



# RAJASTHAN HOUSING BOARD

## BASIC SCHEDULE OF RATES - 2024

Effective from 1<sup>st</sup> July 2024



- GENERAL BASIC RATES
- SANITARY WORKS
- LIFT WORKS
- ELECTRIC WORKS
- BUILDING RATES
- HORTICULTURE WORKS
- ROAD WORKS
- MISCELLANEOUS CIRCULARS

CHIEF ENGINEER  
RAJASTHAN HOUSING BOARD  
JAIPUR



Available on :  
[www.rhb.rajasthan.gov.in](http://www.rhb.rajasthan.gov.in)

हमारा प्रयास सबको आवास

Price Rs. 800.00



# RAJASTHAN HOUSING BOARD

No. CE-I/RHB/2024-25/ 166

Date : 28/6/24

## OFFICE ORDER

RHB BSR 2024 has been prepared and recommended for adoption by the Committee constituted vide office order No. ACE III/2023-24/567 dated 29.01.2024, as a revision of RHB BSR 2013 for all RHB works across Rajasthan. The Basic Schedule of Rates-2024 of Rajasthan Housing Board for buildings, roads and other works is hereby approved & notified. This will be applicable on all works of RHB with effect from 01.07.2024.

This order will not be applicable on works whose A&F issued/under process before 01.07.2024.

CHIEF ENGINEER-I

Copy to :

1. PS to Chairman/Housing Commissioner, RHB, Jaipur.
2. Dy. Secretary UDH, Govt. of Rajasthan, Jaipur.
3. Chief Engineer-II/HQ/Secretary/FA/DL/CEM/ACTP, RHB, Jaipur.
4. Director (Project),
5. RHB, Jaipur.
6. Addl. Chief Engineer-I/II/III, RHB, Jaipur.
7. Addl. Director (IT), RHB, Jaipur for uploading the BSR on Website.
8. All Dy. Housing Commissioner, RHB, Circle-.....
9. All Resident Engineer, RHB, Div-.....
10. Master File.

RajKaj Ref  
8388403



Signature valid

Digitally signed by Aml Agrawal  
Designation: Chief Engineer  
Date: 2024.06.28 12:14:28 IST  
Reason: Approved

# Rajasthan Housing Board, Jaipur

---

**RHB BSR – 2024**

**Released today on 28.06.2024**

**Applicable from 01.07.2024**



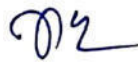
Chairman  
RHB, Jaipur



Housing Commissioner  
RHB, Jaipur



Chief Engineer-I  
RHB, Jaipur



Chief Engineer (HQ)  
RHB, Jaipur



Financial Advisor  
RHB, Jaipur



Secretary  
RHB, Jaipur



ACTP  
RHB, Jaipur



Director (Law)  
RHB, Jaipur



# **RAJASTHAN HOUSING BOARD**

## **BASIC SCHEDULE OF RATES 2024**

(Effective from 1<sup>st</sup> July 2024)

**GENERAL BASIC RATES**

**BUILDING WORKS**

**SANITARY WORKS**

**ELECTRIC WORKS**

**LIFT WORK**

**HORTICULTURE WORKS**

**ROAD WORKS**

**MISCELLANEOUS CIRCULARS**

**CHIEF ENGINEER  
RAJASTHAN HOUSING BOARD  
JAIPUR**



## PREFACE

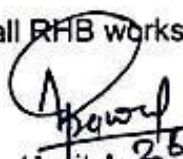
It has been the long felt need of Rajasthan Housing Board Engineers that Rajasthan Housing Board should have its own BSR catering to the specific needs of construction being carried out by the Board incorporating the local practices of constructions as well. RHB BSR 2012 was it's outcome.

The RHB BSR was prepared for various construction works of Rajasthan Housing Board's schemes to ensure uniformity. An effort was made to incorporate all possible items which may be applicable for works of RHB in state. The items are based on Bureau of Indian standard Code, PWD specification & prevailing RHB specification.

This RHB BSR 2024 has been prepared as per office orders ACE III/2023-24/567 dated 29.1.2024, as a revision of RHB BSR 2013 for all RHB works in Rajasthan. It contains almost all commonly used items required for building and road works in RHB. Due care has been taken to incorporate prevailing market rates of material, machinery and man power while preparing this RHB BSR 2024, the suggestions for improvement and corrections if any, are always welcome.

I would like to convey my sincere thanks to Sh. Prateek Srivastava & T.S. Meena Addl. Chief Engineers and team of Sh. Umesh Goyal, Sh. Ashok Agarwal, Sh. Anil Goyal, Sh. Prakash, Sh. Sashikant, Sh. Anil Agarwal, Sh. J.P. Kala, Sh. Ashok Khatri, Sh. R.N. Singhal Resident Engineers, Sh. Ashok Vyas, Sh. Gaurav Jain Project Engineer (Sr.). Special thanks to Sh. H.R. Dupga Additional Chief Engineer and Sh. Sanjay Sharma Dy. Housing Commissioner for doing hard work and devotion in preparing this RHB BSR-2024. Its timely completion is highly appreciated.

This RHB BSR 2024 is being released for adoption in all RHB works.

  
(Amit Agrawal)  
25/6/24  
Chief Engineer-I  
Rajasthan Housing Board  
Jaipur





T. Ravikanth  
Chairman



Rajasthan Housing Board  
Janpath, Jyoti Nagar, Jaipur

### MESSAGE

I congratulate the team of RHB Engineers for preparing RHB BSR-2024 by incorporating various construction practices all over the Rajasthan. It is matter of great pride to prepare RHB BSR-2024 as revision of previous RHB BSR-2013, in very short time.

It has been the long felt need of Rajasthan Housing Board Engineers that board should have its own BSR catering to the specific needs of construction being carried out by the Board incorporating the local practices of construction. The first RHB BSR was released in the year 2012.

The RHB BSR ensures the uniformity and compatibility of rates for the works all over the State of Rajasthan. The items are based on Bureau of Indian standard Code, PWD specification & prevailing RHB specification.

I again appreciate the efforts made by the Technical Team for finalizing the rates of this RHB BSR-2024 by comparing the rates of individual items with the rates of prevailing BSR of other departments.

This RHB BSR 2024 is being released for adoption in all RHB works.

 28/6/24  
Chairman





Inderjeet Singh  
Housing Commissioner



Rajasthan Housing Board  
Jan Path Jyoti Nagar, Jaipur

### MESSAGE

From the establishment of the Rajasthan Housing Board in the year 1971 till date, the Board has made a significant contribution towards solving the housing needs of the state by constructing more than 2.50 lakh houses. With time, the activities of the Board have expanded throughout the state.

In the context of the quality of construction works, it is an important aspect that the assessment and determination of the cost of construction should not only be realistic but also practical and logical in terms of market rates. The compilation of the RHB BSR was an important step in the direction of maintaining uniformity in the assessment of the cost of the Board's works in the entire state. In this process, the RHB BSR-2024 is being implemented for the works to be done in the coming years by adjusting the prevailing rates and other items in the RHB BSR-2024. All the concerned engineers and other officers, due to whose tireless hard work this compilation has been prepared, deserve praise.

I not only hope but am confident that this effort of the Board will prove useful as an easy reference not only for all the Board employees and officers but also for other departments.

Housing Commissioner



# RHB BSR - 2024

## INDEX

S NO.	DESCRIPTION	PAGE
1	GENERAL BASIC RATES	G-1 to G-46
2	BUILDING WORK	B-1 to B-179
3	SANITARY WORK	S-1 to S-155
4	ELECTRIC WORK	E-1 to E-235
5	LIFT WORK	L-1 to L-5
6	HORTICULTURE WORK	H-1 to H-14
7	ROAD WORK	R-1 to R-33
8	MISC. CIRCULARS	M-1 to M-135



**RHB BSR - 2024**

# **GENERAL BASIC RATES**



# GENERAL BASIC RATES

## INDEX

S NO.	DESCRIPTION	PAGE
G-1	HIRE CHARGES OF PLANTS AND MACHINARIS	1
G-2	LABOUR	2
G-3	MATERIALS	3 to 41
G-4	CARRIAGE OF MATERIALS	42 to 43
G-5	HIRE CHARGES OF TENT	44 to 46



**BASIC RATES OF LABOUR/MATERIALS**

CODE	PARTICULARS	UNIT	Rates ( Rs.)
	<b>HIRE CHARGES OF PLANTS AND MACHINARIES</b>		
1	Hire charges of Coaltar Boiler 900 to 1400 litres	Per day	870.00
2	Hire charges of Concrete Mixer 0.14 cubic Mtr.	Per day	1300.00
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	Per day	1730.00
4	Production cost of concrete by batch mix plant.	Cum	500.00
5	Hire charges of Diesel Truck - 9 tonne	Per day	1500.00
6	Hire charges of Spraying machine including electric charges	Per day	450.00
7	Hire charges of Coaltar Sprayer	Per day	400.00
8	Hire charges of Barber green, drying, mixing and Asphalt Plant, with accessories, capacity 30/45 tonne	Per day	8900.00
9	Pumping charges of concrete including Hire charges of pump, piping work & accessories etc.	Cum	150.00
10	Hire charges of Derrickmonkey rope	Per day	635.00
11	Hire charges of Pumpset of capacity 4000 litres/hour.	Per day	1200.00
12	Vibrator(Needle type 40mm)	Per day	800.00
13	Machine for rubbing of floors	Per day	1000.00
14	Front end loader	Per day	7600.00
16	Mastic Cooker	Per day	635.00
17	Hire and running charges of tipper	Per day	1390.00
18	Hire and running charges of loader.	Per day	1150.00
19	Hand Grinder For mirror polish	Per day	400.00
20	Hydraulic Excavator (3D) with driver and fuel.	Per day	8000.00
21	Pin vibrator	Per day	800.00
22	Surface Vibrator	Per day	800.00
24	Hire and running charges of hydraulic piling rig with power unit etc. including complete accessories and shifting at site.	per day	37000.00
25	Hire and running charges of light crane.	per day	2900.00
26	Hire and running charges of bentonite pump.	per day	5775.00
27	Hire and running charges of vibrating pile driving hammer	per day	37000.00
28	Hire and running charges of crane 20 tonne capacity.	per day	6350.00
29	Carriage of concrete by transit mixer.	km/ Cum	32.00
30	Generator 250 KVA.	per day	11500.00
33	Paint applicator.	per day	650.00
37	Mobile crane.	per day	6350.00
38	Tractor with ripper attachment.	per day	1270.00
39	Tractor with trolley .	per day	1300.00
40	Air compressor 250 cfm with two leads for pneumatic cutters/	Per day	1730.00
41	Joint cutting machine with 2-3 blades	Per day	1000.00
42	C.C .batch mix plant.	Per day	50000.00
43	Road sweeper	Per day	700.00
45	Slip form paver with sensor.	Per day	12700.00
46	Water tanker 5000 litr capacity.	Per day	1200.00
47	Concrete joint cutting machine.	Per day	1200.00
48	Texturing machine.	Per day	1000.00

**G - 2**

<b>CODE</b>	<b>PARTICULARS</b>	<b>UNIT</b>	<b>Rates ( Rs.)</b>
	<b>LABOURS</b>		
100	Bandhani	Per day	400.00
101	Bhisti	Per day	500.00
102	Blacksmith 1st class	Per day	800.00
103	Blacksmith 2nd class	Per day	650.00
111	Carpenter 1st class	Per day	1000.00
112	Carpenter 2nd class	Per day	800.00
113	Chowkidar	Per day	600.00
114	Beldar	Per day	500.00
115	Coolie	Per day	400.00
116	Fitter (grade 1)	Per day	800.00
117	Assistant Fitter or 2nd class Fitter	Per day	600.00
119	Glazier	Per day	700.00
122	Mason (for plaster of paris work) 1st class	Per day	700.00
123	Mason (brick layer) 1st class	Per day	700.00
124	Mason (brick layer) 2nd class	Per day	600.00
125	Mason (for plain stone work) 2nd class)	Per day	600.00
126	Mason (for ornamental stone work) 1st class	Per day	1000.00
127	Driver (for Road Roller, Concrete Mixer, Truck etc.)	Per day	700.00
128	Mate	Per day	600.00
130	Mistry	Per day	700.00
131	Painter	Per day	600.00
132	Rock Excavator	Per day	800.00
133	Rock Breaker	Per day	800.00
134	Rock Hole Driller	Per day	800.00
135	Stone Chiseller	Per day	700.00
138	Sprayer (for bitumen, tar etc.)	Per day	700.00
139	Skilled Beldar (for floor rubbing etc.)	Per day	500.00
141	White Washer	Per day	600.00
155	Mason (average)	Per day	700.00
156	Carpenter (average)	Per day	600.00
157	Operator (Pile/ Special machine)	Per day	800.00
159	Skilled torch operator for laying tack	Per day	600.00



CODE	PARTICULARS	UNIT	Rates ( Rs.)
	<b>MATERIALS</b>		
222	Seam bolts and nuts 6 mm dia and 25 mm long	10 Nos	60.00
223	Non - Asbestos fibre cement corrugated sheet 6mm thick.	Sqm	260.00
224	Non - Asbestos fibre cement close fitting adjustable ridge.	Mtr.	320.00
225	Non - Asbestos fibre cement corrugate serrated adjustable	Mtr.	270.00
226	Non - Asbestos fibre cement plain wing adjustable ridge.	Mtr.	290.00
227	Non - Asbestos fibre cement unserrated adjustable ridge for	Mtr.	300.00
228	Non - Asbestos fibre cement corrugated apron piece.	Mtr.	230.00
229	Non - Asbestos fibre cement eaves filler piece.	Each	150.00
230	Non - Asbestos fibre cement north light curves.	Mtr.	300.00
231	Non - Asbestos fibre cement ventilator curves.	Each	385.00
232	Non - Asbestos fibre cement barge boards 6 mm thick.	Mtr.	330.00
233	Non - Asbestos fibre cement ridge finial .	pair	150.00
234	Non - Asbestos fibre cement special north light curves.	Each	405.00
235	Non - Asbestos fibre cement S type louvers.	Each	250.00
236	Non - Asbestos multi purpose fibre cement board 6mm thick.	Sqm	280.00
237	Non - Asbestos multi purpose fibre cement board 8mm thick.	Sqm	350.00
285	Brick Aggregate (Single size) : 63 mm nominal size	Cum	485.00
286	Brick Aggregate (Single size) : 50 mm nominal size	Cum	530.00
287	Brick Aggregate (Single size) : 40 mm nominal size	Cum	560.00
291	Stone Aggregate (Single size) : 63 mm nominal size	Cum	770.00
292	Stone Aggregate (Single size) : 50 mm nominal size	Cum	750.00
293	Stone Aggregate (Single size) : 40 mm nominal size	Cum	990.00
294	Stone Aggregate (Single size) : 25 mm nominal size	Cum	990.00
295	Stone Aggregate (Single size) : 20 mm nominal size	Cum	950.00
296	Stone Aggregate (Single size) : 12.5 mm nominal size	Cum	950.00
297	Stone Aggregate (Single size) : 10 mm nominal size	Cum	900.00
298	Stone Aggregate (Single size) : 06 mm nominal size	Cum	950.00
302	Safeda ballies 125 mm diameter	Mtr.	60.00
304	Bajri	Cum	1100.00
305	Bamboo 25 mm dia 2.5 Mtr. long	score	400.00
308	Bhusa	Quintal	350.00
309	Paving bitumen S-90 of approved quality	tonne	55000.00
310	Bitumen emulsion	tonne	50000.00
312	Bitumen grade PMB - 40	M.T.	55000.00
313	Blown type petroleum bitumen of penetration 85/25 of approved quality	tonne	55000.00
314	Bitumen hot sealing compound : grade A	Kg	35.00
316	Bitumen solution primer of approved quality	Litre	72.00
317	Premoulded joint filler 12 mm thick	Sqm	570.00
318	Bitumen felt fibre base (vegetable or animal): Type 2 grade 1	Sqm	90.00
322	Bitumen felt :Type 3 grade 1	Sqm	90.00
324	Coal Tar	Litre	40.00
325	Blasting powder	Kg	41.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
326	Blasting fuse (fuse wire)	Each	18.00
328	White face insulating board:12 mm thick	Sqm	405.00
332	Natural colour insulating board:12 mm thick	Sqm	300.00
336	Flame retardent face insulating board: 12 mm thick	Sqm	370.00
338	Flame retardent face insulating, Impregnated fibre board 12 mm thick	Sqm	580.00
339	Flame retardent face insulating, Impregnated fibre board 18 mm thick	Sqm	815.00
340	Flame retardent face insulating, Impregnated fibre board 25 mm thick	Sqm	1120.00
341	Flat pressed 3 layer particle board (medium density) Grade I :12 mm thick	Sqm	350.00
346	Extra for veneered particle board with : Teak veneering on one side and commercial veneered on other side	Sqm	350.00
347	Extra for veneered particle board with : Commercial veneering on both sides	Sqm	200.00
348	Extra for veneered particle board with : Teak veneering on both sides	Sqm	580.00
349	SILFIL (Armour Bound) 20 mm thick	Sqm	270.00
350	SILFIL (Armour Bound) 25 mm thick	Sqm	340.00
351	SILFIL (Armour Bound) 30 mm thick	Sqm	405.00
352	SILFIL (Armour Bound) 40 mm thick	Sqm	550.00
353	kg./cum.)	Sqm	70.00
362	Brick bats	Cum	600.00
364	Wire brush	Each	50.00
365	Soft brush	Each	30.00
367	Portland Cement	tonne	6000.00
368	White Cement	tonne	18000.00
369	Shree binder	tonne	500.00
370	Coal (steam)	Quintal	490.00
373	Cramp Gun metal 25x6x300 mm	Each	75.00
378	Brass butt hinges (light/ordinary type) : 125x70x4 mm	10 Nos	650.00
379	Brass butt hinges (light/ordinary type) : 100x70x4 mm	10 Nos	500.00
380	Brass butt hinges (light/ordinary type) : 75x40x2.5 mm	10 Nos	400.00
381	Brass butt hinges (light/ordinary type) : 50x40x2.5 mm	10 Nos	350.00
382	Brass butt hinges (heavy type) : 125x85x5.5 mm(.70)kg	10 Nos	3000.00
383	Brass butt hinges (heavy type) : 100x85x5.5 mm(.56)kg	10 Nos	2700.00
384	Brass butt hinges (heavy type) :75x65x4.0 mm(.20)kg	10 Nos	2500.00
385	Brass parliamentary hinges 150x125x27x5 mm	10 Nos	2500.00
386	Brass parliamentary hinges 125x125x27x5 mm	10 Nos	2400.00
387	Brass parliamentary hinges 100x125x27x5 mm	10 Nos	2300.00
388	Brass parliamentary hinges75x100x20x3.2 mm	10 Nos	2250.00
389	Brass single acting spring hinges 150 mm	Each	300.00
390	Brass single acting spring hinges 125 mm	Each	250.00
391	Brass single acting spring hinges 100 mm	Each	200.00
392	Brass double acting spring hinges 150 mm	Each	980.00
393	Brass double acting spring hinges 125 mm	Each	750.00
394	Brass double acting spring hinges 100 mm	Each	650.00
400	Brass tower bolt (barrel type) 250x10 mm	Each	250.00



CODE	PARTICULARS	UNIT	Rates ( Rs.)
401	Brass tower bolt (barrel type) 200x10 mm	Each	220.00
402	Brass tower bolt (barrel type) 150x10 mm	Each	200.00
403	Brass tower bolt (barrel type) 100x10 mm	Each	170.00
404	Brass flush bolt 250 mm	Each	140.00
405	Brass flush bolt 150 mm	Each	115.00
406	Brass flush bolt 100 mm	Each	76.00
408	Brass handles 125 mm with plate 175x32 mm	Each	240.00
409	Brass handles 100 mm with plate 150x32 mm	Each	220.00
410	Brass handles 75 mm with plate 125x32 mm	Each	200.00
411	Brass door latch 300x16x5 mm (0.380 kg)	Each	400.00
412	Brass door latch 250x16x5 mm (0.350 kg)	Each	350.00
413	Brass mortice latch and lock 100x65 mm with 6 levers and a pair of brass lever handles	Each	2500.00
414	Brass mortice latch 100x65mm with a pair of brass lever handles	Each	3500.00
417	Brass 150 mm floor door stopper (0.357kg)	Each	190.00
418	Brass hard drawn hooks and eyes 300 mm	10 Nos	900.00
419	Brass hard drawn hooks and eyes 250 mm	10 Nos	800.00
420	Brass hard drawn hooks and eyes 200 mm	10 Nos	750.00
421	Brass hard drawn hooks and eyes 150 mm	10 Nos	700.00
422	Brass hard drawn hooks and eyes 100 mm	10 Nos	500.00
423	Brass casement window fastener	Each	55.00
424	Brass casement stays (straight peg type ) 300 mm weighing not less than 0.33 kg	Each	110.00
425	Brass casement stays (straight peg type ) 250 mm weighing not less than 0.28 kg	Each	90.00
426	Brass casement stays (straight peg type ) 200 mm weighing not less than 0.24 kg	Each	80.00
427	Brass quadrant stays 300 mm	Each	130.00
428	Brass fanlight catch	10 Nos	190.00
429	Brass fanlight pivot	10 Nos	260.00
430	Brass chain with hook for fan light catch	Each	25.00
431	Brass hasps and staples (safety type) 300 mm	10 Nos	760.00
432	Brass hasps and staples (safety type) 115 mm	10 Nos	630.00
433	Brass hasps and staples (safety type) 90 mm	10 Nos	510.00
438	Brass Night latch	Each	560.00
442	Brass helical spring 150 mm	Each	305.00
444	Brass curtain rod 20 mm dia 1.25 mm thick	Mtr.	150.00
445	Brass curtain rod 25 mm dia 1.25 mm thick	Mtr.	180.00
446	Brass brackets (curtain rods) 20 mm	Each	80.00
447	Brass cupboard knob or ward robe knob 50 mm	Each	50.00
449	Brass screws 50 mm	100 Nos	600.00
450	Brass screws 40 mm	100 Nos	550.00
451	Brass screws 30 mm	100 Nos	500.00
452	Brass screws 25 mm	100 Nos	450.00
453	Brass screws 20 mm	100 Nos	400.00
524	Chromium plated Brass butt hinges (lheavy) type 75x65x4 .0 mm (200gms)	10 Nos	950.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
525	Chromium plated Brass butt hinges (light/ordinary) type 125x70x4 mm	10 Nos	1150.00
526	Chromium plated Brass butt hinges (light/ordinary) type 100x70x4 mm	10 Nos	1050.00
527	Chromium plated Brass butt hinges (light/ordinary) type 75x40x2.5 mm	10 Nos	900.00
528	Chromium plated Brass butt hinges (light/ordinary) type 50x40x2.5 mm	10 Nos	700.00
555	Chromium plated Brass handles 125 mm with plate 175 x32 mm	Each	180.00
556	Chromium plated Brass handles 100 mm with plate 150 x 32 mm	Each	160.00
557	Chromium plated Brass handles 75mm with plate 125x32 mm	Each	140.00
558	Chromium plated Brass mortice latch and lock 100x65 mm with 6 levers and a pair of brass lever handles	Each	800.00
568	Chromium plated brass casement window fastner	Each	90.00
569	Chromium plated Brass casement stays (straight peg type ) 300 mm weighing not less than 0.33 kg	Each	130.00
570	Chromium plated Brass casement stays (straight peg type ) 250 mm weighing not less than 0.28 kg	Each	115.00
571	Chromium plated Brass casement stays (straight peg type ) 200 mm weighing not less than 0.24 kg	Each	95.00
583	Chromium plated Brass Night latch	Each	720.00
584	Chromium plated Brass Wardrobe Knobe 50 mm	Each	630.00
585	Chromium plated Brass screws 50 mm	100 Nos	470.00
586	Chromium plated Brass screws 40 mm	100 Nos	360.00
587	Chromium plated Brass screws 30 mm	100 Nos	280.00
588	Chromium plated Brass screws 25 mm	100 Nos	230.00
589	Chromium plated Brass screws 20 mm	100 Nos	140.00
590	Chromium plated Brass curtain rod 12 mm dia 1.25mm thick	Mtr.	230.00
591	Chromium plated Brass curtain rod 20 mm dia 1.25mm thick	Mtr.	320.00
592	Chromium plated Brass curtain rod 25 mm dia 1.25mm thick	Mtr.	450.00
594	Bright finished or black enamelled mild steel butt hinges 125x65x2.12 mm	10 Nos	160.00
595	Bright finished or black enamelled mild steel butt hinges 100x58x1.90 mm	10 Nos	130.00
596	Bright finished or black enamelled mild steel butt hinges 75x47x1.70 mm	10 Nos	90.00
597	Bright finished or black enamelled mild steel butt hinges 50x37x1.50 mm	10 Nos	70.00
608	Nickel plated mild steel piono hinges 1 mm thick 35 mm wide	Mtr.	40.00
635	Bright finished or black enamelled mild steel screws 50 mm	100 Nos	90.00
637	Bright finished or black enamelled mild steel screws 40 mm	100 Nos	45.00
638	Bright finished or black enamelled mild steel screws 30 mm	100 Nos	50.00
639	Bright finished or black enamelled mild steel screws 25 mm	100 Nos	40.00
640	Bright finished or black enamelled mild steel screws 20 mm	100 Nos	20.00
641	Bright finished or black enamelled mild steel bolts and nuts 50x6 mm	Each	7.00
642	Oxidised mild steel butt hinges 125x65x2.12 mm	10 Nos	250.00
643	Oxidised mild steel butt hinges 100x58x1.90 mm	10 Nos	180.00



CODE	PARTICULARS	UNIT	Rates ( Rs.)
644	Oxidised mild steel butt hinges 75x47x1.70 mm	10 Nos	100.00
645	Oxidised mild steel butt hinges 50x37x1.50 mm	10 Nos	56.00
646	Oxidised mild steel parliamentary hinges 150x125x27x2.8 mm	10 Nos	450.00
647	Oxidised mild steel parliamentary hinges 125x125x27x2.8 mm	10 Nos	360.00
648	Oxidised mild steel parliamentary hinges 100x125x27x2.8 mm	10 Nos	280.00
649	Oxidised mild steel parliamentary hinges 75x100x20x2.24 mm	10 Nos	215.00
650	Oxidised mild steel single acting spring hinges 150 mm	Each	115.00
651	Oxidised mild steel single acting spring hinges 125 mm	Each	105.00
652	Oxidised mild steel single acting spring hinges 100 mm	Each	90.00
653	Oxidised mild steel double acting spring hinges 150 mm	Each	120.00
654	Oxidised mild steel double acting spring hinges 125 mm	Each	110.00
655	Oxidised mild steel double acting spring hinges 100 mm	Each	90.00
656	Nickel plated mild steel piono hinges 1 mm thick 35 mm wide	Mtr	40.00
660	Oxidised mild steel sliding door bolt 300x16 mm	Each	82.00
661	Oxidised mild steel sliding door bolt 250x16 mm	Each	65.00
662	Oxidised mild steel door latch 300x20x6 mm	Each	45.00
663	Oxidised mild steel door latch 250x20x6 mm	Each	40.00
664	Oxidised mild steel tower bolt (barrel type) 250x10 mm	Each	40.00
665	Oxidised mild steel tower bolt (barrel type) 200x10 mm	Each	31.00
666	Oxidised mild steel tower bolt (barrel type) 150x10 mm	Each	28.00
667	Oxidised mild steel tower bolt (barrel type) 100x10 mm	Each	23.00
668	Oxidised mild steel handles 125 mm	Each	13.00
669	Oxidised mild steel handles 100 mm	Each	10.00
670	Oxidised mild steel handles 75 mm	Each	7.00
679	Oxidised mild steel hasps and staples(safety type) 150 mm	10 Nos	130.00
680	Oxidised mild steel hasps and staples(safety type) 115 mm	10 Nos	101.00
681	Oxidised mild steel hasps and staples(safety type) 90 mm	10 Nos	76.00
682	Oxidised mild steel screws 50 mm	100 Nos	60.00
683	Oxidised mild steel screws 40 mm	100 Nos	48.00
684	Oxidised mild steel screws 30 mm	100 Nos	36.00
685	Oxidised mild steel screws 25 mm	100 Nos	23.00
686	Oxidised mild steel screws 20 mm	100 Nos	20.00
687	Anodised Aluminium butt hinges 125x75x4 mm	10 Nos	1050.00
688	Anodised Aluminium butt hinges 125x63x4 mm	10 Nos	1000.00
689	Anodised Aluminium butt hinges 100x75x4 mm	10 Nos	900.00
690	Anodised Aluminium butt hinges 100x63x3.2 mm	10 Nos	850.00
691	Anodised Aluminium butt hinges 100x63x4 mm	10 Nos	850.00
692	Anodised Aluminium butt hinges 75x63x4 mm	10 Nos	800.00
693	Anodised Aluminium butt hinges 75x63x3.2 mm	10 Nos	380.00
694	Anodised Aluminium butt hinges 75x45x3.2 mm	10 Nos	205.00
696	Anodised Aluminium sliding door bolt 300x16 mm	Each	210.00
697	Anodised Aluminium sliding door bolt 250x16 mm	Each	190.00
698	Anodised Aluminium tower bolt (barrel type) 300x10 mm	10 Nos	980.00
699	Anodised Aluminium tower bolt (barrel type) 250x10 mm	10 Nos	860.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
700	Anodised Aluminium tower bolt (barrel type)200x10 mm	10 Nos	710.00
701	Anodised Aluminium tower bolt (barrel type)150x10 mm	10 Nos	550.00
702	Anodised Aluminium tower bolt (barrel type)100x10 mm	10 Nos	410.00
703	Anodised Aluminium handles 125 mm with plate 175 x 32 mm	10 Nos	750.00
704	Anodised Aluminium handles 100 mm with plate 150 x 32 mm	10 Nos	650.00
705	Anodised Aluminium handles 75mm with plate 125 x 32 mm	10 Nos	550.00
706	Anodised Aluminium kicking plate 50 cm long100x3.15 mm	Each	140.00
713	Block board construction flush door with teak wood ply on both faces 35 mm thick	Sqm	2150.00
714	Block board construction flush door with teak wood ply on both faces 30 mm thick	Sqm	1865.00
715	Block board construction flush door with teak wood ply on both faces 25 mm thick	Sqm	1680.00
717	Block board construction flush door with commercial ply on both faces 35 mm thick	Sqm	1250.00
718	Block board construction flush door with commercial ply on both faces 30 mm thick	Sqm	1180.00
719	Block board construction flush door with commercial ply on both faces 25 mm thick	Sqm	1100.00
720	Block board construction flush door with teak wood ply on one faces 35 mm thick	Sqm	1550.00
721	Block board construction flush door with teak wood ply on one faces 30 mm thick	Sqm	1350.00
722	Block board construction flush door with teak wood ply on one faces 25 mm thick	Sqm	1250.00
752	Block board construction flush door lipping	Sqm of door area	200.00
753	Square vision panel in Block board construction flush door	Sqm of door area	200.00
754	Circular vision panel in Block board construction flush door	Sqm of door area	200.00
755	Decorative type Louvers in Block board construction flush door	Sqm of door area	350.00
757	Rebate cutting in Block board construction flush door	Sqm of door area	120.00
759	Decorative plywood 4 mm	Sqm	800.00
761	Fuel wood	Quintal	500.00
763	Glue	Kg	550.00
765	Hessian cloth	Sqm	25.00
768	Cement Concrete Jali 50 mm thick	Sqm	360.00
769	Cement Concrete Jali 40 mm thick	Sqm	600.00
770	Cement Concrete Jali 25 mm thick	Sqm	280.00
771	Kerosene oil	Litre	50.00
772	Synthetic colour	Kg	165.00
773	Unslaked lime	Quintal	560.00
774	Khameera	Kg	20.00
775	Dehradun white lime	Quintal	700.00
776	Satna lime	Quintal	400.00
777	Dry hydrated lime (factory made)	Quintal	400.00



CODE	PARTICULARS	UNIT	Rates ( Rs.)
784	Marble dust/ powder	Cum	900.00
785	Marble chips upto 4mm and downsize White & black	Quintal	240.00
788	Marble chips large size above 4 mm White & black	Quintal	310.00
789	Jhingra	Cum	60.00
790	MS hold fast	Nos	30.00
810	Moorum	Cum	525.00
811	Mud (dry)	Cum	55.00
815	Dry distemper	Kg	55.00
816	Oil bound washable distemper/ Acrylic distemper	Kg	60.00
818	Linseed oil (double boiled)	Litre	200.00
820	Cement primer	Litre	90.00
821	Distemper primer	Litre	130.00
823	Pink primer (for wood)	Litre	150.00
826	Aluminium paint	Litre	240.00
827	Acid proof paint (chocolate or black)	Litre	150.00
828	Anticorrosive bituminous paint (black)	Litre	150.00
829	Black japan	Litre	160.00
830	Enamel paint	Litre	200.00
831	Floor enamel paint in all shades except green	Litre	250.00
833	Synthetic enamel paint in black or chocolate shade	Litre	250.00
834	Synthetic enamel paint in all shades except black or chocolate shade	Litre	240.00
835	Plastic emulsion paint	Litre	285.00
845	Roofing paint for iron sheets in red colour	Litre	165.00
850	White lead	Kg	90.00
851	Water proofing cement paint	Kg	60.00
855	Wax polish (ready made)	Kg	250.00
856	Ordinary varnish	Litre	90.00
857	Superior copal varnish	Litre	150.00
858	Superior spar varnish	Litre	250.00
859	Oil type wood preservative	Litre	90.00
863	Putty for wood work	Kg	75.00
865	Pig lead	Kg	125.00
868	Premixed super white gypsum plaster.	Kg	15.00
869	Plaster of Paris	Kg	6.00
870	Plug	Each	6.00
871	White cement based putty	Kg	25.00
873	Copper pins 6 mm dia 7.5 cm long	Each	15.00
874	Black colour dark shade pigment	Kg	75.00
875	Red, chocolate, orange, buff or yellow (red oxide of iron) light shade pigment	Kg	70.00
876	Green or blue medium shade pigment	Kg	70.00
886	Standard holdar bat clamps for sand cast iron or cast iron pipes 150 mm dia	Each	40.00
887	Gur	Kg	40.00
888	Methi	Kg	50.00
889	Hemp	Kg	30.00
966	Sand Cast iron plain shoe 150 mm dia	Each	500.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
967	Copper plate	Kg	400.00
969	Pully 25 mm dia	Each	25.00
973	Rolling shutter made of 80x1.25 mm machine rolled laths	Sqm	1300.00
974	Top cover for rolling shutters	Mtr	700.00
975	27.5 cm long wire spring grade no 2 for rolling shutters	Each	300.00
976	Ball bearing for rolling shutters	Each	450.00
977	Extra for mechanical devices chain and cranked operation for operating rolling shutters : exceeding 10.00 sq.m and upto 16.80 sq.m area of door	Sqm	800.00
978	Extra for mechanical devices chain and cranked operation for operating rolling shutters : exceeding 16.80 sq.m area of door	Sqm	950.00
979	Royalty for good earth	Cum	25.00
980	Royalty for sludge (from okhla)	Cum	100.00
982	Coarse sand (zone III)	Cum	1400.00
983	Fine sand (zone IV)	Cum	1400.00
992	Galvanised steel plain sheets	Quintal	300.00
994	Standard quality hard board sheet 3 mm thick	Sqm	210.00
996	Standard quality hard board sheet 4.5 mm thick	Sqm	290.00
999	Shellac	Kg	550.00
1000	Spirit	Litre	70.00
1001	Spun yarn	Kg	80.00
1002	Mild steel round bar 12 mm dia and below	Quintal	7400.00
1003	Mild steel round bar above 12 mm dia	Quintal	7400.00
1004	Average rate of Mild steel round bars for reinforcements	Quintal	7400.00
1005	Twisted steel / deformed bars	Quintal	8000.00
1006	Mild steel square bars	Quintal	7400.00
1007	Structurals such as tees, angles channels and R.S. joists	Quintal	7400.00
1008	Flats upto 10 mm in thickness	Quintal	7400.00
1009	Flats exceeding 10 mm in thickness	Quintal	7400.00
1010	Mild steel plates	Quintal	9600.00
1013	Mild steel sheets for tanks	Quintal	9600.00
1015	Mild steel expanded metal 20x60 mm strands	Sqm	325.00
1016	TMT bar	Quintal	8000.00
1019	Mild steel hooks	Each	35.00
1020	Mild steel rivets	Quintal	8000.00
1021	Hard drawn steel wire fabric	Sqm	550.00
1022	Galvanised steel bolts & nuts 6 mm dia and 25 mm long round head with slots	10 Nos	25.00
1023	Galvanised steel J or L hooks 8 mm dia	10 Nos	150.00
1024	Galvanised steel bolts & nuts 10 mm dia and 125 mm long round head with slots	Each	15.00
1025	Mild steel bolts 6 mm dia and 25 mm long with hexagonal head	10 Nos	30.00
1026	Black steel barbed wire	Quintal	9000.00
1028	Straining bolts	Each	70.00
1029	Galvanised steel barbed wire	Quintal	7500.00
1030	Galvanised steel turn buckles	Each	15.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
1031	Galvanised steel bolts & nuts 10 mm dia and 27 cm long both sides threaded with 4 galvanised steel nuts	Each	20.00
1032	Galvanised steel bolts 10 mm dia and 7 cm long with nuts	Each	15.00
1034	Bolts and nuts upto 300 mm in length	Quintal	6350.00
1035	Bolts and nuts above 300 mm in length	Quintal	6930.00
1036	Iron pintels including welded pin	Each	45.00
1037	Binding wire	Kg	90.00
1038	Wire mesh (rabbit)	Sqm	350.00
1143	Steel beading	Mtr.	25.00
1145	Aluminium Plain Strip edging 38x12x3 mm	Mtr.	120.00
1148	Glass strip 3 mm thick 20 mm deep	Mtr.	10.00
1149	Glass strip 4 mm thick 40 mm deep	Mtr.	17.00
1151	Boundry stone top chisel dressed 15x15x90 cm	Each	81.00
1154	Through and bond stone	100 Nos	1275.00
1157	Stone for masonry work	Cum	1000.00
1158	Stone for pitching 15 cm x 22.5 cm	Cum	650.00
1159	Jaisalmer stone	Cum	750.00
1160	Red sand stone block	10 Cudm	70.00
1161	White/Pink sand stone block	10 Cudm	80.00
1163	White sand stone slab 75 mm thick (un-dressed)	Sqm	375.00
1164	Red sand stone slab 40 mm thick (un-dressed)	Sqm	650.00
1165	White sand stone slab 40 mm thick (un-dressed)	Sqm	750.00
1166	Red sand stone slab 30 mm thick (un-dressed)	Sqm	350.00
1167	Stone chajja patti	Sqm	650.00
1168	Kota stone slab 20 mm to 25 mm thick (semi-polished)	Sqm	400.00
1169	Kotastone slab 40mm thick (rough cheseled)	Sqm	250.00
1170	Katla stone pati 50 mm thick	Sqm	840.00
1171	Katla stone pati 80 mm thick	Sqm	950.00
1172	Stone slab	Sqm	600.00
1174	Red sand stone slab 45 mm and 50 mm thick (un-dressed)	Sqm	400.00
1175	White sand stone slab 45 mm and 50 mm thick (un-dressed)	Sqm	800.00
1177	Stone grit 6 mm and down size or pea sized gravel	Cum	900.00
1179	Crushed stone 2.36 mm to 12.5 mm size	Cum	900.00
1182	Surkhi	Cum	500.00
1183	Shesham wood	10 Cudm	900.00
1184	Nigeria wood	10 Cudm	950.00
1185	Ghana wood	10 Cudm	1050.00
1186	Superior class teak wood such as Dandeli, Balarshah or Malabar in planks	10 Cudm	1000.00
1187	First class teak wood in scantling	10 Cudm	700.00
1188	First class teak wood in planks	10 Cudm	750.00
1189	Second class teak wood in scantling	10 Cudm	700.00
1190	Second class teak wood in planks	10 Cudm	600.00
1191	Ivory coast	10 Cudm	1000.00
1192	Chir wood	10 Cudm	375.00
1194	Second class deodar wood in planks	10 Cudm	600.00
1196	First class kail wood in planks	10 Cudm	350.00



CODE	PARTICULARS	UNIT	Rates ( Rs.)
1197	Second class kail wood in scantling	10 Cudm	290.00
1198	Second class kail wood in planks	10 Cudm	310.00
1199	Sal wood in scantling	10 Cudm	500.00
1201	Precast terrazo tiles 22 mm thick (light shade)	Sqm	160.00
1202	Precast terrazo tiles 22 mm thick (medium shade)	Sqm	160.00
1203	Precast terrazo tiles 22 mm thick (dark shade)	Sqm	190.00
1204	Precast terrazo tiles 20 mm thick for roof	Sqm	175.00
1207	G.I. Limpet washer	100 Nos	30.00
1208	Bitumen washer	100 Nos	25.00
1209	G.I. plain washer thick	100 Nos	40.00
1210	G.I. plain washer thin	100 Nos	30.00
1211	G.I. plain washer for seam bolts	100 Nos	30.00
1213	Water proofing materials	Kg	40.00
1214	Welding by gas plant	Cm.	5.00
1215	Welding by electric plant	Cm.	5.00
1216	Whiting	Quintal	735.00
1218	Spigot for standard jointing	Kg	60.00
1219	Wire nails	Kg	60.00
1220	Wire mesh (rabbit)	Sqm	225.00
1221	20 mm dia holding down bolts	Quintal	5500.00
1222	Mild steel sheets with bolts and nuts to rest on pintels	Each	125.00
1224	Hard drawn steel wire	Quintal	5500.00
1225	Mild steel flat strap fitting	Quintal	5200.00
1227	Chequered terrazo tiles 22 mm thick (light shade)	Sqm	200.00
1228	Chequered terrazo tiles 22 mm thick (medium shade)	Sqm	190.00
1229	Chequered terrazo tiles 22 mm thick (dark shade)	Sqm	180.00
1231	Extra for selected planks of second class teakwood	10 Cudm	125.00
1234	Aluminium Plain Strip edging 57x12x3 mm	Mtr.	175.00
1235	Diesel oil	Litre	100.00
1237	Cutting marble or sand stone slab upto 50 mm thick by mechanical device	Mtr.	20.00
1238	Extra for selected planks of first class teakwood	10 Cudm	175.00
1241	Commercial LPG in cylinder.	Kg	100.00
1301	Bleaching powder	Quintal	1900.00
1304	Surface box for stop cock	Each	100.00
1305	Surface box for sluice valve	Each	200.00
1307	Surface box for water meter	Each	325.00
1309	C.I. bracket for wash basin and sinks	Pair	105.00
1314	C.P.brass chain with 32 mm dia rubber plug	Each	50.00
1315	C.P.brass chain with 40 mm dia rubber plug	Each	80.00
1330	Clamps and M.S. stays including bolts and nuts for 100 mm pipe	Each	90.00
1331	M.S.Holder bat clamp of approved design for 100 mm S.C.I. pipe	Each	35.00
1332	M.S.Holder bat clamp of approved design for 75 mm S.C.I. pipe	Each	25.00
1334	Clamps and M.S. stays including bolts and nuts for 50 mm pipe	Each	35.00
1335	Clamps and M.S. stays including bolts and nuts for 75 mm pipe	Each	41.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
1336	Clearing eye with chain and lid 100 mm dia	Each	52.00
1337	Clearing eye with chain and lid 150 mm dia	Each	58.00
1339	Brass bib-cock 15 mm dia	Each	300.00
1340	Brass bib-cock 20 mm dia	Each	450.00
1342	Brass stop-cock 15 mm dia	Each	310.00
1343	Brass stop-cock 20 mm dia	Each	425.00
1350	Mosquito proof coupling of approved design	Each	350.00
1352	C.I. cover and frame 300x300 mm inside	Each	500.00
1353	C.I. cover without frame 300x300mm inside i.e. cover of 4.50 kg	Each	400.00
1354	Rectangular cover 455x610 mm with frame (low duty)	Each	2200.00
1355	Rectangular cover 455x610mm without frame (low duty)	Each	1300.00
1356	500 mm dia cover with frame (medium duty)	Each	6500.00
1357	500 mm dia cover without frame (medium duty)	Each	3200.00
1360	C.I. mouth, brass ferrule 15 mm dia	Each	140.00
1361	C.I. mouth, brass ferrule 20 mm dia	Each	185.00
1362	C.I. mouth, brass ferrule 25 mm dia	Each	230.00
1363	Vitreous china foot rests 250x130x30 mm	pair	175.00
1364	C.I. grating 100x100 mm	Each	30.00
1366	C.I. grating 150x150 mm	Each	60.00
1367	C.I. grating 180x180 mm	Each	70.00
1369	S.C.I. gully or nahani grating 100 mm dia	Each	34.00
1373	Rubber insertions for 80 mm dia pipe joints	Each	13.00
1374	Rubber insertions for 100 mm dia pipe joints	Each	17.00
1375	Rubber insertions for 125 mm dia pipe joints	Each	18.00
1376	Rubber insertions for 150 mm dia pipe joints	Each	21.00
1377	Rubber insertions for 200 mm dia pipe joints	Each	28.00
1378	Rubber insertions for 250 mm dia pipe joints	Each	42.00
1379	Rubber insertions for 300 mm dia pipe joints	Each	53.00
1380	Rubber insertions for 350 mm dia pipe joints	Each	63.00
1381	Rubber insertions for 400 mm dia pipe joints	Each	92.00
1382	Rubber insertions for 450 mm dia pipe joints	Each	116.00
1383	Rubber insertions for 500 mm dia pipe joints	Each	150.00
1384	Rubber insertions for 600 mm dia pipe joints	Each	165.00
1392	Mirror of superior make glass 60x45 cm	Each	380.00
1396	Vitrous china pedestal for wash basin	Each	1000.00
1397	Pig lead	Kg	140.00
1464	S & S.C.I. standard specials upto 300 mm dia (heavy class)	Quintal	3510.00
1466	S & S.C.I. standard specials over 300 mm dia (heavy class)	Quintal	3800.00
1468	Flanged C.I. standard specials upto 300 mm dia (heavy class)	Quintal	6300.00
1470	Flanged C.I. standard specials over 300 mm dia (heavy class)	Quintal	6700.00
1472	Casing pipe 100 mm dia	Mtr.	430.00
1532	Flush pipe with union spreaders and clamps all in C.P. brass for single stall	Each	300.00
1533	Flush pipe with union spreaders and clamps all in C.P. brass for double stall	Each	490.00
1534	Flush pipe with union spreaders and clamps all in C.P. brass for range of three stall	Each	610.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
1535	Flush pipe with union spreaders and clamps all in C.P. brass for range of four stall	Each	680.00
1540	Flush pipe and spreaders G.I.for single set of one squatting plate urinal	Each	200.00
1541	Flush pipe and spreaders G.I.for range of two squatting plates urinal	Each	300.00
1542	Flush pipe and spreaders G.I.for range of three squatting plates urinal	Each	370.00
1543	Flush pipe and spreaders G.I.for range of four squatting plates urinal	Each	470.00
1545	G.I. pipes 15 mm dia	Mtr.	160.00
1546	G.I. pipes 20 mm dia	Mtr.	205.00
1547	G.I. pipes 25 mm dia	Mtr.	290.00
1548	G.I. pipes 32 mm dia	Mtr.	360.00
1549	G.I. pipes 40 mm dia	Mtr.	420.00
1550	G.I. pipes 50 mm dia	Mtr.	600.00
1551	G.I. pipes 65 mm dia	Mtr.	695.00
1552	G.I. pipes 80 mm dia	Mtr.	890.00
1555	G.I. back (jam) nuts 25 mm dia	Each	8.00
1559	G.I. back (jam) nuts 65 mm dia	Each	27.00
1608	G.I. tees (equal) 25 mm	Each	65.00
1612	G.I. tees (equal) 65 mm	Each	370.00
1614	G.I. inlet connection	Each	86.00
1616	S.C.I. soil, waste and vent single socketed pipe 1.80 Mtr.s long: 75mm dia	Each	1590.00
1617	S.C.I. soil, waste and vent single socketed pipe 1.80 Mtr.s long: 100mm dia	Each	2020.00
1618	S.C.I. soil, waste and vent single socketed pipe 1.80 Mtr.s long: 150mm dia	Each	3675.00
1620	S.C.I. plain bend 75mm dia	Each	391.00
1621	S.C.I. plain bend 100mm dia	Each	475.00
1622	S.C.I. plain bend 150mm dia	Each	1090.00
1624	S.C.I. bend with access door 75mm dia	Each	375.00
1625	S.C.I. bend with access door 100mm dia	Each	550.00
1627	S.C.I. plain single equal junctions 75x75x75 mm dia	Each	325.00
1628	S.C.I. plain single equal junctions 100x100x100 mm dia	Each	420.00
1630	S.C.I. single equal junctions 75x75x75 mm dia with access door.	Each	360.00
1631	S.C.I. single equal junctions 100x100x100 mm dia with access door.	Each	470.00
1633	S.C.I. plain double equal junctions 75x75x75x75 mm dia	Each	470.00
1634	S.C.I. plain double equal junctions 100x100x100x100 mm dia	Each	625.00
1636	S.C.I. double equal junctions 75x75x75x75 mm dia with access door.	Each	530.00
1637	S.C.I. double equal junctions 100x100x100x100 mm dia with access door.	Each	660.00
1639	Slotted cowl (terminal guard ) 75 mm dia	Each	175.00
1640	Slotted cowl (terminal guard ) 100 mm dia	Each	241.00
1641	G.I. Union 15 mm nominal bore	Each	62.00
1642	G.I. Union 20 mm nominal bore	Each	107.00



CODE	PARTICULARS	UNIT	Rates ( Rs.)
1643	G.I. Union 25 mm nominal bore	Each	135.00
1644	G.I. Union 32 mm nominal bore	Each	227.00
1645	G.I. Union 40 mm nominal bore	Each	275.00
1646	G.I. Union 50 mm nominal bore	Each	430.00
1647	G.I. Union 65 mm nominal bore	Each	890.00
1648	G.I. Union 80mm nominal bore	Each	995.00
1649	Polyethylene water storage tank with cover and suitable locking arrangement	per Litre	7.00
1653	Sand cast iron S&S plain single unequal junctions : 100x100x75 mm dia	Each	460.00
1656	Sand cast iron S&S single unequal junctions: 100x100x75 mm dia with access door.	Each	510.00
1659	Sand cast iron S&S plain double unequal junctions : 100x100x75x75 mm dia	Each	675.00
1662	Sand cast iron S&S double unequal junctions: 100x100x75x75 mm dia with access door.	Each	720.00
1666	Sand cast iron heel rest bend 75mm dia	Each	261.00
1667	Sand cast iron heel rest bend 100mm dia	Each	315.00
1669	S.C.I. single equal invert branch of required degree 75x75x75 mm dia	Each	380.00
1670	S.C.I. single equal invert branch of required degree 100x100x100 mm dia	Each	510.00
1672	S.C.I. double equal invert branch of required degree 75x75x75x75 mm dia	Each	500.00
1673	S.C.I. double equal invert branch of required degree 100x100x100x100 mm dia	Each	670.00
1674	S.C.I. single unequal invert branch of required degree 100x100x75 mm dia	Each	610.00
1677	S.C.I. double unequal invert branch of required degree 100x100x75x75 mm dia	Each	730.00
1682	S.C.I. door pieces 75 mm dia	Each	335.00
1683	S.C.I. door pieces 100 mm dia	Each	465.00
1685	S.C.I. collar 75 mm dia	Each	130.00
1686	S.C.I. collar 100 mm dia	Each	175.00
1687	Unplasticised P.V.C. connection pipe with brass union 30 cm long 15 mm bore	Each	28.00
1688	Unplasticised P.V.C. connection pipe with brass union 30 cm long 20 mm bore	Each	38.00
1689	Unplasticised P.V.C. connection pipe with brass union 45 cm long 15 mm bore	Each	38.00
1690	Unplasticised P.V.C. connection pipe with brass union 45 cm long 20 mm bore	Each	53.00
1693	S.C.I. hand pump	Each	630.00
1700	R.C.C. pipes NP2 class 100 mm dia	Mtr.	475.00
1701	R.C.C. pipes NP2 class 150 mm dia	Mtr.	520.00
1702	R.C.C. pipes NP2 class 250 mm dia	Mtr.	700.00
1703	R.C.C. pipes NP2 class 300 mm dia	Mtr.	950.00
1704	R.C.C. pipes NP2 class 450 mm dia	Mtr.	1430.00
1705	R.C.C. pipes NP2 class 500 mm dia	Mtr.	1600.00
1706	R.C.C. pipes NP2 class 600 mm dia	Mtr.	2150.00
1707	R.C.C. pipes NP2 class 700 mm dia	Mtr.	2650.00
1709	R.C.C. pipes NP2 class 800 mm dia	Mtr.	3465.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
1710	R.C.C. pipes NP2 class 900 mm dia	Mtr.	4350.00
1711	R.C.C. pipes NP2 class 1000 mm dia	Mtr.	3200.00
1712	R.C.C. pipes NP2 class 1100 mm dia	Mtr.	3600.00
1713	R.C.C. pipes NP2 class 200 mm dia	Mtr.	615.00
1714	R.C.C. collarsNP2 class 100 mm dia	Each	28.00
1715	R.C.C. collarsNP2 class 150 mm dia	Each	35.00
1716	R.C.C. collarsNP2 class 250 mm dia	Each	56.00
1717	R.C.C. collarsNP2 class 300 mm dia	Each	70.00
1718	R.C.C. collarsNP2 class 450 mm dia	Each	106.00
1719	R.C.C. collarsNP2 class 500 mm dia	Each	122.00
1720	R.C.C. collarsNP2 class 600 mm dia	Each	155.00
1721	R.C.C. collarsNP2 class 700 mm dia	Each	171.00
1723	R.C.C. collarsNP2 class 800 mm dia	Each	245.00
1724	R.C.C. collarsNP2 class 900 mm dia	Each	300.00
1725	R.C.C. collarsNP2 class 1000 mm dia	Each	350.00
1726	R.C.C. collarsNP2 class 1100 mm dia	Each	405.00
1727	R.C.C. collarsNP2 class 1200 mm dia	Each	470.00
1728	R.C.C. collarsNP2 class 200 mm dia	Each	50.00
1854	Stoneware pipes grade A (60 cm long) 100 mm dia	Each	100.00
1855	Stoneware pipes grade A (60 cm long) 150 mm dia	Each	150.00
1856	Stoneware pipes grade A (60 cm long) 200 mm dia	Each	220.00
1857	Stoneware pipes grade A (60 cm long) 230 mm dia	Each	255.00
1858	Stoneware pipes grade A (60 cm long) 250 mm dia	Each	300.00
1859	Stoneware pipes grade A (60 cm long) 300 mm dia	Each	450.00
1860	Stoneware pipes grade A (60 cm long) 400 mm dia	Each	700.00
1863	Fire clay kitchen sink: 600x450x250 mm	Each	3700.00
1871	White vitreous china laboratry sink450x300x150 mm	Each	1600.00
1872	White vitreous china laboratry sink600x450x200 mm	Each	2400.00
1875	White plastic seat (solid)with lid C.P.brass hinges and rubber buffers	Each	650.00
1876	Black plastic seat (solid) with lid C.P.brass hinges and rubber buffers	Each	600.00
1878	Shower rose C.P.brass for 15 to 20 mm inlet 100 mm dia	Each	43.00
1879	Shower rose C.P.brass for 15 to 20 mm inlet 150 mm dia	Each	60.00
1881	Spun yarn	Kg	200.00
1882	Strainer brass 40 mm dia 1.5 Mtr. long	Each	65.00
1885	15 mm C.P.brass tap	Each	190.00
1889	C.P.brass toilet paper holder of standard size	Each	150.00
1891	C.I. trap for standard urinal with vent arm with operating and other couplings in C.P.brass: 50 mm dia	Each	191.00
1893	C.I. trap for standard urinal with vent arm with operating and other couplings in C.P.brass: 80 mm dia	Each	241.00
1895	C.P.brass trap40 mm dia	Each	150.00
1896	100 mm S.C.I. trap with vent heel	Each	400.00
1897	100 mm S.C.I. trap with 100 mm inlet and 100 mm outlet	Each	350.00
1898	100 mm S.C.I. trap with 100 mm inlet and 75 mm outlet	Each	250.00
1900	S.W. gully trap P type 100x100 mm	Each	83.00
1902	S.W. gully trap P type 150x100 mm	Each	190.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
1904	S.W. gully trap P type 180x150 mm	Each	425.00
1913	Vitros china lipped front urinal	Each	800.00
1915	Vitros china squatting plate urinal	Each	800.00
1922	H.P. or L.P. ball valve with polythene floats: 15 mm dia	Each	250.00
1923	H.P. or L.P. ball valve with polythene floats: 20 mm dia	Each	370.00
1924	H.P. or L.P. ball valve with polythene floats: 25 mm dia	Each	420.00
1927	Brass full way valve with C.I. wheel (screwed end) 25 mm dia	Each	410.00
1928	Brass full way valve with C.I. wheel (screwed end) 32 mm dia	Each	520.00
1929	Brass full way valve with C.I. wheel (screwed end) 40 mm dia	Each	580.00
1930	Brass full way valve with C.I. wheel (screwed end) 50 mm dia	Each	850.00
1931	Brass full way valve with C.I. wheel (screwed end) 65 mm dia	Each	1200.00
1932	Brass full way valve with C.I. wheel (screwed end) 80 mm dia	Each	2030.00
1933	Gunmetal non-return valve-horizontal (screwed end) 25 mm dia	Each	420.00
1934	Gunmetal non-return valve-horizontal (screwed end) 32 mm dia	Each	550.00
1935	Gunmetal non-return valve-horizontal (screwed end) 40 mm dia	Each	720.00
1936	Gunmetal non-return valve-horizontal (screwed end) 50 mm dia	Each	1080.00
1937	Gunmetal non-return valve-horizontal (screwed end) 65 mm dia	Each	1900.00
1938	Gunmetal non-return valve-horizontal (screwed end) 80 mm dia	Each	2700.00
1940	C.I.sluiice valve (with caps) class I : 100 mm dia	Each	3000.00
1941	C.I.sluiice valve (with caps) class I : 125 mm dia	Each	3755.00
1942	C.I.sluiice valve (with caps) class I : 150 mm dia	Each	4510.00
1943	C.I.sluiice valve (with caps) class I : 200 mm dia	Each	8585.00
1944	C.I.sluiice valve (with caps) class I : 250 mm dia	Each	12785.00
1945	C.I.sluiice valve (with caps) class I : 300 mm dia	Each	15750.00
1947	Vitreous china flat back wash basin 630x450 mm	Each	930.00
1949	Vitreous china angle back wash basin 600x480 mm	Each	860.00
1950	Vitreous china angle back wash basin 400x400 mm	Each	550.00
1951	C.P. brass waste 32 mm	Each	115.00
1952	C.P. brass waste 40 mm	Each	185.00
1953	Vitreous china indian type w.c. pan size 580 mm	Each	530.00
1954	Vitreous china orrisa type w.c. pan size 580 mm	Each	1280.00
1955	Vitreous china pedestal type water closet	Each	1015.00
1956	Bolts and nuts 16 mm dia 60 mm long	Each	14.00
1957	Bolts and nuts 16 mm dia 65 mm long	Each	14.00
1958	Bolts and nuts 20 mm dia 65 mm long	Each	19.00
1959	Bolts and nuts 20 mm dia 70 mm long	Each	19.00
1960	Bolts and nuts 20 mm dia 75 mm long	Each	20.00
1961	Bolts and nuts 20 mm dia 80 mm long	Each	24.00



CODE	PARTICULARS	UNIT	Rates ( Rs.)
1962	Bolts and nuts 24 mm dia 85 mm long	Each	34.00
1963	Bolts and nuts 24 mm dia 90 mm long	Each	43.00
1964	Bolts and nuts 27 mm dia 100 mm long	Each	48.00
1965	White vitreous china dual purpose closet (Anglo Indian W.C.) suitable for use as squatting pan or European type water closet as per manufacturer's specifications	Each	2200.00
1970	Vitreous china foot rests 250x125x25 mm	Pair	70.00
1980	Flyash	Cum	12.00
1984	F.P.S. bricks tile class designation 100	1,000 Nos	4500.00
1986	Modular bricks class designation 75	1,000 Nos	6000.00
2205	Carriage of Steel	Tonne	150.00
2391	Strips-Aluminium fluted 3.15mm thick and 150mm wide	Mtr.	350.00
2392	Strips Aluminium fluted 3.15mm thick and 200mm wide Mtr.	Mtr.	450.00
2393	5mm thick Acrylic sheet	Mtr.	60.00
2406	Float glass sheet of nominal thickness 4 mm (weight not less than 10kg/sqm).	Sqm	450.00
2407	Float glass sheet of nominal thickness 5 mm.(weight not less than 13.50 kg/sqm).	Sqm	550.00
2408	Float glass sheet of nominal thickness 8 mm	Sqm	950.00
2412	Ply wood 5 ply with commercial ply on both faces 6 mm thick	Sqm	515.00
2447	Hollock ballies 125 mm diameter	Mtr.	60.00
2449	Oxidised mild steel pull bolt lock (locking bolt) of size 85 mm x 42 mm with screws,bolts,nuts and washers complete	Each	45.00
2451	Brass cupboard lock 6 levers (best make of approved quality) 40 mm size	Each	250.00
2452	Brass cupboard lock 6 levers (best make of approved quality) 50 mm size	Each	110.00
2453	Brass cupboard lock 6 levers (best make of approved quality) 65 mm size	Each	130.00
2454	Brass cupboard lock 6 levers (best make of approved quality) 75 mm size	Each	190.00
2455	Brass hanging type door stopper 150 mm	Each	75.00
2456	Hydraulic door closer bottle type M.S. body with necessary accessories and screws complete	Each	1050.00
2459	Anodised Aluminium hanging type door stopper	Each	25.00
2464	Anodised Aluminium pull bolt lock (locking bolt) of size 85 mmx42 mm with screws,bolts,nuts and washers complete	Each	50.00
2465	Anodised Aluminium Casement stay 250 mm	Each	60.00
2466	Hollock wood in scantling	10 Cudm	470.00
2467	Chromium plated Brass pull bolt lock (locking bolt) of size 85 mmx42 mm with screws,bolts,nuts and washers complete	Each	185.00
2468	Nickled Chromium Brass cupboard lock 40 mm size	Each	130.00
2469	Nickled Chromium Brass cupboard lock 50 mm size	Each	130.00
2470	Nickled Chromium Brass cupboard lock 65 mm size	Each	180.00
2471	Nickled Chromium Brass cupboard lock 75 mm size	Each	200.00
2480	Ply wood 5 ply with teak ply on both faces 9 mm thick	Sqm	1050.00
2481	Ply wood 5 ply with teak ply on one face and commercial ply on another face 9 mm thick	Sqm	850.00
2482	6 mm thick commercial ply	Sqm	350.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
2483	9 mm thick commercial ply	Sqm	600.00
2484	9 mm teak ply BWR one side	Sqm	1050.00
1050	9 mm teak ply BWR both side	Sqm	1350.00
2486	12 mm thick commercial ply	Sqm	650.00
2487	12 mm teak ply BWR one side	Sqm	1250.00
2488	12mm teak ply BWR both side	Sqm	1470.00
2489	0.6 mm mica	Sqm	300.00
2490	0.8 mm mica	Sqm	450.00
2491	1 mm mica	Sqm	700.00
2492	4 mm thick commercial ply	Sqm	350.00
2493	4 mm teak ply BWR one side	Sqm	600.00
2494	6 mm teak ply BWR one side	Sqm	800.00
2495	12 mm thick Acoustical Board	Sqm	800.00
2496	12 mm thick one side laminated board Practical board (Phenol bonded)	Sqm	950.00
2497	50 mm glass whool	Sqm	550.00
2498	Hassian cloth with fibre glass	Sqm	250.00
2500	Extra for selected planks of second class deodarwood	10 Cudm	120.00
2504	Kiln seasoning of timber	Cum	1050.00
2505	Hollock wood in planks	10 Cudm	500.00
2602	F.P.S. bricks class designation 75	1,000 Nos	4500.00
2603	F.P.S. bricks class designation 50	1,000 Nos	4200.00
2704	Aluminium Strip 40 mm wide and 2 mm thick	Kg	325.00
2710	White marble makranasecondquality plain veined stone pieces for crazy flooring	Quintal	170.00
2750	8 mm thick granite stone tiles (mirror polished of all shades)	Sqm	770.00
2751	8 mm thick marble tiles (polished) Raj Nagar	Sqm	400.00
2901	Stone Aggregate (Single size) : 100 mm nominal size	Cum	750.00
2902	Stone Aggregate (Single size) : 80 mm nominal size	Cum	810.00
2903	Stone chippings/ screenings 4.75 mm nominal size	Cum	1100.00
2904	Stone chippings/ screenings 150 micron nominal size	Cum	1100.00
2908	Over burnt (Jhama) Brick Aggregate: 120 mm to 40 mm size	Cum	405.00
2909	Over burnt (Jhama) Brick Aggregate: 90 mm to 40 mm size	Cum	470.00
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size	Cum	810.00
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size	Cum	810.00
2914	Solvent	Kg	35.00
2916	Paving Asphalt 80/100 penetration	Tonne	52000.00
3002	Polyvinyle chloride sheet 400 micron thick	Sqm	37.00
3004	Stone ware spouts 100 mm dia 60 cm long	Each	41.00
3050	Galvanised steel corrugated sheets	Quintal	7000.00
3213	Vitreous china Surgeon type wash basin of size 660x460 mm	Each	1300.00
3228	600x120 mm glass shelf with anodised aluminium angle frame, C.P. brass brackets and guard rail of standard size	Each	175.00
3229	Vitreous china flat back wash basin 550x400 mm	Each	950.00
3300	Gunmetal non-return valve-horizontal (screwed end) 80 mm dia	Each	
3311	C.I.sluiice valve (with caps) class II : 100 mm dia	Each	2750.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
3314	C.I.sluiice valve (with caps) class II : 125 mm dia	Each	2500.00
3317	C.I.sluiice valve (with caps) class II : 150 mm dia	Each	4200.00
3320	C.I.sluiice valve (with caps) class II : 200 mm dia	Each	8100.00
3321	C.I.sluiice valve (with caps) class II : 250 mm dia	Each	11500.00
3326	C.I.sluiice valve (with caps) class II : 300 mm dia	Each	14400.00
3617	C.P.brass union 40 mm dia	Each	165.00
3620	C.C.I.(spun) socketed soil, waste and vent pipe 1.80 Mtr.s long:100mm dia	Each	1400.00
3621	C.C.I.(spun) socketed soil, waste and vent pipe 1.80 Mtr.s long:75mm dia	Each	1150.00
3624	S.C.I. S&S bends with access door100mm dia	Each	250.00
3625	S.C.I. S&S bends with access door75mm dia	Each	250.00
3628	S.C.I. S&S bend100mm dia	Each	270.00
3629	S.C.I. S&S bend75mm dia	Each	200.00
3634	S.C.I. S&S heel rest sanitary bend 100mm dia	Each	330.00
3635	S.C.I. S&S heel rest sanitary bend 75mm dia	Each	290.00
3640	S.C.I. S&S single equal junctions100x100x100 mm	Each	520.00
3641	S.C.I. S&S single equal junctions75x75x75 mm	Each	390.00
3644	S.C.I. S&S single equal junctions with access door 100x100x100 mm	Each	560.00
3645	S.C.I. S&S single equal junctions with access door 75x75x75 mm	Each	410.00
3650	S.C.I. S&S double equal junctions100x100x100x100 mm	Each	650.00
3651	S.C.I. S&S double equal junctions75x75x75x75 mm	Each	520.00
3654	S.C.I. S&S double equal junctions with access door 100x100x100x100 mm.	Each	700.00
3655	S.C.I. S&S double equal junctions with access door 75x75x75x75 mm.	Each	560.00
3660	S.C.I. S&S single unequal junctions100x100x75 mm	Each	650.00
3664	S.C.I. S&S single unequal junctions with access door 100x100x75 mm	Each	730.00
3670	S.C.I. S&S double unequal junctions100x100x75x75 mm	Each	900.00
3674	S.C.I. S&S double unequal junctions with access door 100x100x75x75 mm	Each	980.00
3681	S.C.I. S&S single equal invert branch of required degree 100x100x100 mm dia	Each	455.00
3682	S.C.I. S&S single equal invert branch of required degree 75x75x75 mm dia	Each	345.00
3685	S.C.I. S&S double equal invert branch of required degree100x100x100x100 mm dia	Each	580.00
3686	S.C.I. S&S double equal invert branch of required degree 75x75x75x75 mm dia	Each	470.00
3690	S.C.I. S&S single unequal invert branch of required degree100x100x75 mm dia	Each	590.00
3695	S.C.I. S&S double unequal invert branch of required degree100x100x75x75 mm dia	Each	800.00
3699	S.C.I. S&S, 75 mm offset for75 mm dia pipe	Each	250.00
3707	S.C.I. S&S, 150 mm offset for75 mm dia pipe	Each	315.00
3708	S.C.I. S&S, 150 mm offset for100 mm dia pipe	Each	430.00
3712	S.C.I. S&S, 114 mm offset for75 mm dia pipe	Each	310.00
3713	S.C.I. S&S, 114 mm offset for100 mm dia pipe	Each	405.00



CODE	PARTICULARS	UNIT	Rates ( Rs.)
3716	S.C.I. S&S, 152 mm offset for 75 mm dia pipe	Each	390.00
3717	S.C.I. S&S, 152 mm offset for 100 mm dia pipe	Each	505.00
3728	S.C.I. S&S door pieces 100 mm dia	Each	325.00
3729	S.C.I. S&S door pieces 75 mm dia	Each	250.00
3733	S.C.I. S&S, Slotted Cowl (Terminal Guard) 100 mm	Each	220.00
3734	S.C.I. S&S, Slotted Cowl (Terminal Guard) 75 mm	Each	200.00
3738	S.C.I. S&S, collars 100 mm	Each	230.00
3739	S.C.I. S&S, collars 75 mm	Each	160.00
3746	S.C.I. S&S, 76 mm offset for 75 mm dia pipe	Each	180.00
3747	S.C.I. S&S, 76 mm offset for 100 mm dia pipe	Each	310.00
3749	Vitreous china toilet paper holder of standard size	Each	150.00
3860	560 mm dia cover with frame (Heavy duty)	Each	3000.00
3861	560 mm dia cover without frame (Heavy duty)	Each	2600.00
4006	Pressed steel door frames (mild steel sheet 1.25mm) Profile "A"	Mtr.	350.00
4007	Pressed steel door frames (mild steel sheet 1.25mm) Profile "B"	Mtr.	375.00
4008	Pressed steel door frames (mild steel sheet 1.25mm) Profile "C"	Mtr.	400.00
4009	Mild steel tubes hot finished welded type	Kg	87.00
4010	Mild steel tubes hot finished seamless type	Kg	110.00
4011	Mild steel tubes electric resistant or induction butt welded	Kg	80.00
4012	Circular C.I. Box for ceiling fan	Each	60.00
4013	Pully 40 mm dia	Each	40.00
4014	Ready made steel door with necessary hinges, lugs and glazing clips excluding other fittings & their fixing	Sqm	2200.00
4201	Aluminium primer	Litre	225.00
4202	Red oxide Zinc chromate primer	Litre	240.00
4203	Copper acetate	Kg	350.00
4204	Hydrochloric acid	Kg	35.00
4205	Copper chloride	Kg	350.00
4206	Copper nitrate	Kg	250.00
4207	Ammonium chloride	Kg	20.00
5001	Mobil oil	Litre	150.00
6001	White marble slab Makrana second quality plain veined 18 mm thick	Sqm	4000.00
6007	Pink marble slab plain 18mm thick	Sqm	950.00
6010	Udaypur green marble slab plain 18mm thick	Sqm	800.00
6019	Black Zebra marble slab plain 18mm thick	Sqm	650.00
6501	Sand zone V ( )	Cum	1000.00
7001	Brass 100mm mortice latch and lock with 6 levers without pair of handles	Each	400.00
7003	Pair of Anodised Aluminium lever handles for 100mm mortice latch and lock	Each	260.00
7004	Vitreous china flat back wash basin 450x300 mm	Each	600.00
7005	Vitreous china 10 litres low level cistern without fittings	Each	1500.00
7006	Vitreous china 10 litres low level cistern with fittings	Each	2000.00
7008	F.P.S. clay fly ash bricks class designation 75	1,000 Nos	4400.00
7009	Gypsum board	Sqm	300.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
7010	Ceiling sections	Mtr.	58.00
7011	PeriMtr. channel	Mtr.	35.00
7012	Intermediate channel	Mtr.	61.00
7013	Ceiling angle	Mtr.	23.00
7014	Connecting clips	Each	7.00
7015	Soffit cleat	Each	4.00
7016	Joint filler	Kg	29.00
7017	Joint finisher	Kg	32.00
7018	Joint tape roll	roll	162.00
7019	Dash fastner/ chemical fastener	Each	14.00
7020	All drive screws ( for gypsum board)	100 Nos	58.00
7021	Primer ( for gypsum board)	Litre	130.00
7022	Chlorpyriphos 20% E.C. / Lindane 20% E.C.	Litre	220.00
7023	Chromium plated brackets ( curtain rods)	Each	7.00
7024	Acid Proof cement	tonne	9820.00
7027	M.S. Butt hinges 125x90x4 mm	10 Nos	120.00
7029	Galvanised wire mesh of average width of aperture 1.4 mm and nominal dia. of wire 0.63 mm	Sqm	200.00
7032	Frosted glass sheet of nominal thickness 4 mm (weighing not less than 10 kg/sqm)	Sqm	725.00
7034	Nickle plated M.S. pipe 20 mm dia.	Mtr.	73.00
7035	Nickle plated M.S. Brackets for curtain rod 20 mm	Each	4.00
7036	Nickle plated M.S. Brackets for curtain rod 25 mm	Each	6.00
7040	Oxidised mild steel screws 35 mm	100 Nos	41.00
7042	Mild steel conduit pipe (heavy type) ISI marked-20 mm dia.	Mtr.	61.00
7043	Mild steel conduit pipe (heavy type) ISI marked-25 mm dia.	Mtr.	69.00
7044	Rolling shutters of 80x0.90 mm laths	Sqm	890.00
7045	Rolling shutters of 80x1.2 mm laths	Sqm	1020.00
7046	Top cover of Rolling shutters 0.90 mm thick	Mtr.	460.00
7047	Top cover of Rolling shutters 1.20 mm thick	Mtr.	520.00
7048	Rawl plug 50 mm (designation 10 no.)	Each	9.00
7049	Teak wood lipping of size 25x3 mm in pelmets	Mtr.	23.00
7055	Flat pressed 3 layer and graded particle board (medium density) Grade 1 conforming to IS : 3087 - 18 mm thick	Sqm	420.00
7056	Aluminium tee channel (heavy duty) with rollers and stop end	Mtr.	48.00
7059	Aluminium hanging floor door stopper with twin rubber & stopper	Each	61.00
7060	Hydraulic door closer tubular type Aluminium section body	Each	1600.00
7063	Oxidised M.S.casement stay (straight peg type) 300 mm not less than 0.33 kg	Each	21.00
7064	Oxidised M.S.casement stay (straight peg type) 250 mm not less than 0.28 kg	Each	18.00
7065	Oxidised M.S.casement stay (straight peg type) 200 mm not less than 0.24 kg	Each	17.00
7068	Extra for providing grilled rolling shutters with 8 mm dia M.S. rod	Sqm	295.00
7070	Chequered precast cement concrete tiles 22mm thick using marble chips of size 6mm - Light shade using white cement	Sqm	170.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
7071	White marble Raj Nagar plain 20 mm thick (slab area 0.10 sqm to 0.20 sqm)	Sqm	650.00
7077	Acid and alkali resistant tiles 300x300 mm size, 10 mm thick	10 Nos	650.00
7087	S.C.I. Tee 150 mm	Each	800.00
7090	Expanded polystyrene type N- Normal	Sqm	165.00
7091	Expanded polystyrene type - SE	Sqm	
7095	Stainless steel kitchen sink - with drain board bowl depth 250 mm.	Each	6900.00
7096	Stainless steel kitchen sink - with drain board 510 x 1040mm bowl depth 225 mm.	Each	6430.00
7097	Stainless steel kitchen sink - with drain board 510 x 1040mm bowl depth 200 mm.	Each	5730.00
7098	Stainless steel kitchen sink - with drain board 510x1040mm bowl depth 178 mm	Each	3630.00
7101	Stainless steel kitchen sink - without drain board 610x510mm bowl depth 200 mm	Each	3780.00
7102	Stainless steel kitchen sink - without drain board 610x460mm bowl depth 200 mm.	Each	3500.00
7103	Stainless steel kitchen sink - without drain board 470x420mm bowl depth 178 mm	Each	2250.00
7104	Coloured Orissa pattern W.C. pan 580x440 mm	Each	3220.00
7105	Coloured Pedestal type W.C. pan 580x440 mm (European type)	Each	2600.00
7106	Coloured Vitreous china 10 lit. low level cistern	Each	2100.00
7107	Coloured (other than black) solid P.V.C. seat in European W.C. pan	Each	400.00
7112	Circular shape 450 mm dia Mirror with Plastic moulded frame	Each	460.00
7113	Rectangular shape 453x357 mm Mirror with Plastic moulded frame	Each	450.00
7114	Oval shape 450x350 mm (outer dimensions) Mirror with Plastic moulded frame	Each	500.00
7115	Rectangular shape 1500x450 mm Mirror with Plastic moulded frame	Each	900.00
7116	Hard board 6 mm thick	Sqm	210.00
7117	Semi Rigid PVC waste pipe for sink and wash basin 32 mm dia with length not less than 700 mm i/c PVC waste fittings	Each	40.00
7118	Semi Rigid PVC waste pipe for sink and wash basin 40 mm dia with length not less than 700 mm i/c PVC waste fittings	Each	45.00
7119	Flexible (coil shaped) PVC waste pipe for sink and wash basin 32 mm dia with length not less than 700 mm i/c PVC waste fittings	Each	45.00
7120	Flexible (coil shaped) PVC waste pipe for sink and wash basin 40 mm dia with length not less than 700 mm i/c PVC waste fittings	Each	50.00
7123	Coloured High density polyethylene/ poly propylene 10 lit. (full flush) capacity controlled low level flushing cistern with fittings	Each	1050.00
7126	White Vitreous china 10 lit. (full flush) capacity controlled low level flushing cistern with all fittings	Each	1420.00
7127	Coloured Vitreous china 10 lit. (full flush) capacity controlled low level flushing cistern with all fittings	Each	2110.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
7128	S.W. intercepting trap 100 mm dia	Each	275.00
7129	S.W. intercepting trap 150 mm dia	Each	350.00
7130	Rectangular shape 600x450 mm precast R.C.C. manhole cover with frame - L.D. - 25	Each	1270.00
7131	Square shape 350x350 mm precast R.C.C. manhole cover with frame - L.D. - 25	Each	870.00
7132	Circular shape 450 mm dia precast R.C.C. manhole cover with frame - L.D. - 25	Each	1040.00
7133	Rectangular shape 500x500 mm precast R.C.C. manhole cover with frame - M.D. - 10	Each	1150.00
7134	Circular shape 500 mm dia precast R.C.C. manhole cover with frame - M.D. - 10	Each	1150.00
7135	Circular shape 560 mm dia precast R.C.C. manhole cover with frame - H.D. - 20	Each	1670.00
7136	Circular shape 560 mm dia precast R.C.C. manhole cover with frame - E.H.D. - 35	Each	1600.00
7137	Factory made 35 mm thick shutters with laminated veneer lumber styles rails as per TADS IS:1995 and panels of 12 mm thick plain type-I, medium density flat pressed three layer, graded particle board (FPT-I) as per IS:3087-1985 bonded with BWP type synthe	Sqm	2250.00
7139	Factory made 35 mm thick shutters with laminated veneer lumber styles rails as per TADS IS:1995 and panels of 12 mm thick both sides prelaminated type-I, medium density flat pressed three layer, graded particle board (FPT-I) as per IS:3087-1985 bonded w	Sqm	2430.00
7143	Factory made 35 mm thick shutters with laminated veneer lumber styles rails as per TADS IS:1995 and panels of 12 mm thick one side prelaminated type-I, and other side balancing lamination, medium density flat pressed three layer, graded particle board (	Sqm	2350.00
7151	Factory made 30 mm thick shutters with laminated veneer lumber styles rails as per TADS IS:1995 and panels of sheet glass using 10 kg/ sqm glass panes	Sqm	1950.00
7154	Factory made 35 mm thick shutters with laminated veneer lumber styles rails as per TADS IS:1995 and panels of galvanised wire gauge with average width of aperture 1.4 mm on both directions with wire of dia 0.63 mm	Sqm	2000.00
7155	Factory made 30 mm thick shutters with laminated veneer lumber styles rails as per TADS IS:1995 and panels of galvanised wire gauge with average width of aperture 1.4 mm on both directions with wire of dia 0.63 mm	Sqm	1850.00
7157	Laminated veneer lumber confirming to TADSS IS:1995 manufactured in factory in frames of doors, windows	10 Cudm	850.00
7181	C.I. pile shoe	Kg	53.00
7182	M.S. clamps for pile shoe	Kg	46.00
7183	Bentonite	Tonne	3700.00
7184	Oxidised M.S. safety chain (weighing not less than 450 gms) for door	Each	69.00
7187	C.I. grating 150 mm dia. (Weighing not less than 440 gm)	Each	52.00
7188	U-PVC pipes (working pressure 4 kg / cm <sup>2</sup> ) Single socketed pipe 75 mm dia.	Mtr.	120.00
7189	U-PVC pipes (working pressure 4 kg / cm <sup>2</sup> ) Single socketed pipe 110 mm dia.	Mtr.	240.00
7190	U-PVC pipes (working pressure 4 kg / cm <sup>2</sup> ) Rubber (Seal) Ring 75 mm dia.	Mtr.	25.00



CODE	PARTICULARS	UNIT	Rates ( Rs.)
7191	U-PVC pipes (working pressure 4 kg / cm <sup>2</sup> ) Rubber (Seal) Ring 110 mm dia.	Mtr.	30.00
7192	UPVC coupler for UPVC drainage pipes 75 mm	Each	57.00
7193	UPVC coupler for UPVC drainage pipes 110 mm	Each	75.00
7194	UPVC pushfit coupler (single) 75 mm thick	Each	90.00
7195	UPVC pushfit coupler (single) 110 mm thick	Each	137.00
7196	UPVC single equal Tee (with door) 75x75x75 mm	Each	158.00
7197	UPVC single equal Tee (with door) 110x110x110 mm	Each	220.00
7198	UPVC single equal Tee (with door) 75x75x75 mm	Each	190.00
7199	UPVC single equal Tee (with door) 110x110x110 mm	Each	305.00
7208	UPVC bend 87.5o 75 mm bend	Each	96.00
7209	UPVC bend 87.5o 110 mm bend	Each	160.00
7212	UPVC plain shoe 75 mm bend	Each	200.00
7213	UPVC plain shoe 110 mm bend	Each	375.00
7214	UPVC pipe clip 75 mm bend	Each	29.00
7215	UPVC pipe clip 110 mm bend	Each	57.00
7231	Resin Bonded Glass wool 16 kg/m <sup>3</sup> 50 mm thick	Sqm	221.00
7232	Resin Bonded Glass wool 24 kg/m <sup>3</sup> 50 mm thick	Sqm	332.00
7233	Fibre glass tissue reinforcement Type II Grade I	Sqm	126.00
7236	Precast chequered cement tiles 22 mm thick Dark shade using ordinary cement	Sqm	200.00
7237	Precast chequered cement tiles 22 mm thick medium shade using 50% white cement, 50% ordinary cement	Sqm	250.00
7239	Epoxy paint	Litre	400.00
7240	Fire retardant paint	Litre	450.00
7241	Melamine polish	Litre	350.00
7242	Expoxy primer for steel	Ltr.	2050.00
7243	Expoxy harder and resin	Kg	1150.00
7244	Table rubbed polished stone 18 mm thick (75x50cm) Agaria Marble stone - 18 mm thick	Sqm	2000.00
7245	Table rubbed polished stone 18mm thick (75x50cm) Granite stone - 18mm thick	Sqm	2250.00
7246	Verticle load testing (INITIAL) of piles in accordance with IS : 2911 (Part-IV) including installation of loading platform and prepration of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification a	Per Test	27200.00
7247	Verticle load testing (INITIAL) of piles in accordance with IS : 2911 (Part-IV) including installation of loading platform and prepration of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification &	Per Test	38100.00
7248	Verticle load testing (INITIAL) of piles in accordance with IS : 2911 (Part-IV) including installation of loading platform and prepration of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification &	Per Test	52000.00
7249	Cyclic verticle load testing of piles in accordance with IS : 2911 (Part-IV) including prepration of pile head etc. for Single pile upto 50 tonne capacity	Per Test	16200.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
7250	Cyclic verticle load testing of piles in accordance with IS : 2911 (Part-IV) including prepration of pile head etc. forSingle pile above 50 tonne capacity pile and upto 100 tonne capacity pile	Per Test	25200.00
7251	Cyclic verticle load testing of piles in accordance with IS : 2911 (Part-IV) including prepration of pile head etc. forGroup of two piles upto 50 tonne capacity each	Per Test	29300.00
7252	Lateral load testing of single pile in accordance with IS : 2911 part -IV for determining safe allowable lateral load on pile. Upto 50 tonne capacity	Per Test	16200.00
7253	Lateral load testing of single pile in accordance with IS : 2911 part -IV for determining safe allowable lateral load on pile. Above 50 tonne capacity	Per Test	26000.00
7254	Hardening compound	Litre	48.00
7255	Road marking paint (spirit based)	Litre	150.00
7256	Superior quality road marking paint	Litre	230.00
7257	C.P. Brass bibcock 15 mm	Each	520.00
7258	C.P. Brass long nose bibcock 15 mm	Each	520.00
7259	C.P. Brass long body bibcock 15 mm	Each	550.00
7260	C.P. Brass stop cock (concealed) 15 mm	Each	600.00
7261	C.P. Brass angle valve 15 mm	Each	470.00
7266	Pressed clay tiles	1,000 Nos	12500.00
7267	Plain ceiling tiles (BWP type phenol formaldehyde synthetic resin bonded) (600x600x12 mm)	Each	140.00
7268	Semi perforated ceiling tiles (600x600x12 mm)	Each	125.00
7269	25 mm thick particle board	Sqm	550.00
7270	30 mm thick prelaminated flush door shutter	Sqm	990.00
7271	Ilnd class teak wood lipping 25 mm wide x 12 mm thick	Mtr.	47.00
7272	25 mm thick melamine faced prelaminated three layer particle board	Sqm	940.00
7295	Granite Jhunjhnu Red 18 mm thick slab, upto 1500 cm2	Sqm	1000.00
7296	Granite Jhunjhnu Red 18 mm thick slab, above 1500 upto 3600 cm2	Sqm	1200.00
7297	Granite Jhunjhnu Red 18 mm thick slab, above 3600 cm2	Sqm	1400.00
7298	Granite South Red 18 mm thick slab, upto 1500 cm2	Sqm	1500.00
7299	Granite South Red 18 mm thick slab, above 1500 upto 3600 cm2	Sqm	2000.00
7300	Granite South Red 18 mm thick slab, above 3600 cm2	Sqm	3000.00
7301	Granite Black 18 mm thick slab, upto 1500 cm2	Sqm	1200.00
7302	Granite Black 18 mm thick slab, above 1500 upto 3600 cm2	Sqm	2200.00
7303	Granite Black 18 mm thick slab, above 3600 cm2	Sqm	3000.00
7306	Aluminium T or L sections	Kg	250.00
7307	For flush door shutters Extra for providing teak veneering on one side instead of commercial veneering	Sqm	600.00
7309	Paving Asphalt 60/70 penetration	Tonne	56600.00
7312	Expandable fastner with plastic sleeve and M.S. screws. 25 mm long	Each	12.00
7313	Expandable fastner with plastic sleeve and M.S. screws. 32 mm long	Each	13.00
7314	Expandable fastner with plastic sleeve and M.S. screws. 40 mm long	Each	14.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
7315	Expandable fastner with plastic sleeve and M.S. screws. 50 mm long	Each	15.00
7318	Plasticizer / super plasticizer	Kg	46.00
7319	Wall form panel 1250x500 mm	Each	830.00
7320	Tie bolt 12 mm dia 100 mm length	Each	46.00
7321	Tie bolt 12 mm dia 150 mm length	Each	58.00
7322	Tie bolt 20 mm dia 150 mm length	Each	81.00
7323	Tie bolt 20 mm dia 225 mm length	Each	98.00
7324	Spring coil 12 mm	Each	15.00
7325	Plastic cone 12 mm dia	Each	18.00
7326	Corner angle 45x45x5 mm 1.50 m long	Each	250.00
7327	100 mm channel shoulder 2.5 m long	Each	870.00
7328	Double clip ( bridge clip)	Each	87.00
7329	Single clip	Each	75.00
7330	M.S. tube 40 mm dia	Mtr.	220.00
7331	Wall form panel 1250x450 mm	Each	750.00
7332	Corner angle 45x45x5 m 2.50 m long	Each	350.00
7333	Column clamp 450x1070 m	Each	1200.00
7334	Prop 2 m ( 2-3.5m)	Each	870.00
7335	Binding wire	Kg	90.00
7338	Gun metal cramp	Kg	405.00
7339	Stainless steel cramp	Kg	420.00
7340	Stainless steel pin .	Kg	180.00
7342	Adjustable span ESO+SI (2.35-3.40)	Each	1970.00
7343	Adjustable telescopic prop 3 m (2.02-3.75 m)	Each	1155.00
7344	Beam clamp 300-380 mm (450-1070 mm)	Each set	470.00
7345	Prop 4 m	Each	1270.00
7346	Double coupler	Each	58.00
7347	Cadmium plated full threaded steel screws (30x4 mm dia.)	100 Nos	35.00
7348	Aluminium washer 2 mm thick 15 mm dia	100 Nos	12.00
7349	12 mm M.S. 'U' beading	Mtr.	14.00
7354	Plastic encapsuled M.S. foot rest 30x20x15 cm	Each	133.00
7358	Flushing Cistern P.V.C. 10 lts capacity ( low level ) (White) ( with fittings, accessories and flush pipe)	Each	1100.00
7359	P.V.C. automatic flushing cistern 5 lts capacity	Each	600.00
7361	P.V.C. automatic flushing cistern 10 lts capacity	Each	650.00
7363	15 mm C.P. brass tap with elbow operation lever	Each	870.00
7364	White glazed fire clay draining board 600x450x25 mm	Each	550.00
7366	Glass reinforced Gyp sum ( GRG) board 8.5 mm thick	Sqm	290.00
7367	Galvanised M.S. sheet 0.5 mm thick pressed channel section of size 50x32 mm	Mtr.	85.00
7369	Galvanised M.S. sheet 0.50 mm thick pressed stud. 48x34x36 mm	Mtr.	85.00
7375	G.I. flush pipe and C.P. brass spreader including C.P. connecting pipe Single lipped urinal	Each	500.00
7376	G.I. flush pipe and C.P. brass spreader including C.P. connecting pipe Range of two lipped urinals	Each	1230.00
7377	G.I. flush pipe and C.P. brass spreader including C.P. connecting pipe Range of three lipped urinals	Each	1500.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
7378	G.I. flush pipe and C.P. brass spreader including C.P. connecting pipe Range of four lipped urinals	Each	2140.00
7379	White vitreous china clay half stall urinal flat back 580x380x350 mm or angle back 450x375x350 mm with waste fittings as per IS : 2556	Each	1720.00
7380	Precast R.C.C. grating with frame 500x450 mm horizontal grating	Each	820.00
7381	Precast R.C.C. grating with frame 450x100 mm vertical grating	Each	385.00
7382	Bitumen emulsion rapid setting (R.S.) confirming to IS : 8887-1995	Tonne	44000.00
7385	3 mm thick translucent white acrylic plastic sheet	Sqm	705.00
7386	12 thick particle board ceiling tile	Sqm	400.00
7388	Dash hold fastener 12.5 mm dia, 40 mm long with 6 mm dia bolt	Each	45.00
7389	Anodising 15 microns on aluminium sections	Kg	45.00
7390	Neoprin/EPDM rubber gasket	Mtr.	60.00
7391	Anodising 25 microns on aluminium sections	Kg	55.00
7392	Epoxy powder coating 50 microns on aluminium sections.	Kg	65.00
7393	Polyester powder coating 50 microns on aluminium sections	Kg	75.00
7394	Double action hydraulic floor spring with stainless steel cover plate	Each	1550.00
7395	6 mm dia. G.I. adjustable hangers including clips (upto 1.2 m length)	Each	35.00
7396	Double action hydraulic floor spring with brass cover plate	Each	2500.00
7397	Base jack	Each	255.00
7398	Challies	Each	990.00
7399	Cup lock	Each	105.00
7400	15 mm PTMT bib cock	Each	225.00
7401	15 mm PTMT bib cockwith flange (fancy)	Each	310.00
7402	15 mm PTMT bib cock long body with flange	Each	370.00
7403	15 mm dia PTMT stop cock (male thread)	Each	235.00
7405	20 mm dia. PTMT stop cock	Each	265.00
7406	PTMT pillar cock	Each	380.00
7407	PTMT push cock 15 mm dia.	Each	185.00
7408	PTMT push cock 12 mm dia. 20 mm BSP	Each	185.00
7409	PTMT grating 100 mm dia.	Each	82.00
7410	PTMT pillar cock (fancy) 15 mm foam flow.	Each	400.00
7411	125 mm grating withwaste hole	Each	80.00
7412	Rectangular type with openable circular lid 150 mm size 18 mm	Each	130.00
7415	Double acting air valve 50 mm	Each	4270.00
7416	Double acting air valve 80 mm	Each	6300.00
7417	Double acting air valve 100 mm	Each	8100.00
7418	Water meter (including testing charges) 80 mm	Each	2500.00
7419	Water meter (including testing charges) 100 mm	Each	3900.00
7420	Water meter (including testing charges) 150 mm	Each	5600.00
7421	Water meter (including testing charges) 200 mm	Each	6300.00
7422	Dirt box strainer 80 mm	Each	3500.00
7423	Dirt box strainer 100 mm	Each	5250.00
7424	Dirt box strainer 150 mm	Each	6800.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
7425	Dirt box strainer 200 mm	Each	9500.00
7426	Cat's eye	Each	650.00
7427	Water stops Serrated with central bulb (225 mm wide, 8-11 mm thick)	Mtr.	460.00
7428	Water stops Dumb bell with central bulb	Mtr.	439.00
7429	Kickers	Mtr.	440.00
7430	Wedge expansion hold fastner 1/4" or 6 mm	Each	15.00
7431	Wedge expansion hold fastner 3/8" or 10 mm	Each	18.00
7432	Wedge expansion hold fastner 1/2" or 12 mm	Each	35.00
7439	8mm thick (mirror polished tiles machine cut edge) Raj Nagar white	Sqm	610.00
7442	Wheel 75 mm dia. 40 mm wide	Each	72.00
7443	Aluminium single cleat of size 30x32x3	Each	15.00
7444	Aluminium grip strip of size 50x12x2	Each	12.00
7445	25 mm prelaminated flush door both side decorative	Sqm	870.00
7449	Aluminium U beading	Kg	270.00
7451	Glass sheet (Pin headed) 4 mm thick	Sqm	225.00
7452	Raj nagar I quality plain white marble (table rubbed and polished) 18 mm thick upto 1500 cm2	Sqm	550.00
7453	Raj nagar plain I quality white marble (table rubbed and polished) 18 mm thick above 1500 and upto 3600 cm2	Sqm	700.00
7454	Raj nagar plain I quality white marble (table rubbed and polished) 18 mm thick above 3600 cm2	Sqm	800.00
7455	Makrana Adanga 15-18mm upto 1500 cm2	Sqm	800.00
7456	Makrana Adanga 15-18mm above 1500 and upto 3600 cm2	Sqm	900.00
7457	Makrana Adanga 15-18mm above 3600 cm2	Sqm	1100.00
7458	Keseriaji/ Abu Ambaji (Green Marble)15-18mm upto 1500 cm2	Sqm	650.00
7459	Keseriaji/ Abu Ambaji (Green Marble)15-18mm above 1500 and upto 3600 cm2	Sqm	750.00
7460	Keseriaji/ Abu Ambaji (Green Marble) 15-18mm above 3600 cm2	Sqm	950.00
7461	Bhaislana,Abu,Kishangarh Zebra (Black Marble) 5-18mm upto 1500 cm2	Sqm	550.00
7462	Bhaislana,Abu,Kishangarh Zebra (Black Marble) 15-18mm above 1500 and upto 3600 cm2	Sqm	650.00
7463	Bhaislana,Abu,Kishangarh Zebra (Black Marble) 15-18mm above 3600 cm2	Sqm	800.00
7466	Second class deodar teak wood lipping 30 mm widthx12mm	Mtr.	40.00
7468	Veneered particle board with commercial veneering on both sides 12 mm thick	Sqm	700.00
7477	Prelaminated particle board with one side decorative and other side balancing lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS : 12823 (exterior grade)12 mm thick	Sqm	950.00
7478	Prelaminated particle board with one side decorative and other side balancing lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS : 12823 (exterior grade)18 mm thick	Sqm	1100.00



CODE	PARTICULARS	UNIT	Rates ( Rs.)
7479	Prelaminated particle board with one side decorative and other side balancing lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS : 12823 (exterior grade)25 mm thick	Sqm	1350.00
7480	Prelaminated particle board with both sides decorative lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS : 12823 (exterior grade)12 mm thick	Sqm	950.00
7485	Oxidised M. S. hinges finished with nickel plating 50 mm (Over all width)	Mtr.	41.00
7486	Oxidised M. S. hinges finished with nickel plating 65 mm (Over all width)	Mtr.	46.00
7491	PTMT Waste Coupling 31/32MM	Each	120.00
7492	PTMT Waste Coupling 38/40MM	Each	165.00
7493	PTMT Bottle Trap 31/32MM	Each	670.00
7494	PTMT Bottle Trap 38/40MM	Each	700.00
7495	PTMT Ball Cock 15mm Complete with Epoxy Coated Aluminium Road & H.D. Ball	Each	350.00
7496	PTMT Ball Cock 20mm Complete with Epoxy Coated Aluminium Road & H.D. Ball	Each	520.00
7497	PTMT Ball Cock 25mm Complete with Epoxy Coated Aluminium Road & H.D. Ball	Each	970.00
7498	PTMT Ball Cock 40mm Complete with Epoxy Coated Aluminium Road & H.D. Ball	Each	1620.00
7499	PTMT Ball Cock 50mm Complete with Epoxy Coated Aluminium Road & H.D. Ball	Each	2400.00
7500	PTMT Angle Stop cock with Flenge 15mm	Each	290.00
7501	PTMT Swiveling shower 15mm	Each	250.00
7503	PTMT Liquid Soap Container of 400ml capacity	Each	350.00
7504	PTMT Towel Ring 215xd200x37mm	Each	240.00
7505	PTMT Towel Rail (450MM)	Each	450.00
7506	PTMT Towel Rail (600MM)	Each	540.00
7507	PTMT Shelf 450x124x36mm	Each	610.00
7508	PTMT Urinal Spreader 15MM	Each	270.00
7509	PTMT Soap Dish/Holder 138x102x75mm	Each	240.00
7512	PTMT handle 125x34x24mm	Each	47.00
7513	PTMT handle 150x34x24mm	Each	51.00
7514	PTMT butt hinges 75x60x10mm	Each	62.00
7515	PTMT butt hinges 100x75x10mm	Each	82.00
7516	PTMT Tower bolt 152x42x18mm	Each	105.00
7517	PTMT Tower bolt 202x42x18mm	Each	125.00
7518	PTMT door catcher 72x42mm	Each	41.00
7552	Coir veneered board 4mm thick	Sqm	360.00
7553	Coir veneered board 6mm thick	Sqm	470.00
7555	Coir veneered board 12mm thick	Sqm	835.00
7556	Coir veneered board 18mm thick	Sqm	1250.00
7651	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 100mm dia	Mtr.	920.00
7652	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 150mm dia	Mtr.	1370.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
7653	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 200mm dia	Mtr.	1890.00
7654	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 - 250mm dia	Mtr.	2435.00
7655	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 - 300mm dia	Mtr.	3130.00
7656	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 - 350mm dia	Mtr.	3670.00
7657	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 - 400mm dia	Mtr.	5260.00
7658	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 - 450mm dia	Mtr.	5850.00
7659	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 - 500mm dia	Mtr.	7830.00
7660	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 - 600mm dia	Mtr.	8770.00
7661	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 - 700mm dia	Mtr.	12000.00
7662	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 - 750mm dia	Mtr.	13600.00
7663	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 - 800mm dia	Mtr.	14000.00
7664	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 - 900mm dia	Mtr.	16300.00
7665	Ductile Iron class K - 9 pipe Conforming to I.S. 8329 - 1000mm dia	Mtr.	18350.00
7666	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 100mm dia	Each	38.00
7668	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 150mm dia	Each	53.00
7669	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 200mm dia	Each	95.00
7670	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 250mm dia	Each	105.00
7671	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 300mm dia	Each	150.00
7672	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 350mm dia	Each	190.00
7673	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 400mm dia	Each	380.00
7674	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 450mm dia	Each	420.00
7675	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 500mm dia	Each	435.00
7676	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 600mm dia	Each	530.00
7677	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 700mm dia	Each	840.00
7678	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 750mm dia	Each	990.00
7679	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 800mm dia	Each	1100.00
7680	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 900mm dia	Each	1480.00
7681	Ruber Gaskets Conforming to I.S 5382 of S.B.R quality 1000mm dia	Each	1815.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
7682	Ductile Iron K - 12 specials suitable for push on jointing upto 600mm dia	Quintal	12500.00
7683	Ductile Iron K - 12 specials suitable for push on jointing over 600mm dia	Quintal	18800.00
7684	Ductile Iron specials suitable for mechanical jointing as per I.S. 9523 - upto 600mm dia	Quintal	13150.00
7685	Ductile Iron Specials suitable for mechanical jointing as per I.S. 9523 over 600mm dia	Quintal	19900.00
7686	Ductile Iron Pipe Class K-9 flanges and welding 100mm dia	Mtr.	2650.00
7687	Ductile Iron Pipe Class K-9 flanges and welding 150 dia	Mtr.	3650.00
7688	Ductile Iron Pipe Class K-9 flanges and welding 200mm dia	Mtr.	4750.00
7689	Ductile Iron Pipe Class K-9 flanges and welding 250mm dia	Mtr.	6300.00
7690	Ductile Iron Pipe Class K-9 flanges and welding 300mm dia	Mtr.	8100.00
7691	Ductile Iron Pipe Class K-9 flanges and welding 350mm dia	Mtr.	10080.00
7692	Ductile Iron Pipe Class K-9 flanges and welding 400mm dia	Mtr.	12050.00
7693	Ductile Iron Pipe Class K-9 flanges and welding 450mm dia	Mtr.	14550.00
7694	Ductile Iron Pipe Class K-9 flanges and welding 500mm dia	Mtr.	17650.00
7695	Ductile Iron Pipe Class K-9 flanges and welding 600mm dia	Mtr.	24000.00
7696	Ductile Iron Pipe Class K-9 flanges and welding 700mm dia	Mtr.	29500.00
7697	S&S Centrifugally (Spun) C.I. Pipe class LA 100mm dia	Mtr.	1248.00
7698	S&S Centrifugally (Spun) C.I. Pipe class LA 125mm dia	Mtr.	1550.00
7699	S&S Centrifugally (Spun) C.I. Pipe class LA 150mm dia	Mtr.	1810.00
7700	S&S Centrifugally (Spun) C.I. Pipe class LA 200mm dia	Mtr.	1930.00
7701	S&S Centrifugally (Spun) C.I. Pipe class LA 250mm dia	Mtr.	2735.00
7702	S&S Centrifugally (Spun) C.I. Pipe class LA 300mm dia	Mtr.	3640.00
7703	S&S Centrifugally (Spun) C.I. Pipe class LA 350mm dia	Mtr.	4500.00
7704	S&S Centrifugally (Spun) C.I. Pipe class LA 400mm dia	Mtr.	5500.00
7705	S&S Centrifugally (Spun) C.I. Pipe class LA 450mm dia	Mtr.	6580.00
7706	S&S Centrifugally (Spun) C.I. Pipe class LA 500mm dia	Mtr.	8010.00
7707	S&S Centrifugally (Spun) C.I. Pipe class LA 600mm dia	Mtr.	10600.00
7708	S&S Centrifugally (Spun) C.I. Pipe Specials as per IS 1538 suitable for lead jointing upto 300mm dia	Quintal	4950.00
7709	S&S Centrifugally (Spun) C.I. Pipe Specials as per IS 1538 suitable for lead jointing over 300mm dia	Quintal	5580.00
7710	S&S Centrifugally (Spun) C.I. Pipe specials suitable for mechanical joint as per I.S. 13382 upto 300mm dia	Quintal	7500.00
7711	S&S Centrifugally (Spun) C.I. Pipe Specials suitable for mechanical joint as per IS 13382 over 300mm dia	Quintal	7800.00
7712	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 100mm dia	Mtr.	1370.00
7713	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 150mm dia	Mtr.	2120.00
7714	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 200mm dia	Mtr.	2950.00
7715	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 250mm dia	Mtr.	3920.00
7716	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 300mm dia	Mtr.	5000.00
7717	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 350mm dia	Mtr.	6400.00
7718	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 400mm dia	Mtr.	8100.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
7719	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 450mm dia	Mtr.	10700.00
7720	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 500mm dia	Mtr.	14000.00
7721	Screwed double flanged centrifugally cast (spun) C.I. Pipe of Class B conforming to I.S. 1536, - 600mm dia	Mtr.	18200.00
7722	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 100mm dia	Mtr.	850.00
7723	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 150mm dia	Mtr.	1220.00
7724	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 200mm dia	Mtr.	1730.00
7725	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 250mm dia	Mtr.	2350.00
7726	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 300mm dia	Mtr.	3310.00
7727	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 350mm dia	Mtr.	3820.00
7728	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 400mm dia	Mtr.	4550.00
7729	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 450mm dia	Mtr.	5400.00
7730	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 500mm dia	Mtr.	6400.00
7731	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 600mm dia	Mtr.	8400.00
7732	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 700mm dia	Mtr.	10450.00
7733	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 800mm dia	Mtr.	14550.00
7734	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 900mm dia	Mtr.	17900.00
7735	Ductile Iron Class K- 7 pipe conforming to I.S. 8329 - 1000mm dia	Mtr.	21700.00
7736	Extruded burnt flyash clay sewer bricks conforming to I.S 4885 - 1988	1,000 Nos	5500.00
7737	Fly ash lime bricks (FALG Bricks) conforming to I.S. 12894-1989	1,000 Nos	2800.00
7738	Calcium Silicate Bricks machine moulded confirming to I.S. 4139 - 1989	1,000 Nos	4850.00
7739	Modified Bitumen Refinery produced CRMB - 55	Tonne	56600.00
7741	Modified Bitumen Refinery produced CRMB - 60	Tonne	56600.00
7742	Bitumen emulsion medium setting (M.S.) confirming to IS : 8887-1995	Tonne	46200.00
7799	Broken ceramic tiles	Kg	8.00
7800	Ceramic Glazed Tiles Ist quality size 200 mm x 300 mm in white, gray, ivory, fume red brown, light green, light blue and other light shades	Sqm	350.00
7801	Ceramic Mat finished Tiles Ist quality size 300 mm x 300 mm in white, gray, ivory, fume red brown, light green, light blue and other light shades	Sqm	380.00
7802	Ceramic Glazed Tiles Ist quality 300 x 300 in all shades designs except White, Ivory, Grey, Fume Red Brown etc.	Sqm	350.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
7803	Rectified Ceramic Glazed Tiles 1st quality 300x300mm or more in all shades designs White, Ivory, Grey, Fuem Red Brown etc.	Sqm	550.00
7804	Rectified Ceramic Glazed Tiles 1st quality 300x300mm or more in all shades designs except White, Ivory, Grey, Fuem Red Brown etc.	Sqm	675.00
7805	Salem Stainless steel AISI - 304 (18/8) Orrisa pattern W.C. pan 724mm X 578mm	Each	4700.00
7806	Salem Stainless steel AISI - 304 (18/8) Round basin 405mm X 355mm	Each	2100.00
7807	Salem Stainless steel AISI - 304 (18/8) Wash basin 530mm X 345mm	Each	1900.00
7808	Centrifugally cast (spun) iron S&S 100 mm inlet and 100 mm outlet	Each	435.00
7809	Centrifugally cast (spun) iron S&S 100 mm inlet and 75 mm outlet	Each	470.00
7810	75 mm wide decorative border	Rmt.	125.00
7811	Motive 200x200 mm	Each	125.00
7812	Motive 200x300 mm	Each	150.00
7850	Agaria White marble slab plain 18mm thick	Sqm	1325.00
7857	P.T.M.T. Grating square slit 150mm	Each	150.00
7858	P.T.M.T. Urinal cock 15mm dia	Each	155.00
7859	P.T.M.T. Bib cock with nozzle 15mm	Each	200.00
7861	P.T.M.T. Stop cock (concealed) 15mm	Each	275.00
7862	15 mm nominal bore and 30 cm length PVC connection pipe with P.T.M.T. Nuts	Each	67.00
7863	15 mm nominal bore and 45 cm length PVC connection pipe with P.T.M.T. Nuts	Each	84.00
7864	P.T.M.T. extension nipple 15mm	Each	42.00
7865	P.T.M.T. extension nipple 20mm	Each	51.00
7866	P.T.M.T. extension nipple 25mm	Each	75.00
7900	Modular bricks of class designation 100	1,000 Nos	5200.00
7901	Machine moulded perforated FPS bricks of class designation 125	1,000 Nos	5200.00
7902	Machine moulded modular perforated bricks of class designation 125	1,000 Nos	5200.00
7903	Machine moulded FPS bricks of class designation 125	1,000 Nos	5200.00
7904	Machine moulded tile bricks of class designation 125	1,000 Nos	5000.00
8001	24 mm thick Factory made shutters with frame, rails and panels of PVC extruded sections in white, grey or wooden finish	Sqm	1500.00
8002	30 mm thick Factory made shutters with frame, rails and panels of PVC extruded sections in white, grey or wooden finish	Sqm	1560.00
8003	Factory made PVC rigid foam panelled shutter i/c carriage	Sqm	1865.00
8004	Factory made PVC rigid foam panelled shutter as per IS : 4020 i/c carriage	Sqm	2000.00
8006	Factory made PVC rigid foam sheet 1mm thick	Sqm	185.00
8007	Factory made PVC rigid foam sheet 5mm thick	Sqm	770.00
8008	Factory made prelaminated PVC rigid foam sheet 5mm thick	Sqm	925.00



CODE	PARTICULARS	UNIT	Rates ( Rs.)
8010	48mmX40mmX1.5mm thick Factory made door frame of PVC extruded sections in white, grey or wooden finish	Mtr.	190.00
8011	Factory made door frame PVC extruded sheet i/c carriage	Mtr.	230.00
8012	Adhesive solvent cement	Kg	130.00
8100	Powder coated M.S. butt hinges 100mm X58mmX1.9mm	10 Nos	95.00
8200	A.P.P. modified polymeric felt (two layers) 1.5 mm thick	Sqm	110.00
8201	A.P.P. modified polymeric felt (two layers) 2 mm thick	Sqm	150.00
8203	A.P.P. modified 2 mm thick membrane reinforced with glass fibre matt	Sqm	250.00
8204	A.P.P. modified 3 mm thick membrane reinforced with glass fibre matt	Sqm	175.00
8205	A.P.P. modified 3 mm thick membrane reinforced with polyster matt	Sqm	225.00
8206	Bitumen primer for bitumen membrane	Litre	110.00
8207	Geotextile 120 gsm membrane	Sqm	40.00
8210	Stainless steel screws 50 mm	100 Nos	305.00
8211	Stainless steel screws 40 mm	100 Nos	250.00
8212	Stainless steel screws 30 mm	100 Nos	150.00
8214	Stainless steel screws 20 mm	100 Nos	100.00
8215	Stainless steel butt hinges 125x64x1.9 mm IS : 12817 marked	10 Nos	315.00
8216	Stainless steel butt hinges 100x58x1.9 mm IS : 12817 marked	10 Nos	210.00
8217	Stainless steel butt hinges 75x47x1.8 mm IS : 12817 marked	10 Nos	175.00
8218	Stainless steel butt hinges 50x37x1.5 mm IS : 12817 marked	10 Nos	150.00
8219	Stainless steel butt hinges (heavy weight) 125x64x2.5 mm IS : 12817 marked	10 Nos	485.00
8220	Stainless steel butt hinges (heavy weight) 100x60x2.5 mm IS : 12817 marked	10 Nos	430.00
8221	Stainless steel butt hinges (heavy weight) 75x50x2.5 mm IS : 12817 marked	10 Nos	370.00
8222	M.S. heavy weight but hinges 125x90x4.0mm IS : 1341 marked.	10 10 Nos	330.00
8223	M.S. heavy weight butt hinges 100x75x3.5 mm IS: 1341 marked	10 10 Nos.	170.00
8224	M.S. heavy weight butt hinges 75x60x3.1 mm IS: 1341 marked	10 10 Nos	98.00
8225	M.S. heavy weight butt hinges 50x40x2.5 mm IS : 1341 marked	10 10 Nos	81.00
8300	1216 mm PE-AL-PE Composit pressure pipe	Mtr.	90.00
8301	1620 mm PE-AL-PE Composit pressure pipe	Mtr.	100.00
8302	2025 mm PE-AL-PE Composit pressure pipe	Mtr.	130.00
8303	2532 mm PE-AL-PE Composit pressure pipe	Mtr.	190.00
8304	3240 mm PE-AL-PE Composit pressure pipe	Mtr.	240.00
8305	4050 mm PE-AL-PE Composit pressure pipe	Mtr.	350.00
8501	Polymer modified cementation coating	Kg	290.00
8502	Fibre glass cloth	Sqm	50.00
8504	Multi surface paint	Litre	460.00
8505	Acrylic exterior paint	Litre	450.00
8506	Premium Acrylic exterior paint	Litre	250.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
8507	Textured exterior paint	Litre	350.00
8508	Primer for cement paint	Litre	158.00
8509	Special Primer	Litre	190.00
8510	Metal Primer	Litre	130.00
8611	Main T ceiling sections 24x38x0.3 mm (3 Mtr. long)	Each	230.00
8612	Perimeter wall angle 21x21x0.3mm (3 Mtr. long)	Each	145.00
8613	Intermediate cross T-section 24x25x0.3mm (1.2 mtrs long)	Each	87.00
8614	Intermediate cross T-section 24x25x0.3mm (0.6 mtrs long)	Each	41.00
8615	Hanger rod 0.5 mm thick	Each	12.00
8616	Adjustment clip	Each	6.00
8617	Soffit cleat	Each	3.00
8618	Dash fastener 6 mm dia 50 mm long	Each	12.00
8620	Vitrified floor tile 50x50 cm	Sqm	463.00
8621	Vitrified floor tile 60x60 cm	Sqm	566.00
8622	Vitrified floor tile 90x90 cm	Sqm	766.00
8623	Vitrified floor tile 100x100 cm	Sqm	809.00
8625	Poly propylene- Random - Co - Polymer (PPR) pipes SDR 7.4 - 16 Outer dia	Mtr.	52.00
8626	Poly propylene - Random - Co - Polymer (PPR) pipes SDR 7.4 - 20mm Outer dia.	Mtr.	69.00
8627	Poly propylene - Random - Co - polymer (PPR) pipes SDR 7.4 - 25 mm outer dia.	Mtr.	116.00
8628	Poly propylene - Random - Co - poymer (PPR) pipes SDR 7.4 - 32 mm Outer dia.	Mtr.	185.00
8629	Poly propylene - Random - Co - polymer (PPR) pipes SDR 7.4 - 40mm Outer dia.	Mtr.	280.00
8630	Poly propylene - Random - Co - polymer (PPR) pipes SDR 7.4 - 50mm Outer dia.	Mtr.	430.00
8631	Poly propylene - Random - Co - polymer (PPR) pipes SDR 7.4 - 63mm Outer dia.	Mtr.	650.00
8632	Poly propylene - Random - Co - polymer (PPR) pipes SDR 7.4 - 75mm Outer dia.	Mtr.	805.00
8633	Poly propylene - Random - Co - polymer (PPR) pipes SDR 7.4 - 90mm Outer dia.	Mtr.	1285.00
8634	Poly propylene - Random - Co - polymer (PPR) pipes SDR - 11 - 110mm Outer dia.	Mtr.	1345.00
8635	Poly propylene - Random - Co - polymer (PPR) pipes SDR - 11- 160mm Outer dia.	Mtr.	2835.00
8636	Chlorinated Polyvinyl - chloride (CPVC) pipe 15 mm outer dia.	Mtr.	73.00
8637	Chlorinated Polyvinyl - chloride (CPVC) pipe 20 mm outer dia.	Mtr.	91.00
8638	Chlorinated Polyvinyl - chloride (CPVC) pipe 25 mm outer dia.	Mtr.	130.00
8639	Chlorinated Polyvinyl - chloride (CPVC) pipe 32 mm outer dia.	Mtr.	181.00
8640	Chlorinated Polyvinyl - chloride (CPVC) pipe 40 mm outer dia.	Mtr.	285.00
8641	Chlorinated Polyvinyl - chloride (CPVC) pipe 50 mm outer dia.	Mtr.	410.00
8642	Chlorinated Polyvinyl - chloride (CPVC) pipe 62.5mm inner dia.	Mtr.	1140.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
1400	Chlorinated Polyvinyl - chloride (CPVC) pipe 75 mm inner dia.	Mtr.	1500.00
8644	Chlorinated Polyvinyl - chloride (CPVC) pipe 100 mm inner dia.	Mtr.	2080.00
8645	Chlorinated Polyvinyl - chloride (CPVC) pipe 150 mm inner dia.	Mtr.	3625.00
8646	Silicon sealant.	cartridge	360.00
8647	Stainless steal screws 30mm x4mm.	Cent	80.00
8648	Hermetically sealed double glazed unit made with 6mm thick clear float glass both side having 12 mm air gap.	Sqm	3780.00
8649	Stainless steel (SS 304 grade) adjustable friction window stay. 205 x 19mm	Each	185.00
8650	Stainless steel (SS 304 grade) adjustable friction window stay 255 x 19mm	Each	205.00
8651	Stainless steel (SS 304 grade) adjustable friction window stay. 355 x 19mm	Each	265.00
8652	Stainless steel (SS 304 grade) adjustable friction window stay. 510 x 19mm	Each	495.00
8653	Stainless steel (SS 304 grade) adjustable friction window stay. 710 x 19mm	Each	910.00
8654	Masking tape.	Mtr.	5.00
8655	Autoclaved aerated cement (AAC) blocks.	Cum	2550.00
8656	Gypsum panel 666 X 500 X 100 mm size.	Sqm	810.00
8657	Bonding plaster for Gypsum panel.	Kg	92.00
8658	Mechanised Autoclaved flyash lime bricks.	1,000 Nos	5200.00
8659	Water proof ply 12mm thick.	Sqm	1650.00
8660	Aluminium casement window fastner (Anodised AC 15 )	Each	90.00
8661	Aluminium casement window fastner (powder coated ).	Each	105.00
8662	Aluminium casement window fastner (polyester powder	Each	115.00
8663	Aluminium round shape handle (anodised AC 15)	Each	140.00
8664	Aluminium round shape handle (powder coated)	Each	165.00
8665	Aluminium round shape handle (polyester powder coated).	Each	195.00
8666	Stainless steel screws 25mm x4mm	Cent	145.00
8667	UV stabilised 2 mm thick plain FRP sheet .	Sqm	745.00
8668	UV stabilised 3 mm thick plain FRP sheet .	Sqm	1120.00
8669	Mangalore ridge tiles .....x.....mm and 20mm thick.	Each	41.00
8670	Manglore tiles .....x.....mm 20mm thick.	Each	23.00
8671	Precoated galvanised iron profile sheet 0.50 mm TCT	Sqm	440.00
8672	Precoated galvanised steel plain ridges.	Mtr.	440.00
8673	Precoated galvanised steel flashings/aprons.	Mtr.	440.00
8674	Precoated galvanised steel gutter	Mtr.	480.00
8675	Precoated galvanised steel north light curves.	Mtr.	480.00
8676	Precoated galvanised steel barge board.	Mtr.	440.00
8677	Precoated galvanised steel crimp curve	Sqm	560.00
8678	1mm thick 35mm wide bright finished stainless steel piano	Mtr.	110.00
8683	Red sand stone gang saw cut 30mm thick.	Sqm	460.00
8684	White sand stone gang saw cut 30mm thick.	Sqm	750.00
8685	Delinator	Each	800.00
8686	Precast C.C. Kerb stone M - 25	Cum	4800.00
8687	Thermoplastic paint	Kg	100.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
8688	Glass beads	Kg	120.00
8689	Interlocking C.C. paver block ( 60 mm thick, M-30 )	Sqm	578.00
8690	High intensity retro - reflective sheet.	Sqm	1950.00
8691	Punched tape concertina coil 600 m dia. 10m openable length (Total length 90m)	Bundle	1050.00
8692	RBT reinforced barbed wire.	Mtr.	20.00
8693	Turn buckle and strengthening bolt.	Each set	50.00
8694	Precast pavement slab 450 x 450 x 50mm (M - 30).	Each	60.00
8695	Chain link fabric fencing mesh of size 50x50mm made of G.I. wire of dia. 3.15mm.	Sqm	210.00
8696	Chain link fabric fencing mesh of size 75x75mm made of G.I. wire of dia. 3.15mm.	Sqm	160.00
8697	Chain link fabric fencing mesh of size 100x100mm made of G.I. wire of dia. 3.15mm.	Sqm	120.00
8698	Stainless steel cramps with nuts, bolts and washer for dry stone cladding .	Each	280.00
8699	8 mm thick tapered edge calcium silicate board .	Sqm	350.00
8700	10 mm thick calcium silicate board.	Sqm	430.00
8701	Chain link fabric fencing mesh of size 150x150mm made of G.I. wire of dia. 3.15mm.	Set	110.00
8703	Telescopic drawer channels 300mm long .	Set	200.00
8704	Stainless steel roller for sliding arrangment in racks/ cupboards/ cabinets shutter .	Each	9.00
8705	50mmX42mmX2mm thick Factory made door frame of PVC extruded sections in white, grey or wooden finish	Mtr.	210.00
8706	25mm thick factory made PVC flash foor shutter i/c carriage.	Sqm	2800.00
8707	Factory made glass reinforced plastic door frame 90x45 mm i/c carriage.	Mtr.	450.00
8708	30 mm thick factory madeglass fiber reinforced plastic panel door shutter i/c carriage.	Sqm	3200.00
8710	Factory made solid PVC door frame 60 x 30mm i/c carriage.	Mtr.	600.00
8711	28mm factory made solid PVC panel door shutteri/c carriage.	Sqm	3200.00
8713	Fiber glass reinforced plastic chajja.	Sqm	4900.00
8714	Magenatic catcher triple strip verticle type.	Each	105.00
8715	Magenatic catcher double strip horizontal type.	Each	25.00
8716	Mortice lock of approved make Godrej or equivalent with pair of CP handles	Each	600.00
8717	12.5 mm thick Glass fibre reinforced Gypsum board .	Sqm	300.00
8718	Almirah lock of approved make Godrej or equivalent	Each	240.00
8719	2nd class teak wood lipping/ moulded beading or Taj beading of size 18X5mm	Mtr.	50.00
8720	Ceiling sections 0.55 mm thick having a knurled web of 51.55mm and two flanges of 26mm each with lips of 10.55mm.	Mtr.	85.00
8721	Perimeter channel having one flange of 20mm and another flange of 30mm with thickness of 0.55mm and web of length 27mm.	Mtr.	75.00
8722	Nylon sleeves & wooden screws (40mm)	Each	3.00
8723	Counter sunk ribbed head screw 25mm.	Cent	105.00
8724	12mm thick marine plywood conforming to IS:710	Sqm	1500.00
8725	12mm thick fire retardant plywood conforming to IS: 5509.	Sqm	1280.00
8726	1.5mm thick decorative laminated sheet	Sqm	800.00

CODE	PARTICULARS	UNIT	Rates ( Rs.)
8727	1.0mm thick decorative laminated sheet	Sqm	650.00
8730	30 mm thick factory made glass fiber reinforced plastic flush door shutter i/c carriage.	Sqm	2700.00
8731	High polymer modified quickset tile adhesive.	Per kg	50.00
8732	synthetic Fiber 6mm / 12mm	Per pack of 125 gm	45.00
8733	Welded mesh 50x50x2.1 mm	Sqm	205.00
8734	Welded mesh 50x25x2.1 mm	Sqm	230.00
8735	Welded mesh 25x25x2.1 mm	Sqm	260.00
8736	Expanded metal size 20 - 25 mm size 18swg	Sqm	235.00
8737	Steel pipe 80x40 16 gauge	Qtl	8750.00
8738	Steel pipe 50x25 18 gauge	Qtl	8850.00
8739	UV stabilised 5 mm thick plain FRP sheet .	Sqm	1350.00
8740	Acoustical fine fissured tiles/ Mineral fibre high density tiles	Sqm	850.00
8741	Glass Fibre Reinforced Gypsum False ceiling tiles	Sqm	1150.00
8742	Earthen pots	Each	12.00
8743	Disc for floater	Each	6930.00
8744	Trowel blades	Each	6930.00
8745	Filter mats	Each	14000.00
8746	Top mat	Each	41600.00
8747	Concrete Cutter diamond saw	Each	5300.00
8748	Designer polished CC tiles	Sqm	650.00
8749	8mm thick laminated floor	Sqm	1850.00
8750	89 mm wide having both side laminations	Rmt	700.00
8751	transation/adaptation profile	Rmt	550.00
8752	Alumium grill	Sqm	1100.00
8753	Y & H section	Rm	90.00
8754	Anodising 15 microns on aluminium sections for grill	Sqm	700.00
8755	Powder coating aluminum for grill	Sqm	850.00
8756	Polyester Powder coating for grill	Sqm	950.00
8757	SS wire gauge	Sqm	550.00
8758	Vertical blinds	Sqm	1400.00
8759	Horizontal blinds /Venation blind	Sqm	1500.00
8760	Drapery rod	Rmt	250.00
8761	Sun control film	Sqm	650.00
8762	Polysulphide	Kg	650.00
8763	Primer	Ltr	1300.00
8764	Backup rod	Rmt	60.00
8765	Masking tape, thinner	Rmt	60.00
8766	Door frame RCC 75x50 mm	Rmt	70.00
8767	Size 75 x 75mm	Rmt	85.00
8768	Size 100 x 75mm	Rmt	90.00
8769	Size 125 x 75mm	Rmt	98.00
8770	Stone Door frame Size 75 x 60mm	Rmt	87.00
8771	Size 75 x 75mm	Rmt	98.00
8772	Size 100 x 60mm	Rmt	125.00
8773	Size 100x 75mm	Rmt	160.00
8774	Size 125 x 100mm	Rmt	175.00
8775	Double paitam Size 100x 75mm	Rmt	150.00
8776	Size 125 x 100mm	Rmt	200.00
8777	PVC sheet 1 mm	Sqm	420.00
8778	PVC sheet 1.5 mm	Sqm	500.00
8779	PVC sheet 2 mm	Sqm	560.00



CODE	PARTICULARS	UNIT	Rates ( Rs.)
8780	Malamine polish	Ltr	450.00
8781	Malamine polish	Ltr	350.00
8782	PW 6250 (PANEL)	Sqm	555.00
8783	PW 928 (PERIMETER SECTION)	Rmt	46.00
8784	M.S. PIPE(20x20MM)WITH PRIMER COATING	Rmt	48.00
8785	PW 10150 (PANEL)	Sqm	785.00
8786	PW 1228 (PERIMETER SECTION)	Rmt	68.00
9001	uPVC Casement Window Frame 60x60mm with EPDM & 1.2mm thk G.I Reinforcement (BR60DA)	Meter	685.00
9004	uPVC Casement Window Fix Mullion 76x60mm with EPDM & 1.2mm thk G.I Reinforcement (SE76NDA)	Meter	499.00
9005	uPVC Single Glazing Bead 34x20 with EPDM (GB34DA)	Meter	63.00
9022	Multipoint Transmission Gear (ESPA) with white finish powder coated handle	Per. Pc.	635.00
9023	5mm Thick Float Glass (ISI make)	Sq. Mtr.	509.00
9050	Labour & Manufacturing Charges (Cutting, Drilling, Welding, Trimming, Cleaning, Glass & Hardware Fixing & Packing)	Sq. Mtr.	572.00
9051	uPVC Window & Door Site Installation Labour (Unloading, assembling & fixing, silicon applicaton & cleaning)	Sq. Mtr.	347.00
9052	Bectokill chemical	Ltr	1549.00
9053	UV tube	Each	7980.00
9997	Water charge		0.01
9998	Contractor profit & overhead		0.10
9999	Sundries	L.S.	1.25
10000	Fe 500 D (Cocfirming to relevent IS code )	Kg	6000.00
10001	fibre reinforced cement concrete heavy duty floor tiles	Sqm	750.00
10002	blown sand	Cum	300.00
10003	Good quality South Black 18 mm thick slab, upto 1500 cm2	Sqm	950.00
10004	Good quality South Black 18 mm thick slab, above 1500 upto 3600 cm2	Sqm	1200.00
10005	Good quality South Black 18 mm thick slab, above 3600 cm2	Sqm	1500.00
10006	Jalore (P-white / S-white/ Rosy Pink colour) 18 mm thick slab, upto 1500 cm2	Sqm	550.00
10007	Jalore (P-white / S-white/ Rosy Pink colour) 18 mm thick slab, above 1500 upto 3600 cm2	Sqm	700.00
10008	Jalore (P-white / S-white/ Rosy Pink colour) 18 mm thick slab, above 3600 cm2	Sqm	800.00
10009	Rajasthan Black 18 mm thick slab, upto 1500 cm2	Sqm	500.00
10010	Rajasthan Black 18 mm thick slab, above 1500 upto 3600 cm2	Sqm	600.00
10011	Rajasthan Black 18 mm thick slab, above 3600 cm2	Sqm	700.00
	Providing and fixing wood panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled and glazed shutter 25 mm to 40 mm		
10012	IS 710- 1976 marked 19 mm thick commerical ply	Sqm	1171.00
10013	IS 710- 1976 marked 12 mm thick Teak ply BWR one side	Sqm	1716.00
10014	IS 710- 1976 marked 12mm thick Teak ply BWR both side	Sqm	1954.00
10015	6 mm thick glass	Sqm	1596.00
10016	10 mm thick glass	Sqm	2221.00

**G - 41**

<b>CODE</b>	<b>PARTICULARS</b>	<b>UNIT</b>	<b>Rates ( Rs.)</b>
10017	12 mm thick glass	Sqm	2596.00
10018	5 mm tinted glass	Sqm	1534.00
10019	5 mm reflected glass	Sqm	1721.00
10020	TOUGHENED glass panes (4.0mm)	Sqm	370.00
10021	Pavers made in fully autometric plant with vibro compact process ( high end uniform strength of m30 grade in various sizes 100x100x60 mm 200x100x60 mm 200x200x60 mm	Sqm	750.00
10022	Cobble stone of approx. Size 125x125x75 mm	Sqm	1200.00
10023	Epoxy Grout Kg	Kg	520.00

**CHAPTER : G-4.1 : CARRIAGE OF MATERIALS****NOTE**

- 1 Rates are for net quantities after deduction of voids
- 2 Part of Km beyond 1 Km. will be treated as under :  
1.499 = 1.00 Km. ; 1.500 Km. = 2.00 Km
- 3 The rates are inclusive of loading and unloading
- 4 The rates are inclusive of stacking. If stacking is not required, no deduction is to be done.

Ch Code No.	Description	Unit	Rates										
			Up to 50 M	Add for each 50 M (upto 500 M)	For 500 M (0.5 Km.)	For 1 Km.	Add for each 1 Km beyond 1st Km (upto 5 Km.)	For 5 Km.	Add for each 1 Km beyond 5 Km (upto 10 Km.)	For 10 Km.	Add for each 1 Km beyond 10 Km (upto 20 Km.)	For 20 Km.	Add for each 1 Km beyond 20 Km
1	2	3	4	5	6	7	8	9	10	11	12	13	14
4.1	Earth, Sand, Lime, Morrum manure or sludge	Cum	22.00	4.00	56.00	76.00	9.00	119.00	8.00	157.00	8.00	228.00	7.00
4.2	Building Rubbish Stone metal (Grit and ballast etc.)	Cum	29.00	5.00	68.00	76.00	9.00	119.00	8.00	157.00	8.00	228.00	7.00
4.3	Stone for Masonry work &	Cum	42.00	5.00	86.00	100.00	7.00	125.00	7.00	156.00	6.00	210.00	5.00
4.4	Excavated rock	Cum	42.00	5.00	86.00	100.00	7.00	125.00	7.00	156.00	6.00	210.00	5.00
4.5	Bricks	1000	85.00	11.00	183.00	216.00	13.00	268.00	12.00	328.00	11.00	437.00	8.00
4.6	Brick Tiles	1000 Nos	34.00	7.00	93.00	109.00	12.00	159.00	12.00	219.00	11.00	328.00	7.00
4.7	Cement, Stone blocks pipes and other heavy materials	MT	24.00	4.00	53.00	63.00	8.00	93.00	8.00	131.00	7.00	197.00	4.00
4.8	Steel, Tar bitumen , Timber and steam coal	MT	22.00	3.00	48.00	56.00	12.00	105.00	12.00	164.00	11.00	274.00	5.00
4.9	Empty bitumen drums	10 Nos	36.00	3.00	62.00	73.00	5.00	90.00	4.00	109.00	4.00	143.00	2.00
<b>4.10</b>	<b>Carriage with care Precast cement concrete blocks like Dand &amp; kerbs etc weighing</b>												
4.10.1	Upto 50 Kg.	Each	--	--	4.00	4.00	0.00	6.00	0.00	8.00	0.00	10.00	0.00
4.10.2	51 to 70 Kg.	Each	--	--	6.00	7.00	0.00	9.00	0.00	10.00	0.00	14.00	0.00
4.10.3	71 to 100 Kg.	Each	--	--	8.00	9.00	0.00	10.00	0.00	13.00	0.00	16.00	0.00
<b>4.11</b>	<b>R.C.C. Hume Pipe with collar</b>												
4.11.1	Dia 300 mm	Mtr.	--	--	23.00	27.00	1.00	29.00	1.00	31.00	0.00	35.00	0.00
4.11.2	Dia 600 mm	Mtr.	--	--	58.00	68.00	2.00	76.00	2.00	84.00	1.00	97.00	1.00
4.11.3	Dia 900 mm	Mtr.	--	--	121.00	146.00	523.00	167.00	5.00	188.00	3.00	219.00	3.00
4.11.4	Dia 1200mm	Mtr.	--	--	183.00	219.00	523.00	240.00	5.00	261.00	3.00	293.00	3.00

**CHAPTER : G-4.2**  
**Loading & Unloading**

Item no.	Description	Unit	Rate (Rs.)
4.12	Loading in or unloading cement of the Railway wagons at siding and carrying the same from or into godowns adjacent to the siding, including stacking the same properly in rows upto any height as per direction of Engineer-in Charge, sweeping the wagons and screening the swept cement and filling in bags complete.	M.T.	33.00
4.13	Loading in or unloading from the Railway wagons and stacking as per the direction of Engineer-in-Charge		
4.13.1	Steel	M.T	42.00
4.13.2	G.I., C.I. R.C.C. or C.C. pipes upto 500mm dia and similar heavy materials.	M.T	33.00
4.13.3	Full bitumen drums	Each	11.00
4.13.4	Heavy materials where each piece or bundle, crate or case weight more than one tonne and R.C.C. C.I. and concrete pipes above 500 mm dia	M.T	43.00
<b>Note :-</b> The rates will be applicable in all cases whether material are unloaded on or loaded from railway siding or directly unloaded on or loaded from transport No deduction shall be made from carriage rates for such direct unloading or loading			
4.14	Extra for sorting the steel size-wise inside the store yard and stacking the same for measurement within the lead of 100 meters as directed by the Engineer-in-charge	M.T	23.00

### CHAPTER G-5 HIRE CHARGES OF TENT ARTICLES

**NOTE :** Hire charges includes transporatation at site within Muncipal Limits, Loading, Unloading, Placing and removing complete.

Item no.	Description	Unit	Rate (Rs.)		
			Cost (Rs.)	Rate (Rs.)	
				1st Day	Subsequent days (per Day)
5.1	<b>Chairs :</b>				
5.1.1	PVC chair	Each.	500.00	9.00	2.00
5.1.2	Steel pipe pedded chair	Each.	1200.00	30.00	10.00
5.2	<b>Tables :</b>				
5.2.1	Wooden Table 6' x 3' (Babool).	Each.	800.00	25.00	7.00
5.2.2	Wooden Table 6' x 2' (Babool).	Each.	750.00	30.00	10.00
5.2.3	Centre Table sunmica Top 2'x4'	Each.	1800.00	50.00	14.00
5.2.4	Centre Table Glass Top 2'x4'	Each.	2250.00	150.00	48.00
5.2.5	Peg Table Sunmica Top 1'x1'	Each.	800.00	15.00	5.00
5.3	<b>Floor Covering :</b>				
5.3.1	Cotton Durry (Old).	Sqm.	18.00	2.00	1.00
5.3.2	Cotton Durry (New).	Sqm.	30.00	3.00	1.00
5.3.3	Non woven synthtic carpet (Red/Green) (New)	Sqm.	160.00	25.00	14.00
5.3.4	Non woven synthtic carpet (Red/Green) (old)	Sqm.	160.00	20.00	5.00
5.3.5	Woolen Carpet (New).	Sqm.	600.00	35.00	11.00
5.3.6	Woolen Carpet (old).	Sqm.	600.00	24.00	8.00
5.4	White Cotton chader (Sheet) (Washed)	Sqm.	40.00	20.00	2.00
5.5	Pipe Pandal with covering ht <b>from</b> to 12 to 18 ft	Sqm		30.00	10.00
5.6	Curtain cloth (View cutter ) made out of steel pipe frame covering with good quality white cloth to cut view including making holes and made necessary strengthening support against wind pressure complete .	Sqm		25.00	7.00
5.7	Kanat fixed with Tent. <b>(15'x6')</b>	Each.	850.00	40.00	14.00
5.8	Kanat fixed without Tent. <b>(15'x6')</b>	Each.	850.00	50.00	10.00
5.9	5mm Galvanised Iron (G.I) pipe 6 mtr. long with new silk flag.	Each.		72.00	31.00
5.10	Water Proof Tripal.	Sqm.		10.00	4.00
5.11	Wooden stage height 60cm.with steps complete	Sqm.		48.00	11.00

Item no.	Description	Unit	Rate (Rs.)		
			Cost (Rs.)	Rate (Rs.)	
				1st Day	Subsequent days (per Day)
5.12	Wooden stage height 120 to 180 cm.with steps made of 50 mm dia iron pipe frame with adjustable height system and having smooth top wooden board complete .	Sqm.		150.00	48.00
5.13	Cotton mattress with white sheet (chader).	Each		24.00	10.00
5.14	Dunlop mattress with white chadar size 6'x3'.	Each.		40.00	11.00
5.15	Massand with white cover.	Each.		14.00	5.00
5.16	Speech Stand having Sunmica top.	Each.	2850.00	150.00	57.00
5.17	white cotton cloth cover for padded chair including ribbon	Each.		10.00	4.00
	<b>Barricading</b>				
5.18	Barricading with Sal ballies as per design including tying with vertical post by coconut strings including digging out holes in all types of soil complete in all respect with two horizontal members height 1.2 m upto 1.5m above ground level and vertical supports upto 2.5 centre and upto 3 days period including removal and cleaning the site complete in all respect & including dressing of sides and providing retro reflective tapes for traffic safety as per direction of Engineer-in charge in all types of soil.	Rmt		31.00	
5.19	Barricading with M.S. Pipe as per design including tying with vertical post including digging out holes in all types of soil complete in all respect with two horizontal members height 1.2 m upto 1.5m above ground level and vertical supports upto 2.5 centre and upto 3 days period including removal and cleaning the site complete in all respect & including dressing of sides and providing retro reflective tapes for traffic safety as per direction of Engineer-in charge in all types of soil.	Rmt.		27.00	
5.20	Add extra for item No. <b>5.18 &amp; 5.19</b> in barricading for each subsequent day after 3 days	Rmt			3.00



Item no.	Description	Unit	Rate (Rs.)	
			Cost (Rs.)	Rate (Rs.)
				1st Day      Subsequent days (per Day)
5.21	Making of holes in cement concrete/ Bitumenous road by power driven hammer for barricating work as per direction of Engineer in charge	Each	176.00	-
5.22	Hire charges for folded type two seater sofa set (cum bed) with good quality white cloth cover	Each	228.00	76.00
5.23	VIP Chair with cushion	Each	95.00	38.00
5.24	Add extra for hire charge for providing welded mesh size 25x25 mm (16SWG) over barricating (excluding hire charge of barricating)	Sqm	29.00	6.00
5.25	Water Proof Tent with pipe pandal supported with Bamboo/Balli /MS Pipe frame.	Sqm	86.00	24.00
5.26	Water proofing canopy with ornamental frill, inner ceiling & curtains			
5.26 .1	Upto size 20'x20'	Sqm	166.00	38.00
5.26.2	Above size 20'x20'	Sqm	238.00	52.00
5.27	Deluxe sofa			
5.27.1	Three Seater	Each	665.00	190.00
5.27.2	Two Seater	Each	475.00	143.00
5.27.3	Single Seater	Each	285.00	95.00
5.28	Chemical toilet with house keeping arrangement and providing liquid soap, tissues, comb, freshener etc.	Each	5700.00	1140.00
5.29	Water proof dome with truss steel strcture, inner ceiling & curtains			
5.29.1	60' span	Sqm	214.00	43.00
5.29.2	80' span	Sqm	238.00	48.00
5.29.3	90' span	Sqm	247.00	49.00
5.30	Aluminium German Hanger Tent Roof made up of Waterproof, Fire resistant Synthetic Rubber fabric of 885 GSM.	Sqm	380.00	76.00

**RHB BSR - 2024**

# **BUILDING WORK**

# BUILDING WORK

## INDEX

CHAPTER NO.	DESCRIPTION	PAGE
B-1	EARTH WORK	1-6
B-2	MORTAR	7
B-3	CONCRETE WORK	8-11
B-4	REINFORCED CONCRETE WORK	12-18
B-5	BRICK WORK	19-21
B-6	STONE MASONRY	22-29
B-7	MARBLE, GRANITE AND TILE WORK	30-34
B-8	WOOD WORK	35-44
B-9	STEEL AND FENCING WORK	45-51
B-10	ROOFING	52-75
B-11	FLOORING WORK	76-87
B-12	FINISHING WORK	88-98
B-13	REPAIR OF BUILDING	99-103
B-14	DISMANTLING & DEMOLISHING WORK	104-111
B-15	WATER PROOFING AND EXPANSION JOINT TREATMENT	112-124
B-16	ALUMINUM & PVC WORK	125-151
B 17	ADDITIONAL MISCELLANEOUS ITEMS	152-170
B 18	MICS. WORKS	171-179

## CHAPTER : B-1 EARTH WORK

Note : The items in this Chapter will cover Earth Work for Building and Sanitary Works.

Item No.	Description	Unit	Rate (Rs.)
1.1	Earth work in excavation by mechanical means (Hydraulic excavator )/ manual means over areas (exceeding 30cm in depth. 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50m and all lift, disposed earth to be levelled and neatly dressed: All kinds of soil	Cum	139.00
1.1.1	Excavation in Soil with mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 m, including trimming bottom and side slopes in accordance with requirements of lines, grades and cross-sections.	Cum	60.00
1.2	Earth work in excavation/ by mechanical means (Hydraulic Excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50 m and all lift , disposed earth to be levelled and neatly dressed:		
1.2.1	Ordinary rock	Cum	266.00
1.2.2	Hard rock (requiring blasting) useful material 30%	Cum	441.00
1.2.3	Hard rock(blasting prohibited) useful material 30%	Cum	644.00
1.3	Earth work in excavation by mechanical means (Hydraulic Excavator )/ manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5 m, including taking out the excavated soil and depositing and refilling of jhiri with watering & ramming and disposal of surplus excavated soil as directed with in a lead of 50 meter. all kinds of soils	Cum	141.00
1.4	Excavation work by mechanical means (Hydraulic excavator)/manual means in foundation trenches or drains not exceeding 1.5 m in width or 10 sqm on plan including dressing of sides and ramming of bottoms lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed with a lead in a 50 meter including stacking of useful material if available :		

**B - 2**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate (Rs.)</b>
1.4.1	Ordinary rock	Cum	292.00
1.4.2	Hard rock (requiring blasting) useful material 30%	Cum	484.00
1.4.3	Hard rock(blasting prohibited) useful material 30%	Cum	662.00
1.5	Excavating trenches of required width for pipe cables, etc. including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 Mtr. including taking out the excavated soil, and then returning the soil as required in layers not exceeding 20cm in depth including consolidating each deposited layer by ramming, watering etc. and disposal of surplus excavated soil as directed within a lead of 50 Mtr.: All kinds of soil		
1.5.1	Pipes cables etc. not exceeding 80mm dia	Mtr.	99.00
1.5.2	Pipes cables, etc. exceeding 80mm dia but not exceeding 300mm dia.	Mtr.	161.00
1.5.3	Pipes, cables etc. exceeding 300mm dia but not exceeding 600mm dia.	Mtr.	252.00
1.6	Add extra for excavating trench for pipes, cables etc. in all kinds of soil for depth exceeding 1.5 Mtr. but not exceeding 3 Mtr.	%	1.41%
1.7	Add extra for excavating trench for pipes, cables etc. in all kinds of soil for depth exceeding 3 Mtr. but not exceeding 4.5 Mtr.	%	3.61%
1.8	Excavating trenches of required width for pipes cables etc. including excavation for sockets, depth up to 1.5 Mtr. including taking out the excavated materials, refilling the soil as required in layers not exceeding 20cm in depth including consolidating each deposited layers by ramming, watering etc., stacking serviceable material for measurements and disposal of unserviceable material as directed, with in a lead of 50 Mtr.		
1.8.1	ORDINARY ROCK: -		
1.8.1.1	Pipes cables etc. not exceeding 80mm dia	Mtr.	173.00
1.8.1.2	Pipes cables, etc. exceeding 80mm dia but not exceeding 300mm dia.	Mtr.	429.00
1.8.1.3	Pipes, cables etc. exceeding 300mm dia but not exceeding 600mm dia.	Mtr.	493.00
1.8.2	HARD ROCK (REQUIRING BLASTING) USEFUL MATERIAL 30% OF VOLUME EXCAVATED		
1.8.2.1	Pipes cables etc. not exceeding 80mm dia	Mtr.	265.00
1.8.2.2	Pipes cables, etc. exceeding 80mm dia but not exceeding 300mm dia.	Mtr.	655.00

**B - 3**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate (Rs.)</b>
1.8.2.3	Pipes, cables etc. exceeding 300mm dia but not exceeding 600mm dia.	Mtr.	754.00
1.8.3	HARD ROCK (BLASTING PROHIBITED) USEFUL MATERIAL 30% OF VOLUME EXCAVATED		
1.8.3.1	Pipes cables etc. not exceeding 80mm dia	Mtr.	349.00
1.8.3.2	Pipes cables, etc. exceeding 80mm dia but not exceeding 300mm dia.	Mtr.	864.00
1.8.3.3	Pipes, cables etc. exceeding 300mm dia but not exceeding 600mm dia.	Mtr.	994.00
1.9	Add extra for excavating trenches for pipes, cables, etc. in ordinary/hard rock exceeding 1.5 m in depth but not exceeding 3 m. (Rate is over corresponding basic item for depth upto 1.5 metre.)	%	104%
1.10	Add extra for excavating trenches for pipes, cables, etc. in ordinary/hard rock exceeding 3m in depth but not exceeding 4.5 m. (Rate is over corresponding basic item for depth upto 1.5 metre.)	%	130%
1.11	P & F Close timbering in trenches including strutting, shoring and packing cavities (wherever required) etc. Complete (Measurement to be taken of the face area timbered):		
1.11.1	Depth not exceeding 1.5 Mtr.	Sqm	101.00
1.11.2	Depth exceeding 1.5 Mtr. but not exceeding 3 Mtr	Sqm	105.00
1.11.3	Depth exceeding 3 Mtr. but not exceeding 4.5 Mtr	Sqm	116.00
1.12	P & F Close timbering in case of shafts, wells, soak pits, man-holes and the like including strutting, shoring and packing cavities (wherever required) etc complete (Measurement to be taken of the face area timbered):		
1.12.1	Depth not exceeding 1.5 Mtr.	Sqm	105.00
1.12.2	Depth exceeding 1.5 Mtr. but not exceeding 3 Mtr	Sqm	115.00
1.12.3	Depth exceeding 3 Mtr. but not exceeding 4.5 Mtr	Sqm	126.00
1.13	P & F Close timbering over area including strutting, shoring and packing cavities (wherever required) etc. complete (Measurement to be taken of the face area timbered):		
1.13.1	Depth not exceeding 1.5 Mtr.	Sqm	90.00
1.13.2	Depth exceeding 1.5 Mtr. but not exceeding 3 Mtr	Sqm	96.00
1.13.3	Depth exceeding 3 Mtr. but not exceeding 4.5 Mtr	Sqm	102.00
1.14	Add extra for planking, strutting and packing material for cavities (in close timbering) if required to be left permanently in position (face area of timber permanently left to be measured)	Sqm	1328.00

**B - 4**

Item No.	Description	Unit	Rate (Rs.)
1.15	P & F of Open timbering in trenches including strutting, shoring complete (measurements to be taken of the face area timbered)		
1.15.1	Depth not exceeding 1.5 Mtr.	Sqm	52.00
1.15.2	Depth exceeding 1.5 Mtr. but not exceeding 3 Mtr	Sqm	55.00
1.15.3	Depth exceeding 3 Mtr. but not exceeding 4.5 Mtr	Sqm	60.00
1.16	P & F of Open timbering in case of shafts, wells, soak pits, manholes and the like including strutting, shoring complete (Measurement to be taken of the face are timbered):		
1.16.1	Depth not exceeding 1.5 Mtr.	Sqm	45.00
1.16.2	Depth exceeding 1.5 Mtr. but not exceeding 3 Mtr	Sqm	50.00
1.16.3	Depth exceeding 3 Mtr. but not exceeding 4.5 Mtr	Sqm	56.00
1.17	P & F Open timbering over area including strutting, shoring etc complete (Measurement to be taken of the face are timbered):		
1.17.1	Depth not exceeding 1.5 Mtr.	Sqm	32.00
1.17.2	Depth exceeding 1.5 Mtr. but not exceeding 3 Mtr	Sqm	35.00
1.17.3	Depth exceeding 3 Mtr. but not exceeding 4.5 Mtr	Sqm	41.00
1.18	Add extra for planking and strutting in open timbering if required to be left permanently in position (face area of timber permanently left to be measured)	Sqm	678.00
1.19	Add extra rate for quantities of works, executed :		
1.19.1	In or under water and /or liquid mud, including pumping out water as required	%	20.00%
1.19.2	In or under foul position , including pumping out water as required	%	25.00%
	<b>Note for item no. 1.19:-</b> The extra percentage rate is applicable in respect of each item but limited to quantities of work executed in these difficult conditions. The unit, namely, metre depth, to be considered for payment, shall be the depth measured from the sub soil water level up to the centre of gravity of the qty executed in difficult condition. The depth shall be reckoned correct to 0.10m, 0.05m or more shall be taken as 0.10m and less than 0.05m ignorel.		
1.20	Filling available excavated earth (excluding rock) in trenches, plinth side of foundation etc. in layers not exceeding 20 cm. in depth, consolidating each deposited layer by ramming and watering including lead up to 50 meter and with all lift.	Cum	68.00
1.21	Add extra for foundation/trenches/drains for every additional lift of 1.5 Mtr. or part thereof in		



Item No.	Description	Unit	Rate (Rs.)
1.21.1	All kinds of soil	Cum	34.00
1.21.2	Ordinary or hard rock.	Cum	61.00
1.22(a)	Supplying and Filling in plinth with river sand under floors including watering ramming consolidating and dressing complete including cost of sand	Cum	1336.00
1.22(b)	Supplying and Filling in plinth with blown sand under floors including watering ramming consolidating and dressing complete including cost of sand.	Cum	392.00
1.23	Surface dressing of the ground including removing vegetation and inequalities not exceeding 15cm deep and disposal of rubbish lead up to 50 Mtr. and lift up to 1.5 Mtr.: All kinds of soil	Sqm	8.00
1.24	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm measured at a height of 1 m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared.	Sqm	4.00
1.25	Diluting and injecting by hand operated pressure pumps chemical Emulsion timber ground treatment [TCGT] in ratio 1: 2 as per manufacturers specification for <b>POST CONSTRUCTIONAL</b> Anti-termite treatment (as per IS 6313) part - III 1971 as amended from time to time) :		
1.25.1	Along external wall where the apron is not provided using chemical emulsion @ 7.5 litres / sqm of the vertical surface of the substructure to a depth of 300mm including excavation channel along the wall & rodding etc. complete: With Chlorpyrifos/Lindane E.C. 20% with 1% concentration	Mtr.	17.00
1.25.2	Along the external wall below concrete or masonry apron using chemical emulsion @ 2.25 litres per linear metre including drilling and plugging holes etc. With Chlorpyrifos/Lindane E.C. 20% with 1% concentration	Mtr.	22.00

Item No.	Description	Unit	Rate (Rs.)
1.25.3	Treatment of soil under existing floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing floor. With Chlorpyrifos/Lindane E.C. 20% with 1% concentration	sqm	87.00
1.25.4	Treatment of existing masonry using chemical emulsion@ one litre per hole at 300mm interval including drilling holes at 45 degree and plugging them with cement mortar 1:2(1 cement : 2 coarse sand) to the full depth of the hole. With Chlorpyrifos/Lindane E.C. 20% with 1% concentration	Mtr.	13.00
1.25.5	Treatment at points of contact of wood work by chemical emulsion Chlorpyrifos/Lindane (in oil or kerosene based solution) @ 0.5 litres per hole by drilling 6 mm dia holes at downward angle of 45 degree at 150mm centre to centre and sealing the same. With Chlorpyrifos/Lindane E.C. 20% with 1% concentration	Mtr.	124.00
1.26	Diluting and injection Chloropyrifos Emulsifiable concentrate 20% with 1% concentration for <b>PRE-CONSTRUCTIONAL Anti termite treatment</b> as per IS 6313 part III as amended from time to time and creating a continuous chemical barrier under and around the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall and floor along the external perimeter of building expansion joints, over the top surface of consolidated earth of which approach is to be laid surrounding of pipes and conduits etc. complete as per specification (Plinth floor area only shall be measured for payment)	sqm	111.00

## CHAPTER : B-2 MORTAR

**NOTE :**

- 1 Complete rate for mortar is inclusive of cost of material, T & P & cost of water with all leads and lifts involved.
- 2 Compressive strength of mortars shall be as per the relevant specifications.
- 3 Cement mortar shall be prepared by mechanical mixer only.

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

**CEMENT SAND MORTAR :**

2.1	Cement sand Mortar 1 : 3 (1 cement : 3 sand)	Cum	4546.00
2.2	Cement sand Mortar 1 : 4 (1cement : 4 sand)	Cum	3766.00
2.3	Cement sand Mortor 1 : 6 (1 cement : 6 sand)	Cum	2986.00
2.4	Cement sand Mortor 1 : 8 (1 cement : 8 sand)	Cum	2506.00

## CHAPTER : B-3 CONCRETE WORK

**NOTE :**

- 1 The rates are for all lead of cement, ballast, sand, and grit etc. at site of work and are inclusive of laying and mixing, all T & P, mixer, vibrator with P.O.L, scaffolding etc. including cost of curing.
- 2 For all concrete work only coarse sand shall be used.
- 3 Concrete mix prepared by power-driven mechanical mixer shall be used.
- 4 Under exceptional conditions, where mechanical mixer and vibrator are not used (with the approval of Engineer-in-Charge) rates to be reduce by 15%, for mechanical mixer and 10 % for vibrator.

Item No.	Description	Unit	Rate (Rs.)
<b>CEMENT CONCRETE (CAST-IN-SITU):</b>			
3.1	Providing and laying in position cement concrete including curing, compaction etc. complete in specified grade excluding the cost of centering and shuttering - All work up to plinth level.		
3.1.1	M15 grade Nominal Mix 1: 2: 4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size).	Cum	4393.00
3.1.2	M10 grade Nominal Mix 1: 3: 6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size).	Cum	3805.00
3.1.3	M10 grade Nominal Mix 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).	Cum	3847.00
3.1.4	1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).	Cum	3513.00
3.1.5	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40mm nominal size).	Cum	3247.00
3.2	Providing and laying cement concrete including curing, compaction etc. complete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, levelling course etc up to floor five level excluding the cost of centering and shuttering.		
3.2.1	M20 grade Nominal Mix 1: 1.5: 3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size).	Cum	5239.00
3.2.2	M15 grade Nominal Mix 1: 2: 4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size).	Cum	4778.00

Item No.	Description	Unit	Rate (Rs.)
<b>CEMENT CONCRETE (PRE-CAST):</b>			
3.3	Providing and fixing up to floor five level pre cast cement concrete string or lacing courses, copings, bed plates, anchor blocks, windows sills, shelves, louvers steps, staircases, etc. including carriage, hoisting and setting in position with cement mortar 1:3 (1 cement : 3 coarse sand) cost of required centering, shuttering and finishing smooth with 6 mm thick cement plaster 1:3 (1 cement : 3 fine sand) on exposed surface, including all T & P, curing etc. complete:		
3.3.1	M15 grade Nominal Mix 1: 2: 4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size).	Cum	6966.00
3.4	Add Extra for concrete work in superstructure above floor V level for each four floors or part thereof.	Cum	333.00
3.5	Add Extra for laying concrete in or under water and/or liquid mud including cost of pumping or bailing out water and removing slush etc. complete.	Per Cum per Mtr. depth	360.00
<b>Note :</b>	The quantity will be calculated by multiplying the depth measured from the sub-soil water level up to centre of gravity of concrete under sub-soil water level with quantity of concrete in cum executed under sub-soil water. The depth of centre of gravity shall be reckoned correct to 0.1 m; 0.05 m or more shall be taken as 0.1 m and less than 0.05 m ignored.		
3.6	Add Extra for laying concrete in or under foul positions.	Cum	117.00
<b>DAMP- PROOF COURSE AND COPING</b>			
3.7	Providing and laying damp-proof course with cement concrete grade M-15 (1 : 2 : 4) mortar prepared with 1% solution of water-proof compound complete as per specification .		
3.7.1	50mm thick.	Sqm	389.00
3.7.2	75mm thick.	Sqm	535.00
3.8	Providing & fixing precast cement concrete coping 1 : 2 : 4 mix 50mm thick complete as per specification :	Sqm	370.00

**B - 10**

Item No.	Description	Unit	Rate (Rs.)
3.9	Providing and laying coping with cement concrete grade M-15 (1 : 2 : 4) mortar complete with scaffolding,shuttering, glass strip at 1m interval finishing of surface with CM 1:3, rounding of edges fine finishing as per specification 50mm thick..	Sqm	395.00
3.10	Hollow block masonry with Cement mortar 1 : 4 (1 cement : 4 coarse sand) complete with scaffolding , curing , placing , finishing etc.from plinth level to floor five level excluding cost of block (Hollow blocks will be provided at site by department )	Cum	958.00
3.11	Solid block masonry with Cement mortar 1 : 4 (1 cement : 4 coarse sand) complete with scaffolding , curing , placing , finishing etc.from plinth level to floor five level excluding cost of block (solid blocks will be provided at site by department )	Cum	1212.00
3.12	Providing and fixing CC Mix 1:4:8 (1 cement : 4 coarse sand : 8graded stone aggregate 20mm nominal size crusher broken) solid block masonry in superstructure up to floor five level in CSM 1:6 with solid block size of 300 x 200 x 150mm with compaction ,curing etc. complete in all respect.	Cum	3445.00
3.13	Providing and fixing CC Mix 1:4:8 (1 cement : 4 coarse sand : 8graded stone aggregate 20mm nominal size crusher broken) solid block masonry for partition 100 mm thick with nominal hoop reinforcement (2 nos. 6mm of MSbars) at every forth course in superstructure up to floor five level in CSM 1:6 with solid block size of 300 x 200 x 100mm with compaction ,curing etc. complete in all respect.	Sqm	460.00
3.14	Extra for doing C.C. block masonry work for each subsequent storey for respective item beyond five storey		
	(i) Quantity in cum	Cum	73.00
	(ii) Quantity in sqm	Sqm	8.00

**B - 11**

Item No.	Description	Unit	Rate (Rs.)
3.15	Cement, Concrete flooring/ cement plaster/ Cement Concret Road, Plain or RCC work & water retaining works providing and mixing Additive of Synthetic polypropylene Fibrillated mesh fibers free form any reprocess Olefins &comfirming to ASTM C 1116 Type III 4.1.3 Having grade 6mm/12mm / <b>18mm</b> melting point of 165 deg.C., strength>600 mpa Sp. Gravity:0.92g/cc, diameter 10-70 microns. It is required in specified ratio @ 0.25% (125 Gm. Fibers in 50 Kg. cement) for use. Mix it directly with contents in rotating site mixer direction of Engineer in charge with all leads and lifts.	Per Pack 125 gm.	66.00
3.16	Cement, Concrete Flooring/ Cement Plaster/Cement Concrete Road, Plain or RCC work & water retaining works providing and mixing admixture of Synthetic Nylon-6 Fibres or polycaprolactam free from any reprocess Olefins & confirming to ASTM C 1116 Type III 4.1.3 Having grade 6mm / 12 mm /18 mm melting point 220 deg. C, Sp. Gravity:1.14 g/cc, diameter 10-40 microns. It is required in specific ratio @ 0.20% (100 gm Fibres in 50 Kg Cement) for use as specified by manufacture specification and direction of Engineer In-charges with all leads and lifts.	Per 100 gram pack	61.00



## CHAPTER : B-4 REINFORCED CONCRETE WORK

**Note:**

- 1 Rates for complete work laying, compaction, vibration, curing and all types of T & P, including P.O.L. etc and grinding and mixing of mortar.
- 2 The rates for centering and shuttering are for steel plates shuttering for complete work including centering, shuttering nails and other such items
- 3 The Concrete for all grade shall be produced in conformation to the laid down procedures and all relevant clauses of IS 456 : 2000
- 4 If any machinery like mechanical mixture machine, vibrator or mechanical mortar miller etc. is supplied by the Department, the hire charges as per
- 5 No R.C.C. work shall be permitted without the use of mechanical mixer by hopper and vibrator.
- 6 Contractor at site shall arrange a stand by mechanical mixer and extra vibrator if more than 20 cum of RCC is to be done in a single day.
- 7 The rate for R.C.C. work is inclusive of cost of providing cement mortar covers Blocks. The rates for centering includes placement of cover blocks.
- 8 The producer / manufacturer / contractor shall obtain mix proportions of each grade of concrete from a recognized laboratory and submit detail to the Engineer-in-charge for approval. Concrete of any particular design mix and grade shall be produced / manufactured by weight batched hopper mechanical mixer with assigned capacity of mixing drum as directed by Engineer-in-charge.
- 9 If any change required in the approved Job Mix design ingredient, Fresh Job Mix design shall be obtain by the contractor from approved lab and shall be got approved from Engineer-in-charge

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

**CAST-IN-SITU CONCRETE:**

- |     |  |     |         |
|-----|--|-----|---------|
| 4.1 | <p>Providing and laying in position specified grade of cement concrete for all RCC structural elements upto plinth level including curing, compaction, finishing with rendering in cement sand mortar 1:3 (1 cement: 3 coarse sand) and making good the joints and cost of plastizers( if required) excluding the cost of centering, shuttering and reinforcement.</p> <p>M20 grade Nominal Mix / Design Mix</p> | Cum | 5039.00 |
|-----|--|-----|---------|

**B - 13**

Item No.	Description	Unit	Rate (Rs.)
4.2	<p>Providing and laying in position specified grade of cement concrete for RCC structural elements upto floor five level including curing, compaction, finishing with rendering in cement sand mortar 1:3 (1 cement: 3 coarse sand) and making good the joints and cost of plastizers (if required ) excluding the cost of centering, shuttering and reinforcement for Walls (any thickness) including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc.</p> <p>M20 grade Nominal Mix / Design Mix</p>	Cum	5493.00
4.3	<p>Providing and laying in position specified grade of cement concrete for RCC structural elements upto floor five level including curing, compaction, finishing with rendering in cement sand mortar 1:3 (1 cement: 3 coarse sand) and making good the joints and cost of plastizers( if required) excluding the cost of centering, shuttering and reinforcement for Beams, suspended floors, roofs, griders having slopes up to 15°, landings, balconies, shelves, chajjas, lintels, bands, plain windows sills, staircases and spiral staircases etc.</p> <p>M20 grade Nominal Mix / Design Mix</p>	Cum	5220.00
4.4	<p>Providing and laying in position specified grade of cement concrete for RCC structural elements upto floor five level including curing, compaction, finishing with rendering in cement sand mortar 1:3 (1 cement: 3 coarse sand) and making good the joints and cost of plastizers( if required) excluding the cost of centering, shuttering and reinforcement for Arches, arch ribs, domes, vaults, shells, folded plate, chimneys, shafts , roofs having slope more than 15° ,vertical and horizontal fins individually or forming box louvers, facias and eaves boards</p> <p>M20 grade Nominal Mix / Design Mix</p>	Cum	5235.00

Item No.	Description	Unit	Rate (Rs.)
4.5	Providing and laying in position Ready mix concrete manufactured in fully automatic Batching Plant and transported to site in transit mixer for having continous agitated mixer, manufactured as per approved mix design of specified grade of RCC work including pumping of R.M.C. from transit mixer to site of laying , excuding the cost of centering, shuttering and reinforcement with all lead and lift including cost of admixtures in recommended proportion as per IS 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer in charge . All works upto floor V floor M20 grade Design Mix by using cement as per codel provision	Cum	5939.00
4.6	Add extra for providing richer mixes respectively at all floor levels		
4.6.1	Providing M-25 grade concrete by using cement as per codel provision instead of M-20 grade design mix.	Cum	69.00
4.6.2	Providing M-30 grade concrete by using cement as per codel provision instead of M-20 grade design mix.	Cum	138.00
4.6.3	Providing M-35 grade concrete by using cement as per codel provision instead of M-20 grade design mix.	Cum	194.00
4.6.4	Providing M- 40 grade concrete by using cement as per codel provision instead of M-20 grade design mix.	Cum	242.00
4.7	Add extra for RCC work in superstructure above floor five level for each four floor or part thereof .	Cum	133.00
4.8	Deduct for using less cement quantity than the quantity as provided in the item of design mix concrete/RMC as arrived as per mix design.(on cement quantity)	Kg	7.00
<b>FORM WORK</b>			
4.9	Centering and Shuttering with plywood or steel sheets including strutting, propping bracing both ways and removal of formwork for foundation , footings, strap beam, raft , bases of columns etc.	Sqm.	144.00

**B - 15**

Item No.	Description	Unit	Rate (Rs.)
4.10	Centering & shuttering with plywood or steel sheets including strutting, propping bracing both ways with steel props and removal of formwork for upto floor five level for :		
4.10.1	Walls (any thickness) including attached pilasters, buttresses plinth and string course.	Sqm	267.00
4.10.2	Suspended floors, roofs, landings, staircases, balconies, girders, cantilevers, bands, coping bed plates, anchor blocks, sills, chhajjas, lintel, beam, plinth beam etc.	Sqm	312.00
4.10.3	Columns, pillars, posts and struts etc.	Sqm.	343.00
4.10.4	Spiral staircases, chimneys shafts etc.	Sqm.	278.00
4.10.5	Arches, domes, vaults etc. up to 6 Mtr span.	Sqm.	946.00
4.10.6	Arches, domes, vaults etc exceeding 6 Mtr span	Sqm.	397.00
4.10.7	Vertical and horizontal fins individually or forming box louvers band, facias and eaves boards.	Sqm.	531.00
4.10.8	Add extra for shuttering in circular work (in respective centering and shuttering items)	Sqm	20.00%
4.10.9	Cornices and mouldings	Sqm	522.00
4.10.10	Grid roofing with panel area less than 2.25 Sqm. (contact area to be measured).	Sqm	516.00
4.10.11	Deduct for using wooden vertical member instead of steel props Note : The uses of wooden member is allowed in works which A & F sanction up to 25 lacs only.	Sqm	20%
4.11	Add extra for additional height in centring, shuttering where ever required with adequate bracing, propping etc. including cost of de-shuttering and decentring at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan are is to be measured)	Sqm	160.00
4.12	Add extra for centering and shuttering work in superstructure above floor five level for each four floor or part thereof .	Sqm.	28.00
<b>STEEL REINFORCEMENT:</b>			
4.13	Providing and fabricating reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding (including cost of binding wire) all complete up to floor five level. ('Original producers' who manufacture billet directly from iron ores and roll the billets to produce steel conforming to IS:1786)		
4.13.1	Cold twisted deformed bars (IS : 1786).	Kg.	70.00

Item No.	Description	Unit	Rate (Rs.)
4.13.2	Hot rolled deformed bars (IS : 1139).	Kg.	70.00
4.13.3	Fe 500 D (Conforming to relevant IS code )	Kg.	78.00
4.13.4	Thermo-mechanically Treated bars (Conforming of relevant IS code)	Kg.	78.00
4.14	Add extra for reinforcement in superstructure above floor five level for each four floor or part thereof .	Kg	3.00
<b>PRECAST CEMENT CONCRETE</b>			
4.15	Providing, hoisting and fixing tree gaurds made with precast cement concrete Jali 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6mm nominal size) reinforced with 1.6 mm dia Mild steel wire including centring and shuttering, roughening cleaning, fixing and finishing with cement based colour complete as per approved design size 600x600x1800mm , 50mm thick	Each	2869.00
4.16	Providing and fixing of 200mm thick RCC precast panel made of M35 grade concrete with required steel, rebar chair, wire mesh, connection bolt, fastener and beveled washer with <b>erection</b> ready complete in all respect with all lead.	Sqm	4076.00
4.17	Providing and fixing of 150 mm thick RCC precast panel made of M35 grade concrete with required steel, rebar chair, wire mesh, connection bolt, fastener and beveled washer with <b>erection</b> ready complete in all respect with all lead.	Sqm	3847.00
4.18	Providing, hoisting and fixing up to floor five level precast reinforced concrete work in Nominal M20 grade mix including cost of required centering, shuttering, finishing, smooth with 6 mm thick cement plaster 1:3 (1 cement: 3 fine sand) on exposed surface complete excluding cost of reinforcement		
4.18.1	String courses, copings, bed plates, anchor blocks, plain window sills etc	Cum	7030.00
4.18.2	Small lintels not exceeding 1.5 m clear span	Cum	9163.00
4.18.3	Mouldings as in cornices, windows sills etc.	Cum	10262.00
4.18.4	Lintels beams and bressumers including setting in cement mortar 1:3 (1 cement: 3 coarse sand) aggregate 20mm nominal size).	Cum	8636.00

**B - 17**

Item No.	Description	Unit	Rate (Rs.)
4.18.5	Beams, Columns, slabs, Shelves, Vertical & horizontal fins individually or forming box louvers setting in cement mortar 1:2 (1 cement: 2 sand) or grouts as per requirements	Cum	13036.00
4.19	Providing, hoisting and fixing up to floor five level precast cement concrete Jali 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6mm nominal size) reinforced with 1.6 mm dia Mild steel wire including centring and shuttering, roughening cleaning, fixing and finishing in cement mortar 1 : 3 (1 cement : 3 fine sand ) etc complete as per approved design excluding plastering of jambs, sills and soffits		
4.19.1	50mm thick	Sqm	756.00
4.19.2	40 mm thick	Sqm.	981.00
4.19.3	30mm thick	Sqm.	625.00
4.20	Add extra over for both side jali	Sqm.	20%
<b>ENCASING ROLLED STEEL SECTION</b>			
4.21	Encasing rolled steel section in beams and columns, with M20 Nominal Mix cement concrete including centering and shuttering complete but excluding cost of reinforcement.	Cum	8460.00
4.22	Encasing rolled steel section in grillages with M20 Nominal Mix including centering and shuttering complete but excluding cost of expanded metal and hangers.	Cum	5607.00
4.23	Add Extra for providing and fixing expanded metal mesh of size 20x60mm and strands 3.25mm wide 1.6mm thick weighing 3.64 kg. per <b>sqm.</b> for encasing of rolled steel sections in beams, columns and grillages excluding cost of hangers.	Sqm.	381.00

Item No.	Description	Unit	Rate (Rs.)
4.24	<p>Providing ,arranging and erecting 50mm dia M.S. pipe cup lock shuttering arrangement above the ground level upto the height given below. The girding arrangement of cup lock system should have 2.50 meter 3.00 meter long coupling pipes and 0.90mt long lacer pipe (Horizontal bracing pipes) reconnected in both ways so as to make a square grid of size 0.90x0.90 meter in plan. The Horizontal bracing and lacer pipes should have a maximum spacing of 1.50 meter c/c both ways. The bottom of the coupling pipe must rest over a firm support at ground. the shuttering plates of 900mmx600mm size duly braced by angle supports and should rest over 50mmx50mm size wooden logs supported by 75x40x6mm size channels and U-Jacks made of M.S.25mm dia steel bars with adjustable thread and lock arrangement placed at a spacing of 0.60 meter c/c. The whole arrangement should be duly shored from ground by U-Jacks and lacer pipes to prevent any lateral movement during casting of slabs. Additional support as per direction of engineer in charge are also to be provided wherever felt necessary. The work would include transportation of material erecting the whole grid structure, bracing both way, shoring, leveling of shuttering</p> <p>and removal of form work complete as per direction of Engineer in charge for all the floors upto the height of:-</p>		
(a)	Upto 6.63 meter height	Sqm.	958.00
(b)	Upto 9.14 meter height	Sqm.	1722.00
4.25	<p>Rebarring work in old R.C.C structures including making bore hole to adjust required bar diameter and filling a good quality filler to provide a tensile strength as per requirement and fix the Bar to the section including cost of bars.</p>		
(i)	8 mm bar	Each	429.00
(ii)	10 mm bar	Each	468.00
(iii)	12 mm bar	Each	528.00
(iv)	16 mm bar	Each	831.00
(v)	20 mm bar	Each	1078.00
(vi)	25 mm bar	Each	1559.00

**CHAPTER : B-5**  
**BRICK WORK**

Item No.	Description	Unit	Rate (Rs.)
5.1	Brick masonry with F.P.S. bricks of class designation 75 in foundation and plinth with bricks		
5.1.1	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	Cum.	4139.00
5.1.2	Cement mortar 1 : 6 (1 cement : 6 coarse sand)	Cum.	3923.00
5.2	Brick work with F.P.S. bricks of class designation 75 in superstructure above plinth level upto floor V level in all shapes and sizes in :		
5.2.1	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	Cum.	4590.00
5.2.2	Cement mortar 1 : 6 (1 cement : 6 coarse sand)	Cum.	4199.00
5.3	Add extra for Square or Rectangular Pillars in Superstructure brick work up to five storey		
5.3.1	Upto 45 cm length and all sides are free	Cum	289.00
5.3.2	Upto 45 cm length and two corners are free	Cum	144.00
5.3.3	Upto 90 cm length and all sides are free	Cum	247.00
5.3.4	Circular Pillars	Cum.	292.00
5.4	Brick work in plain arches in super structure upto five storey in cement mortar 1 : 3 including centering and shuttering complete span upto 6 Mtr. with Brick of class designation 75.	Cum.	6838.00
5.5	Brick work in gauged arches in super structure upto five storey in cement mortar 1 : 3 including centering and shuttering complete span upto 6 meter with Brick of class designation 75.	Cum.	7965.00
5.6	Add extra for additional cost of centering for arches exceeding 6m span including all shuttering , bolting wedging and removal.(Area of the soffit to be measured)	Cum	397.00
5.7	Half brick masonry in foundation & plinth using bricks of designation 75		
5.7.1	Cement mortar 1 : 3 (1 cement : 3 coarse sand)	Sqm.	512.00
5.7.2	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	Sqm.	488.00
5.7.3	Cement mortar 1 : 6 (1 cement : 6 coarse sand)	Sqm.	464.00
5.8	Half brick masonry in Superstructure , above plinth level upto floor V level using bricks of designation 75		
5.8.1	Cement mortar 1 : 3 (1 cement : 3 coarse sand)	Sqm.	562.00
5.8.2	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	Sqm.	537.00



Item No.	Description	Unit	Rate (Rs.)
5.8.3	Cement mortar 1 : 6 (1 cement : 6 coarse sand)	Sqm.	513.00
5.9	Add extra providing and placing in position 2 Nos., 6mm Ø M.S. bar at every third course of half brick masonry .	Sqm	78.00
5.10	Brick work in partition in super structure upto five storey 7cm. thick (brick on edges) using bricks of class designation 75 in :		
5.10.1	Cement mortar 1 : 3 (1 cement : 3 coarse sand)	Sqm.	382.00
5.10.2	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	Sqm.	366.00
5.11	Brick work in super structure upto five storey with selected bricks of class designation 75 in exposed brick work including making horizontal and vertical grooves 10mm. wide 12mm. deep complete in cement mortar 1:6.	Cum	4007.00
5.12	Brick work with clay flyash F.P.S. brick of (IS 13757-1993) class designation 75 in superstructure above plinth level upto floor five level in :		
5.12.1	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	Cum	4523.00
5.12.2	Cement mortar 1 : 6 (1 cement : 6 coarse sand)	Cum	4306.00
5.13	Half brick masonry with clay flyash F.P.S. bricks of class designation 75 in superstructure above plinth level upto floor V level.		
5.13.1	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	Sqm	531.00
5.13.2	Cement mortar 1 : 6 (1 cement : 6 coarse sand)	Sqm	507.00
5.14	Add extra for brick work in superstructure above floor five level, for each four floors or part thereof.		
5.14.1	Quantity in Cum.	Cum.	285.00
5.14.2	Quantity in Sqm.	Sqm.	25.00
5.15	Add extra over item of brick work with class designation 100 in substitution of class designation 75 :		
5.15.1	Quantity in Cum.	Cum.	346.00
5.15.2	Quantity in Sqm.	Sqm.	40.00
5.16	Brick work with mechanised autoclaved flyash lime bricks conforming to IS: 12894 :2002 of class designation 100 in superstructure above plinth level upto floor V level in.		
5.16.1	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	Cum	4912.00
5.16.2	Cement mortar 1 : 6 (1 cement : 6 coarse sand)	Cum	4645.00

**B - 21**

Item No.	Description	Unit	Rate (Rs.)
5.17	Add extra for brick work in superstructure above floor five level, for each four floors or part thereof.		
5.17.1	Quantity in Cum.	Cum.	260.00
5.17.2	Quantity in Sqm.	Sqm.	23.00
5.18	Add extra over item of brick work with class designation 100 in substitution of class designation 75 :		
5.18.1	Quantity in Cum.	Cum.	163.00
5.18.2	Quantity in Sqm.	Sqm.	19.00
5.19	Half Brick work with mechanised autoclaved flyash lime bricks conforming to IS: 12894 :2002 of class designation 100 in superstructure above plinth level upto floor V level in.		
5.19.1	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	Sqm	586.00
5.19.2	Cement mortar 1 : 6 (1 cement : 6 coarse sand)	Sqm	557.00
5.20	Half Brick work with mechanised autoclaved flyash lime bricks conforming to IS: 12894 :2002 of class designation 75 in superstructure above plinth level upto floor V level in.		
5.20.1	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	Sqm	564.00
5.20.2	Cement mortar 1 : 6 (1 cement : 6 coarse sand)	Sqm	536.00
5.21.1	Providing and laying Autoclaved Aerated Concrete (AAC) blocks masonry 100mm/125mm thick with Grade-I AAC blocks of density 551 to 650 kg/cum conforming to IS : 2185 (Part-3) in superstructure above plinth level upto floor V level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos. 6 mm dia MS bars at every third course of masonry work.	Cum.	5404.00
5.21.2	Providing and laying Autoclaved Aerated Concrete (AAC) blocks masonry 150mm/230mm/300mm thick with Grade-I AAC blocks in superstructure above plinth level upto floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-charge. (The payment of RCC band and reinforcement shall be made for separately).	Cum.	4752.00
5.21.3	Add extra for AAC block masonry work in superstructure above floor five level, for each four floors or part thereof.	Cum.	260.00

## CHAPTER : B-6 STONE MASONRY

Note :

- 1 Rates provided are for the complete finished items inclusive of cost of water and materials with all leads labour, all type of taxes, royalty, scaffolding, curing, laying, fixing finishing etc., hire charges for tools and plants, templates and other appliances, required for the purpose of execution of the items work as per specification.
- 2 In case of non-availability of stone header of proper size cement concrete header of mix 1:3 : 6 (M-100) with 25mm graded stone aggregate with smooth finish may be provided by the contractor at no extra cost.

Item No.	Description	Unit	Rate (Rs.)
6.1	Random Rubble stone masonry with hard stone in foundation and plinth in Cement Sand mortar above 30 CM thick wall in:		
6.1.1	Cement Mortar 1:4 ( 1-Cement : 4-Sand).	Cum.	3267.00
6.1.2	Cement Mortar 1:6 ( 1-Cement : 6-Sand).	Cum.	2981.00
6.2	Random Rubble stone masonry with hard stone in superstructure above plinth level and upto floor five level above 30cm. thick walls in :		
6.2.1	Cement Mortar 1:4 ( 1-Cement : 4-Sand).	Cum.	3822.00
6.3	Add extra for Random Rubble stone masonry with hard stone in		
6.3.1	Square or Rectangular pillars	Cum.	253.00
6.3.2	Circular pillars	Cum.	825.00
6.3.3	Wall curved in plan to mean radius not exceeding 6 Mtr.	Cum	302.00
6.3.4	Wall upto 30cm. and less thickness.	Cum	156.00
6.4	Add extra for facing as per design and detailed specifications including additional cost of stones		
6.4.1	Course rubble facing First sort.	Sqm	568.00
6.4.2	Course rubble facing Second sort.	Sqm	454.00
6.4.3	Add extra for rock facing using jodhpur white sand stone with proper projection and chisel dressing of edges of stone 2 line dressing for building corners, jambs including uniform joints etc. complete.	Sqm	203.00
6.5	Extra for stone masory work,above floor V level for every four floors or part thereof.	Cum	525.00
6.6	Extra for laying stone work in or under water and/or liquid mud including cost of pumping or bailing out water and removing slush etc. complete.	Cum/ P Mt depth	136.00

Item No.	Description	Unit	Rate (Rs.)
6.7	Extra for laying stone work in or under foul position.	Cum	117.00
Note :-	Recover cost of useful stone @ 2/3rd of masonry work dismantalled quantity.	Cum	808.00
6.8	Stone work (machine cut edges) for Wall cladding/ Veneering work up to 10m height with 20 to 30 mm thick Red Sand Stone (Karauli ) and backing filled with a grout of 12mm thick cement mortar 1:3 (1 cement : 3 coarse sand) including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade :(To be secured to the backing by means of cramps which shall be paid separately)		
6.8.1	Exposed face rough dressed	Sqm.	1691.00
6.8.2	Exposed face machine cut	Sqm.	2290.00
6.9	Stone work (machine cut edges) for Wall cladding/ Veneering work up to 10 m height with 20 to 30 mm thick Pink Sand stone (Bansi Paharpur) and backing filled with a grout of 12mm thick cement mortar 1:3 (1 cement : 3 coarse sand) including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade : (To be secured to the backing by means of cramps which shall be paid separately)		
6.9.1	Exposed face rough dressed	Sqm.	1743.00
6.9.2	Exposed face Machine cut	Sqm.	2342.00
6.10	Wall lining butch work upto 10m height with Red/ Pink Sand stone 20 to 30 mm thick (machine cut edges) stone strips of minimum length 300 mm and required width including embedding every tenth layer and bottom most layer in masonry or concrte after making necessary chases of size 75x75 mm and by providing layer of 75 mm thick strips i/c 12 mm thick bed of cement mortar 1 : 3 (1 cement : 3 Coarse sand) i/c ruled pointing in cement mortar 1 :2 ( 1 white cement : 2 stone dust) with an admixture of pigment to match the shade of stone complete as per direction of Engineer in Charge		
6.10.1	Exposed face rough dressed	Sqm.	1575.00
6.10.2	Exposed face machine cut	Sqm.	1714.00

Item No.	Description	Unit	Rate (Rs.)
6.11	Providing and fixing stainless steel clamps of required size and shape for anchoring stone wall lining to the backing or securing adjacent stones in stone wall lining in cement mortar 1:2 (1 cement : 2 coarse sand) including making the necessary chases in stone and holes in walls wherever required	Kg	686.00
6.12	Providing and fixing stone dowels 10x5x2.50 cm cut to double wedge shape as per design in cement mortar 1:2 (1 cement : 2 coarse sand) including making the necessary chases.	Each	24.00
6.13	Providing and fixing copper pins 7.5 cm long 6 mm diameter for securing adjacent stones in stone wall lining in cement mortar 1:2 (1 cement : 2 coarse sand) including making the necessary chases.	Each	19.00
6.14	Extra for stone work for wall lining on exterior walls of height more than 10 m from ground level for every additional height of 3 m or part there of.	Sqm.	51.00
6.15	Providing and fixing horizontal chajja of Red/ White sand stone 40 mm thick and upto 80 cm projection in cement mortar 1:4 (1 cement : 4 coarse sand) including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade.	Sqm.	957.00
6.16	Providing dab stone over Chajjas duly fixed in cement sand mortar 1:6 complete :		
6.16.1	80mm thick.	Sqm.	1296.00
6.16.2	50mm thick.	Sqm.	1177.00
6.17	Supplying and fixing in walls machine cut and polished stone shelves, tands and in CM 1:3 with machine cut edges :		
6.17.1	Sand or other approved stone 25mm thick.	Sqm.	557.00
6.17.2	Sand or other approved stone 50mm thick.	Sqm.	673.00
6.17.3	Kota stone 25 to 30mm thick.	Sqm.	592.00
6.18	Supplying and fixing stone lintels/bed plates of approved quarry rough dressed in cement mortar 1:4 :		
6.18.1	Upto 15 cm. thick.	Cum	10404.00
6.18.2	Above 15 cm. thick.	Cum	11937.00

**B - 25**

Item No.	Description	Unit	Rate (Rs.)
6.19	Supplying and fixing machine cut fine dressed Red/Pink sand stone dasa or coping, with full moulding if required laid on cement mortar 1:4 including pointing with admixture of pigment matching with the stone shade.		
6.19.1	25 mm thick	Sqm.	945.00
6.19.2	50 mm thick	Sqm.	1153.00
6.19.3	75 mm thick	Sqm.	1411.00
6.20	Supplying and fixing machine cut dressed 75 mm thick Pink sand stone (Bansi Paharpur) dasa/ coping with ornamental shape having moulding and "PAN Shape" engraving as per required pattern with engraving depth of 5 mm (average) in single piece of length 90 cm to be laid on cement mortar 1:4 (12 to 20mm thick) including pointing with admixture of pigment matching with the stone shade.	Sqm.	4898.00
6.21	Providing and fixing Stone jali 40mm thick Red/Pink sand stone throughout in cement mortar 1:3 (1 cement : 3 coarse sand) including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment, matching the stone shade, jali patterns to be cut square to jali slab without any chamfers etc:	Sqm.	7220.00
6.22	Providing and fixing Stone jali 50mm thick Red/Pink sand stone as per ornamental design to be fixed with white cement/epoxy mortar including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment, matching the stone shade.	Sqm.	8170.00
6.23	Providing and fixing Red/Pink sand stone post (Mataga) having size 100x100mm heights 600 to 750 mm as per ornamental design such as like flower octonogal head border etc. to be fixed with white cement/epoxy mortar including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment, matching the stone shade.	Each	774.00
6.24	Supply and fixing 7 to 10cm soorsagar or equivalent stone chaps in lime mortar or gypsum rough dressed more than 0.60 m. length	Sqm	247.00
6.25	Supplying and fixing ashlar sills, jambs, skirting, steps etc. rough dressed:		
6.25.1	(A) Upto 15 cm thick Soorsagar or eqvt. White Ashlar	Cum	25952.00
	(B) Upto 15 cm thick Red Ashlar	Cum	17161.00

**B - 26**

Item No.	Description	Unit	Rate (Rs.)
6.25.2	Above 15 cm. and upto 20 cm. thick		
	(A) Red Ashlar	Cum	17291.00
	(B) Soorsagar or eqvt. White Ashlar	Cum	26082.00
6.25.3	Above 20 cm. thick & upto 2.15 m length (Pats.)		
	(A) Red Ashlar	Cum	17421.00
	(B) Soorsagar or eqvt. White Ashlar	Cum	26245.00
6.25.4	Above 20 cm. thick & above 2.15 m. length		
	(A) Red Ashlar	Cum	17454.00
	(B) Soorsagar or eqvt. White Ashlar	Cum	26245.00
6.26	Supplying and fixing Soorsagar Bhura or Equivalent ashlar sills, lintels and dassa, bearing, bed & top surface made perfectly even, jambs, skirting steps etc. rough dressed:		
6.26.1	Upto 15 cm. thick	Cum	5019.00
6.26.2	Above 15 cm. and upto 20 cm. thick	Cum	5149.00
6.26.3	Above 20 cm. thick (pats) & upto 2.15 m length	Cum	5312.00
6.26.4	Above 20 cm. thick (pats) & above 2.15 m length	Cum	5507.00
6.27	Supply and fixing ashlar lintels and Dassa exposed horizontal and vertical faces 3 - lines fine dressed (bearing bed & top surface made perfectly even)		
6.27.1	(a) upto 15 cm thick Red Ashlar	Cum	18369.00
	(b) upto 15 cm thick White Ashlar	Cum	26722.00
6.27.2	Above 15 cm. and upto 20 cm. thick		
	(a) Soorsagar or eqvt. White Ashlar	Cum	26992.00
	(b) Red Ashlar	Cum	18579.00
6.27.3	Above 20 cm. thick & upto 2.15 m length (Pats.)		
	(a) Soorsagar or eqvt. White Ashlar	Cum	27062.00
	(b) Red Ashlar	Cum	18649.00
6.27.4	Above 20 cm. thick & above 2.15 m length		
	(a) Soorsagar or eqvt. White Ashlar	Cum	27272.00
	(b) Red Ashlar	Cum	18859.00
6.28	Supplying and fixing ashlar solid block pillars fully fine (3 lines) dressed		
	(a) Soorsagar or eqvt. White Ashlar	Cum	38844.00
	(b) Red Stone	Cum	27662.00
6.29	Supplying and fixing ashlar face stone 10 cm thick fine (3 lines) dressed		
	(b) Red Ashlar	Sqm	5006.00

**B - 27**

Item No.	Description	Unit	Rate (Rs.)
6.30	Supplying and fixing ashlar coping ordinary 7 to 10 cm. thick 2-line dressed (normal length of single piece not less than 0.90m)		
	(a) Soorsagar or eqvt. White Ashlar	Sqm	8348.00
	(b) Red Ashlar	Sqm	4741.00
6.31	Supplying and fixing ashlar coping moulded and counter slopped 7 to 10 cm. thick (2 line dressed) (normal length of single piece not less than 0.90m)		
	(a) Soorsagar or eqvt. White Ashlar	Sqm	9028.00
	(b) Red Ashlar	Sqm	5421.00
6.32	Supplying and fixing in cement sand mortar 1:4 sand or other approved stone dassa or coping of thickness 75 to 100 mm (fine dressed) : <b>Plain ornamental/ Jhalar coping (face area measured)</b>	P. Cum	11004.00
6.33	Supplying and fixing ashlar shrivan (Kharpa grooved) rough dressed (normal length of single piece not less than 0.90m)	Cum	16279.00
6.34	Supplying and fixing ashlar rain water spouts fine (3 lines) dressed as per approved design of size :		
6.34.1	(A) Red Ashlar 60x26x18 cm	Each	571.00
	(B) White Ashlar 60x26x18 cm	Each	1135.00
6.34.2	(A) White Ashlar 60x30x25 cm	Each	1457.00
	(B) Red Ashlar 60x30x25 cm	Each	744.00
6.35	Supplying and fixing ashlar stone chhajja 5 to 7 cm. thick all exposed surface fully fine dressed, weather dripped includin 75x75mm. Cement batta (1:2:4) between chhajja & wall (single piece upto 1:2m length) :		
6.35.1	(A) Red Ashlar three line dressed	Sqm	1247.00
	(B) White Ashlar three line dressed	Sqm	1707.00
6.35.2	(A) Red Ashlar two line dressed	Sqm	1057.00
	(B) White Ashlar two line dressed	Sqm	970.00
6.35.3	(A) Red Ashlar one line dressed	Sqm	759.00
	(B) White Ashlar one line dressed	Sqm	743.00
6.36	Supplying and fixing Red ashlar railing ordinary with takia and thambli complete fine dressed		
6.36.1	Red Ashlar three line dressed	Sqm	1296.00
6.36.2	Red Ashlar two line dressed	Sqm	1106.00
6.36.3	Red Ashlar one line dressed	Sqm	808.00



Item No.	Description	Unit	Rate (Rs.)
6.37	Supplying and fixing Red ashlar stone Jali 5 to 7 cm. thick curved		
6.37.1	Red Ashlar upto half depth	Sqm	1839.00
6.37.2	Red Ashlar upto full depth	Sqm	2313.00
6.38	Supplying and fixing stone liri in CM 1:4 work facing with proper projection and chiesel dressing of edges of stone two line dressing of building corners, jambs etc. including uniform joints using aluminium square section of size 12 mm to 15 mm as per requirement of course and width of stone not less than 12 Cm., with requisite humber headers (minimum length of stone 0.9 M) 14 cm (5.5") thick.	Sqm	2081.00
6.39	Supplying and fixing Jodhpur machine cut stone Kadau in CM 1:4 with rock facing with proper projection and machine cut edges of stone, two line dressing of building corners, jambs etc. including uniform joints using aluminium square section of size 12 mm to 15 mm as per requirement of course and width of stone not less than 12 Cm., with requisite humber headers (minimum length of sotne 0.9 M)	Sqm.	
(i)	29cm (11.5") hight	Per Sqm.	3259.00
(ii)	19cm (7.5") hight	Per Sqm.	2880.00
6.40	Supply and fixing Jodhpur sand stone Machine cut Dash, Coping,sill,lintel fixed in cement sand mortar 1:4.		
(i)	15 cm (6") thick	Per Sqm.	2923.00
(ii)	9 cm (3.5") thick	Per Sqm.	2081.00
(iii)	5 cm (2") thick	Per Sqm.	2167.00
(iv)	3.5 cm (1.5") thick	Per Sqm.	1984.00
6.41	Supply and fixing Jodhpur sand stone Machine cut Kerb stone (10cm wide 40 cm. height) fixed in white cement sand mortar 1:4 with pigment including EarthWork.	Rm.	857.00
6.42	Supply and fixing Jodhpur sand stone Machine cut Nali fixed in white cement sand mortar 1:4 with pigment including E/W		
	(A) Single nali 55 cm wide 40 cm hight	Rm.	3421.00
	(B) Double nali 85 cm wide 40 cm hight	Rm.	4312.00

Item No.	Description	Unit	Rate (Rs.)
6.43	Add extra for facing with white ashlar stone three line dressed of size 300x300mm with min. thickness of 125mm, including all four edge are chamfered cut 12mm x 12mm with 3 line dressing, every fifth stone header with thickness min.300 mm,including additional cost of stone as per drawing or as approved by Engineer In Charge, Complete with all respect .	Sqm	4350.00
6.44	Fine dressed stone flooring over 20 mm (average) thick base of cement mortar 1:4 ( 1cement : 4 coarse sand) with joints finished flush. Red Sand stone size not less than 1350 Cm2,		
	a) 40mm	Sqm	1244.00
	b) 50mm	Sqm	1392.00
	c) 75mm	Sqm	1685.00
6.45	Fine dressed stone flooring over 20 mm (average) thick base of cement mortar 1:4 ( 1cement : 4 coarse sand) with joints finished flush. White Sand stone size not less than 1350 Cm2,		
	a) 40mm	Sqm	1392.00
	b) 50mm	Sqm	1538.00
	c) 75mm	Sqm	1831.00
6.46	Chiesel dressing of machine cut Jodhpur ashlar stone.	Sqm	517.00

**CHAPTER : B-7**  
**MARBLE, GRANITE AND TILE WORKS**

Note : The rates of item nos. 7.1 to 7.21 are for work upto floor five level

Item No.	Description	Unit	Rate (Rs.)
7.1	Providing and fixing Marble stone flooring table rubbed, 15-18 mm thick over 20mm (Av.) thick base of CM 1:4 (1 cement : 4 coarse sand) jointing with white cement mortar 1:2 (1 white cement : 2 marble dust) with pigment to match the shade of the marble slab including grinding, rubbing and polishing complete.		
	OR		
	Providing and fixing stone slabs table rubbed, 15-18 mm thick in Walls, Steps, Pillars, Counters, Jambs, Shelves, Sills etc. laid on 12mm (Av.) thick base of CM 1:3 (1 cement : 3 coarse sand) jointing with white cement mortar 1:2 (1white cement : 2 marble dust) with pigment to match the shade of the marble slab including grinding, rubbing and polishing complete.		
7.1	Makrana 'Adanga'.		
7.1.1	Upto to 1500 Cm <sup>2</sup> Tiles	Sqm.	1198.00
7.1.2	1501 Cm <sup>2</sup> to 3600 Cm <sup>2</sup> Tiles	Sqm.	1297.00
7.1.3	Above 3601 Cm <sup>2</sup> Slabs	Sqm.	1575.00
7.2	Rajnagar 1st quality/Ageria with light spots.		
7.2.1	Up to 1500 Cm <sup>2</sup> Tiles	Sqm.	993.00
7.2.2	1501 Cm <sup>2</sup> to 3600 Cm <sup>2</sup> Tiles	Sqm.	1152.00
7.2.3	Above 3601 Cm <sup>2</sup> Slabs	Sqm.	1208.00
7.3	Keseriaji/ Abu Ambaji (Green Marble)		
7.3.1	Up to 1500 Cm <sup>2</sup> Tiles	Sqm.	1098.00
7.3.2	1501 Cm <sup>2</sup> to 3600 Cm <sup>2</sup> Tiles	Sqm.	1204.00
7.3.3	Above 3601 Cm <sup>2</sup> Slabs	Sqm.	1416.00
7.4	Bhaislana, Abu, Kishangarh Zebra (Black Marble)		
7.4.1	up to 1500 Cm <sup>2</sup> Tiles	Sqm.	993.00
7.4.2	1501 Cm <sup>2</sup> to 3600 Cm <sup>2</sup> Tiles	Sqm.	1098.00
7.4.3	Above 3601 Cm <sup>2</sup> Slabs	Sqm.	1257.00
7.5	Providing and fixing Granite stone slab mirror polished and machine edge cut in walls, pillars, steps, Shelves, Sills Counters, Floors etc. laid on 12mm (Av.) thick base of cement mortar 1:3 (1 cement : 3 coarse sand) jointing with white cement mortar 1:2 (1white cement : 2 marble dust) with pigment to match the shade of the marble slab including grinding, rubbing and polishing complete.		
7.5.1	Jhunjhunu / Jalore (Red / Chocolate Colour)		
(i)	Up to 1500 Cm <sup>2</sup> Tiles	Sqm.	2311.00

Item No.	Description	Unit	Rate (Rs.)
(ii)	1501 Cm <sup>2</sup> to 3600 Cm <sup>2</sup> Tiles	Sqm.	2544.00
(iii)	Above 3601 Cm <sup>2</sup> Slabs	Sqm.	2777.00
7.5.2	South (Red)		
(i)	Up to 1500 Cm <sup>2</sup> Tiles	Sqm.	2369.00
(ii)	1501 Cm <sup>2</sup> to 3600 Cm <sup>2</sup> Tiles	Sqm.	2836.00
(iii)	Above 3601 Cm <sup>2</sup> Slabs	Sqm.	3302.00
7.5.3	South Zed Black		
(i)	Up to 1500 Cm <sup>2</sup> Tiles	Sqm.	2252.00
(ii)	1501 Cm <sup>2</sup> to 3600 Cm <sup>2</sup> Tiles	Sqm.	2544.00
(iii)	Above 3601 Cm <sup>2</sup> Slabs	Sqm.	3011.00
7.5.4	Good quality South Black		
(i)	Up to 1500 Cm <sup>2</sup> Tiles	Sqm.	2252.00
(ii)	1501 Cm <sup>2</sup> to 3600 Cm <sup>2</sup> Tiles	Sqm.	2544.00
(iii)	Above 3601 Cm <sup>2</sup> Slabs	Sqm.	2894.00
7.5.5	Jalore (P-white / S-white/ Rosy Pink colour)		
(i)	Up to 1500 Cm <sup>2</sup> Tiles	Sqm.	1786.00
(ii)	1501 Cm <sup>2</sup> to 3600 Cm <sup>2</sup> Tiles	Sqm.	1961.00
(iii)	Above 3601 Cm <sup>2</sup> Slabs	Sqm.	2077.00
7.5.6	Rajasthan Black		
(i)	Up to 1500 Cm <sup>2</sup> Tiles	Sqm.	1619.00
(ii)	1501 Cm <sup>2</sup> to 3600 Cm <sup>2</sup> Tiles	Sqm.	1736.00
(iii)	Above 3601 Cm <sup>2</sup> Slabs	Sqm.	1852.00
7.5.7	Providing and fixing 30 mm thick Jalore Red Granite stone slab shot blasted flammed brushed and machine edge cut in walls, pillars, steps, Shelves, Sills Counters, Floors etc. laid on 12mm (Av.) thick base of cement mortar 1:3 (1 cement : 3 coarse sand) jointing with white cement mortar 1:2 (1white cement : 2 marble dust) with pigment to match the shade of the marble slab including grinding, rubbing and polishing complete	Sqm	4657.00
7.5.8	Providing and fixing 30 mm thick Tiger Red Granite stone slab shot blasted leather finished flammed brushed and machine edge cut in walls, pillars, steps, Shelves, Sills Counters, Floors etc. laid on 12mm (Av.) thick base of cement mortar 1:3 (1 cement : 3 coarse sand) jointing with white cement mortar 1:2 (1white cement : 2 marble dust) with pigment to match the shade of the marble slab including grinding, rubbing and polishing complete	Sqm	3212.00
7.5.9	Add Extra for Sand Blasting on Granite	Sqm.	160.00

Item No.	Description	Unit	Rate (Rs.)
7.5.10	Shortblast 1200 x 600mm Kota stone 35 mm thick flooring of approved shade set in pattern over 20mm thick base of cement mortar 1:6 (1 cement : 6 coarse sand) and pointing with cement sand mortar 1:3 with pigment to match the shade of stone with joint thickness up to 15 mm complete in all respects :	Sqm	675.00
7.6	Extra for providing edge moulding to 15-18mm thick marble/ Granite stone counters, Vanities etc. including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.		
7.6.1	Marble work		
	Full Edge moulding	Metre	225.00
	Half Edge moulding	Metre	129.00
7.6.2	Granite Work		
	Full Edge moulding	Metre	353.00
	Half Edge moulding	Metre	192.00
7.7	Extra for fixing marble /granite stone over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive including cleaning etc. complete	Metre	26.00
7.8	Extra for providing opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/Granite/stone work including necessary holes for pillar taps etc. including rubbing and polishing of cut edges etc. complete	Each Opening	271.00
7.9	Extra for Mirror polishing on marble work where ever required to give high gloss finish complete.	Sqm.	93.00
7.10	Extra in marble flooring work for upto 50 mm wide strip of Green/White/ Jaisalmer stone in flooring work as per direction of Engineer in Charge	Rm	49.00
7.11	Providing and fixing 1st quality standard white, grey, ivory, fume red brown, light green, light blue and other light shades glazed tiles confirming to IS : 13753 & IS :15622 in walls, floors, steps, pillars etc. laid on a bed of neat cement slurry finished with flush pointing in the white cement mixed with pigment to match the shade of the tile complete (excluding the cost of cement plaster on walls and pillar).		
7.11.1	200 X 300mm	Sqm.	641.00
7.11.2	250 x 350mm	Sqm.	696.00
7.11.3	300 x 450mm	Sqm.	753.00

Item No.	Description	Unit	Rate (Rs.)
7.12	Providing and fixing 1st quality MAT finished ceramic tile size 300x300mm confirming to IS : 13755 and IS : 15622 colour such as white, grey, ivory, fume red brown, light green, light blue and other light shades in floors, steps, pillars etc. laid on a bed of neat cement slurry finished with flush pointing in the white cement mixed with pigment to match the shade of the tile complete (including the cost of cement mortar bed 1:4).	Sqm.	649.00
7.13	Extra for using Marble printed / Granite shade or dark shade tiles instead of white, grey, ivory, fume red brown, light green, light blue and other light shades in glazed tiles and MAT finished tiles.	Sqm	10.00%
7.13.1	Extra for using size above 300x300mm in glazed tiles and for using 400mm x 400mm MAT finished tiles in place of 300mm x 300mm size.	Sqm	10.00%
7.14	Providing and fixing 75 mm wide Decorative Border in different shades and in all colours in glazed tiles laid over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white mixed with pigment of matching shade complete.	Rmt.	324.00
7.15	Providing and fixing Motive pieces all colours for glazed tiles laid over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white mixed with pigment of matching shade complete..		
7.15.1	Size 200 x 300mm	Each	139.00
7.15.2	Size 300 x 350mm	Each	167.00
7.15.3	Size 300 x 450mm	Each	206.00
7.16	P & F 1st quality Soluble Salt Vitrified Polished tiles on floor, skirting and steps etc.in different sizes (thickness to be specified by manufacture) with water absorption less than 0.08% and conforming to IS 15622 of approved make in all color and shade, laid with 20 mm thick CM 1 : 4 including grouting the joints with white cement and matching pigment etc complete.		
7.16.1	size 600 mm X 600 mm	Sqm	751.00
7.16.2	Add extra for double charge tiles	Sqm	240.00
7.16.3	Add extra for Glazed Vitrified tiles	Sqm	220.00
7.16.4	Add extra for size more than 600 X 600 mm upto 900 x 900mm size	Sqm	250.00
7.16.5	Add extra for size more than 900 X 900 mm upto1200 x 1200mm size	Sqm	310.00
7.17	Add extra for Fixing glazed/ Ceramic/ Vitrified floor tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477 , using 5kg. adhesive per sqm of tile area, in average 3mm thickness instead of cement mortar.	Sqm	85.00

Item No.	Description	Unit	Rate (Rs.)
7.18	Grouting the joints of flooring tiles having joints using epoxy grout mix of 0.70 kg of organic coated filler of desired shade (0.10 kg of hardener and 0.20 kg of resin per kg), including filling / grouting and finishing complete as per direction of Engineer-in-charge. length of joint to be measured.		
7.18.1	2mm width	Rmt	26.00
7.18.2	3mm width	Rmt	38.00
7.18.3	4mm width	Rmt	50.00
7.19	Filling joints of tile flooring using water proof tile grout (Fevimate, T.G. , Unitile, Chockesy or equivalent) specially formulated with graded granules, polymers & stable pigment, fine finished including cleaning of joints.	Sqm	50.00
7.20	Cutting of groove in marble / granite steps as per approved design and drawing	Rmt.	20.00
7.21	Extra over item no. 7.1 to 7.22 for above floor V level for every four floors or part thereof.	Sqm.	5.00%
		Rmt.	4.00%
		Each	3.00%

## CHAPTER : B-8 WOOD WORK

Note : The rates of item nos. 8.1 to 8.24 are for work upto floor five level

Item No.	Description	Unit	Rate (Rs.)
8.1	Providing & fixing door, window, chowkhats and other frames, including antitermite treatment, M.S. flat, hold fasts of size 250 x 40 x 3mm fixed with M.S. bolt 5mm dia 50mm long duly embedded in cement concrete M-15 grade :		
8.1.1	Sal wood Grade - I.	Cum	48406.00
8.1.2	Kiln seasoned and chemically treated Hollock wood. Grade I	Cum	40957.00
8.1.3	Sheesham wood Grade - I.	Cum	97060.00
8.1.4	Nigeria teak wood Grade - I.	Cum	102101.00
8.1.5	Ghana teak wood Grade - I.	Cum	112067.00
8.1.6	Ivory coast wood Grade I	Cum	130473.00
8.2	Add extra in frames for circular members such as in fan lights, staircase railing etc.	Cum	10%
8.3	Providing and fixing fully panelled/partly panelled/ double leaf shutter frame for doors as per approved design and drawings with approved ordinary C.P./ oxidised steel fittings as per Annexure - 'A' and width of styles & top rails of 100mm and lock rails width of 150mm and bottom rails of 200mm width including teak wood beading of size 19mm x 12mm on both faces complete :		
<b>8.3.1</b>	<b>35 mm thick</b>		
8.3.1.1	Nigeria wood grade I	Sqm	2582.00
8.3.1.2	Ghana wood grade I	Sqm	2805.00
8.3.1.3	Shesham wood grade I	Sqm	2469.00
8.3.1.4	Ivory coast wood grade I	Sqm	3217.00
<b>8.3.2</b>	<b>30 mm thick</b>		
8.3.2.1	Nigeria wood grade I	Sqm	2291.00
8.3.2.2	Ghana wood grade I	Sqm	2483.00
8.3.2.3	Shesham wood grade I	Sqm	2194.00
8.3.2.4	Ivory coast wood grade I	Sqm	2839.00
8.4	Providing and fixing fully panelled /partly panelled double leaf shutters frame for windows and ventilators as per approved design and drawings with approved steel fittings as per Annexure 'A' and width of styles, bottom and top rails 75mm including intermediate rails 50mm wide, beading of 25mm x 15mm size on both faces :		



Item No.	Description	Unit	Rate (Rs.)
8.4.1	<b>35 mm thick</b>		
8.4.1.1	Nigeria wood grade I	Sqm	2320.00
8.4.1.2	Ghana wood grade I	Sqm	2512.00
8.4.1.3	Shesham wood grade I	Sqm	2223.00
8.4.1.4	Ivory coast wood grade I	Sqm	2866.00
8.4.2	<b>30 mm thick</b>		
8.4.2.1	Nigeria wood grade I	Sqm	2059.00
8.4.2.2	Ghana wood grade I	Sqm	2224.00
8.4.2.3	Shesham wood grade I	Sqm	1976.00
8.4.2.4	Ivory coast wood grade I	Sqm	2528.00
8.5	Providing and fixing wood panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled and glazed shutter 25 mm to 40 mm thick		
8.5.1	Nigeria wood Grade I	Sqm	2208.00
8.5.2	Ghana wood grade I	Sqm	2390.00
8.5.3	Shesham wood grade I	Sqm	2116.00
8.5.4	Ivory coast wood grade I	Sqm	2726.00
8.5.5	IS 710- 1976 marked 9 mm thick commerical ply	Sqm	1011.00
8.5.6	IS 710- 1976 marked 9 mm thick Teak ply BWR one side	Sqm	1674.00
8.5.7	IS 710- 1976 marked 9 mm thick Teak BWR ply both side	Sqm	2005.00
8.5.8	IS 710- 1976 marked 12 mm thick commerical ply	Sqm	1130.00
8.5.9	IS 710- 1976 marked 19 mm thick commerical ply	Sqm	1171.00
8.5.10	IS 710- 1976 marked 12 mm thick Teak ply BWR one side	Sqm	1716.00
8.5.11	IS 710- 1976 marked 12mm thick Teak ply BWR both side	Sqm	1954.00
8.5.12	Wire gauge 24 gauge 14 mesh of IS 1568-1970 marked 85 gauge of dia 0.56 mm	Sqm	711.00
8.5.13	SS wire gauge 14 mesh x 24 gauge	Sqm	999.00
8.5.14	4 mm plain float glass	Sqm	906.00
8.5.15	5 mm float glass	Sqm	1032.00
8.5.16	8 mm thick glass	Sqm	1463.00
8.5.17	6 mm thick glass	Sqm	1596.00
8.5.18	10 mm thick glass	Sqm	2221.00
8.5.19	12 mm thick glass	Sqm	2596.00
8.5.20	5 mm tinted glass	Sqm	1534.00
8.5.21	5 mm reflected glass	Sqm	1721.00
8.6	Extra for providing frosted glass panes 4 mm thick instead of ordinary float glass panes 4 mm thick in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).	Sqm	311.00
8.6.1	Extra for providing toughened glass panes instead of ordinary float glass panes in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).	Per mm Per Sqm	56.00

Item No.	Description	Unit	Rate (Rs.)
8.7	Deduct for providing pin headed glass panes instead of ordinary float glass panes weighing 4 mm thick in doors, windows and clerestory windows, shutters (Area of opening for glass panes excluding portion inside rebate shall be measured).	Sqm	106.00
8.8	Extra for providing ISI marked Stainless Steel butt hinges instead of black enamelled M.S. butt hinges with necessary screws. (Shutter area to be measured).	Sqm	141.00
8.9	Extra for providing movable/ fixed Nigeria / Ghana /Ivory Teak wood grade - I louvers instead of wooden panels in column No.4 for Nigeria / Ghana/Ivory Teak wood door shutters.	Sqm	10.00%
8.10	Providing Single leaf shutter instead of double leaf.	Sqm	20.00%
8.11	Providing and fixing external grade board solid core single leaf flush door shutters ISI 2202-67 marked using Phenol formal dehyderesin in glue both sides with approved steel fittings complete as per annexure 'A' :		
<b>8.11.1</b>	<b>30 mm thick .</b>		
8.11.1.1	Commercial Veneer both side	Sqm	1785.00
8.11.1.2	Decorative teak veneer One side	Sqm	1919.00
8.11.1.3	Decorative teak veneer both side	Sqm	2419.00
<b>8.11.2</b>	<b>35 mm thick .</b>		
8.11.2.1	Commercial Veneer both side	Sqm	1863.00
8.11.2.2	Decorative teak veneer One side	Sqm	2197.00
8.11.2.3	Decorative teak veneer both side	Sqm	2630.00
8.12	Extra for providing external lipping with 2nd class teak wood battens 6 mm minimum depth on all edges of shutters (over all area of door shutter to be measured) Over item no. 8.13.	Sqm	156.00
8.13	Extra for providing vision panel not exceeding 0.1 Sqm in all type of flush doors (cost of glass excluded) (overall area of door shutter to be measured) :	Each	122.00
8.14	Extra if louvers (not exceeding 0.2 sqm) are provided in flush door shutters (overall area of door shutters to be measured). .	Sqm.	272.00
8.15	Extra for cutting rebate in flush door shutters for making double leaf shutter(Total area of the shutter to be measured).	Sqm.	80.00

Item No.	Description	Unit	Rate (Rs.)
8.16	Extra for providing other type of fittings as mention in annexure A ( as approved by EI) :		
8.16.1	Brass fittings	Sqm.	20.00%
8.16.2	Stainless steel fittings	Sqm.	10.00%
8.17	Providing and fixing 18 mm thick, 150 mm wide pelmet of flat pressed 3 layer or graded wood particle board medium density grade I, IS : 3087 marked including top cover of 6 mm commercial ply wood conforming to IS: 303 BWR grade, nickel plate MS 20 mm dia curtain rod with nickel plated bracket including fixing with 25x3 mm MS flat 10 cm long all complete	Mtr	326.00
8.18	Providing and fixing curtain rods of 1.25 mm thick chromium plated brass plate, with two chromium plated brass brackets fixed with C.P. brass screws and wooden plugs, etc., wherever necessary complete:		
	12 mm	Mtr	235.00
	20 mm	Mtr	291.00
8.19	Providing and fixing Nigeria / Ghana /Ivory Coast Teak wood grade-I mouldings and beadings in droos and windows size :-		
8.19.1	50x12 mm	Mtr	106.00
8.19.2	50x20 mm	Mtr	135.00
8.20	Providing and fixing bright finished Mortice lock of approved make Godrej or equivalent with pair of CP handles for doors with necessary screws etc complete (Best make of approved quality) as per direction of Engineer-in-charge.	Each	631.00
8.21	Providing and fixing IS : 3564 marked Aluminium die cast body tubular type universal hydraulic door closer with necessary accessories and screws etc. complete.	Each	705.00

Item No.	Description	Unit	Rate (Rs.)
8.22	Supply of 30mm thick factory made composite panel door as per approve design and color. Made of central solid core of MDF / Particle board as per IS:12823 having density 600-900kg/m <sup>3</sup> , Planks encased in 100 mm x 23 mm thick frame of seasoned and chemically treated hard wood (Mango/Pine) with provision to fix the hinges, tower bolt and locks and covered with 3 mm thick HDF (High Density Fiber) skin panel (Mesonite / Doorpan / Action-teas brand) and skin coated with one coat of high quality primer so that the door can be painted with any desired color without moulded with engraved design. Composite door pressed under 100 ton press for 24 hrs. for better & uniform adhesion of all types of Composite Panel Door. Edge duly seated with 1.5mm thick PVC edge banding of matching color. using minimum three nos. of stainless steel butt hinges.	Sqm.	3346.00
8.23	Providing and fixing of 28mm thick factory made PVC Foam Profile door with homogenous fine cellular structure having smooth outer integral skin having 71mm width & 28 mm thick as styles and rails. Joints are made using solvent adhesive and GI 'C' section (39 mm x 19 mm x 0.6 mm thick) or Mile Steel Pipe (40 mm x 20 mm) stiffener frame insert and telescopic polymeric 'L' corners. The panel shall be filled with 3 mm thick high pressure compact laminated as per manufacturer's specifications and direction of Engineer-in-charge, cover moulding shall be provided for covering fixing screws and elegant look. (for W.C. and bathroom door shutter). using minimum three nos. of stainless steel butt hinges.	Sqm.	2879.80
8.24	Providing and fixing factory made door frame (single rebate) made of solid PVC foam profile with homogenous fine cellular structure having smooth outer integral skin having 60 mm width and 30 mm thickness and shall be fixed to wall as per instruction of Engineer-in-charge using 100 x 8 sheet metal CSK screw. using minimum three nos. of stainless steel butt hinges.	Sqm.	326.70
8.25	P & F 12mm thick float glass with beveled edge as per design to be used for table top and side rack top. Etc. complete.	Sqm.	2759.00
8.26	P/F Pin board made out of 12mm thick pin board blazed cloth having 6mm thick commercial ply, beading as per requirment.	Sqm.	1286.00

Item No.	Description	Unit	Rate (Rs.)
8.27	Extra over item no. 8.1 to 8.26 (Except item no. 8.2, 8.6 to 8.10, 8.12 to 8.16) for above floor V level for every four floors or part thereof.	Cum Sqm. Rmt.	5.00% 4.00% 3.00%
8.28	Providing and fixing Hollow core partition wall using 50x30 mm Chir wood frame 600 mm c/c on both directions, door opening as per drawing with steel fittings antitermite treatment complete as per specifications using :		
8.28.1	ISI 4 mm thick commercial ply with 0.80 mm mica with adhesive on both sides.	Sqm	1926.00
8.28.2	ISI 4 mm teak ply one side BWR	Sqm	1817.00
8.29	Providing and fixing wall panelling using soft wood frame of size 50x25mm @600 mm c/c in both directions duly treated with anti-termite treatment making grooves painting of grooves specification and drawing using :		
8.29.1	ISI 6 mm teak ply one side BWR	Sqm	1398.00
8.29.2	ISI 9 mm teak ply one side BWR	Sqm	1683.00
8.29.3	12mm thick Acoustical Board	Sqm	1344.00
8.29.4	12 mm thick one side laminated board Practical board (Phenol bonded)	Sqm	1647.00
8.30	Providing and fixing 50 mm thick resin bounded glass wool 32 kg/cum density wrapped in jutilies cloth bag (box type) and held in position using chicken mesh	Sqm	528.00
8.31	Providing and fixing Hassian cloth of approved colour and texture over soft wood frame glass wool & fibre glass tissue paper	Sqm	294.00
8.32	Providing and fixing expandable fastners of specified size with necessary plastic sleeves and galvanised M.S. screws including drilling holes in masonry work /CC/R.C.C. and making good etc. complete		
8.32.1	25 mm long	Each	12.00
8.32.2	32 mm long	Each	16.00
8.32.3	40 mm long	Each	17.00
8.32.4	50 mm long	Each	18.00
8.33	Providing and fixing Nigeria / Ghana /Ivory Coast Teak wood grade-I mouldings and beadings in doors and windows size :-		
8.33.1	50x12 mm	Mtr	84.00
8.33.2	50x20 mm	Mtr	120.00
8.33.3	25x12 mm	Mtr	68.00
8.33.4	25x20 mm	Mtr	83.00

**B - 41**

Item No.	Description	Unit	Rate (Rs.)
8.34	Providing and fixing IS : 3564 marked aluminium extruded section body tubular type universal hydraulic door closer with double speed adjustment with necessary accessories and screws etc. complete.	Each	1393.00
8.35	Providing and fixing Bamboo jaffery/ fencing consisting of superior quality 25mm dia (Average) half cut bamboo placed vertically and fixed together with three numbers horizontal running members of wood in scantling of section 50X25mm fixed with nails and GI wire to existing surface complete as per direction of EI	Sqm	389.00
8.36	Providing and Fixing Bamboo Zafari/Fencing consisting of superior quality 25mm dia Solid Bamboo placed vertically & fixed together with 3 Nos Horizontal running members of wood in scantling of section size 50x40mm and fixed with nut and bolt to existing surface/angle post as per direction given by Engineer-in-charge	Sqm	887.00
8.37	Providing and fixing wooden moulded corner beading of triangular shape to the junction of panelling etc. with iron screws, plugs and priming coat on unexposed surface etc. complete 2nd class teak wood. 50x50mm (base and height)	Rm	171.00
8.38	Extra for providing Brass handle instead of CP handle	Each	0.00
8.39	Providing and fixing Almirah lock (50 to 70 mm size )of approved make without pair of handles for door with necessary screws etc complete as per direction of Engineer-in-charge.	Each	141.00
8.40	Providing & Fixing of ward robe shutters made out of 19mm thick BWP block board ISI of superior quality make with following details :-		

Item No.	Description	Unit	Rate (Rs.)
8.41	Front side finishing with 1mm thick superior quality mica approved make and 0.8mm thick approved shade mica in the inner side. Covering with teak wood beading 25x12mm all the sides of shutter & 35x12mm on outer frame for making good the wall joint including heavy brass S.S. fittings (Handle 200mm 2 Nos., Tower Bolt 150mm 2 Nos., Brass Lock 1 Nos., Magnetic Catcher 2 Nos., Brass Hinges 75x40x2.5 mm 6 Nos., SS Hanger Rod 20mm dia) complete as per drawing and design approved by Engineer in Charge.	Sqm	5249.00
8.42	Providing & Fixing mica of approved make for inner/outer side of shutters with fevicol & nails complete as per approved by engineer in charge.		
8.42.1	0.6mm thick mica	Sqm	591.00
8.42.2	0.8mm thick mica	Sqm	718.00
8.43	Providing & Fixing decorative veneer of approved make for inner/outer side of shutters with fevicol & nails complete as per approved by engineer in charge.		
8.43.1	4.0mm thick veneer	Sqm	1351.00
8.43.2	6.0mm thick veneer	Sqm	1478.00
8.44	Providing and fixing S.S. Rod 30mm dia (304 grade , 16SWG) including brackets fixed with C.P. brass screws and rawl plugs, etc., wherever necessary complete two side central all fittings.	Rmt	612.00
8.45	Providing & Fixing BWR ISI marked 19 mm board of approved make for making wardrobe/shelves and other furniture with fevicol & nails complete as per approved by engineer in charge.	Sqm	1272.00
8.46	Providing & Fixing Commercial Ply as per IS 710 : 1976 BWR of approved make for making wardrobe/shelves and other furniture with fevicol & nails complete as per approved by engineer in charge.		
8.46.1	18 mm thick	Sqm	1272.00
8.46.2	12 mm thick	Sqm	971.00
8.46.3	6 mm thick	Sqm	801.00
8.47	Providing & Fixing telescopic channel of approved make for drawers with screws complete as per approved by engineer in charge.		
8.47.1	300mm long	Each	401.00
8.47.2	400mm long	Each	483.00
8.47.3	450mm long.	Each	530.00
8.47.4	500mm long	Each	592.00

**B - 43**

Item No.	Description	Unit	Rate (Rs.)
8.47.5	600mm long	Each	708.00
8.48	Providing & Fixing drawer handle of approved make for drawers with screws complete as per approved by engineer in charge.		
8.48.1	100mm long	Each	150.00
8.48.2	150mm long	Each	184.00
8.49	Providing & Fixing drawer lock of approved make for drawers with screws complete as per approved by engineer in charge.	Each	422.00



**ANNEXURE - A**

**The following fittings shall be provided in Door's and Window's shutters:**

<b>S.NO.</b>	<b>PARTICULARS</b>	<b>NUMBER OF FITTINGS</b>
(A)	Single Leaf Door Shutters	
(i)	Hinges of Sizes 100mm	3 Nos.
(ii)	Sliding Bolt one No. of length of 300 mm dia 12mm upto 35mm thick shutters and 16mm dia 300mm. Length for above 35mm thick shutters	1No.
(iii)	Handles 150m	2 Nos.
(iv)	Tower Bolts 225mm/300mm/400mm	1 Nos.
(v)	Tower Bolts 150mm	1 Nos.
(vi)	Door stopper	1 Nos.
(vii)	Back Stopper	1 Nos.
(B)	Duble Leaf Door Shutters	
(i)	Hinges of Size 100mm	6 Nos.
(ii)	Sliding Bolt noe No. of 350mm long 16mm dia	1 Nos.
(iii)	Handles 150m	3 Nos.
(iv)	Tower Bolts 225mm	2 Nos.
(v)	Tower Bolts 150mm	2 Nos.
(vi)	Door stopper	2 Nos.
(vii)	Back Stopper	2 Nos.
(C)	Window shutters in each leaf	
(i)	Hinges of Size 100mm	2 Nos.
(ii)	Handles 125mm	1 Nos.
(iii)	Tower Bolts 150mm	2 Nos.
(iv)	Door stopper	1 Nos.

## CHAPTER : B-9

### STEEL & FENCING WORKS

Note : The rates of item nos. 9.1 to 9.25 are for work upto floor five level

Item No.	Description	Unit	Rate (Rs.)
9.1	Steel work in built up tubular trusses including cutting, hoisting (height upto 10 m) fixing in position and applying a priming coat of approved steel primer, welded and bolted including special shaped washers etc. complete.		
9.1.1	Hot finished welded type tubes.	Kg.	107.00
9.1.2	Hot finished seamless type tubes.	Kg.	113.00
9.1.3	Electric resistance or induction butt welded tubes.	Kg.	128.00
9.2	Extra for hoisting and fixing for every additional one metre or part thereof beyond 10 mtr height.	Kg.	5.00
9.3	Providing and fixing T-iron frames for doors, windows and ventilators of mild steel Tee-sections, joints mitred and welded with 15x3 mm lugs 10cm long embedded in cement concrete blocks 15x10x10 cm of 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer.	Kg.	81.00
9.4	Providing and fixing pressed steel door frames confirming to IS 4351 manufactured from commercial mild steel sheet of 1.25 mm thickness including hinges jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25mm, or base ties of 1.25mm pressed mild steel welded or rigidly fixed together by mechanical means, adjustable lugs with split end tail to each jamb including steel butt hinges 2.5mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface including filling with CC 1:2:4(M15 grade) complete as directed by Engineer-in-charge :		
9.4.1	Profile B	Mtr.	432.00
9.4.2	Profile C	Mtr.	460.00
9.4.3	Profile E	Mtr.	488.00

Item No.	Description	Unit	Rate (Rs.)
9.5	Supply and fixing in cement mortar welded hand railing made out of MS round or square bars, flats etc. for staircase or verandah as per design complete in all respect (wooden or PVC hand railing to be paid extra) with priming coat of red oxide.		
		Kg.	89.00
9.5.1	Extra for providing D type pipe head as top of hand railing	Kg.	8.90
9.6	Providing and fixing steel gate, grating , and grills made of angles, tees, square bars, flats, or black pipe with holdfast and fittings complete as per design and drawing including cutting welding and fabrication with priming coat of red oxide	Kg.	97.00
9.6.1	Extra if square, rectangular hollow tubular sections are used or grill made by flats only	Kg.	9.70
9.7	Providing and fixing cow catcher made of R.S. joist angles channels MS rounds including cutting welding and fabrication with priming coat of red oxide (as per design).	Kg.	75.00
9.8	Providing and fixing in position collapsible steel shutters with vertical M.S. Channels 20 x 10 x 2mm and bracket with flat iron diagonals 20 x 5mm. size with top and bottom rail of T-iron 40 x 40 x 6mm. with 40mm dia steel pulleys/ball bearing complete with bolts, nuts locking arrangements inside and outside stoppers, handles etc. as per specification including applying a priming coat of approved steel primer. (To be measured and paid as per outer dimension).	Sqm.	4763.00
9.9	Supplying and fixing rolling shutters of approved make, made of 80 x 1.25mm. M.S. laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete including cost of spring hooks, providing and fixing necessary 25.3cm. long wire springs grade No. 2 and M.S. top cover 1.25mm thick for rolling shutters as per design. (Clear openable area to be measured for payment).	Sqm.	2514.00
9.10	Providing & fixing ball bearing for rolling shutters	Each	537.00
9.11	Extra for providing mechanical device chain and crank operation for operating rolling shutters.		

**B - 47**

Item No.	Description	Unit	Rate (Rs.)
9.11.1	Exceeding 10.00 Sqm and upto 16.80 Sqm in the area.	Sqm.	819.00
9.11.2	Exceeding 16.80 Sqm in the area.	Sqm.	941.00
9.12	Extra for providing grilled rolling shutters manufactured out of 8 mm dia. M.S. bar instead of laths as per design approved by Engineer-in-charge. (area of grill to be measured).	Sqm.	328.00
9.13	Providing and fixing M.S. sheet 1mm thick single leaf door shutter in angle iron frame 35x35x5mm suitably diagonally braced with 25x3mm flat iron above and below lock rail of size 50x5mm beading extra including all fittings, as per direction of Engg. incharge but excluding cost of chowkhats: including two coats of anti-corrosive red oxide primer paint	Sqm.	2748.00
9.13.1	Extra for double leaf shutters.	Sqm.	20%
9.14	Fixing standard steel glazed doors, windows and ventilators in walls with 15x3mm lugs 10cm long embedded in cement concrete blocks 15x10x10 cm of 1:3:6 (1 cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including fixing of glass panes with glazing clips and special metal-sash putty of approved make, or metal beading with screws (only steel windows with lugs, glass pane cut to size and glazing clips or metal beading with screws, shall be supplied by department free of cost.)	Sqm.	290.00
9.15	Providing and fixing steel glazed doors windows and ventilator shutters of standard rolled steel section joints mitred and welded with steel lugs 13x3mm, 10cm. long embedded in cement concrete block 15x10x10cm. of 1:3:6 (1cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size) or with wooden plugs and screws or rawl plugs and screws with fixing clips or with bolts and nuts as required including providing and fixing of plain glass panes 4mm thick with cooper glazing clips and special metal sash putty of approved make or metal beading with screws complete including priming coat of approval steel primer, excluding the cost of metal beading and other fitting except necessary hinges of pivots steel handles peg stay etc. as required :		
9.15.1	Doors	Sqm.	3067.00
9.15.2	Windows fixed	Sqm.	2859.00

Item No.	Description	Unit	Rate (Rs.)
9.15.3	Windows side hung /Ventilators top or centre hung (openable)	Sqm.	2915.00
9.15.4	Partly fixed and partly openable [ fixed area not to exceed 33%]	Sqm.	2859.00
9.16	Providing brass handles/peg stays and fittings in place of oxidized fitting	Sqm.	5.00%
9.17	Aluminium handles/peg stays fitting instead of oxidized fitting.	Sqm.	3.00%
9.18	5mm thick plain glass instead of 4mm thick plain glass	Sqm.	95.00
9.19	Deduct for Not providing glass panels	Sqm.	216.00
9.20	Deduct for Pin headed 4mm thick glass panels is used instead of 4mm thick plain glass	Sqm.	5.00%
9.21	Deduct for Not provided oxidised fittings.	Sqm.	5.00%
9.22	Supplying and fixing fixed wire gauge of 14 mesh x 24 gauge to the metal frame of rolled section by metal beading 20x3mm with suitable screw at not exceeding 150mm distance.	Sqm.	616.00
9.23	Providing and fixing Square bars or other flat welded to window, ventilators etc.	Kg.	68.00
9.24	Providing and fixing steel glazed window frame made out of 80x40 mm hollow sheet section of 16 gauge thickness, joint mitred welded and grinded including hold fast of steel lugs 13mm x 3mm and 15 Cm long embedded in C C block 15 x 10 x 10 Cm of 1:3:6 nominal concrete and including fixing of pivoted hinges of superior quality, window shutters made out of 50 x 25.0 mm hollow steel section 15 mm paitam of 18 gauge thickness, joint mitred and grinded including 10mm x 10mm square bars welded to frame for paitam fixing float glass 4mm thick panes with glazing clips and metal sash putty and fixing of shutters frames peg stay, U shape handle 100 mm long, tower bolts 100 mm long of steel powder coated superior quality including fixing and jointing with frame hinges priming coat with steel primer complete in all respect as per direction of Engineer-in –charge		
9.24.1	Window openable.	Sqm	3784.00
9.24.2	Window fixed.	Sqm	3486.00

Item No.	Description	Unit	Rate (Rs.)
9.24.3	Extra for additional shutter in pipe section windows with wire gauge 14 mesh x 24 gauge	Sqm	1642.00
9.25	Providing and fixing frame for doors and windows of EZ-7 ISI marks section welded at corners and dully painted with red oxide paint, frame to be fixed by MS flat 230 x 16 x 3mm size holdfast embedded in cement concrete M 100 (1 : 3 : 6) block size 230 x 115 x 75mm with oxidized iron 100 mm round hinges screwed and welded complete in all respect as per design with priming coat of red oxide.	Kg	77.00
9.26	Extra over item no. 9.3 to 9.25 (Except item no.9.2, 9.5.1, 9.6.1, 9.7, 9.12, 9.13.1, 9.16, 9.17, 9.20, 9.21.) for above floor V level for every four floors or part thereof.	Kg/sqm	5.00%
<b>FENCING WORK</b>			
9.27	180cm high fencing with angle iron post 55x55x6mm. placed at every 3Mtr. apart 45cm. in ground embedded in cement concrete 1:3:6 (30x30x60cm) corner and every tenth post to be strutted with 55x55x6mm. angle iron provided with 6 horizontal lines and two diagonals of black barbed wire between two posts fitted and fixed with G.I. staples including earth work in excavation etc. complete.	Mtr.	529.00
9.28	150cm high fencing with angle iron 50x50x6mm. placed at every 3Mtr. apart 30cm. in ground embedded in cement concrete 1:3:6 (30x30x45cm) corner and every tenth post to be strutted with 50x50x6mm. angle iron provided with 6 horizontal lines and two diagonals of black barbed wire between two posts fitted and fixed with G.I. staples including earth work in excavation etc. complete.	Mtr.	488.00
9.29	120cm. high fencing with angle iron posts 50x50x6mm. placed at every 3 Mtr. apart 30cm. in ground embedded in cement concrete 1:3:6 (30x30x45cm) corner & every tenth posts to be strutted with 50x50x6mm angle iron provided with three horizontal lines and two diagonals of black barbed wire between two posts fitted and fixed with G.I. staple including earth work in excavation etc. complete.	Mtr.	463.00

Item No.	Description	Unit	Rate (Rs.)
9.30	150 cm high fencing of precast R.C. posts of 15cmx15cm tapered to 10x10cm at top placed at every 3m apart 30cm in ground embedded in cement concrete 1:3:6 (30x30x45cm) corner and every tenth posts to be struted with same R.C. posts provided with 6 horizontal lines and two diagonals of black barbed wire between the two posts fitted and fixed with G.I. staples including earth work in excavation etc. complete	Mtr.	448.00
9.31	Add or deduct for each wire line over basic item	Mtr.	13.00
9.32	Add or deduct for additional or less higher per 10 Cm. over basic item	Mtr	5.00%
9.33	Extra for using galvanized barbed wire instead of black barbed wire.	Mtr. Each wire	5.00%
9.34	Providing and fixing welded mesh/expanded metal mesh in frame work, flat iron beading 20x3mm including top cross laps inside and out sides welding, iron bolts, crews, clips etc. complete (excluding frame work) of size.		
9.34.1	Welded mesh 50 mmx 50 mm x 2.1 mm	Sqm.	692.00
9.34.2	Welded mesh 50 mmx 25 mm x 2.1 mm	Sqm.	721.00
9.34.3	Welded mesh 25 mmx 25 mm x 2.1 mm	Sqm.	757.00
9.34.4	Expended metal size 20-25 mm size 18SWG	Sqm.	727.00
9.35	Supplying & Fixing Stainless steel pipe railing for ramp railing height, 900mm with 40mm dia stainless steel pipe with 18 gauge with drow (vertical post) at 90cm center to center & intermediate horizontal pipe with suaitle height of same size and gauge with coupling, grinding and polishing and fixing of masterpiece as per required point and approved design of engineer-in-charge	Mtr.	2065.00
9.36	Providing and fixing of double leaf steel shutter for cupboard, the frame is made of pressed steel ISI section 80x25 mmx 1.25 mm thick with 1.00 mm MS sheet to spot welded including holdfasts of 15x3mm, MS oxidized fittings such as butt hinges, sliding doors bolts, handles, tower bolts and twin peg etc complete including applying priming coat of approved steel primer of red oxide zinc chromate and spray painting in approved shade with deco paint of approved quality complete as per direction of Engineer In Charge	Sqm	3560.00

**B - 51**

Item No.	Description	Unit	Rate (Rs.)
9.37	Providing and fixing glass panes, with putty and nails wherever necessary:		
9.37.1	Float glass panes of thickness 4.0 mm	Sqm	589.00
9.37.2	Float glass panes of thickness 5.0 mm	Sqm	705.00
9.38	Providing and fixing concertina coil fencing with required dia 610 mm (having 15 nos. round per 6 metre length) up to 3m height of wall with existing angle iron 'Y' shaped placed 2.4 m or 3.00 m apart and with 9 horizontal R.B.T. stud tied with GI staples and GI clips to retain horizontal including necessary bolts or GI barbed wire tied to angle iron all complete as per direction of Engineer In Charge with reinforced barbed tape (R.B.T.)/Spring core(2.5 mm thick) wire of high tensile strength of 165 kg/sq.mm with tape (0.52 mm thick) and weight 43.478 gm/metre (Cost of MS angle, CC block shall be paid extra)	Mtr.	244.00



## CHAPTER : B-10

### ROOFING

- 1 Rates are for complete item of work and are inclusive of all centering, shuttering, curing and finishing including all leads and delivery of material at site of work with all lead and upto floor five level
- 2 The rates for G.I. sheet roofing are inclusive of all necessary, overlaps and wastage in cutting and all standard screws nuts washers bolts and nuts 'J' or 'L' hooks etc. required as per specifications.
- 3 All precautions shall be taken to ensure that the finished roof is water tight and without any leakage under all weather conditions. Particular care shall be taken in providing good workmanship specially at vulnerable points.

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

#### **GALVANISED IRON SHEET ROOFING**

10.1	Providing corrugated G.I. sheet roofing including vertical / curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead and including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (upto any pitch in horizontal/ vertical or curved surfaces) excluding the cost of purlins, rafters and trusses and including cutting to size and shape whenever required.		
10.1.1	1.00 mm thick with zinc coating not less than 275 gm/m <sup>2</sup>	Sqm	963.00
10.1.2	0.80 mm thick with zinc coating not less than 275 gm/m <sup>2</sup>	Sqm	812.00
10.1.3	0.63 mm thick with zinc coating not less than 275 gm/m <sup>2</sup>	Sqm	679.00
10.2	Extra for straight cutting in C.G.S. sheet roofing for making opening of area exceeding 40 sq. decimetre for chimney stacks, sky light etc. :	P.Mtr.	33.00
10.3	Extra for circular cutting in C.G.S. sheet roofing for making opening of area exceeding 40 square decimetre :	P.Mtr.	133.00

Item No.	Description	Unit	Rate (Rs.)
10.4	Providing ridges or hips of width 60 cm over all width plain G.S. sheet fixed with polymer coated J or L hooks, bolts and nuts 8 mm dia. G.I. limpet and bitumen washers complete.		
10.4.1	0.80mm thick with zinc coating not less than 275	Mtr.	444.00
10.4.2	0.63mm thick with zinc coating not less than 275	Mtr.	396.00
10.5	Providing valleys of 90cm wide overall in plain G.S. sheet fixed with polymer coated J or L hooks, bolts and nuts 8mm dia. G.I. limpet and bitumen washers complete : 1.60mm thick with zinc coating not less than 350gm/m <sup>2</sup>	Mtr.	785.00
10.6	Providing flashing of 40 cm over all width in plain, G.S. sheet fixed with polymer coated J, or L hooks, bolts and nuts, G.I. limpet and bitumen washer complete, bent to shape and fixed in wall with cement mortar 1:3 (1cement : 3 coarse sand) 1.00mm thick sheet	Mtr.	328.00
10.7	Providing and fixing 15 cm wide 45 cm over all semi circular plain G.S. sheet gutter with iron brackets 40x3mm size, bolts, nuts and washers etc. including making necessary connections with rain water pipes complete.		
10.7.1	0.80mm thick	Mtr.	442.00
10.7.2	0.63mm thick	Mtr.	401.00
10.8	Painting top of roofs with bitumen of approved quality at 17kg per 10 sum impregnated with a coat of coarse sand at 60 cudm per 10sqm including cleaning the slab surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil complete: With residual type petroleum bitumen of penetration 80/100	Sqm	138.00
10.9	Stone slab roofing on ground floor with fine grained stone slab from approved quarry including filling of joints of parapet and slab on both sides in cement sand mortar 1:4, with ceiling pointing in cement sand mortar 1 : 3 complete as per specification and instruction of Engineer In Charge	Sqm	1570.00
10.9.1	Add extra for subsequent story	Sqm	20%
10.10	Grading roof for water proofing treatment with water proffing compound		
10.10.1	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	4463.00

Item No.	Description	Unit	Rate (Rs.)
10.10.2	Cement mortar 1:3 (1 cement : 3 coarse sand)	Cum	5900.00
10.10.3	Cement mortar 1:4 (1cement : 4 coarse sand)	Cum	5032.00
10.11	Providing and laying brick kharanja on roofs with cement mortar 1:4 (1 cement : 4 coarse sand) mixed with 2% integral water proofing compound in square pattern		
10.11.1	75mm to 100mm thick average	Sqm	293.00
10.11.2	55mm to 60mm thick average	Sqm	253.00
10.12	Providing and laying brick tiles of class designation 100 over roofs grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% of integral water proofing compound by weight of cement, over a 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat .	Sqm	339.00
10.13	Providing and fixing 20 mm thick precast terrazo tiles of approved make, with marble chips of size upto 6mm laid over roof with neat cement slurry mixed with pigment to match the shade of the tiles, including cutting ,grinding rubbing with machine complete on 20 mm thick bed of cement sand mortar 1 : 4.	Sqm	318.00
10.14	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10mm and down gauge) including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design :	Mtr.	108.00
10.15	Providing & fixing UV stabilised fiberglass reinforced plastic sheet roofing upto any pitch including fixing with polymer coated 'J' or 'L' hooks, bolts & nuts 8mm dia. G.I plain/bitumen washers complete but excluding the cost of purlins, rafters, trusses etc. The sheets shall be manufactured out of 2400 TEX panel rovigs incorporating minimum 0.3% Ultra-violet stabiliser in resin system under approximately 2400 psi and hot cured. They shall be of uniform pigmentation and thickness without air pockets and shall confoim to IS 10192 and IS 12866.The sheets shall be opaque or translucent, clear or pigmented, textured or smooth as specified.		
10.15.1	2.0mm thick (Wt. 3.3 Kg./Mtr. Sq.)	Sqm	896.00
10.15.2	3.0mm thick (Wt. 5.0 Kg./Mtr. Sq.)	Sqm	1287.00
10.15.3	5.0mm thick (Wt. 8.4 Kg./Mtr. Sq.)	Sqm	1888.00

Item No.	Description	Unit	Rate (Rs.)
10.16	Extra for corrugated Fiberglass Reinforced Plastic (FRP) (2.5" /4.2"/6") or step down (2.5" /4.2"/6") as specified.	Sqm	10.00%
	<b>FALSE CEILING</b>		
10.17	<p>Providing and fixing 12.5 mm thick tapered edge gypsum board conforming to IS 2095- Part I at all height false ceiling including providing and fixing of frame work made of special sections power pressed from M.S. sheet and galvanised in accordance with zinc coating of grade 350 as per IS : 277 and consisting of angle cleats of size 25mm wide x 1.6mm thick with flanges of 22mm and 37mm at 1200mm centre to centre one flange fixed to the ceiling with dash fastener 12.5mm diax40mm long with 6mm dia bolts to the angle hangers of 25x25x0.55mm of required length, and other end of angle hanger being fixed with nut and bolts to G.I. channels 45x15x0.9mm running at the rate of 1200mm centre to centre to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26mm each having clips of 10.5mm at 450mm centre to centre shall be fixed in a direction perpendicular to G.I. channel with connecting clips made out of 2.64mm diax230mm long G.I. wire at every junction including fixing the gypsum board with ceiling section and perimeter channels 0.5mm thick 27mm high having flanges of 20mm and 30mm longer ceiling fixed, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive-all</p> <p>screws @ 230mm interval including jointing and fixing to a flush finish of tapered and square edges of the board with recommended filler, jointing tapes, finisher and two coats of primer suitable for board as per manufactures specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction of the Engineer in Charge but excluding the cost of painting.</p>	Sqm	911.00

Item No.	Description	Unit	Rate (Rs.)
10.18	<p>Providing and fixing 14 mm thick Acoustical with fine fissured tiles/ Mineral fibre high density tiles with butt edges false ceiling tiles of size 595x595 mm in true horizontal level suspended on inter locking metal grid of hot dipped galvanised steel sections ( galvanized @ 170 gsm/sqm.) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38mm made from 0.30mm thick (minimum) sheet spaced at 1200mm center to center and cross "T" of size 24x25mm made of 0.30mm thick (minimum) sheet, 1200mm long spaced between main "T" at 600mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600mm and size 24x25mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600mm panel to form grids of 600x600mm and wall angle of size 21x21x0.30 mm and laying false ceiling tiles of approved texture in the grid including, wherever, required, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from</p> <p>ceiling using GI slotted cleats fixed to ceiling with 6 mm dia and 50mm long dash fasteners, 4mm GI adjustable rods with galvanised level clips spaced at 1200mm center to center along main T, bottom exposed width of 24mm of all T-sections shall be pre-painted with polyester paint, all complete at all heights as per specifications drawings and as directed by Engineer-in-Charge. ( The tiles should of 90 % RH avg. NCR 0.55 light reflectance&gt; 80% thermal conductivity K = 0.052-0.057 w/m K colour white. Fire performance class 0/class I(BS 476) with warranty against sag)</p>	Sqm	1100.00
10.19	<p>Providing &amp; fixing 12 mm thick tegular edge Glass Fibre Reinforced Gypsum False ceiling tiles of size 595 x 595 mm in true horizontal level suspended on inter locking metal grid of hot dipped galvanised steel sections ( galvanized @ 170 gsm/sqm.) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38mm made from 0.30mm thick (minimum) sheet spaced at 1200mm center to center and cross "T" of size 24x25mm made of 0.30mm thick (minimum) sheet, 1200mm long spaced between main "T" at 600mm center to center to form a grid of 1200x600 mm and</p>		

Item No.	Description	Unit	Rate (Rs.)
	secondary cross "T" of length 600mm and size 24x25mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600mm panel to form grids of 600x600mm and wall angle of size 21x21x0.30 mm and laying false ceiling tiles of approved texture in the grid including, wherever, required, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats fixed to ceiling with 6 mm dia and 50mm long dash fasteners, 4mm GI adjustable rods with galvanised level clips spaced at 1200mm center to center along main T, bottom exposed width of 24mm of all T-sections shall be pre-painted with polyester paint, all complete at all heights as per specifications drawings and as directed by Engineer-in-Charge.	Sqm	1378.00
10.20	Providing and fixing POP false ceiling using 12 to 18mm thick POP cast in situ using GI frame work to be made of parimeter angle of size 25 x 25 x 0.556mm as a member provided at 300mm center to center and intermediate channel of 45 x 15 x 0.80 mmas main runner @ 900mm center to center suspended by means of GI angle 25 x 25 x 0.556mm from the existing RCC ceiling by MS Rawl plug 12.50mm dia x 35mm with 6mm dia bolt screwed at 900mm c/c GI wire mesh 10 x 10mm x 24 gauge screwed on the GI frame work as per approved design and drawing	Sqm	657.00
10.21	Add extra over item of false ceiling for decorative false ceiling in steps as per requirments	Sqm	110.00
10.22	Add extra over item of false ceiling for cutting and framing of electrical fixtures / AC diffusers in false ceiling.	Nos.	200.00
10.22	Extra over item no.10.1 to 10.22 (Except item no.10.9 , 10.9.1 , 10.16.) for above floor V level for every four floors or part thereof.	Sqm/cum/ Rmt	5.00 %

Item No.	Description	Unit	Rate (Rs.)
10.23	<p>Providing and fixing calcium silicate board false ceiling at all heights including providing and fixing of frame work made of special sections power pressed from M.S. sheet and galvanised in accordance with zinc coating of grade 350 as per IS : 277 and consisting of angle cleats of size 25mm wide x 1.6mm thick with flanges of 22mm and 37mm at 1200mm centre to centre one flange fixed to the ceiling with dash fastener 12.5mm dia x 40mm long with 6mm dia bolts to the angle hangers of 25x25x0.55mm of required length, and other end of angle hanger being fixed with nut and bolts to G.I. channels 45x15x0.9mm running at the rate of 1200mm centre to centre to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26mm each having clips of 10.5mm at 450mm centre to centre shall be fixed in .... a direction perpendicular to G.I.</p> <p>channel with connecting clips made out of 2.64mm dia x 230mm long G.I. wire at every junction including fixing the calcium silicate board with ceiling section and perimeter channels 0.5mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive-all screws @ 230mm interval including jointing and fixing to a flush finish of tapered and square edges of the board with recommended filler, jointing tapes, finisher and two coats of primer suitable for board as per manufactures specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction of the Engineer in Charge but excluding the cost of painting of thickness of calcium silicate board as below:-</p>		
10.23.1	6 mm thick	Sqm	872.00
10.23.2	8 mm thick	Sqm	978.00

Item No.	Description	Unit	Rate (Rs.)
10.24	<p>Providing &amp; fixing calcium silicate ceiling tiles of size 595 x 595 mm in true horizontal level suspended on inter locking metal grid of hot dipped galvanised steel sections ( galvanized @ 170 gsm/sqm.) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38mm made from 0.30mm thick (minimum) sheet spaced at 1200mm center to center and cross "T" of size 24x25mm made of 0.30mm thick (minimum) sheet, 1200mm long spaced between main "T" at 600mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600mm and size 24x25mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600mm panel to form grids of 600x600mm and wall angle of size 21x21x0.30 mm and laying false ceiling tiles of approved texture in the grid including, wherever, required, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats fixed to ceiling with 6 mm dia and 50mm long dash fasteners, 4mm GI adjustable rods with galvanised level clips spaced at 1200mm center to center along ...main T, bottom exposed width</p> <p>of 24mm of all T-sections shall be pre-painted with polyester paint, all complete at all heights as per specifications drawings and as directed by Engineer-in-Charge of thickness of tiles as mentioned below:-</p>		
10.24.1	6 mm thick	Sqm	620.00
10.24.2	8 mm thick	Sqm	711.00



Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

- 10.25 Providing and fixing calcium silicate perforated board false ceiling at all heights including providing and fixing of frame work made of special sections power pressed from M.S. sheet and galvanised in accordance with zinc coating of grade 350 as per IS : 277 and consisting of angle cleats of size 25mm wide x 1.6mm thick with flanges of 22mm and 37mm at 1200mm centre to centre one flange fixed to the ceiling with dash fastener 12.5mm dia x 40mm long with 6mm dia bolts to the angle hangers of 25x25x0.55mm of required length, and other end of angle hanger being fixed with nut and bolts to G.I. channels 45x15x0.9mm running at the rate of 1200mm centre to centre to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26mm each having clips of 10.5mm at 450mm centre to centre shall be fixed in a direction perpendicular to G.I. channel with connecting clips made out of 2.64mm dia x 230mm long G.I. wire at every junction including fixing the calcium silicate board with ceiling section and perimeter channels 0.5mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive-all screws @ 230mm interval

including jointing and fixing to a flush finish of tapered and square edges of the board with recommended filler, jointing tapes, finisher and two coats of primer suitable for board as per manufactures specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction of the Engineer in Charge but but excluding the cost of painting of thickness of calcium silicate board as below:-

10.25.1	6 mm thick	Sqm	1125.00
10.25.2	8 mm thick	Sqm	1257.00

Item No.	Description	Unit	Rate (Rs.)
10.26	Providing & fixing calcium silicate perforated ceiling tiles of size 595 x 595 mm in true horizontal level suspended on inter locking metal grid of hot dipped galvanised steel sections ( galvanized @ 170 gsm/sqm.) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38mm made from 0.30mm thick (minimum) sheet spaced at 1200mm center to center and cross "T" of size 24x25mm made of 0.30mm thick (minimum) sheet, 1200mm long spaced between main "T" at 600mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600mm and size 24x25mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600mm panel to form grids of 600x600mm and wall angle of size 21x21x0.30 mm and laying false ceiling tiles of approved texture in the grid including, wherever, required, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats fixed to ceiling with 6 mm dia and 50mm long dash fasteners, 4mm GI adjustable rods with galvanised level clips spaced at 1200mm center to center along main T, bottom exposed width of 24mm of all T-sections shall be pre-painted with polyester paint, all complete at all heights as per specifications drawings and as directed by Engineer-in-Charge of thickness of tiles as mentioned below:-		
10.26.1	6 mm thick	Sqm	816.00
10.26.2	8 mm thick	Sqm	944.00
10.27	Providing and fixing 15 mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture as per direction of Engineer-in-charge of size 595 X 595 mm in true horizontal level suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanizing @120 grams per sqm) consisting of main 'T' runner suitably spaced at joints to get required length and size of 24X38mm made from 0.33 mm thick (minimum) sheet, 1200mm centre to centre, and cross 'T' of size 24X32mm made out of 0.33mm (Minimum) sheet, 1200mm long spaced between main 'T' at 600mm centre to centre to form a grid of 1200X600mm and secondary cross 'T' of length 600mm and size 24X32mm made out of 0.33 mm thick (Minimum) sheet to be interlocked at middle of the 1200X600mm panel to form grid of size 600X600mm resting...		

Item No.	Description	Unit	Rate (Rs.)
	<p>...on periphery walls/partitions on a perimeter wall angle pre-coated steel of size (24X24X3000mm made of 0.40mm thick (minimum) sheet with the help of rawl plugs at 450mm centre to centre with 25mm long dry wall screws @ 230mm interval and laying 15mm thick densified edged calcium silicate ceiling tiles of approved texture in the grid including cutting /making opening for services like diffusers, grills, light fitting, fixtures, smoke detectors etc., wherever required, Main 'T' runners to be suspended from ceiling using 50 mm long M 6 dash fasteners, 6mm G.I. fully threaded rods with galvanised steel L cleat level adjusters of size 80x25x2mm, spaced at 1200mm centre to centre long main 'T' bottom exposed with 24mm of all T-sections shall be pre-painted with polyster baked paint, for all heights, as per specifications, drawing and as directed by engineer-in-charge. Note :- Only calcium silicate false ceiling area will be measured from wall to wall. No deduction shall be made for exposed frames/opening (cut outs)having area less than 0.30 Sqm. The calcium silicate ceiling tiles shall have NRC. Value 0.50 (Minimum), light reflection&gt; 85% non-combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity &lt;= 0.043 w/m0KC.</p>	Sqm	1575.00

Item No.	Description	Unit	Rate (Rs.)
10.28	<p>Providing and fixing tiled false ceiling of approved materials of size 595X595 mm in true horizontal level suspended on inter locking metal grid of hot dipped galvanized steel sections ( galvanized @ 120 grams per sqm both side inclusive ) consisting of main "T" runner with suitably spaced joints to get required length and of size 24X38 mm made from 0.30 mm thick (minimum) sheet spaced at 1200 mm center to center and cross "T" of size 24X25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200X600 mm and secondary cross "T" of length 600 mm and size 24X25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200X600 mm panel to form grids of 600X600 mm and wall angle of size 24X24X0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/ making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 X 37 X 25 X 1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanized butterfly level clips of size 85 X 30 X 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.</p>		
10.28.1	GI Metal Ceiling Lay in Plain Tegular edge Global white colour tiles of size 595X595 mm, and 0.5 mm thick with 8 mm drop, made of G I Sheet having galvanizing of 100 gms/sqm (boths ides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending.	Sqm	1491.00
10.28.2	GI Metal Ceiling Lay in perforated Tegular edge global white colour tiles of size 595x595mm and 0.5 mm thick with 8 mm drop made of GI Sheet having galvanizing of 100 gms/ sqm (both sides inclusive) and 20% perforation area with 1.8 mm dia holes and having NRC (Noise Reduction Coefficient ) of 0.5, electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending and perforation and backed with a black Glass fiber acoustical fleece.	Sqm	1613.00

Item No.	Description	Unit	Rate (Rs.)
10.29	12.5mm thick square edge PVC laminated Gypsum tiles of size 595mm x 595mm, made of Gypsum plasterboard, manufactured from natural gypsum as per IS 2095 part I and laminated with white 0.16mm thick fire retardant PVC film on the face side and 12 micron metalized polyester on the back side with all edges sealed with the face side PVC film which goes around and wraps the edges and is bonded to the edged and the back side metalized polyester film so as to make the tile a completely sealed unit.	Sqm	1804.00
10.30	Providing Solid PVC false Ceiling consisting of 600mm x 600mm, 5mm (±0.25) thick Plain embossed PVC sheet of Density 600 Kg /Cbm Manufactured by an ISO-9001-2015 certified Company, used as panel insert in a frame work made using powder coated aluminum T- section of sizes 1" x1"( 25x25mm, 19 gauge or 1mm thick ) in square pattern of grid sizes of 2'x2'( 600x600mm ). The aluminum framework is supported from the ceiling with the help of 'J' hook and G.I. wire / 6mm M.S. rods of required sizes to maintain proper level etc. The aluminum framework is supported on side wall with the use of aluminum L-section of size 1"x1" ( 25x25mm ) angles etc. Complete as per direction of Engineer-In-charge, manufacturer's specification & drawing.	Sqm	1490.00

Item No.	Description	Unit	Rate (Rs.)
10.31	<p>Providing &amp; Fixing of Mineral Fibre Anti Bacterial Suspended Ceiling System with (Bevelled Tegular) EDGE TILES WITH 15 mm Exposed GRID. The tiles should have Humidity Resistance (RH) of 95% Light Reflectance 90%, Thermal Conductivity K =0.052-0.057 w/m K, Colour White, Fire Performance UK Class 0/Class 1 (BS 476 Part 6 &amp; 7), in module size of 600 x 600 x 15 mm with Anti Microbial coating on the face of the tile, suitable for Green Building application, with Recycled content of 34 % The tile shall be laid on Silhouette profile grid system with 15 mm white/black flanges incorporating a 6 mm central reveal in white/black colour and with a web height of 45mm and a load carrying capacity of minimum 15.68 Kgs/M2 &amp; minimum pull out strength of 100 kgs. Silhouette, Main Runners &amp; Cross Tees to have mitred ends &amp; "birdsmouth" notches to provide mitred cruciform junctions. The T Sections have a Galvanizing of 90 grams per M2 and need to be installed with suspension system of make. The Tile &amp; Grid system used together should carry a 10 year warranty. INSTALLATION :- To comprise main runner spaced at 1200 mm centres securely fixed to the structural soffit using suspension system (Specifications below) at 1200mm maximum centre. The First/Last suspension system at the end of each main runner should not be greater than 450 mm from the adjacent wall. Flush fitting 1200 mm long cross tees to be interlocked between main runners at 600 mm centre to form 1200 x 600 mm module. Cut cross tees longer than 600mm require independent support. 600 x 600 mm module to be formed by fitting 600 mm long flush fitting cross tees centrally between the 1200 mm cross tees. Perimeter trim to be wall angles of size 3000 x 19 x 19mm, secured to walls at 450 mm maximum centres. SUSPENSION SYSTEM accessories consisting of M6 Anchor Fasteners with Vertical Hangers made of Galvanised steel of size 26 x 26x 25x1.2 mm with a Galvanised Thickness of 80 gsm, A pre Straightened Hanger wire of dia-2.5 mm of 1.8 m length., thickness of 80 gsm and a tensile strength of 344-413 MPa, along with Adjustable hook clips of 0.8 mm thick, galvanised spring steel for 2.68 mm with a minimum pull strength of 110 kg. The adjustable clip also consists of a 3.5 mm aquiline wire to be used with the main runner.</p>	Mtr	1650.00
10.32	<p>Providing &amp; Fixing of Mineral Fibre Acoustical Suspended Ceiling System with (Bevelled Tegular)</p>	Mtr	1553.00

Item No.	Description	Unit	Rate (Rs.)
10.33	<p>Providing and fixing 300C Aluminium Panel with perforation of 2mm diameter and 5mm centre to centre to give 15% open area with Non woven textile False Ceiling system of approved colour consisting of Panel 300 mm wide X 30 mm deep X 0.7 mm thick with bevelled edges having panel length upto 6 mtrs, Coil Coated on a Continuous Paint Line, Double baked and roll formed for higher strength and good roll forming characteristics. The panel ends will be raised upto 29mm. Panel shall be clipped to a baked enamelled aluminium panel carrier of 41.5mm wide x 62mm deep x 0.95 mm thick in standard length of 5 mtrs. made of double baked stove enamelled aluminium magnesium alloy AA3005 black with cut outs to hold the panels. The Carrier shall be suspended by means of G.I. threaded rod of 6-mm diameter directly fixed to the Carrier. The Carrier tabs to be bent down to secure the panels at all Panel Carrier intersections. The panels will be installed in a module of 300MM. (Tensile strength of suspension-344/413 mpa and fastner strength-110kg) All Ceiling Panels shall adhere to GreenPro Certifications.</p>	Sqm	4530.00

Item No.	Description	Unit	Rate (Rs.)
10.34	<p>Providing and fixing of perforated Metal Tile Ceiling System comprising of Tile of 600mm wide and 600mm long manufactured out of 0.7mm thick aluminium alloy 3105 with beveled edge of 4.15mm width height of 32mm. The tiles shall be perforated to 1.5mm dia with open area of 23%. The Tile will be manufactured on advanced includes several leveling stages in the manufacturing process by approved manufacturers. Tile ends will be raised with pips and slops to ensure positive engagement into the spring to enable for de-mounting of individual panels. The Tile sides will be sufficiently high to ensure a minimum deflection across the length of Tile. All Tiles will be bevel edged. The Tile shall be epoxy polyester powder coating in white colour. The Tile shall be clipped into clip in rail of 0.5mm thick GI. in form of a grid system using a cross connector. The clip in rail shall be supported from slab by means of rigid Suspension of 4mm G.I rod, Hold on Clamp with Clip. POWDER COATING SPECIFICATION: Aluminium PANELS, cleaned through eco friendly cleaning process and powder applied through electrostatic charged Automatic Carona technology spray guns and cured in combination of Infrared &amp; hot air oven in a certified plant as Akzo International approved applicator .</p> <p>The powder is conforming with the performance requirements of the AAMA2603.02 &amp; Qualicoat Class 1 specifications.</p> <p>The coating thickness will be minimum 60 microns with properties of Salt Spray of 1500 hrs in exposure in SST Cabinet with Minimum blister rating 8.</p> <p>(Tensile strength of suspension-344/413 mpa and fastener strength-110kg)</p> <p>All Ceiling Panels shall adhere to GreenPro Certifications.</p>	Sqm	3604.00



Item No.	Description	Unit	Rate (Rs.)
10.35	<p>Providing and fixing of Un-perforated Metal Tile Ceiling System comprising of Tile of 600mm wide and 600mm long manufactured out of 0.7mm thick aluminium alloy 3105 with beveled edge of 4.15mm width height of 32mm. The Tile will be manufactured on advanced equipment that includes several leveling stages in the manufacturing process by approved manufacturers . Tile ends will be raised with pips and slops to ensure positive engagement into the spring to enable for de-mounting of individual panels. The Tile sides will be sufficiently high to ensure a minimum deflection across the length of Tile. All Tiles will be bevel edged. The Tile shall be epoxy polyester powder coating with in white colour. The Tile shall be clipped into clip in rail of 0.5mm thick GI. in form of a grid system using a cross connector. The clip in rail shall be supported from slab by means of rigid Suspension of 4mm G .I rod, Hold on Clamp with Clip. POWDER COATING SPECIFICATION: Aluminium PANELS, cleaned through eco friendly cleaning ,process and powder applied through electrostatic charged Automatic Carona technology spray guns and cured in combination of Infrared &amp; hot air oven in a certified plant as Akzo International approved applicator .</p> <p>The powder is conforming with the performance requirements of the AAMA2603.02 &amp; Qualicoat Claa 1 specifications. The coating thickness will be minimum 60 microns with properties of Salt Spray of 1500 hrs in exposure in SST Cabinet with Minimum blister rating 8. (Tensile strength of suspension-344/413 mpa and fastner strength-110kg) All Ceiling Panels shall adhere to GreenPro Certifications.</p>	Sqm	3041.00

Item No.	Description	Unit	Rate (Rs.)
10.36	<p>Providing and fixing of Un perforated Antibacterial Metal Tile Ceiling System comprising of Tile of 600mm wide and 600mm long manufactured out of 0.7mm thick aluminium alloy 3105 with beveled edge of 4.15mm width height of 32mm. The Tile will be manufactured on advanced equipment that includes several leveling stages in the manufacturing process by approved manufacturers. Tile ends will be raised with pips and slops to ensure positive engagement into the spring to enable for de-mounting of individual panels. The Tile sides will be sufficiently high to ensure a minimum deflection across the length of Tile. All Tiles will be bevel edged. The Tile shall be epoxy polyester powder coating with ANTIBAC in white colour which is in compliant to ROHS directive. The Tile shall be clipped into clip in rail of 0.5mm thick GI. in form of a grid system using a cross connector. The clip in rail shall be supported from slab by means of rigid Suspension of 4mm G.I rod, Hold on Clamp with Clip. POWDER COATING SPECIFICATION: Aluminium PANELS, cleaned through eco friendly cleaning process and powder applied through electrostatic charged Automatic Carona technology spray guns and cured in combination of Infrared &amp; hot air oven in a certified plant as Akzo International approved applicator .</p> <p>The powder is conforming with the performance requirements of the AAMA2603.02 &amp; Qualicoat Class 1 specifications.</p> <p>The coating thickness will be minimum 60 microns with properties of Salt Spray of 1500 hrs in exposure in SST Cabinet with Minimum blister rating 8.</p> <p>(Tensile strength of suspension-344/413 mpa and fastner strength-110kg)</p> <p>All Ceiling Panels shall adhere to GreenPro Certifications.</p>	Sqm	3930.00

Item No.	Description	Unit	Rate (Rs.)
10.37	<p>Providing and fixing of Perforated Metal Tile Ceiling System comprising of Tile of 600mm wide and 600mm long manufactured out of 0.5mm thick Galvanised Iron with beveled edge of 4.15mm width height of 32mm. The tiles shall be perforated to 1.5mm dia with open area of 23%. The Tile will be manufactured on advanced equipment that includes several leveling stages in the manufacturing process by approved manufacturers. Tile ends will be raised with pips and slops to ensure positive engagement into the spring to enable for de-mounting of individual panels. The Tile sides will be sufficiently high to ensure a minimum deflection across the length of Tile. All Tiles will be bevel edged. The Tile shall be epoxy polyester powder coating in white colour. The Tile shall be clipped into clip in rail of 0.5mm thick GI. in form of a grid system using a cross connector. The clip in rail shall be supported from slab by means of rigid Suspension of 4mm G.I rod, Hold on Clamp with Clip. POWDER COATING SPECIFICATION: Aluminium PANELS, cleaned through eco friendly cleaning process and powder applied thru electrostatic charged Automatic Carona technology spray guns and cured in combination of Infrared &amp; hot air oven in a certified plant as Akzo International approved applicator .</p> <p>The powder is conforming with the performance requirements of the AAMA2603.02 &amp; Qualicoat Class 1 specifications. The coating thickness will be minimum 60 microns with properties of Salt Spray of 1500 hrs in exposure in SST Cabinet with Minimum blister rating 8. (Tensile strength of suspension-344/413 mpa and fastner strength-110kg) All Ceiling Panels shall adhere to GreenPro Certifications.</p>	Sqm	3222.00

Item No.	Description	Unit	Rate (Rs.)
10.38	<p>Providing and fixing of Unperforated Metal Tile Ceiling System comprising of Tile of 600mm wide and 600mm long manufactured out of 0.5mm thick Galvanised Iron with beveled edge of 4.15mm width height of 32mm. The tiles shall be plain. The Tile will be manufactured on advanced equipment that includes several leveling stages in the manufacturing process by approved manufacturers. Tile ends will be raised with pips and slops to ensure positive engagement into the spring to enable for de-mounting of individual panels. The Tile sides will be sufficiently high to ensure a minimum deflection across the length of Tile. All Tiles will be bevel edged. The Tile shall be epoxy polyester powder coating in white colour. The Tile shall be clipped into clip in rail of 0.5mm thick GI. in form of a grid system using a cross connector. The clip in rail shall be supported from slab by means of rigid Suspension of 4mm G.I rod, Hold on Clamp with Clip. POWDER COATING SPECIFICATION: Aluminium PANELS, cleaned through eco friendly cleaning ,process and powder applied through electrostatic charged Automatic Carona technology spray guns and cured in combination of Infrared &amp; hot air oven in a certified plant as Akzo International approved applicator .</p> <p>The powder is conforming with the performance requirements of the AAMA2603.02 &amp; Qualicoat Claa 1 specifications. The coating thickness will be minimum 60 microns with properties of Salt Spray of 1500 hrs in exposure in SST Cabinet with Minimum blister rating 8. (Tensile strength of suspension-344/413 mpa and fastner strength-110kg) All Ceiling Panels shall adhere to GreenPro Certifications.</p>	Sqm	2429.00

Item No.	Description	Unit	Rate (Rs.)
10.39	<p>Supply &amp; Fixing of torsion spring Plank Ceiling System, comprising of Plank of 600mm wide and 1200mm long manufactured out of 0.7mm thick Aluminium Alloy 3105 perforated 1.5mm dia With 22% open area. The metal ceiling panels shall be downward accessible with a minimum of four (4) torsion springs per panel . The Plank will be manufactured on advanced CAD/CAM equipment that includes several levelling stages in the manufacturing process. Torsion Spring panel with two side legs die formed and two end legs die formed and punched to receive torsion springs (min two springs each end or side) for secure engagement into Tee Grid main runners which are factory punched to receive torsion springs. Planks will be square edged. The metal ceiling panels shall be downward accessible with a minimum of four (4) torsion springs per panel. The Plank shall be Polyester powder coated in desired colour. Main Runners: 24mm deep, inverted "Tee" sections, 3.6m long, with factory punched flanges to receive torsion spring assembly. Main Tee on center spacing to match panel length. Cross Runners: 24 mm deep, inverted "Tee" sections designed to interlock in to web of main tee section on designated spacing. Cross tee length to match panel length. Cross tees are spaced spacing 1200mm on center maximum. Suspension System:</p> <p>As per manufacturer standard considering type of plenum and its height. Paint finish – POWDER COATING SPECIFICATION: Aluminium PANELS, cleaned through eco friendly cleaning ,process and powder applied through electrostatic charged Automatic Carona technology spray guns and cured in combination of Infrared &amp; hot air oven in a certified plant as Akzo International approved applicator . The powder is conforming with the performance requirements of the AAMA2603.02 &amp; Qualicoat Claa 1 specifications. The coating thickness will be minimum 60 microns with properties of Salt Spray of 1500 hrs in exposure in SST Cabinet with Minimum blister rating 8 Acoustic Felt (Optional): Non-woven felt made of glass-reinforced fibre glued over the perforation for sound absorption. NRC- 0.7. (Tensile strength of suspension-344/413 mpa and fastner strength-110kg) All Ceiling Panels shall adhere to GreenPro Certifications.</p>	Sqm	5015.00

Item No.	Description	Unit	Rate (Rs.)
10.40	<p>Supply &amp; Fixing of torsion spring Plank Ceiling System, comprising of Plank of 600mm wide and 600mm long manufactured out of 0.7mm thick Aluminium Alloy 3105 perforated 1.5mm dia With 22% open area. The metal ceiling panels shall be downward accessible with a minimum of four (4) torsion springs per panel . The Plank will be manufactured on advanced CAD/CAM equipment that includes several levelling stages in the manufacturing process. Torsion Spring panel with two side legs die formed and two end legs die formed and punched to receive torsion springs (min two springs each end or side) for secure engagement into Tee Grid main runners which are factory punched to receive torsion springs. Planks will be square edged. The metal ceiling panels shall be downward accessible with a minimum of four (4) torsion springs per panel. The Plank shall be Polyester powder coated in desired colour. Main Runners: 24mm deep, inverted "Tee" sections, 3.6m long, with factory punched flanges to receive torsion spring assembly. Main Tee on center spacing to match panel length. Cross Runners: 24 mm deep, inverted "Tee" sections designed to interlock in to web of main tee section on designated spacing. Cross tee length to match panel length. Cross tees are spaced spacing 1200mm on center maximum.</p> <p>Suspension System: As per manufacturer standard considering type of plenum and its height. Paint finish – POWDER COATING SPECIFICATION: Aluminium PANELS, cleaned through eco friendly cleaning ,process and powder applied thru electrostatic charged Automatic Carona technology spray guns and cured in combination of Infrared &amp; hot air oven in a certified plant as Akzo International approved applicator . The powder is conforming with the performance requirements of the AAMA2603.02 &amp; Qualicoat Claa 1 specifications. The coating thickness will be minimum 60 microns with properties of Salt Spray of 1500 hrs in exposure in SST Cabinet with Minimum blister rating 8. Acoustic Felt (Optional): Non-woven felt made of glass-reinforced fibre glued over the perforation for sound absorption. NRC- 0.7. (Tensile strength of suspension- 344/413 mpa and fastner strength-110kg)</p> <p>All Ceiling Panels shall adhere to GreenPro Certifications.</p>	Sqm	4932.00

Item No.	Description	Unit	Rate (Rs.)
10.41	<p>Supply &amp; Fixing of torsion spring Plank Ceiling System, comprising of Plank of 600mm wide and 1200mm long manufactured out of 0.6mm thick GALVANISED IRON perforated 1.5mm dia With 22% open area. The metal ceiling panels shall be downward accessible with a minimum of four (4) torsion springs per panel . The Plank will be manufactured on advanced CAD/CAM equipment that includes several levelling stages in the manufacturing process. Torsion Spring panel with two side legs die formed and two end legs die formed and punched to receive torsion springs (min two springs each end or side) for secure engagement into Tee Grid main runners which are factory punched to receive torsion springs. Planks will be square edged. The metal ceiling panels shall be downward accessible with a minimum of four (4) torsion springs per panel. The Plank shall be Polyester powder coated in desired colour. Main Runners: 24mm deep, inverted "Tee" sections, 3.6m long, with factory punched flanges to receive torsion spring assembly. Main Tee on center spacing to match panel length. Cross Runners: 24 mm deep, inverted "Tee" sections designed to interlock in to web of main tee section on designated spacing. Cross tee length to match panel length. Cross tees are spaced spacing 1200mm on center maximum.</p> <p>Suspension System: As per manufacturer standard considering type of plenum and its height. Paint finish – POWDER COATING SPECIFICATION: Aluminium PANELS, cleaned through eco friendly cleaning ,process and powder applied thru electrostatic charged Automatic Carona technology spray guns and cured in combination of Infrared &amp; hot air oven in a certified plant as Akzo International approved applicator . The powder is conforming with the performance requirements of the AAMA2603.02 &amp; Qualicoat Claa 1 specifications. The coating thickness will be minimum 60 microns with properties of Salt Spray of 1500 hrs in exposure in SST Cabinet with Minimum blister rating 8. Acoustic Felt (Optional): Non-woven felt made of glass-reinforced fibre glued over the perforation for sound absorption. NRC- 0.7. (Tensile strength of suspension- 344/413 mpa and fastner strength-110kg)</p> <p>All Ceiling Panels shall adhere to GreenPro Certifications.</p>	Sqm	4250.00

**B - 75**

Item No.	Description	Unit	Rate (Rs.)
10.42	Providing and installation of Poly Carbonate Sheet roofing over existing steel framing as per drawing and design including fixing with non-corrodible nuts and water proof washers as per instruction of Engineer-in-charge.		
10.42.1	6 mm thick	Sqm	1381.00
10.42.2	10 mm thick	Sqm	1827.00
10.43	Providing Transportation cutting and placing in position STONE COATED ROOFING SHEET of 0.4 mm thickness CLASSIC PROFILE having panel size of 420 mm x 1340 mm on roof fixed with G.I. flat headed screws with rubber washer of 25 mm /37mm /50mm length as required with standard laps between sheet in both longitudinal & transverse direction fixed on steel purlins or runners including drilling holes etc complete with finishing kit.	Sqm	2855.00
10.44	Providing transporting to the site & fixing STONE COATED STEEL RIDGES of approved single colour on roof length of 2000mm cut as the Site requirement and fixed with G.I. flat headed screws with rubber washer of 25mm /37mm/50mm length as required with standard lap between the ridges.	Rmt.	864.00



## CHAPTER : B-11 FLOORING WORKS

Note : The rates of item nos. 11.1 to 11.57 are for work upto floor five level

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

### CEMENT CONCRETE FLOORING

11.1	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, making of lines or groove etc complete but excluding the cost of nosing of steps etc. complete.		
11.1.1	40mm thick with 20mm thick nominal size aggregate.	Sqm	275.00
11.1.2	75mm thick with 20mm thick nominal size aggregate.	Sqm	435.00
11.2	Providing and fixing 50mm thick cement concrete flooring with Metallic concrete hardener topping, under layer of 38mm thick cement concrete 1:2:4 (1-cement : 2-coarse sand : 4-graded stone aggregate 20mm thick nominal size) and top layer of 12mm thick metallic concrete hardener consisting of mix 1:2 (1 cement : 2 stone aggregate, 6mm nominal size) by volume & mixed with metallic hardening compound of approved quality @ 2Kg./Sqm including cement slurry, rounding off edges etc. but excluding the cost of nosing of step etc. complete.	Sqm	408.00
11.3	Cement plaster in skirting and/dado 18 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement including rounding of junctions with floor	Sqm	254.00

### TERRAZZO FLOORING

11.4	40mm thick marble chips flooring rubbed and polished to granolithic finish under layer 31mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5mm nominal size) including fixing of dividing strip (excluding the cost of strips) and top layer 9mm thick with marble chips of approved colour & 4mm to 7mm nominal size laid in cement marble chips 2 : 3 (2 cement : 3 marble chips) by volume including cement slurry etc. complete		
11.4.1	Dark shade pigment with ordinary cement.	Sqm	479.00
11.4.2	Light shade pigment with ordinary cement.	Sqm	686.00

Item No.	Description	Unit	Rate (Rs.)
11.4.3	Medium shade pigment with approximately 50% white cement and 50% ordinary cement.	Sqm	509.00
11.4.4	White cement without any pigment.	Sqm	513.00
11.4.5	Light shade pigment with white cement.	Sqm	477.00
11.4.6	Ordinary cement without any pigment.	Sqm	445.00
11.5	40mm thick marble chips flooring rubbed and polished to granolithic finish under layer 28mm thick cement concrete 1:2:4 (1 cement : 2 course sand : 4 graded stone aggregate 12.5mm nominal size) including fixing of dividing strip (excluding the cost of strips) and top layer 12mm thick with marble chips of approved colour 7mm to 10mm nominal size laid in cement marble chips mix by weight in proportion of 2 : 3 (2 cement : 3 marble chips) by volume including cement slurry etc. complete :		
11.5.1	Dark shade pigment with ordinary cement.	Sqm	509.00
11.5.2	Light shade pigment with ordinary cement.	Sqm	596.00
11.5.3	Medium shade pigment with approximately 50% white cement and 50% ordinary cement.	Sqm	551.00
11.5.4	White cement without any pigment.	Sqm	553.00
11.5.5	Light shade pigment with white cement.	Sqm	511.00
11.5.6	Ordinary cement without any pigment.	Sqm	463.00
11.6	Marble chips skirting/dado rubbed and polished to granolithic finish 6mm thick with white marble chips of approved colour and size from smallest to 4mm nominal size laid in cement marble chips mix in proportion of 4:7(4 cement : 7 marble chips) by volume including fixing of dividing strips (excluding the cost of strips) complete in all respects : 18mm thick with under layer of 12mm thick cement plaster 1:3 (1 cement : 3 coarse sand) :		
11.6.1	Dark shade pigment with ordinary cement.	Sqm	597.00
11.6.2	Light shade pigment with ordinary cement.	Sqm	640.00
11.6.3	Medium shade pigment with approximately 50% white cement and 50% ordinary cement.	Sqm	618.00
11.6.4	White cement without any pigment.	Sqm	620.00
11.6.5	Light shade pigment with white cement.	Sqm	595.00
11.6.6	Ordinary cement without any pigment.	Sqm	572.00
11.7	Providing and fixing glass strips in joints of terrazo/ cement concrete floors.		
11.7.1	40mm wide and 4mm thick	Mtr.	33.00
11.7.2	20mm wide and 3mm thick for skirting.	Mtr.	21.00
11.8	Extra for laying terrazo flooring on staircase treads not exceeding 30 cm in width including cost of forming, nosing etc.	Sqm	25.00

Item No.	Description	Unit	Rate (Rs.)
11.9	Extra for terrazzo flooring in narrow band bands not exceeding 7.5cm in width.	Sqm	15.00
11.10	Crazy marble stone flooring 20mm thick marble stone with black or of specified colour topping including filling the gaps with cement marble chips mix in proportion of 4 : 7 (4cement : 7 white black or white or black marble chips) size from 1mm to 4mm by volume and under layer of 25mm thick cement concrete [1:2:4, graded stone aggregate 12.5mm nominal size] rubbing and polishing and cement slurry etc. complete : In ordinary cement.	Sqm	556.00
<b>TILE FLOORING</b>			
11.11	Precast terrazzo tiles of approved make, 20mm thick with marble chips of size upto 6mm laid in floors, and landing, jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete on 20mm thick bed of cement sand mortar 1 : 4.		
11.11.1	Light shade using white cement.	Sqm	513.00
11.11.2	Medium shade using approximately 50% white cement and 50% ordinary cement.	Sqm	527.00
11.11.3	Dark shade using ordinary cement.	Sqm	498.00
11.11.4	Ordinary cement without any pigment.	Sqm	555.00
11.12	Extra if terrazzo tiles are laid in treads of steps not exceeding 30 cm in width.	Sqm	30.00
11.13	Precast terrazzo tiles of approved make 20mm thick with marble chips of size upto 6mm in skirting & risers, treads of steps and dados 12mm thick cement plaster 1:3 (1 cement : 3 coarse sand) jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete with tiles of :		
11.13.1	Light shade using white cement.	Sqm	664.00
11.13.2	Medium shade using approximately 50% white cement and 50% ordinary cement.	Sqm	664.00
11.13.3	Dark shade using ordinary cement.	Sqm	701.00
11.13.4	Ordinary cement without any pigment.	Sqm	695.00

Item No.	Description	Unit	Rate (Rs.)
11.14	Providing & laying Chequered terrazzo tiles of approved make 22mm thick with marble chips of size upto 6mm, in floors, jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and polishing complete in all respect as per specification, on 28mm thick bed of C.M. 1:4 :		
11.14.1	Light shade using shade cement.	Sqm	649.00
11.14.2	Medium shade using approximately 50% white cement and 50% ordinary cement.	Sqm	612.00
11.14.3	Dark shade using ordinary cement.	Sqm	577.00
11.14.4	Ordinary cement without any pigment.	Sqm	528.00
11.14.5	Add extra for non slipping 9-12 mm ironite topping tiles		10%
11.15	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and cleaning etc. complete on 20 mm thick bed of cement mortar 1:4 (1 cement : 4 coarse sand)		
11.15.1	Light shade using shade cement.	Sqm	540.00
11.15.2	Medium shade using approximately 50% white cement and 50% ordinary cement.	Sqm	611.00
11.15.3	Dark shade using ordinary cement.	Sqm	525.00
11.15.4	Ordinary cement without any pigment.	Sqm	475.00
11.15.5	Add Extra for polished chequered precast cement concrete tiles over item No. 11.15.1, 11.15.2, 11.15.3, 11.15.4		10%
<b>KOTA STONE FLOORING</b>			
11.16	Kota stone slab flooring 25 mm thick over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand)		
11.16.1	For area of each slab from 901 to 2000 Sq.Cm :	Sqm	1050.00
11.16.2	For area of each slab from 2001 to 5000 Sq.Cm	Sqm	1100.00
11.17	Kota stone slabs 25 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete		
11.17.1	For area of each slab upto 2001 Sqcm	Sqm	1063.00
11.17.2	For area of each slab from 2001 to 5000 Sqcm	Sqm	1100.00

Item No.	Description	Unit	Rate (Rs.)
11.18	Rough Chisel dressed Kota stone 35 mm thick flooring of approved shade set in pattern over 20mm thick base of cement mortar 1:6 (1 cement : 6 coarse sand) and pointing with cement sand mortar 1:3 with pigment to match the shade of stone with joint thickness up to 15 mm complete in all respects :	Sqm	631.00
<b>SAND STONE FLOORING</b>			
11.19	Rough Chisel dressed Sand stone 35 mm thick flooring of approved shade set over 20mm thick base of cement mortar 1:6 (1 cement : 6 coarse sand) and pointing with cement sand mortar 1:3 with pigment to match the shade of stone with joint thickness up to 15 mm complete in all respects :		
11.19.1	Red sand stone (Karauli stone)	Sqm	678.00
11.19.2	Pink sand stone (Bansi Paharpur stone)	Sqm	715.00
11.19.3	Mandana stone	Sqm	715.00
11.20	Fine dressed & machine cut edges 30-35 mm thick sand stone flooring over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) jointed grey cement slurry mixed with pigment to match the shade of stone complete as per design drawing and instruction of El.		
11.20.1	Red sand stone (Karauli stone)	Sqm	812.00
11.20.2	Pink sand stone (Bansi Paharpur stone)	Sqm	897.00
11.20.3	Mandana stone	Sqm	897.00
11.21	Fine grinded Gangsaw cut 30-35 mm thick stone flooring over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) jointed grey cement slurry mixed with pigment to match the shade of stone complete as per design drawing and instruction of El.		
11.21.1	Red sand stone (Karauli stone)	Sqm	873.00
11.21.2	Pink sand stone (Bansi Paharpur stone)	Sqm	958.00
11.21.3	Mandana stone	Sqm	958.00

Item No.	Description	Unit	Rate (Rs.)
11.22	Extra for pre finished nosing in treads of steps of Kota stone/ sand stone slab.	Sqm	83.00
11.23	Extra for Mirror polishing on terrazzo/Kota stone work where ever required to give high gloss finish complete.	Sqm	131.00
11.24	Random rubble dry stone Kharanja under floor.	Cum	1167.00
11.25	Filling of sunk portion of roof with earthen pots of required height including filling voids with 1:3:6 light concrete, using brick bats complete levelling and dressing the surface by 50mm thick cement concrete 1:2:4 as per specification.	Cum	1714.00
11.26	Providing and fixing of precast concrete interlocking blocks of M 30 grade 60mm thick manufactured from fully computerised automatic stationery hydraulic vibropressed machine and fully computerised automatic batching plant of class A1/A2 as per BS 6717:2001. The CC interlocking paving blocks be laid on average 50mm. thick bed of coarse sand and the joint is to be filled with fine sand. Laying procedure on compacted sub-base as defined. Complete job is to be executed as per the instruction of Engineer incharge. The rates to be inclusive of all lead, Lifts and taxes. General specification of blocks: 1) Shape as defined by Engineer incharge 2) Tensile splitting strength and braking load as per BS 6717:2001 3) Color: Grey cement natural colour 4) Variation in dimension: Less than 1.6mm. 5) Variation in thickness: Less than 3.2mm 6) Abrasion: As per BS: 6717:2001	Sqm	693.00
11.27	Providing and fixing of <b>Pavers</b> made in fully automatic plant with vibro compact process ( high end uniform strength of m30 grade in various sizes 100x100x60 mm 200x100x60 mm 200x200x60 mm to be laid on average 50mm. thick bed of coarse sand and the joint is to be filled with fine sand.in any available colours complete in all respect as directed by engineer incharge.:	Sqm	995.00

Item No.	Description	Unit	Rate (Rs.)
11.28	Providing and fixing designer cement concrete polished tiles over 20mm average thick base of CM 1 :4 (1 Cement : 4 sand) jointing with cement mortar 1 :2 ( 1cement : 2 sand) with pigment to match the shade of the tiles having minimum thickness of 25mm complete with all respect. ( as per IS 1237:2012)	Sqm	1259.00
11.29	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement : 3 coarse sand ) including making joints with without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete including painting etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineerin- charge).	Cum	5705.00
11.30	Providing and laying M30 grade controlled cement concrete pavements including mixing and vibrations concrete with necessary needle vibrators and surface with screed board vibrating complete in all respect with 20/25 mm stone aggregate (crusher broken) including anti-skid textured finish to required camber/ super elevation and grade including curing etc. as per specification with cement concrete M-30 grade including cost of Steel frame work for sides of C.C. pavement consisting of M. S. channels flats and angles with required steel pegs ( some of them may left embedded in concrete/ including providing frame work	Cum	5559.00
11.31	Extra for vacuum processed concrete including cost of equipments labour etc.	Sqm..	209.00
11.32	Cutting of construction joint/ longitudinal joint 4 to 6 mm. wide & 75 to 100mm depth using mechanical concrete cutter including cost of diamond bit cutting wheel and filling of bitumen sealing compound in groove including cost of sealing compound.		
	25 mm depth	P Mtr.	43.00
	50 mm depth	P Mtr.	89.00
	75 mm depth	P Mtr.	132.00
	100 mm depth	P Mtr.	177.00

Item No.	Description	Unit	Rate (Rs.)
11.33	Deduct over item no.11.30 for M20 grade controlled cement concrete design mix in place of M30 grade controlled cement concrete	cum	130.00
<b>PVC FLOORING</b>			
11.34	Providing and Fixing Cushion Vinyl/Fully flexible Vinyl Flooring confirming to I.S.-3462 Flooring of approved make with fibre base using rubber base adhesives including rolling with light wooden roller complete :		
11.34.1	1.0 mm thick.	Sqm	747.00
11.34.2	1.5 mm thick.	Sqm	859.00
11.34.3	2.0 mm thick.	Sqm	974.00
11.35	25mm thick wooden planking, tongued and grooved in flooring including fixing with iron screws complete (Lower frame to be paid extra) with :First class Teak wood.	Sqm	2899.00
11.36	Providing and laying wooden flooring with a direct laminated surface treated with aluminum oxide on top of a high-density fiber board with a density of 850 Kg./per Mtr. having a click system tongue and groove joint to secure a long lasting joint. The planks are or termite resistant and water protected with both side lamination Wooden flooring Planks of size 1208 x 194 x 8 mm / 1215x294x8 mm (8mm thick laminated floor class of use 23/31 having a wear resistance level of AC-3 , impact resistance > 9mm, moisture resistance 3-10% as per (EN-424, EN – 438 EN – 425 EN – 417 – 2)or PREN 3329 complete in all respect as per direction of EI	Sqm	2253.00
11.37	Providing and laying of skirting 89 mm wide having both side laminations with <b>moulding</b> in upper side with matching of floor fixing with nails and screws & fevicol complete in all respect as per direction of EI.	Rm	955.00
11.38	Providing and laying transaction/adaptation profile with fixing of nails, screws & fevicol complete in all respect as per direction of EI.	Rm	883.00
11.39	Providing and laying of paver block as per IS 15658 : 2006 (Indian standard for precast concrete block for paving- specification) and IRC : SP:63-2004 (guidelines for the use of interlocking concrete block pavement)		



Item No.	Description	Unit	Rate (Rs.)
	M-30, 60 mm thick to be used in non traffic areas like building premises, monument premises, land scapes, public gardens/ park, domestic drives, paths and patios, Embankment slopes, sand stabilization Area etc.( As per table 1 of IS 15658:2006		
11.39.1	Category A Denated units to key into each other on four faces zigzag shape as per IRC SP 63:2004	Sqm	796.00
11.39.2	Category 'B' Denated only two side like I,Z,T shape etc. as per IRC SP 63:2004	Sqm	766.00
11.39.3	Category 'C'not denated on any it's faces like Hexagon, Rectangular, square shape as per IRC SP 63:2004	Sqm	718.00
11.40	M-35,60mm thick to be used in light traffic (Light traffic is defined as a daily traffic up to 150 commercial vehicles exceeding 30 KN laden weight, or an equivalent up to 0.5 million standard axles (MSA) for a design life of 20 years (A standard axle is defined as a single axle load of 81.6 KN) like pedestrian plazas, shopping complexes ramps, car parks, office driveways , housing colonies, office complexes, rural roads with low volume traffic, farm houses , beach sites, tourist resorts, local authority footways, residential roads, etc.		
11.40.1	Category A Denated units to key into each other on four faces zigzag shape as per IRC SP 63:2004	Sqm	937.00
11.40.2	Category 'B' Denated only two side like I,Z,T shape etc. as per IRC SP 63:2004	Sqm	910.00
11.40.3	Category 'C'not denated on any it's faces like Hexagon, Rectangular, square shape as per IRC SP 63:2004	Sqm	829.00
11.41	M-40,80mm thick to be used in medium- traffic ( Medium traffic is defined as a daily traffic of 150-450 commercial vehicles exceeding 30 KN laden weight, or an equivalent of 0.5 to 2.0 MSA for a design life of 20 years.) like city streets, small and medium market roads, low volume roads, utility cuts on arterial roads, etc		
11.41.1	Category A Denated units to key into each other on four faces zigzag shape as per IRC SP 63:2004	Sqm	1062.00
11.41.2	Category 'B' Denated only two side like I,Z,T shape etc. as per IRC SP 63:2004	Sqm	1034.00
11.41.3	Category 'C'not denated on any it's faces like Hexagon, Rectangular, square shape as per IRC SP 63:2004	Sqm	978.00

Item No.	Description	Unit	Rate (Rs.)
11.42	M-50 100mm thick to be used in heavy-traffic ( Heavy traffic is defined as a daily traffic of 450-1500 commercial vehicles exceeding 30 KN laden weight, or an equivalent of 2.0 to 5.0 MSA for a design life of 20 years.) like Bus terminals, industrial complexes, mandi houses roads on expansive soils, factory floor, service station, industrial pavements.etc.		
11.42.1	Category A Denated units to key into each other on four faces zigzag shape as per IRC SP 63:2004	Sqm	1278.00
11.42.2	Category 'B' Denated only two side like I,Z,T shape etc. as per IRC SP 63:2004	Sqm	1250.00
11.42.3	Category 'C'not denated on any it's faces like Hexagon, Rectangular, square shape as per IRC SP 63:2004	Sqm	1193.00
11.43	M-55 120mm thick to be used in very heavy-traffic ( very heavy-traffic is defined as a daily traffic of more than 1500 commercial vehicle exceeding 30 KN laden weight, or an equivalent of more than 5.0 MSA for a design life of 20 years.) like container terminals, ports, block yards, mine access roads, bulk cargo handling areas, airport pavements, etc.		
11.43.1	Category A Denated units to key into each other on four faces zigzag shape as per IRC SP 63:2004	Sqm	1483.00
11.43.2	Category 'B' Denated only two side like I,Z,T shape etc. as per IRC SP 63:2004	Sqm	1455.00
11.43.3	Category 'C'not denated on any it's faces like Hexagon, Rectangular, square shape as per IRC SP 63:2004	Sqm	1398.00
11.44	Add extra over item No. <b>11.43</b> , if reflective paver block, manufactured with wet cast vibration system in two layers is used.	Sqm	10%
11.45	Add extra over rates of item No. <b>11.43</b> , if colored paver blocks are used	Sqm	20%
11.46	Providing and fixing 25 mm thick Non slippery reflective type designer paving tile with metallic hardening using 2 Kg/sq.mtr made out of cement concrete of required grade, sizes of tile upto 300X300 mm Manufactured with wet cast Vibration system in two layers and laid over base of 20 mm thick cement mortar1:4 using neat cement slurry in cluding finishing of joints etc. complete.		
11.46.1	Using M-40 grade cement Concrete	Sqm	1471.00
11.46.2	Using M-30 grade cement Concrete	Sqm	1334.00

Item No.	Description	Unit	Rate (Rs.)
11.46.3	Add extra over <b>11.46</b> , if <b>coloured</b> wearing course (as per IS 1237:1980) is used.	Sqm	20%
11.47	25mm thick fine dressed and machine grinded surface stone flooring over 20mm (av.) thick base in cement in CM 1:6 with joints finished flush with:		
11.47.1	Red sand stone	Sqm	500.00
11.47.2	White sand stone	Sqm	608.00
11.48	Providing & Laying Tactile tile (for vision impaired persons is standard of size 300x300x20mm and confirming to IS 1231 of 1980 (Re affirmed in 2006) in all colours & sheds further product should confirm ASTM 303 for shad resistance and DIN51099 for colour fastness etc. laid on 20mm thick base of cement mortar 1:4 (1 cement : 4 course sand) in all shapes & patterns including grouting the joint which white cement mixer) will matching pigments etc complete is per direction of Engineer-in-charges. <b>Grade M 30</b>	Sqm	1252.00
11.49	25mm thick wooden planking, tongued and grooved in flooring including fixing with iron screws complete (Lower frame to be paid extra) with :First class Teak wood.	Sqm	2870.00
11.50	Providing and laying wooden flooring with a direct laminated surface treated with aluminum oxide on top of a high-density fiber board with a density of 850 Kg./per Mtr. having a click system tongue and groove joint to secure a long lasting joint. The planks are or termite resistant and water protected with both side lamination Wooden flooring Planks of size 1208 x 194 x 8 mm / 1215x294x8 mm (8mm thick laminated floor class of use 23/31 having a wear resistance level of AC-3 , impact resistance > 9mm, moisture resistance 3-10% as per (EN-424, EN – 438 EN – 425 EN – 417 – 2)or PREN 3329 complete in all respect as per direction of EI	Sqm	2231.00
11.51	Providing and laying of skirting 89 mm wide having both side laminations with <b>moulding</b> in upper side with matching of floor fixing with nails and screws & fevicol complete in all respect as per direction of EI.	Rm	945.00
11.52	Providing and laying transaction/adaptation profile with fixing of nails, screws & fevicol complete in all respect as per direction of EI.	Rm	875.00

Item No.	Description	Unit	Rate (Rs.)
11.53	Providing and laying in place 300mm x 300mm x 16mm cement tactile directional and warning tiles (for a person with visual impairment) of the approved brand and make and specified colour for outdoor floors such as footpath, courtyard, multimodals location etc. laid on 20mm thick base of cement mortar 1:4 (1 cement: 4 coarse sand) in all shapes and patterns including grouting the joints with white cement with matching pigments etc. complete as per direction of engineer in charge	Sqm.	1549.00
11.54	Providing and laying in place 300mm x 300mm x 9.8mm vitrified tactile warning and directional tiles of the approved brand, make and colour inside the buildings at in all corridors and lobbies, level differences etc. as per accessibility standards and as per the installation instructions prescribed by the manufacturer including zarri making wherever required and finishing including grouting the joints with white cement with matching pigments etc. up to the satisfaction of the engineer in charge complete.	Sqm.	2199.00
11.55	Providing and fixing in place 300mm x 300mm x 3mm polyurethane stick on tactile directional tiles and warning tiles having bevelled edges and of the approved brand, make and colour and conforming to ISO 23599: 2012 inside the building on all floors in corridors, lobbies, level differences as per accessibility standards and to be installed as per the installation instructions given by the manufacturer using butyl rubber adhesive and the hardware specified by the manufacturer, as per the direction of the engineer in charge complete	Sqm.	3545.00
11.56	Flooring with Cobble stone of approx. Size 125x125x75 mm (thick) laid on 25 mm average thick cement mortar 1:3 ( 1 cement : 3 Coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the stone, laid in approved pattern complete in all respect as per direction of Engineer-in-charge.	Sqm.	3545.00
11.57	Extra over item no. 11.1 to 11.56 for above floor V level for every four floors or part thereof.	Cum Sqm Mtr.	5% 4% 3%

## CHAPTER : B-12

### FINISHING WORK

**Note :**

- 1 The rates are for complete work including racking of joints, curing, grinding, mixing and finishing T & P and scaffolding material and cost of material with all lead and lift upto floor five level for internal work, height up to 10 m from ground level unless otherwise stated for external work
- 2 The rates cover protection of all places and things, requiring protection and cleaning such places and thing of all droppings and splashes of mortar etc.
- 3 Cement mortar is to be made by mechanical mixer only.

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

**CEMENT PLASTER**

12.1	Plaster on new surface on wall in cement sand mortar 1:3 including racking of joints etc. complete fine finish :		
12.1.1	25 mm thick	Sqm.	243.00
12.1.2	20mm thick	Sqm	210.00
12.1.3	12mm thick	Sqm	161.00
12.2	Plaster on new surface on walls in cement sand mortar 1:4 including racking of joints etc. complete fine finish :		
12.2.1	25 mm thick.	Sqm	219.00
12.2.2	20mm thick .	Sqm	191.00
12.2.3	12mm thick .	Sqm	149.00
12.3	Plaster on new surface on walls in cement sand mortar 1:6 including racking of joint etc. complete fine finish :		
12.3.1	25 mm thick	Sqm	195.00
12.3.2	20mm thick.	Sqm	171.00
12.3.3	12mm thick.	Sqm	136.00
12.4	Plaster on new surface on walls in cement sand mortar 1:8 including racking of joint etc. complete fine finish :		
12.4.1	25mm thick.	Sqm	181.00
12.4.2	20mm thick.	Sqm	159.00
12.4.3	12mm thick.	Sqm	129.00
12.5	6 mm thick cement plaster to ceiling of mix 1:3 (1cement : 3-fine sand)	Sqm.	119.00

Item No.	Description	Unit	Rate (Rs.)
12.6	6mm thick cement plaster 1:3 ( 1cement : 3fine sand) finished with a floating coat of neat cement and thick coat of Lime wash on top of walls when dry for bearing of R.C.C slabs and beams.	Sqm.	155.00
12.7	Finishing with neat cement (punning).	Sqm	32.00
12.8	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers.	Kg.	51.00
12.9	Extra for providing and fixing chicken mesh with plaster at joints of RCC and masonry ,conduit recess etc.complete fixing of mesh with nails including cost of mesh ,nails etc.	Sqm	49.00
<b>ROUGH CAST PLASTER</b>			
12.10	Rough cast plaster upto 10m height above ground level with a mixture of sand and gravel or crushed stone from 6mm to 10mm nominal size dashed over and including the fresh plaster in two layers, under layer 12mm cement plaster 1:4 (1 cement : 4 coarse sand) and top layer 10mm cement plaster 1:3 (1 cement : 3 fine sand) mixed with 10% finely grounded hydrated lime by volume of cement. Ordinary cement finish using ordinary cement	Sqm	331.00
12.11	Pebble dash plaster upto 10m height above ground level with a mixture of washed pebble or crushed stone 6mm to 12.5mm nominal size dashed over and including fresh plaster in two layers under layer 12mm cement plaster 1:4 (1 cement : 4 coarse sand) and top layer 10mm cement plaster with cement mortar 1:3 (1 cement : 3 fine sand) with 10% finely grounded hydrated lime by volume of cement	Sqm	315.00

Item No.	Description	Unit	Rate (Rs.)
12.12	Washed stone grit plaster on exterior walls of height upto 10 M. above level in two layers, under layer 12mm cement plaster 1:4 (1 cement : 4 coarse sand ) furrowing the under layer with scratching tool, applying cement slurry on the under layer @ 2kg of cement per sqm, top layer 15 mm cement plaster 1:1/2:2 ( 1 cement : 1/2 coarse sand : 2 stone chipping size 10 mm nominal size) in panel with groove all around as per approved pattern including scrubbing and washing, the top layer with brushes and water to expose the stone chipping, complete as per specification and direction of Engineer in charge. (Payment for providing grooves shall be made separately)	Sqm	426.00
12.13	Forming groove of uniform size 15x15mm and upto 25x15mm in the top layer of washed stone grit plaster as per approved pattern using wooden battens, nailed to the under layer including removal of wooden battens, repair to the edges of panels and finishing the groove complete as per specification and direction of Engineer in charge	Rm	24.00
12.14	Extra for using white cement in place of ordinary cement in the top layer of the item of washed stone grit plaster.	Sqm	37.00
12.15	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	Sqm	26.00
12.15.1	Extra for plastering on circular work not exceeding 6 m in radius:	Sqm	14.00
12.15.2	Add extra item No. 12.1 to 12.4 for plaster done over ceiling.	Sqm	20%
12.15.3	Deduct over item No. 12.1 to 12.4 if sandla/POP/wall putty is to be done on top surface.	Sqm	3.00
12.16	Extra for plastering done on moulding cornices or architraves including neat finish to line and level:		
12.16.1	In one coat	Sqm	203.00
12.16.2	In two coats	Sqm	333.00
12.17	Extra for plastering :		
12.17.1	Spherical ceiling	Sqm	53.00
12.17.2	Groined ceiling	Sqm	58.00
12.17.3	Flewing soffits	Sqm	35.00

**B - 91**

Item No.	Description	Unit	Rate (Rs.)
12.18	Extra for lining out plaster to imitate stone or concrete blocks walling	Sqm	34.00
12.19	Making grooves as per design in plaster 10mm to 20mm wide.	Rm	7.00
12.20	Making of drip course (Tapka) in cement sand mortar 1:6 width upto 40 mm and 10 mm thick as per approved design	Rm	11.00
12.21	12 mm thick plain cement mortar bands in cement mortar 1:4 (1 cement : 4 fine sand) :		
12.21.1	Flush band.	Cm P Rm	2.40
12.21.2	Sunk band.	Cm P Rm	2.60
12.21.3	Raised Band	Cm P Rm	2.90
12.21.4	Moulded band.	Cm P Rm	4.70
12.22	Providing and applying white cement based putty over plastered surface to prepare the surface even and smooth complete		
	New Plastered Surface (three or more coats)	Sqm	97.00
	Old Plastered Surface (two or more coats)	Sqm	52.00
12.23	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete	Sqm	79.00
12.24	Providing & Laying POP moulding & beading in ceiling including nailing & scaffolding etc. complete of size :		
12.24.1	25mm x 12mm	Rm	58.00
12.24.2	25mm x 25 mm	Rm	68.00
12.25	Providing & Laying POP Cornice of required design & pattern in ceiling including nailing & scaffolding etc. complete with fine finishing of size:		
12.25.1	50mm x 50mm	Rm	106.00
12.25.2	65mm x 65mm	Rm	119.00
12.25.3	75mm x 75mm	Rm	141.00
12.26	Lime plaster ( up to 40 mm thick in 3 Coat) on new surface on walls with lime sand mortar 1:2 (1 lime putty : 2 sand) using admixture like Gur, Methi & Gugal @ 1.0 Kg./each for every 10 Sqm of area including racking of joints curing etc. complete	Sqm	431.00



Item No.	Description	Unit	Rate (Rs.)
12.27	Extra for making Ornamental design like Kangooras Gola etc. as per Jaipur practice in cement plaster	Sqm	50%
<b>POINTING</b>			
12.28	Pointing on brick work or brick flooring with cement mortar 1:3 (1 cement : 3 fine sand) :		
12.28.1	Flush / Ruled/ Struck or weathered pointing.	Sqm	77.00
12.28.2	Raised and cut pointing	Sqm	125.00
12.29	Pointing on stone masonry in cement sand mortar 1:3 (1 cement : 3 sand) :		
12.29.1	Flush / Ruled/ Struck or weathered pointing.	Sqm	103.00
12.29.2	Raised and cut pointing.	Sqm	194.00
12.29.3	Deep groove pointing	Sqm	178.00
12.30.4	Deep groove pointing on stone masonry in white cement sand mortar 1:3 with colour pigment of approved shade for all type of masonry including racking of joints as per specification complete in all respect.	Sqm	125.00
12.31	Pointing on stone slab ceiling with cement mortar 1:2 (1 cement : 2 fine sand): Flush/ Ruled pointing	Sqm	60.00
12.32	Extra for pointing on walls on the outside at height more than 10 m from ground level for every additional height of 3 m or part there of.	Sqm	4.00
<b>INTERIOR FINISHING</b>			
12.33	White washing with lime to give an even shade including all scaffolding:		
12.33.1	New work (three or more coats).	Sqm	13.00
12.33.2	Old work (two or more coats) including scrapping old surface and repairing with whiting where ever necessary.	Sqm	8.00
12.33.3	Old work (one or more coats) including scrapping old surface and repairing with putty where ever necessary.	Sqm	5.00
12.34	Colour washing of all shades to give an even shade including all scaffolding :		
12.34.1	New work (two or more coats) with a base coat of white washing with lime.	Sqm	17.00

Item No.	Description	Unit	Rate (Rs.)
12.34.2	New work (two or more coats) with a base coat of whiting.	Sqm	17.00
12.34.3	Old work (one or more coats) with whiting with a base coat of white washing including scrapping old surface.	Sqm	8.50
12.34.4	Old work (two or more coats) with whiting with a base coat of white washing including scrapping surface.	Sqm	6.80
12.34.5	Old work (one or more coats) with lime including scrapping surface.	Sqm	4.25
12.34.6	Old work (one or more coats) with whiting including scrapping surface.	Sqm	4.25
12.35	Removing white or colour wash by scrapping and sand papering and preparing the surface smooth including necessary repairs to scratches by sandla/loi. (only for colour changing ).	Sqm	4.25
12.36	Distempering with dry distemper of approved brand and shade (two or more coats) and of required shade on new work, over and including, priming coat of whiting to give an even shade including all scaffolding.	Sqm	56.00
12.37	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade including all scaffolding:		
12.37.1	New work (two or more coats) over and including scrapping and priming coat with cement primer.	Sqm	72.00
12.37.2	Old work (one or more coats) including scrapping surface and necessary repairs.	Sqm	50.00
12.37.2a	Colour Change	Sqm	35.00
12.37.2b	Same colour	Sqm	
12.38	Removing dry or oil bound distemper by scrapping sand papering and preparing surface smooth including necessary repairs to scratches by sandla/loi and all scaffolding (for colour changing only)	Sqm	6.00
12.39	Distempering with 1st quality acrylic washable distemper (ready mixed) of approved manufacturer and of required shade and colour complete including all scaffolding as per manufacturer's specification. Two or more coats on new work including preparation of base with primer, putty, lippy etc complete in all respect.	Sqm	49.00

Item No.	Description	Unit	Rate (Rs.)
12.40	Applying one coat of Cement primer of approved brand and manufacture on wall surface including all scaffolding:	Sqm	16.00
12.41	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade including all scaffolding:		
12.41.1	Two or more coats on new work including preparation of base with primer, putty, lippy etc complete in all respect	Sqm	91.00
12.41.2	Old work (One or more coats).	Sqm	64.00
<b>EXTERIOR FINISHING</b>			
12.42	Finishing wall with water proofing cement paint of approved brand and manufacture and or required shade to give an even shade including all scaffolding:		
12.42.1	New work (Two or more coats applied @ 3.84 kg/10 sqm).	Sqm	54.00
12.42.2	Old work (One or more coats).	Sqm	27.00
12.43	Finishing walls with Acrylic Smooth exterior paint of required shade including all scaffolding. New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including base coat of water proofing cement paint applied @ 2.20 kg/ 10 sqm.)	Sqm	102.00
12.44	Painting exterior surface of Wall with 100% acrylic exterior paint of approved brand and manufacture to give an even shade with two or more coats including preparation of base with sand papering, primer, putty, etc complete in all respect.		
12.44.1	New Work	Sqm	126.00
12.44.2	Old Work	Sqm	63.00
12.45	Finishing walls with textured exterior paint of required shade as per approved colour complete as per manufacturers specifications including primer coat and protecting coat	Sqm	
12.45.1	Roller Finish av. thickness 400 to 500 microns.	Sqm	194.00
12.45.2	Trowel Finish av. thickness 1000 to 1200 microns.	Sqm	360.00
12.45.3	Trowel Finish av. thickness 1500 to 2000 microns.	Sqm	438.00
12.45.4	Trowel Finish av. thickness 2000 to 2500 microns.	Sqm	496.00

Item No.	Description	Unit	Rate (Rs.)
<b>PAINTING</b>			
12.46	Applying priming coat :		
12.46.1	With ready mix pink or gray primer of approved brand and manufacture on wood work hard and soft wood.	Sqm	30.00
12.46.2	With ready mix Aluminium primer of approved brand and manufacture on resinous wood and plywood.	Sqm	37.00
12.46.3	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/steel works	Sqm	31.00
12.46.4	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel work (second coat)	Sqm	18.00
12.47	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :		
12.47.1	Two or more coats on new work	Sqm	71.00
12.47.2	Old work (One or more coats).	Sqm	43.00
12.48	Varnishing with varnish of approved brand and manufacture :		
12.48.1	Two or more coats glue sizing with copal varnish over an under coat of flatting varnish.	Sqm	91.00
12.48.2	Two or more coats glue sizing with spar varnish or an under coat of flatting varnish.	Sqm	106.00
12.49	French sprit polishing :		
12.49.1	Two or more coats on new work including a coat of wood filler.	Sqm	190.00
12.49.2	One or more coats on old work.	Sqm	76.00
12.50	Polishing on wood work with ready mixed wax polish of approved brand and manufacture :		
12.50.1	New Work	Sqm	64.00
12.50.2	Old Work.	Sqm	38.00
12.51	Providing and applying Malamine polish on teak wood work of approved brand and manufacture to give an even shade with two or more coats by compressor including sand papering, wood filler coat etc complete in all respect:		
12.51.1	New Surface	Sqm	894.00
12.51.2	Old Surface	Sqm	671.00

Item No.	Description	Unit	Rate (Rs.)
12.52	Painting one thin coat with white lead of approved brand and manufacture on wet or patchy portion of plastered surfaces.	Sqm	41.00
12.53	Painting (two or more coats) on rain water soil, waste and vent pipes and fitting with black anticorrosive bitumastic paint of approved brand and manufacture over and including a priming coat of ready mixed zinc chromate yellow primer on new work :		
12.53.1	75mm dia. Pipes.	Mtr.	21.00
12.53.2	100mm dia. Pipes	Mtr.	30.00
12.53.3	150mm dia. Pipes.	Mtr.	45.00
12.54	Painting (one or more coats) on rain water soil, waste and vent pipes and fitting with black anticorrosive bitumastic paint of approved brand and manufacture on old work :		
12.54.1	50mm dia. Pipes.	Mtr.	3.00
12.54.2	75mm dia. Pipes.	Mtr.	5.00
12.54.3	100mm dia. Pipes	Mtr.	7.00
12.54.4	150mm dia. Pipes.	Mtr.	8.00
12.55	Painting (two or more coats) on rain water, soil, waste and vent pipes and fittings with synthetic enamel paint of approved brand and manufacture and required colour over a priming coat of approved steel primer on new work.		
12.55.1	50mm dia. Pipes.	Mtr.	13.00
12.55.2	75mm dia. Pipes.	Mtr.	20.00
12.55.3	100mm dia. Pipes	Mtr.	27.00
12.55.4	150mm dia. Pipes.	Mtr.	39.00
12.56	Painting with oil type wood preservative of approved brand and manufacture :		
12.56.1	New work (Two or more coats).	Sqm	20.00
12.56.2	Old work (One or more coats).	Sqm	12.00
12.57	Providing and applying two coats of fire retardant paint unthinned on cleaned wood/ply surface @ 3.5 sum per litre per coat including preparation of base surface as per recommendations of manufacturer to make the surface fire retardant.	Sqm	323.00
12.58	Coal-tarring coats on new work using 0.16 and 0.12 litre of coal tar per Sqm in the first and second coat respectively.	Sqm	29.00

Item No.	Description	Unit	Rate (Rs.)
12.59	Painting with Aluminium paint of approved brand and manufacture to give an even shade :		
12.59.1	Two or more coats on new work.	Sqm	58.00
12.59.2	One or more coats on old work.	Sqm	23.00
12.60	Painting with acid proof paint of approved brand and manufacture of required colour to give an even shade :		
12.60.1	Two or more coats on new work .	Sqm	55.00
12.60.2	One or more coat on old work .	Sqm	28.00
12.60	Painting with black anti-corrosive bitumastic paint of approved brand and manufacture to give an even shade :		
12.61.1	Two or more coats on new work.	Sqm	51.00
12.61.2	One or more coat on old work.	Sqm	20.00
12.62	Floor painting with floor enamel paint of approved brand and manufacture of required colour to give an even shade: Two or more coats on new work.	Sqm	77.00
12.63	Lettering with black Japan paint of approved brand and manufacture.	P. Letter Per cm. height	1.94
12.64	Re-lettering with black Japan paint of approved brand and manufacture.	P. Letter Per cm. height	1.26
12.65	P/F of 3mm thick Acrylic sheet number plate including writing of matter with viniyl in specified size letters or numbers, fixing with steel screws.	Sqm	5400.00
12.66	Providing and applying superior quality emulsion for wall painting with Velvet touch/Royal paint etc of approved brand and manufacture to give an even shade with putty and preparation of surface applying with the help of paint roller the work complete in all respect as per direction of Engineer-in-charge.		
12.66.1	New Work Three or More coat	Sqm	237.00
12.66.2	Old Work Analysis	Sqm	156.00

Item No.	Description	Unit	Rate (Rs.)
12.67	Spray painting in approved shade and approved quality with Duco paint of required colour to give even shade with two or more coats by compressor including sand papering, NC putty filler coat etc complete in all respect as per design given by Engineer incharge on new work.	Sqm	1791.00
12.68	Providing and applying P.U. paint of approved brand and manufacture to even shade. Two or more coats on New works.	Sqm	293.00
12.69	Wall painting with Royal Play paint with various types of designs as approved of approved brand and manufacture to give an even shade including all scaffolding. Two or more coats on New work including preparation of base with primer, putty lippy etc. Complete in all respect.	Sqm	352.00
12.70	Lining work on Yellow & Pink Exterior Paint/ Colour wash including making Gola, Gardana, Kangoora and Orngamental lining work as per approved style and pattern complete in all respect with Exterior (White/Brown) paint as required complete in all respect as per direction givin by Engineer in charge.	Sqm	41.00
12.71	Face lifting (Doba Wash) with washing of stones by (1:20) acid & water solution, rubbing by brush, washing by clear water, pointing of damaged grooves & doba washing with good quality lime water and painting of doors, windows, ventilators upto all height & lead including all scaffolding and T&P etc. complete as per instructions and direction of Engineer-in-charge.	Sqm	70.00
12.72	Extra for external work for height more than 10 m from ground level for every additional height of 3 m or part there of.		8.00%
12.73	Extra for internal work above floor V level for every four floors or part thereof.		5.00%

## CHAPTER : B-13 REPAIRS OF BUILDING

Note : The rates are for work upto floor five level

Item No.	Description	Unit	Rate (Rs.)
13.1	Repairs to plaster of thickness 12mm to 20mm in patches of area 2.5 sq. metres and under including cutting the patch in proper shape, raking out joints and preparing and plastering the surface of the walls complete including disposal of rubbish to the dumping ground within 50 m lead : <b>With cement mortar 1 :4 ( 1 cement : 4 coarse sand)</b>	Sqm	210.00
13.2	Fixing chowkhats in existing opening including embedding chowkhats in floors or walls cutting masonry for holdfasts embedding hold fasts in cement concrete blocks with cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominaal size)painting two coats of coal tar to sides of chaukhats and making good the damages to walls and floors as required complete including disposal of rubbish to the dumping ground within 50 metres lead		
13.2.1	Door chowkhats	Each	604.00
13.2.2	Window chowkhats	Each	375.00
13.2.3	Clerestory window chowkhats	Each	268.00
13.3	Making the opening in masonry including dismantling in floor or walls by cutting masonry and making good the damages to walls, flooring and jambs complete to match existing surface i/c disposal of mulba/ rubbish to the nearest municipal dumping ground. For door/windows/clerestory windows	Sqm	423.00
13.4	Renewing glass panes, with putty and nails wherever necessary:		
13.4.1	Float glass panes of thickness 4 mm	Sqm	622.00
13.4.2	Float glass panes of thickness 5.0 mm	Sqm	738.00
13.5	Renewing glass panes with wooden fillets wherever necessary :		
13.5.1	4mm thick plain glass panes.	Sqm	754.00
13.5.2	5.mm thick plain glass panes.	Sqm	870.00
13.6	Renewing glass panes and refixing existing wooden fillets :		
13.6.1	4mm thick plain glass panes.	Sqm	618.00



**B - 100**

Item No.	Description	Unit	Rate (Rs.)
13.6.2	5mm thick plain glass panes.	Sqm	734.00
13.7	Supplying and fixing new wooden fillets wherever necessary: 2nd class teak wood fillets	Rm	29.00
13.8	Renewal of old putty of glass panes (length)	Rm	17.00
13.9	Refixing old glass panes with putty and nails	Sqm	206.00
13.10	Fixing old glass panes with wooden fillets (Excluding cost of fillets)	Sqm	174.00
13.11	Providing and fixing 16 mm M.S. Fan clamps of standard shape and size in existing R.C.C. slab including cutting chase and making good and painting exposed portion of the clamps complete.	Each	191.00
13.12	Repair to stone masonry in cement sand mortar 1:6 with old and new stone.	Sqm	286.00
13.13	Repair to brick masonry in cement sand mortar 1:6 with new brick.	Sqm	308.00
13.14	Cement plaster 1:3 under old stone slabs with admixture (gur,nails,binding wire to mesh and scraping scales & dressing joints of slabs complete.		
13.14.1	Proofing upto 25 mm thickness.	Sqm	232.00
13.14.2	Proofing above 25 mm thickness& upto 60 mm thickness	Sqm	422.00
13.15	Patch repair to cement concrete floor including digging out old floor in regular shape and removal of rubbish curing etc. complete in all respects.	Sqm	304.00
13.16	Washing floor with soda, soap or other cleaning material.	Sqm	1.00
13.17	Removal and refixing stone chhajja 50 to 75 mm thick including finishing, complete in all respects.	Sqm	162.00
13.18	Replacing broken roofing slab in patches including lime terrace, ceiling plaster etc. including removal of broken slabs.	Sqm	2151.00
13.19	Making holes in stone masonry wall upto 450 mm x 450 mm size and making good in CM 1:6.	Each	146.00
13.20	Grinding of existing floor with		

**B - 101**

Item No.	Description	Unit	Rate (Rs.)
13.20.1	60, 80, 120 and 360 No. Carborundum stone including cost of wax polishing complete :	Sqm	80.00
13.20.2	120 and 360 No. Carborundum stone including cost of wax polishing complete :	Sqm	51.00
13.21	Add extra for mirror polishing on existing marble work/ Kota stone flooring work where ever required to give high gloss finish complete.	Sqm	131.00
13.22	Providing and fixing double scaffolding system on the exterior side, upto five story made with 4" wodden member 1.5 m c/c horizontal and vertical direction joining with rassi, clamps, challies. The scaffolding system shall be stiffened with bracing, runner, connection of building if necessary with all essential safty features for the workmen etc complete as per direction of EI.The lavation area of the scaffolding shall be mearured for payment. The paeyment will be made once irrespective of duration of scaffolding. Note : This item to be used for maintence work judically	Sqm.	140.00
13.23	Repair of existing steel glazed doors, windows and ventilator, MS sheet door, garge doors, compound wall gates etc. by welding drilling complete include. Cost of welding rods and hire charge of welding meachine and TP etc complete	Sqm.	299.00
13.24	Labour charges for repair to door / window without using any material such as applying randha (finishing) tightening of bolts & screw etc.	Sqm.	200.00
13.25	L/C for fixing of GI/AC sheet include. Cutting jhiri and repair , cutting of sheet , fixing of sheet with J or L hook and bitumen washer as per direction of EI	Sqm.	233.00
13.26	Repair of rolling shutter with replacement of shutter spring incl. removal of old spring in the existing rolling shutter incld. Cost of new spring	Each	750.00
13.27	Repair of rolling shutter with using any material such as bend repair , tightening of spring,boltand screw etc complete	Each	525.00
13.28	Repair of door, window shutters including cost of material and labour for change of damaged :		

Item No.	Description	Unit	Rate (Rs.)
(a)	Style / rail of teak wood 30mm thick/ Aluminium Section		
(i)	4"wide	Rmt.	313.00
(ii)	6" wide	Rmt.	430.00
(b)	Panel by		
(i)	Shuttering Ply - 9mm thick (Commercial)	Sqm.	703.00
(ii)	Wire Gauge 14 mesh x 24 gauge	Sqm.	626.00
(iii)	Plain Glass Panes 4mm thick	Sqm.	507.00
(c)	Aldrop of mild Steel		
(i)	12" long x12mm dia	Each	171.00
(ii)	8" long x 10mm dia	Each	125.00
(d)	Stopper of Aluminium with		
(i)	Single Rubber Gutka	Each	38.00
(ii)	Double Rubber Gutka	Each	54.00
(e)	Door Springs of mild Steel	Each	188.00
(f)	Steel Hinges		
(i)	For Wooden Chowkhat 3" size.	Each	29.00
(ii)	For Wooden Chowkhat 4" size	Each	41.00
(iii)	For Stone Chowkhat ,4"size	Each	34.00
(g)	Mild Steel Tower Bolt 6" long	Each	48.00
(h)	Steel Locking Bolt	Each	63.00
(i)	Steel Handle 6" size	Each	29.00
13.29	Making hole in flooring tiles for chambers/grating upto 125mm dia.	Each	20.00
13.30	Extra for work above floor V level for every four floors or part thereof.		5.00%
13.31	Refebrication work with existing steel work including cutting, welding & refebrication as per requirement with fixing at site complete as per direction of Engineer In charge	Kg	33.00
13.32	Repair to damaged RCC slabs, beams and columns etc for strengthening with cement mortar 1 : 2 in following steps :- Choping losse and cracked concrete to required depth, cleaning the exposed surface of steel and concrete with wire brush and sand papering , cleaning of concrete surface with water as necessary and getting dried. Applying Epoxy primer on the exposed steel bars. Applying Epoxy hardener and resin mix (as per manufactured's specification) on concrete and steel bars with brush. Spreading dry cement mortar 1 : 2 mix over epoxy treated wet surface and allow it to dry for one day.		

**B - 103**

Item No.	Description	Unit	Rate (Rs.)
	Plastering the surface with cement sand mortar 1 : 3 upto depth of 30mm complete. Cure the plastered surface for 15 days, All work including scaffolding etc. complete in all respect.	Sqm	1510.00
13.33	Replacement of stone Chajja with sriwan in damaged portion as per existing thickness and width in CM 1 : 3 with removal of old damaged pieces of chajja including top plaster of chajja and bottom pointing in CM 1 : 3 with scaffolding upto <b>Ground floor</b> level as per direction of Engineer in charge	Sqm	2717.00
13.34	<b>Add Extra for each additional floor</b>	Sqm	254.00
13.35	Repair to damaged cement plaster of stone chajja with CM 1 : 3 of required thickness on top & bottom as per existing pattern and making patta etc complete up to three floor level as per direction of Engineer in charge including all necessary scaffolding etc	Sqm	610.00
13.36	Mechanised cleaning of storage tanks comprises of following 6 stage as mentioned below : Mechanical dewatering Desalting removal of leftover dirty water and sludge with sludge pump Cleaning of wall, ceiling and floor by high pressure water jet with help of equipments which creates a pressure of 100-150 bar Removal of remaing sludge from floor with the help of industrial vacuum cleaner. Spraying of non toxic, bio degradable ecofriendly and bacterial agent certified by a govt approved laboratory to disinfect the tank from all harmfull pathogens. The dose should be safe as per the UECD guidelines & 23 adopted on 17 th december 2001. Treatment of inside tank by exposing UV radiation to kill further suspended or floating bacteria if any		
13.36.1	<b>Upto 500 ltr.</b>	Ltr.	0.39
13.36.2	<b>Above 500 ltr. to 1000 Ltr.</b>	Ltr.	0.34
13.36.3	<b>Above 1000 ltr.</b>	Ltr.	0.29
13.37	Making of hole in R.C.C. slab/wall/beams and masonry wall (width up to 450 mm) by core cutting machine complete as per direction of EI		
	From diameter 100mm to 150mm	Nos	1066.00
	Diameter above 150mm	Nos	1602.00

**CHAPTER : B-14**  
**DISMANTLING & DEMOLISHING WORK**

Note : The rates are for work upto floor five level

Item No.	Description	Unit	Rate (Rs.)
14.1	Demolishing lime concrete manually/ by mechanical means and disposal of material within 50 metres lead as per direction of Engineer-in-charge.	Cum	206.00
14.2	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer-in-charge.		
14.2.1	1: 3: 6 or richer mix.	Cum	608.00
14.2.2	1: 4: 8 or leaner mix.	Cum	369.00
14.3	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.	Cum	906.00
14.4	Demolishing R.B. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.	Cum	795.00
14.5	Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. or R.B. work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work) as per direction of Engineer-in-charge	Sqm	338.00
14.6	Extra for scrapping, cleaning and straightening reinforcement from R.C.C. or R.B. work	Kg	3.00
14.7	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.		
14.7.1	In mud mortar.	Cum	167.00
14.7.2	In lime mortar.	Cum	206.00
14.7.3	In cement mortar.	Cum	498.00
14.8	Removing mortar from bricks and cleaning bricks including stacking within a lead of 50 meters (stacks of cleaned bricks shall be measured):		
14.8.1	From bricks work in mud mortar.	1000 Nos.	1158.00
14.8.2	From brick work in lime mortar	1000 Nos.	1368.00

**B - 105**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate (Rs.)</b>
14.8.3	From brick work in cement mortar.	1000 Nos.	1730.00
14.9	Demolishing stone rubble masonry manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge:		
14.9.1	In lime mortar.	Cum	281.00
14.9.2	In cement mortar.	Cum	596.00
14.9.3	In mud mortar	Cum	169.00
14.9.4	dry masonry	Cum	145.00
14.10	Dismantling dressed stone work ashlar face stone work, marble work or precast concrete work manually/ by mechanical means including stacking of serviceable and disposal of unserviceable material within 50 metres lead as per direction of Engineer in charge :		
14.10.1	In lime mortar.	Cum	356.00
14.10.2	In cement mortar.	Cum	699.00
14.11	Removing mortar from stones and cleaning stones and concrete articles including stacking (net quantity of stacks of cleaned materials will be measured):		
14.11.1	Lime mortar.	Cum	117.00
14.11.2	Cement mortar.	Cum	173.00
14.12	Dismantling doors, windows and clearstory windows steel or wood shutter including chowkhats and holdfasts etc. complete and stacking within 50 meters lead:		
14.12.1	Of area 3 square meter and below.	Each	103.00
14.12.2	Of area exceeding 3 square meter.	Each	142.00
14.13	Taking out doors, windows and clearstory windows shutters (steel or wood) including stacking within 50 meters lead:		
14.13.1	Of area 3 square meter and below.	Each	45.00
14.13.2	Of area exceeding 3 square meter.	Each	60.00
14.14	Dismantling wood work in frames, trusses, purlins and rafters up to 10 meter span and 5m height including, levelling stacking the material within 50m lead:		
14.14.1	Of sectional area 40 Sq.cm and above	Cum	1463.00
14.14.2	Of sectional area below 40 Sq.cm.	Mtr.	6.00

Item No.	Description	Unit	Rate (Rs.)
14.15	Extra for dismantling trusses, rafters, purlins etc. of wood work for every additional span of one metre or part thereof beyond 10 metres :		
14.15.1	of sectional area 40 Sq.cm and above	Cum per Meter span	174.00
14.15.2	of sectional area below 40 Sq.cm.	Mtr. .Per meter span	0.50
14.16	Extra for dismantling trusses, rafters, purlins etc. of wood work for every additional height of one metre or part thereof beyond 5 metres :		
14.16.1	of sectional area 40 Sq.cm and above	Cum per Meter span	248.00
14.16.2	of sectional area below 40 Sq.cm.	Mtr. per Meter span	1.00
14.17	Dismantling steel work in single sections including dismembering and stacking within 50 meters lead in:		
14.17.1	R.S. joists.	Kg	0.90
14.17.2	Channels, angles, tees & flats.	Kg	0.60
14.18	Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50metres lead.	Kg	1.50
14.19	Dismantling steel work manually/ by mechanical means in built up sections without dismembering and stacking within 50 metres lead as per direction of Engineer-in-charge.	Kg	1.00
14.20	Extra for dismantling trusses, rafters, purlins etc. of steel work for every additional span of one metre or part thereof beyond 10 metres	Kg per Mtr.	0.40
14.21	Extra for dismantling trusses, rafters, purlins etc. of steel work for every additional height of one metre or part thereof beyond 5 metres.	Kg per Mtr.	0.40
14.22	Extra for making of structural steel work required to be re-erected.	Kg	1.30
14.23	Dismantling tile work in floors and roofs laid in cement mortar including stacking of serviceable material and disposal of unserviceable material within 50 meter lead:		
14.23.1	For thickness of tiles 10mm to 25mm.	Sqm	19.00
14.23.2	For thickness of tiles 25mm to 40mm.	Sqm	30.00

**B - 107**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate (Rs.)</b>
14.24	Dismantling dry brick pitching in floors drains etc. including stacking of serviceable material and disposal of unserviceable material within 50 meters lead.	Cum	295.00
14.25	Dismantling stone slab/ terrazo chip flooring laid in cement mortar including stacking of serviceable material and disposal of unserviceable material within 50 meters lead.	Sqm	67.00
14.26	Dismantling brick tiles covering in terracing including stacking of serviceable material and disposal of unserviceable material within 50 meters lead.	Sqm	28.00
14.27	Demolishing mud phuska/ Lime dhar/ Kharanja in terracing and disposal of unserviceable material within 50 meters lead.	Cum	273.00
14.28	Dismantling roofing including ridges, hips, valleys and rafters etc. and stacking the within 50 meter lead of:		
14.28.1	G.I. Sheet.	Sqm	51.00
14.28.2	Asbestos Sheet.	Sqm	24.00
14.29	Dismantling and stacking within 50 meters lead fencing post, struts, including earth work dismantling of concrete etc. in the case of:		
14.29.1	T or Angle Iron posts	Each	66.00
14.29.2	R.C.C. posts.	Each	74.00
14.30	Dismantling barbed wire or chain link fencing including bending making rolls and stacking within 50-meter lead.	Kg	10.00
14.31	Dismantling precast concrete or stone slabs in wall partitions etc. including stacking within 50 meter lead:		
14.31.1	Thickness up to 40mm.	Sqm	75.00
14.31.2	Thickness 40mm up to 75mm	Sqm	113.00
14.32	Dismantling cement, asbestos, celotex or other hard board ceiling or partition walls including stacking of serviceable material and disposal of unserviceable material within 50-meter lead.	Rm	18.00



Item No.	Description	Unit	Rate (Rs.)
14.33	Dismantling CI or asbestos rain water pipe with fitting and clamps including stacking within 50 meter lead:		
14.33.1	Up to 80mm dia pipe.	Mtr.	18.00
14.33.2	100mm dia pipe.	Mtr.	19.00
14.33.3	150mm dia pipe.	Mtr.	19.00
14.34	Dismantling tar felt over roofing complete including stacking of serviceable material and disposal of unserviceable material within 50-meter lead.	Sqm	22.00
14.35	Dismantling GI pipes (external work) including excavation and refilling trenches after taking out the pipes and including stacking of pipes within 50 meter lead:		
14.35.1	15mm to 40mm nominal bore.	Mtr.	38.00
14.35.2	Above 40mm nominal bore.	Mtr.	43.00
14.36	Dismantling CI pipes including excavation and refilling trenches after taking out the pipes, breaking lead caulked joints, melting of lead and making into block, including stacking of pipes lead at site within 50 meter, of dia:		
14.36.1	Up to 150mm dia.	Mtr.	106.00
14.36.2	Above 150mm dia. up to 300mm dia.	Mtr.	146.00
14.36.3	Above 300mm dia.	Mtr.	194.00
14.37	Dismantling steel cylinder, R.C. pipes etc. including excavation and refilling trenches after taking out the pipes, breaking lead caulked joints, melting of lead and making into blocks including stacking of pipes, within a lead of 50 meter, of dia:		
14.37.1	Up to 600mm dia.	Mtr.	194.00
14.37.2	Above 600 mm dia.	Mtr.	482.00
14.38	Dismantling asbestos cement pressure pipes including excavation and refilling trenches after taking out the pipes, and stacking the same within a lead of 50 meter, of dia:		
14.38.1	Up to 150mm.	Mtr.	79.00
14.38.2	Above 150mm.	Mtr.	95.00
14.39	Taking out CI cover with frame from stone slab / RCC slab of inspection chambers of various sizes including dismantling of stone slab / RCC slab roofing and stacking of useful materials near the site and disposal of unserviceable materials within 50-meter lead.	Each	182.00

**B - 109**

Item No.	Description	Unit	Rate (Rs.)
14.40	Taking out C.I. cover with frame from stone slab / RCC slab of manholes of various sizes including dismantling of stone slab / RCC slab roofing and stacking of useful materials near the site and disposal of unserviceable materials within 50-meter lead.	Each	107.00
14.41	Dismantling of RCC spun vent shaft including excavating the cement concrete pit completely, taking out the shaft, refilling the excavated gap stacking the useful material near the site and disposal of unserviceable materials within 50 meter lead.	Each	1160.00
14.42	Dismantling of gully chamber of various sizes including CI grating with frame including stacking of useful materials near the site and disposal of unserviceable material within 50 meter lead including refilling the gap.	Each	238.00
14.43	Dismantling of flushing cistern of any size including stacking of useful materials near the site and disposal of unserviceable material within 50 meter lead.	Each	261.00
14.44	Dismantling of CI sluice valve including stacking of useful materials within a lead of 50 meter:		
14.44.1	Up to 150mm dia.	Each	94.00
14.44.2	Above 150mm dia.	Each	335.00
14.45	Dismantling of spindle fire hydrant including stacking of useful material within 50 meter lead.	Each	203.00
14.46	Dismantling of cement concrete platform along with curtain walls and base concrete etc. including stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead :		
14.46.1	120 x 120 cm (outside to outside)	Each	269.00
14.46.2	210 x 120 cm (outside to outside)	Each	413.00
14.46.3	320 x 120 cm (outside to outside)	Each	584.00
14.47	Dismantling old plaster or skirting, raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 meter lead.	Sqm	14.00

**B - 110**

Item No.	Description	Unit	Rate (Rs.)
14.48	Dismantling CC jali including cost of making grooves in plaster and making good and including disposal of unserviceable surplus material and stacking of serviceable material with in 50 meters lead as directed by Engineer-in-charge. .	Sqm	88.00
14.49	Dismantling aluminium/Gypsum partitions, doors, windows, fixed glazing and false ceiling including disposal of unserviceable material and stacking of serviceable material with in 50 meters lead as directed by Engineer-in-charge.	Sqm	18.00
14.50	Demolishing CC/R.C.C. work by mechanical power driven means and stockpiling at designated locations and disposal of dismentled material up to to lead of 50 m, stacking serviceable and unserviceable material seperately including cutting reinforcement bars	Cum	968.00
14.51	Making of hole (width up to 150 mm) in R.C.C. slab/wall/beams by power driven drilling machine complete as per direction of EI		
14.51.1	upto 150mm thick	Each	146.00
14.51.2	above 150 mm thick	Each	216.00
14.52	Extra for work above floor V level for every four floors or part thereof.		5.00%
14.53	Dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 meters, stacking serviceable and unserviceable materials separately as per MoRTH specification clause 202.		
14.53.1	<b>By Manual Means :</b>		
14.53.1.1	Bituminous courses	Cum	632.00
14.53.1.2	Granular courses	Cum	439.00
14.53.2	<b>By Mechanical Means :</b>		
14.53.2.1	Bituminous courses	Cum	199.00
14.53.2.2	Granular courses	Cum	169.00
14.54	Dismantling of existing structures like culverts, bridges, retaining walls and other structures comprising of brick masonry, including disposal of unserviceable material and staching the serviceasble material with all lift and lead of 1000m as per MoRTH specification clause 202.		
14.54.1	Lime Mortar	Cum	126.00
14.54.2	Cement Mortar	Cum	170.00

**B - 111**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate (Rs.)</b>
14.54.3	Mud Mortar	Cum	104.00
14.54.4	Dry Brick Pitching or Brick Soling	Cum	103.00
14.55	Dismantling thatch roofing including mats bamboos, jafries etc. complete including stacking of serviceable material and disposal of unserviceable material within 50 meter lead	Sqm	13.00
14.56	Dismantling wooden ballies in posts and struts including stacking within 50 meters lead.	Mtr.	6.00
14.57	Dismantling wooden trellis work excluding frames but including bending, making rolls and stacking within 50 meter lead.	Sqm	16.00
14.58	Dismantling expanded metal or I.R.C. fabric with necessary battens and beading including stacking the serviceable material within 50-meter lead.	Sqm	20.00
14.59	Dismantling wooden boards in lining of walls and partition excluding supporting members but including stacking within 50 meter lead:		
14.59.1	Up to 10mm thick	Sqm	16.00
14.59.2	Thickness above 10mm up to 25mm	Sqm	24.00
14.59.3	Above 25mm thick.	Sqm	34.00

## CHAPTER : B-15

### WATER PROOFING AND EXPANSION JOINT TREATMENT

Note : The rates are for work upto floor five level

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

#### WATER PROOFING TREATMENT

- |      |  |      |        |
|------|--|------|--------|
| 15.1 | <p>Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-Charge and consisting of</p> <p>i) 1st layer of 20mm thick approved and specified rough stone slab over a 25mm thick base of cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound conforming to IS:2645 in the recommended proportion. Joints sealed and grouted with cement slurry mixed with water proofing recommended proportion.</p> <p>ii) 2nd layer of 25mm thick cement mortar 1:3 ( 1 cement : 3 coarse sand ) mixed with water proofing compound in recommended proportions.</p> <p>iii) Finishing top with stone aggregate of 10mm to 12mm nominal size spreading @ 8 cu/m/sqm thoroughly embedded in the 2nd layer.</p> <p><b>Using rough kota stone</b></p> | Sqm. | 828.00 |
|      |  |      |        |
| 15.2 | <p>Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 20mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions with a gap of 20mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with cement mortar 1:4 (1 cement:4 coarse sand) 20mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge</p> <p><b>Using rough Kota stone</b></p>  | Sqm. | 970.00 |

Item No.	Description	Unit	Rate (Rs.)
15.3	<p>Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of :</p> <p>i) Ist course of applying cement slurry @ 4.4 Kg/sqm mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface.</p> <p>ii) IInd course of 20mm cement plaster 1:3 (1 cement: 3 coarse sand) mixed with water. proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface..</p> <p>iii) IIIrd course of applying blown or residual bitumen applied hot at 1.7 Kg per sqm. of area.</p> <p>iv) IVth course of 400 micron thick PVC sheet .(Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 Kg/sqm.)</p>	Sqm.	445.00
15.4	Providing and Placing in position suitable PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete :		
15.4.1	Serrated with central bulb (225 mm wide, 8-11 mm wide)	Rm	517.00
15.4.2	Dumb bell with central bulb (180 mm wide, 8 mm wide)	Rm	494.00
15.4.3	Kickers (320 mm wide, 5 mm thick)	Rm	495.00
15.5	<p>Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying :</p> <p>a) first layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @0.253 kg//sqm .This layer will be allowed to air cure for 4 hours.</p> <p>b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm This layer will be allowed to air cure for 4 hours followed by water curing for 48 hours.</p> <p>The rates includes preparation of surface treatment &amp; sealing of all joints ,corners, junction with polymer mixed slurry</p>	Sqm.	267.00

Item No.	Description	Unit	Rate (Rs.)
15.6	<p>Providing and laying water proofing treatment on roofs of slabs by applying cement slurry mixed with water proofing cement compound consisting of applying :</p> <p>a) after surface preparation, first layer of slurry of cement @ 0.488 kg/sqm mixed with water proffing cement compound @ 0.253 kg/sqm.</p> <p>b) laying second layer of Fiber glass cloth when the first layer is still green . Overlaps of joints of fiber cloth should not be less than 10 cm .</p> <p>c) Third layer of 1.5 mm thickness consisting of slurry of cement @ 1.289 kg/sqm mixed with water proofing cement compound @ 0.670 kg/sqm and coarse sand @ 1.289 kg/sqm. This will be allowed to air cure for 4 hours followed by water curing for 48 hours. The entire treatment will be taken upto 30cm on parapet wall and tucked into groove in parapet all around</p> <p>d) fourth and final layer of brick tiling 'with cement mortar or any other approved protective coarse. (which will be paid for separately) For the purpose of measurement the entire treated surface will be measured</p>	Sqm.	416.00
15.7	<p>Providing and laying four courses water proofing treatment with bitumen felt over roofs consisting of first and third courses of blown bitumen 85/25 or 90/15 conforming to IS : 702 applied hot 1.45Kg. per square meter of area for each course, second course of roofing felt type 3 grade –I (Hessian based self finished bitumen felt )and fourth and final course of stone grit 6mm and down size of pea sized gravel spread at 6cubes diameter per square meter including preparation of surface, but excluding grading, complete with <b>Bitumen felt (Hessian base) type 3 grade - I conformina to : 1322.</b></p>	Sqm.	363.00
15.8	<p>Providing and laying six courses water proofing treatment with bitumen felt over roofs consisting of first, third and fifth course of blown bitumen 85/25 or 90/15 conforming to IS : 702 applied hot @ @ 1.45 ,1.20 and 1.45 Kg per sqm. of area respectively second and fourth courses of roofing felt type 3 grade-I conforming to IS 1322 (Hessian based self finished bitumen felt) conforming to IS 1322 and sixth and final course of stone grit 6mm and down size of pea sized gravel spread at 6 cubic dm. per square metre including preparation of surface but excluding grading complete .</p>	Sqm.	577.00

**B - 115**

Item No.	Description	Unit	Rate (Rs.)
15.9	Providing and laying six courses water proofing treatment with bitumen felt over roofs consisting of first, third and fifth courses of blown or/and residual bitumen applied hot at 1.45, 1.20 and 1.70 Kg. per Sqm. of area respectively second and fourth courses of roofing felt type 2 grade-I (fiber base self finished bitumen felt) and sixth and final course of stone grit 6mm and down size or pea sized gravel spread at 8cu.dm per sqm including preparation of surface excluding grading complete confirming to IS : 1322 and 1346.	Sqm.	623.00
15.10	Providing and laying six courses water proofing treatment with bitumen felt over roofs consisting of first, third and fifth courses of blown or/and residual bitumen applied hot at 1.45, 1.20 and 1.70Kg. per Sqm of area respectively second and fourth courses of roofing felt type 2 grade 2 (fiber base self finished bitumen felt) and sixth and final course of stone grit 6mm and down size of pea sized gravel spread at 8cu.dm per sqm including preparation of surface excluding grading complete confirming to IS : 1322 and 1346.	Sqm.	623.00
15.11	Supplying and applying bituminous solution primer on roofs or on wall surface at 0.24 liter per sqm.	Sqm.	29.00
15.12	Deduct for omitting in water proofing treatment final course of spreading stone grit 6mm. and down size of pea sized gravel :		
15.12.1	At 6dm3 per Sqm.	Sqm.	10.00
15.12.2	At 8dm3 per Sqm.	Sqm.	13.00



Item No.	Description	Unit	Rate (Rs.)
15.13	<p>Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer 3mm thick water proofing membrane, black finished reinforced with <b>glass fibre matt</b> consisting of a coat of bitumen primer for bitumen membrane @ 0.40 ltr/sq.mt. by the same membrane manufacture of density at 25°C, 0.87-0.89 kg/ltr and viscosity 70-160 cps. Over the primer coat the layer of membrane shall be laid using Butane Torch and sealing all joints etc., and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under Joint strength in longitudinal and transverse direction at 23°C as 650/450N/5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D-5147. The laying of membrane shall be got done through the authorized applicator of the manufacturer of membrane.</p> <p><b>3 mm thick</b></p>	Sqm.	453.00
15.14	<p>Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer 3mm thick water proofing membrane, black finished reinforced <b>with non-woven polyester matt</b> consisting of a coat of bitumen primer for bitumen membran @ 0.40 ltr/sq.mt. by the same membrane manufacture of density at 25°C, 0.87-0.89 kg/ltr and viscosity 70-160 cps. Over the primer coat the layer of membrane shall be laid using Butane Torch and sealing all joints etc., and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under Joint strength in longitudinal and transverse direction at 23°C as 650/450N/5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D-5147. The laying of membrane shall be got done through the authorized applicator of the manufacturer of membrane.</p> <p><b>3 mm thick</b></p>	Sqm.	514.00
15.15.1	<p>Extra for covering top of membrane with Geotextile, 120gsm non woven, 100% polyester of thickness 1 to 1.25mm bonded to the membrane with intermittent touch by heating the membrane by Butane Torch as per manufactures recommendation.</p>	Sqm.	61.00

Item No.	Description	Unit	Rate (Rs.)
15.15.2	Add extra over item of cement plaster/cement concrete flooring /plain or RCC work providing and mixing admixture of synthetic fibre 6mm / 12mm recron 3S@ 125 gm pack per 50kg of cement or in the ratio of as specified by manufacture specification and direction of engineer in charge with all lead and lift. 125 gm pack.	Per pack 125 gm	55.00
15.16	<p>Providing and laying water proofing treatment over the existing R.C.C. roof as directed by Engineer-in-Charge and consisting of :</p> <p>(i) Cleaning and washing of the existing roof including removing of loose material from the surface of cracks.</p> <p>(ii) Widening and deepening of cracks to receive the Terro Crack filler or equivalent in two coats.</p> <p>(iii) Application of one coat of Terro seal or equivalent compound.</p> <p>(iv) Application of one base coat of water puoofting compound and then application of net (made up of nylon and plastic of approved brand and desired thichness) and again application of two base coats of water proofing compound over the net. The three layers of approved water proofing material will be mixed with kerosene in proportion of 5 kg (water proofing material): 1 liter (Kerosene) ratio and will be applied like gurmala plaster.</p> <p>(v) Application of three or more coats of water repellent compound like Terro seal or equivalent compound with soft brushes complete in all respect as per direction of Engineer-in-Charge.</p>	Sqm	690.00
15.17	Providing and laying cool coating over the existing R.C.C. roof/AC Sheet roof /GI Sheet roof to reduce the inside temperature by at least 15 C by Terro cool coating or equivalent mixed with water repellent compound like Terro seal or equivalent in a proportion of 5:1 ratio (5 Terrozo cool : 1 Terro seal) in three or more coats with soft brush including the cleaning and washing of existing R.C.C. roof/AC Sheet roof /GI sheet with suitable material as directed by Engineer-in-Charge and upto the satisfaction of Engineer-in-Charge and complete in all respect.	Sqm	170.00

Item No.	Description	Unit	Rate (Rs.)
15.18	Providing and laying cool coating on the existing PVC Tanks including exposes inlet and outlet pipes of PVC tank to reduce the temperature of water by at least 15 C by Terrozcool coating or equivalent material mixed with water repellent compound like Terro seal or wquivalent in a proportion of 5:1 ratio ( Terrozo cool: 1 Terro seal) including the cleaning and washing of outer surface of existing PVC Tanks with suitable material and exposed inlet and outlet pipes of PVC tanks in three or more coats with soft brush as directed by Engineer-in-Charge and upto the satisfaction of Engineer-in-Charge and complete in all respect.		
a	300 lit capacity	Each	560.00
b	500 lit capacity	Each	740.00
c	1000 lit capacity	Each	1120.00
<b>EXPANSION JOINT TREATMENT:</b>			
15.19	Supplying and providing of two components poly sulphide sealant containing solid contents, confirming to standard specification and approved compatible primer, for priming vertical faces prior to application of poly sulphide sealant including all labour charges for sealing of expansion joints after drill mixing of two components sealing compound. Cleaning and preparation of expansion joint using wire brush sand papering with emery paper and filing with suitable mechanical means. The work includes racking and cleaning of joints, sticking, debonding tape on bottom of joint, applying primer on edges, using masking tape on edges, providing of sealant and removal of masking tape immediately after providing sealant in joint.		
15.19.1	To vertical joint between RCC columns, bricks & stone masonry in size 40 mm width and 12 mm depth, including providing back up material (Thermocoal foam) if required.	Mtr.	817.00
15.19.2	To joints in flooring, as per drawing with first layer of poly sulphide sealant in size 20 mm width and 10 mm depth over PE Foam and then providing polyethylene foam back up rod 25 mm dia size and finally providing another layer of poly sulphide sealant in size 20 mm width and 10 mm depth over P.E. back up rod as per application procedure and direction of Engineer-in-charge.	Mtr.	854.00
15.20	Providing and fixing in position bitumen impregnated fiberboard confirming to IS: 1838 in expansion joints including the cost of primer sealing compound.		
15.20.1	12 mm. thick	Sqm.	637.00

Item No.	Description	Unit	Rate (Rs.)
15.20.2	18 mm. thick	Sqm.	833.00
15.20.3	25 mm. thick	Sqm.	1087.00
15.21.	Providing and fixing expansion joint board for building RCC column beams, walls, slab of Polyethylene foam of density 30 to 35 Kg/m <sup>3</sup> of Armour Board.		
15.21.1	20mm Thick	Sqm.	425.00
15.21.2	25 mm Thick	Sqm.	506.00
15.21.3	30 mm Thick	Sqm.	582.00
15.21.4	40 mm Thick	Sqm.	751.00
15.21.5	50 mm Thick	Sqm.	816.00
15.22	Providing and fixing 150 mm wide sheet covering over expansion joints with iron screws as per design to match the colour / shade of wall treatment.		
15.22.1	Non-asbestos fibre cement board 6 mm thick as per IS:14862. 1	Rm.	122.00
15.22.2	Aluminum fluted strips 2 mm thick	Rm.	444.00
15.22.3	Acrylic sheet 5 mm thick	Rm.	122.00
15.22.4	Copper Plate 1 mm thick	Rm.	599.00
15.22.5	Add extra for using 225 wide sheet in place of 150mm over item 15.22.1 to 15.22.4	Rm.	45%
15.23	Providing and filling in position bitumen sealing compound grade A (IS 1834 ) in expansion joints.	P.Cm. depth P. Cm. Width for 100mtr. length	723.00
15.24	Providing and filling in position bitumen mix filler of proportion 80 Kg. of hot bitumen, 1 Kg. of cement and 0.25 cubic meter of coarse sand for expansion joints.	Per cm width per cm depth per 100 mtr. length	216.00
<b>CUT STONE DOOR AND WINDOW FRAMES</b>			
15.25	Providing and fixing in cement sand mortar 1 : 4 single paitam (rebated) stone doors windows and ventilator frames of approved quarry :		
15.25.1	Size 75 x 60mm	Mtr.	145.00
15.25.2	Size 75 x 75mm	Mtr.	158.00
15.25.3	Size 100 x 60mm	Mtr.	188.00
15.25.4	Size 100x 75mm	Mtr.	226.00
15.25.5	Size 125 x 100mm	Mtr.	243.00

**B - 120**

Item No.	Description	Unit	Rate (Rs.)
15.26	Providing and fixing in CM 1 : 4 double paitam (rebated) stone door window and ventilator frames of approved quarry :		
15.26.1	Size 100 x 75mm.	Mtr.	215.00
15.26.2	Size 125 x 100mm	Mtr.	271.00
15.27	Providing and fixing in cement sand mortar 1 : 3 single/double rebated R..C. Door Window and ventilator frames (Chowkhats) including 1% reinforcement as per design and concrete mix 1 : 2 : 4 cutting etc. complete incl. horns. and hold fasts :		
15.27.1	Size 75 x 50mm	Mtr.	124.00
15.27.2	Size 75 x 75mm	Mtr.	140.00
15.27.3	Size 100 x 75mm	Mtr.	148.00
15.27.4	Size 125 x 75mm	Mtr.	158.00
15.27.5	Extra for RC frames (Chowkhats) Curved in plan	Mtr.	10%
15.27.6	Extra for RCC frame finishing the exposed face with terrazo (Mosaic) finish.	Mtr.	20%
15.28	Extra for work above floor V level for every four floors or part thereof.	sqm /Rm.	5%
15.29	Providing & mixing admixture in Cement Concrete flooring/Cement Plaster/Plain or RCC work, Synthetic Polyster Triangular Construction Fiber of length 6mm/12mm/18mm with specific gravity 1.34 to 1.40 and diameter 10-40 microns and melting point>220 degrees centigrade by using 125 gm fiber for 50 kgs cement used as per direction of Engineer-in-charge as per IS Code : 16481-2016	Kg	428.00
15.30	Providing & mixing admixture in Cement Mass Concrete flooring CC Road, RCC work, Canal Lining and Shotcrete Non Circular with ribbed surface Structural Synthetic Macro Fiber 42-50mm length, specific gravity of > 1.30 and diameter 0.8 - 1.20mm and melting poing > 220 degree centigrade @ 0.75% -100% by cement weight in mix as per direction of Engineer-in-charge.	Kg	560.00
	Nano technology water proofing, thermal insulation protection coating :		

Item No.	Description	Unit	Rate (Rs.)
15.31	Nano technology water proofing, thermal insulation protection coating 12 layer process for increasing life of building and damage control for roof.-- before coating scaling, cleaning, and preparing surface for treatment. Opening all joint and cracks and filling them with nano technology crack filling hydrophobic chemical with 2/3 coats. then after drying doing a PCC coat on cracks. One coat of nano technology hydrophobic/oiliophobic primer. Nano technology water proofing treatment in3 coats non silicon based applied with fiber mesh sheets in medium. Nano technology thermal insulation coating highly elasticity in nature with 3 coats with 1000 micron width.2top coats of anti stain, anti slippery, natural transparent high shine chemical for better life of the treatment.	Sqm	1119.00
15.32	Nano technology water proofing, thermal insulation protection coating 9 layer process for increasing life of building and damage control protection for walls.-- before coating scaling, cleaning, and preparing surface for treatment. Opening all joint and cracks and filling them with nano technology crack filling hydrophobic chemical with 2 coats. then after drying doing a PCC coat on cracks. One coat of nano technology hydrophobic/oiliophobic primer. Nano technology water proofing treatment in 2 coats non silicon based thermal insulation coating highly elasticity in nature with 2 coats with 1000 micron thickness 2 top coats of anti slippery, natural transparent high shine chemical for better life of the treatment.	Sqm	799.00
15.33	Nano technology water proofing or anti stain protection coating 5-7 layer process for increasing life of all stone fascia/facades/flooring or stone building and damage control protection, life 7-9 years, warranty 5 years-- before coating washing of stone and degreasing of that area is done 1 coat. (Removing of algae/moss/blackness/stains/rust etc. is extra) then after drying doing 1 coat of Nono technology hydrophobic prime. After this on dry area Nano technology water proofing treatment in 3 coats wet on wet. In case of anti stain treatment 2 top coats of anti stain, anti slippery, natural transparent high shine or matt chemical treatment is done.	Sqm	860.00

Item No.	Description	Unit	Rate (Rs.)
15.34	<p>Providing and Applying ACRYLIC emulsion polymer waterproofing chemical coating, on over roof on over roof slabs/terrace/balconies/parapet wall etc.with following method/specification:</p> <p>Paint the surface with regular paint brush so as to obtain approximately 0.3mm thickness coating. apply the 2nd coat next day at right angles to the 1st coat so that total thickness of the coating should be approximately 0.6mm coverage by using above formulation will be 40 ft<sup>2</sup>/ litre of chemical. painted surface does not require any external water curing since chemical will hold sufficient water for curing.After the primer coat Apply 2 coats of modified acrylic emulsion polymer water proofing compound having solar heat reduction properties coating @ 0.330 KG/SQM on the surface of the interval of 3-4 hours. Undulation on the surface is repair before the waterproofing work.</p>	Sqm	507.00
15.35	<p>Providing &amp; applying one coat of UV resistant polymer cement based waterproofing slurry coating of approved make and quality on concrete or plastered surface as per specifications including preparation of surface by cleaning brushing and dust removing, filling of cracks and making the surface leak proof by mixing one part of chemical with 2 parts of cement and 2 parts of water (covering area 1.86 Sq.M/Kg of chemical) including cost of cement, labour, tools &amp; plant, scaffolding if necessary etc., complete as directed by Engineer in Charge.</p> <p>Note: Undulations/cracks found on the surface should be rectified with Cement Motor before application and the same will be paid under relevant items.</p>	Sqm	235.00
15.36	<p>Providing &amp; applying Three coat of Acrylic Water Proof membrane having sunlight and UV resistant properties over waterproofing slurry coat , initial coat of 50-75 micron thickness with diluting 1 part of chemical with 2 parts of clean water, over which applying 2 coats at 2 Hrs .intervals each with diluting 1 part of chemical with 20% of clean water for total thickness of 400 to 450 microns (covering area 0.9 Sq.M/Kg of chemical including preparation of surface by cleaning, brushing and dust removing, scaffolding if necessary etc., with contractor's labour, tools, machinery etc, complete as directed by Engineer in Charge.</p>	Sqm	468.00

Item No.	Description	Unit	Rate (Rs.)
15.37	Providing & applying Three coat of pure Acrylic Water based elastomeric brush applied insulating coating on exterior surface overwaterproofing slurry coat , initial coat of 50-75 micron thickness with diluting 1 part of chemical with 2 parts of clean water, over which applying 2 coats at 2 Hrs, intervals each with diluting 1 part of chemical with 10% of clean water for total thickness of 400 to 450 microns (covering area 0.9 Sq.M/Kg of chemical) including preparation of surface by cleaning, brushing and dust removing, scaffolding if necessary etc., with contractor's labour, tools, machinery etc, complete as directed by Engineer in Charge.	Sqm	503.00
15.38	Providing and fixing 50mm thick extruded polystyrene rigid insulation board of required size <b>between cavity wall</b> , complying with ISO 4898:2008 & ASTM C 578-08b - type VI having thermal conductivity of 0.0289 W/m K as per ASTM C 578 (measured as per IS 3346), compressive strength of >350 kPa listed as per ASTM D 1621, density of 34-36 kg/m <sup>3</sup> as per ASTM D 1622, water absorptions =< 1% by volume as per ASTM D 2842, oxygen index of 24.1 to 28.1 listed as per ASTM D 2863, cell size 0.4 mm of dia (max) as per ASTM D 3576. Fire retardent property as per DIN 4102, part 1 of class B2 and as per ASTM E84 class A, fixed with suitable water based adhesive and fastener, complete in all respect as per the direction of Engineer-in-Charge.	Sqm	635.00
15.39	Providing & fixing 50mm extruded polystyrene (XPS) insulation board density 36kg/m <sup>3</sup> , <b>under or over RCC roof slab</b> complete as per manufacturing specifications fixed with 1% suitable water based adhesive and fastener, complete in all respect as per the direction of Engineer-in-Charge.	Sqm	638.00



Item No.	Description	Unit	Rate (Rs.)
15.40	<p>Supply and Application of Solar IR Heat Reflective Coating System conforming to BIS Std IS 17218:2019 for concrete surface having minor leakage by thorough surface preparation to remove dust, dirt, molds etc. using High Pressure WaterJet / Wire Brush etc, opening of cracks and filling with elastomeric crack filler, then applying one absorption coat of UV resl tan1 elastomeric coating having min. 50% solids (i.e. Thermacool WP 51/or Equivalent), followed by application of "elastomeric clear coating White Cement" waterproofing coat having min. 400% elongation and tensile strength of 2.2 MPa and than top coating with 2 Coats of Solar IR Heat Reflective Coating conforming to BIS Standard IS 17218:2019 (i.e. Thermacool 0.3C/or Equivalent) of cementitious surfaces, white colour, matt, surface coverage 3.25 sqm/Ltr/2 wat, dft 100- 120microns.The work shall be done as per the directions of Engineer-in-charges.water based pure acrylic, UV resistant, Solar IR Heat Reflective coating with Pull off Adhesion 2.8 Mpa, passes 2000 hrs accelerated durability test, suitable for all types of cementitious surfaces, white colour, matt, surface coverage 3.25 sqm/Ltr/2 wat, dft 100-120microns.The work shall be done as per the directions of Engineer-in-charges.</p>	Sqm	559.00

**CHAPTER : B-16**  
**ALUMINIUM & P.V.C. WORK**

Item No.	Description	Unit	Rate (Rs.)
16.1	Providing and fixing aluminum work for doors , windows, ventilators and partition with extruded built up standard tubular / appropriate Z sections and other sections of approved make conforming to IS :733 and IS :1285, fixed with rawl plugs and screws or with fixing clips ,or with expansion hold fasteners including necessary filling up of gap. at junctions, at top ,bottom and sides with required PVC/neoprene felt etc. Aluminium section shall be smooth, rust free, straight, mitered and jointed mechanically wherever required including cleat angle Aluminium snap beading for glazing /paneling, C.P. brass/ stainless steel screws Al. Tower bolt & Al. handle & Al. Aldrop etc., all complete as per architectural drawings and the directions of Engineer- in – charge . (Glazing and paneling to be paid for separately).		
16.1.1	For fixed portion		
16.1.1.1	Anodised aluminum (anodised transparent 81 dyed to required shade according to IS : 1868. (Minimum anodic coating of grade AC 15, Anodizing to be got done from approved Anodizer)	Kg.	312.00
16.1.1.2	Powder coating aluminum ( minimum thickness of powder coating 50 micron)	Kg.	336.00
16.1.1.3	Polyester Powder coating aluminum ( minimum thickness of powder coating 50 micron)	Kg.	348.00
16.1.2	For shutters builtup standard tubular sections of openable doors ,windows & ventilators including providing & fixing hinges / rollers etc. and making provision for fixing of fittings wherever required (lockes shall be paid for separately).		
16.1.2.1	Anodised aluminum (anodised transparent 81 dyed to required shade according to IS : 1868. (Minimum anodic coating of grade AC 15, Anodizing to be got done from approved Anodizer)	Kg.	340.00
16.1.2.2	Powder coating aluminum (minimum thickness of powder coating 50 micron)	Kg.	365.00
16.1.2.3	Polyester Powder coating aluminum (minimum thickness of powder coating 50 micron)	Kg.	377.00
16.2	Extra for shutters of sliding aluminum windows		10%
16.3	Extra for work done in curved / circular shape.		10%

Item No.	Description	Unit	Rate (Rs.)
16.4	Providing and fixing 12 mm thick prelaminated three layer medium density (exterior grade ) particle board Grade I, Type II conforming to IS : 12823 bonded formaldehyde synthetic resin ,of approved brand and manufacture in paneling fixed in aluminium doors ,windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and direction of engineer-in-charge.		
16.4.1	Pre-laminated particle board with decorative lamination on one side and balancing lamination on other side.	Sqm	985.00
16.4.2	Prelaminated particle board with decorative lamination on both sides.	Sqm	1045.00
16.5	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVS / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge.(Cost of aluminium snap beading shall be paid in basic item.)		
16.5.1	With glass panes of 4.0 mm thickness ( weight not less than 10.0 kg/sqm) as per IS : 2835.	Sqm	757.00
16.5.2	With float glass panes of 5.0 mm thickness ( weight not less than 13.50 kg/sqm)	Sqm	863.00
16.5.3	With float glass panes of 8 mm thickness	Sqm	1182.00
Note	Add extra for using toughened glass( Refer 8.6.1)		
16.6	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS : 6315 marked, for doors including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M.S.		
16.6.1	With stainless steel cover plate	Each	1364.00
16.6.2	With brass cover plate	Each	1890.00
16.7	Filling the gap upto 5 mm depth and 5 mm width in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete.	Rm	76.00
16.8	Providing and fixing 100mm brass locks (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	Each	321.00

**B - 127**

Item No.	Description	Unit	Rate (Rs.)
16.9	Providing and fixing aluminium U shape handle of size 100mm with SS screws etc. Complete as per direction of Engineer-in-charge		
16.9.1	Anodized (AC 15 ) aluminium	Each	66.00
16.9.2	Powder coated minimum thickness 50 micron aluminium	Each	71.00
16.9.3	Polyester powder coated minimum thickness 50 micron aluminium .	Each	73.00
16.10	Providing and fixing expanded grill made of aluminum as per design and drawing having members section of size 7.5mm x 6.0mm and opening of size 102mm x 99mm to aluminum window/vent with required screws, Y and H aluminium section (as per drawing) at the ends and middle joints respectively complete in all respect as per direction of engineer in charge.		
16.10.1	Anodised aluminum (anodised transparent 81 dyed to required shade according to IS : 1868. (Minimum anodic coating of grade AC 15, Anodizing to be got done from approved Anodizer)	Sqm.	1738.00
16.10.2	Powder coating aluminum (minimum thickness of powder coating 50 micron)	Sqm.	1804.00
16.10.3	Polyester Powder coating aluminum (minimum thickness of powder coating 50 micron)	Sqm.	1935.00
16.11	S&f fixed wire gauge of stainless steel of 14 mesh x 24 gauge to the aluminium window by Aluminium beading 20x3mm with suitable screws not exceeding 150mm distance at all heights with all lead and lift with scaffolding.	Sqm	905.00
16.12	Providing and fixing vertical Blinds, headrail shall be oriented aluminum alloy 50 mm wide x 18 mm high the thickness shall be 1.2 mm. Control unit shall be made of high grade polymer and shall be housed in side the headrail, which shall transfer motion from chain tilter to tilt rod. Chain tilter shall be made of plastic bead of diameter 4.5 mm through which 2 mm thick polyester code passes. Tilt rod shall be extruded aluminum having 3 key ways. Runner shall be moulded plastic and shall have to plastic wheels mounted on plastic axles to enable runner to slide unhindered in headrail. Luver shall be made of fabric 100 mm colour fast and shall have protective scotchgard coating to resist stains and dust. Bottom mechanism consist bottom weight made of powder coated galvanized steel for maximum corrosion resistance. The bottom weight shall be attached with bottom.	Sqm	1589.00

Item No.	Description	Unit	Rate (Rs.)
16.13	Providing and fixing Horizontal blinds /Venation blind shall be cold rolled formed U shape 23 mm high x 25 mm wide with flanged edges. It shall be made of heavy gauge 0.56 mm galvanized steel, Slates shall be made of virgin Al. alloy (having 3.5 – 4.5% of Mg. Content of width 25 mm. The slat shall have dust guard paint coating, the chord lock shall be of thick tomized steel and shall be securely attach in the head rail. It shall provide locking arrangement of the cord. Tilt rod shall be made of galvanized steel it shall have a D shaped with an average cross section with diameter of 6 mm to achieve minimum torsional deflection.	Sqm	1589.00
16.14	Providing and fixing Drapery rod shall be made of 20 gauge cold rolled steel strip, which is electrical resistance welded. The section will be available 25.4 mm diameter the section shall be coated with acid resistance polymer finish shall made from ABS material in nearest matching colour of rod. The ring shall be made from ABS material in nearest matching colour to rod. Brackets made of galvanized steel.	Rm	
16.15	Providing and fixing sun control film, thickness of film 1 Mil Visible Light Transmittance 4-24% & Solar Energy Transmittance 42-51% & Total solar Energy rejection 37-43% of approved colour and shade, complete in all respect, at all level, as directed by engineer- in -charge.	Sqm	626.00
<b>PVC ITEMS</b>			
16.16	Providing and fixing factory made of uPVC Extruded section having an overall dimension as below (tolerance+/-1mm) with wall thickness 2.0mm+/-0.2mm, corners of the door frame to be mitred and welded of plastic ,galvanized brackets and stain less steel screws. The hinge side vertical of the frames reinforced by galvanized M.S.tube of size 19x19mm and 1mm+/-0.1mm wall thickness and 3 nos.stainless steel hinges fixed to the frame complete as per manufacturers specification and direction of Engineer-in-charge.		
16.16.1	Extruded section profile size 48x40 mm	Rm	192.00
16.16.2	Extruded section profile size 42x50 mm	Rm	213.00

Item No.	Description	Unit	Rate (Rs.)
16.17	Providing and fixing to existing door frames 24mm thick factory made PVC door shutters made of stiles and rails of a uPVC hollow section of size 59x24 mm and wall thickness 2mm +/- 0.2 mm with inbuilt edging on both sides. The stiles and rails mitred and joined at the corners by means of M.S.galvanized/plastic brackets of size 75x220mm having wall thickness 1.0mm +/- 0.1mm and stainless steel screws. The stiles of the shutter reinforced by inserting galvanized M.S.tube of size 20x20mm and 1mm +/- 0.1mm wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x24mm and 2mm +/- 0.2mm wall thickness fixed to the shutter stiles by means of plastic/ galvanized M.S.'U' cleats. The shutter frame fitted with a uPVC multi-shambered single panel of size not less than 610mm, having overall thickness of 20mm and 1mm +/- 0.1mm wall thickness. The panels fitted vertically and tie bar at two places by inserting horizontally 6mm galvanized M.S.rod and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in-charge (For W.C.and bathroom door shutter).	Sqm	1724.00
16.18	Providing and fixing to existing door frames 30mm thick factory made polyvinyl chloride (PVC) door shutter made of stiles and rails of a uPVC hollow section of size 60x30 mm and wall thickness 2mm +/- 0.2mm with inbuilt decorative moulding edging on one side. The stiles and rails mitred and joined and the corners by means of M.S.galvanized/plastic brackets of size 75x220 mm having wall thickness 1.0mm and stainless steel screws. The stiles of the shutter reinforced by inserting galvanized M.S.tube of size 25x20 mm and 1mm +/- 0.1mm wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x30 mm and 2mm +/- 0.2mm wall thickness fixed to the shutter stiles by means of plastic/galvanized M.S.tube 'U' cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 610mm, having overall thickness of 20mm and 1mm +/- 0.1mm wall thickness. The panels filled vertically and tie bar at two places by inserting horizontally 6mm galvanized M.S.rod and fastened with nuts and washers. complete as per manufacturer's specification and direction of Engineer-in-charge. (For W.C.and bathroom door shutter)	Sqm	1790.00

**B - 130**

Item No.	Description	Unit	Rate (Rs.)
16.19	Providing and fixing factory made P.V.C. door frame of size 50x47mm with a wall thickness of 5mm, made out of extruded 5mm rigid PVC foam sheet mitred at corners and joined with 2 Nos. of 150mm long brackets of 15x15mm M.S. square tube, the vertical door profiles to be reinforced with 19x19mm M.S. square tube of 19 gauge, EPDM rubber gasket weather seal to be provided through out the frame. The door frame to be fixed to the wall using M.S. screws of 65/100mm size complete as per manufacturers specification and direction of Engineer-in-Charge.	Rm	271.00
16.20	Providing and fixing to existing door frames.		
16.20.1	30mm thick factory made solid panel PVC door shutter consisting of frame made out of M.S. tubes of 19 gauge thickness and size of 19mm x 19mm for stiles and 15 mm x15mm, top & bottom rails. M.S. frame shall have a coat of steel primers of approved make and manufacture M.S. frame covered with 5mm thick heat moulded PVC 'C' channel of size 30mm thickness, 70mm width out of which 50mm shall be flat and 20mm shall be tapered in 45 degree angle on either side forming stiles; and 5mm thick, 95mm wide PVC sheet out of which 75 mm shall be flat and 20mm shall be tapered in 45 degree on the inner side to form top and bottom rail and 115mm wide PVC sheet out of which 75 mm shall be flat and 20mm shall be tapered on both sides to form lock rail. Top bottom and lock rails shall be provided either side of the panel. 10mm (5mm x 2) thick, 20mm wide cross PVC sheet shall be provided as gap insert for top rail & bottom rail. Panelling of 5mm thick PVC sheet to be fitted in the M.S. frame welded/ sealed to the stiles & rails with 7mm (5mm +2mm) thick x 15mm wide PVC sheet bending on inner side, and joined together with solvent cement adhesive. An additional 5mm thick PVC strip of 20mm width is to be stuck on the interior side of the 'C' Channel using PVC solvent adhesive etc. complete as per direction of Engineer-in-charge, manufacture's specification & drawing.(For W.C.and bathroom door shutter).	Sqm	3032.00

Item No.	Description	Unit	Rate (Rs.)
16.20.2	<p>30mm thick factory made solid both side Pre laminated panel PVC door shutter consisting of frame made out of M.S. tubes of 19 gauge thickness and size of 19mm x 19mm for stiles and 15x15mm top &amp; bottom rails. M.S. frame shall have a coat of steel primers of approved make and manufacture M.S. frame covered with 5mm thick heat moulded PVC 'C' channel of size 30mm thickness, 70mm width out of which 50mm shall be flat and 20mm shall be tapered in 45 degree angle on either side forming stiles; and 5mm thick, 95mm wide PVC sheet out of which 75mm shall be flat and 20mm shall be tapered on the inner side to form top and bottom rail and 115mm wide PVC sheet out of which 75 mm shall be flat and 20mm shall be tapered on both sides to form lock rail. Top bottom and lock rails shall be provided either side of the panel. 10mm (5mm x 2) thick, 20mm wide cross PVC sheet shall be provided as gap insert for top rail &amp; bottom rail. Panelling of 5mm thick PVC sheet to be fitted in the M.S. frame welded/ sealed to the stiles &amp; rails with 7mm (5mm +2mm) thick x 15mm wide PVC sheet bending on inner side, and joined together with solvent cement adhesive. An additional 5mm thick PVC strip of 20mm width is to be stuck on the interior side of the 'C' Channel using PVC solvent adhesive etc. complete as per direction of Engineer-in-charge,</p> <p>manufacture's specification &amp; drawing.(For W.C.and bathroom door shutter).</p>	Sqm	3161.00
16.21	<p>Providing and fixing of false ceiling with grid of M.S.tube section of size 19mm X 19mm and with a wall thickness of 1mm+/- 0.2mm.The side pipe and the intermediate pipes is fixed to the roof from the top with the help of ceiling angles/wire grid shall be covered by the uPVC profile section of size 6mm X 250mm with wall thickness of 0.80mm +/- 0.2mm,with the help of self tapping screw of 6mm X 13mm, 6mm X 19mm.Necessary cutouts for electric connections, lighting, air conditioning etc, shall be provided at required place. The perimeter edge shall be covered by extruded PVC corner beading section of size 9mm X 28mm or 25mm X30mm with a wall thickness of 1mm+/-0.2mm fixed by applying cynoacrylic adhesive complete as per manufacturer's specification and direction of Engineer-in-charge.</p>	Sqm	941.00



Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

- 16.22 Providing and fixing of wall paneling on grid made out of PVC profile section of size 21x17mm with a wall thickness of 1.5mm+/-0.2mm, fixed on the existing wall with wood screw of size 50mm X 8mm with rowel plug at a spacing of 900mm center. uPVC profile section of size 150mm X 10mm with a wall thickness of 1.0mm+/-0.2mm to be fixed on the grid by self tapping screw of size 19mm X 6mm. Necessary cutouts for electrical connection to be provided at required places. The edge and periphery, finally to be covered by extruded PVC beading section of size 28mm X 12mm with a wall thickness of 1.0mm+/-0.2mm complete as per manufacture's specification and direction of Engineer-in-charge.

Sqm

1316.00

- 16.23 Supply of "Computer Table" of Modular nature having all the necessary arrangement for keyboard, CPU, UPS, Printer and wire manager Table Top : The table top of size 900 x 600mm(WxD) would be made out of post formed on 25 mm thick particle board with 0.7mm thick Carvica sheet in half round post formed finish on the front and rear side, matching color compensating laminate fixed on the bottom side. Other two sides are edge banded and duly sealed with 1.5 mm thick PVC edge banding of matching color with high pressure through feed machine.
- Keyboard Below the table top the keyboard pull out tray having sliding arrangement fixed on side supporting legs with 450mm G.I. telescopic channel. Keyboard of size 750 x 450 made out of 18 mm thick Particle board laminate with 0.7mm thick laminate sheet having all four sides Flat edge banded and duly sealed with 1.5 mm thick PVC edge banding of matching color with high pressure through feed machine. Side Support : Two supporting side leg of size 600 x 750mm(WxH) made out of post formed on 18 mm thick particle board with 0.7mm thick Carvica sheet in half round post formed finish on two sides and other two sides are edge banded and sealed with 1.5mm thick PVC edge banding of matching color with high pressure through feed machine.

Item No.	Description	Unit	Rate (Rs.)
	<p>Modesty Panel :</p> <p>Made out of 18 mm thick Particle board laminate with 0.7mm thick laminate sheet of size 900 x 750mm(WxH) having all four sides Flat edge banded and duly sealed with 1.5 mm thick PVC edge banding of matching color with high pressure through feed machine. CPU, UPS &amp; Printer Places</p> <p>Table having the provision for CPU of size 300 x 600 x 600mm(WxDxH) below the table top on the right side of table adjoining to this on left side below the table the provision for UPS of size 450 x 600 x 250mm (WxDxH) and above this the provision for the Printer and stationary having overall dimension of 450 x 600 x 300mm(WxDxH). All this is made out of 18 mm thick Particle board laminate with 0.7mm thick laminate sheet having all four sides flat edge banded and duly sealed with 1.5 mm thick PVC edge banding of matching color with high pressure through feed machine.</p> <p>All the parts of the table are duly fixed with mini fix dowel system with each other having matching drilled holes to be made on CNC multi hole boring machine for proper matching and alignment of the different part of the table, 4nos. of Self Adjusting level screw of size 45 x 6mm are provide at the bottom of the both legs for the proper leveling of the table.</p>	Each	6981.00
16.24	Supply and fixing of Modular work Station with Partition 32mm thick Aluminum top 25 mm thick particale board with post forming three drawer pedestal unit one KBT or one CPU trolley. Size 4800 x 1500 x 1200mm single seat in combination	Each	14681.00
16.25	Supply and fixing of Modular work Station with Partition 32mm thick Aluminum top 25 mm thick particle board with four side edage banding one drawer and one open able shutter pedestal unit one KBT or one CPU trolley. Size 6000 x 3000 x 1200mm single seat in combination	Each	23280.00
16.26	Supply and fixing of Modular work Station with Partition 32mm thick Aluminum top 25 mm thick MDF board with Membrane three drawer pedestal unit one KBT or one CPU trolley. Size 4600 x 2100 x 1200mm single seat in combination	Each	23214.00

**B - 134**

Item No.	Description	Unit	Rate (Rs.)
16.27	Supply and fixing of Modular work Station with Partition 32mm thick Aluminum top 25 mm thick particle board with post formed three drawer pedestal unit one KBT or one CPU trolley. Size 4500 x 2400 x 1200mm single seat in combination (Rate of this item is effective from 01.12.2016)	Each	21211.00
16.28	Supply and fixing of Modular work Station with Partition 32mm thick Aluminum top 25 mm thick MDF board with Membrane three drawer pedestal unit one KBT or one CPU trolley. Size 6600 x 3000 x 1200mm single seat in combination	Each	28266.00
16.29	Supply and fixing of Modular work Station with Partition 32mm thick Aluminum top 25 mm thick particle board with post formed one drawer or one open able shutter pedestal unit one KBT or one CPU trolley. Size 4500 x 3000 x 1200mm single seat in combination	Each	22077.00
16.30	Supply and fixing of Modular work Station with Partition 32mm thick Aluminum top 25 mm thick particle board with post formed three drawer pedestal unit one KBT or one CPU trolley. Size 3600 x 2400 x 1200mm single seat in combination	Each	16385.00
16.31	Supply and fixing of Modular work Station with Partition 32mm thick Aluminum top 25 mm thick particle board with four side edage banding 1200mm height storage unit with two drawer one KBT or one CPU trolley. Size 1500 x 3000 x 1650mm single seat in combination	Each	47361.00
16.32	Supply and fixing of Modular work Station with Partition 32mm thick Aluminum top 25 mm thick particale board with post formed three drawer one KBT or one CPU trolley. Size 2100 x 2100 x 1200mm single seat in combination	Each	8513.00
16.33	Supply and fixing of Modular work Station with Partition 32mm thick Aluminum top 25 mm thick particle board with post formed legs 18mm particle board with four side edge banding one KBT or one CPU trolley. Size 2100 x 2100 x 1200mm single seat in combination	Each	13912.00

**B - 135**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate (Rs.)</b>
16.34	Supply and fixing of Modular work Station with Partition 60mm thick Aluminum top 25 mm thick particle board with post formed legs 18mm particle board with four side edge banding with three drawer one KBT or one CPU trolley Two 1200mm height storage unit. Size 6000 x 3000 x 1200mm single seat in combination	Each	153166.00
16.35	Supply and fixing of Modular work Station with Partition 22mm thick Aluminum top 25mm thick particle board with post formed one drawer or one open able shutter one KBT or one CPU trolley Two 1200mm height storage unit. Size 2400 x 1200 x 1200mm single seat in combination	Each	14527.00
16.36	Supply and fixing of Modular work Station with Partition 60mm thick Aluminum top 25mm thick particle board with post formed one drawer or one open able shutter one KBT or one CPU trolley Two 1200mm height storage unit. Size 1200 x 1200 x 1200mm single seat in combination	Each	17112.00
16.37	Supply and fixing of Modular work Station with Partition 22mm thick Aluminum top 25mm thick particle board with post formed one drawer or one open able shutter one KBT or one CPU trolley Two 1200mm height storage unit. Size 2400 x 600 x 1200mm single seat in combination	Each	17437.00
16.38	Supply and fixing of Modular work Station with Partition 60mm thick Aluminum top 25mm thick particle board with post formed one drawer or one open able shutter one KBT or one CPU trolley Two 1200mm height storage unit. Size 1800 x 1800 x 1950mm single seat in combination	Each	61064.00

Item No.	Description	Unit	Rate (Rs.)
16.39	Providing and fixing Structural glazing work with toughened glass of 6mm thick and reflective colour as approved in dark shade like Blue/Dark Blue etc. with frame work of curtain section 65x60mm (Weight 1.64 kg/m min.) made of aluminium with chrome plating. Internal frame work will also be of curtain section 65x60mm of chrome plated aluminium section with 20x20mm aluminium tube section and structural spacer made of rubber. The aluminium frame work size as per instruction of Engineer-in-charge and including openable panels with all necessary sections and fitting. The work include silicon structural adhesive for complete gripping of glass with framing members and silicon weather seal sealant to prevent moisture/water through joints. Glass will be fixed in plumb and with uniform spacing of 10-12mm wide duly filled with silicon weather seal sealant. The work includes all labour, scaffolding, structural aluminium work, toughened glasses, silicon weather seal sealant, silicon structural adhesive structural spacer, all accessories like handles, peg stays, M-15 grade cement concrete for fixing holdfast. (Face area of glass shall be measured)	Sqm	5243.00
16.40	Supply and fixing of polycrrete wall fencing of existing wall, fencing of 0.9 mtr. Height above the existing wall, main member PVC profile section of size 125mmx125mmx900mm (c/c 1.67 mtr. length) with a wall thickness of 2.00mm+0.20mm and Horizontal panel PVC profile section of size 305mmx20mm (3 nos. 1.6 mtr. length) with wall thickness 1.00mm + 0.1mm and side edge covered with PVC C-Section of size 24mm x18mm with a wall thickness of 2.00mm+0.20mm Horizontal panel reinforced with G.I. section (C-Type) with a wall thickness of 1.20+0.10mm and horizontal panel having side in main member groove (vertical pillar 125x125mm) all complete as per design specification and as direction by Engineer in charge.	Sqm	2504.00

Item No.	Description	Unit	Rate (Rs.)
16.41	<p>Providing and fixing of uPVC casement fixed windows or ventilators manufactured in ISO 9001:2000 &amp; 14001:2004 certified company. Frame : Made from the Extruded uPVC Window Profile Section of size 60 x 60mm having outer wall thickness of 2.25mm (+/- 0.2mm) and 3 box multi-chamber construction, White in finish, duly reinforced with 1.2mm thick G/J/U/O TYPE GI section. All the four corners shall be mitered cut &amp; thermal welded so as to form window frame. Frame shall be milled with drain and air equalizer hole in order to be water tight and for drainage of accumulated water, if any, to outer side. Fix Mullion made of 76 x 60mm uPVC Profile Section with steel reinforcement shall be provided in windows as per the requirement. Frame shall have 'O' type EPDM gasket fitted in in-built groove of frame profile for proper air &amp; sound insulation of the shutter. Glazing bead of size 34 x 20mm with 'K' &amp; 'O' type inner and outer EPDM weather seal gaskets alongwith 5mm thick ISI make plain float glass. All welding joints of</p> <p>frame and shutter shall be cleaned and milled with the CNC mechanism to provide uniform grooved finish on all visible joints. Hardware : Installation at Site : Complete window is to be installed on site with 10 x 100mm fasteners with white cap in existing pre-finished wall cut-out cemented to glass level plane at all height &amp; width and silicon glue is applied to fill up the crevices between wall and window frame. Complete in all respect as per the drawing and specifications and direction of engineer-in-charge.</p>	Sqm	4997.00
16.42	<p>Providing and fixing expanded grill made of aluminum as per design and drawing having members section of size 7.5mm x 6.0mm and opening of size 75mmx72mm to aluminum window/vent with required screws, Y and H aluminium sec (as per drawing) at the ends and middle joints respectively complete in all respect as per direction of engineer in charge.</p>		
16.42.1	<p>Anodised aluminum (anodised transparent 81 dyed to required shade according to IS : 1868. (Minimum anodic coating of grade AC 15, Anodizing to be got done from approved Anodizer) Anodised aluminum (anodised transparent 81 dyed to required shade according to IS : 1868. (Minimum anodic coating of grade AC 15, Anodizing to be got done from approved Anodizer)</p>	Sqm	1796.00

Item No.	Description	Unit	Rate (Rs.)
16.42.2	Powder coating aluminum (minimum thickness of powder coating 50 micron)	Sqm	1865.00
16.42.3	Polyester Powder coating aluminum (minimum thickness of powder coating 50 micron)	Sqm	1990.00
16.43	Providing and fixing expanded grill made of aluminum as per design and drawing having members section of size 7.5mm x 6.0mm and opening of size 50mmx48mm to aluminum window/vent with required screws, Y and H aluminium section (as per drawing) at the ends and middle joints respectively complete in all respect as per direction of engineer in charge.		
16.43.1	Anodised aluminum (anodised transparent 81 dyed to required shade according to IS : 1868. (Minimum anodic coating of grade AC 15, Anodizing to be got done from approved Anodizer)	Sqm	1827.00
16.43.2	Powder coating aluminum (minimum thickness of powder coating 50 micron)	Sqm	1891.00
16.43.3	Polyester Powder coating aluminum (minimum thickness of powder coating 50 micron)	Sqm	2020.00
16.44	Providing and fixing of uPVC Sliding windows: Frame Made from the Extruded uPVC Window Profile Section of size 106w x 50h mm having outer wall thickness of 2.5mm (+/- 0.2mm) and 3 box multi-chamber construction, White in finish, duly reinforced with 1.2 mm thick GI section. Frame shall have three track configuration, two for sliding of window shutter and one for mosquito mesh shutter. Vertical member of frame which bears the sliding shutter load shall have aluminium rail/track for smooth sliding of shutter rollers. All the four corners shall be mitered cut & thermal welded so as to form window frame. Frame shall be milled with drain and air equalizer hole in order to be water tight and for drainage of accumulated water, if any, to outer side. Shutter : The shutter of sliding window shall be made of 39w x 69h mm Extruded 3 box multi- chamber uPVC Window Profile Section of white colour having outer wall thickness of 2.5mm (+/- 0.2mm) provided with reinforcement of 1.5mm thick GI section duly mitered cut & thermal welded at all corners and fitted with uPVC glazing bead of size 22 x 20 mm with inner and outer co-extruded		

Item No.	Description	Unit	Rate (Rs.)
	EPDM/TPE-E weather seal gaskets alongwith 6mm thick ISI make plain float glass. Mesh shutter shall be made of 39w x 69h mm Extruded 3 box multi-chamber UPVC Window profile section of white colour having outer wall thickness of 2.5mm (+/- 0.2mm) provided with reinforcement of 1.5 mm thick GI section duly mitered cut & thermal welded at all corners and fitted with nylon/polymer mesh and rollers/pully.	Sqm	8077.00
16.45	<p>Providing and fixing of uPVC Sliding windows: Frame Made from the Extruded uPVC Window Profile Section of size 106w x 50h mm having outer wall thickness of 2.5mm (+/- 0.2mm) and 3 box multi-chamber construction, Laminated (colour) finish, duly reinforced with 1.2 mm thick GI section. Frame shall have three track configuration, two for sliding of window shutter and one for mosquito mesh shutter. Vertical member of frame which bears the sliding shutter load shall have aluminium rail/track for smooth sliding of shutter rollers. All the four corners shall be mitered cut &amp; thermal welded so as to form window frame. Frame shall be milled with drain and air equalizer hole in order to be water tight and for drainage of accumulated water, if any, to outer side.</p> <p>Shutter : The shutter of sliding window shall be made of 39w x 69h mm Extruded 3 box multi- chamber uPVC Window Profile Section of laminated ( colour) having outer wall thickness of 2.5mm (+/- 0.2mm) provided with reinforcement of 1.5mm thick GI section duly mitered cut &amp; thermal welded at all corners and fitted with uPVC glazing bead of size 22 x 20 mm with inner and outer co-extruded EPDM/TPE-E weather seal gaskets alongwith 6mm thick ISI make plain float glass. Mesh shutter shall be made of 39w x 69h mm Extruded 3 box multi-</p> <p>chamber UPVC Window profile section of laminated ( colour) having outer wall thickness of 2.5mm (+/- 0.2mm) provided with reinforcement of 1.5 mm thick GI section duly mitered cut &amp; thermal welded at all corners and fitted with nylon/polymer mesh and rollers/pully.</p>	Sqm	11069.00



**B - 140**

Item No.	Description	Unit	Rate (Rs.)
16.46	<p>Providing and fixing of uPVC Sliding windows: Frame Made from the Extruded uPVC Window Profile Section of size 106w x 50h mm having outer wall thickness of 2.5mm (+/- 0.2mm) and 3 box multi-chamber construction, White in finish, duly reinforced with 1.2 mm thick GI section. Frame shall have three track configuration, Vertical member of frame which bears the sliding shutter load shall have aluminium rail/track for smooth sliding of shutter rollers. All the four corners shall be mitered cut &amp; thermal welded so as to form window frame. Frame shall be milled with drain and air equalizer hole in order to be water tight and for drainage of accumulated water, if any, to outer side.</p> <p>Shutter : The shutter of sliding window shall be made of 39w x 69h mm Extruded 3 box multi- chamber uPVC Window Profile Section of white colour having outer wall thickness of 2.5mm (+/- 0.2mm) provided with reinforcement of 1.5mm thick GI section duly mitered cut &amp; thermal welded at all corners and fitted with uPVC glazing bead of size 22 x 20 mm with inner and outer co-extruded EPDM/TPE-E weather seal gaskets alongwith 6mm thick ISI make plain float glass.</p>	Sqm	6068.00

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

- 16.47 Providing and fixing of uPVC Sliding windows: Frame Made from the Extruded uPVC Window Profile Section of size 106w x 50h mm having outer wall thickness of 2.5mm (+/- 0.2mm) and 3 box multi-chamber construction, Laminated (colour) finish, duly reinforced with 1.2 mm thick GI section. Frame shall have three track configuration, Vertical member of frame which bears the sliding shutter load shall have aluminium rail/track for smooth sliding of shutter rollers. All the four corners shall be mitered cut & thermal welded so as to form window frame. Frame shall be milled with drain and air equalizer hole in order to be water tight and for drainage of accumulated water, if any, to outer side.
- Shutter : The shutter of sliding window shall be made of 39w x 69h mm Extruded 3 box multi- chamber uPVC Window Profile Section of laminated (colour) having outer wall thickness of 2.5mm (+/- 0.2mm) provided with reinforcement of 1.5mm thick GI section duly mitered cut & thermal welded at all corners and fitted with uPVC glazing bead of size 22 x 20 mm with inner and outer co-extruded EPDM/TPE-E weather seal gaskets alongwith 6mm thick ISI make plain float glass.

Sqm

8648.00

- 16.48 Providing and fixing of UPVC casement openable windows (outward / inward): Outer Frame made from the Extruded UPVC Windows profile section of size 60w X 60h mm having outer wall thickness of 2.5mm (+/- 0.2mm) and three chamber constuction, White in finish, duly reinforced with 1.5mm thick GI section. All the four corners shall be mitered cut & thermal welded so as to form window frame. Frame shall be milled with drain and air equalizer hole in order to be water tight and for drainage of accumulated water, if any, to outer side. Fix Mullion made of 60w X 80h mm UPVC profile section with steel reinforcement shall be provided in windows having 2 or more openable shutters, as per the requirement. Frame shall have co-extruded with EPDM/TPE-E gasket fitted in in-built groove of frame profile for proper air & sound insulation of the shutter. Shutter:

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

The shutter of outward openable window shall be made of size 60w X 74h mm and shutter of inward openable window shall be made of size 60w x 77h mm Extruded 3 box multi-chamber UPVC Window profile section of white colour having outer wall thickness of 2.25mm (+/- 0.2mm) provided with reinforcement of 1.5mm thick GI section duly mitered cut & thermal welded at all corners and fitted with UPVC glazing bead of size 36 X 20mm with inner and outer co-extruded EPDM/TPE-E weather seal gasket alongwith 6mm thick ISI make plain float glass. All welding joints of frame and shutter shall be cleaned and milled with the CNC mechanism to provide uniform grooved finish on all visible joints. Hardware: Window shutter are fixed with frame on 2.5mm thick SS301 Grade friction hinge system to keep the window opened at desired angle. Friction Hinge also enables easy cleaning of glass on both side from the inside of building.

		Sqm	8723.00
16.49	Providing and fixing of UPVC casement openable windows (outward / inward): Outer Frame made from the Extruded UPVC Windows profile section of size 60w X 60h mm having outer wall thickness of 2.5mm (+/- 0.2mm) and three chamber construction in Laminated (colour) finish, duly reinforced with 1.5mm thick GI section. All the four corners shall be mitered cut & thermal welded so as to form window frame. Frame shall be milled with drain and air equalizer hole in order to be water tight and for drainage of accumulated water, if any, to outer side. Fix Mullion made of 60w X 80h mm UPVC profile section with steel reinforcement shall be provided in windows having 2 or more openable shutters, as per the requirement. Frame shall have co-extruded with EPDM/TPE-E gasket fitted in in-built groove of frame profile for proper air & sound insulation of the shutter.		

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

Shutter: The shutter of outward openable window shall be made of size 60w X 74h mm and shutter of inward openable window shall be made of size 60w x 77h mm Extruded 3 box multi-chamber UPVC Window profile section of laminated( colour) having outer wall thickness of 2.25mm (+/- 0.2mm) provided with reinforcement of 1.5mm thick GI section duly mitered cut & thermal welded at all corners and fitted with UPVC glazing bead of size 36 X 20mm with inner and outer co-extruded EPDM/TPE-E weather seal gasket alongwith 6mm thick ISI make plain float glass. All welding joints of frame and shutter shall be cleaned and milled with the CNC mechanism to provide uniform grooved finish on all visible joints. Hardware: Window shutter are fixed with frame on 2.5mm thick SS301 Grade friction hinge system to keep the window opened at desired angle. Friction Hinge also enables easy cleaning of glass on both side from the inside of building.

Sqm

12891.00

- 16.50 Providing and fixing of UPVC casement fully (french) open-able windows (outward / inward) : Frame made from the Extruded UPVC Windows profile section of size 60w X 60h mm having outer wall thickness of 2.5 mm (+/- 0.2mm) and 3 box multi-chamber constuction, White in finish, duly reinforced with 1.5 mm thick G/J/U/O TYPE GI section. All the four corners shall be mitered cut & thermal welded so as to form window frame. Frame shall be milled with drain and air equalizer hole in order to be water tight and for drainage of accumulated water, if any, to outer side. Fix Mullion made of 60w X 80h mm UPVC profile section with steel reinforcement shall be provided for the fix portion of the window and for the window area having 2 or more openable shutters / fix part as per the requirement. Frame shall have co-extruded EPDM/TPE-E gasket fitted in in-built groove of frame profile for proper air & sound insulation of the shutter.

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

Shutter: The shutter of outward openable window shall be made of size 60w X 74h mm and shutter of inward openable window shall be made of size 60w X 77h mm Extruded 3 box multi-chamber UPVC Window profile section of white colour having outer wall thickness of 2.5 mm (+/- 0.2mm) provided with reinforcement of 1.5 mm thick GI section duly mitered cut & thermal welded at all corners. shutter as well as fix part of the window shall be fitted with UPVC glazing bead of size 36 X 20 mm with inner and outer co-extruded EPDM/TPE-E Gasket.

Sqm 10550.00

- 16.51 Providing and fixing of UPVC casement fully (french)openable windows Laminated Profile ( Colour ) (outward / inward) : Frame made from the Extruded UPVC Windows profile section of size 60w X 60h mm having outer wall thickness of 2.5 mm (+/- 0.2mm) and 3 box multi-chamber constuction, Laminated(colour) finish, duly reinforced with 1.5 mm thick GI section. All the four corners shall be mitered cut & thermal welded so as to form window frame. Frame shall be milled with drain and air equalizer hole in order to be water tight and for drainage of accumulated water, if any, to outer side. Fix Mullion made of 60w X 80h mm UPVC profile section with steel reinforcement shall be provided for the fix portion of the window and for the window area having 2 or more openable shutters / fix part as per the requirement. Frame shall have co-extruded EPDM/TPE-E gasket fitted in in-built groove of frame profile for proper air & sound insulation of the shutter. Shutter: The shutter of outward openable window shall be made of size 60w X 74h mm and shutter of inward openable window shall be made of size 60w X 77h mm Extruded 3 box multi-chamber UPVC Window profile section of laminated (colour) having outer wall thickness of 2.5 mm (+/- 0.2mm) provided with reinforcement of 1.5 mm thick GI section duly

mitered cut & thermal welded at all corners. shutter as well as fix part of the window shall be fitted with UPVC glazing bead of size 36 X 20 mm with inner and outer co-extruded EPDM/TPE-E Gasket.

Sqm 13654.00

Item No.	Description	Unit	Rate (Rs.)
16.52	<p>Providing and fixing of openable uPVC Doors with or without fix top: Frame Made of Extruded uPVC Window Profile Section of size 60w x 70h mm having outer wall thickness of 2.75mm (+/- 0.2mm) and 3 box multi-chamber construction, White in finish, duly reinforced with 1.2mm thick GI section. All the corners shall be mitered cut &amp; thermal welded so as to form door frame. Fix Mullion made of 60w x 80h mm uPVC Profile Section with steel reinforcement shall be provided for the top fix portion of the doors or in case of the doors having more than two openable shutters, as per the requirement / drawing. Frame of openable door shall have „O” type EPDM gasket fitted in in-built groove of frame profile for proper air &amp; sound insulation of the shutter. Shutter : The shutters of openable door shall be made of 60w x 95h mm Extruded 3 box multi-chamber uPVC Window Profile Section of white colour having outer wall thickness of 2.75mm (+/- 0.2mm) provided with reinforcement of 2.0 mm thick GI section duly mitered cut &amp; thermal welded at all corners, provided with center mullion (if specified in drawing) of size 60w x 80h mm uPVC Profile Section and fitted with uPVC glazing bead of size 36 x 20mm with inner and outer co-extruded EPDM/TPE-E weather seal gaskets alongwith 6mm thick All welding joints of frame and shutter shall be cleaned and milled with the CNC mechanism to provide uniform grooved finish on all visible joints. Hardware: Each openable door shutters is to be fixed with three load beading butt hinges and locking of doors is to be provided with multi-point transmission gear (ESPAG) with white finish powder- coated lockable handle. Installation at site: Complete door is to be installed on site with 10 X 100mm fastners with white cap in existing pre-finished wall cut-out cemented to glass level plane at all height &amp; width and silicon glue is applied to fill up the crevices between wall and door frame. Complete in all respect as per the drawing and specification and direction of engineer-in-charge.</p>	Sqm	9500.00

Item No.	Description	Unit	Rate (Rs.)
16.53	<p>Providing and fixing of openable uPVC Doors with or without fix top: Frame Made of Extruded uPVC Window Profile Section of size 60w x 70h mm having outer wall thickness of 2.75mm (+/- 0.2mm) and 3 box multi-chamber construction, Laminated (colour) finish, duly reinforced with 1.2mm thick GI section. All the corners shall be mitered cut &amp; thermal welded so as to form door frame. Fix Mullion made of 60w x 80h mm uPVC Profile Section with steel reinforcement shall be provided for the top fix portion of the doors or in case of the doors having more than two openable shutters, as per the requirement / drawing. Frame of openable door shall have co-extruded EPDM/TPE-E gasket fitted in in-built groove of frame profile for proper air &amp; sound insulation of the shutter. Shutter : The shutters of openable door shall be made of 60w x 95h mm Extruded 3 box multi-chamber uPVC Window Profile Section of laminated( colour) having outer wall thickness of 2.75mm (+/- 0.2mm) provided with reinforcement of 2.0 mm thick GI section duly mitered cut &amp; thermal welded at all corners,</p> <p>provided with center mullion (if specified in drawing) of size 60w x 80h mm uPVC Profile Section and fitted with uPVC glazing bead of size 36 x 20mm with inner and outer co-extruded EPDM/TPE-E weather seal gaskets alongwith 6mm thick ISI make plain float glass. All welding joints of frame and shutter shall be cleaned and milled with the CNC mechanism to provide uniform grooved finish on all visible joints. Hardware: Each openable door shutters is to be fixed with three load beading butt hinges and locking of doors is to be provided with multi-point transmission gear (ESPAG) with white finish powder- coated lockable handle. Installation at site: Complete door is to be installed on site with 10 X 100mm fastners with white cap in existing pre-finished wall cut-out cemented to glass level plane at all height &amp; width and silicon glue is applied to fill up the crevices between wall and door frame. Complete in all respect as per the drawing and specification and direction of engineer-in-charge.</p>	Sqm	12971.00

Item No.	Description	Unit	Rate (Rs.)
16.54	Providing and Fixing Aluminium composite panel of approved make 3mm thick with 0.5mm thick skin & PVDF coated approved shade for wall panelling. Main framing work to be done using 50mmx25mmx1.6mm tubular section of approved make. Stainless steel screw to be used to fix the ACP panel to be fixed to the main frame with industrial adhesive tape and panel groove to be sealed with weather proof silicon sealant suitable for glass/aluminium etc. complete in all respect as approved by Engineer-in-charge.	Sqm	2482.00
16.55	Providing and fixing stainless steel railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).		
(a)	Grade 304	Kg.	481.00
(b)	Grade 204	Kg.	413.00
16.56	Providing and Fixing of SS 304 Grade Groove Section for Top Part of Glass Railing as approved , the basic Top Handrail SS frame work shall be created by 2*2 (50*50mm) 18 gauge SS 304 grade approved brand section with Groove rectangular section at the top part only 12mm clear tuff glass will install with holding 4" Bracket SS 304 grade & also SS caps will install at end the railing & Railing Height will from Granite level to Top SS Handrail include glass SS section will be Polish /buffing at joint of section at final installation of work, fixing of the basic framework/ Brackets shall be done by Drilling holes by an electric drill in the masonry/ Reinforced cement concrete Grainte, also install the base frame brackets with 10mm fasteners/sealant as per needed Silicon Clear Weather / GP sealant with approved brand.	Sqm	5110.00



**B - 148**

Item No.	Description	Unit	Rate (Rs.)
16.57	Supply & Fixing of superior quality wall covering decorative paper of composition of paper and synthetic blend and providing material such as fevicol, cmc powder, chemical and water for fixing the wall paper as per enclosed photograph and direction Engineer-in Charge.	Sqm	431.00
16.58	Supplying and fixing Rollor Blinds of good quality and approved make made out of Imported fabric including Roller Mechanism and lock with chain system with all necessary hooks etc. complete as per direction and sample approved by engineer-in-charge.	Sqm	1626.00
16.59	Providing & Fixing Aluminium composite panel of indo bond/euro/flexi bond of equivalent made 3mm that with 0.5mm thick skin& PVDF coated of approved shads for toilet door in double layer in Aluminium frame complete in all respect as per sample approved by Engineer in Charges.	Sqm	889.00
16.6	Providing & Fixing brass handle 125mm with plate 175x22mm with screw complete in all respect as per direction of Engineer in charges.	Nos.	187.00
16.61	Labour Charges for removing and refixing Aluminium Partitions door including minor repair on alteration in the same.	Sqm	263.00

Item No.	Description	Unit	Rate (Rs.)
16.62	Providing factory made pvc internal door frame of size 100mm x 45mm with a wall thickness of 5mm ( $\pm 0.25$ ), made out of extruded 5mm ( $\pm 0.25$ ) thick PVC Sheet of Density 600 Kg /Cbm Manufactured by an ISO-9001-2015 certified Company, and by joining 3nos. heat bent PVC sheet sections. The inside section of size 90x30mm shall be made from plain colour PVC sheet of 5mm ( $\pm 0.25$ ) thickness. The inside section will be covered by sticking two sections of size 30x35mm and 70x45mm made from 5mm ( $\pm 0.25$ ) thick plain PVC sheet. The frame shall be mitre cut at two corners and joined with 4nos. of 150mm long brackets of 15mm x 15mm M.S. Square tube. The two vertical door frames are to be reinforced with 40mm x 20mm M.S. tube of 19 gauge through out the frame. The door frame shall be fixed to the wall using 8/100mm long M.S. Screws through the frame by using anchor fasteners. A minimum of 4nos. of screws to be provided for each vertical member & minimum 2nos. for horizontal member etc. complete as per manufactures specification and direction of Engineer-in-charge.	Rmt	478.00
16.63	Providing Factory Made 100% Solid WPC (Wood polymer Composite) Board of 12MM of Single Side Lamination ( 14 Micron ) required size comprising of virign PVC resin of K Value 58-60 ( Suspension Grade), Calcium Corbonate and natural Fibers ( Wood Powders/ rice husk/ wheat husk) and Non toxic additives , made from Extrusion process WPC foam sheet Single Extruded ( Inner) with density not less than 550 kg/cbm manufactured by an ISO 9001 - 2015 Certified Company, having good screw holding capacity ( Screw Withdrawal strength of 1800 N ( Face) & 900 N ( Edge), Minimum Compressive Stength of 58 N/mm <sup>2</sup> , Modulus of elasticity 900N/mm <sup>2</sup> and resistance of spread of flam of Class A caegory wih Property of being Termite/ Borer Free. Water/ Moisture Proof and Fire Retardant and fixing stainless Steel butt hinges of required size with necessary full body threaded star headed counter sunk SS Screws. All as per direction of Engineer -In-Charge, Material test certificate and authentication should be compulsory provided by the manufacturing company : For KITCHEN CABINET & CUPBOARDS..	Sqm	1373.00

Item No.	Description	Unit	Rate (Rs.)
16.64	Providing Factory Made 100% Solid WPC (Wood polymer Composite) Board of 18mm thicknesss of required size comprising of virign PVC resin of K Value 58-60 ( Suspension Grade), Calcium Corbonate and natural Fibers ( Wood Powders/ rice husk/ wheat husk) and Non toxic additives , made from Extrusion process WPC foam sheet Single Extruded ( Inner) with density not less than 550 kg/cbm manufactured by an ISO 9001 - 2015 Certified Company, having good screw holding capacity ( Screw Withdrawal strength of 1800 N ( Face) & 900 N ( Edge), Minimum Compressive Stength of 58 N/mm2, Modulus of elasticity 900N/mm2 and resistance of spread of flam of Class A caegory wih Property of being Termite/ Borer Free.Water/ Moisture Proof and Fire Retardant and fixing stainless Steel butt hinges of required size with necessary full body threaded star headed counter sunk SS Screws. All as per direction of Engineer -In-Charge, Material test certificate and authentication should be compulsory provided by the manufacturing company : For KITCHEN CABINET & CUPBOARDS..	Sqm	1562.00
16.65	Providing & fixing factory made 100% Solid WPC (Wood Polymer Composite) Door Frame 90mm x 45 mm ( Moulded ) Single Rebated,, made from Wood Polymer Composite (Single Extruded Process) material comparising of virign PVC polymer of K Value 58-60 ( Suspension Grade), Calcium Corbonate and Natural Fibers ( Wood Powder/ Rice Husk/ Wheat Husk) and Nor toxic additives fabricated with meter Joints after applying PVC solvent Cement & screwed with full body treaded star headed srews having minimum frame density of 780 kg/ cbm & manufactured by an ISO 9001 - 2015 Certified Company, having good screw holding capacity ( Screw Withdrawal strength of 2200 N ( Face) & 1100 N ( Edge), Minimum Compressive Stength of 58 N/mm2, Moduus of elasticity 900N/mm2 and resistance to spread of flame of class A category with property of being termite / borer proof , water / Moisture Proof & Fire retardant & Fixed in postion with SS Dash Fasterns / Hold Fast of reuired dia and lenght, all as per specifications drawings as directed by the Engineer-In-Charge. Material test certificate and authentication should be compulsory provided by the manufacturing company ( Hold Fast or Dash Fastners shall be paid seperately)	Rmt	521.00

**B - 151**

Item No.	Description	Unit	Rate (Rs.)
16.66	Providing and fixing thermal insulation with Resin Bonded rock wool conforming to IS:8183, having density 48 kg/m <sup>3</sup> , 50 mm thick, fixed on the roof top with screws, rawel plug & washers and held and in position by criss crossing GI wire etc. complete as per directions of Engineer-in-charge.	Sqm	169.00
16.67	Providing and Fixing Vertical Blinds of approved Make and shade of 100mm regular fabric with powder coated aluminium channel with telting PVC chain & bottom weight plate with all necessary fixtures and fitting etc. complete. (Sample to be final by Engineer In-charge prior execution of work)	Sqm.	1026.00
16.68	S/F of Curtain including steaching complete (Sample to be final by Engineer In-charge prior execution of work)		
16.68.1	Cotton.	sqm	403.00
16.68.2	Polyster	sqm	293.00
16.69	Providing and fixing Rubber beading in existing aluminium door shutters including removing and refixing of glass and aluminium beading.	Rmt.	253.00

**CHAPTER : B-17**  
**ADDITIONAL MISCELLANEOUS ITEMS**

Item no.	Description	Unit	Rate (Rs.)
17.1	Supply and installation of Multi Rib Proofing/cladding Sheet Manufacture out of 0.50mm TCT (Total Coated Thickness) high tensile Zinc aluminum alloy coated galvalume steel (as per 150gsm zinc aluminum coated 550Mpa tensile strength) confirming to IS: 1397/astm A-792 sheet to have wide ribs 30mm high NB at 250 centre and centre width of 1020mm sheets be coated with regular modified polyester system on a continuous with line on centre for face and with a polyester coating respectively sheet shall have proportionality with siphoned plate made to prevent leakage sheet shall be fixed by more of self drilling self tapping hot dip zinc coated hex head fastener of size 12x14x55mm long. The sheet shall be supplied in cost one length and for a minimum up to 12mts with all scaffolding.	Sqm	667.00
17.1.1	Add extra for 0.60mm TCT (Total Coated Thickness) high tensile Zinc aluminum alloy coated galvalume steel sheet in place of 0.50mm thick	Sqm	15%
17.1.2	Add extra for 0.80mm TCT (Total Coated Thickness) high tensile Zinc aluminum alloy coated galvalume steel sheet in place of 0.50mm thick	Sqm	45%
17.2	Supply and Installation of ROOF – PREFABRICATED INSULATED PPGL FACE PANEL: Roof: Insulated sandwich panels for roof of total thickness mentioned below exclusive of crest height of top corrugation. Panel shall be made of 0.50mm (+/-0.04mm) thick pre coated metal sheet on both sides of rigid polyurethane insulation. The top external facing metal sheet shall have corrugated shape with crest. The trapezoidal shape crowns/crest height should not be less than 30mm. The pre-coated metal sheet shall be PPGL (Pre Painted Galvalume Sheet with AZ coating) sheet having SDP (Super Durable Polyester) colour coat of 18 micron (min). The bottom sheet must have tongue and groove type flange (U shape) of 8mm x 8mm on groove side and 8mm x 12mm on tongue side. Flange must be on lengthwise sides for joining adjacent panels. Panel's bottom side PPGL sheet must also be pre-strengthened by full lengthwise stiffening with semi-circular beading of 12mm width & 3 to 4mm depth at 240 (+/-5) mm pitch. The top corrugated sheet must have at-least one open crown/crest for overlapping adjacent panel widthwise. Similarly the top corrugated sheet must		

Item no.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

have suitable open extension of min 6" on bottom widthwise side of panel for overlapping further panels joined lengthwise also. The insulation core shall be self-extinguishing DIN 4102, Class B3 fire retardant class rigid PUR with thermal conductivity of 0.025 W/mK and with initial density of 40kg/m<sup>3</sup> (+/-2kg) suitable for temperature range of -30 degree C to +80 degree C. The panel must be made using glue-free high pressure hot pressing self-bonding method. PPGL sheet on both sides of panel shall have a min15 micron protective plastic guard film to avoid scratches during transportation.

Thickness 65mm (+/- 2mm)

Sqm. 2440.00

Thickness 105mm (+/- 2mm)

Sqm. 2761.00

17.3 Supply and Installation of WALL – PREFABRICATED INSULATED PPGL PANEL:

Walls: Insulated sandwich panels for wall of total thickness mentioned below. Panel shall have 0.50mm (+/-0.04mm) thick pre coated metal sheet on both sides of rigid PUR insulation. The pre-coated metal sheet shall be PPGL (Pre Painted Galvalume Sheet with AZ coating) sheet having SDP (Super Durable Polyester) colour coat of 18 micron (min). The panels shall be vertically joined together with adjacent panel by tongue and groove joints. For joining, wall panel's metal sheet facings must have lengthwise flange (U shape) of 8mm x 8mm on groove side and 8mmx12mm on tongue side of panel. The pre-coated metal sheet (PPGL) must also be pre-strengthened by full lengthwise stiffening with semi-circular beading of 12mm width & 3 to 4mm depth at 240 (+/-5) mm pitch. Panels may have optional provision for inbuilt electrical conduit running lengthwise at vertical center of specified panels. The insulation core shall be self-extinguishing DIN 4102, Class B3 fire retardant class rigid PUR with thermal conductivity of 0.025 W/mK and with density of 40kg/m<sup>3</sup> (+/-2kg) suitable for temperature range of -30 degree C to +80 degree C. The panel must be made using glue-free high pressure pressing self-bonding method. PPGL sheet on both sides of panel shall have a min15 micron protective plastic guard film to avoid scratches during transportation.

Thickness 55mm (+/- 2mm)

Sqm. 2246.00

Thickness 65mm (+/- 2mm)

Sqm. 2440.00

17.4 Supply and Installation of WALL – PREFABRICATED INSULATED CEMENT FACE PANEL:

Item no.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

Factory-readymade structural reinforced insulated wall panel of thickness mentioned below. Panel shall be made of 6mm (+/-0.6mm) thick asbestos-free fiber cement sheet/ Cement bonded particle board as per IS:14276:1995 on both sides of rigid PUR insulation. The wall panel shall be vertically joined together with adjacent panel by biscuit joints lengthwise with suitable construction adhesive. Joining member (biscuit) shall be made of approx 12mm thick cement sheet /Cement bonded particle board as per IS:14276:1995. Panels may have optional provision for inbuilt electrical conduit running lengthwise at vertical center of specified panels.

Both vertical lengthwise sides of panels must have full length MS tubes of min 1.0mm thickness for better structural strength. The final panel surface must be free from undulations. The Insulating core shall be self-extinguishing DIN 4102, Class B3 fire retardant class rigid PUR with thermal conductivity of 0.025 W/mK and with density of 40kg/m<sup>3</sup> (+/-2kg) suitable for temperature range of -30 degree C to +80 degree C. The panel must be made using glue-free high pressure hot pressing self-bonding method and shall be free from major surface undulations.

Thickness 65mm (+/- 2mm)	Sqm.	2440.00
Thickness 75mm (+/- 2mm)	Sqm.	2566.00

**17.5 Supply and Installation of WALL – PREFABRICATED INSULATED LAMINATED FACE PANEL:**

Factory-readymade interior wall panel of thickness mentioned below. The panels shall have suitable provision for joining adjacent panels. Interior panels may have optional provision for inbuilt electrical conduit running lengthwise at vertical center of specified panels. The insulation core shall be self-extinguishing DIN 4102, Class B3 fire retardant class rigid PUR with thermal conductivity of 0.025 W/mK and with density of 40kg/m<sup>3</sup> (+/-2kg) suitable for temperature range of -30 degree C to +80 degree C. The panel must be made using glue-free high pressure hot pressing self-bonding method and shall be free from major surface undulations. both sides of panel shall have a min15 micron protective plastic guard film to avoid scratches during transportation.

1. Panel shall be made of min 4mm (+/- 0.5mm) thick laminated wood based medium density fiber board sheet on both sides of rigid PUR insulation.

Thickness 65mm (+/- 2mm)	Sqm.	2566.00
Thickness 75mm (+/- 2mm)	Sqm.	2692.00

Item no.	Description	Unit	Rate (Rs.)
17.6	<p>Supply and Installation of SMALL ROOM (TOILET &amp; GUARD ROOM) – PREFABRICATED INSULATED PPGL FACE PANEL:</p> <p>Insulated closed lip panels (for door, wall and roof) of thickness mentioned below. Panel shall have 0.50mm (+/- 0.04mm) thick pre-coated metal sheet on both sides of rigid PUR insulation. The pre-coated metal sheet shall be PPGL (Pre Painted Galvalume Sheet with AZ coating) sheet having SDP (Super Durable Polyester) colour coat of 18 micron(min). The Pre coated metal sheet on both sides must be pre-strengthened by full lengthwise stiffening with semi-circular beading of 12mm wide &amp; 3mm depth at 240 (+/-5) mm pitch. Panels shall have closed lengthwise sides made by right angle flange on both side of Pre coated metal sheets, free from cap type covers. The top and bottom part on widthwise sides of panels must have full width MS Square tube insert of (min 25mm x 1.0mm) for better screw retention and strength. The insulation core shall be self-extinguishing DIN 4102, Class B3 fire retardant class rigid PUR with thermal conductivity of 0.025 W/mK and with density of 40kg/m<sup>3</sup> (+/-2kg) suitable for temperature range of -30 degree C to +80 degree C. The panel must be made using glue-free high pressure hot pressing self-bonding method free from major undulations. PPGL sheet on both sides of panel shall have a min15 micron protective plastic guard film to avoid scratches during transportation.</p>		
	Thickness of 32mm (+/-2mm)	Sqm.	2189.00
	Thickness of 50mm (+/-2mm)	Sqm.	2349.00
17.7	<p>AccessoriesSupply and Installation of (Labour rate included in main item) Bottom and Top U track :</p> <p>U-track for mounting panels with floor. The channel shall be made from minimum 1.15 mm thick PPGL sheet with flange height of minimum 35 mm and width as per thickness of panel used.</p>	RMT	213.00
17.7.1	<p>Flashings (inner and outer):</p> <p>Corner angle flashings of equal shape for covering various corners and open sides of panels. Flashings shall be made from 0.5mm thick pre-coated PPGL sheet in following sizes:</p>		
	50mm x 50mm	RMT	160.00
	100mm x 100mm	RMT	213.00
17.7.2	<p>Roof Ridge Cap:</p> <p>Ridge flashing for roof panels shall be made from 0.5mm thick pre-coated PPGL sheet of 200mm x200 mm.</p>	RMT	213.00



Item no.	Description	Unit	Rate (Rs.)
17.7.3	Roof Front Corrugated Cap: Front side flashing for roof panels (corrugated trapazodial shape) shall be made from 0.5mm thick pre-coated PPGL sheet.	RMT	213.00
17.7.4	Roof End Cap: End cap for closing ends of roof panels made from 0.5mm thick PPGL sheet.	RMT	160.00
17.7.5	Frame for Door/Window: Frame shall be made out of min 1.15mm thick press steel sheet.	RMT	213.00
17.7.6	Panel End Caps: U or L shape caps suitable for thickness of panel used, with 30mm flange. It should be made frem 0.5mm Pre coated PPGL sheet.	RMT	107.00
17.7.7	Self Drilling Screws: 5"	Each	13.00
	3.5"	Each	10.00
	1"	Each	6.00
17.7.8	Adhesives	KG.	192.00
17.8	Supply and fixing of Cement Bonded Particle Board (as per IS 14276) false ceiling using 6MM thick Cement Board with galvanized and pre painted steel T section of size 24mm x 27mm x 0.4mm for main T duty pre punched to accept cross T section of size 24mm x 25mm x 0.4mm duly punched at both ends for insertion into main T. The grid size will be 610mm x 610mm. The frame work (grid) is suspended to the roof by using G.I flat of 0.60mm or 14-gauge G.I wire with necessary fixers to the roof and frame work. Cement Board panel is laded on the grid. The cost inclusive of necessary hardware, labor, one coat of primer (Both side) and two coats of smooth finish on visible side.	Sqm	632.00

Item no.	Description	Unit	Rate (Rs.)
17.9	Supply and fixing of Cement Bonded Particle Board (as per 14276) wall paneling using 10 MM thick Cement Board with frame work made of GI stud section of size 48mm x 35mm x 0.55mm thick placed at every 610 mm C/C intervals vertically and at 1200mm internals horizontally fixed to the wall by means of self expansion screws and caps. Cement Board panel is to be fixed to frame by means of self taping screws placed at every 300 mm intervals leaving 3mm gap between two panels. The cost inclusive of one coat of Altek primer and two coats of Altek smooth finish and cost & conveyance of all materials, labor charges etc. complete as per the direction of Engineer in charge.	Sqm	1625.00
17.10	Supply and fixing of Cement Bonded Particle Board (as per 14276) double skin partition using with 10 MM thick Cement Board made out of G.I. track section of size 50mmx 35mm x 0.55 mm for fixing to the roof and floor and stud section of size 48mm x 35mm x 0.55mm placed in track section vertically at 610mm intervals and at 1200mm intervals horizontally fixed to the wall by means of self expansion screws and caps to the wall and roof. Cement Board panel is to be fixed both sides of frame work by using self taping screws fixed at every 300mm intervals to the frame work leaving 3 mm gap between two panels. The cost inclusive with one coat of Alltek primer and two coats of Alltek smooth finish and cost and conveyance of all materials to site, labor charges etc., complete as per the direction of Engineer in charge.	Sqm	2351.00
17.11	Supply and fixing of Factory Laminated Cement Bonded Particle Board double skin partition using with 10MM Factory Laminated Cement Bonded Board made out of G.I track section of size 50 mm x 35mm x 0.55mm for fixing to the roof and floor and stud section of size 48mm x 35mm x 0.55mm placed in track section vertically at 610mm intervals and at 1200mm internals horizontally. The frame is fixed by means of self expansion screws and caps to the wall / roof. Laminated Cement Bonded Particle Board is to be fixed both sides of the frame work by using 2mm thick electro plated CR flat section leaving 3mm gap between two panels. The cost inclusive of cost and conveyance of all materials to sites, other materials incidentals and labor charges as per the direction of Engineer in charges.	Sqm	3292.00

Item no.	Description	Unit	Rate (Rs.)
17.12	Supply and fixing of Bath room / Toilet door shutter with 16mm Factory Laminated Cement Bonded Particle Board BISON Lam (IS 14276) door shutter with all-round 'U' lipping of PPS section of size 12mm X 18mmX 12mmX0.6mm thickness with a hardware of 12mm dia X200mm long aluminum aldop – 2 nos2 No of 125mm long handles and also 3 no Of IS304 grade Patee Hinges 3mmX12mmX180mm long with pole receiver of 10mm dia pole X40mm long welded on 2mm X40mm(ss304) plates works as receiver for RT patte hinges. The price inclusive of all material at site.	Sqm	2330.00
17.13	Solid Rectangular Block (400x200x200, 400x200x100, 400x200x150, 225x200x100) Providing and fixing up to floor five level of cement concrete solid blocks (M-20 Grade) of different sizes (Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with steel moulds (Milled and manufactured in CSI diamond or CSI Nitro process for accuracy) on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) including hoisting and setting in position with cement mortar 1:3 (1 Cement : 3 Coarse Sand), cost of required centering, shuttering complete.	Cum	9976.00

Item no.	Description	Unit	Rate (Rs.)
17.14	<p>Hollow Rectangular Block (400x200x200, 400x200x100)</p> <p>Providing and fixing up to floor five level of cement concrete Hollow Rectangular blocks of different sizes (Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with steel moulds (Milled and manufactured in CSI diamond or CSI Nitro process for accuracy) on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) including hoisting and setting in position with cement mortar 1:3 (1 Cement : 3 Coarse Sand), cost of required centering, shuttering complete.</p>	Cum	7107.00
17.15	<p>Insulated Rectangular Block (400x200x200 mm)</p> <p>Providing and fixing up to floor five level of cement concrete insulated blocks of different sizes having a layer of polysterene as insulating material (Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with steel moulds (Milled and manufactured in CSI diamond or CSI Nitro process for accuracy) on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) including hoisting and setting in position with cement mortar 1:3 (1 Cement : 3 Coarse Sand) including cost of required centering, shuttering complete.</p>	Cum	10561.00
17.16	Interlocking Paver Blocks having 80 mm thickness in M-40 grade concrete		

**B - 160**

Item no.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

Providing and Laying 80 mm thick cement concrete blocks of M-40 Grade (Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with steel moulds(Milled and manufactured in CSI diamond or CSI Nitro process for accuracy) on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) spreading 25mm thick sand underneath and filling joints with sand on existing W.B.M.base, as per IS15658:2006 and all materials shall conform to MoRTH Specification Clause 602.

Sqm. 1172.00

- 17.17 Interlocking Paver Blocks having 100 mm thickness in M-50 grade concrete

Providing and Laying 100 mm thick cement concrete blocks of M-50 Grade(Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with steel moulds (Milled and manufactured in CSI diamond or CSI Nitro process for accuracy) on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) spreading 25mm thick sand underneath and filling joints with sand on existing W.B.M.base, as per IS15658:2006 and all materials shall conform to MoRTH Specification Clause 602.

Sqm. 1373.00

- 17.18 Interlocking Paver Blocks having 120 mm thickness in M-50 grade concrete

**B - 161**

Item no.	Description	Unit	Rate (Rs.)
	<p>Providing and Laying 120 mm thick cement concrete blocks of M-50 Grade(Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with steel moulds (Milled and manufactured in CSI diamond or CSI Nitro process for accuracy)on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) spreading 25mm thick sand underneath and filling joints with sand on existing W.B.M.base, as per IS15658:2006 and all materials shall conform to MoRTH Specification Clause 602.</p>	Sqm	1516.00
17.19	<p>Interlocking Paver Blocks having 100 mm thickness in M-55 grade concrete</p> <p>Providing and Laying 100 mm thick cement concrete blocks of M-55 Grade (Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with steel moulds (Milled and manufactured in CSI diamond or CSI Nitro process for accuracy)on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) spreading 25mm thick sand underneath and filling joints with sand on existing W.B.M.base, as per IS15658:2006 and all materials shall conform to MoRTH Specification Clause 602</p>	Sqm	1479.00
17.20	Interlocking Paver Blocks having 120 mm thickness in M-55 grade concrete		

Item no.	Description	Unit	Rate (Rs.)
	<p>Providing and Laying 120 mm thick cement concrete blocks of M-55 Grade (Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with steel moulds (Milled and manufactured in CSI diamond or CSI Nitro process for accuracy) on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) spreading 25mm thick sand underneath and filling joints with sand on existing W.B.M.base, as per IS15658:2006 and all materials shall conform to MoRTH Specification Clause 602.</p>	Sqm.	1586.00
17.21	<p>Kerb Stones of 1200x300x150, 1000x450x150, 1000x600x150, 600x300x150 size (M-30)</p> <p>Providing and Laying cement concrete Kerb Stones of different sizes in M-30 grade (Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with steel moulds (Milled and manufactured in CSI diamond or CSI Nitro process for accuracy) on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) in position to the required line, level and curvature jointed with cement mortar 1:3 (1 Cement : 3 Coarse sand) including making of joints, drainage opening wherever required.</p>	Cum	9126.00
17.22	<p>Kerb Stones of 1200x300x150, 1000x400x150, 1000x600x150, 600x300x150 size (M-40)</p>		

Item no.	Description	Unit	Rate (Rs.)
	<p>Providing and Laying cement concrete Kerb Stones of different sizes in M-40 grade (Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with steel moulds (Milled and manufactured in CSI diamond or CSI Nitro process for accuracy) on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) in position to the required line, level and curvature jointed with cement mortar 1:3 (1 Cement : 3 Coarse sand) including making of joints, drainage opening wherever required.</p>	Cum	9653.00
17.23	<p>Cellular Concrete Block for Pitching and garden paths (600x400x80) in M-30</p> <p>Providing and fixing Cellular concrete blocks (M-30 Grade), 600x400x80 mm sizes (Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with steel moulds (Milled and manufactured in CSI diamond or CSI Nitro process for accuracy) on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) including hoisting and setting in position with cement mortar 1:3 (1 Cement : 3 Coarse Sand), cost of required centering, shuttering complete.</p>	Sqm.	787.00
17.24	Pre Cast Concrete Flooring (Slab 600x600x100, 1000x650x100)		



Item no.	Description	Unit	Rate (Rs.)
	<p>Providing and fixing Precast concrete flooring slabs (M-30 Grade) of different sizes (Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with steel moulds (Milled and manufactured in CSI diamond or CSI Nitro process for accuracy) on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) including hoisting and setting in position with cement mortar 1:3 (1 Cement : 3 Coarse Sand), cost of required centering, shuttering complete and spreading 25mm thick sand underneath.</p>	Sqm.	952.00
17.25	<p>Pre Cast U/Semi circular Drains (Outer size 600x400 mm, wall thickness 80 mm)</p> <p>Providing and fixing Precast concrete Udrains (M-30 Grade) of different sizes (Manufactured with fully mechanised dry cast process with forced action mixer whose arms revolve along the main axis and rotate about its own axis also, having humidity sensor for moisture control of w/c ratio in concrete mix. Manufactured with Steel moulds (Milled and manufactured in CSI diamond or CSI Nitro process for accuracy) on steel base plate of min 16 mm thick; Having Vibration and pressing action both together with the help of multiple synchronised vibrators. Power of hydraulic station should be minimum 50KW for compaction and cured in controlled chambers having humidity control and automated air circulation system) including hoisting and setting in position with cement mortar 1:3 (1 Cement : 3 Coarse Sand), cost of required centering, shuttering complete and spreading 25mm thick sand underneath.</p>	R.M.	445.00
17.26	Dry Cleaning of sofa sets using shampooing machine with all materials & drying it to the level using machinery at designated place by engineer-in-charge one seat of sofa (payment for multi seater sofa will be done as the number of seats of that sofa.)		
17.26.1	Single Seater Sofa	Each	150.00
17.26.2	Two Seater Sofa	Each	225.00
17.26.3	Three Seater Sofa	Each	322.00

**B - 165**

Item no.	Description	Unit	Rate (Rs.)
17.27	Dry Cleaning of Woolen Carpet of any size using shampooing machine with all material & drying it using machinery at the designated place as told by engineer in charge.	Sqm	99.00
17.28	Complete replacement of Tapestry cloth of Sofa set costing @ Rs. 300/- per Mtr. Approx of superior quality including stitching charges (As approved by the Engineer in Charge) as per existing pattern/design.		
17.28.1	Single seater sofa	Each	1403.00
17.28.2	Three seater sofa	Each	3815.00
17.29	Complete replacement of damaged foam of Sofa set and using 100mm thick Joint less P.U. foam in seat of 32 density feather foam of superior quality of approved make (as approved by the Engineer-in-charge) pasted with Adhesive (Rubber Solution) of superior quality.		
17.29.1	Single seater sofa	Each	730.00
17.29.2	Three seater sofa	Each	2045.00
17.3	Complete replacement of damaged foam of Sofa set and using 50mm thick joint less P.U. foam of 32 density feather foam superior quality of approved make (as approved by the Engineer-in-charge) in back duly pasted with Adhesive (Rubber Solution) of superior quality.		
17.30.1	Single seater sofa	Each	439.00
17.30.2	Three seater sofa	Each	1248.00
17.31	Complete replacement of damaged foam of Sofa set and using 25mm thick joint less P.U. foam of 32 density feather foam superior quality of approved make (as approved by the Engineer-in-charge) in Hand rest, in seat and back and design work as required of superior quality.		
17.31.1	Single seater sofa	Each	830.00
17.31.2	Three seater sofa	Each	1759.00
17.32	Repair of wooden frame of Sofa set using Tat, Nail, Screw, Bolt (if required) and re-assembling sofa set (Cost Including all Consumable Item) complete in all respect as per direction of the Engineer-in-charge		
17.32.1	Single seater sofa	Each	666.00
17.32.2	Three seater sofa	Each	2026.00
17.33	Repair using replacement of Jata, Dori, wooden batten & legs everything in all respect as per approval of Engineer-in-charge.		
17.33.1	Single seater sofa	Each	486.00

Item no.	Description	Unit	Rate (Rs.)
17.33.2	Three seater sofa	Each	731.00
17.34	Providing and Fixing machine made Synthetic Carpet having total Carpet weight 850 gm Psqm. and 5mm thickness superior quality complete in all respect as per direction of Engineer-in-charge.	Each	469.00
17.35	Providing and Fixing Chiken wire mesh at the joint of masonry members/ R.C.C. Members with Nails complete in all respect.	Sqm	75.00
17.36	Providing and fixing in position wall panelling at all heights with intergral densified calcium silicate panels/tiles of size 595x595mm, having NRC (Noise Reduction coefficient) of 0.50 minimum) as per IS 8225:1987, Light reflectance of 85% (minimum). Non combustible as per BS:476 (part-4), fire performance as per BS:476 (part 6& 7), Humidity resistance of 100 %, thermal conductivity <0.043 W/m K as per ASTM 518:1991, comprising of a frame made from especially fabricated galvanised mild steel sheet 0.50 mm thick pressed section (galvanizing @120 grams per sqm including both sides) i.e. vertical studs of size 48x34x36 mm are placed at 600mm center to center in a floor and ceiling channel section of size 50x32mm fixed to the floor and soffit at 600mm centers using 12mm dia, 50mm long wedge type expanded zinc alloy dash fastner with 10mm bolt. The joints between the panels are to be duly jointed and finished using recommended jointing calcium sillcated based compound and fiber joint tape roll 50mm wide (90 metre) roll and two coats of primer suitable for panelling as per manufacturer's specification as per direcrtion of Enginner-in-Charge all complete.	Sqm	2525.00
17.37	Providing and Fixing powder coated aluminium angle corners of size 75 x 75 x 6mm over extruded/exposed corners of walls/colom etc. fixed with glazing tape on all four sides including filling of all inside edges of 6mm thickness with weather silicone sealant by backer rod of approved quality to make it completely air tight and water tight over the surface as per dirction of Engineer-in-charge.	Rmt	1427.00

Item no.	Description	Unit	Rate (Rs.)
17.38	Supply & fixing of one side polished black granite/white marble stone 14-20mm thick of size 3'x2' with engraved and gold colour painted letters (upto 500 letters) & borders including soorsagar white stone pillars of size 0.15x0.15x2.1 Mtr. With moulding, carving & making slot on pillars for fixing of granite stone including loading & unloading with all leads & lifts as per direction of Engineer Inchaqre.	Each	14624.00
17.39	Supply & fixing of one side polished black granite/white marble stone 14-20mm thick of size 3'x2' with engraved and gold colour painted letters (upto 500 letters) & borders including dismatalling plaster for fixing stone and finishing the surface including cost of stone and other material, carriage, loading, unloading with all leads & lifts as per direction of Engineer Inchaqre.	Each	10753.00
17.40	Providing and fixing Glass Brick with adhesive in line and length complete as per drawing and design and asapproved by Engineer-in-Charge.	Sqm	4743.00
17.41	Repairing of High Back, Low Back and Medium Back Revolving Padded Chair including required all material complete in all respect as per directin of the Engineer-in-Charge.		
17.41.1	Replacing/Adding 25mm thick P.U. Foam of 32 Density in seat & back as per existing pattern (pasted with Rubber Solution)		
(i)	Low Back Chair	Each	91.00
(ii)	Medium Back Chair	Each	116.00
(iii)	High Back Chair	Each	131.00
17.41.2	Replacement/pasting of leatherite seat as per approved sample costing @ Rs. 300/- per Mtr. (Appx) as approved by the Engineer in Charge.		
(i)	Low Back Chair	Each	620.00
(ii)	Medium Back Chair	Each	872.00
(iii)	High Back Chair	Each	1207.00
17.41.3	Repair of Chair of NYLON wheel including all material of fixing and labour Charge.	Each	70.00
17.41.4	Replacing Bolt/Screw (of existing pattern) in the chair.	Each	15.00
17.41.5	Repair/Change of Gas lift mechanism use for adjuston purpose with fitting material and labour charges.	Each	480.00
17.41.6	Repair/Change of Chrome base plate including all materal of fixing and labour charge.	Each	767.00

**B - 168**

Item no.	Description	Unit	Rate (Rs.)
17.41.7	Repair/ Change of PU handle including all material of fixing and labour charge .	Each	480.00
17.42	Repair and polish work of peacock chair/padded chair including required all material complete in all respect as per direction of the Engineer in Charge.		
17.42.1	Replacing/Adding 25mm thick P.U. foam of 32 Density in seat & back as per existing pattern (Pasted with Rubber solution)	Each	145.00
17.42.2	Replacement of Baniyan foam/tapestry cloth in seat as per approved sample costing @ Rs. 200/- per Mtr. (Appx.) as approved by the Engineer in Charge.	Each	200.00
17.42.3	Replacing linning cloth in bottom of the chair with nail/screw/fevicol etc. of existing type & pattern.	Each	33.00
17.42.4	Replacing bolt/screw (of existing pattern) in the chair.	Each	15.00
17.42.5	Repair of wooden frame of chair including required raw material i.e. replacement of teak wood arms, legs, wooden required including tightening work as per existing pattern complete in all respect.	Each	338.00
17.42.6	Spirit polish on wooden chair with rubbing old surface cleaning and good finishing including cost of polish material.	Each	105.00
17.43	Supplying, Filling and stitching of empty cement bags either of plastic or jute with earth available at site of weight not less than 40 kg including stacking and removing.	Per Bag	7.00
17.44	Supplying and Spreading 25 to 30mm thick layer of Screened approved Samod Bajari of Uniform colour from approved quarry with all lead.	Per Cum	2081.00
17.45	Labour Charge for providing and fixing 20' long 2" dia G.I. pipe with flags (Flags to be provided by department) in straight line etc. as per direction and removing all the flags complete before sunset as per direction of Engineer in charge.	Each	252.00

Item no.	Description	Unit	Rate (Rs.)
17.46	P/F wall mounted foldable hinged (Grab rail) size 750mm x 100mm (LxW) as approved design, made of 35mm stainless steel pipe having anti-bacterial Nylon surface with contour finish for better grip. Grab bar should be mounted on wall between height 200mm to 250mm from the top of W.C seat and extending 100mm to 150mm beyond the front of the W.C. Complete in all respect as per Harmonized guideline & Satisfaction of Engineer-in-Charge. Cera make (B2210108)	Nos	6775.00
17.47	P/f wall mounted inverted L Shaped grab bar with 700mm long bar as approved design, made of 35mm stainless steel pipe having anti-bacterial Nylon surface with contour finish for better grip. Grab bar should be mounted on wall at height of 700mm from the finish floor level complete in all respect as per Harmonized guideline & Satisfaction of Engineer-in-Charge. Cera make (B2210103)	Nos	2226.00
17.48	P/F wall mounted 600mm long grab bar as approved design, made of 35mm stainless steel pipe having anti-bacterial Nylon surface with contour finish for better grip. Grab bar should be mounted on wall at height of 800mm from the finish floor level complete in all respect as per Harmonized guideline & Satisfaction of Engineer-in Charges. Make Cera (B2210106)	Nos	1624.00
17.49	Supply and fixing of solid stainless steel grade 304 C type door handle of dia 32mm length 600 (outside measurement) having hole dia 14 mm of with i/c key arrangement.	Nos	2768.00
17.50	Repair to damaged plaster with high performance curing free, quick setting cement mortar & confirming to ASTM C 1600 in ratio of 1:4 with following properties of cement : <b>Compressive strength of 20 MPa within 4 Hours, Curing free, bond strength of 4 MPa within 24 Hours, Non shrink &amp; Non toxic in following steps-</b>	Sqm	927.00
(i)	Chopping loose and cracked plaster to required depth, cleaning the exposed surface with wire brush, cleaning of plaster surface with water as necessary and getting dried.		
(ii)	Plastering the surface with above mentioned high performance cement sand mortar 1:4 upto depth of 25 mm complete with all scaffolding.		
(iii)	No curing has to be done as the high performance cement used should be curing free. (This item is to be used in only emergency situation after decided by Engineer in charge )		

**B - 170**

Item no.	Description	Unit	Rate (Rs.)
17.51	Providing and laying treatment of wear & tear concrete surface with pre-mixed, ready to use, geopolymer based mortar & confirming to ASTM C 1600 upto 10 mm thickness with following property –	Sqm	3082.00
(i)	Curing Free, compressive strength of 15 MPa within 2 hours, Quick Setting, bond strength of 4 MPa within 24 hours and repaired surface should be ready to use within 3 hours.		
Note	(This item is to be used in only emergency situation after decided by Engineer in charge )		
17.52	Providing and applying treatment of plaster and masonry cracks with pre-mixed, ready to use, geo polymer based mortar & confirming to ASTM C 1600 upto 15 mm width and 15 mm depth by making V-Groove with following property –		
(i)	Curing Free, compressive strength of 15 MPa within 2 hours, Quick Setting and with bond strength of 4 MPa within 24 hours with all scaffolding.	Rmt.	189.00
Note	(This item is to be used in only emergency situation after decided by Engineer in charge )		

**CHAPTER : B-18**  
**MISC. WORKS**

Item No.	Description	Unit	Rate (Rs.)
18.1	Providing and Fixing 10 OZ flex duly printed with letter writing, design etc. complete as per required.	Per Sq. Ft	10.00
18.2	Providing and Fixing 10 OZ flex board and hoarding duly printed with letter writing, designing, with light weight Iron pipe, Erecting as per requirement of site duly approved by Engineer in charge. (supporting Angles not included)	Per Sq. Ft	35.00
18.3	Providing and Fixing 10 OZ flex Board and hoarding duly printed, letter writing, designing, with heavy weight Iron Piece, Erecting as per requirement of site duly approved by Engineer in Charge (supporting Angles not included)	Per Sq. Ft	45.00
18.4	Providing and Fixing Flex Hoarding 10 OZ Flex sheet duly printing, letter writing, designing, Iron sheet Framing with wooden structure & angles for supporting of 35x35x5mm with erecting on temporary Ballis post as per requirement of site duly approved by Engineer incharge, including fitting at site.	Per Sq. Ft	90.00
18.5	Removing, Installing & Erecting of the Hoarding with 1200x1200x1500mm M-20 Concrete with material and labour (including complete labour of removing & fitting of old hoarding at site.)	Each	8000.00
18.6	Making Rangoli of approved pattern in tri colour as directed by the competent authority with material and complete in all respect.	Rmt.	34.00
18.7	Providing and fixing Bamboo jaffery/ fencing consisting of superior quality 25mm dia (Average) half cut bamboo placed vertically and fixed together with three numbers horizontal running members of wood in scantling of section 50X25mm fixed with nails and GI wire to existing surface complete as per direction of EI	Sqm	413.00
18.8	Providing and Fixing Bamboo Zafari/Fencing consisting of superior quality 25mm dia Solid Bamboo placed vertically & fixed together with 3 Nos Horizontal running members of wood in scantling of section size 50x40mm and fixed with nut and bolt to existing surface/angle post as per direction given by Engineer-in-charge	Sqm	941.00



Item No.	Description	Unit	Rate (Rs.)
18.9	Conducting Topography survey work using DGPS in periphery of Land, Blocks, Houses/Commercial centres, Road alignments to prepare contour plan, L- section, X-sections and to compute earth work quantities. To mark Latitude & Longitude of all the points on periphery, Blocks of houses and road centres, levelling at 25m. interval for L-section and 50m. Interval for X-sections upto desired width, preparing and submission of plan, L-section (not more than 500m. Length in one sheet) and X-section in A-4 size showing various details like geometrical datas, habitations, electric lines (including H.T. Lines) & Other special features, computation of earth work after marking desired grade line, marking sufficient bench mark in field to check the DGPS survey etc. complete as per direction of engineer-in-charge.		
		Beegha	1300.00
18.10	Topographic Survey with a grid area of 15MX15M, includes all features such as structures (bridges, culverts etc.) utilities, existing roads, electric and telephone installations (both O/H as well as underground), huts, buildings, fencing and trees, oil, water and gas lines etc. using Total Station and develop a drawing in AUTO CAD format using the layering system and Geo referencing including supply of detailed drawings in appropriate scale in A-2 size complete in all respect.		
18.10.1	For preparation of plans of built-up areas Upto 10 Hectare	Hectare	3109.00
18.10.2	For preparation of plans of built-up areas beyond 10 hectare	Hectare	2601.00
18.10.3	For preparation of plans of open areas Upto 10 Hectare	Hectare	2325.00
18.10.4	For preparation of plans of open areas beyond 10 hectare	Hectare	1827.00
18.11	Providing and Fixing "Saucer Drain " sawn finished 75 mm thick made of granite having width 300 mm with cement sand mortar 1:3 (1 cement : 3 Course Sand ) Compute in all respect as directed by engineer incharge.	Mtr	5880.00

**B - 173**

Item No.	Description	Unit	Rate (Rs.)
18.12	Supply of high intensity retro reflecting type XI class C sign plate made out of 2mm thick aluminum sheet face to be fully covered with blue/green high intensity grade recto reflective sheet and logo/letters, boarder made of similar type of white sheeting after anodizing treatment of aluminum sheet. the back side is to be painted with epoxy gray paint. the plate is to be fix on 40X40X5 mm angle iron frame with the help of aluminum rebates	Sqm.	4500.00
18.13	Providing and laying Single component crack bridging high elongation Polyurethane (PU) waterproofing coating, after the surface should be properly prepared and devoid of any impurities. (To prepare the surface wire brush, hair brush, hammers and blower machine will be used) The surface should be pre-wetted and no dry areas lefts. Treat all the joints and corners by making gola with cement 1: 3 sand: SBR with water. Pack all drain holes. Any cracks on surface will cut in V shape groove and filled with SBR, up to 10 mm in depth and 10-20 mm in width. Cleaning of surface and make it dusts free and then Apply 1st primer coat of or MYK Arment SBR 35. Apply 3rd, 4th and 5th coat of PU primer coat of MYK Arment and allow it to dry for at least 5 hours. Pond tests the surface for 72 hours. All complete with standard specification and under Engineer in charge	Sqm	956.00
18.14	S/I remote electric bell as per direction of Site Engineer.	Each	402.00
18.15	Annual Maintenance contract for :-		
18.15.1	Invertor with Battery up to 2.00 KW capacity including chainging of water in Battery as required at H. O. Building.	Each	8917.00
18.15.2	LED Board with timer & wiring & led bulb etc as required for one year at H. O. Building.	Each	17185.00
18.15.3	Electric panels and capaciter bank including repair & replacement of various parts. (as MCB,wire,relay,contractor,capacitor,air finishing fan as required) (For one year)	Each	16023.00

**B - 174**

Item No.	Description	Unit	Rate (Rs.)
18.15.4	Expandable Digital Key telephone system panasonic make having 8 Junction. 24 KTS part and 16 analogue telephone port complete with (7 Nos. KTS 3 line display and 24 programable key, 11 KTS 1 line display and 8 programable keys and 10 nos. analogue speakertelephone.) instruments.	Nos.	65938.00
18.15.5	Main EPBAX SIEMENS 1190 suitable for 120 extension	Nos.	72688.00
18.15.6	Telephone Instruments.	Nos.	144.00
18.15.7	Plan 1+1 Telephone instruments with adaptor	Nos.	752.00
18.15.8	Wiring MDF and DP boxes	Nos.	32450.00
18.16	COMPACTOR: Rigid Knock Down construction made out of 0.8 thk. CRCA Steel. Finish: The bodies including shelves are given antirust surface treatment & are powder coated with epoxy-polyester powder. It involves an 8-step treatment consisting of Hot water rinse, Knock of degreasing, degreasing, cold water rinse, phosphating, cold water rinse, and passivation & dry-off oven treatment. The final finish consists of epoxy polyester powder coating of approved color & shade with a Dry Film Thickness of a minimum 40 microns. Shelf: It is made of 0.8 thk CRCA steel Shelves are mounted on support brackets & shelf level can be adjusted at approx. 25.4 pitches. There are 4 adjustable shelves per body giving 5 loading levels, if no Cradle pair is provided. Finish: The undercarriage, after pre-treatment, is coated with a final finish consisting of an epoxy polyester powder coat of approved color & shade with a Dry Film Thickness of a minimum 40 microns. Centralized Locking Drive Type PU Drive wheel and 'Sprocket-Chain- Tensioner' arrangement mounted rigidly onto body side movement of units is achieved mechanically through a Drive wheel and Sprocket-Chain'arrangement mounted rigidly onto body side.OPTIMIZER 15(915 mm-1000mm W x 450mm D x 2400 mm H)		
18.16.1	SSD2-Single Static Drive Cover Unit One Bay	Nos.	42500.00
18.16.2	SMD2-Single Mobile Drive Unit one bay	Nos.	54500.00
18.16.3	TMD2-Twin Mobile Drive Unit two bay S/F of CHANNELS	Nos.	78787.00
18.16.4	14'0" size	Nos.	7800.00
18.16.5	7'0" Size	Nos.	6500.00

**B - 175**

Item No.	Description	Unit	Rate (Rs.)
18.17	Providing and fixing of Wooden office table size 1500-1800 x 750 x 750 mm having three drawers pedestal on one side. Top & legs made of 25mm post-formed prelaminated bond /modesty in 18mm edge PLT Board. Pedestal made of 25/18mm post-formed board with central locking device etc. as per directions of engineer in charge	Nos	16500.00
18.18	Providing and fixing of Wooden office table size 1800-2450 x 750 x 750 mm having three drawers pedestal on one side. Top & legs made of 25mm post-formed prelaminated bond /modesty in 18mm edge PLT Board. Pedestal made of 25/18mm post-formed board with central locking device etc. as per directions of engineer in charge	Nos	25500.00
18.19	Providing executive office revolving chair of over all size 21 " x 19" x 34", seat size 21" x 19" with pneumatic height adjustment, normal padded seat and back PU moulded seat, 90 degree tilt lock, class A wheel, high-quality PP arms rest, push back design structure, domati stand, black or other colour fabrics. Godrej / Hycon or equivalent make as approved by engineer in charge	Nos	12500.00
18.20	Providing visitors chairs 18" with arm rest , steel frame, PVC/Fabric seat and back ,perfect balance of comfort,modern type and as approved by engineer in charges	Nos	7500.00
18.21	Removing and dismantling all GI Duct Ffor air cooling ( size upto 1.50 x.90 mt ) and its cooling plant from existing building in various floors including all stacking/depositing of useful materials and disposal of unserviceable material.	Sqm	350.00
18.22	Providing and fixing of sofa set with side arms as per approved design, frame made out of pine wood or other wood structure with 40 density foam cushion good quality upholstery, seat foam of 4" thickness +20mm thick high density foam and back foam 48mm thickness +20mm thick density foam Entire sofa covered with approved quality trepestry fabric of best available and approved make. Fabric of back to be made as per drawing cutting /division/quilting and seats having spring of good quality supported with jute and canvas with required hardware. Bottom of sofa to be covered with canvas/jute/rat mesh and SS finish legs base as approved by engineer in charge		
18.22.1	Single Seated	Each	14500.00
18.22.2	Two Seater	Each	25600.00
18.22.3	Three Seated	Each	38500.00

Item No.	Description	Unit	Rate (Rs.)
18.23	Providing and fixing aluminum frame for partitions with extruded built-up standard sections of size 50mmx50mm and 600 mm center to center of approved make conforming to IS:733 and IS:1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gap. at junctions, at the top, bottom, and sides with required PVC/neoprene felt, etc. The aluminum section shall be smooth, rust-free, straight, mitered, and jointed mechanically wherever required including cleat angle etc.,all complete as per the directions of the Engineer-in – charge.	Sqm	2350.00
18.24	Providing and applying the claddings on the existing framework erected for Solid partitions. Provision for all electrical/ networking boxes and to provide 30mm dia cut-outs as required. Electrical/ Network boxes/ other services to be provided at the desired height and location as indicated in the drawing .All junctions between materials, columns, walls, etc to have a 6mm groove with Aluminium 'L'/'U' sections as per details. Each face to be measured separately		
18.24.1	12mm BWP commercial ply + 4mm MDF + 1mm Laminate of approved design	Sqm	2200.00
18.24.2	12mm BWP commercial ply + veneer 4mm of approved design with malamine polish finish.	Sqm	3200.00
18.24.3	9 mm BWP commercial ply + 12mm soft board+fabric with groove, joints and design pattern as per drawing.	Sqm	2650.00
18.24.4	19 mm PLY +10 mm MDF with groove, joints and design pattern as per drawing including matching paint finish.	Sqm	2475.00
18.25	Providing & Fixing Writing desk/workstation, made out of 19mm board as per design. finished with 1mm laminated on all sides. including all necessary hardware,Wire managers etc. standard height verticle support max. 1200mm as per drawings		
18.25.1	Width 600mm	Rmt	3350.00
18.25.2	Width 750 mm	Rmt	3850.00
18.25.3	Width 900 mm	Rmt	4250.00
18.26	Providing and Fixing of Low height storage of size 900mmx450mmx750mm as per drawing with structure in 19mm board finished 1mm laminate all sides. The storage has equal shutter with horizontal internal shelf including of all hardware and handle.	Each	12850.00

**B - 177**

Item No.	Description	Unit	Rate (Rs.)
18.27	The drawer unit of size 450 x 450 x 675mm ( W X DX H) made out of 19mm thick pre-laminated board, having three number of drawer units, the two top units of 6" ht. each and the bottom drawer of 12" ht. The front shutters matching with top surface in quarter round post formed shutters and mounted on steel telescopic channels including necessary hard-wares, handle locks etc.	Each	8500.00
18.28	Providing and Fixing over/lower head storage unit/box type with 19 mm thick shutter. Made out of 19mm thick BWP board with provision of light slots parallel to the wall including making and fixing loose/fix shelves made of 19 mm BWP board finished with 1 mm laminated on all sides and depth up to 450 mm etc complete as per approved design and drawings, Front side finishing with 1mm thick superior quality mica approved make and 0.8mm thick approved shade mica in the inner side. Covering with teak wood beading 25x12mm all the sides of shutter & 35x12mm on outer frame for making good the wall joint including heavy brass S.S. fittings (Handle 200mm 2 Nos., Tower Bolt 150mm 2 Nos., Brass Lock 1 Nos., Magnetic Catcher 2 Nos., Brass Hinges 75x40x2.5 mm 6 Nos., SS Hanger Rod 20mm dia) complete as per drawing and design approved by Engineer in Charge. (Mode of measurements: Only the front elevation area shall be measured for payment)	Sqm	14850.00
18.29	Providing and Fixing of computer table Key board tray mount underneath the desk,either fixed or with a sliding support and made from as metal to ensure the best quality .	Each	1050.00

Item No.	Description	Unit	Rate (Rs.)
18.30	<p>Providing and fixing modular toilet cubicles, made out of 12mm th. BWP board finished both faces with 1mm th. laminate of approved shade. edge of the board to be finished with 4mm th. maple wood lipping/margin, stained and melamine polished. Including following Accessories:</p> <p>(a) Aluminium Powder Coated Top Rail/Bottom Rail  (b) Hinges – Gravity to close  (c) Privacy Thumbturn c/w Occupancy Indicator  (d) Coat Hook  (e) Door Knob  (f) Adjustable foot / SS legs  (g) Aluminium “U” channel (Black anodized)  (h) Aluminium Door Stopper channel (Black anodized)  (i) Rubber Door Stopper Lining  (j) Screws &amp; Wall angles and cleats to secure the partition to floor and wall 12mm Box - up ceiling hung Series Restrooms . (Including door size upto 750mmX2460mm)</p>	Each	26500.00
18.31	<p>Providing and fixing 12mm thick Toughen Glass with Frame Facad with requisite hardware fittings of size as per architectural design. Having required opening area for Entrance doors, Complete in all respects with filling of weather silicon where necessary. &amp; as per instruction of Engineer In charge. including the cost of centering &amp; shuttering for all leads &amp; lift.</p>	Sqm	4760.00
18.32	<p>Providing and Fixing SS Signage of thickness 16 gauge and 304 grade over specified places fixed with ss steel screw/studs/double side tap etc complete as per requirement and approved by an engineer in charge.</p>	Per Sq inch	18.00
18.33	<p>Supply and Fixing Power Operated Slide Door of appropriate opening as well as door size, remaining part from the door opening (sides of the door) shall be fixed with 12mm thick toughened glass door shall be complete with 12mm thick frame less toughened clear glass leaf with all necessary hardware and miscellaneous equipment. Power connection and cabling etc. conceal with the door head units cover. include operator, header with roller track, track shall be alumite-coated alluminium, carrier assemblies, framing jambs, sliding door panel (s), activation, safety, devices and accessories required for complete installation.</p> <p>Accessories;  Vertical Slides  Floating Header Bars  Door Patches</p>		

**B - 179**

Item No.	Description	Unit	Rate (Rs.)
18.34	<p>Chanel and Header Bars 12mm thck frameless toughned clear glass leaf etc. work is deemed to be completed after sucessfully demonstration.</p> <p>Supply and Fixing premium make Microprocessor fully and fully adjustable for fast and slow speed and adjustable to incorporate 0 -30 second delay, Capable of continuous duty cycle, Provide internal audible alarm, Motor is driven from isolator unit mounted adjucent to the doors, Microwave motion detector head(s) shall be mounted single or pair of doors on both sides of frame to provide 3 operations, Detector shall incorporate precence sensing devices to keep the door open if obstructed, Automatic Power Operated Sensor (suitable for existing Slide Door with all necessary hardware and miscellneous equiepmnt). Power connection and cabling etc. conceal with the door head units cover. include accessories required for complete installation. Accessories; Centre lock housings of standered company work is deemed to be completed after sucessfully demonstration.</p>	Sqm	5660.00
18.35	<p>Providing &amp; Fixing Automatic Urinal Flushing Sensor madup of 304 stainless steel case material, Screwless Plate, dully power operated AC &amp; DC System, Power Voltage DC 6 V or AC 230 V, Battary 4 x AA Alkaline, Battary Life 1 Year if 100 Cycle/Day, Sensor Range adjustable upto 60 cm., Low battary indicator (Red LED Flush), Flushing time 6 second, water pressure adjustable valve, water pressure (0.4 to 8 Bar), input/output pipe size G1/2", water temprerature 1.55 degreee, plate size 155 x 130 mm, System based on low power consumptions technology.</p>	Each	177000.00
		Each	5880.00



**RHB BSR - 2024**

# **SANITARY WORK**

# **SANITARY WORK**

## **INDEX**

<b>CHAPTER NO.</b>	<b>DESCRIPTION</b>	<b>PAGE NO.</b>
S -1	SANITARY INSTALLATION WORK	1-11
S -2	WATER SUPPLY INSTALLATION	12-24
S -3	DRAINAGE / DISPOSAL WORK	25-45
S -4	CONSTRUCTION AND COMMISSIONING OF TUBE WELLS, OPEN WELLS & HAND PUMPS.	46-59
S -5	WATER SUPPLY WORK	60-114
S -6	SEWER LINE WORK	115-151
S -7	O&M WATER SUPPLY AND SEWERAGE WORK	152-155

## CHAPTER : S-1

## SANITARY INSTALLATION WORK

**NOTE:** All items which are manufactured ISI marked, shall only be used. this condition shall be always incorporated in special condition of contract.

Item No.	Description	Unit	Rate (Rs.)
<b>WATER CLOSETS</b>			
1.1	P. & F Squatting Pan (Indian type) white glazed vitreous china 1st quality W.C. Pan (IS : 2556 Mark) with 100 mm vitreous china P or S trap including cutting and making good the wall and floor (excluding the pair of foot rest.)		
1.1.1	Size 450mm.	Each	1188.00
1.1.2	Size 510 mm	Each	1208.00
1.1.3	Size 580mm	Each	1426.00
1.2	P & F Indian type white glazed vitreous china 1st quality W.C. orissa pan (IS :2556 Mark) with 100 mm vitreous china P or S trap including cutting and making good the wall and floor:		
1.2.1	Size 530x410mm.	Each	1980.00
1.2.2	Size 580x440mm.	Each	2259.00
1.3	P & F WVC Foot- rest (IS : 2556 Mark) including cutting and making good the floor size: 250x125x25mm.	Pair	220.00
1.4	P & F European type white glazed vitreous china 1st quality W.C pan (IS : 2556 Mark) with P or S trap including cutting and making good the wall and floor	Each	1632.00
1.5	P & F European type white glazed vitreous china 1st quality Double syphonic W.C (IS :2556 Mark) with P or S trap including cutting and making good the wall and floor	Each	4330.00
1.6	P & F Universal (anglo-Indian type) white glazed vitreous china W.C. pan 1st quality with P or Strap including cutting and making good the wall and floor	Each	2947.00
1.7	P & F European type white glazed vitreous china 1st quality W.C. (IS : 2556 Mark) including cutting and making good the wall and floor		
1.7.1	Wall Mounting	Each	3403.00
1.7.2	Wall Mounting (extended)	Each	3736.00
1.7.3	Wall Mounting (syphonic)	Each	4353.00

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

**Note :-**

(A)	Add extra over item No. 1.1 to 1.7, 1.14, 1.15, 1.19, 1.22 ,1.23 ,1.38 & 1.42 for using approved light coloured vitreous china ware i.e. ivory champagne, perl , soft green , soft blue ,pink, ,light grey etc. instead of white vitreous chinawares.	Each	50%
(B)	Add extra over item No.1.1 to 1.7, 1.14, 1.15, 1.19 1.22 ,1.23 ,1.38 & 1.42 for using approved dark colored vitreous china ware i.e. Cherry Red , Dark blue, Jet black, Magenta, Burgandy instead of white vitreous chinawares.	Each	65%
1.8	P & F water closet Seat Covers with brass hinges complete :		
1.8.1	Solid PVC (ISI marked) grade-I Black for EWC.	Each	675.00
1.8.2	-do- White.	Each	731.00
1.8.3	-do- Coloured.	Each	653.00
1.8.4	-do- White.	Each	251.00
1.8.5	-do- Coloured.	Each	291.00
1.9	P & F C.P. lugs for toilet seat cover.	Pair	69.00
1.10	Labour charges for removing W.C. pan (any type) of all sizes with care including all necessary fittings P or S trap.	Each	239.00
1.11	P & F White glazed Conversion Bend for W.C. from P trap to S trap. .	Each	132.00
1.12	P & F vitreous china P trap of approved quality	Each	342.00
1.13	Add extra if C.I.P trap is used in place of Vitreous china P trap for W.C.	Each	511.00
1.14	P & F White Vitreous China Double Syphonic European W.C. (I.S:2556Mark) with mounted W.V.C. flushing cistern of (IS : 2556 Mark) of 10 litre capacity complete with all necessary internal fittings including cutting and making good the wall and floor.	Each	8350.00
<b>URINALS:</b>			
1.15	P & F Ist quality WVC Urinal (IS:2556 mark) with 25mm dia G.I. waste pipe, dome waste couplings, concealed iron brackets or screws etc complete.		
1.15.1	Flat Back (small) size 456x355x265mm.	Each	1605.00
1.15.2	Flat Back (large) or half stall size 610x400x80mm.	Each	2707.00
1.15.3	Mini stall size 455x385x350mm.	Each	1858.00

Item No.	Description	Unit	Rate (Rs.)
1.16	P & F W.V.C. Urinal Partition Plate of approved standard make of size 630x315mm including making good the wall.	Each	938.00
1.17	P&F Marble Urinal Partition slab both sides polished of approved design cut from marble size 900x600mm.		
1.17.1	Makrana II quality marble having light spots	Each	987.00
1.17.2	Makrana `Albeta` Marble having light streaks.	Each	831.00
1.17.3	Makrana `Adanga` or Raj Nagar 1St Quality White or Andhi Indo-Italian marble.	Each	831.00
1.18	P & F W.V.C. Half-Round Channel of approved make in C.M. 1:3, joints finished in white cement of:		
1.18.1	Size 100mm dia.	Mtr.	515.00
1.18.2	Size 150mm dia.	Mtr.	649.00
1.19	P & F W.V.C. (IS: 2556 Mark) Squatting Urinal of standard make complete. Including cutting & making good the floor:		
1.19.1	Size 450x350mm	Each	1360.00
1.20	Labour charges for removing and refixing of urinals (all type & sizes) including all necessary fittings.	Each	359.00
1.21	P & F High Level Flushing Cistern of 10 litres capacity of approved make including C.I. brackets duly painted, chain & pull and 32 mm dia G.I. concealed flush pipe with M.S. clamps, 20 mm dia G.I. overflow pipe upto 185 cm. Long, brass ball cock (IS :1703 Mark) with PVC ball and internal fittings and mosquito proof coupling, complete including cutting and making good the wall. White PVC (IS: 7231 Mark).	Each	2179.00
1.22	P & F Low level Flushing Cistern of 10 litres capacity (IS : 2556mark). Of approved make with complete fittings C.I. brackets duly painted, brass ball cock with ball, (IS: 1703 mark) complete including cutting and making good the wall:		
1.22.1	WVC with C.P. brass bend.	Each	2235.00
1.22.2	PVC with PVC bend as per IS : 7231 .	Each	1347.00
1.22.3	PVC with PVC bend of make Commander champion	Each	1735.00
1.22.4	WVC for symphonic EWC.	Each	2410.00
122.5	PVC with CP brass long band.	Each	1146.00

Item No.	Description	Unit	Rate (Rs.)
1.23	P & F Automatic Flushing Cistern of first quality (IS : 774 mark) of approved make fitting, siphon with copper tube, C.I. brackets complete including cutting and making good the wall. WVC (as per IS : 2556) 10 litres.	Each	1180.00
<b>Note :-</b>	Deduct if plastic syphon is used.	Each	110.00
1.24	P & F Flush Pipe of approved make with complete fittings for high level flushing cistern:		
1.24.1	G.I. 'B' class (Concealed) 25mm.	Each	675.00
1.24.2	G.I. 'B' class (Concealed) 32 mm.	Each	725.00
1.24.3	PVC exposed (heavy) 32mm.	Each	150.00
1.24.4	GI (Sheet) hot galvanized exposed (10 litres).	Each	200.00
1.25	P & F WVC (10 litres) low-level flushing cistern with cover.	Each	737.00
1.26	P & F WVC (10 litres) low-level flushing cistern cover only	Each	322.00
1.27	P & F WVC syphon with plunger plate only.	Each	242.00
1.28	P & F WVC Auto cistern with cover only.	Each	478.00
1.29	P & F WVC Auto cistern cover only.	Each	140.00
1.30	P & F C.P. brass Urinal Flush Pipe set complete with flanged brackets of approved make.		
1.30.1	For 4 Urinals	Each	1304.00
1.30.2	For 3 Urinals	Each	1013.00
1.30.3	For 2 Urinals	Each	706.00
1.30.4	For 1 Urinal	Each	484.00
1.31	P & F C.P. brass Urinal Spreader for stall urinal of approved make.	Each	341.00
1.31.1	P & F Synthetic (PTMT) Urinal Spreader for stall urinal of approved make.	Each	233.00
1.32	P & F C.P. brass Doom Waste Coupling 32 mm dia.	Each	171.00
1.32.1	P & F C.P. brass Doom Waste Coupling 40 mm dia.	Each	211.00
1.33	P & F Plastic Syphon of approved make for automatic flush tank.	Each	157.00
1.34	P & F Copper tube Syphon for auto flush tank.	Each	355.00

Item No.	Description	Unit	Rate (Rs.)
1.35	Removing and re-fixing of wash hand basin including all necessary fittings.	Each	170.00
1.36	P & F metal brackets duly painted including cutting & making good the wall.	Pair	185.00
1.37	P & F C.P. Brass flush Valve with C.P. flush bend of approved make.		
1.37.1	Lever type with Elbow 32 mm dia	Each	3013.00
1.37.2	Push type with Elbow 32 mm dia	Each	3245.00
1.37.3	Concealed type for 115 mm thick wall	Each	3633.00
1.37.4	Concealed type for 230 mm thick wall	Each	3750.00
1.37.5	Economy model 25 mm dia.	Each	2159.00
1.37.6	Economy model 32 mm dia.	Each	2353.00
<b>WASH BASINS:</b>			
1.38	P & F WVC wash basin (1st quality, I.S. : 2556 Mark) of approved make with C.I. brackets duly painted, 1 No. 15 mm C.P. Pillar cock (IS : 8934 Mark) & 32 mm C.P. brass waste coupling of approved make, 25 mm PVC waste pipe complete including cutting & making good the wall.:		
1.38.1	Size 450 mm x 300 mm	Each	2143.00
1.38.2	Size 510 mm x 400 mm	Each	2420.00
1.38.3	Size 550 mm x 400 mm	Each	2531.00
1.38.4	Size 580 mm x 450 mm	Each	2531.00
1.38.5	Size 610 mm x 510 mm	Each	2698.00
1.38.6	Size 400 mm x 400 mm or 450 mm x 390 mm Corner	Each	2087.00
1.38.7	460 dia for counter top	Each	2587.00
1.38.8	Size 550 mm x 400 mm dia for counter top	Each	2687.00
1.38.9	Size 630 mm x 500 mm dia for counter top	Each	2753.00
1.39.10	Add extra for using 25mm GI waste pipe instead of PVC waste pipe	Each	95.00
1.39	P & F Terrazzo (Mosaic) wash hand basin with supporting brackets waste coupling and PVC waste pipe complete, including painting of brackets making good the walls:		
1.39.1	450 mm x 280 mm	Each	1111.00
1.39.2	550 mm x 400 mm	Each	1222.00

**KITCHEN & LAB. SINKS:**

- 1.40 P & F Kitchen & Lab. Sink of approved make with C.I. brackets duly painted, 40 mm C.P. waste coupling, C.P. Brass chain with rubber plug, 40 mm PVC waste pipe up-to floor level complete including cutting and making good the wall & floor :

Item No.	Description	Unit	Rate (Rs.)
1.40.1	Fire clay glazed kitchen sink (I.S.771-1985 Marked) size 600 x 450 x 250mm.	Each	3590.00
1.40.2	Fire clay glazed kitchen sink (I.S.771-1985 Marked) size 600 x 450 x 200 mm.	Each	3348.00
1.40.3	WVC Lab sink (IS:2556 mark) size 530 x 430 x 180 mm	Each	2336.00
1.40.4	WVC Lab sink (IS:2556 mark) size 500 x 350 x 150 mm	Each	2169.00
1.40.5	WVC Lab sink (IS:2556 mark) size 450 x 300 x 150 mm	Each	1947.00
1.40.6	Mosaic fine polished kitchen sink size 600 x 450 x 200mm.	Each	1426.00
1.40.7	Mosaic fine polished kitchen sink size 450 x 450 x 200mm.	Each	1259.00
1.40.8	Mosaic fine polished kitchen sink size 600 x 450 x 200 mm with 600 x 450mm drain board	Each	1598.00
1.40.9	1.0 mm thick Salem stainless steel AISI -304 kitchen sink of approved make (Nirali, Neel – kanth, Jaina, Faber-Castell ) with large waste coupling.		
	Overall size (inches)      Bowl size (inches)		
1.40.10	18 x 16 x 6      16x14x6	Each	3868.00
1.40.11	22 x 18 x 7      20x16x7	Each	4922.00
1.40.12	24 x 18 x 8      20x16x8	Each	5588.00
1.40.13	37 x 18 x 7      17x15x7 (with drain board)	Each	5422.00
1.40.14	45 x 20 x 8      20x16x8 (with drain board)	Each	7753.00
<b>Note :-</b>	Deduct for item No 1.41.9 to 1.41.14 for using any other make than specified above.	Each	35%
1.41	P & F Drain Board of approved make with C.I. brackets duly painted complete including cutting & making good the wall:		
1.41.1	WVC (I.S.: 2556 Mark) size 530 x 450mm	Each	1159.00
1.41.2	Mosaic fine polished size 600 x 450	Each	427.00
1.42	P & F 1st quality WVC pedestal for wash basin.	Each	1252.00
<b>MISCELLANEOUS</b>			
1.43	P & F Bottle Trap of approved make :		
1.43.1	C.P Brass 32 mm	Each	582.00
1.43.2	C.P Brass 40 mm	Each	615.00
1.43.3	Synthetic Material (PTMT)32 mm	Each	522.00
1.43.4	Synthetic Material (PTMT)42 mm	Each	566.00
1.43.5	P.V.C	Each	143.00
1.44	P& F waste Coupling with fittings of approved quality /make:		



Item No.	Description	Unit	Rate (Rs.)
1.44.1	C.P Brass 32 mm dia	Each	176.00
1.44.2	C.P Brass 40 mm dia	Each	242.00
1.44.3	C.P. Brass 50 mm dia	Each	275.00
1.44.4	SS 125 mm	Each	288.00
1.45	P& F waste Pipe with all fitting		
1.45.1	P.V.C with C.P nut 32 mm	Each	157.00
1.45.2	P.V.C with PVC nut 32 mm	Each	62.00
1.45.3	P.V.C. with C.P. nut 40 mm dia	Each	171.00
1.45.4	G.I(B class) 32mm	Each	251.00
1.45.5	G.I(B class) 40 mm	Each	292.00
1.46	P & F Bevelled edge Mirror/mirror with teak wood lipping around of special glass of approved make as per directions of Engineer-in- charge complete with 6mm thick commercial ply base fixed to wooden screws & washers.		
1.46.1	Size 600 x 450mm x 4 mm thick	Each	573.00
1.46.2	Other sizes	Sqm.	1563.00
1.47	P & F Looking Mirrors with P.V.C. frame of approved make as per directions of Engineer-in- charge		
1.47.1	Size 500x400mm	Each	355.00
1.47.2	Oval shape 450x350 mm	Each	522.00
1.47.3	Round 500mm dia	Each	538.00
1.48	P & F Toilet Shelf of approved quality/make:		
1.48.1	W.V.C. (I.S.: 2556 Mark) Size 300mm	Each	427.00
1.48.2	W.V.C. (I.S.: 2556 Mark) Size 550 mm	Each	495.00
1.48.3	Synthetic Material with tumbler of approved quality/make size 470 x 114 x 36mm	Each	407.00
1.48.4	Hard Plastic of Commander/equivalent size 590 x 140mm	Each	505.00
1.48.5	Acrylic shelf on C.P. brass casted brackets & guard rail of Commander or equivalent make size 550x125mm	Each	921.00
1.48.6	Glass Shelf with edges rounded off Anodised Aluminium angle frame & C.P. brass brackets & guard rail size 600x120mm	Each	316.00
1.49	P & F Towel Rail or Ring of approved quality/make:		
1.49.1	C.P. brass Towel Rail elbow type with concealed screws size 450mm (Heavy duty).	Each	468.00
1.49.2	C.P. brass Towel Rail elbow type with concealed screws size 600 mm (Heavy duty).	Each	516.00
1.49.3	C.P. brass towel rail with brackets 450 x 20mm.	Each	296.00
1.49.4	C.P. brass towel rail with brackets 600 x 20mm.	Each	337.00

Item No.	Description	Unit	Rate (Rs.)
1.49.5	Synthetic Material(PTMT) of approved quality/make size 525 x90 x 75mm	Each	152.00
1.49.6	Synthetic Material(PTMT) of approved quality/make size 675 x90 x 75mm	Each	165.00
1.49.7	WVC (1stquality, ISI Marked) of approved make. Recessed towel Hanger size 108 x 108mm.	Each	144.00
1.49.8	C.P. Brass Towel Ring revolving type	Each	254.00
1.49.9	Synthetic Material (PTMT) Towel Ring of approved quality/make.	Each	165.00
1.50	P & F Grating of approved quality/make:		
1.50.1	Stainless Steel Sheet size 125mm dia.	Each	62.00
1.50.2	Stainless Steel Sheet size 125mm dia. Heavy Quality of approved make	Each	97.00
1.50.3	Synthetic Material(PTMT) of approved quality/make size 125mm dia.	Each	89.00
1.50.4	(-do-) 150mm dia.	Each	97.00
1.50.5	(-do-) Square 150 x 150 x 8mm. (Anti Cockroach)	Each	358.00
1.50.6	C.P. brass with frame (Heavy) & superior quality size 125mm dia.	Each	131.00
1.50.7	(-do-) Light & superior quality size 125mm dia	Each	55.00
1.50.8	Cast Iron.	Each	69.00
1.51	P & F Liquid Soap Container with brackets complete of approved make:		
1.51.1	C.P. brass	Each	238.00
1.51.2	Synthetic Material of approved quality/make:	Each	164.00
1.52	P & F Tooth Paste & Brush Holder of approved quality/make:		
1.52.1	C.P. brass	Each	127.00
1.52.2	C.P. brass (Heavy and Superior quality.	Each	520.00
1.52.3	Stainless Steel	Each	319.00
1.53	P & F Toilet Paper Holder with rod of approved quality/make:		
1.53.1	C.P. brass	Each	223.00
1.53.2	C.P. brass heavy & Superior quality.	Each	602.00
1.53.3	WVC (1stquality, ISI Marked) recessed size 150x150mm.	Each	305.00
1.53.4	(-do-) exposed (-do-)	Each	238.00
1.54	P & F Soap Dish or Tray of approved quality/make		
1.54.1	C.P. brass	Each	127.00
1.54.2	C.P. brass heavy and superior quality.	Each	156.00
1.54.3	WVC (1st Quality, ISI Marked) recessed size 150 x 150 mm.	Each	283.00
1.54.4	(-do-) 200 x100mm.	Each	327.00

Item No.	Description	Unit	Rate (Rs.)
1.54.5	(-do-) Soap tray 170mm.	Each	245.00
1.54.6	(-do-) Soap Dish 380mm.	Each	327.00
1.55	P & F Twin- peg of approved quality / make		
1.55.1	C.P. brass	Each	79.00
1.55.2	C.P. brass (heavy)Superior quality	Each	149.00
1.55.3	Acrylic	Each	76.00
1.56	P & F Shower arm 15mm dia of approved quality/make.		
1.56.1	C.P.brass heavy & superior quality 150mm Projection.	Each	198.00
1.56.2	(-do-) size 220mm(-do-)	Each	307.00
1.56.3	(-do-) size 300mm.(-do-)	Each	337.00
1.56.4	(-do-) size 370mm.(-do-)	Each	376.00
1.57	P & F Bath Shower of approved quality/make.		
1.57.1	C.P. brass fixed.	Each	149.00
1.57.2	C.P. brass of Heavy & superior quality 150mm.	Each	376.00
1.57.3	C.P. brass of Heavy & superior quality, revolving with adjustable key 150mm.	Each	573.00
1.58	P & F Extension Pipe for bib cocks of approved quality/make.		
1.58.1	C.P. brass of Heavy & Superior quality 50x15mm	Each	85.00
1.58.2	(-do-) 100 X 15mm.	Each	119.00
1.58.3	(-do-) 150 X 15mm.	Each	168.00
1.59	P & F Acrylic Toilet accessories set consisting of Towel rail, shelf, towel ring, soap dish, paste & brush holder & twin peg of approved quality/make.	Each	1179.00
1.60	Labour Charges for removing WVC pan:		
1.60.1	Indian/Orissa pan	Each	227.00
1.60.2	European W.C.	Each	227.00
1.60.3	Flushing cistern	Each	96.00
1.61	P & F Jet spray for water closet with C.P. Copper Tube flange of approved make.	Each	381.00
1.62	Providing & fixing C.P.flange for 15mm dia taps.	Each	18.00
1.63	P & F C.P. Health Faucet with 1Mtr. Long Tube & Hook of approved make and heavy as per direction of Enginner-in-Charge	Each	605.00

**S - 10**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate (Rs.)</b>
1.64	P & F C.P. brass Urinal Spreader for Large Urinal of heavy duty of approved make as per direction of Enginner-in-Charge	Each	617.00
1.65	Removing & Re fixing of P.V.C. Cistern fittings (Syphon, Ball cock & Handle Set) complete as per direction of Enginner-in-Charge	Each	468.00
1.66	Providing & Fixing Premium Quality white glazed vitreous china Sanitary Wares (IS:2556 Mark) of approved make as per direction of Engineer-in-charge including cutting and making good the wall and floor.		
1.66.1	W.C. orissa pan with 100 mm vitreous china P or S trap (Size 580x440 mm.)	Each	3065.00
1.66.2	Universal (anglo-Indian type) with P or S trap	Each	6386.00
1.66.3	Wall Mounting European type W.C.	Each	9072.00
1.66.4	Double Syphonic European W.C. with mounted W.V.C. flushing cistern of 10 litre capacity complete with all necessary internal fittings with Hydraulic seat cover.	Each	17839.00
1.67	Providing & Fixing premium qulaity WVC Urinal with PVC waste pipe, dome couplings, concealed iron brackets or screws etc. complete.		
1.67.1	Flat Back (small) size 440x265x315 mm.	Each	2619.00
1.67.2	Flat Back (large) or half stall size 590x375x390 mm.	Each	6246.00
1.68	Providing & Fixing premium qulaity W.V.C. Urinal Partition plate of size 630x315 mm	Each	2636.00
1.69	Providing & Fixing premium qulaity WVC Wash basin with C.I. brackets duly painted & 32 mm C.P. brass waste coupling of approved make with PVC waste pipe complete		
1.69.1	Size 550 mm x 400 mm	Each	2334.00
1.69.2	Size 550 mm x 400 mm dia for counter top.	Each	3372.00
1.70	P & F Premium quality water closet Seat Covers with brass hinges complete Solid PVC (ISI marked) grade-I White for EWC.	Each	714.00
1.71	P & F Premium quality Low level Flushing Cistern of 10 litres capacity (IS:2556 mark) of approved make as per Engineer-in-charge with complete fittings C.I. brackets duly painted, brass ball cock with ball, (IS:1703 mark) complete including cutting and making good the wall :	Each	1823.00

**S - 11**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate (Rs.)</b>
1.72	P&F Looking Mirror 5mm thick of approved make with ornamental frame size 50x12 with 6mm Ply Board on Back Side Complete as per approved sample	Sqm	2544.00
1.73	Supply of Hydraulic Seat Cover for European WC of superior quality approved make in white Colour	Each	4057.00
1.74	Providing & Fixing chair for wall hung W.C.	Each	1604.00
1.75	Providing & Fixing Concealed cistern with Floor mounting frame and flush plate of superior quality and approved sample by Engineer-in-charge.	Each	8187.00
1.76	Providing and fixing new spindle for Bib cock/pillar cock for repairing purpose to solve leakage and proper functioning of tap.	Each	114.00
1.77	Providing & Fixing premium quality Toilet corner Glass Shelf size 225x225mm with C.P. brass brackets & guard rail edges rounded of SS frame	Each	1562.00
1.78	Providing & Fixing premium quality waste coupling 32mm half thread as per approved by Engineer in Charge.	Each	519.00
1.79	Providing & Fixing Premium quality Bottle trap internal portion 32mm, size 250mm long wall connection pipe & wall flange as per approved by Engineer in Charge.	Each	1599.00

**CHAPTER : S-2**  
**WATER SUPPLY INSTALLATION**

Item No	Description	Unit	Rate (Rs.)
<b>GALVANISED IRON PIPES</b>			
2.1	P & F G.I. pipes ( <i>Internal Work</i> ) with G.I. Fittings excluding union (IS:1239 Mark) & MS clamps including cutting and making good the walls and floors:		
(a)	Exposed on wall		
2.1.1	15 mm dia nominal bore		
	'A' Class	Mtr.	243.00
	'B' Class	Mtr.	263.00
2.1.2	20mm dia nominal bore		
	'A' Class	Mtr.	300.00
	'B' Class	Mtr.	326.00
2.1.3	25mm dia nominal bore		
	'A' Class	Mtr.	334.00
	'B' Class	Mtr.	363.00
2.1.4	32mm dia nominal bore		
	'A' Class	Mtr.	364.00
	'B' Class	Mtr.	396.00
2.1.5	40mm dia nominal bore		
	'A' Class	Mtr.	436.00
	'B' Class	Mtr.	473.00
2.1.6	50mm dia nominal bore		
	'A' Class	Mtr.	575.00
	'B' Class	Mtr.	626.00
2.1.7	65mm dia nominal bore		
	'A' Class	Mtr.	689.00
	'B' Class	Mtr.	752.00
2.1.8	80mm dia nominal bore		
	'A' Class	Mtr.	826.00
	'B' Class	Mtr.	904.00
(b)	Concealed pipe in wall including painting with anticorrosive bitumen paint		
2.1.9	15 mm dia nominal bore		
	'A' Class	Mtr.	247.00
	'B' Class	Mtr.	267.00
2.1.10	20mm dia nominal bore		

Item No	Description	Unit	Rate (Rs.)
	'A' Class	Mtr	299.00
	'B' Class	Mtr	325.00
2.1.11	25mm dia nominal bore		
	'A' Class	Mtr	328.00
	'B' Class	Mtr	386.00
2.2	P & F G.I. Pipes (External Work) with G.I. fittings excluding union (IS : 1239 Mark) including trenching & refilling earth etc.		
2.2.1	15mm dia nominal bore		
	'A' Class	Mtr.	203.00
	'B' Class	Mtr.	221.00
2.2.2	20mm dia nominal bore		
	'A' Class	Mtr.	248.00
	'B' Class	Mtr.	271.00
2.2.3	25mm dia nominal bore		
	'A' Class	Mtr.	272.00
	'B' Class	Mtr.	298.00
2.2.4	32mm dia nominal bore		
	'A' Class	Mtr.	298.00
	'B' Class	Mtr.	326.00
2.2.5	40mm dia nominal bore		
	'A' Class	Mtr.	345.00
	'B' Class	Mtr.	378.00
2.2.6	50mm dia nominal bore		
	'A' Class	Mtr.	453.00
	'B' Class	Mtr.	498.00
2.2.7	65mm dia nominal bore		
	'A' Class	Mtr.	567.00
	'B' Class	Mtr.	624.00
2.2.8	80mm dia nominal bore		
	'A' Class	Mtr.	689.00
	'B' Class	Mtr.	759.00
2.2.9	100mm dia nominal bore		
	'A' Class	Mtr.	921.00
	'B' Class	Mtr.	1017.00
2.2.10	125mm dia nominal bore		
	'A' Class	Mtr.	1073.00
	'B' Class	Mtr.	1185.00

Item No	Description	Unit	Rate (Rs.)
2.3	Making connection of G.I. distribution branch with G.I. main including all fitting.		
2.3.1	Upto 25mm dia	Each	278.00
2.3.2	Beyond 25mm & upto 100mm dia	Each	426.00
2.4	Fixing water meter (IS: 779 mark) and stop cock in G.I. pipe line including making chamber of approved size excluding cost of water meter & stop cock.	Each	259.00
2.5	P & F water meter (IS : 779 mark) of approved make.		
2.5.1	15mm dia	Each	949.00
2.5.2	20mm dia	Each	1734.00
2.5.3	25 mm dia	Each	2378.00
<b>COCKS, MIXERS, DIVERTORS &amp; VALVES</b>			
Note:-			
(a)	The rates are for ISI marked item.		
(b)	If the items are Non- ISI marked, reduce the rate by 25%.		
2.6	P & F Pillar Cocks (IS :8934 Mark) of superior quality and approved make:		
2.6.1	C.P. Pillar cock, 15 mm dia nominal bore	Each	869.00
2.6.2	C.P. Pillar cock Elbow action, 15 mm nominal bore.	Each	873.00
2.6.3	C.P. Pillar cock fancy type ,15mm nominal bore.	Each	913.00
2.6.4	C.P. Pillar cock, Swan-neck with casted spout, 15mm nominal bore.	Each	1309.00
2.6.5	C.P. Pillar cock, high-neck, 15 mm nominal bore.	Each	835.00
2.6.6	Synthetic Material (PTMT) Pillar cock of approved quality / make 15mm nominal bore.	Each	462.00
2.7	P & F Bib Cock (IS : 8931 Mark), Superior quality of approved make:		
2.7.1	Brass 400 gm,15mm nominal bore.	Each	353.00
2.7.2	P.V.C. heavy duty, 15mm nominal bore.	Each	95.00
2.7.3	C.P. Brass bib cock,15mm nominal bore.	Each	595.00
2.7.4	C. P. Brass swan - neck, 15mm nominal bore.	Each	829.00
2.7.5	(-do-) Long body, 15mm nominal bore weight not less than 690 gm	Each	738.00
2.7.6	(-do-) Long nose, 15mm nominal bore weight not less than 810 gm	Each	815.00
2.7.7	(-do-) Elbow-action, 15mm nominal bore.	Each	939.00



Item No	Description	Unit	Rate (Rs.)
2.7.8	Synthetic Material(PTMT) bib cock of approved quality/ make, nominal bore, 15mm, 86 mm long.	Each	271.00
2.7.9	(-do-) Fancy Type, 122 mm long.	Each	254.00
2.7.10	(-do-) Long Body, 175 mm long	Each	276.00
2.8	P & F <i>Stop Cock</i> (IS :8931 Mark), superior quality & of approved make:		
2.8.1	Brass 400 gm. 15mm nominal bore.	Each	364.00
2.8.2	(-do-) 750 gm. 20 mm nominal bore.	Each	491.00
2.8.3	(-do-) 1350gm. 25 mm nominal bore.	Each	738.00
2.8.4	C.P. Brass 15mm nominal bore.	Each	408.00
2.8.5	(-do-) Concealed Stop Cock 15mm.	Each	793.00
2.8.6	Synthetic material (PTMT) stop cock of approved quality/make 15mm.	Each	282.00
2.8.7	(-do-) Concealed stop cock 15mm	Each	216.00
2.9	P & F Sink Cocks of superior quality & approved made :		
2.9.1	C.P. Sink cock swinging spout 15mm.	Each	980.00
2.9.2	(-do-) Casted Spout 15 mm.	Each	980.00
2.10	P & F <i>Push Cock</i> superior quality, of approved make		
2.10.1	C.P. Brass 15 mm.	Each	467.00
2.10.2	Synthetic Material (PTMT) push cock of approved quality/make 15mm.	Each	229.00
2.11	P & F <i>Ball Cock</i> (IS :1703 Mark) with Rod & P.V.C. Ball complete :		
2.11.1	Brass wt.400 gm, 15mm.	Each	255.00
2.11.2	Brass wt.750 gm, 20mm.	Each	294.00
2.11.3	(-do-) wt.1000 gm, 25mm.	Each	327.00
2.11.4	(-do-) wt.1000 gm, 32mm.	Each	354.00
2.11.5	(-do-) wt.1200 gm 40mm.:	Each	525.00
2.11.6	(-do-) wt.2000 gm 50mm.	Each	750.00
2.11.7	Synthetic material (PTMT) of approved make 15mm nominal size.	Each	288.00
2.11.8	(-do-) 20 mm nominal size.	Each	354.00
2.11.9	(-do-) 25 mm nominal size.	Each	794.00
2.11.10	(-do-) 50 mm nominal size.	Each	1740.00
2.12	P & F <i>Inlet Connection</i> (Angle Valves) Superior quality, of approved make, for Wash basin, Gyser etc.		
2.12.1	C.P. Inlet connection 15mm.Brass (IS : 8931 marked)	Each	557.00
2.12.2	---do--- with 37 cm long pipe and nut.	Each	644.00
2.12.3	---do--- with 45 cm long thread and nut	Each	703.00

Item No	Description	Unit	Rate (Rs.)
2.12.4	Synthetic Material (PTMT) Inlet connection of approved quality/make 15 mm nominal size.	Each	277.00
2.13	P & F 15 mm. Dia <i>Connection Pipe</i> of approved quality/make :		
2.13.1	PVC pipe with C.P. Brass nuts upto length, 300mm	Each	48.00
2.13.2	(-do-) upto length 370mm	Each	59.00
2.13.3	(-do-) 450mm.	Each	70.00
2.13.4	(-do-) 600mm.	Each	81.00
2.13.5	CP Brass Pipe with CP Brass nuts upto length 300mm.	Each	93.00
2.13.6	(-do-) 370mm.	Each	125.00
2.13.7	(-do-) 450mm.	Each	154.00
2.13.8	(-do-) 600mm.	Each	170.00
2.14	P & F <i>Flush Cock / Flush Valve</i> (IS : 9758 Mark) for WC of approved quality make :		
2.14.1	CP brass push type 15mm nominal bore.	Each	342.00
2.14.2	(-do-) 20mm nominal bore.	Each	470.00
2.14.3	(-do-)exposed 25mm nominal bore.	Each	855.00
2.14.4	(-do-) 32mm nominal bore.	Each	1221.00
2.14.5	(-do-) concealed 25mm nominal bore.	Each	888.00
2.14.6	(-do-) concealed 32mm nominal bore.	Each	1354.00
2.14.7	(-do-) Half-turn exposed 25mm nominal bore.	Each	768.00
2.14.8	(-do-) Concealed 25mm nominal bore.	Each	832.00
2.14.9	Brass / Gun metal Half-turn wt. 1 Kg. of approved quality / make, 25mm nominal bore.	Each	508.00
2.14.10	CP Brass flush valve 32mm nominal bore	Each	1887.00
2.15	P & F <i>Full-way Valve</i> (IS:778 Mark) or wheel valve of approved make :		
2.15.1	Gun-metal 15mm nominal bore.	Each	327.00
2.15.2	(-do-) 20mm nominal bore.	Each	381.00
2.15.3	(-do-) 25mm nominal bore.	Each	560.00
2.15.4	(-do-) 32mm nominal bore.	Each	727.00
2.15.5	(-do-) 40mm nominal bore.	Each	1063.00
2.15.6	(-do-) 50mm nominal bore.	Each	1396.00
2.15.7	(-do-) 65mm nominal bore.	Each	1795.00
2.15.8	(-do-) 80mm nominal bore.	Each	2528.00
2.15.9	(-do-) 100mm nominal bore.	Each	3584.00
2.16	P & F <i>Gun-metal Non-return Valve or Check Valve</i> (IS :Make) of approved make, superior quality:		
2.16.1	15mm nominal bore.		
	Horizontal	Each	221.00
	Vertical	Each	200.00

Item No	Description	Unit	Rate (Rs.)
2.16.2	20mm nominal bore. Horizontal	Each	294.00
	Vertical	Each	267.00
2.16.3	25mm nominal bore. Horizontal	Each	461.00
	Vertical	Each	381.00
2.16.4	32mm nominal bore. Horizontal	Each	640.00
	Vertical	Each	487.00
2.16.5	40mm nominal bore. Horizontal	Each	864.00
	Vertical	Each	683.00
2.16.6	50mm nominal bore. Horizontal	Each	1210.00
	Vertical	Each	883.00
2.17	P & F <i>Flush Valve</i> (Hydraulic) with level complete (IS : 9758 Mark) of approved make :		
2.17.1	32mm nominal bore.	Each	2595.00
2.17.2	25mm nominal bore.	Each	2196.00
2.18	P & F Oxidised Gas Taps, Bench-type of superior quality and approved make:		
2.18.1	One way	Each	201.00
2.18.2	Two way	Each	270.00
2.18.3	Three way	Each	325.00
2.18.4	Four way	Each	411.00
2.19	P & F Chromium plated <i>Swan-neck Laboratory Cock</i> of approved quality / make:		
2.19.1	One way	Each	397.00
2.19.2	Two way	Each	543.00
2.19.3	Three way	Each	664.00
2.19.4	Four way	Each	725.00
2.20	P & F <i>Spouts</i> of superior quality and approved make:		
2.20.1	C.P. brass spout	Each	688.00
2.20.2	(-do-) Extra heavy with flange.	Each	847.00
2.21	P & F <i>Mixing Range</i> (15mm)		
2.21.1	C.P. One hole/close hole basin mixer with casted spout.	Each	1883.00
2.21.2	(-do-) with swinging spout casted.	Each	2183.00
2.21.3	C.P. sink mixer with swinging spout J-pipe.	Each	1943.00

Item No	Description	Unit	Rate (Rs.)
2.21.4	(-do-) With casted spout.	Each	1943.00
2.21.5	C.P. valve mixer non-telephonic type.	Each	1930.00
2.21.6	C.P. wall mixer telephonic type crutch & telephonic shower.	Each	3459.00
2.21.7	(-do-) without crutch & telephonic shower.	Each	2736.00
2.21.8	C.P. Bath-tub mixer without telephonic shower but with crutch.	Each	3207.00
2.21.9	C.P. Surgical basin mixer elbow action.	Each	2694.00
2.21.10	(-do-) with shower (wall type)	Each	3760.00
2.22	P & F <i>Diveritors</i> of superior quality and approved make:		
2.22.1	C.P. brass Tip-tone divertor bath spout with mixing valve.	Each	2079.00
2.22.2	(-do-) Concealed Five-way divertors.	Each	2138.00
2.22.3	(-do-) Four way (-do-)	Each	2198.00
2.22.4	(-do-) Three way (-do-)	Each	2048.00
2.22.5	(-do-) Two way with 22Cm. Pipe flange	Each	1124.00
2.23	P & F foot valve of superior quality and approved make with fittings :		
2.23.1	Brass 25 mm.	Each	156.00
2.23.2	CI 50 mm	Each	388.00
2.23.3	CI 65 mm	Each	482.00
2.23.4	CI 80 mm	Each	757.00
2.23.5	CI 100 mm	Each	1362.00
2.24	P & F <i>Precast R.C.C. Water Storage Tank</i> with R.C.C. cover 25mm thick and 15 Cm. Long G.I. over-flow pipe including making connections etc. & hoisting upto 1M. ht. From ground level having:		
2.24.1	340 litres water capacity size 90 x 75 x 60 Cm.	Each	893.00
2.24.2	270 litres water capacity size 90 x 60 x 60 Cm.	Each	726.00
2.25	Hoisting Charges of precast R.C.C. water storage tank on each floor :		
2.25.1	340 litres water capacity.	Each	208.00
2.25.2	270 litres water capacity.	Each	155.00
2.26	P & F <i>PVC Storage Tank</i> ISI Marked (IS : 12701) indicating the BIS license No), of approved make with cover, 25mm dia 1M long G.I. over-flow pipe & 25 Cm. long wash out pipe with plug & socket, including making connection etc., complete of approved design:		
2.26.1	200 litres capacity.	Each	1310.00
2.26.2	300 (-do-)	Each	1965.00
2.26.3	500 (-do-)	Each	3275.00
2.26.4	750 (-do-)	Each	4913.00

Item No	Description	Unit	Rate (Rs.)
2.26.5	1000 (-do-)	Each	6551.00
2.26.6	2000 (-do-)	Each	13101.00
2.26.7	3000(-do-)	Each	19652.00
2.26.8	5000(-do-)	Each	32754.00
2.27	Hoisting Charges for each floor :		
2.27.1	For items 2.26.1 to 2.26.4	Each	90.00
2.27.2	For items 2.26.5 to 2.26.8	Each	120.00
2.28	Providing and fixing Bitumen Paint Coating over G.I. Pipes Complete as per Specifications. –		
2.28.1	15 mm dia	Rmt.	1.50
2.28.2	20 mm dia	Rmt.	2.00
2.28.3	25 mm dia	Rmt.	2.50
2.28.4	40 mm dia	Rmt.	4.00
2.29	Providing and fixing Polyethylene - Aluminium - Polyethylene (PE-AL-PE) Composite Pressure Pipes as per 15450 : 2004 U.V. stabilised with carbon black having thermal stability for hot and cold water supply, capable to withstand temperature upto 80 oC including all special fittings of composite material (engineering plastic blend and brass inserts whenever required) e.g. elbows, tees, reducers, couplers connectors etc.with clamps at 1.00 metre spacing.This include the cost of cutting chases and including testing of joints complete as per direction of Engineer In charge Internal work - Exposed on Wall		
2.29.1	1216 (16mm OD) pipe	Metre	198.00
2.29.2	1620 (20mm OD) pipe	Metre	219.00
2.29.3	2025 (25mm OD) pipe	Metre	272.00
2.29.4	2532 (32mm OD) pipe	Metre	376.00
2.29.5	3240 (40mm OD) pipe	Metre	470.00

Item No	Description	Unit	Rate (Rs.)
2.30	Providing and fixing Polyethylene - Aluminium - Polyethylene (PE-AL-PE) Composite Pressure Pipes as per 15450 : 2004 U.V. stabilised with carbon black having thermal stability for hot and cold water supply, capable to withstand temperature upto 80 oC including all special fittings of composite material (engineering plastic blend and brass inserts whenever required) e.g. elbows, tees, reducers, couplers connectors etc.with clamps at 1.00 metre spacing.This include the cost of cutting chases and including testing of joints complete as per direction of Engineer In charge Concealed installation including cutting chases and making good the walls etc. complete.		
2.30.1	1216 (16mm OD) pipe	Metre	223.00
2.30.2	1620 (20mm OD) pipe	Metre	241.00
2.30.3	2025 (25mm OD) pipe	Metre	296.00
2.30.4	2532 (32mm OD) pipe	Metre	383.00
2.30.5	3240 (40mm OD) pipe	Metre	462.00
2.31	Providing and fixing Polyethylene - Aluminium - Polyethylene (PE-AL-PE) Composite Pressure Pipes as per 15450 : 2004 U.V. stabilised with carbon black having thermal stability for hot and cold water supply, capable to withstand temperature upto 80 oC including all special fittings of composite material (engineering plastic blend and brass inserts whenever required) e.g. elbows, tees, reducers, couplers connectors etc.with trenching & refilling and testing of joints complete as per direction of Engineer In charge External work		
2.31.1	1216 (16mm OD) pipe	Metre	184.00
2.31.2	1620 (20mm OD) pipe	Metre	200.00
2.31.3	2025 (25mm OD) pipe	Metre	248.00
2.31.4	2532 (32mm OD) pipe	Metre	343.00
2.31.5	3240 (40mm OD) pipe	Metre	417.00
2.32	Supply & fixing G.I. Union ISI marked in G.I. pipe line as required complete in all respect of size :		
2.32.1	15mm dia nominal bore	Each	99.00
2.32.2	20mm dia nominal bore	Each	134.00
2.32.3	25mm dia nominal bore	Each	159.00
2.32.4	32mm dia nominal bore	Each	233.00
2.32.5	40mm dia nominal bore	Each	295.00
2.32.6	50mm dia nominal bore	Each	446.00
2.32.7	65mm dia nominal bore	Each	861.00
2.32.8	80mm dia nominal bore	Each	1003.00

Item No	Description	Unit	Rate (Rs.)
2.33	Providing and fixing Superior quality (Jaguar Contiental ) CP Brass fittings complete as per direction of EI		
2.33.1	Pillar Cock 15 mm nominal size	Each	787.00
2.33.2	Swan neck pillar cock 15 mm nominal size	Each	1498.00
2.33.3	Bib Cock with long thread 15 mm nominal size	Each	780.00
2.33.4	Long body Bib Cock 15 mm nominal size	Each	1028.00
2.33.5	Two way Bib Cock 15 mm nominal size	Each	1114.00
2.33.6	Angular stop cock with long thread 15 mm nominal size	Each	725.00
2.33.7	Stop cock long thread	Each	762.00
2.33.8	Stop cock with reduced body	Each	966.00
2.33.9	Concealed stop cock 15 mm nominal size	Each	1109.00
2.33.10	Sink cock with swinging casted spout (table mounted ) 15 mm nominal size	Each	1542.00
2.33.11	Single lever wash basin mixer with 450 mm long copper connection pipe	Each	4420.00
2.33.12	Central hole basin mixer	Each	2563.00
2.33.13	Wall mixer 3 in 1 system with provision of teteponic bath shower with bend pipe	Each	3553.00
2.33.14	600 mm long towel rail	Each	1709.00
2.33.15	Revolving type towel ring	Each	1047.00
2.33.16	Soap dish	Each	1015.00
2.33.17	Double coat hook	Each	805.00
2.33.18	190 mm rain shower	Each	5290.00
2.33.19	Shower arm	Each	1151.00
2.33.20	Paper holder	Each	1048.00
2.33.21	Hand shower with 8 mm dia 1 mt long PVC tube & wall hook complete	Each	1733.00
2.33.22	Health focet (Premium heavy Quality) as approved by Engineer-in-Charge	Each	950.00
2.33.23	Jet Spray (Premium heavy Quality) as approved by Engineer-in-Charge	Each	600.00
2.34	Providing and fixing 3-layer PP-R (Polypropylene random copolymer ) pipes SDR 7.4 UV stabilized and antimicrobial fusion welded, having thermal stability for hot & cold water supply including all PP-R plain & brass threaded Polypropylene random fittings and fixing the pipe with clamps at 1.00 spacing. This includes testing of joint complete as per direction of Engineer - in charge.( INTERNAL WORK- EXPOSED ON WALL)		
2.34.1	PN-16 Pipe, 16 mm OD	Rm	130.00
2.34.2	PN-16 Pipe, 20 mm OD	Rm	155.00
2.34.3	PN-16 Pipe, 25 mm OD	Rm	223.00
2.34.4	PN-16 Pipe, 32 mm OD	Rm	322.00
2.34.5	PN-16 Pipe, 40 mm OD	Rm	459.00

Item No	Description	Unit	Rate (Rs.)
2.34.6	PN-16 Pipe, 50 mm OD	Rm	676.00
2.35	Providing and fixing 3-layer PP-R (Polypropylene random copolymer ) pipes SDR 7.4 UV stabilized and antimicrobial fusion welded, having thermal stability for hot & cold water supply including all PP-R plain & brass threaded Polypropylene random fittings and fixing the pipe with clamps at 1.00 spacing. This includes cost of cutting chases and making good the same including testing of joint complete as per direction of Engineer - in charge.(CONCELED WORK INCLUDING CUTTING CHASES AND MAKING GOOD THE WALL ETC.)		
2.35.1	PN-16 Pipe, 16 mm OD	Rm	186.00
2.35.2	PN-16 Pipe, 20 mm OD	Rm	219.00
2.35.3	PN-16 Pipe, 25 mm OD	Rm	310.00
2.35.4	PN-16 Pipe, 32 mm OD	Rm	444.00
2.36	Providing and fixing 3-layer PP-R (Polypropylene random copolymer ) pipes SDR 7.4 UV stabilized and antimicrobial fusion welded, having thermal stability for hot & cold water supply including all PP-R plain & brass threaded Polypropylene random fittings including trenching, refilling and testing of joint complete as per direction of Engineer - in charge. (EXTERNAL WORKS)		
2.36.1	PN-16 Pipe, 16 mm OD	Rm	116.00
2.36.2	PN-16 Pipe, 20 mm OD	Rm	141.00
2.36.3	PN-16 Pipe, 25 mm OD	Rm	209.00
2.36.4	PN-16 Pipe, 32 mm OD	Rm	308.00
2.36.5	PN-16 Pipe, 40 mm OD	Rm	445.00
2.36.6	PN-16 Pipe, 50 mm OD	Rm	662.00
2.36.7	PN-16 Pipe, 63 mm OD	Rm	980.00
2.37	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. (Internal work Exposed on wall)		
2.37.1	15 mm nominal outer dia pipes	Rm	166.00
2.37.2	20mm nominal outer dia pipes	Rm	197.00
2.37.3	25 mm nominal outer dia pipes	Rm	253.00
2.37.4	32mm nominal outer dia pipes	Rm	336.00
2.37.5	40 mm nominal outer dia pipes	Rm	506.00
2.37.6	50 mm nominal outer dia pipes	Rm	687.00



Item No	Description	Unit	Rate (Rs.)
2.38	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. (Concealed work including cutting chases and making good the walls etc..)		
2.38.1	15 mm nominal outer dia pipes	Rm	230.00
2.38.2	20mm nominal outer dia pipes	Rm	265.00
2.38.3	25 mm nominal outer dia pipes	Rm	342.00
2.38.4	32mm nominal outer dia pipes	Rm	440.00
2.39	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings, this included jointing of pipes & fittings with one step CPVC solvent cement , trenching refilling & testing of joints complete as per direction of Engineer in Charge. (External work).		
2.39.1	15 mm nominal outer dia pipes	Rm	146.00
2.39.2	20mm nominal outer dia pipes	Rm	172.00
2.39.3	25 mm nominal outer dia pipes	Rm	229.00
2.39.4	32mm nominal outer dia pipes	Rm	302.00
2.39.5	40 mm nominal outer dia pipes	Rm	453.00
2.39.6	50 mm nominal outer dia pipes	Rm	633.00
2.40	Providing and fixing Premium quality Towel rack 600mm long 260mm wide with lower hangers CP Brass fittings of approved make as per direction of Engineer-in-charge	Each	3089.00
2.41	Labour Charges for Removing & Refixing the water Storage Tank of all sizes and including all Necessary fitting complete in all respect as per approved sample and direction of engineer in charge.	Each	369.00
2.42	Providing and fixing premium quality Angular stop cock 15mm with wall flange complete as per sample approved by Engineer in charge	Each	1572.00

Item No	Description	Unit	Rate (Rs.)
2.43	Providing and fixing premium quality Two way Bib cock 15mm with wall flange complete as per sample approved by Engineer in charge	Each	2335.00
2.44	Providing and fixing superior quality PVC Tank Cover complete as per approved by Engineer In Charge		
2.44.1	300 Lt. capacity	Each	186.00
2.44.2	500 Lt. capacity	Each	201.00
2.44.3	Above 500 Lt. capacity	Each	216.00
2.45	Providing & fixing C.I. Saddle pieces 100mm dia with nut & bolt & washer & Rubber Gasket complete as per direction of engineer in charge	Each	196.00
2.46	Supply and installation of Premium quality sluice valve 100mm dia including all fittings as per approved by Engineer in charge.	Each	5042.00
2.47	Providing Laying Jointing DI Pipe (Ductile iron pipe) of 100 mm dia ISI marked K-7 grade as per IS : 5329-2000 with internal cement mortar lining for potable water with rubber ring (EPDM/ SBR) Joints per IS : 5382-1985 complete including Hydraulic testing & commissioning as per Technical Specification.	Mtr	1088.00
2.48	P&F Sluice valve of approved code IS 14846 : 2000 make		
2.48.1	100 mm dia nominal bore	Each	10175.00
2.48.2	75 mm dia nominal bore	Each	9625.00
2.49	P&F Divertors in water supply lines for walls, wash basin etc	Each	10450.00
2.50	P & F of Water Spout Superior Quality of approve make.	Each	1870.00
2.51	P&F Sink Mixture of (Adjustable or Non Adjustable) Superior quality Swan Neck.	Each	5060.00

### CHAPTER : S-3

### DRAINAGE / DISPOSAL WORK

Note :-

- 1 For laying of S.W. pipes beyond 1.2m depth, earthwork & close timbering or open timbering (as per site conditions) is to be paid extra.
- 2 The rates for S.W. pipes are applicable to work executed in soils above sub-soil water level. Extra allowance is to be made for working under sub-soil water level.
- 3 Rock cutting wherever required will be paid extra.

Item no.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

#### STONEWARE PIPES & FITTING

3.1	Providing Laying & jointing glazed S.W. pipes grade 'A' (IS:651 marked) of approved make with spun yarn & stiff mixture of cement mortar 1:1, excavation & refilling of earth in all types of soil upto 1.2m depth, S.W. fittings, including testing of joints etc, complete.		
3.1.1	100mm dia	Mtr.	268.00
3.1.2	150mm dia	Mtr.	413.00
3.1.3	200mm dia	Mtr.	575.00
3.1.4	230mm dia	Mtr.	656.00
3.1.5	250mm dia	Mtr.	761.00
3.1.6	300mm dia	Mtr.	1056.00
3.1.7	400mm dia	Mtr.	1521.00

Note:-

- 1 If grade 'AA' S.W. pipes (IS:651 mark) are used then add 5%
- 2 Deduct 5% if jointing is done in CM 1:3.

3.2	Providing & Laying C.C. 1:5:10 (Stone aggregate 40mm nominal size) all around S.W. pipe including 15 Cm. thick bed concrete (Width W= Diameter of pipe in Cm+30 Cm.)( Excluding cost of pipe)		
3.2.1	100mm dia S.W. pipe	Mtr.	437.00
3.2.2	150mm dia S.W. pipe	Mtr.	535.00
3.2.3	200mm dia S.W. pipe	Mtr.	624.00
3.2.4	230mm dia S.W. pipe	Mtr.	683.00
3.2.5	250mm dia S.W. pipe	Mtr.	721.00
3.2.6	300mm dia S.W. pipe	Mtr.	828.00
3.2.7	350mm dia S.W. pipe	Mtr.	937.00
3.2.8	400mm dia S.W. pipe	Mtr.	1046.00

Item no.	Description	Unit	Rate (Rs.)
3.3	Providing & Laying C.C. 1:5:10 (Stone aggregate 40mm nominal size) upto haunches of S.W. pipes including 150 mm thick bed concrete (Width W= Dia of pipe in Cm+ 30Cm.) concrete width to be reduced from width W at center of pipe to `0` at top of pipe. (Excluding cost of pipe)		
3.3.1	100mm dia S.W. pipe	Mtr.	208.00
3.3.2	150mm dia S.W. pipe	Mtr.	337.00
3.3.3	200mm dia S.W. pipe	Mtr.	396.00
3.3.4	230mm dia S.W. pipe	Mtr.	435.00
3.3.5	250mm dia S.W. pipe	Mtr.	461.00
3.3.6	300mm dia S.W. pipe	Mtr.	532.00
3.3.7	350mm dia S.W. pipe	Mtr.	606.00
3.3.8	400mm dia S.W. pipe	Mtr.	683.00
3.4	Providing & fixing S.W. square mouth Gully trap `A` grade (ISI marked) of approved make & design in existing man-hole.		
3.4.1	Size 100 X 100mm	Each	182.00
3.4.2	Size 150 X 100mm	Each	190.00
3.4.3	Size 225 X 150mm	Each	254.00
3.5	P & F Square-mouth gully trap `A` grade (ISI marked) of approved make complete with C.I. grating, frame & Cover masonry chamber in C.M. 1:6, 100mm thick C.C. 1:5:10 base concrete, 40mm thick C.C.M-15 grade coping, 12mm thick cement plaster in CM 1:3 complete as per approved design & type.		
3.5.1	Trap size 150 X 100mm, ferrow cement cover with frame, Internal Chamber size 300 X 300mm.	Each	1062.00
3.5.2	Trap size 225 X 150 mm, ferrow cement cover with frame Internal Chamber size 450 X 450mm.	Each	1653.00
3.6	P & F S.W. Master Trap (Inter-cepting) `A` grade (I.S.: 651 marked) of approved quality/make		
3.6.1	100mm dia	Each	310.00
3.6.2	150mm dia	Each	424.00
3.7	Labour charges for Removing S.W. pipes including breaking of joints & bed concrete, stacking of useful material at site within 50 mtr. Lead and disposal of unserviceable material within 0.5 Km. lead:		
3.7.1	100 & 150mm dia pipe	Mtr.	20.00
3.7.2	200, 230 & 250mm dia pipe	Mtr.	24.00
3.7.3	300mm dia pipe	Mtr.	25.00

Item no.	Description	Unit	Rate (Rs.)
3.7.4	350mm dia pipe	Mtr.	26.00
3.7.5	400mm dia pipe	Mtr.	29.00
<b>R.C.C. NON PRESSURE PIPES</b>			
3.8	Providing, Laying & Jointing R.C.C. class NP-2 Non-Pressure pipes (IS : 458mark) of approved make with collars, jointed with C.M. 1:2 or having Spigot and socket ends with flexible rubber rings joint including testing of joints etc. complete :		
3.8.1	100mm dia Internal	Mtr.	500.00
3.8.2	150mm dia Internal	Mtr.	556.00
3.8.3	200mm dia Internal	Mtr.	669.00
3.8.4	250mm dia Internal	Mtr.	766.00
3.8.5	300mm dia Internal	Mtr.	992.00
3.8.6	450mm dia Internal	Mtr.	1484.00
3.8.7	500mm dia Internal	Mtr.	1656.00
3.8.8	600mm dia Internal	Mtr.	2195.00
3.8.9	700 mm dia Internal	Mtr.	2683.00
3.8.10	800 mm dia Internal	Mtr.	3480.00
3.8.11	900 mm dia Internal	Mtr.	4353.00
Note : Deduct 20 % for Non ISI marked pipes of all size			
<b>SAND-CAST IRON SOIL, WATER &amp; RAIN WATER PIPES.</b>			
3.9	P & F Sand-cast Iron (S.C.I.) Pipe (IS : 1729mark) of approved make in wall or in floor with M.S. holder bat clamps in 10 X 10 X 10 Cm. M-15 grade concrete blocks, joints filled with CM 1:4 with spun yarn including cutting holes and making good the wall:		
3.9.1	50mm dia	Mtr.	596.00
3.9.2	75mm dia	Mtr.	866.00
3.9.3	100mm dia	Mtr.	1136.00
3.9.4	150mm dia	Mtr.	1870.00
3.10	Add extra for Lead caulked joints (IS:782-1978) in sand cast iron pipes/spun-		
3.10.1	75mm dia, 0.88 Kg. Pig lead	Each	276.00
3.10.2	100mm dia, 0.98 Kg. Pig lead	Each	341.00
3.10.3	150mm dia, 1.48 Kg. Pig lead	Each	499.00
3.11	P & F S.C.I. Fittings (IS : 1729 mark) in CM 1:4 with spun yarn.		
3.11.1	50mm w/o door		
	Socket	Each	271.00
	Cowel	Each	344.00
	Tee	Each	499.00
	Bend	Each	405.00

Item no.	Description	Unit	Rate (Rs.)
3.11.2	75 mm w/o door		
	Offset	Each	455.00
	Socket	Each	320.00
	D/door Y-Tee	Each	751.00
	Cowel	Each	404.00
	Tee	Each	568.00
	Bend	Each	467.00
	Door Cross	Each	551.00
3.11.3	100mm-do-		
	Offset	Each	751.00
	Socket	Each	383.00
	D/door Y-Tee	Each	1046.00
	Cowel	Each	477.00
	Tee	Each	778.00
	Bend	Each	563.00
	Door Cross	Each	600.00
3.11.4	150mm w/o door		
	Socket	Each	857.00
	Cowel	Each	963.00
	Bend	Each	1200.00
3.11.5	50mm with door		
	Tee	Each	581.00
	Bend	Each	465.00
3.11.6	75mm-do-		
	Tee	Each	604.00
	Bend	Each	514.00
3.11.7	100mm-do-		
	Tee	Each	807.00
	Bend	Each	650.00
3.11.8	150mm-do-		
	Tee	Each	1682.00
	Bend	Each	1396.00
3.12	P & F Sand –cast Floor Trap (Nahni) of (IS:1729 mark) of approved quality/make with socket down or hinged grating including cutting and making good the floor.		
3.12.1	Size 100 x 100mm	Each	562.00
3.12.2	Size 100 x 75mm	Each	474.00
3.12.3	Size 100 x 50mm	Each	437.00
3.13	P & F Sand-cast Iron 'P' or 'S' Trap (IS:1729 make) of approved make.	Each	777.00

Item no.	Description	Unit	Rate (Rs.)
3.14	Labour charges for making connection of sewer line through main hole.	Each	521.00
3.15	Making connection with existing G.I. pipe lines of all sizes.	Each	222.00
3.16	Labour charges for removing C.I./A.C. pipes of all sizes including accessories with care and stacking of useful material.	Mtr.	23.00
<b>RIGID PVC SOIL</b>			
3.17	P&F rigid PVC Pipe (IS:4985 mark) class II/ (4 Kg. /Cm <sup>2</sup> .) approved quality /make including joining the pipe with solvent cement rubber ring and lubricant.		
3.17.1	63 mm dia	Mtr	127.00
3.17.2	75 mm dia	Mtr	192.00
3.17.3	110 mm dia	Mtr	242.00
3.17.4	160 mm dia	Mtr	387.00
3.18	P&F rigid PVC pipe fittings (IS: 4985 mark) of approved quality /make including joining the pipe with solvent cement rubber ring and lubricant:		
3.18.1	Coupler (socket)		
	75mm dia	Each	75.00
	110mm dia	Each	93.00
	160 mm dia	Each	102.00
3.18.2	Reducer 110 X 75 mm		
	75mm dia	Each	77.00
	110mm dia	Each	83.00
	160 mm dia	Each	98.00
3.18.3	Plain Tee		
	75mm dia	Each	98.00
	110mm dia	Each	161.00
	160 mm dia	Each	176.00
3.18.4	Door Tee		
	75mm dia	Each	152.00
	110mm dia	Each	183.00
	160 mm dia	Each	197.00
3.18.5	Door 'Y'		
	75mm dia	Each	161.00
	110mm dia	Each	198.00
	160 mm dia	Each	212.00

Item no.	Description	Unit	Rate (Rs.)
3.18.6	Double 'Y'		
	75mm dia	Each	168.00
	110mm dia	Each	267.00
	160 mm dia	Each	284.00
3.18.7	Double Door 'Y'		
	75mm dia	Each	197.00
	110mm dia	Each	336.00
	160 mm dia	Each	351.00
3.18.8	Bend 45		
	75mm dia	Each	69.00
	110mm dia	Each	110.00
	160 mm dia	Each	123.00
3.18.9	Bend 87 .5		
	75mm dia	Each	83.00
	110mm dia	Each	138.00
	160 mm dia	Each	152.00
3.18.10	Door Bend (Top Side)		
	75mm dia	Each	114.00
	110mm dia	Each	132.00
	160 mm dia	Each	148.00
3.18.11	Door Bend (Left & Right)		
	75mm dia	Each	136.00
	110mm dia	Each	168.00
	160 mm dia	Each	181.00
3.18.12	Vent Cowel		
	75mm dia	Each	37.00
	110mm dia	Each	48.00
	160 mm dia	Each	65.00
3.18.13	Socket plug		
	75mm dia	Each	58.00
	110mm dia	Each	70.00
	160 mm dia	Each	87.00
3.18.14	Door Cap		
	75mm dia	Each	38.00
	110mm dia	Each	53.00
	160 mm dia	Each	68.00
3.18.15	Pipe Clip		
	75mm dia	Each	21.00
	110mm dia	Each	31.00
	160 mm dia	Each	46.00



**S - 31**

Item no.	Description	Unit	Rate (Rs.)
3.18.16	W.C. connector with lipring 110mm dia	Each	183.00
3.18.17	W.C. connector bent type 110mm dia	Each	192.00
3.18.18	Plain floor trap 110mm dia	Each	198.00
3.18.19	Multi floor trap 110mm dia	Each	172.00
3.18.20	height Raiser 110mm dia	Each	138.00
3.18.21	Top Tile& straine 110mm dia	Each	52.00
3.18.22	Top Tile only 110mm dia	Each	40.00
3.18.23	P- Trap 110mm dia	Each	247.00
3.18.24	Q- Trap 110mm dia	Each	277.00
3.18.25	S- trap 110mm dia	Each	346.00
3.18.26	Ring fitting 110mm dia	Each	69.00
3.18.27	Gully trap 110mm dia	Each	363.00
3.19	Raising manhole cover and frames slab to required level including dismantling existing slab and making good the damage as required (raising depth of manhole masonry to be paid separately).		
3.19.1	Rectangular manhole 90x60 cm	Each	906.00
3.19.2	Rectangular manhole 150x120 cm	Each	1386.00

Item no.	Description	Unit	Rate (Rs.)
3.20	Construction of manhole in all type of soil inner size 90 X 60 Cm. 300 mm thick masonry in CM 1:6, 10 Cm. thick cement concrete 1:5 10 in foundation, 20 mm thick inside plaster in CM 1:6, finished with floating neat cement, 50mm thick M-15 grade C.C. flooring, making channels, 80mm thick stone slab covering with 40mm thick M-15 grade C.C. flooring, Cement cover with frame of 450mm dia, earthwork etc. complete as per design including disposal of surplus earth within 50 mtr. lead.		
3.20.1	Depth up to 0.5 M	Each	5175.00
3.20.2	Add extra over item 3.20.1 for every additional 0.10m depth above 0.5 m depth. Deduct in Item No 3.19.1 for manhole with brick work 230 mm thick in place of 300 mm thick stone masonry	Each Each	201.00 1010.00
3.21	Construction of Man hole, in all types of soil, inner size 1.5 x 1.2 M, with 450mm thick masonry in CM 1:6, 10 Cm. thick cement concrete 1:5:10 in foundation, 20mm thick inside plaster in CM 1:6, finished with floating neat cement, 50 mm thick M-15 grade C.C. flooring making channels, 80 mm thick stone slab covering with 40 mm thick M-15 grade C.C. flooring, Ferro Cement cover with frame of 450mm dia, earthwork etc. complete including disposal of surplus earth within 50 mtr. lead as per design :		
3.21.1	Depth up to 1.5 M	Each	19234.00
3.21.2	Add extra over item 3.21.1 for every additional 0.10m depth above 1.5 m depth .	Each	684.00
3.22	Construction of chamber in all type of soil with 300 mm thick masonry in CM 1:6 m 10 cm thick C.C. 1:5:10 in foundation, 20mm thick insider plaster in Cm 1:6, finished with floating neat cement, 50mm thick M-15 grade C.C. flooring , earthwork etc. complete as per design including disposal of surplus earth within a lead of 50 mtr.		
3.22.1	Inside size 300 X 300 mm depth upto 0.5 M Cement cover with frame.	Each	991.00
3.22.1.1	Deduct for using brick work 230 mm thick in place of 300 mm thick stone masonry		430.00
3.22.2	Inside size size 450 x 450mm depth upto 0.5 M Cement cover with frame	Each	2202.00

Item no.	Description	Unit	Rate (Rs.)
3.22.2.1	Deduct for using brick work 230 mm thick in place of 300 mm thick stone masonry		480.00
3.22.3	Inside size 600 x 450mm depth upto 0.5 M Cement cover with frame.	Each	3116.00
3.22.3.1	Deduct for using brick work 230 mm thick in place of 300 mm thick stone masonry		500.00
3.22.4	Inside size 600 x 450mm depth upto 0.5 M to 1.0 M –do-	Each	3426.00
3.22.4.1	Deduct for using brick work 230 mm thick in place of 300 mm thick stone masonry		766.00
3.23	Construction of soakage well in all type of soil with 300 mm thick dry masonry, top and bottom 300 mm course in CM 1:6, 80mm thick stone slab, jointing of slab in CM 1 : 3, Ralthal, Kharanja, 40 mm thick M-15 grade C.C flooring , earthwork complete as per approved drawing including disposal of earth within a lead of 50 mtr.:		
3.23.1	Size 300 Cm. dia outside & 300 Cm. depth .	Each	23377.00
3.23.2	-do- & 240 Cm. Depth.	Each	21404.00
3.23.3	Size 240 Cm. dia outside & 240 Cm. depth.	Each	15566.00
3.24	Construction of soakage Trench in all types of soil with 300 mm thick dry stone masonry, 80 mm thick stone slab covering, jointing of slab in CM 1:3 Ralthal, Kharanja, 40 mm thick M-15grade C.C. flooring earthwork etc. complete as per approved drawing including disposal of earth within a lead of 50 Mtr.:		
3.24.1	Top width 180Cm., bottom width 90Cm. & depth 240Cm.	Mtr.	5946.00
3.24.2	-do- 240 Cm., -do- 150Cm. & depth 300 Cm	Mtr.	10053.00
3.25	Construction of Soakage well in all types of soil of approved drawing, top 90 Cm .Portion in 450mm thick masonry with CM 1:6, 80 mm thick stone slab covering, jointing of slab in CM 1:3 ,Ralthal, kharanja 40mm thick M-15 grade C.C flooring, earth work etc . complete including disposal of surplus earth within a lead of 50 mtr .		
3.25.1	Inner dia 90 Cm & 10 to 12 Mtr deep.	Each	4662.00
3.25.2	Inner dia 60 Cm & 10 to 12 Mtr deep.	Each	4392.00
3.26	Labour charges for construction of Soakage well of 90 Cm. dia (Earth –work & its disposal ,with in a lead of 0.5 Km .only ).	Mtr	122.00
3.27	Add extra if Soakage Well is filled with dry stones.	Cum	383.00

Item no.	Description	Unit	Rate (Rs.)
3.28	Construction of septic Tank in all types of soil with 40 Cm .thick masonry in CM 1:6, 15 Cm thick C.C bed of 1:5:10, M-15 grade C.C flooring & over stone slab covering ,80 mm thick slab ,jointing of slab in CM 1:3. Ralthal, Kharanja, 50 mm thick stone partition walls, 20 mm thick plaster in CM 1:6 finished with neat floating cement, 4 Nos C.I foot rests of approved design ,two No. 450 mm dia each Ferro cement cover with frame, earth work etc. complete as per approved drawing including disposal of surplus earth within a lead of 50 mtr:-		
3.28.1	Size 200x100x130 cm.(for 10 users)	Each	25455.00
3.28.2	Size 230 x110 x150 cm.(for 20 users)	Each	35868.00
3.28.3	Size 400 x140x150 cm.(for 50 users)	Each	55769.00
Note :-	Add or subtract proportionately for every 0.5 M increase or decrease in Length -12.5% Breadth & Depth -18 % each		
3.29	Emptying of Septic tank ,Soakage well etc. by disposing or sludge upto 5 Km. lead & taking out sewage including cleaning of site.	Cum	267.00
3.30	Add extra if R.C.C slab of designed thickness & reinforcement is provided on manhole in place of stone slab( Actual area of R.C.C slab to be measured).	Sqm	202.00
3.31	P & F M.S. Foot Rests in with C.M.,1:3, standard design in 20mm square M.S. bar 50 mm embedded in wall & 10 cms. projected out complete.	Each	194.00
3.32	Supplying and fixing C.I. Cover with frame, C.I. gratings for chambers & man holes.	Kg.	62.00
3.33	Supplying and fixing Ferro- cement cover with C.I. frame for chambers & man holes of size.		
3.33.1	450mm dia, 5Kg. C.I. frame to with stand 3 MT center point load & minimum unfractured load of 1 MT. (Light duty).	Each	1288.00
3.33.2	500mm dia 12 Kg.-do-15 MT centre point load (medium duty).	Each	2160.00
3.33.3	500mm dia 22 Kg.-do-22 MT centre point load (Heavy duty).	Each	3600.00
3.33.4	500mm dia 25 Kg.-do-70 MT centre point load seal type (Heavy duty.)	Each	3984.00

Item no.	Description	Unit	Rate (Rs.)
3.33.5	Rectangular shape 600 x 450 mm, to withstand 3 MT center point load & minimum unfractured load of 1 MT. (Light duty).	Each	1291.00
3.34	Supplying & Fixing R.C.C. Manholes covers with frame of approved make (Light duty).		
3.34.1	Size 500mm dia (Double seal)	Each	313.00
3.34.2	Size 450mm dia	Each	278.00
3.34.3	Size 400mm dia	Each	209.00
3.34.4	Size 600 X 600mm (Double seal)	Each	478.00
3.34.5	Size 600 X 450mm	Each	400.00
3.34.6	Size 450 X 450mm	Each	304.00
3.34.7	Size 300 X 300mm	Each	96.00
3.34.8	Size 250 X 250mm	Each	78.00
3.34.9	Size 180 X 180mm	Each	70.00
3.35	Construction of Open Surface Drain with 112mm thick brick masonry in CM 1:4, 110mm thick base concrete 1:5:10, 37mm thick M-15 grade C.C. flooring, 12mm 1:4 cement plaster on all exposed faces of walls including top surface excavation & disposal of earth complete as per approved design/drawing:		
3.35.1	112mm drain, 225mm Av. depth	Mtr.	256.00
3.35.2	150mm drain, 225mm Av. depth	Mtr.	268.00
3.35.3	250mm drain, 300mm Av. depth	Mtr.	359.00
3.36	Construction of open Drain with 112mm thick brick masonry in CM 1:4 Semi circular S.W. glazed channel (confirming to IS Standards) fixed with cement mortar 1:1 over a bed of 100mm thick C.C. 1:5:10, filling of edged with M-15 grade C.C. flooring, 12mm cement plaster 1:4, over all exposed faces, excavation & disposal of earth with in a lead of 50 mtr complete as per approved drawings :		
3.36.1	112 mm drain, 225mm Av. depth width 10 Cm S.W. glazed channel.	Mtr	411.00
3.36.2	150 mm drain, 225mm Av. depth width 15 Cm S.W. glazed channel.	Mtr.	474.00
3.36.3	250 mm drain, 225mm Av. depth width 250 Cm S.W. glazed channel.	Mtr.	827.00
3.37	Extra For additional 5 Cm. Average depth of drain of all sizes.	Mtr.	33.00

Item no.	Description	Unit	Rate (Rs.)
3.38	P & F precast dense cement concrete (Vibro-pressed) drain section Block of different size as per approved drawing and design and strength as per IS code 2185 part I of grade 'D' (5.00mm <sup>2</sup> ) proper quality of additive/admixture like plasticizer etc. added to produce high quality and durable drain section Blocks of 'L' shape 'U' shape etc. as per approved design and drawing complete with fixing and joining in C.M.1:4 in proper grade and level complete in all respect including earth work and disposal of surplus earth within 0.5 Km. lead. (cost of Steel/ welded mesh etc. shall be paid extra).		
3.38.1	40mm thick	Sqm.	400.00
3.38.2	Upto 60mm thick	Sqm.	496.00
3.38.3	Upto 80mm thick	Sqm.	607.00
3.39	Construction of Cement Concrete Chamber 125mm dia.		
3.39.1	C.P. Brass grating	Each	159.00
3.39.2	C.P. Brass doom grating	Each	169.00
3.39.3	C.I. Grating	Each	145.00
3.39.4	Stainless Steel Sheet Grating	Each	163.00
3.40	Construction of Cement Concrete Chamber 125mm dia on depressed floor upto 45cm height from floor with :		
3.40.1	C.P. Brass grating	Each	228.00
3.40.2	C.P. doom grating	Each	254.00
3.40.3	C.I. Grating	Each	212.00
3.40.4	Stainless Steel Sheet Grating	Each	228.00
<b>SPUN-CENTRIFUGALLY CAST IRON SOIL WATER PIPES:-</b>			
3.41	Providing & fixing Spun –Centrifugally cast Iron Pipes (IS : 3989 Mark ) of Approved make in wall or in floor with M.S. Holder bat clamps in 10 X 10 X10 Cm. M-15 Grade concrete blocks, joints filled with CM 1:4 with spun yarn including cutting holes and making good the wall:-		
3.41.1	75 mm dia	Mtr	1016.00
3.41.2	100 mm dia	Mtr	1204.00
3.41.3	150 mm dia	Mtr	2058.00
3.42	Providing & fixing Spun –Centrifugally cast Iron Pipes fitting (IS : 3989 Mark ) in CM 1:4 with spun Yarn.		

Item no.	Description	Unit	Rate (Rs.)
3.42.1	75mm w/o door		
	Offset	Each	558.00
	Socket	Each	330.00
	D/Door Y-Tee	Each	703.00
	Bend	Each	403.00
	Door Cross	Each	1067.00
	Cowel	Each	374.00
	Tee	Each	605.00
3.42.2	100 mm –do-		
	Offset	Each	717.00
	Socket	Each	446.00
	D/Door Y-Tee	Each	976.00
	Bend	Each	562.00
	Door Cross	Each	1163.00
	Cowel	Each	497.00
	Tee	Each	774.00
3.42.3	150 mm –do-		
	Socket	Each	1011.00
	D/Door Y-Tee	Each	2461.00
	Bend	Each	1284.00
	Door Cross	Each	2102.00
	Cowel	Each	1047.00
	Tee	Each	1914.00
3.42.4	75mm with door		
	Bend	Each	543.00
	Door Cross	Each	679.00
	Tee	Each	688.00
3.42.5	100mm with door		
	Bend	Each	711.00
	Door Cross	Each	1187.00
	Tee	Each	953.00
3.42.6	150mm with door		
	Bend	Each	1460.00
	Door Cross	Each	2608.00
	Tee	Each	1974.00
3.43	Providing and Fixing Spun –Cast Iron floor trap (Nahani) of (IS :3989 Mark ) approved quality / make with socket down or hinged grating including cutting and making good the floor :-		
3.43.1	Size 100 x 100 mm	Each	956.00
3.43.2	Size 100 x 75 mm	Each	734.00

Item no.	Description	Unit	Rate (Rs.)
3.44	Add 10% extra Over Item No. 3.41 if the pipes are laid under suspended condition under the roof.		
	<b>UPVC SOIL WASTE &amp; RAIN WATER (SWR ) PIPES</b>		
3.45	Providing and Fixing Unplasticized Poly Vinyl Chloride (UPVC) SWR Pipes Type B for sciland waste discharge system (IS:13592 : 1992 Marked) of approved quality /make		
3.45.1	75 mm dia	Mtr.	167.00
3.45.2	110 mm dia	Mtr.	342.00
3.45.3	160mm dia	Mtr.	487.00
3.46	Providing and Fixing Unplasticized Poly Vinyl Chloride (UPVC) SWR Pipes fittings type B for sciland waste discharge system (IS:13592 : 1992 Marked) of approved quality /make		
3.46.1	Coupler		
	75mm dia	Each	70.00
	110mm dia	Each	105.00
	160mm dia	Each	148.00
3.46.2	Repair Coupler		
	75mm dia	Each	74.00
	110mm dia	Each	121.00
	160mm dia	Each	170.00
3.46.3	Single Push Fit Coupler		
	75mm dia	Each	71.00
	110mm dia	Each	124.00
	160mm dia	Each	175.00
3.46.4	Bend 87.5 Dg.		
	75mm dia	Each	91.00
	110mm dia	Each	152.00
	160mm dia	Each	214.00
3.46.5	Bend 45 Dg.		
	75mm dia	Each	78.00
	110mm dia	Each	130.00
	160mm dia	Each	183.00
3.46.6	Door Bend 87.5 Dg.		
	75mm dia	Each	121.00
	110mm dia	Each	189.00
	160mm dia	Each	266.00
3.46.7	Single 'Y'		
	75mm dia	Each	141.00
	110mm dia	Each	271.00
	160mm dia	Each	400.00
3.46.8	Single 'Y' with Door		
	75mm dia	Each	183.00
	110mm dia	Each	339.00



Item no.	Description	Unit	Rate (Rs.)
	160mm dia	Each	480.00
3.46.9	Double 'Y'		
	75mm dia	Each	192.00
	110mm dia	Each	346.00
	160mm dia	Each	488.00
3.46.10	Double 'Y' with Door		
	75mm dia	Each	291.00
	110mm dia	Each	446.00
	160mm dia	Each	633.00
3.46.11	Socket Plug		
	75mm dia	Each	60.00
	110mm dia	Each	74.00
	160mm dia	Each	105.00
3.46.12	Pipe Clip		
	75mm dia	Each	19.00
	110mm dia	Each	29.00
	160mm dia	Each	38.00
3.46.13	Double tee with Door		
	75mm dia	Each	327.00
	110mm dia	Each	560.00
	160mm dia	Each	786.00
3.46.14	W.C. Connector		
	110mm dia	Each	211.00
3.46.15	W.C. Connector (Bend) with ring		
	110mm dia	Each	222.00
3.46.16	Single Tee		
	75mm dia	Each	116.00
	110mm dia	Each	206.00
	160mm dia	Each	284.00
3.46.17	Single Tee with Door		
	75mm dia	Each	133.00
	110mm dia	Each	237.00
	160mm dia	Each	335.00
3.46.18	Double Tee (4 Ways)		
	75mm dia	Each	208.00
	110mm dia	Each	360.00
	160mm dia	Each	507.00
3.46.19	Multi floor trap		
	110mm dia	Each	236.00
3.46.20	Offset		
	110mm dia	Each	276.00
3.46.21	Extra Square Jali		
	110mm dia	Each	37.00
3.46.22	Extra Round Jali		
	110mm dia	Each	26.00
3.46.23	Extra for SWR Ring		
	75mm dia	Each	14.00

Item no.	Description	Unit	Rate (Rs.)
	110mm dia	Each	17.00
	160mm dia	Each	22.00
3.46.24	Gully Trap		
	110mm dia	Each	670.00
3.46.25	Nahni Trap with Jali 4"		
	110mm dia	Each	167.00
3.46.26	Nahni Trap without Jali 4"		
	110mm dia	Each	147.00
3.46.27	Nahni Trap with Jali 3"		
	75 mm dia	Each	149.00
3.46.28	Nahni Trap without Jali 3"		
	75 mm dia	Each	132.00
3.46.29	Vent Cowel		
	75 mm	Each	48.00
3.46.30	Vent Cowel		
	110mm dia	Each	57.00
3.47	Providing & fixing Spun –Centrifugally cast Iron Pipes fitting (IS : 3989 Mark ) in CM 1:4 with spun Yarn 100mm w/o door as per direction of Engineer-in-Charge.		
(a)	P Trap of standard size	Each	868.00
(b)	Long P Trap (900mm)	Each	2500.00
(c)	Long P Bend	Each	856.00
(d)	Long Floor Trap (600mm)	Each	1536.00
3.48	Removing & Re fixing of S.C.I. Pipe and Spun Pipe with C.I.clip as per direction of Engineer-in-Charge of following diameters :-		
(a)	100mm dia	Each	169.00
(b)	150mm dia	Each	135.00
3.49	Cleaning of sewer line of various sizes as per requirement at site of different sizes including 100mm,150mm & 225mm dia of Stoneware pipe as per direction of Engineer-in-Charge.	Rmt	109.00
3.50	Cleaning of C.I. Pipe Line of various size as per requirement at site of different sizes including 100mm,150mm & 225mm dia of C.I.Pipes as per direction of Engineer-in-Charge.	Rmt	68.00
3.51	Repairing of Cement Concrete Chambers of different size as per requirement at site and as per direction of Engineer-in-charge.	Each	57.00

Item no.	Description	Unit	Rate (Rs.)
3.52	Providing & fixing Hubless Spun –Centrifugally cast Iron Pipes (IS : 15905 Mark ) of Approved make in wall or in floor with M.S. Holder bat clamps in 10 X 10 X10 Cm. M-15 Grade concrete blocks, joints filled with CM 1:4 with spun yarn including cutting holes and making good the wall:-		
3.52.1	75 mm dia	Rmt	1047.00
3.52.2	100 mm dia	Rmt	1273.00
3.52.3	150 mm dia	Rmt	2078.00
3.53	Providing & fixing Hubless Spun –Centrifugally cast Iron Pipes fitting (IS : 15905 Mark ) in CM 1:4 with spun Yarn.		
3.53.1	75mm w/o door		
(i)	Offset (130mm)	Each	521.00
(ii)	Shielded (SS) Coupling (With EPDM Rubber)	Each	427.00
(iii)	D/Door Y-Tee	Each	554.00
(iv)	Bend	Each	278.00
(v)	Cowel	Each	355.00
(vi)	Tee	Each	371.00
3.53.2	100mm W/o door		
(i)	Offset (130mm)	Each	724.00
(ii)	Shielded (SS) Coupling (With EPDM Rubber)	Each	466.00
(iii)	D/Door Y-Tee	Each	1021.00
(iv)	Bend	Each	396.00
(v)	Cowel	Each	458.00
(vi)	Tee	Each	652.00
3.53.3	150mm W/o door		
(i)	Shielded (SS) Coupling (With EPDM Rubber)	Each	652.00
(ii)	D/Door Y-Tee	Each	1899.00
(iii)	Bend	Each	837.00
(iv)	Cowel	Each	972.00
(v)	Tee	Each	1878.00
3.53.4	75mm with door, bend	Each	379.00
3.53.5	100mm with door		
(i)	Bend	Each	605.00
(ii)	Tee	Each	826.00
3.54	Mechanised Cleaning of sewer line of diameter upto 200mm with the help of trolley mounted electrical driven machine having flexible steel springs of length 20ft. Each which are rotated with the help of electric motor and clutch assembly.	mtr	143.00

Item no.	Description	Unit	Rate (Rs.)
3.55	Mechanised sewer line Cleaning upto diameter 100mm with the help of PU coated glass fibre rod mounted on a wheel with brush attachment.	mtr	99.00
3.56	Mechanised Cleaning and desilting of manhole/sewer line chambers With the help of mechanical bucket which gets open and close through levers.		
3.56.1	depth upto 0.5 mtr.	Each	91.00
3.56.2	Depth upto 1.0 mtr.	Each	169.00
3.56.3	Depth upto 2.0 mtr.	Each	315.00
3.56.4	Depth upto 3.0 mtr.	Each	456.00
3.56.5	Depth upto 5.0 mtr.	Each	725.00
3.57	Supplying and Fixing Ductile iron Man Hole Covers/storm water grating and gratingwith frame of various sizes weight and types and load bearing capacity as per EN -124 ,superior quality or equivalent, complete as per Direction of Engineer In charge.	Kg.	169.00
3.58	Providing and fixing circular air tight composite resin (FRP) manhole cover without frame of approved brand with grade designation C-250 HD as per EN-124 standard. Manhole Cover shall have top abrasion resistant layer conforming to IS-15658:2006 and permissible permanent set value of 1.9mm after the application of 2/3 test load in five continuous application as per EN-124, the testing shall be performed in fully equipped and NABL certified test lab with random batch test (2% of lot size) as per testing procedure stated in EN-124 standard including fixing in existing manhole frame etc. complete in all respect as directed by Engineer in Charge.		
(i)	Internal dia 0.56m	Each	10836.00

Item no.	Description	Unit	Rate (Rs.)
3.59	Providing and fixing circular air tight composite resin (FRP) manhole cover without frame of approved brand with grade designation D-400 EHD as per EN-124 standard. Manhole Cover shall have top abrasion resistant layer conforming to IS-15658:2006 and permissible permanent set value of 1.9mm after the application of 2/3 test load in five continuous application as per EN-124, the testing shall be performed in fully equipped and NABL certified test lab with random batch test (2% of lot size) as per testing procedure stated in EN-124 standard including fixing in existing manhole frame etc. complete in all respect as directed by Engineer in Charge.		
(i)	Internal dia 0.56m	Each	13544.00
3.6	Providing and fixing circular air tight composite resin (FRP) manhole cover with frame of approved brand with grade designation C-250 HD as per EN-124 standard. Manhole Cover & Frame shall have top abrasion resistant layer conforming to IS-15658:2006 and permissible permanent set value of 1.9mm after the application of 2/3 test load in five continuous application as per EN-124, the testing shall be performed in fully equipped and NABL certified test lab with random batch test (2% of lot size) as per testing procedure stated in EN-124 standard including fixing with M-20 concrete etc. complete in all respect as directed by Engineer in Charge.		
(i)	Internal dia 0.56m	Each	12406.00
(ii)	Internal dia 0.60m	Each	13982.00
3.61	Providing and fixing circular air tight composite resin (FRP) manhole cover with frame of approved brand with grade designation D-400 EHD as per EN-124 standard. Manhole Cover & Frame shall have top abrasion resistant layer conforming to IS-15658:2006 and permissible permanent set value of 1.9mm after the application of 2/3 test load in five continuous application as per EN-124, the testing shall be performed in fully equipped and NABL certified test lab with random batch test (2% of lot size) as per testing procedure stated in EN-124 standard including fixing with M-20 concrete etc. complete in all respect as directed by Engineer in Charge.		

Item no.	Description	Unit	Rate (Rs.)
(i)	Internal dia 0.56m	Each	15114.00
(ii)	Internal dia 0.60m	Each	19400.00
3.62	Providing and fixing rectangular air tight composite resin (FRP) Manhole Cover with frame of approved brand with grade designation C-250 HD as per EN-124 standard. Manhole Cover & Frame shall have top abrasion resistant layer conforming to IS-15658:2006 and permissible permanent set value of 1.9mm after the application of 2/3 test load in five continuous application as per EN-124, the testing shall be performed in fully equipped and NABL certified test lab with random batch test (2% of lot size) as per testing procedure stated in EN-124 standard including fixing with M-20 concrete etc. complete in all respect as directed by Engineer in Charge.		
(i)	Internal Size 0.45 m x 0.60 m	Each	11581.00
(ii)	Internal Size 0.45 m x 0.90 m	Each	14614.00
(iii)	Internal Size 0.60 m x 0.90 m	Each	21622.00
(iv)	Internal Size 0.90 mx 1.20 m	Each	58769.00
3.63	Providing and fixing rectangular air tight composite resin (FRP) Manhole Cover with frame of approved brand with grade designation D-400 EHD as per EN-124 standard. Manhole Cover & Frame shall have top abrasion resistant layer conforming to IS-15658:2006 and permissible permanent set value of 1.9mm after the application of 2/3 test load in five continuous application as per EN-124, the testing shall be performed in fully equipped and NABL certified test lab with random batch test (2% of lot size) as per testing procedure stated in EN-124 standard including fixing with M-20 concrete etc. complete in all respect as directed by Engineer in Charge.		
(i)	Internal Size 0.45 m x 0.60 m	Each	15144.00
(ii)	Internal Size 0.45 m x 0.90 m	Each	19034.00
(iii)	Internal Size 0.60 m x 0.90 m	Each	25186.00
(iv)	Internal Size 0.90 mx 1.20 m	Each	71601.00

Item no.	Description	Unit	Rate (Rs.)
3.64	Providing and fixing rectangular air tight composite resin (FRP) Grating with frame of approved brand with grade designation C-250 HD as per EN-124 standard. Grating with & Frame shall have top abrasion resistant layer conforming to IS-15658:2006 and permissible permanent set value of 1.9mm after the application of 2/3 test load in five continuous application as per EN-124, the testing shall be performed in fully equipped and NABL certified test lab with random batch test (2% of lot size) as per testing procedure stated in EN-124 standard including fixing with M-20 concrete etc. complete in all respect as directed by Engineer in Charge.		
(i)	Internal Size 0.45 m x 0.45 m	Each	10808.00
(ii)	Internal Size 0.50 m x 0.60 m	Each	13871.00
(iii)	Internal Size 0.60 m x 0.75 m	Each	21315.00
(iv)	Internal Size 0.90 m x 0.60 m	Each	22762.00
(v)	Internal Size 0.90 m x 0.90 m	Each	37486.00
(vi)	Internal Size 1.20 m x 0.60 m	Each	32996.00
3.65	Providing and fixing rectangular air tight composite resin (FRP) Grating with frame of approved brand with grade designation D-400 EHD as per EN-124 standard. Grating & Frame shall have top abrasion resistant layer conforming to IS-15658:2006 and permissible permanent set value of 1.9mm after the application of 2/3 test load in five continuous application as per EN-124, the testing shall be performed in fully equipped and NABL certified test lab with random batch test (2% of lot size) as per testing procedure stated in EN-124 standard including fixing with M-20 concrete etc. complete in all respect as directed by Engineer in Charge.		
(i)	Internal Size 0.45 m x 0.45 m	Each	14699.00
(ii)	Internal Size 0.50 m x 0.60 m	Each	19145.00
(iii)	Internal Size 0.60 m x 0.75 m	Each	28728.00
(iv)	Internal Size 0.90 m x 0.60 m	Each	32628.00
(v)	Internal Size 0.90 m x 0.90 m	Each	47253.00
(vi)	Internal Size 1.20 m x 0.60 m	Each	44117.00

**CHAPTER : S-4**  
**CONSTRUCTION AND COMMISSIONING OF TUBE WELLS,**  
**OPEN WELLS & HAND PUMPS**

**TUBE WELLS**

Item no.	Description	Unit	Rate (Rs.)
4.1	Construction of tube well from ground level & up to 100 mtr depth to accommodate housing and assembly pipe of following sizes in all type of alluvium strata unconsolidated formation such as pebbles, boulders etc. by <b>percussion/rotary</b> drilling method as per IS:2800 Part 1: 1991 and IS:2800 Part II: 1979 (both amended up to date) and technical specifications, with gravel as per IS:4097-1967 and it's packing as per IS: 2800 (Part I & II) 1979 as amended up to date (the work includes the cost of gravel & it's primary packing and packing during development, lowering of housing & strainer assembly pipes with supply and wrapping of coir-rope, wherever necessary for arresting fine sand particles and development work, but excluding the cost of housing and strainer pipe assembly). The work would be completed after obtaining sand free water.		
4.1.1	Nominal bore 150 mm dia.	Mtr	994.00
4.1.2	Nominal bore 200 mm dia.	Mtr	1523.00
4.1.3	Nominal bore 250 mm dia.	Mtr	1782.00
4.1.4	Add 15% extra on above item (Item no 2.1.1 to 2.1.3) for drilling depth beyond 100 mtr and up to 200 mtr, rate shall be applicable for only extra depth beyond 100 mtr and up to 200 mtr.		
4.1.5	Add 40% extra on above item (Item no 2.1.1 to 2.1.3) for drilling depth beyond 200 mtr, rate shall be applicable for only extra depth beyond 200 mtr .		
4.2	Construction of Tube Well from ground level and up to 100 mtr. depth to accommodate housing and assembly pipe in all type of alluvium strata, unconsolidated formation such as pebbles, boulders etc. by <b>percussion/ rotary</b> drilling method as per IS:2800 Part 1: 1991 and IS:2800 Part II: 1979 (both amended up to date) and technical specifications for removal of overburden. The work includes the cost of lowering of casing pipe, but excludes the cost of casing pipe.		
4.2.1	Nominal bore 200 mm dia.	Mtr	1227.00
4.2.2	Nominal bore 250 mm dia.	Mtr	1384.00
4.2.3	Add 15% extra on above item (Item No 2.2.1 to 2.2.2) for drilling depth beyond 100 mtr, rate shall be applicable for only extra depth beyond 100 mtr .		



Item no.	Description	Unit	Rate (Rs.)
4.3	Construction of tube well after completion of drilling by rotary /percussion method & up to 100 mtr. depth in all type of rocks by <b>DTH</b> system as per IS:2800 Part 1: 1991 and IS:2800 Part II: 1979 (both amended up to date) and technical specifications. The work shall be deemed completed only after obtaining sand free water. The bore well should have a throughout nominal size bore beyond casing pipe.		
4.3.1	Nominal bore 150 mm dia.	Mtr	874.00
4.3.2	Nominal bore 200 mm dia.	Mtr	1263.00
4.3.3	Nominal bore 250 mm dia.	Mtr	1532.00
4.3.4	Add 15% extra on above item (Item No 2.3.1 to 2.3.3) for drilling depth beyond 100 mtr and up to 200 mtr from ground level, rate shall be applicable for only extra depth beyond 100 mtr and up to 200 mtr.		
4.3.5	Add 30% extra on above item (Item No 2.3.1 to 2.3.3) for drilling depth beyond 200 mtr and from ground level, rate shall be applicable for only extra depth beyond 200 mtr .		
4.3.6	Add 15% extra on above item (Item No 2.3.1 to 2.3.3) for drilling, where strata is collapsible and lowering of casing pipe is required . The work includes lowering of casing pipe, but excluding the cost of casing pipe. The rate shall be applicable for stretch of collapsible strata only.		
4.4	Construction of Tube Well up to 100 mtr. depth in all type of rocks by <b>DTH</b> system & over burden to accommodate casing pipe of following sizes in all types of soils & over burden including lowering of casing pipes, (if required) excluding cost of casing pipes, as per IS:2800 Part 1: 1991 and IS:2800 Part II: 1979 (both amended up to date) and technical specifications. The work would be completed after obtaining sand free water. The tube well should have a through out bore as per nominal dia of casing pipe.		
4.4.1	Nominal bore 150 mm dia.	Mtr	726.00
4.4.2	Nominal bore 200 mm dia.	Mtr	1089.00
4.4.3	Add 15% extra on above item (Item No 2.4.1 to 2.4.2) for drilling depth beyond 100 mtr and up to 200 mtr from ground level, rate shall be applicable for only extra depth beyond 100 mtr and up to 200 mtr.		
4.4.4	Add 30% extra on above item (Item No 2.4.1 to 2.4.2) for drilling depth beyond 200 mtr and from ground level, rate shall be applicable for only extra depth beyond 200 mtr .		

Item no.	Description	Unit	Rate (Rs.)
4.4.5	Add 15% extra on above item (Item No 2.4.1 to 2.4.4) for drilling, where strata is collapsible and lowering of casing pipe is required . The work includes lowering of casing pipe, but excluding the cost of casing pipe. The rate shall be applicable for stretch of collapsible strata only.		
4.5	Construction of tube well from ground level and up to 100 mtr. depth and above of following sizes in all types of soils in alluvium strata, unconsolidated formation such as pebbles, boulders etc. by " <b>bailing</b> " method and without gravel packing as per IS:2800 Part 1: 1991 and IS:2800 Part II: 1979 (both amended up to date) and technical specifications. The work includes formation of cavity at bottom by development with appropriate air compressor or bailer pumping and also lowering of casing pipe but excluding cost of the casing pipe. The tube well should have a throughout bore as per nominal dia of casing pipe. The work would be completed after obtaining sand free water.		
4.5.1	Nominal bore 125 mm dia.	Mtr	487.00
4.5.2	Nominal bore 150 mm dia.	Mtr	543.00
4.5.3	Nominal bore 200 mm dia.	Mtr	897.00
4.6	Construction of tube well from ground level and up to 100 mtr depth and above to accommodate housing assembly pipe in all type of unconsolidated formation such as pebbles, boulders, collapsible formation etc. by <b>Odex drilling</b> method as per IS: IS:2800 Part 1: 1991 and IS:2800 Part II: 1979 (both amended up to date) and technical specifications. The work will include lowering of housing and strainer pipe assembly and casing shoe including cost of casing shoe, but excluding cost of the casing pipe. The work would be completed after obtaining sand free water.		
4.6.1	Nominal bore 125 mm dia.	Mtr	834.00
4.6.2	Nominal Bore 150 mm dia.	Mtr	1139.00
4.6.3	Nominal bore 200 mm dia.	Mtr	1670.00
4.6.4	Add 15% extra on above item (Item No 2.6.1 to 2.6.3) for drilling depth beyond 100 mtr, rate shall be applicable for only extra depth beyond 100 mtr .		
4.7	Deepening of existing tube well by <b>DTH</b> system beyond existing depth up to 100 mtr. and above in all type of rocks including flushing of tube well and obtaining sand free water.		
4.7.1	Nominal bore 150 mm dia.	Mtr	927.00
4.7.2	Nominal bore 200 mm dia.	Mtr	1344.00

Item no.	Description	Unit	Rate (Rs.)
4.8	Testing verticality of tube well by plumbing system and yield test and draw down test by pumping system as per IS : 2800 (Part – II) – 1979 or as per amended up to date.	Each	8178.00
4.9	Supplying & Packing P-gravel suitable for slot size/mesh size as suggested in IS 2800 (Part-1) 1991 or as per amended up to date.	Cum.	4109.00
4.10	Development of tube well having depth up to 250 mtr as per IS: 11189- 1985 and IS: 2800 (Part- I)- 1991 (both amended up to date) using suitable methods to give sand free water for required yield of the gravel packed tube well.	Hr.	1696.00
4.11	Supply of ERW M.S. black casing pipe ISI marked (IS: 4270/2001) or amended up to date of following sizes		
4.11.1	150 mm dia NB(Thickness of pipe 5.0 mm & mass of tube 20.13 Kg/m)	Mtr	1933.00
4.11.2	200 mm dia NB (Thickness of pipe 5.4mm & mass of tube 28.46 Kg/m)	Mtr	2734.00
4.11.3	250 mm dia NB (Thickness of pipe 7.1 mm & mass of tube 46.57 Kg/m)	Mtr	4473.00
4.12	Labour charges for making slots on blank pipes made of ERW MS black pipe ISI marked of following sizes, the slotting should be as per IS:8110-1985.		
4.12.1	125 mm dia nominal bore of 4.8 mm thickness	Mtr	177.00
4.12.2	150 mm dia nominal bore of 4.8 mm thickness	Mtr	210.00
4.12.3	200 mm dia nominal bore of 5.4mm thickness	Mtr	319.00
4.12.4	250 mm dia nominal bore of 7.1mm thickness	Mtr	399.00
4.13	Providing & laying ISI marked GI Pipe Light duty ( "A" class) as per IS: 1239 for casing pipe for submersible cable external work 40 mm dia complete in all respect.	Mtr	416.00
4.14	<b>Supply &amp; Installation of single phase</b> ISI marked submersible motor pump set of three star or better rating of BEE and as per IS: 8034-2018 (pump) and IS 9283-2013 (motor) or as amended up to date of approved make of following duty condition with required accessories including making connection suitable for tube well/DCB. The job includes lowering of motor pump, installation of complete fitting & accessories, jointing of electrical cables up to switch board, testing of submersible pump set and interconnection up to water mains, complete in all respect.		
4.14.1	Up to 2.0 KW	KW	17840.00
4.14.2	Above 2.0 KW	KW	13890.00

Item no.	Description	Unit	Rate (Rs.)
4.15	<b>Supply &amp; Installation of 3 phase</b> ISI marked submersible motor pump set of three star or better rating of BEE and as per IS: 8034-2018 (pump) and IS 9283- 2013 (motor) or as amended up to date of approved make of following duty condition with required accessories including making connection suitable for tube well/DCB. The job includes lowering of motor pump, installation of complete fitting & accessories, jointing of electrical cables up to switch board, testing of submersible pump set and interconnection up to water mains, complete in all respect.		
4.15.1	Up to 5.5 KW (7.5 HP) & head up to 120 mtr.	KW	9810.00
4.15.2	Up to 5.5 KW (7.5 HP) & head above 120 mtr.	KW	10550.00
4.15.3	7.5 KW (10 HP) & head up to 120 mtr.	KW	7540.00
4.15.4	7.5 KW (10 HP) & head above 120 mtr.	KW	8320.00
4.15.5	9.3 KW (12.5 HP) & head up to 120 mtr.	KW	6490.00
4.15.6	9.3 KW (12.5 HP) & head above 120 mtr.	KW	8430.00
4.15.7	11 KW (15 HP) & head up to 120 mtr.	KW	6270.00
4.15.8	11 KW (15 HP) & head above 120 mtr.	KW	7020.00
4.15.9	13 KW (17.5 HP) & head up to 120 mtr.	KW	6020.00
4.15.10	13 KW (17.5 HP) & head above 120 mtr.	KW	6400.00
4.15.11	15 KW (20 HP) and above, head up to 120 mtr.	KW	5590.00
4.15.12	15 KW (20 HP) and above, head above 120 mtr.	KW	6320.00
4.16	<b>Supply and Fixing</b> of Electric feeder panel (having projected canopy)for submersible pump set Single phase up to 5 HP, comprising of DOL Starter, MCB, Indicating Light, Ammeter, Volt meter, connection plate, condensers of approved make and the panel enclosure should be made out from 18 gauge M.S. Sheet with powder coating. Panel size Height 600 mm Width 500 mm depth 250 mm with Stand ( made of angle iron of size 35x35x5mm) duly bolted/screwed with enclosure box having 4 legs, each leg's length 18" and double door including in built locking system. The legs should be embedded in M-15 cement concrete platform. The size of CC platform should be equal or bigger than the base size of panel having height of at least 200 mm from ground level. The operation of panel should be suitable for on 240 Volt AC Supply.	Each	10009.00

Item no.	Description	Unit	Rate (Rs.)
4.17	<b>Supply and Fixing</b> of electric control feeder panel comprising of suitable rating MCCB, DOL starter, overload relay, ampere meter, volt meter, phase preventer, phase indicators, lighting arrangement etc. complete suitable for three phase pump set. The panel should have space for energy meter (supplied by DISCOM). All these equipments shall be housed by panel box made out from 18 gauge M.S. Sheet with powder coating. Panel should be of minimum size 900 x 600 x 300mm with Stand (made of angle iron of size 35x35x5mm) duly bolted/screwed with enclosure box having 4 legs, each leg's length 18" and double door including in built locking system. The legs should be embedded in M-15 cement concrete platform. The size of CC platform should be equal or bigger than the base size of panel having height of at least 200 mm from ground level. The panel should have opening of suitable size in front of space for energy meter with glass for meter reading. The operation of panel should be suitable for on 440 Volt AC Supply.		
4.17.1	Up to 5.00 HP	Each	13081.00
4.18	<b>Supply and Fixing</b> of electric control feeder panel comprising of suitable rating MCCB , fully automatic star-delta starter, over load relay, ampere meter with CTs, volt meter, phase preventer, suitable starting capacitors, phase indicators, lighting arrangement etc. complete suitable for three phase pump set. The panel should have space for energy meter (supplied by DISCOM). All these equipments shall be housed by panel box made out from 18 gauge M.S. Sheet with powder coating. Panel should be of minimum size 900 x 600 x 450 mm with Stand (made of angle iron of size 35x35x5mm) duly bolted/screwed with enclosure box having 4 legs, each leg's length 18" and double door including in built locking system. The legs should be embedded in M-15 cement concrete plat form. The size of CC platform should be equal or bigger than the base size of panel having height of at least 200 mm from ground level. The panel should have opening of suitable size in front of space for energy meter with glass for meter reading. The operation of panel should be suitable for on 440 Volt AC Supply.		
4.18.1	Above 5 HP and up to 10 HP	Each	25192.00
4.18.2	Above 10 HP and up to 15 HP	Each	29204.00
4.18.3	Above 15 HP and up to 20 HP	Each	33236.00
4.18.4	Above 20 HP and up to 30 HP	Each	39375.00

Item no.	Description	Unit	Rate (Rs.)
4.19	<b>Supply &amp; Fixing</b> of ISI marked three core PVC flat submersible cable as per IS 694:1990 or amended up to date and conductor as per class 5 of IS 8130:1980 including making connection etc.		
4.19.1	3 core 4.0 Sq.mm	Mtr	211.00
4.19.2	3 core 6.0 Sq.mm	Mtr	314.00
4.19.3	3 core 10.0 Sq.mm	Mtr	538.00
4.19.4	3 core 16.0 Sq.mm	Mtr	802.00
4.20	<b>Supply &amp; Fixing</b> XLPE insulated / P.V.C. sheathed cable of 1.1 KV grade with aluminium conductor Armoured of IS:7098-I/1554-1 approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, second Class bricks covering, refilling earth, compaction of earth, making necessary connection, testing etc. as required of size.		
4.20.1	10.0 Sq.mm, 4 core	Mtr	230.00
4.20.2	16.0 Sq.mm, 4 core	Mtr	264.00
4.20.3	25.0 Sq.mm, 3.5 core	Mtr	343.00
4.20.4	35.0 Sq.mm, 3.5 core	Mtr	415.00
4.21	<b>Plate Earthing</b> as per IS:3043 with G.I. Earth plate of size 600mm x 600mm x 6.0mm by embodying 3 to 4 mtr. below the ground level with 20 mm dia. G.I. 'B' class watering Pipe including all accessories like nut, bolts, reducer ,nipple, wire meshed funnel, and C.C. finished chamber covered with hinged type with locking arrangement C.I. Cover, C.I. Frame of size 300mm x 300mm complete with alternate layers of salt and coke/charcoal, testing of earth resistance as required.	Each	3651.00
4.22	<b>Supply &amp; Fixing</b> M S clamp set of 50x6 mm flat from iron with nuts and bolts etc. for holding the riser pipe assembly of submersible pump set.	Each	727.00
4.23	<b>Supply &amp; Fixing</b> tube well cover of MS sheet 8mm thick at top & 5mm thick 100mm wide shroud around the edge so as to form a cap on the top end of casing pipe with GI Nipple 45cm long & two GI flanges at both ends in 80mm sizes passing through a hole in the centre of MS sheet. A 25 mm socket with end plug shall also be welded over top plate. A GI nipple having outside thread of size 1/2" (for installation pressure gauge) shall be provided & welded with 80mm GI nipple near top plate nipple shall be provided with end plug.		
4.23.1	125 mm dia	Each	788.00
4.23.2	150 mm dia	Each	848.00
4.23.3	200 mm dia	Each	1030.00
4.23.4	250 mm dia	Each	1212.00

Item no.	Description	Unit	Rate (Rs.)
4.24	<b>Providing &amp; Lowering</b> in tube well ISI marked GI Pipe medium duty ("B" class), Steel tube as per IS:1239 or amended up to date and zinc coating as per IS 4736, threaded and double flanged (welded) on both ends and two number 25x3mm MS flat welded on both ends between pipe & flange, rubber washer & nut bolts etc. complete in all respect.		
4.24.1	32 mm dia	Mtr	430.00
4.24.2	50 mm dia	Mtr	678.00
4.24.3	65 mm dia	Mtr	765.00
4.24.4	80mm dia	Mtr	944.00
4.25	<b>Providing &amp; Lowering</b> in tube well ISI marked HDPE pipe as per IS 4984:1995 or amended up to date in PE 80 grade and class PN 10 of following dia. including HDPE/GI fittings and PVC rope conforming to IS 5175:1992 or amended up to date, along with clamping of submersible cable etc. complete in all respect.		
4.25.1	40 mm dia	Mtr	96.00
4.25.2	50 mm dia	Mtr	148.00
4.25.3	63 mm dia	Mtr	235.00
4.25.4	75 mm dia	Mtr	332.00
4.25.5	90 mm dia	Mtr	472.00
4.26	<b>Providing, installing, testing and commissioning</b> of double flanged bulk flow meter with removable mechanism, of class B conforming to ISO 4064/1 or amended up to date of approved make including cost of all material and labour as per specifications with GI Box (sheet 16 SWG) suitable with locking arrangement of following dia.		
4.26.1	50 mm dia	Each	11801.00
4.26.2	65 mm dia	Each	13350.00
4.26.3	80 mm dia	Each	15752.00
4.27	<b>Providing &amp; Fixing</b> pump safety cage as per specifications or as directed by Engineer in charge.	Each	1106.00

Item no.	Description	Unit	Rate (Rs.)
4.28	<b>Providing and Fixing</b> of ISI marked PVC storage tank of following capacity as per IS: 12701-1989 (of approved make) with cover, 25 mm dia. 1 mtr long GI overflow pipe, 25 cm long 25 mm dia washout GI pipe with plug & socket, including P&F 32 mm dia Ball Cock (Float valve) IS 1703 marked with rod and PVC ball complete with brass weight 1000 gm, including P&F 15mm dia CI quarter turn heavy duty Bib Cocks four no's of superior quality and approved make, including interconnections complete job.		
4.28.1	1000 litres capacity	Each	8534.00
4.28.2	2000 litres capacity	Each	16436.00
4.29	<b>Fabrication &amp; Fixing</b> M.S. Stand of specified class of angle iron L-shaped of 50 mm size with four legs grouted by 300*300*300 mm CC Block M-15 in the ground and all legs tied up with each other through same size of angle iron along with cross bars to support the bottom of 1000 Ltr./ 2000 Ltr. PVC tank complete in all respect.	kg	117.00
4.30	<b>Providing &amp; Fixing</b> of double flanged, CI body, ISI marked NRV of approved make of following sizes		
4.30.1	65 mm dia	Each	2644.00
4.30.2	80 mm dia	Each	3192.00
4.31	<b>Providing and Fixing</b> 32 mm dia Full way valve or wheel valve as per IS:778 or amended up to date of approved make, on pump delivery pipe.	Each	832.00
4.32	<b>Supplying &amp; Installing</b> 100 mm diameter sealed diaphragm bourdon type pressure gauge of range 0 to 10 kg. including all jointing material as per specification with safety cover.	Each	1243.00
4.33	Construction of bore hole for shallow depth tube well from ground level to required depth for following size for all type of relevant strata by percussion/ rotary drilling/ hand boring method excluding cost of casing pipe. The bore hole should be as per nominal bore of PVC casing pipe. The work will be complete after obtaining sand free water.		
4.33.1	125 mm dia nominal bore	Mtr.	347.00
4.33.2	150 mm dia nominal bore	Mtr.	387.00
4.33.3	200 mm dia nominal bore	Mtr.	551.00
4.33.4	250 mm dia nominal bore	Mtr.	775.00



Item no.	Description	Unit	Rate (Rs.)
4.34	<b>Providing and Lowering</b> of ISI mark PVC-U casing and screen pipe as per IS : 12818 : 2010 or amended up to date having pipe thickness as per IS code suitable for TW and DCB with threading , winding with superior quality of plastic mesh & rope in three layers with end cap complete as per technical specification and direction of Engineer In charge.		
4.34.1	<b>Shallow well casing pipe (CS) suitable for depth up to 80 mtr.</b>		
4.34.1.1	150 mm nominal dia ( internal dia ).	Mtr	475.00
4.34.1.2	200 mm nominal dia ( internal dia ).	Mtr	872.00
4.34.1.3	250 mm nominal dia ( internal dia ).	Mtr.	1362.00
4.34.2	<b>Medium well casing pipe (CM) suitable for depth above 80 mtr and up to 250 mtr.</b>		
4.34.2.1	100 mm nominal dia ( internal dia )	Mtr.	282.00
4.34.2.2	125 mm nominal dia ( internal dia )	Mtr.	450.00
4.34.2.3	150 mm nominal dia ( internal dia )	Mtr	616.00
4.34.2.4	200 mm nominal dia ( internal dia )	Mtr	1114.00
4.34.2.5	250 mm nominal dia ( internal dia )	Mtr.	1733.00
4.35	Supply of ISI mark AC pressure pipe class 15 manufactured by MAZZA process as per IS:1592-2003 or amended up to date, for casing of tube well for following dia nominal bore, with jointing material PVC coupler as per technical specification and direction of Engineer In charge.		
4.35.1	125 mm nominal dia	Mtr	328.00
4.35.2	150 mm nominal dia	Mtr	581.00
4.35.3	200 mm nominal dia	Mtr	955.00
4.35.4	250 mm nominal dia	Mtr	1304.00
4.35.5	300 mm nominal dia	Mtr	1892.00
4.36	Making slots of hole size and Nos. as directed by EIC in AC pressure pipe Class 15 as per technical specification for using slotted pipe in TW casing.	Per 100 no.	98.00
<b>RCC OPEN WELLS</b>			
4.37	Dry sinking of well true & vertical in all types of soil including sand, silt, clay, mixed up to 25% with gravel and river bed stones up to size 300 mm in any direction complete as per drawing and technical specification (depth from level of placing of cutting edge & internal dia, to be taken for measurement) rate includes all percentage of pebbles, boulders and river bed stones. (depth to be measured from around level)		
4.37.1	for depth up to 5.00 m	P.M. dia P.M. depth	1473.00

Item no.	Description	Unit	Rate (Rs.)
4.37.2	for depth from 5.00 m to 10.0 mtr	P.M. dia P.M. depth	2057.00
4.37.3	for depth from 10.0 m to 15.0 mtr	P.M. dia P.M. depth	2468.00
4.37.4	for depth from 15.0 m to 20.0 mtr and above.	P.M. dia P.M. depth	2879.00
4.38	Wet sinking of well in all type of strata (soil & boulders in any quantity) including required operations like chiselling, air and water jetting, hoist drives, skilled divers etc. for removal of isolated obstructions and minor blasting if required and lifting of excavated material up to ground level, and spreading the same with ramming and watering within a radius of 50 m from the site of open well. Rate includes all percentage of pebbles, boulders and river bed stones. (depth to be measured from ground level)		
4.38.1	for depth up to 5.00m	P.M. dia P.M. depth	2131.00
4.38.2	for depth from 5.00m to 10.0 mtr	P.M. dia P.M. depth	3507.00
4.38.3	for depth from 10.00m to 15.0 mtr	P.M. dia P.M. depth	4448.00
4.38.4	for depth from 15.0 m to 20.0 mtr	P.M. dia P.M. depth	5303.00
4.38.5	for depth from 20.0 m to 25.0 mtr	P.M. dia P.M. depth	6443.00
4.38.6	for depth from 25.0 m to 30.0 mtr and above.	P.M. dia P.M. depth	7583.00
4.39	Add 20% extra over item No. 2.39 for excavation in saturated soil where pumping or baling out of water is required, including shoring strutting where required and dewatering.		
4.40	Labour charges for horizontal boring 100 mm dia in open well in rocky strata with all types of rock cutting & drilling tools etc. including all T&P required for job including dewatering arrangement.	Mtr	655.00

**HAND PUMPS**

Item no.	Description	Unit	Rate (Rs.)
4.41	Construction of tube well from ground level & up to 100 mtr depth to accommodate housing and assembly pipe of following sizes in all type of alluvium strata unconsolidated formation such as pebbles, boulders etc. by <b>percussion/rotary</b> drilling method as per IS:2800 Part 1: 1991 and IS:2800 Part II: 1979 (both amended up to date) and technical specifications, with gravel as per IS:4097-1967 and it's packing as per IS: 2800 (Part I & II) 1979 as amended up to date (the work includes the cost of gravel & it's primary packing and packing during development, lowering of housing & strainer assembly pipes with supply and wrapping of coir-rope, wherever necessary for arresting fine sand particles and development work, but excluding the cost of housing and strainer pipe assembly). The work would be completed after obtaining sand free water.		
4.41.1	Nominal bore 125 mm dia.	Mtr	666.00
4.41.2	Add 15% extra on above item for drilling depth beyond 100 mtr, If depth of bore is more than 100 mtr.		
4.42	Construction of Tube Well up to 100 mtr. depth in all type of rocks by <b>DTH</b> system & over burden to accommodate casing pipe of following sizes in all types of soils & over burden including lowering of casing pipes, (if required) excluding cost of casing pipes, as per IS:2800 Part 1: 1991 and IS:2800 Part II: 1979 (both amended up to date) and technical specifications. The work would be completed after obtaining sand free water. The tube well should have a through out bore as per nominal dia of casing pipe.		
4.42.1	Nominal bore 100 mm dia.	Mtr	470.00
4.42.2	Nominal bore 125 mm dia.	Mtr	538.00
4.42.3	Add 15% extra on above item for drilling depth beyond 100 mtr, If depth of bore is more than 100 mtr.		

Item no.	Description	Unit	Rate (Rs.)
4.43	Construction of tube well from ground level and up to 100 mtr. depth and above of following sizes in all types of soils in alluvium strata, unconsolidated formation such as pebbles, boulders etc. by <b>bailing</b> method and without gravel packing as per IS:2800 Part 1: 1991 and IS:2800 Part II: 1979 (both amended up to date) and technical specifications. The work includes formation of cavity at bottom by development with appropriate air compressor or bailer pumping and also lowering of casing pipe but excluding cost of the casing pipe. The tube well should have a throughout bore as per nominal dia of casing pipe. The work would be completed after obtaining sand free water.		
4.43.1	Nominal bore 100 mm dia.	Mtr	341.00
4.43.2	Nominal bore 125 mm dia.	Mtr	373.00
4.44	Supply of ERW M.S. black casing pipe ISI marked {IS:1239(Part-1:2004)} medium of following sizes at site of work.		
4.44.1	100 mm dia NB (Thickness of pipe 4.5 mm & mass of tube 12.50 Kg/m)	Mtr	1286.00
4.44.2	125 mm dia NB( Thickness of pipe 4.8 mm & mass of tube 16.40 Kg/m)	Mtr	1603.00
4.45	<b>Providing and Lowering</b> of ISI mark <b>Medium well PVC-U</b> casing and screen pipe ( <b>CM</b> ) as per IS : 12818 : 2010 or amended up to date having pipe thickness as per IS code suitable for bore well with threading , winding with superior quality of plastic mesh & rope in three layers with end cap complete as per technical specification and direction of Engineer In charge.		
4.45.1	100 mm nominal dia ( internal dia ).	Mtr	282.00
4.45.2	125 mm nominal dia ( internal dia ).	Mtr	450.00
4.46	Labour charges for making slots on blank pipes made of ERW MS black pipe ISI marked of following sizes, the slotting should be as per IS:8110-1985.		
4.46.1	100 mm dia nominal bore	Mtr	139.00
4.46.2	125 mm dia nominal bore	Mtr	177.00
4.47	Supply & installation of GI pipe 32 mm medium class "B" with pipe sockets (heavy duty).	Mtr	399.00
4.48	Supply and installation of ISI marked India Mark II Hand pump set complete with cylinder & 15 connecting rods.	Set	16001.00
4.49	Supply and installation of ISI Marked India Mark II Hand pump set Extra-Deep (EDW) complete with cylinder and connecting rods.		

Item no.	Description	Unit	Rate (Rs.)
4.49.1	EDWHP + 20 Connecting rod.	Set	18290.00
4.49.2	EDWHP + 23 Connecting rod + 1 Weight.	Set	20060.00
4.49.3	EDWHP + 26 Connecting rod + 2 Weight.	Set	21476.00
4.49.4	EDWHP + 30 Connecting rod + 3 Weight.	Set	22774.00
4.50	Supply and installation of ISI mark connecting rod as per departmental specifications. of 3 meter length.	Each	180.00
4.51	Installation of India Mark II/III E.D. I & II hand pump set complete on existing platform.	Each	860.00
4.52	Construction of 185 cm. dia platform as per approved design & drawing of UNICEF.	Each	3852.00

**CHAPTER : S-5**  
**WATER SUPPLY WORK**

Item no.	Description	Unit	Rate (Rs.)
<b>Pipe line work</b>			
5.1	Providing, lowering, laying in trenches, aligning, fixing in position and jointing Ductile Iron (DI) ISI marked <b>K-7</b> grade S&S pipes as per IS:8329-2000 (amended up to date), with internal cement mortar lining suitable for potable water with rubber ring (EPDM) joints as per IS: 5382-1985 including all taxes (Central and local), transportation and freight charges, inspection charges, loading/ unloading charges, including cost of labour and material, specials (Tee, bend etc.) satisfactory hydraulic testing, disinfection, commissioning etc. complete as per technical specifications and direction of Engineer-in-charge. (excluding earth work) Note : Providing and fixing of all requisite specials as per drawing, design and layout are inclusive in RM measurement of the item and shall not be paid separately.		
5.1.1	80 mm	RMT	1494.00
5.1.2	100 mm	RMT	1543.00
5.1.3	150 mm	RMT	2189.00
5.1.4	200 mm	RMT	2793.00
5.1.5	250 mm	RMT	3635.00
5.1.6	300 mm	RMT	4643.00
5.1.7	350 mm	RMT	5667.00
5.1.8	400 mm	RMT	6917.00
5.1.9	450 mm	RMT	8176.00
5.1.10	500 mm	RMT	9753.00
5.1.11	600 mm	RMT	12749.00
5.2	Providing, lowering, laying in trenches, aligning, fixing in position and jointing Ductile Iron (DI) ISI marked <b>K-9</b> grade S&S pipes as per IS:8329-2000 (amended up to date), with internal cement mortar lining suitable for potable water with rubber ring (EPDM) joints as per IS: 5382-1985 including all taxes (Central and local), transportation and freight charges, inspection charges, loading/ unloading charges, including cost of labour and material, specials (Tee, bend etc.) satisfactory hydraulic testing, disinfection, commissioning etc. complete as per technical specifications and direction of Engineer-in-charge. (excluding earth work) Note : Providing and fixing of all requisite specials as per drawing, design and layout are inclusive in RM measurement of the item and shall not be paid separately.		
5.2.1	100 mm	RMT	1764.00
5.2.2	150 mm	RMT	2509.00
5.2.3	200 mm	RMT	3328.00
5.2.4	250 mm	RMT	4421.00

Item no.	Description	Unit	Rate (Rs.)
5.2.5	300 mm	RMT	5604.00
5.2.6	350 mm	RMT	6836.00
5.2.7	400 mm	RMT	8326.00
5.2.8	450 mm	RMT	9944.00
5.2.9	500 mm	RMT	11655.00
5.2.10	600 mm	RMT	15252.00
5.3	Providing, lowering, laying, aligning, fixing in position and jointing at all level/ depths DI standard specials with rubber ring (EPDM)/ nut bolt and insertion sheet and jointing as per IS: 9523- 2000 or as amended up to date, such as tees, bends, tapers, caps etc. within trenches in DI pipe line complete including all material, labour, taxes, testing and commissioning along with pipe line as per technical specifications and direction of Engineer-in-charge (excluding earth work).		
5.3.1	<b>All End Socketed</b>		
5.3.1.1	Up to 300 mm Diameter	Kg	145.00
5.3.1.2	Above 300mm and up to 600 mm diameter	Kg	161.00
5.3.1.3	Above 600 mm diameter	Kg	207.00
5.3.2	<b>All End Flanged</b>		
5.3.2.1	Up to 300 mm Diameter	Kg	158.00
5.3.2.2	Above 300mm and up to 600 mm diameter	Kg	179.00
5.3.3	<b>Single Flange/ MJ Collar</b>		
5.3.3.1	Up to 300 mm Diameter	Kg	151.00
5.3.3.2	Above 300mm and up to 600 mm diameter	Kg	168.00
5.3.4	Double Flange Pipe (up to 1 mtr. length)		
5.3.4.1	<b>Up to 300 mm Diameter</b>	Kg	167.00
5.3.4.2	Above 300mm and up to 600 mm diameter	Kg	195.00
<b>HDPE PIPES</b>			
5.4	Providing, lowering, laying and jointing in trenches, standard lengths <b>HDPE</b> ISI marked Pipes as per IS-4984: 1995 (amended up to date) with necessary jointing material like mechanical connectors, i.e. thread/ insert joint/ quick release coupler joint/ compression fitting joint or flanged joint and specials jointing pipe by <b>electro fusion welding</b> method, including all taxes , transportation and freight charges, inspection charges, loading/ unloading charges, stacking of pipes, including cost of labour and material, specials (Tee, bend etc.), satisfactory hydraulic testing, disinfection, commissioning etc. complete as per technical specifications and direction of Engineer in-charge of following class and diameter. (excluding earth work) . Note : Providing and fixing of all requisite specials as per drawing, design and layout are inclusive in RM measurement of the item and shall not be paid separately. Supply may be in coil or straight length in 6 M/12 M.		
5.4.1	<b>HDPE PE-80 PN-6</b>		
5.4.1.1	75 mm dia	RMT	248.00

Item no.	Description	Unit	Rate (Rs.)
5.4.1.2	90 mm dia	RMT	344.00
5.4.1.3	110 mm dia	RMT	516.00
5.4.2	<b>HDPE PE-100 PN-6</b>		
5.4.2.1	75 mm dia	RMT	212.00
5.4.2.2	90 mm dia	RMT	298.00
5.4.2.3	110 mm dia	RMT	444.00
5.4.3	<b>HDPE PE-80 PN-10</b>		
5.4.3.1	90 mm dia	RMT	475.00
5.4.3.2	110 mm dia	RMT	711.00
5.4.4	<b>HDPE PE-100 PN-10</b>		
5.4.4.1	90 mm dia	RMT	410.00
5.4.4.2	110 mm dia	RMT	608.00
5.5	Providing, lowering, laying and jointing in trenches, standard lengths <b>HDPE</b> ISI marked Pipes as per IS-4984: 1995 (amended up to date) with necessary jointing material like mechanical connectors, i.e. thread/ insert joint/ quick release coupler joint/ compression fitting joint or flanged joint and specials jointing pipe by <b>butt fusion/ electro fusion</b> welding method, including all taxes , transportation and freight charges, inspection charges, loading/ unloading charges, stacking of pipes, including cost of labour and material, specials (Tee, bend etc.), satisfactory hydraulic testing, disinfection, commissioning etc. complete as per technical specifications and direction of Engineer in-charge of following class and diameter. (excluding earth work). Note : Providing and fixing of all requisite specials as per drawing, design and layout are inclusive in RM measurement of the item and shall not be paid separately. Supply of pipe shall be in straight length in 6/12 M.		
5.5.1	<b>HDPE PE-80 PN-6</b>		
5.5.1.1	125 mm dia	RMT	687.00
5.5.1.2	140 mm dia	RMT	862.00
5.5.1.3	160 mm dia	RMT	1087.00
5.5.1.4	180 mm dia	RMT	1369.00
5.5.1.5	200 mm dia	RMT	1640.00
5.5.1.6	225 mm dia	RMT	2075.00
5.5.2	<b>HDPE PE-100 PN-6</b>		
5.5.2.1	125 mm dia	RMT	585.00
5.5.2.2	140 mm dia	RMT	737.00
5.5.2.3	160 mm dia	RMT	928.00
5.5.2.4	180 mm dia	RMT	1167.00
5.5.2.5	200 mm dia	RMT	1399.00
5.5.2.6	225 mm dia	RMT	1762.00
5.5.3	<b>HDPE PE-80 PN-10</b>		
5.5.3.1	125 mm dia	RMT	980.00
5.5.3.2	140 mm dia	RMT	1226.00
5.5.3.3	160 mm dia	RMT	1585.00
5.5.3.4	180 mm dia	RMT	1976.00
5.5.3.5	200 mm dia	RMT	2422.00
5.5.3.6	225 mm dia	RMT	3022.00
5.5.4	<b>HDPE PE-100 PN-10</b>		



Item no.	Description	Unit	Rate (Rs.)
5.5.4.1	125 mm dia	RMT	825.00
5.5.4.2	140 mm dia	RMT	1033.00
5.5.4.3	160 mm dia	RMT	1344.00
5.5.4.4	180 mm dia	RMT	1688.00
5.5.4.5	200 mm dia	RMT	2046.00
5.5.4.6	225 mm dia	RMT	2560.00

**MS PIPES**

- 5.6 Manufacturing, supplying, lowering, laying and jointing in position to correct line spirally welded SAW/Fabricated MS Pipe having bevelled end plates / coils, confirming to IS 3589-2001 or its latest revision/ amendments, for following thickness and inside diameter, including all taxes (Central and local), transportation and freight charges, inspection charges, loading/ unloading charges, including cost of labour and material, specials (Tee, bend etc.), field joints, satisfactory hydraulic testing, disinfection, commissioning etc. complete as per technical specifications and direction of Engineer-in-charge; (excluding earthwork, internal lining and outer coating).

Note : Providing and fixing of all requisite specials as per drawing, design and layout are inclusive in RM measurement of the item and shall not be paid separately.

5.6.1	Outer dia of pipe 219.1 mm and thickness		
5.6.1.1	2.6 mm	RMT	1626.00
5.6.1.2	3.2 mm	RMT	1995.00
5.6.1.3	4 mm	RMT	2485.00
5.6.1.4	4.5 mm	RMT	2789.00
5.6.2	Outer dia of pipe 273 mm and thickness		
5.6.2.1	3.6 mm	RMT	2801.00
5.6.2.2	4 mm	RMT	3107.00
5.6.2.3	5 mm	RMT	3870.00
5.6.2.4	6.3 mm	RMT	4852.00
5.6.3	Outer dia of pipe 323.9 mm and thickness		
5.6.3.1	4 mm	RMT	3695.00
5.6.3.2	4.5 mm	RMT	4151.00
5.6.3.3	5.6 mm	RMT	5148.00
5.6.3.4	7.1 mm	RMT	6496.00
5.6.4	Outer dia of pipe 355.6 mm and thickness		
5.6.4.1	4 mm	RMT	4062.00
5.6.4.2	5 mm	RMT	5063.00
5.6.4.3	5.6 mm	RMT	5660.00
5.6.4.4	7.1 mm	RMT	7146.00
5.6.4.5	8 mm	RMT	8031.00
5.6.5	Outer dia of pipe 406.4 mm and thickness		
5.6.5.1	4 mm	RMT	4648.00
5.6.5.2	5 mm	RMT	5796.00
5.6.5.3	6.3 mm	RMT	7280.00
5.6.5.4	7.1 mm	RMT	8188.00
5.6.5.5	8.8 mm	RMT	10105.00
5.6.6	Outer dia of pipe 457 mm and thickness		

Item no.	Description	Unit	Rate (Rs.)
5.6.6.1	4 mm	RMT	5233.00
5.6.6.2	5 mm	RMT	6527.00
5.6.6.3	6.3 mm	RMT	8200.00
5.6.6.4	7.1 mm	RMT	9225.00
5.6.6.5	8.8 mm	RMT	11391.00
5.6.7	Outer dia of pipe 508 mm and thickness		
5.6.7.1	5 mm	RMT	7263.00
5.6.7.2	5.6 mm	RMT	8125.00
5.6.7.3	6.3 mm	RMT	9128.00
5.6.7.4	7.1 mm	RMT	10271.00
5.6.7.5	8.8 mm	RMT	12687.00
5.6.7.6	10 mm	RMT	14382.00
5.6.7.7	11 mm	RMT	15789.00
5.6.8	Outer dia of pipe 610 mm and thickness		
5.6.8.1	5.8 mm	RMT	10121.00
5.6.8.2	6.3 mm	RMT	10984.00
5.6.8.3	7.1 mm	RMT	12362.00
5.6.8.4	8.8 mm	RMT	15279.00
5.6.8.5	10 mm	RMT	17328.00
5.6.8.6	11 mm	RMT	19029.00
5.6.8.7	12.5 mm	RMT	21570.00

#### Lining and coating on MS pipe

5.7	<p>Providing and applying <b>3LPE</b> (3 Layer Polyethylene) tape coating conforming to ISO 21809-1, DIN 30670-91 or CAN/CSA Z245.20-10 to external surface of M.S. Pipe comprising of a layer of fusion bonded epoxy (FBE), overlaid with PE adhesive with an outer layer of high density polyethylene including preparation of surface by solvent cleaning, abrasive blasting to a finish of Grade 2.5 to DIN EN ISO 8501 1 and surface profile of 50 to 75 microns as per DIN EN ISO 8503-2. Minimum thickness of FBE shall be 250 microns including field joints coating at site complete as per technical specification and direction of Engineer-in-Charge.</p> <p>Minimum thickness of coating shall be 3.0 mm on weld seam as well as remaining surface.</p>	SQM	1227.00
5.8	<p>Providing and applying <b>DFBE</b> ( Dual Layer Fusion Bonded Epoxy) Coating to the external surface of M.S. Pipes conforming to Canadian Standard CSA Z 245.20-10, consisting of 1st layer of (FBE) Fusion Bonded Epoxy powder and 2nd layer also of FBE powder as Abrasion Resistant Overcoat (ARO) including preparation of surface by solvent cleaning, abrasive blasting to a finish of Grade 2.5 to DIN EN ISO 8501 1 and surface profile of 50 to 75 microns as per DIN EN ISO 8503-2 including field joints coating at site complete as per technical specification and direction of Engineer in In charge. Minimum thickness of coating shall be 600 micron</p>	SQM	954.00

Item no.	Description	Unit	Rate (Rs.)
5.9	Providing and applying Spray applied, 100% Solids (Solvent free) Two Component <b>PU</b> ( Polyurethane) coating as per AWWA C222 Standard on external surface of M.S. Pipe including preparation of pipe outer surface by solvent cleaning, abrasive blasting to a finish of Grade 2.5 to DIN EN ISO 8501-1 and surface profile of 50 to 75 microns as per DIN EN ISO 8503-2 including field joints coating at site complete as per technical specification and direction of Engineer in In charge. Minimum dry film thickness of coating shall be 1000 micron	SQM	852.00
5.10	Providing and applying with mechanical arrangement 1:3 proportion <b>cement sand gunite</b> , of following thickness to M.S. Pipe outer surface under 2.1 Kg per Sqcm to 2.80 Kg per Sqcm. pressure including removing the loose materials as directed by EIC and including scrapping the surface with wire brushes, degreasing, cleaning by compressed air and providing fixing BRC fabric no.14 as reinforcement, curing for 21 days, disposing off the rebound materials with in a lead of 50 mtr including field joints coating at site complete as per technical specification and direction of Engineer in In charge.		
5.10.1	25 mm thick	SQM	545.00
5.10.2	40 mm thick	SQM	613.00
5.11	Providing and applying <b>polyolifine tape coating</b> (Cold applied) to external surface of M.S. Pipe as per AWWA C214-14 Standard comprising of liquid adhesive, inner layer tape and outer layer tape including preparation of outer surface of pipe by solvent cleaning, abrasive blasting to a finish of Grade 2.5 to DIN EN ISO 8501-1 and surface profile of 50 to 75 microns as per DIN EN ISO 8503-2 including field joints coating at site complete as per technical specification and direction of Engineer in In charge.	SQM	1363.00
5.12	Providing and applying Solvent free, two pack liquid <b>epoxy lining</b> to internal surface of M.S. Pipe as per BS 6920:2000 and AWWA C210 standard including preparation of internal surface of pipe by cleaning and abrasive blasting including field joints coating at site complete as per technical specification and direction of Engineer in In charge. Liquid Epoxy shall be NSF/WARS approved for drinking water and minimum thickness of lining shall be 406 microns.	SQM	409.00

Item no.	Description	Unit	Rate (Rs.)
5.13	Providing and applying 100% Solids, Rigid, DTM Polyurethane lining to internal surface of M.S. Pipe as per AWWA C222 standard including preparation of internal surface of pipe by cleaning and abrasive blasting including field joints coating at site complete as per technical specification and direction of Engineer in charge. Polyurethane Coating shall be NSF/WARS/SS-375 approved for drinking water and minimum thickness of lining shall be 500 microns.	SQM	681.00
5.14	Providing and making inner <b>cement mortar lining</b> to M.S. Pipes with mechanical devices in cement mortar 1:1 proportion, including cost of all materials, labour, special sand required, machinery, power generation, all equipments, including carrying out "C" value performance test of pipeline, including field joints at site complete as per technical specification and direction of Engineer in charge.		
5.14.1	9 mm thick for pipes up to 700 mm dia	SQM	307.00
5.14.2	12 mm thick for pipes above 700 mm dia	SQM	341.00
5.15	Providing and fixing of flanged/ plain ended MS Specials made from MS sheet strips of relevant IS specification of approved thickness by welding, lowering, laying, aligning, fixing in position at all level/ depths in trenches complete including all taxes, material, labour, inside lining, outside coating, testing and commissioning along with pipe line as per technical specifications and direction of Engineer in-charge.		
5.15.1	MS pipe specials up to 600mm dia (with minimum 5mm thickness sheet)	Kg	126.00
<b>BWSC PIPES</b>			
5.16	De-jointing and removing of already laid CI/DI pipes of following diameters in excavated trenches with care, without damaging pipes, CID joints, valves, specials etc. and other materials and then refilling of soil after de-laying and de-jointing of pipelines with proper compaction and disposing of all surplus soil as directed with in a lead of 30 mtr. This also include stacking the pipes with care and transporting the same to div./sub div. store or as directed by EIC with in the division. (Rates are Exclusive of Earth Work)		
5.16.1	80 mm	RMT	45.00
5.16.2	100 mm	RMT	50.00
5.16.3	125 mm	RMT	50.00
5.16.4	150 mm	RMT	59.00
5.16.5	200 mm	RMT	79.00
5.16.6	250 mm	RMT	98.00
5.16.7	300 mm	RMT	119.00
5.16.8	350 mm	RMT	134.00

Item no.	Description	Unit	Rate (Rs.)
5.16.9	400 mm	RMT	164.00
5.16.10	450 mm	RMT	200.00
5.16.11	500 mm	RMT	257.00
5.16.12	600 mm	RMT	309.00
5.17	De-jointing and removing of already laid MS pipes of following diameters in excavated trenches with care, without damaging pipes, CID joints, valves, specials etc. and other materials and then refilling of soil after de-laying and de-jointing of pipelines with proper compaction and disposing of all surplus soil as directed with in a lead of 30 mtr. This also include stacking the pipes with care and transporting the same to div./sub div. store or as directed by EIC with in the division. (Rates are Exclusive of Earth Work)		
5.17.1	100 mm	RMT	36.00
5.17.2	125 mm	RMT	36.00
5.17.3	150 mm	RMT	42.00
5.17.4	200 mm	RMT	80.00
5.17.5	250 mm	RMT	99.00
5.17.6	300 mm	RMT	120.00
5.17.7	350 mm	RMT	141.00
5.17.8	400 mm	RMT	162.00
5.17.9	450 mm	RMT	208.00
5.17.10	500 mm	RMT	251.00
5.17.11	600 mm	RMT	303.00
5.18	Laying, Jointing, Testing and Commissioning of uPVC/ PVC Pipes (Class- 3/ 4) in assorted length with specials, valves etc. including local handling and transportation from PHED store and then refilling of soil with proper compaction and disposing of all surplus soil as directed with in a lead of 30 mtr as per satisfaction of EIC. (Rates are Exclusive of Earth Work and jointing materials)		
5.18.1	90 mm	RMT	18.00
5.18.2	110 mm	RMT	19.00
5.18.3	125 mm	RMT	23.00
5.18.4	140 mm	RMT	25.00
5.18.5	160 mm	RMT	27.00
5.18.6	180 mm	RMT	30.00
5.18.7	200 mm	RMT	31.00
5.18.8	225 mm	RMT	34.00
5.18.9	250 mm	RMT	36.00
5.18.10	280mm	RMT	39.00
5.18.11	315 mm	RMT	41.00
5.19	Laying, Jointing, Testing and Commissioning of Ductile Iron (DI) Pipes of any class in assorted length with specials, valves etc. including local handling and transportation from PHED store and then refilling of soil with proper compaction and disposing of all surplus soil as directed with in a lead of 30 mtr as per satisfaction of EIC. (Rates are Exclusive of Earth Work and jointing materials)		

Item no.	Description	Unit	Rate (Rs.)
5.19.1	80 mm	RMT	63.00
5.19.2	100 mm	RMT	63.00
5.19.3	125 mm	RMT	66.00
5.19.4	150 mm	RMT	81.00
5.19.5	200 mm	RMT	97.00
5.19.6	250 mm	RMT	115.00
5.19.7	300 mm	RMT	138.00
5.19.8	350 mm	RMT	161.00
5.19.9	400 mm	RMT	195.00
5.19.10	450 mm	RMT	234.00
5.19.11	500 mm	RMT	296.00
5.19.12	600 mm	RMT	354.00
5.20	Laying, Jointing, Testing and Commissioning of AC Pressure Pipes (Class- 10/15/20) of any class in assorted length with specials, valves etc. including local handling and transportation from PHED store and then refilling of soil with proper compaction and disposing of all surplus soil as directed with in a lead of 30 mtr as per satisfaction of EIC. (Rates are Exclusive of Earth Work and jointing materials)		
5.20.1	80 mm	RMT	32.00
5.20.2	100 mm	RMT	34.00
5.20.3	125 mm	RMT	37.00
5.20.4	150 mm	RMT	40.00
5.20.5	200 mm	RMT	47.00
5.20.6	250 mm	RMT	52.00
5.20.7	300 mm	RMT	98.00
5.20.8	350 mm	RMT	106.00
5.20.9	400 mm	RMT	121.00
5.20.10	450 mm	RMT	139.00
5.20.11	500 mm	RMT	158.00
5.20.12	600 mm	RMT	162.00
5.21	Laying, Jointing, Testing and Commissioning of HDPE pipes of any grade in assorted length with specials, valves etc. with jointing material/ fixing of necessary jointing material like mechanical connector i.e. thread/ insert joint/quick release coupler joint compression fitting joint or flanged joint and jointing pipe in proper position and jointing of all specials by butt fusion / electro fusion welding method, including local handling and transportation from PHED store and then refilling of soil with proper compaction and disposing of all surplus soil as directed with in a lead of 30 mtr as per satisfaction of EIC. (Rates are Exclusive of Earth Work and jointing materials)		
5.21.1	90 mm	RMT	14.00
5.21.2	110 mm	RMT	16.00
5.21.3	125 mm	RMT	72.00
5.21.4	140 mm	RMT	78.00
5.21.5	160 mm	RMT	90.00
5.21.6	180 mm	RMT	98.00
5.21.7	200 mm	RMT	109.00

Item no.	Description	Unit	Rate (Rs.)
5.21.8	225 mm	RMT	120.00
	<b>AC pipes</b>		
5.22	Providing, lowering, laying and jointing in trenches, standard lengths ISI marked <b>AC</b> pressure pipe class 15 manufactured by MAZZA process as per IS-1592-2003 or amended up to date with AC coupling and EPDM Rubber sealing rings of Type -3 as per IS: 5382/1985 (Reaffirmed 1998) or amended up to date, including all taxes, transportation and freight charges, inspection charges, loading/ unloading charges, stacking of pipes, labour and material, satisfactory hydraulic testing etc. complete as per technical specifications and direction of Engineer-in-charge. (excluding earth work and specials) Note: These pipes shall only be used for raw water conveyance main from Canal outlet to raw water reservoirs and interconnection works.		
5.22.1	150 mm dia CI-15	RMT	727.00
5.22.2	200 mm dia CI-15	RMT	1183.00
5.22.3	250 mm dia CI-15	RMT	1629.00
5.22.4	300 mm dia CI-15	RMT	2358.00
5.22.5	350 mm dia CI-15	RMT	3117.00
5.22.6	400 mm dia CI-15	RMT	4125.00
5.22.7	450 mm dia CI-15	RMT	4846.00
5.22.8	500 mm dia CI-15	RMT	6136.00
5.22.9	600 mm dia CI-15	RMT	8745.00
	<b>CI Specials</b>		
5.23	Providing, lowering, laying, aligning, fixing in position at all level/ depths CI Class - B specials as per IS : 1538, amended up to date in trenches complete including all material, labour, testing and commissioning along with pipe line/ appurtenance as per Technical Specifications and as per direction of Engineer. Note : E/w to be measured and paid separately.		
5.23.1	Plain ended CI specials including tail piece, spigot end and socket end.		
5.23.1.1	Up to 300 mm dia	Kg	111.00
5.23.1.2	Above 300 mm and up to 600 mm dia	Kg	129.00
5.23.2	Double flanged CI pipe fittings.		
5.23.2.1	Up to 300 mm dia	Kg	129.00
5.23.2.2	Above 300 mm and up to 600 mm dia	Kg	146.00

Item no.	Description	Unit	Rate (Rs.)
5.24	<p><b>House hold tap connections</b></p> <p>Providing Household Tap Connection as per technical specification and approved drawing as per relevant IS code (amended up to date) from <b>uPVC/DI/AC/MS/GI</b> pipe line up to consumer meter/premises by using <b>PP/MS saddle piece</b> (Complete job). This job includes digging out suitable size of pits and trench for laying service line in all kinds of soil (excluding road); depositing and refilling of pit &amp; jhiri with watering &amp; ramming /compacting in layers and disposal of surplus excavated soil as directed with in a lead of 100 meter ; providing &amp; fixing of all fitting duly approved in accordance with specification for potable water including MS/PP saddle piece, gunmetal ferrule 4.0 mm , GM Full-way Valve (IS:778 Mark) or ball valve (min. weight 165 gm) and specials, below ground level 20 mm nominal dia MDPE pipe PE 80 PN 16 as per ISO 4427 / 20 mm nominal dia PPR-C (Three layered) pipe PN16 SDR 7.4 (IS:15801:2008) (ISI mark) and above ground level using 20 mm dia PPR-C pipe with standard PPR fittings/ 15 mm dia GI pipe with fittings in the premises for fixing a tap / meter box (excluding), including accessories with flushing, cleaning, disinfecting and testing of pipe line complete required</p> <p>for making of service connection complete in all respect including labour charges . The service line should be laid at least 45 cm below ground level. Note: Road cut and restoration is not part of this item and paid separately.</p>		
5.24.1	For connection with 20 mm dia MDPE/PPR-C pipe length up to 05 mtr.	Each	1667.00



Item no.	Description	Unit	Rate (Rs.)
5.25	<p>Providing Household Tap Connection as per technical specification and approved drawing and as per relevant IS code (amended up to date) from <b>HDPE</b> pipe line up to consumer meter/premises by using <b>electro fusion saddle piece</b> (Complete job). This job includes digging out suitable size of pits and trench for laying service line in all kinds of soil; depositing and refilling of pit &amp; jhiri with watering &amp; ramming /compacting in layers and disposal of surplus excavated soil as directed with in a lead of 100 meter ; providing &amp; fixing of all fitting duly approved in accordance with specification for potable water including electrofusion saddle piece, gunmetal ferrule 4.0 mm , GM Full-way Valve (IS:778 Mark) or wheel valve and specials, below ground level 20 mm nominal dia MDPE pipe PE 80 PN 16 as per ISO 4427 / 20 mm nominal dia PPR-C (Three layered) pipe PN16 SDR 7.4 (IS:15801:2008) (ISI mark) for and above ground level using 20 mm dia PPR-C pipe with standard PPR fittings/ 15 mm dia GI pipes with fittings in the premises for fixing a tap / meter box (excluding) , in accessories with flushing, cleaning, disinfecting and testing of pipe line complete required for making of service connection complete in all respect including labour charges . The service line should be laid at least 45 cm below ground level.</p> <p>Note: Road cut and restoration is not part of this item and paid separately.</p>		
5.25.1	For connection with 20 mm dia MDPE/PPR-C pipe length up to 05 mtr.	Each	1986.00

Item no.	Description	Unit	Rate (Rs.)
5.26	<p>Providing Household Tap Connection as per technical specification and approved drawing as per relevant IS code (amended up to date) from <b>HDPE/uPVC/DI/AC/MS/GI</b> pipe line up to consumer meter/premises by using <b>PP mechanical Integrated saddle with inbuilt flow control valve made out of SS316 designed for 5 LPM discharge at 0.5 bar pressure, not exceeding the flow of 7 LPM at 2 bar and a compression elbow, moulded in single piece/ fusion welded</b> (Complete job) including digging out suitable size of pits and trench for laying service line in all kinds of soil; depositing and refilling of pit &amp; jhiri with watering &amp; ramming /compacting in layers and disposal of surplus excavated soil as directed with in a lead of 100 meter ; providing &amp; fixing of all fitting duly approved in accordance with specification for potable water including GM Full-way Valve (IS:778 Mark) or wheel valve and specials with 20 mm nominal dia MDPE pipe PE 80 PN 16 as per ISO 4427 / 20 mm nominal dia PPR-C (Three layered) pipe PN16 SDR 7.4 (IS:15801:2008) (ISI mark) and above ground level using PPR-C pipe with standard PPR fittings/ GI pipes in the premises for fixing a tap / meter box (excluding), including accessories with</p> <p>flushing, cleaning, disinfecting and testing of pipe line complete required for making of service connection complete in all respect including labour charges . The service line should be laid at least 45 cm below ground level.</p> <p><b>Note:</b> Road cut and restoration is not part of this item and paid separately.</p>		
5.26.1	For connection with 20 mm dia MDPE/PPR-C pipe length up to 05 mtr.	Each	1780.00
5.27	P & F Bib cock (IS : 781 mark), superior quality of approved make , brass 400 gm, 15 mm nominal bore.	Each	311.00
5.28	P & F Bib cock (IS : 8931 mark), superior quality of approved make, chrome plated with complete brass body including brass handle with wt. 300 to 325 gm.15 mm nominal bore.	Each	311.00
5.29	Road cutting for house hold service connection in minimum trench width wherever road crossing is required. Road cutting of cement concrete,WBM, Black top etc. of all thickness shall be done by using a concrete cutter machine keeping minimum trench width and restoration of the road with Cement concrete with PCC M-10 and CC M-30 grade as per specification and direction of Engineer in charge.	Mtr	205.00

Item no.	Description	Unit	Rate (Rs.)
5.30	Add extra over item no 1.21, 1.22 & 1.23 for providing 20 mm PE 80 PN 16 as per ISO 4427 MDPE pipe including excavation, providing, laying & jointing of service line above 5.00 mtr.	Mtr	44.00
5.31	Add extra over item no 1.21, 1.22 & 1.23 for providing 20 mm ISI marked PN16 SDR 7.4 (IS:15801:2008) PPR-C (Three layered) pipe including excavation, providing, laying & jointing of service line above 5.00 mtr.	Mtr	57.00
<b>PVC-O Pipe</b>			
5.32	Providing, lowering, laying and jointing in trenches, standard lengths ISI marked Rigid <b>PVC-O</b> S/S Pipes (push on joints) as per IS-16647: 2017 (amended up to date) with EPDM Gasket seals on joints including all taxes , transportation and freight charges, inspection charges, loading/ unloading charges, stacking of pipes, laying of pipes, including cost of labour and material, specials (Tee, bend etc.), satisfactory hydraulic testing, disinfection etc. complete as per technical specifications and direction of Engineer-in-charge of following class and diameter. Note : Providing and fixing of all requisite specials as per drawing, design and layout are inclusive in RM measurement of the item and shall not be paid separately.		
5.32.1	<b>PVC-O pipe Class 500 PN-16</b>		
5.32.1.1	110 mm dia	RMT	874.00
5.32.1.2	160 mm dia	RMT	1480.00
5.32.1.3	200 mm dia	RMT	1701.00
5.32.1.4	250 mm dia	RMT	2280.00
5.32.1.5	315 mm dia	RMT	2780.00
5.32.2	<b>PVC-O pipe Class 500 PN-12.5</b>		
5.32.2.1	110 mm dia	RMT	757.00
5.32.2.2	160 mm dia	RMT	1281.00
5.32.2.3	200 mm dia	RMT	1462.00
	PTMT Bib Cock		
5.33	Providing and fixing ISI mark (IS 9763: 2000 or amended up to date) <b>PTMT bib cock</b> 15 mm nominal bore, minimum weight 92 gms and length 100 mm as per technical specification, approved make and direction of Engineer in charge.	Each	196.00
<b>RCC Reservoirs</b>			
5.34	<b>Construction and commissioning of RCC flat slab Over Head Service Reservoir of following capacity and staging including all material and labour charges as per the Scope of work and Technical Specification, consisting of the following main activities: -</b>		

Item no.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

- a) Topographic survey, preparation of site contour plan, conducting SBC test and its approval from department before construction. Submission and approval of concrete mix design and water quality test report for water to be used in construction.
- b) Excavation in all types of soil, PCC below foundation, all RCC Work, Plinth protection all around the structure including all material, labour, shuttering, scaffolding etc.
- c) OHSR shall be provided with adequate plinth protection all around the structure in a width starting from edge of structure at GL and extending at least up to 1.0m beyond the edge of outer most projection of OHSR. The plinth protection shall consist of 150mm thick PCC in M-15 grade concrete laid over 150mm thick layer of compacted soil.
- d) Providing and applying two coats of food grade epoxy paint on the inside surface roof slab, and 600 mm height of the vertical wall.
- e) Successfully hydro test and water tightness test as per I.S. code.
- f) Providing and applying three coats of anti-carbonation paint on the top surface of the roof slab.
- g) Providing and applying three coats of cement-based paint on the external surface of the container, balcony, cone wall, columns & beams etc.
- j) Providing and fixing water level indicator (float type).
- k) Providing and fixing of hand railing all around the balcony, roof and staircase, consisting of 25mm diameter Class-B GI pipe in two rows and 1000 mm high, 50X50X6mm angle iron vertical post at a maximum spacing of 1500mm centres.
- l) All MS parts to be painted with two coats of the enamel paint over the primer coat of red oxide.
- m) Providing and fixing of 150mm wide PVC water bar for the construction joints in the container (vertical wall & cone wall).
- n) Providing one Aluminium portable ladder of appropriate length to access first landing (3.5 to 4.5m above GL) from ground.
- o) Lighting arrestor consisting of providing and fixing of 2 Nos. of chemical earthing and connecting it to the conical cover of SS ventilator with two separate GI strips of 50mmX3mm
- p) CI/DI puddle collar shall be fixed in the bottom/slab for connecting inlet, outlet, overflow and washout pipe of the reservoir.
- q) Painting the name of the scheme and other details on the reservoir, and any other work related to structure as per the directions of Engineer-in- Charge, Technical Specification and Scope of Work.
- r) Inlet, outlet, overflow, washout pipes and valves are not included in this work, provision for the same shall be taken separately.

5.34.1 **Rates for RCC OHSR, SBC 7 T/sqm, SEISMIC ZONE-II & STAGING 15 M**

Item no.	Description	Unit	Rate (Rs.)
5.34.1.1	50 KL capacity	Litre	41.69
5.34.1.2	75 KL capacity	Litre	34.38
5.34.2	<b>Rates for RCC OHSR,SBC 7 T/sqm, SEISMIC ZONE-III &amp; STAGING 15 M</b>		
5.34.2.1	50 KL capacity	Litre	43.28
5.34.2.2	75 KL capacity	Litre	35.28
5.34.3	<b>Rates for RCC OHSR,SBC 7 T/sqm, SEISMIC ZONE-IV &amp; STAGING 15 M</b>		
5.34.3.1	50 KL capacity	Litre	45.96
5.34.3.2	75 KL capacity	Litre	37.82
5.34.4	<b>Rates for RCC OHSR,SBC 10 T/sqm, SEISMIC ZONE-II &amp; STAGING 15 M</b>		
5.34.4.1	50 KL capacity	Litre	38.16
5.34.4.2	75 KL capacity	Litre	29.85
5.34.5	<b>Rates for RCC OHSR,SBC 10 T/sqm, SEISMIC ZONE-III &amp; STAGING 15 M</b>		
5.34.5.1	50 KL capacity	Litre	38.95
5.34.5.2	75 KL capacity	Litre	30.60
5.34.6	<b>Rates for RCC OHSR,SBC 10 T/sqm, SEISMIC ZONE-IV &amp; STAGING 15 M</b>		
5.34.6.1	50 KL capacity	Litre	39.72
5.34.6.2	75 KL capacity	Litre	31.10
5.34.7	<b>Rates for RCC OHSR,SBC 18 T/sqm, SEISMIC ZONE-II &amp; STAGING 15 M</b>		
5.34.7.1	50 KL capacity	Litre	36.69
5.34.7.2	75 KL capacity	Litre	28.70
5.34.8	<b>Rates for RCC OHSR,SBC 18 T/sqm, SEISMIC ZONE-III &amp; STAGING 15 M</b>		
5.34.8.1	50 KL capacity	Litre	37.81
5.34.8.2	75 KL capacity	Litre	29.55
5.34.9	<b>Rates for RCC OHSR,SBC 18 T/sqm, SEISMIC ZONE-IV &amp; STAGING 15 M</b>		
5.34.9.1	50 KL capacity	Litre	38.51
5.34.9.2	75 KL capacity	Litre	30.17
5.35	<b><i>Construction and commissioning of RCC INTZE type Over Head Service Reservoir of following capacity and staging as per the Scope of work and Technical specifications, consisting of the following main activities: -</i></b>		

Item no.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

- a) Topographic survey, preparation of site contour plan, conducting SBC test and its approval from department before construction. Submission and approval of concrete mix design and water quality test report for water to be used in construction.
- b) Excavation in all types of soil, PCC below foundation, all RCC Work, Plinth protection all around the structure including all material, labour, shuttering, scaffolding etc.
- c) OHSR shall be provided with adequate plinth protection all around the structure in a width starting from edge of structure at GL and extending at least up to 1.0m beyond the edge of outer most projection of OHSR. The plinth protection shall consist of 150mm thick PCC in M-15 grade concrete laid over 150mm thick layer of compacted soil.
- d) Providing and applying two coats of food grade epoxy paint on the inside surface on the top dome, edge beam and 600 mm height of the vertical wall.
- e) Conducting successfully hydro test and water tightness test as per I.S. code.
- f) Providing and applying three coats of anti-carbonation paint on the top surface of the Top Dome.
- g) Providing and applying three coats of cement-based paint on the external surface of the container, balcony, cone wall, columns & beams etc.
- h) Providing and fixing SS-304 ventilator, SS 304 manhole frame and cover and SS-304 ladder from top dome/Slab to bottom dome/Slab inside container.
- i) Providing and fixing of MS section ladder from the last landing to balcony having railing all around it and MS ladder with safety cage from balcony to top dome/slab.
- j) Providing and fixing water level indicator (float type).

Item no.	Description	Unit	Rate (Rs.)
	<p>k) Providing and fixing of hand railing all around the balcony, top dome and staircase consisting of 25mm diameter Class-B GI pipe in two rows and 1000 mm high, 50X50X6mm angle iron vertical post at a maximum spacing of 1500mm centres.</p> <p>l) All MS parts to be painted with two coats of the enamel paint over the primer coat of red oxide.</p> <p>m) Providing and fixing of 150mm wide PVC water bar for the construction joints in the container (vertical wall &amp; cone wall).</p> <p>n) Providing one Aluminium portable ladder of appropriate length to access first landing (3.5 to 4.5m above GL) from ground.</p> <p>o) Lighting arrestor consisting of providing and fixing of 2 Nos. of chemical earthing and connecting it to the conical cover of SS ventilator with two separate GI strips of 50mmX3mm.</p> <p>p) CI/DI puddle collar shall be fixed in the bottom dome/slab for connecting inlet, outlet, overflow and washout pipe of the reservoir.</p> <p>q) Painting the name of the scheme and other details on the reservoir, and any other work related to structure as per the directions of Engineer-in- Charge, Technical Specification and Scope of Work.</p> <p>r) Inlet, outlet, overflow, washout pipes and valves are not included in this work, provision for the same shall be taken separately.</p>		
5.35.1	<b>Rates for RCC OHSR,SBC 7 T/sqm, SEISMIC ZONE-II &amp; STAGING 18 M</b>		
5.35.1.1	100 KL capacity	Litre	30.79
5.35.1.2	150KL capacity	Litre	24.05
5.35.1.3	200KL capacity	Litre	21.01
5.35.1.4	250KL capacity	Litre	20.45
5.35.1.5	300KL capacity	Litre	21.07
5.35.1.6	400KL capacity	Litre	19.15
5.35.1.7	500KL capacity	Litre	18.28
5.35.1.8	600 KL capacity	Litre	16.20
5.35.1.9	700 KL capacity	Litre	15.51
5.35.1.10	800 KL capacity	Litre	14.94
5.35.1.11	900 KL capacity	Litre	14.45
5.35.1.12	1000 KL capacity	Litre	14.03
5.35.1.13	1250 KL capacity	Litre	13.17
5.35.1.14	1500 KL capacity	Litre	12.51
5.35.1.15	1750 KL capacity	Litre	11.98
5.35.1.16	2000 KL capacity	Litre	11.53
5.35.2	<b>Rates for RCC OHSR,SBC 7 T/sqm, SEISMIC ZONE-III &amp; STAGING 18 M</b>		
5.35.2.1	100 KL capacity	Litre	31.38
5.35.5.35	150KL capacity	Litre	24.80
5.35.2.3	200KL capacity	Litre	21.62
5.35.2.4	250KL capacity	Litre	21.27
5.35.2.5	300KL capacity	Litre	21.60
5.35.2.6	400KL capacity	Litre	19.70
5.35.2.7	500KL capacity	Litre	18.80

Item no.	Description	Unit	Rate (Rs.)
5.35.2.8	600 KL capacity	Litre	16.56
5.35.2.9	700 KL capacity	Litre	15.85
5.35.2.10	800 KL capacity	Litre	15.27
5.35.2.11	900 KL capacity	Litre	14.76
5.35.2.12	1000 KL capacity	Litre	14.33
5.35.2.13	1250 KL capacity	Litre	13.46
5.35.2.14	1500 KL capacity	Litre	12.77
5.35.2.15	1750 KL capacity	Litre	12.23
5.35.2.16	2000 KL capacity	Litre	11.78
5.35.3	<b>Rates for RCC OHSR,SBC 7 T/sqm, SEISMIC ZONE-IV &amp; STAGING 18 M</b>		
5.35.3.1	100 KL capacity	Litre	33.36
5.35.3.2	150KL capacity	Litre	26.44
5.35.3.3	200KL capacity	Litre	22.88
5.35.3.4	250KL capacity	Litre	22.74
5.35.3.5	300KL capacity	Litre	22.96
5.35.3.6	400KL capacity	Litre	20.60
5.35.3.7	500KL capacity	Litre	19.42
5.35.3.8	600 KL capacity	Litre	17.74
5.35.3.9	700 KL capacity	Litre	16.85
5.35.3.10	800 KL capacity	Litre	16.12
5.35.3.11	900 KL capacity	Litre	15.49
5.35.3.12	1000 KL capacity	Litre	14.96
5.35.3.13	1250 KL capacity	Litre	13.88
5.35.3.14	1500 KL capacity	Litre	13.15
5.35.3.15	1750 KL capacity	Litre	12.50
5.35.3.16	2000 KL capacity	Litre	11.96
5.35.4	<b>Rates for RCC OHSR,SBC 10 T/sqm, SEISMIC ZONE-II &amp; STAGING 18 M</b>		
5.35.4.1	100 KL capacity	Litre	27.53
5.35.4.2	150KL capacity	Litre	21.22
5.35.4.3	200KL capacity	Litre	18.93
5.35.4.4	250KL capacity	Litre	18.06
5.35.4.5	300KL capacity	Litre	17.97
5.35.4.6	400KL capacity	Litre	14.91
5.35.4.7	500KL capacity	Litre	14.74
5.35.4.8	600 KL capacity	Litre	13.19
5.35.4.9	700 KL capacity	Litre	12.47
5.35.4.10	800 KL capacity	Litre	11.89
5.35.4.11	900 KL capacity	Litre	11.39
5.35.4.12	1000 KL capacity	Litre	10.97
5.35.4.13	1250 KL capacity	Litre	10.11
5.35.4.14	1500 KL capacity	Litre	9.47
5.35.4.15	1750 KL capacity	Litre	8.95
5.35.4.16	2000 KL capacity	Litre	8.53
5.35.5	<b>Rates for RCC OHSR,SBC 10 T/sqm, SEISMIC ZONE-III &amp; STAGING 18 M</b>		
5.35.5.1	100 KL capacity	Litre	29.06
5.35.5.2	150KL capacity	Litre	22.55
5.35.5.3	200KL capacity	Litre	20.09
5.35.5.4	250KL capacity	Litre	19.45
5.35.5.5	300KL capacity	Litre	19.43
5.35.5.6	400KL capacity	Litre	16.23
5.35.5.7	500KL capacity	Litre	15.84
5.35.5.8	600 KL capacity	Litre	14.30



Item no.	Description	Unit	Rate (Rs.)
5.35.5.9	700 KL capacity	Litre	13.55
5.35.5.10	800 KL capacity	Litre	12.93
5.35.5.11	900 KL capacity	Litre	12.41
5.35.5.12	1000 KL capacity	Litre	11.97
5.35.5.13	1250 KL capacity	Litre	11.08
5.35.5.14	1500 KL capacity	Litre	10.39
5.35.5.15	1750 KL capacity	Litre	9.85
5.35.5.16	2000 KL capacity	Litre	9.41
5.35.6	<b>Rates for RCC OHSR,SBC 10 T/sqm, SEISMIC ZONE-IV &amp; STAGING 18 M</b>		
5.35.6.1	100 KL capacity	Litre	31.74
5.35.6.2	150KL capacity	Litre	24.98
5.35.6.3	200KL capacity	Litre	21.66
5.35.6.4	250KL capacity	Litre	21.72
5.35.6.5	300KL capacity	Litre	21.29
5.35.6.6	400KL capacity	Litre	17.58
5.35.6.7	500KL capacity	Litre	17.04
5.35.6.8	600 KL capacity	Litre	15.10
5.35.6.9	700 KL capacity	Litre	14.26
5.35.6.10	800 KL capacity	Litre	13.57
5.35.6.11	900 KL capacity	Litre	12.99
5.35.6.12	1000 KL capacity	Litre	12.50
5.35.6.13	1250 KL capacity	Litre	11.50
5.35.6.14	1500 KL capacity	Litre	10.75
5.35.6.15	1750 KL capacity	Litre	10.16
5.35.6.16	2000 KL capacity	Litre	9.67
5.35.7	<b>Rates for RCC OHSR,SBC 18 T/sqm, SEISMIC ZONE-II &amp; STAGING 18 M</b>		
5.35.7.1	100 KL capacity	Litre	24.90
5.35.7.2	150KL capacity	Litre	19.44
5.35.7.3	200KL capacity	Litre	17.25
5.35.7.4	250KL capacity	Litre	15.99
5.35.7.5	300KL capacity	Litre	15.75
5.35.7.6	400KL capacity	Litre	13.93
5.35.7.7	500KL capacity	Litre	12.86
5.35.7.8	600 KL capacity	Litre	12.10
5.35.7.9	700 KL capacity	Litre	11.42
5.35.7.10	800 KL capacity	Litre	10.87
5.35.7.11	900 KL capacity	Litre	10.40
5.35.7.12	1000 KL capacity	Litre	10.01
5.35.7.13	1250 KL capacity	Litre	9.21
5.35.7.14	1500 KL capacity	Litre	8.61
5.35.7.15	1750 KL capacity	Litre	8.13
5.35.7.16	2000 KL capacity	Litre	7.74
5.35.8	<b>Rates for RCC OHSR,SBC 18 T/sqm, SEISMIC ZONE-III &amp; STAGING 18 M</b>		
5.35.8.1	100 KL capacity	Litre	25.42
5.35.8.2	150KL capacity	Litre	20.02
5.35.8.3	200KL capacity	Litre	17.66
5.35.8.4	250KL capacity	Litre	16.68
5.35.8.5	300KL capacity	Litre	16.18
5.35.8.6	400KL capacity	Litre	14.44
5.35.8.7	500KL capacity	Litre	13.35
5.35.8.8	600 KL capacity	Litre	12.62
5.35.8.9	700 KL capacity	Litre	11.93

Item no.	Description	Unit	Rate (Rs.)
5.35.8.10	800 KL capacity	Litre	11.36
5.35.8.11	900 KL capacity	Litre	10.88
5.35.8.12	1000 KL capacity	Litre	10.47
5.35.8.13	1250 KL capacity	Litre	9.65
5.35.8.14	1500 KL capacity	Litre	9.03
5.35.8.15	1750 KL capacity	Litre	8.53
5.35.8.16	2000 KL capacity	Litre	8.13
5.35.9	<b>Rates for RCC OHSR,SBC 18 T/sqm, SEISMIC ZONE-IV &amp; STAGING 18 M</b>		
5.35.9.1	100 KL capacity	Litre	26.85
5.35.9.2	150KL capacity	Litre	20.87
5.35.9.3	200KL capacity	Litre	18.41
5.35.9.4	250KL capacity	Litre	18.02
5.35.9.5	300KL capacity	Litre	17.31
5.35.9.6	400KL capacity	Litre	15.16
5.35.9.7	500KL capacity	Litre	13.96
5.35.9.8	600 KL capacity	Litre	13.15
5.35.9.9	700 KL capacity	Litre	12.44
5.35.9.10	800 KL capacity	Litre	11.85
5.35.9.11	900 KL capacity	Litre	11.37
5.35.9.12	1000 KL capacity	Litre	10.94
5.35.9.13	1250 KL capacity	Litre	10.10
5.35.9.14	1500 KL capacity	Litre	9.46
5.35.9.15	1750 KL capacity	Litre	8.94
5.35.9.16	2000 KL capacity	Litre	8.53
5.35.10	<b>Rates for RCC OHSR,SBC 7 T/sqm, SEISMIC ZONE-II &amp; STAGING 20 M</b>		
5.35.10.1	100 KL capacity	Litre	33.08
5.35.10.2	150KL capacity	Litre	25.91
5.35.10.3	200KL capacity	Litre	22.35
5.35.10.4	250KL capacity	Litre	21.47
5.35.10.5	300KL capacity	Litre	22.08
5.35.10.6	400KL capacity	Litre	19.92
5.35.10.7	500KL capacity	Litre	18.71
5.35.10.8	600 KL capacity	Litre	17.20
5.35.10.9	700 KL capacity	Litre	16.39
5.35.10.10	800 KL capacity	Litre	15.72
5.35.10.11	900 KL capacity	Litre	15.16
5.35.10.12	1000 KL capacity	Litre	14.67
5.35.10.13	1250 KL capacity	Litre	13.68
5.35.10.14	1500 KL capacity	Litre	12.92
5.35.10.15	1750 KL capacity	Litre	12.32
5.35.10.16	2000 KL capacity	Litre	11.81
5.35.11	<b>Rates for RCC OHSR,SBC 7 T/sqm, SEISMIC ZONE-III &amp; STAGING 20 M</b>		
5.35.11.1	100 KL capacity	Litre	33.12
5.35.11.2	150KL capacity	Litre	26.27
5.35.11.3	200KL capacity	Litre	22.64
5.35.11.4	250KL capacity	Litre	22.19
5.35.11.5	300KL capacity	Litre	22.68
5.35.11.6	400KL capacity	Litre	20.47
5.35.11.7	500KL capacity	Litre	19.22
5.35.11.8	600 KL capacity	Litre	17.24
5.35.11.9	700 KL capacity	Litre	16.49
5.35.11.10	800 KL capacity	Litre	15.86

Item no.	Description	Unit	Rate (Rs.)
5.35.11.11	900 KL capacity	Litre	15.33
5.35.11.12	1000 KL capacity	Litre	14.87
5.35.11.13	1250 KL capacity	Litre	13.94
5.35.11.14	1500 KL capacity	Litre	13.22
5.35.11.15	1750 KL capacity	Litre	12.64
5.35.11.16	2000 KL capacity	Litre	12.16
5.35.12	<b>Rates for RCC OHSR,SBC 7 T/sqm, SEISMIC ZONE-IV &amp; STAGING 20 M</b>		
5.35.12.1	100 KL capacity	Litre	35.26
5.35.15.35	150KL capacity	Litre	28.32
5.35.12.3	200KL capacity	Litre	24.05
5.35.12.4	250KL capacity	Litre	24.10
5.35.12.5	300KL capacity	Litre	24.24
5.35.12.6	400KL capacity	Litre	21.72
5.35.12.7	500KL capacity	Litre	20.13
5.35.12.8	600 KL capacity	Litre	18.34
5.35.12.9	700 KL capacity	Litre	17.40
5.35.12.10	800 KL capacity	Litre	16.62
5.35.12.11	900 KL capacity	Litre	15.98
5.35.12.12	1000 KL capacity	Litre	15.41
5.35.12.13	1250 KL capacity	Litre	14.29
5.35.12.14	1500 KL capacity	Litre	13.43
5.35.12.15	1750 KL capacity	Litre	12.74
5.35.12.16	2000 KL capacity	Litre	12.18
5.35.13	<b>Rates for RCC OHSR,SBC 10 T/sqm, SEISMIC ZONE-II &amp; STAGING 20 M</b>		
5.35.13.1	100 KL capacity	Litre	30.01
5.35.13.2	150KL capacity	Litre	23.04
5.35.13.3	200KL capacity	Litre	20.18
5.35.13.4	250KL capacity	Litre	19.09
5.35.13.5	300KL capacity	Litre	18.90
5.35.13.6	400KL capacity	Litre	16.78
5.35.13.7	500KL capacity	Litre	15.30
5.35.13.8	600 KL capacity	Litre	14.19
5.35.13.9	700 KL capacity	Litre	13.32
5.35.13.10	800 KL capacity	Litre	12.60
5.35.13.11	900 KL capacity	Litre	12.00
5.35.13.12	1000 KL capacity	Litre	11.50
5.35.13.13	1250 KL capacity	Litre	10.49
5.35.13.14	1500 KL capacity	Litre	9.72
5.35.13.15	1750 KL capacity	Litre	9.13
5.35.13.16	2000 KL capacity	Litre	8.64
5.35.14	<b>Rates for RCC OHSR,SBC 10 T/sqm, SEISMIC ZONE-III &amp; STAGING 20 M</b>		
5.35.14.1	100 KL capacity	Litre	30.87
5.35.14.2	150KL capacity	Litre	23.75
5.35.14.3	200KL capacity	Litre	21.05
5.35.14.4	250KL capacity	Litre	20.52
5.35.14.5	300KL capacity	Litre	20.36
5.35.14.6	400KL capacity	Litre	18.14
5.35.14.7	500KL capacity	Litre	16.63
5.35.14.8	600 KL capacity	Litre	14.82
5.35.14.9	700 KL capacity	Litre	14.05
5.35.14.10	800 KL capacity	Litre	13.24
5.35.14.11	900 KL capacity	Litre	12.53

Item no.	Description	Unit	Rate (Rs.)
5.35.14.12	1000 KL capacity	Litre	12.08
5.35.14.13	1250 KL capacity	Litre	11.17
5.35.14.14	1500 KL capacity	Litre	10.48
5.35.14.15	1750 KL capacity	Litre	9.93
5.35.14.16	2000 KL capacity	Litre	9.48
5.35.15	<b>Rates for RCC OHSR,SBC 10 T/sqm, SEISMIC ZONE-IV &amp; STAGING 20 M</b>		
5.35.15.1	100 KL capacity	Litre	33.38
5.35.15.2	150KL capacity	Litre	26.41
5.35.15.3	200KL capacity	Litre	22.72
5.35.15.4	250KL capacity	Litre	22.97
5.35.15.5	300KL capacity	Litre	22.49
5.35.15.6	400KL capacity	Litre	19.67
5.35.15.7	500KL capacity	Litre	17.98
5.35.15.8	600 KL capacity	Litre	15.44
5.35.15.9	700 KL capacity	Litre	14.63
5.35.15.10	800 KL capacity	Litre	13.97
5.35.15.11	900 KL capacity	Litre	13.42
5.35.15.12	1000 KL capacity	Litre	12.93
5.35.15.13	1250 KL capacity	Litre	11.98
5.35.15.14	1500 KL capacity	Litre	11.24
5.35.15.15	1750 KL capacity	Litre	10.66
5.35.15.16	2000 KL capacity	Litre	10.17
5.35.16	<b>Rates for RCC OHSR,SBC 18 T/sqm, SEISMIC ZONE-II &amp; STAGING 20 M</b>		
5.35.16.1	100 KL capacity	Litre	27.21
5.35.16.2	150KL capacity	Litre	21.07
5.35.16.3	200KL capacity	Litre	18.33
5.35.16.4	250KL capacity	Litre	17.05
5.35.16.5	300KL capacity	Litre	16.65
5.35.16.6	400KL capacity	Litre	14.57
5.35.16.7	500KL capacity	Litre	13.46
5.35.16.8	600 KL capacity	Litre	12.80
5.35.16.9	700 KL capacity	Litre	12.04
5.35.16.10	800 KL capacity	Litre	11.41
5.35.16.11	900 KL capacity	Litre	10.88
5.35.16.12	1000 KL capacity	Litre	10.43
5.35.16.13	1250 KL capacity	Litre	9.54
5.35.16.14	1500 KL capacity	Litre	8.86
5.35.16.15	1750 KL capacity	Litre	8.33
5.35.16.16	2000 KL capacity	Litre	7.89
5.35.17	<b>Rates for RCC OHSR,SBC 18 T/sqm, SEISMIC ZONE-III &amp; STAGING 20 M</b>		
5.35.17.1	100 KL capacity	Litre	27.17
5.35.17.2	150KL capacity	Litre	21.22
5.35.17.3	200KL capacity	Litre	18.70
5.35.17.4	250KL capacity	Litre	17.70
5.35.17.5	300KL capacity	Litre	17.14
5.35.17.6	400KL capacity	Litre	15.06
5.35.17.7	500KL capacity	Litre	13.94
5.35.17.8	600 KL capacity	Litre	13.54
5.35.17.9	700 KL capacity	Litre	12.78
5.35.17.10	800 KL capacity	Litre	12.15
5.35.17.11	900 KL capacity	Litre	11.62
5.35.17.12	1000 KL capacity	Litre	11.17

Item no.	Description	Unit	Rate (Rs.)
5.35.17.13	1250 KL capacity	Litre	10.27
5.35.17.14	1500 KL capacity	Litre	9.59
5.35.17.15	1750 KL capacity	Litre	9.05
5.35.17.16	2000 KL capacity	Litre	8.61
5.35.18	<b>Rates for RCC OHSR,SBC 18 T/sqm, SEISMIC ZONE-IV &amp; STAGING 20 M</b>		
5.35.18.1	100 KL capacity	Litre	28.38
5.35.18.2	150KL capacity	Litre	21.88
5.35.18.3	200KL capacity	Litre	19.41
5.35.18.4	250KL capacity	Litre	18.91
5.35.18.5	300KL capacity	Litre	18.25
5.35.18.6	400KL capacity	Litre	15.89
5.35.18.7	500KL capacity	Litre	14.60
5.35.18.8	600 KL capacity	Litre	14.03
5.35.18.9	700 KL capacity	Litre	13.28
5.35.18.10	800 KL capacity	Litre	12.66
5.35.18.11	900 KL capacity	Litre	12.12
5.35.18.12	1000 KL capacity	Litre	11.68
5.35.18.13	1250 KL capacity	Litre	10.77
5.35.18.14	1500 KL capacity	Litre	10.08
5.35.18.15	1750 KL capacity	Litre	9.54
5.35.18.16	2000 KL capacity	Litre	9.09
5.35.19	<b>Rates for RCC OHSR,SBC 7 T/sqm, SEISMIC ZONE-II &amp; STAGING 22 M</b>		
5.35.19.1	100 KL capacity	Litre	35.02
5.35.19.2	150KL capacity	Litre	26.81
5.35.19.3	200KL capacity	Litre	23.24
5.35.19.4	250KL capacity	Litre	22.64
5.35.19.5	300KL capacity	Litre	22.67
5.35.19.6	400KL capacity	Litre	20.37
5.35.19.7	500KL capacity	Litre	19.22
5.35.19.8	600 KL capacity	Litre	17.66
5.35.19.9	700 KL capacity	Litre	16.79
5.35.19.10	800 KL capacity	Litre	16.06
5.35.19.11	900 KL capacity	Litre	15.45
5.35.19.12	1000 KL capacity	Litre	14.92
5.35.19.13	1250 KL capacity	Litre	13.85
5.35.19.14	1500 KL capacity	Litre	13.04
5.35.19.15	1750 KL capacity	Litre	12.40
5.35.19.16	2000 KL capacity	Litre	11.86
5.35.20	<b>Rates for RCC OHSR,SBC 7 T/sqm, SEISMIC ZONE-III &amp; STAGING 22 M</b>		
5.35.20.1	100 KL capacity	Litre	35.03
5.35.20.2	150KL capacity	Litre	27.14
5.35.20.3	200KL capacity	Litre	23.56
5.35.20.4	250KL capacity	Litre	23.00
5.35.20.5	300KL capacity	Litre	23.29
5.35.20.6	400KL capacity	Litre	20.93
5.35.20.7	500KL capacity	Litre	19.72
5.35.20.8	600 KL capacity	Litre	17.89
5.35.20.9	700 KL capacity	Litre	17.04
5.35.20.10	800 KL capacity	Litre	16.33
5.35.20.11	900 KL capacity	Litre	15.73
5.35.20.12	1000 KL capacity	Litre	15.22
5.35.20.13	1250 KL capacity	Litre	14.18

Item no.	Description	Unit	Rate (Rs.)
5.35.20.14	1500 KL capacity	Litre	13.38
5.35.20.15	1750 KL capacity	Litre	12.74
5.35.20.16	2000 KL capacity	Litre	12.21
5.35.21	<b>Rates for RCC OHSR,SBC 7 T/sqm, SEISMIC ZONE-IV &amp; STAGING 22 M</b>		
5.35.21.1	100 KL capacity	Litre	36.66
5.35.21.2	150KL capacity	Litre	29.35
5.35.21.3	200KL capacity	Litre	24.62
5.35.21.4	250KL capacity	Litre	24.59
5.35.21.5	300KL capacity	Litre	25.03
5.35.21.6	400KL capacity	Litre	21.88
5.35.21.7	500KL capacity	Litre	20.44
5.35.21.8	600 KL capacity	Litre	18.64
5.35.21.9	700 KL capacity	Litre	17.67
5.35.21.10	800 KL capacity	Litre	16.87
5.35.21.11	900 KL capacity	Litre	16.19
5.35.21.12	1000 KL capacity	Litre	15.60
5.35.21.13	1250 KL capacity	Litre	14.43
5.35.21.14	1500 KL capacity	Litre	13.54
5.35.21.15	1750 KL capacity	Litre	12.83
5.35.21.16	2000 KL capacity	Litre	12.25
5.35.22	<b>Rates for RCC OHSR,SBC 10 T/sqm, SEISMIC ZONE-II &amp; STAGING 22 M</b>		
5.35.22.1	100 KL capacity	Litre	32.31
5.35.22.2	150KL capacity	Litre	24.27
5.35.22.3	200KL capacity	Litre	21.41
5.35.22.4	250KL capacity	Litre	20.27
5.35.22.5	300KL capacity	Litre	19.60
5.35.22.6	400KL capacity	Litre	17.26
5.35.22.7	500KL capacity	Litre	15.74
5.35.22.8	600 KL capacity	Litre	14.25
5.35.22.9	700 KL capacity	Litre	13.37
5.35.22.10	800 KL capacity	Litre	12.66
5.35.22.11	900 KL capacity	Litre	12.06
5.35.22.12	1000 KL capacity	Litre	11.55
5.35.22.13	1250 KL capacity	Litre	10.54
5.35.22.14	1500 KL capacity	Litre	9.78
5.35.22.15	1750 KL capacity	Litre	9.18
5.35.22.16	2000 KL capacity	Litre	8.69
5.35.23	<b>Rates for RCC OHSR,SBC 10 T/sqm, SEISMIC ZONE-III &amp; STAGING 22 M</b>		
5.35.23.1	100 KL capacity	Litre	32.63
5.35.23.2	150KL capacity	Litre	24.75
5.35.23.3	200KL capacity	Litre	21.82
5.35.23.4	250KL capacity	Litre	21.12
5.35.23.5	300KL capacity	Litre	21.05
5.35.23.6	400KL capacity	Litre	18.52
5.35.23.7	500KL capacity	Litre	16.98
5.35.23.8	600 KL capacity	Litre	15.72
5.35.23.9	700 KL capacity	Litre	14.77
5.35.23.10	800 KL capacity	Litre	13.98
5.35.23.11	900 KL capacity	Litre	13.39
5.35.23.12	1000 KL capacity	Litre	12.90
5.35.23.13	1250 KL capacity	Litre	11.89
5.35.23.14	1500 KL capacity	Litre	11.12

Item no.	Description	Unit	Rate (Rs.)
5.35.23.15	1750 KL capacity	Litre	10.52
5.35.23.16	2000 KL capacity	Litre	10.02
5.35.24	<b>Rates for RCC OHSR,SBC 10 T/sqm, SEISMIC ZONE-IV &amp; STAGING 22 M</b>		
5.35.24.1	100 KL capacity	Litre	35.32
5.35.24.2	150KL capacity	Litre	27.02
5.35.24.3	200KL capacity	Litre	23.38
5.35.24.4	250KL capacity	Litre	23.62
5.35.24.5	300KL capacity	Litre	23.13
5.35.24.6	400KL capacity	Litre	20.04
5.35.24.7	500KL capacity	Litre	18.35
5.35.24.8	600 KL capacity	Litre	17.32
5.35.24.9	700 KL capacity	Litre	16.30
5.35.24.10	800 KL capacity	Litre	15.55
5.35.24.11	900 KL capacity	Litre	14.92
5.35.24.12	1000 KL capacity	Litre	14.37
5.35.24.13	1250 KL capacity	Litre	13.29
5.35.24.14	1500 KL capacity	Litre	12.46
5.35.24.15	1750 KL capacity	Litre	11.80
5.35.24.16	2000 KL capacity	Litre	11.27
5.35.25	<b>Rates for RCC OHSR,SBC 18 T/sqm, SEISMIC ZONE-II &amp; STAGING 22 M</b>		
5.35.25.1	100 KL capacity	Litre	28.99
5.35.25.2	150KL capacity	Litre	22.39
5.35.25.3	200KL capacity	Litre	19.34
5.35.25.4	250KL capacity	Litre	18.24
5.35.25.5	300KL capacity	Litre	17.38
5.35.25.6	400KL capacity	Litre	15.14
5.35.25.7	500KL capacity	Litre	13.92
5.35.25.8	600 KL capacity	Litre	12.78
5.35.25.9	700 KL capacity	Litre	11.97
5.35.25.10	800 KL capacity	Litre	11.30
5.35.25.11	900 KL capacity	Litre	10.75
5.35.25.12	1000 KL capacity	Litre	10.27
5.35.25.13	1250 KL capacity	Litre	9.34
5.35.25.14	1500 KL capacity	Litre	8.64
5.35.25.15	1750 KL capacity	Litre	8.08
5.35.25.16	2000 KL capacity	Litre	7.63
5.35.26	<b>Rates for RCC OHSR,SBC 18 T/sqm, SEISMIC ZONE-III &amp; STAGING 22 M</b>		
5.35.26.1	100 KL capacity	Litre	29.31
5.35.26.2	150KL capacity	Litre	22.33
5.35.26.3	200KL capacity	Litre	19.48
5.35.26.4	250KL capacity	Litre	18.54
5.35.26.5	300KL capacity	Litre	17.95
5.35.26.6	400KL capacity	Litre	15.65
5.35.26.7	500KL capacity	Litre	14.41
5.35.26.8	600 KL capacity	Litre	13.30
5.35.26.9	700 KL capacity	Litre	12.48
5.35.26.10	800 KL capacity	Litre	11.82
5.35.26.11	900 KL capacity	Litre	11.27
5.35.26.12	1000 KL capacity	Litre	10.80
5.35.26.13	1250 KL capacity	Litre	9.87
5.35.26.14	1500 KL capacity	Litre	9.16
5.35.26.15	1750 KL capacity	Litre	8.60

Item no.	Description	Unit	Rate (Rs.)
5.35.26.16	2000 KL capacity	Litre	8.14
5.35.27	<b>Rates for RCC OHSR,SBC 18 T/sqm, SEISMIC ZONE-IV &amp; STAGING 22 M</b>		
5.35.27.1	100 KL capacity	Litre	29.92
5.35.27.2	150KL capacity	Litre	23.01
5.35.27.3	200KL capacity	Litre	20.18
5.35.27.4	250KL capacity	Litre	19.49
5.35.27.5	300KL capacity	Litre	18.94
5.35.27.6	400KL capacity	Litre	16.34
5.35.27.7	500KL capacity	Litre	15.01
5.35.27.8	600 KL capacity	Litre	13.86
5.35.27.9	700 KL capacity	Litre	13.06
5.35.27.10	800 KL capacity	Litre	12.41
5.35.27.11	900 KL capacity	Litre	11.85
5.35.27.12	1000 KL capacity	Litre	11.39
5.35.27.13	1250 KL capacity	Litre	10.46
5.35.27.14	1500 KL capacity	Litre	9.75
5.35.27.15	1750 KL capacity	Litre	9.19
5.35.27.16	2000 KL capacity	Litre	8.73
5.35.28	For staging above 22 Mtr ( only in exceptional condition where hydraulics not permit) add 2% per Mtr above 22 Mtr.		
5.36	<b>Construction of RCC (Flat slab type) Clear Water Reservoir</b> of following capacity as per the Scope of work and Technical specification, consisting of the following main activities: - <ul style="list-style-type: none"> <li>a) Topographic survey, preparation of site contour plan, conducting SBC test and its approval from department before construction. Submission and approval of concrete mix design and water quality test report for water to be used in construction.</li> <li>b) Excavation in all types of soil, PCC below foundation &amp; all RCC Work including all labour and material charges including providing and fixing of accessories such as SS ladder, SS manhole frame and covers, water level indicator (float type), SS ventilator with SS screen, float valve, puddle collars, G.I. pipe railing around walk way, Top Dome/Slab, Staircase.</li> <li>c) CWR shall be provided with adequate plinth protection all around the structure in a width starting from edge of structure at GL and extending at least up to 1.0m beyond the vertical wall of CWR. The plinth protection shall consist of 150mm thick PCC in M-15 concrete over 150mm thick compacted soil fill.</li> <li>d) Providing and applying two coats of food grade epoxy paint on the inside surface of the roof slab, and 600 mm height of the vertical wall.</li> <li>e) Successful hydro test and water tightness test as per I.S. code.</li> <li>f) Providing and applying three coats of anti-carbonation paint on the roof Slab.</li> </ul>		



Item no.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

g) Providing and applying three coats of cement-based paint on the remaining external surface area of the structure.

h) Providing and fixing SS-304 ventilator, SS 304 manhole frame and cover and SS 304 ladder from roof slab to bottom Slab, inside container. Providing and fixing water level indicator (Float type).

i) Providing and fixing MS ladder from ground to top slab.

j) All MS parts to be painted with two coats of the enamelled paint over the primer coat of red oxide.

k) Providing and fixing of 150mm wide water bar for the construction joints in the container.

l) Providing and fixing CI/DI puddle collars the vertical wall for connecting inlet, outlet, overflow and washout pipes of the reservoir.

m) **Inlet, outlet, overflow, washout pipes and valves are not included in this work, provision for the same shall be taken separately.**

5.36.1 **Rates for RCC Partially Underground type clear water reservoir SBC 7 T/sqm, SEISMIC ZONE-2,3& 4**

5.36.1.1	50 KL capacity	Litre	8.61
5.36.1.2	75 KL capacity	Litre	7.99
5.36.1.3	100 KL capacity	Litre	7.95
5.36.1.4	150KL capacity	Litre	7.14
5.36.1.5	200KL capacity	Litre	6.58
5.36.1.6	250KL capacity	Litre	6.28
5.36.1.7	300KL capacity	Litre	6.08

5.36.2 **Rates for RCC Underground type clear water reservoir SBC 7 T/sqm, SEISMIC ZONE-2,3 & 4**

5.36.2.1	50 KL capacity	Litre	8.67
5.36.2.2	75 KL capacity	Litre	8.05
5.36.2.3	100 KL capacity	Litre	7.99
5.36.2.4	150KL capacity	Litre	7.03
5.36.2.5	200KL capacity	Litre	6.63
5.36.2.6	250KL capacity	Litre	6.26
5.36.2.7	300KL capacity	Litre	6.18

5.37 Construction of **RCC (Dome type) Clear Water Reservoir** of following capacity as per Scope of work and Technical specification, consisting of the following main activities: -

Item no.	Description	Unit	Rate (Rs.)
	<p>a) Topographic survey, preparation of site contour plan, conducting SBC test and its approval from department before construction. Submission and approval of concrete mix design and water quality test report for water to be used in construction. .</p> <p>b) Excavation in all types of soil, PCC below foundation &amp; all RCC Work including all labour and material charges including providing and fixing of accessories such as SS ladder, SS manhole frame and covers, water level indicator (float type), SS ventilator with SS screen, float valve, puddle collars, G.I. pipe railing around walk way, Top Dome/Slab, Staircase.</p> <p>c) CWR shall be provided with adequate plinth protection all around the structure in a width starting from edge of structure at GL and extending at least up to 1.0m beyond the vertical wall of CWR. The plinth protection shall consist of 150mm thick PCC in M-15 concrete over 150mm thick compacted soil fill.</p> <p>d) Providing and applying two coats of food grade epoxy paint on the inside surface of the roof slab, and 600 mm height of the vertical wall.</p> <p>e) Successful hydro test and water tightness test as per I.S. code.</p> <p>f) Providing and applying three coats of anti-carbonation paint on the roof Slab.</p> <p>g) Providing and applying three coats of cement-based paint on the remaining external surface area of the structure.</p> <p>h) Providing and fixing SS-304 ventilator, SS 304 manhole frame and cover and SS 304 ladder from roof slab to bottom Slab, inside container. Providing and fixing water level indicator (Float type).</p> <p>i) Providing and fixing MS ladder from ground to top slab.</p> <p>j) All MS parts to be painted with two coats of the enamelled paint over the primer coat of red oxide.</p> <p>k) Providing and fixing of 150mm wide water bar for the construction joints in the container.</p> <p>l) Providing and fixing CI/DI puddle collars the vertical wall for connecting inlet, outlet, overflow and washout pipes of the reservoir.</p> <p>m) <b><i>Inlet, outlet, overflow, washout pipes and valves are not included in this work, provision for the same shall be taken separately.</i></b></p>		
5.37.1	<b>Rates for RCC Partially Underground type clear water reservoir SBC 7 T/sqm, SEISMIC ZONE2,3 &amp; 4</b>		
5.37.1.1	400 KL capacity	Litre	6.55
5.37.2	<b>Rates for RCC Underground type clear water reservoir SBC 7 T/sqm, SEISMIC ZONE-2,3 &amp; 4</b>		
5.37.2.1	400 KL capacity	Litre	6.37
5.37.3	<b>Rates for RCC Partially Underground type clear water reservoir SBC 7 T/sqm, SEISMIC ZONE-2 &amp; 3.</b>		

Item no.	Description	Unit	Rate (Rs.)
5.37.3.1	500 KL capacity	Litre	5.61
5.37.3.2	600 KL capacity	Litre	5.33
5.37.3.3	700 KL capacity	Litre	5.27
5.37.3.4	800 KL capacity	Litre	5.22
5.37.3.5	900 KL capacity	Litre	5.11
5.37.3.6	1000 KL capacity	Litre	5.03
5.37.4	<b>Rates for RCC Partially Underground type clear water reservoir SBC 12.5 T/sqm, SEISMIC ZONE-2 &amp; 3.</b>		
5.37.4.1	500 KL capacity	Litre	5.46
5.37.4.2	600 KL capacity	Litre	5.16
5.37.4.3	700 KL capacity	Litre	5.07
5.37.4.4	800 KL capacity	Litre	4.99
5.37.4.5	900 KL capacity	Litre	4.87
5.37.4.6	1000 KL capacity	Litre	4.76
5.37.5	<b>Rates for RCC Partially Underground type clear water reservoir SBC 7 T/sqm, SEISMIC ZONE-4</b>		
5.37.5.1	500 KL capacity	Litre	6.20
5.37.5.2	600 KL capacity	Litre	5.94
5.37.5.3	700 KL capacity	Litre	5.85
5.37.5.4	800 KL capacity	Litre	5.77
5.37.5.5	900 KL capacity	Litre	5.58
5.37.5.6	1000 KL capacity	Litre	5.43
5.37.6	<b>Rates for RCC Partially Underground type clear water reservoir SBC 12.5 T/sqm, SEISMIC ZONE-4</b>		
5.37.6.1	500 KL capacity	Litre	5.58
5.37.6.2	600 KL capacity	Litre	5.38
5.37.6.3	700 KL capacity	Litre	5.27
5.37.6.4	800 KL capacity	Litre	5.18
5.37.6.5	900 KL capacity	Litre	5.03
5.37.6.6	1000 KL capacity	Litre	4.91
5.37.7	<b>Rates for RCC Underground type clear water reservoir SBC 7 T/sqm, SEISMIC ZONE-2 &amp; 3</b>		
5.37.7.1	500 KL capacity	Litre	5.69
5.37.7.2	600 KL capacity	Litre	5.57
5.37.7.3	700 KL capacity	Litre	5.47
5.37.7.4	800 KL capacity	Litre	5.38
5.37.7.5	900 KL capacity	Litre	5.28
5.37.7.6	1000 KL capacity	Litre	5.18
5.37.8	<b>Rates for RCC Underground type clear water reservoir SBC 12.5 T/sqm, SEISMIC ZONE- 2&amp;3</b>		
5.37.8.1	500 KL capacity	Litre	5.56
5.37.8.2	600 KL capacity	Litre	5.44
5.37.8.3	700 KL capacity	Litre	5.35
5.37.8.4	800 KL capacity	Litre	5.29
5.37.8.5	900 KL capacity	Litre	5.16
5.37.8.6	1000 KL capacity	Litre	5.06
5.37.9	<b>Rates for RCC Underground type clear water reservoir SBC 7 T/sqm, SEISMIC ZONE-4</b>		
5.37.9.1	500 KL capacity	Litre	5.77
5.37.9.2	600 KL capacity	Litre	5.70
5.37.9.3	700 KL capacity	Litre	5.56
5.37.9.4	800 KL capacity	Litre	5.46

Item no.	Description	Unit	Rate (Rs.)
5.37.9.5	900 KL capacity	Litre	5.35
5.37.9.6	1000 KL capacity	Litre	5.26
5.37.10	<b>Rates for RCC Underground type clear water reservoir SBC 12.5 T/sqm, SEISMIC ZONE-4</b>		
5.37.10.1	500 KL capacity	Litre	5.77
5.37.10.2	600 KL capacity	Litre	5.70
5.37.10.3	700 KL capacity	Litre	5.56
5.37.10.4	800 KL capacity	Litre	5.46
5.37.10.5	900 KL capacity	Litre	5.35
5.37.10.6	1000 KL capacity	Litre	5.26
5.38	<b>Construction of RCC Dome type Ground Level Service Reservoir (GLSR) of following capacity as per the Scope of work and Technical specifications, consisting of the following main activities: -</b> a) Topographic survey, preparation of site contour plan, conducting SBC test and its approval from department before construction. Submission and approval of concrete mix design and water quality test report for water to be used in construction. b) Excavation in all types of soil, PCC below foundation & all RCC Work. c) All the GLSR shall be provided with adequate plinth protection all around the structure in a width starting from edge of structure at GL and extending at least up to 1.0m beyond the vertical wall. The plinth protection shall consist of 150mm thick PCC in M-15 concrete over 150mm thick compacted soil fill. d) Providing and applying two coats of food grade epoxy paint on the inside surface of the roof slab, and 600 mm height of the vertical wall giving. e) Successful hydro test and water tightness test as per I.S. code. f) Providing and applying three coats of anti-carbonation paint on the roof Slab. g) Providing and applying three coats of cement-based paint on the remaining external surface area of the structure.		

Item no.	Description	Unit	Rate (Rs.)
	h) Providing and fixing SS-304 ventilator, SS 304 manhole frame and cover and SS 304 ladder from top bottom Slab inside container. Providing and fixing water level indicator (Float type).		
	i) Providing and fixing MS ladder from ground to top slab with safety cage.		
	j) All MS parts to be painted with two coats of the enamelled paint over the primer coat of red oxide.		
	k) Providing and fixing of 150mm wide water bar for the construction joints in the container.		
	l) Providing and fixing CI/DI puddle collars the vertical wall for connecting inlet, outlet, overflow and washout pipe of the reservoir.		
	m) <b>Inlet, outlet, overflow, washout pipes and valves are not included in this work, provision for the same shall be taken separately.</b>		
5.38.1	<b>Rates for RCC GROUND LEVEL SERVICE RESERVOIR SEISMIC ZONE-II &amp; III and SBC18T/sqm</b>		
5.38.1.1	50 KL capacity	Litre	10.71
5.38.1.2	100 KL capacity	Litre	8.09
5.38.1.3	150 KL capacity	Litre	6.82
5.38.1.4	200 KL capacity	Litre	6.29
5.38.1.5	250 KL capacity	Litre	5.75
5.38.1.6	300 KL capacity	Litre	5.55
5.38.1.7	400 KL capacity	Litre	5.29
5.38.1.8	500 KL capacity	Litre	5.14
5.38.2	<b>Rates for RCC GROUND LEVEL SERVICE RESERVOIR SEISMIC ZONE-4 &amp; SBC 18T/sqm</b>		
5.38.2.1	50 KL capacity	Litre	10.93
5.38.2.2	100 KL capacity	Litre	8.21
5.38.2.3	150 KL capacity	Litre	6.91
5.38.2.4	200 KL capacity	Litre	6.31
5.38.2.5	250 KL capacity	Litre	5.78
5.38.2.6	300 KL capacity	Litre	5.57
5.38.2.7	400 KL capacity	Litre	5.30
5.38.2.8	500 KL capacity	Litre	5.14
5.39	Providing and fixing double flanged ISI marked GI pipes medium duty (class B ) Steel tube as per IS:1239 or amended up to date and zinc coating as per IS 4736 with GI fittings excluding valves as vertical pipes for RCC Reservoirs including specials required such as bend, tee etc. providing and fixing with MS clamps at every 3 mtr, jointing materials such as nuts, bolt, rubber packing, hydraulic testing etc. complete in all respect up to and from valve chamber as per direction of EIC, Technical Specification and Scope of work.		
5.39.1	50 mm	Mtr	687.00
5.39.2	65 mm	Mtr	881.00
5.39.3	80 mm	Mtr	935.00
5.39.4	100 mm	Mtr	1231.00

Item no.	Description	Unit	Rate (Rs.)
5.40	Providing and fixing double flanged ISI marked DI Class K-9 pipes as per IS:8329-2000 (amended up to date), as vertical pipes for RCC Reservoirs including specials required such as duck foot bend, bend, tee etc. providing and fixing clamps at every 3 mtr, jointing materials such as nuts, bolt, rubber packing, hydraulic testing etc. complete in all respect up to and from valve chamber as per direction of EIC, Technical Specification and Scope of work.		
5.40.1	100 mm	Mtr	2393.00
5.40.2	150 mm	Mtr	3436.00
5.40.3	200 mm	Mtr	4640.00
5.40.4	250 mm	Mtr	6267.00
5.40.5	300 mm	Mtr	7973.00
5.40.6	350 mm	Mtr	9656.00
5.40.7	400 mm	Mtr	11767.00
5.40.8	450 mm	Mtr	13944.00
5.40.9	500 mm	Mtr	16371.00
5.40.10	600 mm	Mtr	21676.00

Note: The rates for DI double flanged pipes shall be reduced 5%, if used other than OHSR pipes.

#### Earth work, Road cutting, restoration & trenchless laying

5.41	Earth work in excavation by mechanical means (Hydraulic Excavator )/ manual means in trenches of required width and gradient for laying and jointing of pipe line including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 Mtr. including taking out the excavated soil, and then returning the soil as required in layers not exceeding 20cm in depth including consolidating each deposited layer by ramming, watering etc. and disposal of surplus excavated soil as directed within a lead of 50 Mtr. including required all safety provisions etc.:		
	All kinds of soil	Cum	204.00
5.42	Add extra for trenches for every additional lift over item no 4.1		
5.42.1	Above 1.5 mtr and up to 3.0 mtr.	Cum	20.00
5.42.2	Above 3.0 mtr and up to 4.5 mtr.	Cum	41.00
5.43	Earth work in excavation by mechanical means (Hydraulic Excavator )/ manual means in trenches of required width and gradient for laying and jointing of pipe line including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 Mtr. including taking out the excavated soil, and then returning the soil as required in layers not exceeding 20cm in depth including consolidating each deposited layer by ramming, watering etc. and stacking serviceable material for measurements and disposal of unserviceable material as directed, with in a lead of 50 Mtr. including all safety provisions required .:		
5.43.1	Ordinary rock	Cum	365.00
5.43.2	Hard rock (requiring blasting)	Cum	546.00

Item no.	Description	Unit	Rate (Rs.)
5.43.3	Hard rock(blasting prohibited)	Cum	931.00
5.44	Add extra for trenches for every additional lift over item no 4.3		
5.44.1	Above 1.5 mtr and up to 3.0 mtr.	Cum	37.00
5.44.2	Above 3.0 mtr and up to 4.5 mtr.	Cum	73.00
5.45	Dismantling of <b>cement concrete pavement</b> for pipe line and chambers by mechanical means using pneumatic tools, cutting the peripheral edge by CC cutter, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials up to a lead of 1000 meters. Measurement for dismantled trench to be made as per standard trench width specified in tender document and no extra payment shall be made for trench width more than specified, re-handling of material/earth to complete the tasks as per technical specification and scope of work.	Cum	757.00
5.46	Dismantling of <b>flexible pavement</b> for pipe line and chambers by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials up to a lead of 1000 meters. Measurement for dismantled trench to be made as per standard trench width specified in tender document and no extra payment shall be made for trench width more than specified, re handling of material/earth to complete the tasks per technical specification and scope of work.		
5.46.1	Bituminous courses	Cum	416.00
5.46.2	Granular courses	Cum	296.00
5.47	Providing and laying in position cement concrete M10 grade nominal mix 1:3:6 (1 Cement : 3coarse sand : 6 graded stone aggregate 40 mm nominal size) in base course complete including all material, labour, machinery, lighting, guarding for road restoration work in trenches of pipe line and chamber work. Measurement for CC work to be made as per standard trench width specified in tender document and no extra payment shall be made for trench width more than specified, complete work as per technical specification and scope of work.	Cum	4811.00

Item no.	Description	Unit	Rate (Rs.)
5.48	Providing and laying in position cement concrete in specified grade over prepared base course complete including finishing, curing, all material, labour, machinery, lighting, guarding for road restoration work in trenches of pipe line and chamber work. Measurement for CC work to be made as per standard trench width specified in tender document and no extra payment shall be made be made for trench width more than specified, complete work as per technical specification and scope of work.		
5.48.1	M20 grade Nominal Mix 1: 1.5: 3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size).	Cum	6730.00
5.48.2	Plain cement concrete pavement of M-30 Grade	Cum	7237.00
5.49	Removing & Re-fixing of Precast concrete interlocking blocks for laying of pipe line by manual method, stacking of serviceable & non serviceable material separately, disposal of dismantled material lead up to 50 mtr. The C.C. interlocking paving blocks be laid on average 25 mm thick bed of coarse sand and the joints to be filled with fine sand. Laying procedure on compacted sub base as defined. Complete job is to be executed as per the directions of Engineer in charge. The rates to be inclusive of fixing of 70 percent reusable precast concrete interlocking block and cost of required new precast concrete interlocking block against damaged, including all lead and lift as per Technical specifications. (Interlocking block manufactured by fully computerized automatic stationery hydraulic vibro pressed machine & full computerized automatic batching plant of class A-1 as per BS:6717-2001. Tensile splitting strength and breaking load as per BS: 6717-2001 Colour: Grey cement natural colour. Variation in Dimension : Less than 1.6 mm Variation in thickness: Less than 3.2 mm) <b>Note:</b> If existing precast block used more than 70%, than for every 1% use above 70%, deduction of 1% in cost shall be done for every 1% use above 70%.		
5.49.1	60 mm thick.	Sqm.	275.00
5.49.2	80 mm thick.	Sqm.	298.00
5.49.3	100 mm thick	Sqm.	332.00



Item no.	Description	Unit	Rate (Rs.)
5.50	Horizontal directional drilling (by trenchless technology) of suitable dia hole minimum 1.0 mtr below natural ground level in all type of soil under CC/BT roads and pulling <b>HDPE pipes of dia up to 110 mm</b> , which are available in the form of a coil including excavation, shoring/ strutting, preparation, maintain the thrust and including, road dismantling, excavation and refilling of drive pit and exit pit, restoration of road cut as per technical specification and scope of work, but excluding the cost of pipe line.	RMT	289.00
5.51	Supply laying and pushing of MS casing pipe of specified thickness approved by concerned department authority by trenchless method adopting any suitable technology below ground at required depth under running traffic condition as per Highway/ Railway standard including carrying out survey work at the job site for determining underground cable trenches like telephone, cable, water & sanitary lines and resistivity test for finding the soil strata using necessary equipments for completion of works, mobilizing of machineries and specialized crew at the job site complete in all respect, including excavation of driven pit and exit pit (up to 3 meter depth) with proper protection at these sites with shoring sheets and ISMB. Providing MS cutting edges for front shield and constructing thrust bed at designated level. Necessary dewatering and providing concrete foundation at the base of the driven pit, PVC/Rubber saddle as per the requirement of Highway/Railway authority, crane for handing of pipe and any other machinery, tools, and tackles required, construction of temporary works as per design, drawing and method as per approved by authority specification and the direction of the Engineer. Apply corrosion, resistant, protection on inside and outside of casing pipe as per technical specification.		
5.51.1	300 mm Dia 8 mm thick casing pipe.	RMT	18353.00
5.51.2	400 mm Dia 8 mm thick casing pipe .	RMT	20972.00
5.51.3	500 mm Dia 8 mm thick casing pipe .	RMT	23569.00
5.51.4	600 mm Dia 10 mm thick casing pipe .	RMT	30211.00

Item no.	Description	Unit	Rate (Rs.)
5.52	Removing & Re-fixing of Bricks Kharanja road by manual means for laying of pipe line, stacking of serviceable & unserviceable material separately, disposal of dismantled material lead up to 50 mtr. The Bricks interlocking be laid on average 12 mm thick bed of mud mortar and the joints to be filled with pointing in cement mortar 1:3. Laying procedure on compacted sub base as defined. Complete job is to be executed as per the direction of Engineer in charge. The rates are inclusive of fixing of 80 percent reusable Bricks and cost of required new First class FPS bricks (min. 10.5 Mpa) in place of damaged bricks, all lead and lift as per Technical Specifications and direction of Engineer in Charge. <b>Note:</b> If existing bricks used more than 80%, than for every 1% above 80% use, deduction of 1% in cost shall be done for every 1% use above 80%.		
5.52.1	Horizontal aligned Bricks	Sqm.	212.00
5.52.2	Vertical aligned Bricks	Sqm.	230.00
	<b>Pump sets</b>		
5.53	Providing, installation, testing and commissioning of Centrifugal Monoblock pump set conforming to IS 9079 , 2 pole motor operating at synchronised speed of 3000 RPM with requisite MOC impeller, priming funnel, cock, suitable flanges at suction and delivery side. Pump shall have common shaft for pump and motor. Motor shall be suitable for working on 415 V $\pm$ 10%, 3 Ph, 50 Hz A.C. Supply. Motor shall be TEFC type and Pump set shall be suitable for working at various discharge and head requirements as per scope of work. Pump shall be erected on C.C. foundation / cross channels / RSJ frame block with suitable foundation bolts grouted in C.C. foundation block etc. complete in all respect as per specification, scope of work and direction of Engineer in Charge of following power rating, suitable for prescribed duty conditions mentioned in TD.		
5.53.1	<b>Centrifugal Monoblock Pump set (Single Stage)</b>		
5.53.1.1	2.2 KW (3.0 HP)	Each	37781.00
5.53.1.2	3.7 KW (5.0 HP)	Each	48540.00
5.53.1.3	5.5 KW (7.5 HP)	Each	61492.00
5.53.1.4	7.5 KW (10 HP)	Each	75189.00
5.53.1.5	9.3 KW (12.5 HP)	Each	88007.00
5.53.1.6	11.0 KW (15 HP)	Each	92665.00
5.53.1.7	15.0 KW (20.0 HP)	Each	125319.00
5.53.1.8	18.5 KW (25.0 HP)	Each	156300.00
5.53.2	<b>Centrifugal Monoblock Pump set (Double Stage)</b>		
5.53.2.1	3.7 KW (5.0 HP)	Each	57399.00
5.53.2.2	5.5 KW (7.5 HP)	Each	69990.00
5.53.2.3	7.5 KW (10.0 HP)	Each	83847.00
5.53.2.4	9.3 KW (12.5 HP)	Each	93053.00
5.53.2.5	11.0 KW (15.0 HP)	Each	102714.00
5.53.2.6	15.0 KW (20.0 HP)	Each	134956.00
	<b>Vacuum Pump set (Monoblock)</b>		

Item no.	Description	Unit	Rate (Rs.)
5.54	Providing, installation, testing and commissioning of Mono block Vacuum pump set with base plate including C.C. foundation / cross channels / RSJ frame and foundation bolts etc. complete in all respect as per specification, scope of work and direction of Engineer in Charge.		
5.54.1	0.75 KW (1 HP), single Ph	Each	33997.00
5.54.2	2.2 KW (3 HP), three Ph	Each	63679.00
	<b>Vacuum Pump set (Coupled)</b>		
5.55	Providing, installation, testing and commissioning of Vacuum pump set with horizontal foot mounted TEFC squirrel cage motor working on three phase 50 Hz, 415 Volts +/- 10% with base plate including cost of flexible couplings, coupling guard etc. complete in all respect as per specification, scope of work and direction of Engineer in Charge.		
5.55.1	3.7 KW (5.0 HP)	Each	136606.00
5.55.2	7.5 KW (10.0 HP)	Each	168530.00
5.56	Providing, installation, testing and commissioning of <b>Submerged Centrifugal Pump sets with motor</b> 4 pole synchronised speed of 1500 rpm ( water immersed, dry air filled, class "F" insulated TEWC motor integrally mounted on volute casing pump sets for drinking water ) 3 phase, +/- 3%, 415 volt +/- 10%, along with suitable foundation/ installation device and with 10 mtr cable, material of construction of impeller SS, casing (volute) CI, wearing ring SS, etc. complete in all respect as per specification, scope of work and direction of Engineer in Charge of following power rating, suitable for prescribed duty conditions mentioned in TD.		
5.56.1	15 KW	Each	276303.00
5.56.2	18.5 KW	Each	340774.00
5.56.3	22 KW	Each	405244.00
5.56.4	30 KW	Each	552606.00
5.56.5	37 KW	Each	666611.00
5.56.6	45 KW	Each	705718.00
5.56.7	55 KW	Each	891006.00
5.56.8	75 KW	Each	1006129.00
5.56.9	90 KW	Each	1330572.00
5.56.10	110 KW	Each	1675542.00
5.56.11	125 KW	Each	1837723.00

Item no.	Description	Unit	Rate (Rs.)
5.57	Providing, installation, testing and commissioning of <b>submersible Monoblock pump</b> set conforming to IS 8034 and 2 pole motor operating at synchronised speed of speed 3000 RPM, with water proof winding. Pump shall be suitable for various delivery head and discharge with stainless steel shaft. Motor suitable for working on 415 V $\pm$ 10%, 3 Ph, 50 Hz AC and with water lubricated bearing to accept entire hydraulic thrust. Supply, with cable guard, thrust carbon/fibre bearing to withstand entire hydraulic thrust. The pump set shall be suitable for direct coupling, with suitable suction strainer. Pump should have suitable discharge out let as per manufacturer's design. Antithrust stream lined non return valve shall be provided with the pump and minimum 6 m submersible copper conductor cable in single / double run and 2 pairs of suitable size erection clamp 10 mm thick shall be provided with each pump etc. complete in all respect as per specification, scope of work and direction of Engineer in Charge of following poery, tools, and tackles required. construction of temporarv works as		
5.57.1	2.2 KW (3.0 HP)	Each	40013.00
5.57.2	3.7 KW (5.0 HP)	Each	44474.00
5.57.3	5.5 KW (7.5 HP)	Each	59854.00
5.57.4	7.5 KW (10 HP)	Each	67441.00
5.57.5	9.3 KW (12.5 HP)	Each	85103.00
5.57.6	11.0 KW (15 HP)	Each	95172.00
5.57.7	15.0 KW (20.0 HP)	Each	112632.00
5.57.8	Providing, installation, testing and commissioning of <b>submersible dewatering pump</b> set conforming to relevant IS codes and as per scope of work and Technical Specifications, with water proof winding. Pump shall be suitable for various delivery head and discharge with stainless steel shaft, impeller, pump and motor body. Motor suitable for working on 415 V $\pm$ 10%, 3 Ph, 50 Hz A.C. Supply, with cable guard. The pump set shall be suitable for direct coupling, with suitable suction strainer etc. complete in all respect as per specification, scope of work and direction of Engineer in Charge of following power rating, suitable for prescribed duty conditions mentioned in TD.		
5.57.9	0.75 KW (1.0 HP)	Each	45388.00
5.57.10	1.5 KW (2.0 HP)	Each	50474.00
5.57.11	2.2 KW (3.0 HP)	Each	88983.00
5.57.12	3.7 KW (5.0 HP )	Each	116764.00

Item no.	Description	Unit	Rate (Rs.)
5.58	Providing and fixing at site with necessary packing, Horizontal Centrifugal Split Casting pumps with 4 pole induction motor operating at synchronised speed of speed 1500 RPM as per IS 12615: 2011 or amended up to date , CI casing and casing ring, SS 316 impeller, SS 410 Shaft and shaft sleeve, coupling guard, common base plate, foundation bolts, Cement concrete foundation etc. complete with all respect as per the specification and scope of work and direction of Engineer in Charge of following range of duty conditions. Note: Duty condition of required pump shall also be mentioned in BoQ.		
5.58.1	Discharge 20 to 30 LPS and head 20 to 30 M	Each	179864.00
5.58.2	Discharge 20 to 30 LPS and head 31 to 40 M	Each	261894.00
5.58.3	Discharge 20 to 30 LPS and head 41 to 50 M	Each	313504.00
5.58.4	Discharge 20 to 30 LPS and head 51 to 60 M	Each	364607.00
5.58.5	Discharge 20 to 30 LPS and head 61 to 70 M	Each	455000.00
5.58.6	Discharge 20 to 30 LPS and head 71 to 80 M	Each	455000.00
5.58.7	Discharge 20 to 30 LPS and head 81 to 90 M	Each	455000.00
5.58.8	Discharge 31 to 40 LPS and head 20 to 30 M	Each	261894.00
5.58.9	Discharge 31 to 40 LPS and head 31 to 40 M	Each	313504.00
5.58.10	Discharge 31 to 40 LPS and head 41 to 50 M	Each	364607.00
5.58.11	Discharge 31 to 40 LPS and head 51 to 60 M	Each	455000.00
5.58.12	Discharge 31 to 40 LPS and head 61 to 70 M	Each	536538.00
5.58.13	Discharge 31 to 40 LPS and head 71 to 80 M	Each	536538.00
5.58.14	Discharge 31 to 40 LPS and head 81 to 90 M	Each	635185.00
5.58.15	Discharge 41 to 50 LPS and head 20 to 30 M	Each	313504.00
5.58.16	Discharge 41 to 50 LPS and head 31 to 40 M	Each	455000.00
5.58.17	Discharge 41 to 50 LPS and head 41 to 50 M	Each	455000.00
5.58.18	Discharge 41 to 50 LPS and head 51 to 60 M	Each	536538.00
5.58.19	Discharge 41 to 50 LPS and head 61 to 70 M	Each	635185.00
5.58.20	Discharge 41 to 50 LPS and head 71 to 80 M	Each	754723.00
5.58.21	Discharge 41 to 50 LPS and head 81 to 90 M	Each	754723.00
5.58.22	Discharge 51 to 60 LPS and head 20 to 30 M	Each	364607.00
5.58.23	Discharge 51 to 60 LPS and head 31 to 40 M	Each	455000.00
5.58.24	Discharge 51 to 60 LPS and head 41 to 50 M	Each	536538.00
5.58.25	Discharge 51 to 60 LPS and head 51 to 60 M	Each	635185.00
5.58.26	Discharge 51 to 60 LPS and head 61 to 70 M	Each	754723.00
5.58.27	Discharge 51 to 60 LPS and head 71 to 80 M	Each	927926.00
5.58.28	Discharge 51 to 60 LPS and head 81 to 90 M	Each	927926.00
5.58.29	Discharge 61 to 70 LPS and head 20 to 30 M	Each	364607.00
5.58.30	Discharge 61 to 70 LPS and head 31 to 40 M	Each	455000.00
5.58.31	Discharge 61 to 70 LPS and head 41 to 50 M	Each	635185.00
5.58.32	Discharge 61 to 70 LPS and head 51 to 60 M	Each	754723.00
5.58.33	Discharge 61 to 70 LPS and head 61 to 70 M	Each	927926.00
5.58.34	Discharge 61 to 70 LPS and head 71 to 80 M	Each	927926.00
5.58.35	Discharge 61 to 70 LPS and head 81 to 90 M	Each	1070902.00
5.58.36	Discharge 71 to 80 LPS and head 20 to 30 M	Each	455000.00
5.58.37	Discharge 71 to 80 LPS and head 31 to 40 M	Each	536538.00
5.58.38	Discharge 71 to 80 LPS and head 41 to 50 M	Each	754723.00
5.58.39	Discharge 71 to 80 LPS and head 51 to 60 M	Each	927926.00
5.58.40	Discharge 71 to 80 LPS and head 61 to 70 M	Each	927926.00
5.58.41	Discharge 71 to 80 LPS and head 71 to 80 M	Each	1070902.00
5.58.42	Discharge 71 to 80 LPS and head 81 to 90 M	Each	1282359.00

**S - 100**

<b>Item no.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate (Rs.)</b>
5.58.43	Discharge 81 to 90 LPS and head 20 to 30 M	Each	455000.00
5.58.44	Discharge 81 to 90 LPS and head 31 to 40 M	Each	635185.00
5.58.45	Discharge 81 to 90 LPS and head 41 to 50 M	Each	754723.00
5.58.46	Discharge 81 to 90 LPS and head 51 to 60 M	Each	927926.00
5.58.47	Discharge 81 to 90 LPS and head 61 to 70 M	Each	927926.00
5.58.48	Discharge 81 to 90 LPS and head 71 to 80 M	Each	1282359.00
5.58.49	Discharge 81 to 90 LPS and head 81 to 90 M	Each	1282359.00
5.58.50	Discharge 91 to 100 LPS and head 20 to 30 M	Each	536538.00
5.58.51	Discharge 91 to 100 LPS and head 31 to 40 M	Each	754723.00
5.58.52	Discharge 91 to 100 LPS and head 41 to 50 M	Each	927926.00
5.58.53	Discharge 91 to 100 LPS and head 51 to 60 M	Each	927926.00
5.58.54	Discharge 91 to 100 LPS and head 61 to 70 M	Each	1070902.00
5.58.55	Discharge 91 to 100 LPS and head 71 to 80 M	Each	1282359.00
5.58.56	Discharge 91 to 100 LPS and head 81 to 90 M	Each	1428405.00
5.58.57	Discharge 101 to 120 LPS and head 20 to 30 M	Each	536538.00
5.58.58	Discharge 101 to 120 LPS and head 31 to 40 M	Each	754723.00
5.58.59	Discharge 101 to 120 LPS and head 41 to 50 M	Each	927926.00
5.58.60	Discharge 101 to 120 LPS and head 51 to 60 M	Each	1070902.00
5.58.61	Discharge 101 to 120 LPS and head 61 to 70 M	Each	1282359.00
5.58.62	Discharge 101 to 120 LPS and head 71 to 80 M	Each	1282359.00
5.58.63	Discharge 101 to 120 LPS and head 81 to 90 M	Each	1798036.00
5.59	Providing and fixing at site with necessary packing, Horizontal Centrifugal Split Casting pumps with 4 pole induction motor operating at synchronised speed of speed 1500 RPM as per IS 12615: 2011 or amended up to date , CI casing and casing ring, SS 316 impeller, SS 410 Shaft and shaft sleeve, coupling guard, common base plate, foundation bolts, Cement concrete foundation etc. complete with all respect as per the specification and scope of work and direction of Engineer in Charge of following range of duty conditions. Note: Duty condition of required pump shall also be mentioned in BoQ.		
5.59.1	Discharge 201 to 220 LPS and head 20 to 30 M	Each	927926.00
5.59.2	Discharge 201 to 220 LPS and head 31 to 40 M	Each	1282359.00
5.59.3	Discharge 201 to 220 LPS and head 41 to 50 M	Each	1798036.00
5.59.4	Discharge 201 to 220 LPS and head 51 to 60 M	Each	1860530.00
5.59.5	Discharge 201 to 220 LPS and head 61 to 70 M	Each	2127544.00
5.59.6	Discharge 221 to 240 LPS and head 20 to 30 M	Each	1070902.00
5.59.7	Discharge 221 to 240 LPS and head 31 to 40 M	Each	1428405.00
5.59.8	Discharge 221 to 240 LPS and head 41 to 50 M	Each	1798036.00
5.59.9	Discharge 221 to 240 LPS and head 51 to 60 M	Each	2127544.00
5.59.10	Discharge 221 to 240 LPS and head 61 to 70 M	Each	2178397.00
5.59.11	Discharge 241 to 260 LPS and head 20 to 30 M	Each	1070902.00
5.59.12	Discharge 241 to 260 LPS and head 31 to 40 M	Each	1479948.00
5.59.13	Discharge 241 to 260 LPS and head 41 to 50 M	Each	1798036.00
5.59.14	Discharge 241 to 260 LPS and head 51 to 60 M	Each	2127544.00
5.59.15	Discharge 241 to 260 LPS and head 61 to 70 M	Each	2390539.00

Item no.	Description	Unit	Rate (Rs.)
5.60	<p>Providing, lowering, aligning, fixing in position in pipe line, <b>CI D/F Sluice valves</b> straight and pocket less body passage of approved make of following Pressure rating &amp; dia complete, confirming to IS:14846 (amended up to date) and of following specifications: Body, Bonnet, Wedge, Gland, Thrust Plate, Cap &amp; Hand wheel of Grey cast iron of IS:210/ FG200 Stem - AISI- 410 ,Body Seating, Wedge facing ring &amp; Bushes - LTB2/ SS , Face to face dimensions as per IS 14846/2000 (amended up to date) ,Epoxy ( Non-Toxic- suitable for drinking water) applied inside and outside, Flanges Drilled as per IS 1538. Nut-Bolt confirming to IS:1363 and IS: 1367/ CS/ galvanised steel Insertion rubber of black EPDM 6mm thick . Sluice valves including all jointing &amp; jointing material, labour, testing and commissioning along with pipe line as per Technical Specifications and as per direction of Engineer-in-charge.</p> <p>Note: Rates are exclusive of tail piece/ dismantling joints and earth work.</p>		
5.60.1	<b>Manually Operated CI Sluice valve of Class PN-1.0</b>		
5.60.1.1	80 mm HW	Each	6397.00
5.60.1.2	100 mm HW	Each	9096.00
5.60.1.3	125 mm HW	Each	11701.00
5.60.1.4	150 mm HW	Each	14644.00
5.60.1.5	200 mm HW	Each	23166.00
5.60.1.6	250 mm HW	Each	36598.00
5.60.1.7	300 mm HW	Each	50354.00
5.60.1.8	350 mm with Gear	Each	92906.00
5.60.1.9	400 mm with Gear	Each	120724.00
5.60.1.10	450 mm with Gear	Each	163434.00
5.60.1.11	500 mm with Gear	Each	195824.00
5.60.1.12	600 mm with Gear	Each	283676.00
5.60.2	<b>Motorized Sluice Valves with Electric Actuator with integral starter of Class PN 1.0</b>		
5.60.2.1	80 mm dia	Each	124574.00
5.60.2.2	100 mm dia	Each	130634.00
5.60.2.3	125 mm dia	Each	134289.00
5.60.2.4	150 mm dia	Each	143462.00
5.60.2.5	200 mm dia	Each	158839.00
5.60.2.6	250 mm dia	Each	182303.00
5.60.2.7	300 mm dia	Each	199753.00
5.60.2.8	350 mm dia	Each	248751.00
5.60.2.9	400 mm dia	Each	275722.00
5.60.2.10	450 mm dia	Each	328632.00
5.60.2.11	500 mm dia	Each	377674.00
5.60.2.12	600 mm dia.	Each	467287.00

Item no.	Description	Unit	Rate (Rs.)
5.61	Providing, lowering, laying, aligning, fixing in position <b>CI D/F short body pattern type butterfly valves</b> having body, disc and end cover in graded cast iron generally conforming to (IS13095/1991 amended up to date), synthetic rubber faced ring secured on disc by retaining ring with SS steel screw stub shaft of SS riding in Teflon bearing including C.C. foundation/ structural steel support, material, labour, testing along with pipe line and commissioning as per Technical Specifications and as per direction of Engineer in charge. Note: Rates are exclusive of tail piece/ dismantling joints and earth work		
5.61.1	Manually Operated Butterfly Valve PN-1.0		
5.61.1.1	100 mm dia ( With lever operated)	Each	13623.00
5.61.1.2	125 mm dia ( With lever operated)	Each	17582.00
5.61.1.3	150 mm dia ( With lever operated)	Each	21877.00
5.61.1.4	200 mm dia (With Gear Operated)	Each	35474.00
5.61.1.5	250 mm dia (With Gear Operated)	Each	44557.00
5.61.1.6	300 mm dia (With Gear Operated)	Each	57178.00
5.61.1.7	350 mm dia (With Gear Operated)	Each	71469.00
5.61.1.8	400 mm dia (With Gear Operated)	Each	93369.00
5.61.1.9	450 mm dia (With Gear Operated)	Each	111056.00
5.61.1.10	500 mm dia (With Gear Operated)	Each	132473.00
5.61.1.11	600 mm dia (With Gear Operated)	Each	187524.00
5.62	Providing, lowering, aligning, fixing in position in pipe line, <b>CI double flanged swing type Non Return Valves (NRV)</b> of approved make of following Pressure rating & dia complete, confirming to IS: 5312 (part -1)/ 2004 (amended up to date) and of following specifications: Body, Cover & disc of Grey cast iron of IS:210/ FG200. Face to face dimensions as per IS 5312 (part - 1):2004 , Flanges Drilled as per IS:1538. Epoxy (Non-Toxic & suitable for drinking water) applied on body, cover and disc inside and outside . Body seat ring of SS/CS Door face ring - EPDM/ Neoprene (food grade quality) ,Shaft of SS- AISI- 410 ,Hinge Malleable cast iron / SS AISI 316 ,Bonnet Gasket EPDM, Bush- Leaded tin Bronze/ PTET, Gasket EPDM/NBR ,Nut-Bolt as per IS:1363 and IS: 1367 (galvanised steel) ,Insertion rubber of black EPDM 6mm thick. Suitable support structure as per directions of EIC including jointing & jointing material, labour, testing and commissioning along with pipeline as per Technical Specification & as per direction of Engineer-in- charge. Note: Rates are exclusive of tail piece/ dismantling joints and earth work.		
5.62.1	<b>Class PN 1.0</b>		
5.62.1.1	80 mm dia	Each	6718.00
5.62.1.2	100 mm dia	Each	8683.00
5.62.1.3	125 mm dia	Each	11624.00
5.62.1.4	150 mm dia	Each	14672.00



Item no.	Description	Unit	Rate (Rs.)
5.62.1.5	200 mm dia	Each	24746.00
5.62.1.6	250 mm dia	Each	39543.00
5.62.1.7	300 mm dia	Each	56158.00
5.62.1.8	350 mm dia	Each	96752.00
5.62.1.9	400 mm dia	Each	136610.00
5.62.1.10	450 mm dia	Each	169426.00
5.62.1.11	500 mm dia	Each	234113.00
5.62.1.12	600 mm dia	Each	368647.00
5.63	<p>Providing, lowering, aligning, fixing in position in pipe line, <b>CI double flanged Dual plate check valve</b> of approved make of following Pressure rating &amp; dia complete, as per API: 594/ API: 598 and of following specifications: Body &amp; Cover of Grey cast iron of IS:210/ FG200 , Disc / plates - Cast steel ,Disc seal ring of EPDM/ NBR (food grade quality) ,Body seat of SS ,Face to face dimensions as per API: 594</p> <p>,Flanges Drilled as per IS:1538. Epoxy (Non-Toxic &amp; suitable for drinking water) applied on body &amp; cover inside and outside . Shaft/Stop Pin of SS- AISI- 304/410 , Hinge SS AISI 316/304 / CS ,Spring SS AISI 316/304 , Bonnet Gasket EPDM ,Bush- Brass with EPDM/NBR "O "ring seal.Nut-Bolt confirming to IS:1363 and IS: 1367 (galvanised steel) ,Insertion rubber of black EPDM 6mm thick . Suitable support structure as per directions of EIC including jointing &amp; jointing material, labour, testing and commissioning along with pipeline as per Technical Specification &amp; as per direction of Engineer-in-charge.</p> <p>Note: Rates are exclusive of tail piece/ dismantling joints and earth work.</p>		
5.63.1	<b>Class PN 1.0</b>		
5.63.1.1	80 mm dia	Each	6329.00
5.63.1.2	100 mm dia	Each	8138.00
5.63.1.3	125 mm dia	Each	9965.00
5.63.1.4	150 mm dia	Each	13014.00
5.63.1.5	200 mm dia	Each	22761.00
5.63.1.6	250 mm dia	Each	37874.00
5.63.1.7	300 mm dia	Each	50155.00
5.63.1.8	350 mm dia	Each	62075.00
5.63.1.9	400 mm dia	Each	89288.00
5.63.1.10	450 mm dia	Each	111147.00
5.63.1.11	500 mm dia	Each	116496.00
5.63.1.12	600 mm dia	Each	159734.00

Item no.	Description	Unit	Rate (Rs.)
5.64	Providing, lowering, aligning, fixing in position and Jointing in pipe line, <b>CI single Air Valve Flanged/ Screwed type</b> of approved makes for following pressure rating & dia complete, confirming to IS: 14845-2000 (amended up to date) and of following specifications: Body , Cover and Cowl - Grey Cast Iron as per IS:210- FG 200 ,Float Stainless Steel AISI 304 / IS: 3444 ,Float Guide-HBT1,Body seat ring - Leaded tin bronze/ SS , Seal ring and face ring - EPDM/NBR, Ends flanged according to IS 6418 or Screwed type shall have external pipe threads conforming to IS 554 Fasteners - CS Epoxy paint inside outside of food grade safe for drinking water ,Valves including all material, labour, testing and commissioning as per Technical Specifications and as per direction of Engineer in charge. Note: Rates are exclusive of connecting tee, pipe piece and earth work.		
5.64.1	<b>Class PN 1.0</b>		
5.64.1.1	15 mm S-1 Type	Each	2515.00
5.64.1.2	25 mm S-1 Type	Each	3357.00
5.64.1.3	40 mm S-1 Type	Each	4168.00
5.64.1.4	50 mm S-2 Type	Each	5261.00
5.64.2	<b>Class PN 1.6</b>		
5.64.2.1	15 mm S-1 Type	Each	2860.00
5.64.2.2	25 mm S-1 Type	Each	3602.00
5.64.2.3	40 mm S-1 Type	Each	4875.00
5.64.2.4	50 mm S-2 Type	Each	5142.00
5.65	Providing, lowering, aligning, fixing in position and Jointing in pipe line, <b>CI Double Acting Kinetic Air Valve</b> with isolating Sluice Valve of approved makes for following pressure rating & dia complete, confirming to IS: 14845-2000 (amended up to date) and of following specifications: Body , Cover and Cowl - Grey Cast Iron as per IS:210- FG 200 ,Float - Stainless Steel AISI 304 / IS: 3444 , Float Guide- HBT1.HP Orifice- HTB2/ SS,Body seat ring - Leaded tin bronze/ SS .Seal ring and face ring - EPDM/NBR ,Ends flanged according to IS 6418,Fastners - CS, Epoxy paint inside outside of food grade safe for drinking water ,Valves including all material, labour, testing and commissioning as per Technical Specifications and as per direction of Engineer in charge. Note: Rates are exclusive of connecting tee, pipe piece and earth work.		
5.65.1	<b>Class PN 1.0</b>		
5.65.1.1	40 mm	Each	13153.00
5.65.1.2	50 mm	Each	14031.00
5.65.1.3	80 mm	Each	18817.00
5.65.1.4	100 mm	Each	25452.00
5.65.1.5	150 mm	Each	52937.00
5.65.1.6	200 mm	Each	80051.00

Item no.	Description	Unit	Rate (Rs.)
5.65.2	<b>Class PN 1.6</b>		
5.65.2.1	40 mm	Each	13939.00
5.65.2.2	50 mm	Each	15015.00
5.65.2.3	80 mm	Each	17858.00
5.65.2.4	100 mm	Each	24184.00
5.65.2.5	150 mm	Each	53110.00
5.65.2.6	200 mm	Each	77713.00
5.66	<p>Providing, lowering, aligning, fixing in position and Jointing in pipe line, <b>CI Body Flanged End Tamper proof Kinetic Air Valve</b> of approved makes of following pressure rating and dia and as per following specifications: Governing standard - AWWA C512/ IS:14845:2000(amended up to date),Body, High pressure cover , Low pressure cover, Cowl and Joint support ring - Grey cast iron of grade IS:210/FG200 ,Float- LP ball &amp; HP ball : AISI 304 stainless Steel, Float Guide- HTB1,Seat ring &amp; Gasket - EPDM/NBR, HP Orifice &amp; HP orifice plug : HTB2/ SS ,Bush: Bronze , Flanges as per IS/ BS, Drilled as per IS:1538. Epoxy paint (Non-Toxic &amp; suitable for drinking water) applied on body &amp; cover inside and outside Fasteners - CS/ Galvanised steel ,Outlet of big orifice will have a screen to prevent Tamper of float, with CI metal seated D/F Non rising stem Sluice Valves as per (IS: 14846 amended up to date) PN 1.0 ratings Valves including all material, labour, testing and commissioning as per Technical Specifications and as per direction of Engineer in charge.</p> <p>Note: Rates are exclusive of connecting tee, pipe piece and earth work.</p>		
5.66.1	<b>Class PN 1.0</b>		
5.66.1.1	40 mm	Each	13368.00
5.66.1.2	50 mm	Each	15027.00
5.66.1.3	80 mm	Each	19526.00
5.66.1.4	100 mm	Each	23227.00
5.66.1.5	150 mm	Each	40466.00
5.66.1.6	200 mm	Each	57592.00

Item no.	Description	Unit	Rate (Rs.)
5.67	Providing, lowering, aligning, fixing in position in pipe line at work site, <b>DI D/F Resilient seated (soft seated) Sluice Valves</b> (Gate Valves) , Vacuum tight(bubble tight), straight and pocket less body passage of approved make of following class & dia complete confirming to BS-EN-1171/ AWWA C-509 and of following specifications: Body & bonnet of Ductile cast iron of grade GGG40/GGG50 as per DIN 1693 or GR SG-400/12 as per IS 1865 or equivalent grade as per IS :3896-part2 1985 and subsequent revisions, Wedge of same material as body & shall vulcanised rubber lined with EPDM (food grade quality) and seals of NBR Face to face dimensions as per BS 5163-89/ IS 14846/2000 (amended up to date) /Din 3202 F4, Stem/ spindle of SS AISI 316/410 Electrostatic epoxy powder(EP-P)/ Fusion bond epoxy ( Non-Toxic- suitable for drinking water) coated with minimum thickness of 250 microns inside and outside, Drilled as per IS 1538. Nut- Bolt confirming to IS:1363 and IS: 1367 (Galvanised steel) Insertion rubber of black EPDM 6mm thick. Suitable support structure as per directions of EIC, Sluice valves including all jointing & jointing material, labour, testing and commissioning along with pipe line as per Technical Specifications and as per direction of Engineer-in- charge.		
	Note: Rates are exclusive of tail piece/ dismantling joints and earth work.		
5.67.1	<b>Manually Operated Resilient Seated Sluice Valves of Class PN 1.6</b>		
5.67.1.1	80 mm dia	Each	10019.00
5.67.1.2	100 mm dia	Each	12389.00
5.67.1.3	125 mm dia	Each	18244.00
5.67.1.4	150 mm dia	Each	21439.00
5.67.1.5	200 mm dia	Each	31984.00
5.67.1.6	250 mm dia	Each	54546.00
5.67.1.7	300 mm dia	Each	69451.00
5.67.1.8	350 mm dia	Each	132651.00
5.67.1.9	400 mm dia	Each	171562.00
5.67.1.10	450 mm dia	Each	231337.00
5.67.1.11	500 mm dia	Each	299714.00
5.67.1.12	600 mm dia.	Each	436663.00
5.67.2	<b>Motorized Sluice Valves with Electric Actuator and integral starter of Class PN 1.0</b>		
5.67.2.1	80 mm dia	Each	137652.00
5.67.2.2	100 mm dia	Each	144382.00
5.67.2.3	125 mm dia	Each	151729.00
5.67.2.4	150 mm dia	Each	157837.00
5.67.2.5	200 mm dia	Each	180140.00
5.67.2.6	250 mm dia	Each	209404.00
5.67.2.7	300 mm dia	Each	228665.00
5.67.2.8	350 mm dia	Each	301472.00
5.67.2.9	400 mm dia	Each	341765.00
5.67.2.10	450 mm dia	Each	396271.00

Item no.	Description	Unit	Rate (Rs.)
5.67.2.11	500 mm dia	Each	459926.00
5.67.2.12	600 mm dia.	Each	589336.00
5.67.3	<b>Motorized Sluice Valves with Electric Actuator and integral starter of Class PN 1.6</b>		
5.67.3.1	80 mm dia	Each	136063.00
5.67.3.2	100 mm dia	Each	141336.00
5.67.3.3	125 mm dia	Each	147880.00
5.67.3.4	150 mm dia	Each	150286.00
5.67.3.5	200 mm dia	Each	174473.00
5.67.3.6	250 mm dia	Each	204871.00
5.67.3.7	300 mm dia	Each	222844.00
5.67.3.8	350 mm dia	Each	292107.00
5.67.3.9	400 mm dia	Each	320434.00
5.67.3.10	450 mm dia	Each	402944.00
5.67.3.11	500 mm dia	Each	468344.00
5.67.3.12	600 mm dia.	Each	599929.00
5.68	Providing, lowering, aligning, fixing in position in pipe line, <b>DI D/F resilient seated (soft seated) short body pattern type double eccentric Butterfly valves</b> of approved make of following class & dia complete confirming to BS EN 593/ BS 5155/ IS 13095/1991 amended up to date and of following specifications: Body, disc and end cover of Ductile cast iron of grade GGG40/GGG50 as per DIN 1693 or GR SG-400/12 as per IS 1865 or equivalent grade as per IS :3896-part2-1985 and subsequent revisions, Face to face dimensions as per DIN 3202 F4/ IS 13095 Drilled as per IS:1538. Electrostatic Epoxy Powder(EP-P) / Fusion Bonded Epoxy (Non-Toxic & suitable for drinking water) coated with minimum thickness of 250 micron applied on both body and disc inside and outside. Disc seal ring of EPDM/ Neoprene (food grade quality) and disc seal retaining ring of SS/CS. Shaft of SS- AISI- 410/316 & shaft bearings- bronze/ PTET or Teflon with EPDM/NBR "O "ring seal, Nut-Bolt confirming to IS:1363 and IS: 1367 (Galvanised steel) Insertion rubber of black EPDM 6mm thick. Suitable support structure as per directions of EIC including jointing & jointing material, labour, testing and commissioning along with pipeline as per Technical Specification & as per direction of Engineer-in- charge.		
	Note: Rates are exclusive of tail piece/ dismantling joints and earth work.		
5.68.1	<b>Class PN 1.6, Manually Operated with Gear</b>		
5.68.1.1	100 mm dia	Each	53433.00
5.68.1.2	150 mm dia	Each	66773.00
5.68.1.3	200 mm dia	Each	68951.00
5.68.1.4	250 mm dia	Each	75607.00
5.68.1.5	300 mm dia	Each	84545.00
5.68.1.6	350 mm dia	Each	106322.00
5.68.1.7	400 mm dia	Each	140133.00
5.68.1.8	450 mm dia	Each	173137.00

Item no.	Description	Unit	Rate (Rs.)
5.68.1.9	500 mm dia	Each	222023.00
5.68.1.10	600 mm dia	Each	278265.00
5.68.2	<b>Class PN 1.0, Motorised Operated</b>		
5.68.2.1	200 mm dia	Each	177980.00
5.68.2.2	250 mm dia	Each	188071.00
5.68.2.3	300 mm dia	Each	212761.00
5.68.2.4	350 mm dia	Each	240021.00
5.68.2.5	400 mm dia	Each	271271.00
5.68.2.6	450 mm dia	Each	303496.00
5.68.2.7	500 mm dia	Each	342306.00
5.68.2.8	600 mm dia	Each	392472.00
5.68.3	<b>Class PN 1.6, Motorised Operated</b>		0.00
5.68.3.1	200 mm dia	Each	178405.00
5.68.3.2	250 mm dia	Each	195190.00
5.68.3.3	300 mm dia	Each	222086.00
5.68.3.4	350 mm dia	Each	246195.00
5.68.3.5	400 mm dia	Each	278419.00
5.68.3.6	450 mm dia	Each	316071.00
5.68.3.7	500 mm dia	Each	350972.00
5.68.3.8	600 mm dia	Each	413082.00
5.69	Providing, lowering, aligning, fixing in position in pipe line, <b>DI resilient seated (soft seated) Concentric Wafer type, Butterfly valves</b> of approved make of following Pressure rating & dia complete confirming to BS EN 593/ BS 5155/ IS 13095/1991 amended up to date and of following specifications: Body- Ductile cast iron of grade GGG40/GGG50 as per DIN 1693 or GR SG-400/12 as per IS 1865 or equivalent grade as per IS :3896-part2-1985 and subsequent revisions, Disc - DI (same as body material) / CS, Face to face dimensions as per DIN 3202 F4/ IS 13095 , Flanges Drilled as per IS:1538 ,Electrostatic Epoxy Powder(EP-P) / Fusion Bonded Epoxy (Non-Toxic & suitable for drinking water) coated with minimum thickness of 250 micron applied on both body and disc inside and outside . Liner & Disc seal - EPDM/ Neoprene (food grade quality) ,Shaft of SS- AISI-410/420 & shaft bearings- bronze/ PTET or Teflon with EPDM/NBR "O "ring seal , Nut-Bolt confirming to IS:1363 and IS: 1367/ Galvanised steel, Insertion rubber of black EPDM 6mm thick ,Suitable support structure as per directions of EIC including jointing & jointing material, labour, testing and commissioning along with pipeline as per Technical Specification & as per direction of Engineer-in-charge.		
	Note: Rates are exclusive of tail piece/ dismantling joints and earth work.		
5.69.1	<b>Class PN 1.6, Wafer Type</b>		
5.69.1.1	80 mm (Lever Operated)	Each	11182.00
5.69.1.2	100 mm (Lever Operated)	Each	13611.00
5.69.1.3	125 mm (Lever Operated)	Each	21934.00
5.69.1.4	150 mm (Lever Operated)	Each	24253.00

Item no.	Description	Unit	Rate (Rs.)
5.69.1.5	200 mm (with Gear)	Each	37043.00
5.69.1.6	250 mm (with Gear)	Each	49009.00
5.69.1.7	300 mm (with Gear)	Each	56143.00
5.70	Providing, lowering, aligning, fixing in position in pipe line, DI D/F resilient seated (soft seated) <b>Swing type Non Return Valve</b> of approved make of following Pressure rating & dia complete, generally confirming to IS: 5312 (part -1)/ 2004 (amended up to date) and of following specifications: Body, Bonnet & disc of Ductile cast iron of grade GGG40/GGG50 as per DIN 1693 or GR SG-400/12 as per IS 1865 or equivalent grade as per IS :3896-part2-1985 and subsequent revisions, Face to face dimensions as per IS 5312 (part -1):2004 Drilled as per IS:1538. Electrostatic Epoxy Powder(EP-P) / Fusion Bonded Epoxy (Non-Toxic & suitable for drinking water) coated with minimum thickness of 250 micron applied on body, cover and disc inside and outside . Disc seal ring of EPDM/ Neoprene (food grade quality) and disc seal retaining ring of SS/CS.Shaft of SS- AISI- 410, Hinge SS AISI 316/410 ,Bonnet Gasket EPDM ,Bush- Brass with EPDM/NBR "O "ring seal Nut- Bolt confirming to IS:1363 and IS: 1367 (galvanised steel) Insertion rubber of black EPDM 6mm thick. Suitable support structure as per directions of EIC including jointing & jointing material, labour, testing and commissioning along with pipeline as per Technical Specification & as per direction of Engineer-in-charge.		
	Note: Rates are exclusive of tail piece/ dismantling joints and earth work.		
5.70.1	<b>Class PN 1.6</b>		
5.70.1.1	80 mm dia	Each	9458.00
5.70.1.2	100 mm dia	Each	12603.00
5.70.1.3	125 mm dia	Each	18654.00
5.70.1.4	150 mm dia	Each	22096.00
5.70.1.5	200 mm dia	Each	37413.00
5.70.1.6	250 mm dia	Each	55783.00
5.70.1.7	300 mm dia	Each	76588.00
5.70.1.8	350 mm dia	Each	142563.00
5.70.1.9	400 mm dia	Each	191593.00
5.70.1.10	450 mm dia	Each	235873.00
5.70.1.11	500 mm dia	Each	294357.00
5.70.1.12	600 mm dia	Each	387237.00

Item no.	Description	Unit	Rate (Rs.)
5.71	Providing, lowering, aligning, fixing in position in pipe line, <b>DI double flanged resilient seated Dual plate check valve of approved make of following Pressure rating &amp; dia complete, as per API: 594/ API: 598 and of following specifications:</b> Body & Bonnet of Ductile cast iron of grade GGG40/GGG50 as per DIN 1693 or GR SG-400/12 as per IS 1865 or equivalent grade as per IS :3896-part2-1985 and subsequent revisions, Disc / plates - SG-400/12 or CF-8M, Face to face dimensions as per API: 594 , Flanges Drilled as per IS:1538. Electrostatic Epoxy Powder(EP-P) / Fusion Bonded Epoxy (Non-Toxic & suitable for drinking water) coated with minimum thickness of 250 micron applied on body and cover inside and outside . Disc seal ring of EPDM/ Neoprene (food grade quality) and disc seal retaining ring of SS/CS. Shaft of SS- AISI- 410, Hinge SS AISI 316/304, Spring SS AISI 316/304, Bonnet Gasket EPDM , Bush- Brass with EPDM/NBR "O "ring seal, Nut-Bolt conforming to IS:1363 and IS: 1367 (galvanised steel) , Insertion rubber of black EPDM 6mm thick .Suitable support structure as per directions of EIC including jointing & jointing material, labour, testing and commissioning along with pipeline as per Technical Specification & as per direction of Engineer-in-charge.		
	Note: Rates are exclusive of tail piece/ dismantling joints and earth work.		
5.71.1	<b>Class PN 1.6</b>		
5.71.1.1	80 mm dia	Each	11584.00
5.71.1.2	100 mm dia	Each	13945.00
5.71.1.3	125 mm dia	Each	15474.00
5.71.1.4	150 mm dia	Each	21508.00
5.71.1.5	200 mm dia	Each	37969.00
5.71.1.6	250 mm dia	Each	57416.00
5.72	Supply, Erection, testing and commissioning of suitable size made out of 18 gauge painted sheet canopy type out door LT panel board, (PMCC) conforming SLD and specification suitable for upto 10 HP submersible motor pump having following Items. Space for three phase electric meter with backlight sheet 6 mm thick, kit-kit fuse 32Amp.- 3 no., MCB 32Amp. 4 pole, Selector switch, Indicator lamp RYB, Amper mtr. (0-30) 100 mm size, volt meter ( 0-500) 100 mm size, Single phase preventer, Star-delta starter connection plat (63 Amp.), capacitor 4 KVAR etc. Make L&T complete including grouting the panel on MS angle frame above 60 cm height from ground level, construction suitable size RR stone masonry in (Cement motor 1:6) block on top of block CC 1:2:4 15cm thick for grouting the panel board (enclosed)		
		Each	29500.00



**S - 111**

<b>Item no.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate (Rs.)</b>
5.73	Construction of RR stone masonry sluice valve chambers of following size wall thickness 45CM bed concrete M-15 grade 15 CM, 25 CM thick internal & outer planter ferrow cement cover "AA" class loading. Internal size 1.20 x 1.50 Mtr.	No.	24300.00
5.74	Cleaning of water body reservoir having capacity upto 15.00 lac liter including dewatering & removal of all type silt from reservoir, sludge scrapping of floor, walls, high pressure cleaning then disinfection of reservoir with antibacterial spray after cleaning & disposal of silt away from park minimum 5.00 Km lead.	Each	49400.00
5.75	Cleaning of water body reservoir having capacity upto 35.00 lac liter dewatering & removal of all type silt from reservoir, sludge scrapping of floor, walls, high pressure cleaning then disinfection of reservoir with antibacterial spray after cleaning & disposal of silt away from park minimum 5.00 Km lead.	Each	110225.00
5.76	Cleaning and desilting of water body having capacity upto 2.00 lac liter including dewatering of stored water, removal of slurry, wiping of sludge, cleaning of floor and side wall tiles, scraping, remove the fluoride & strain from the wall complete job work.	Each	11000.00
5.77	Operation and maintenance of lower lake fountain and related accessories which installted at city park with all respect such as cleaning of nozzle, repairing of pump machinery and required as per site.	Month	16500.00
5.78	Providing and fixing Hydropnuematic Variable speed HYPN pressure boosting system consisting of 3 Nos.(2W+1S) Verticle Inline Multistage centrifugal pumps, connected in parallel mounted on a common base frame of galvanised sheet with Suction & discharge manifolds of galvanised M.S. pipe, One No. NRV & two Isolating valves for each pump, pressure guage, pressure Transmitter & manufracturer make factory fitted IP54 panel. The PLC operated panel Inbuilt in VFD shall include all required fuses, motor protection, main switch, 3 No. VFD, Etc. Complete in all respect with 200 Ltr Pressure Tank 10 Bar. Flow Per Pump 24 m3/Hr. at Head 44 mtrs. Motor rating Should be not less than 5.5KW/IP55/IE2.	Lot	785400.00

Item no.	Description	Unit	Rate (Rs.)
5.79	Providing and fixing Hydropneumatic Variable speed HYPN pressure boosting system consisting of 3 Nos.(2W+1S) Verticle Inline Multistage centrifugal pumps, connected in parallel mounted on a common base frame of galvanised sheet with Suction & discharge manifolds of galvanised M.S. pipe, One No. NRV & two Isolating valves for each pump, pressure guage, pressure Transmitter & manufracturer make factory fitted IP54 panel. The PLC operated panel Inbuilt in VFD shall include all required fuses, motor protection, main switch, 3 No. VFD, Etc. Complete in all respect 100 Ltr Pressure Tank 10 Bar. Flow Per Pump 8 m3/Hr. at Head 45 mtrs. Motor ratingb Should be not less than 2.2 KW/IP55/IE2.	Lot	576583.00
5.80	Providing and fixing Sump Pump for Pump room capacity 8 M3/Hr, Head 15 Mtr., pump model 1500 CW, Type drainage pump (1W+1S), Motor 1.5 KW /IP68 /B class /three phase, with Discharge connecting accessories (Local)	Each	88793.00
5.81	Providing and fixing Control panel for sump pump S.N. 6 with alternet cascading with SPP, OLR, DRP, Etc. with float switch.	Each	21945.00
5.82	Providing and fixing Filter feed pump (1W+1S) capacity 10 M3/Hr, Head 35 Mtr., Horizontal Multistage pump RPM 2900, Motor 2.2 KW /2900 RPM /IE3/IP55 /Fclass, casing SS 304, Impeller SS 304, Shaft SS 316, Mechanical Seal With isolation valve, pressure guage, Pressure switch, MS base frame with MS suction discharge header etc.	Lot	323400.00
5.83	Providing and fixing Multigrade Sand Filter (1W), of water filtration plant Dual Media filter made of FRP composite material complete in all respects, ready for operation of capacity 5 Cu.M per hpour complete with dished ends, supporting legs and facing pad for pipe connection complete with manhole cover, frontal pipe work of min. 10 Kg./Sqcm. Pressure fitted with valves and proper supports. (Rates of flow not to be exceeds 18 Cu.M/Hr/Sq.M of surface area). Make ION Exchange (I) Ltd.	Each	200970.00
5.84	Water softener, Design Flow rate M3/Hrs 10, Max. Flow rate M3/hrs 12, Max. Working Pressure Kg/Cm2 3.5, Min. wokring pressure Kg/Cm2 1.8, Resin Quality INDION 220 Na, Resin Quantity INDION 400, Design Hardness Ppm 250-300, Product hardness Ppm <10, OBR M3 50, Make ION Exchange (I) Ltd. (1 W + 1 S)	Each	146674.00
5.85	Supply, Installation of Openwell Submersible Pump capacity 5 HP, 3 phase with discharge of 8.8 lps to 20lps @10-24 mtr head with all required Fitting & accessories (1 W+1S) & (1 W+ 1 S)	Nos	84370.00

Item no.	Description	Unit	Rate (Rs.)
5.86	SITC of Skimmer having powerful suction cleaning of pond surfaces up to 250 mtr. Sq. It should have optimal adaption to water level differences made of SS. The skimmer should include large 27 ltr stainless steel debris collection basket. The dimensions of each skimmer should be 775mm*440mm*590mm (L*W*H). It will also include power cable of 10 mtr. The filter volume of the skimmer should be 27 ltrs./ second. The skimmer should operate in single phase electric connection and will be manually operated with power consumption of 250 W. Fastening material is to be included in the scope of delivery.	Nos	616550.00
5.87	Designing, supply erection, commissioning and testing of 10 HP Monoblock submersible pump of Kirlosker make AC Three phase 415 Volt, 50 cycle, supply with foundation bolt, suction stainless steel mesh Filter cover as per instruction of engineer in charge.	Each	55266.00
5.88	Designing, supply erection, commissioning and testing of 5 HP Monoblock submersible pump of Kirlosker make AC Three phase 415 Volt, 50 cycle, supply with foundation bolt, suction stainless steel mesh Filter cover as per instruction of engineer in charge.	Each	36506.00
5.89	Providing & Fixing Ms Signage Boards With 4mm Thick Sheet For Write Up & 50mm * 50mm Hollow Pipes Of Apollo Brand. Sheet With Acid Etching As Per Design, Rubbing, Polishing & Sealing The Surface With A Coat Of Polyurethane Layer As Protective Layer. Jaali Cut As Per Design In 4mm Sheet.	Sq. Inch.	39.00
5.90	Providing, fixing, testing & commissioning of Isolation Valve in mainline for bypass and flow diversion of approved quality 110 MM	Nos.	7301.00
5.91	Providing, fixing, testing & commissioning of Isolation Valve in mainline for bypass and flow diversion of approved quality 90 MM	Nos.	4235.00
5.92	Providing, fixing, testing & commissioning of a double acting 1" Air release valve, The Air release valve shall be capable of both releasing and admitting air from and into the line. The working pressure shall be 5 bar. Including service saddle and riser assembly.	Nos.	5257.00
5.93	Providing and Fixing of Hydropneumatic Fix speed system for Dom. Supply Toilets, Restaurant etc. (Non VFD) (1 W + 1S) capacity 6 M3/Hr, Head 32 Mtr., Vertical Multistage pump (Fix Speed System), RPM 2900, Motor 1.1 KW/IE2/IP55/F class/Three Phase	Set	240240.00

Item no.	Description	Unit	Rate (Rs.)
5.94	Providing and Fixing of Hydropneumatic Variable speed system for Garden hydrants of Landscape (VFD operated) (2 W + 1 S) capacity RPM 2900, Motor 3.0 KW/IE2/IP55/F class/Three Phase	Set	517740.00
5.95	Providing and Fixing of Control Panel, Local control panel (1 W + 1 S) 2 HP	Each	19210.00
5.96	Supply,Testing, commissioning of Hydropneumatic Pressure Boosting System consisting of 4 Nos. Vertical Inline Multistage centrifugal pumps with TEFC IE2 class motor, Pump connected in Parallel mounted on a common MS ISMC type base frame with Suction & Discharge manifolds of Galvanised MS Pipe, One No. NRV & Two Isolating Valves for each pump, Pressure Gauge, Pressure Transmitter & minimum IP54 type Panel. The Panel shall include all required fuses, motor protection, main switch, 4 Nos. VFDs, <b>KIRLOSMART</b> (IoT Remote Monitoring System, IP20,) BMS Connectivity through RS485 PORT, all automation operations etc. complete in all respect & 1-Nos 200 Ltrs MS 10 bar Pressure Tank. This work including Pressure transmitter, flow meter, NRV on discharge line as per required line size and Butterfly valve, Y-Strainer on suction line and all accessories for pump and system safe operation complete job as per direction engineer in charge		
5.96.1	<b>For OHT FILLING (LIG &amp; EWS)</b> The Technical details of the system are as under : PUMPS - 4 Nos. (3W+ 1S) Head pump - 75-85 Mtrs. Flow each pump - 25-30 M <sup>3</sup> /Hr. VFD make - Danfoss/VACON - 4 nos. Impeller : SS 304 Shaft : SS 316 Casing ; SS 304 CI Suction-discharge port of pump <b>Makes: Kirloskar, Grundfos, Armstrong.</b>	Set	2195000.00
5.96.2	<b>Solenoid Valve with 12V, DC Operated control Panel and float switch</b> Size - 50mm MOC - SS 304 Valve Body - CF8M <b>Make :- U-Flow, Danfoss</b>	Set	45000.00

**CHAPTER : S-6**  
**SEWER LINE WORK**

Item no.	Description	Unit	Rate (Rs.)
6.1	Earth work for Sewer line and Manhole in excavation in foundation, trenches manholes, road side chambers etc. including dressing of sides and ramming of bottoms, including getting out the excavated material, refilling after laying pipe/ foundation and disposal of surplus excavated material at a lead upto 50m suitable site as per direction of Engineer for following depths, below natural ground / Road top level including allowances for any additional excavation beyond the drawings (measurement for payment to be as per standard drawings), re-handling of material/earth to complete the task.		
6.1.1	In all types soils/ saturated soil such as moorum, sand, sandy silt, clay, black cotton soil, kankar, etc.		
6.1.1.1	Depth upto 1.5 m	Cum	299.00
6.1.1.2	Add extra for overall depth of excavation above 1.5 m and upto 3.0 m over item no 17.1.1.1	Cum	20.90
6.1.1.3	Add extra for overall depth of excavation above 3.0 m and upto 4.5 m over item no 17.1.1.1	Cum	47.80
6.1.1.4	Add extra for overall depth of excavation above 4.5 m and upto 6.0 m over item no 17.1.1.1	Cum	83.70
<b>6.1.2</b>	<b>In ordinary rock.</b>		
6.1.2.1	Depth upto 1.5 m	Cum	1262.00
6.1.2.2	Add extra for overall depth of excavation above 1.5 m and upto 3.0 m over item no 17.1.2.1	Cum	88.30
6.1.2.3	Add extra for overall depth of excavation above 3.0 m and upto 4.5 m over item no 17.1.2.1	Cum	202.00
6.1.2.4	Add extra for overall depth of excavation above 4.5 m and upto 6.0 m over item no 17.1.2.1	Cum	353.50
<b>6.1.3</b>	<b>In hard rock (required blasting) including Blasting materials.</b>		
6.1.3.1	Depth upto 1.5 m	Cum	2127.00
6.1.3.2	Add extra for overall depth of excavation above 1.5 m and upto 3.0 m over item no 17.1.3.1	Cum	149.00
6.1.3.3	Add extra for overall depth of excavation above 3.0 m and upto 4.5 m over item no 17.1.3.1	Cum	340.50
6.1.3.4	Add extra for overall depth of excavation above 4.5 m and upto 6.0 m over item no 17.1.3.1	Cum	596.00
<b>6.1.4</b>	<b>In hard rock (Blasting prohibited)</b>		
6.1.4.1	Depth upto 1.5 m	Cum	4320.00
6.1.4.2	Add extra for overall depth of excavation above 1.5 m and upto 3.0 m over item no 17.1.4.1	Cum	302.50
6.1.4.3	Add extra for overall depth of excavation above 3.0 m and upto 4.5 m over item no 17.1.4.1	Cum	691.00
6.1.4.4	Add extra for overall depth of excavation above 4.5 m and upto 6.0 m over item no 17.1.4.1	Cum	1210.00
6.2	Add extra over item no 17.1.1, 17.1.2, 17.1.3 and 17.1.4 in RUIDP SOR for excavation in saturated soil, silt, rock and sludge where pumping or bailing out of water including well point if required for sewer line and manhole.		
6.2.1	Excavation depth from ground level 0.0 to 9.0 m		

Item no.	Description	Unit	Rate (Rs.)
6.2.1.1	Excavation from Encountered depth of water table 0.0 to 1.5 m	Cum	59.80
6.2.1.2	Excavation from Encountered depth of water table 1.5 to 3.0 m	Cum	119.50
6.2.1.3	Excavation from Encountered depth of water table 3.0 to 4.5 m	Cum	239.00
6.2.1.4	Excavation from Encountered depth of water table 4.5 to 6.0 m	Cum	359.00
6.3	Providing and fixing CLOSE timbering in trenches of sewer line and manholes including strutting, shoring and packing cavities (wherever required) complete. (Measurements to be taken of the face area timbered) for following depth below NGL.		
6.3.1	Depth upto 3.0 m	Sqm	142.50
6.3.2	Depth more than 3.0 m and upto 6.0 m	Sqm	144.00
6.3.3	Depth beyond 6.0 m	Sqm	146.50
6.4	Extra for planking, strutting and packing material for cavities IN CLOSE TIMBERING of sewer line and manholes if required to be left permanently in position (face area of timber permanently left to be measured)	Sqm	1121.00
6.5	Providing and fixing OPEN timbering in trenches of sewer line and manholes including strutting, shoring and packing cavities (wherever required) complete for following depth below NGL.		
6.5.1	Depth upto 3.0 m	Sqm	72.60
6.5.2	Depth more than 3.0 m and upto 6.0 m	Sqm	73.20
6.5.3	Depth beyond 6.0 m	Sqm	74.50
6.6	Extra for planking, strutting and packing material for cavities IN OPEN TIMBERING of sewer line and manholes if required to be left permanently in position (face area of timber permanently left	Sqm	477.50
6.7	Providing and fixing close timbering made of Steel Girder Piling in sewer line and manholes work for support the both side of trenches with ISMB 250 as vertical member at 1.25 m centre to centre, ISMB 250 as horizontal member for tie at two depths, Struts to support the both side of trench of ISMB 250 and face of trench to be covered with 100*100*1235 mm wooden planks and removing Steel Girder piling after laying the sewers etc. complete as per specifications and as directed by Engineer. (Measurements to be taken of the face area timbered)		
6.7.1	Depth more than 3.0 m and upto 6.0 m	Sqm	609.00
6.7.2	Depth beyond 6.0 m	Sqm	731.00
6.8	Dismantling of flexible pavements for sewer line and manholes and disposal of dismantled materials up to a lead of 50 Metres as directed by Engineer including allowances for any additional dismantling beyond the drawings (measurement for payment to be as per standard drawings), re-handling of material/earth to complete the task.		
6.8.1	Bituminous courses	Cum	534.00
6.8.2	Granular courses	Cum	372.00

Item no.	Description	Unit	Rate (Rs.)
6.9	Dismantling of cement concrete pavement for sewer line and manholes by mechanical means using pneumatic tools, cutting the peripheral edge by CC cutter, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials up to a lead of 1000 Metres including allowances for any additional dismantling beyond the drawings (measurement for payment to be as per standard drawings), re-handling of material/earth to complete the task.	Cum	1273.00
6.10	Providing and laying un-reinforced, plain cement concrete mix in pavement over a prepared sub base with 43 grade cement, coarse and fine aggregate conforming to IS: 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant, transported to site, laid spread, compacted and finished in a continuous operation including provision of contraction, expansion, admixtures as approved, curing compound, finishing to lines and grades complete as per drawing and as per clause 602, 112 of MoRT&H specification including all material, labour, machinery, lighting, guarding and maintenance of diversion for road restoration under sewer line and manhole work including allowances for any additional road restoration beyond the drawings (measurement for payment to be as per standard drawings) to complete the task.		
6.10.1	cement concrete 1:3:6	Cum	4205.00
6.10.2	cement concrete 1:4:8	Cum	3785.00
6.11	Providing and laying in position cement concrete of specified grade over a prepared base course complete including finishing, curing all material, labour, machinery, lighting, guarding for road restoration under sewer line and manhole work using RMC (ready mix concrete plant) and Transit mixer including allowances for any additional road restoration beyond the drawings (measurement for payment to be as per standard drawings) to complete the task. including Providing /mixing of synthetic fibers compulsorily complying with IS 16481:2022 of 06 mm/12 mm length to be mixed @ 0.25% by weight of Cement i.e.125 gms per 50 kg Cement up to 900 gms per cum of Concrete/ mortar.		
6.11.1	PCC/ RCC Grade M -20	Cum	6130.00
6.11.2	PCC/ RCC Grade M -25	Cum	6540.00

Item no.	Description	Unit	Rate (Rs.)
6.12	Providing laying, spreading and compacting stone aggregates of specific sizes as per Table 400-7 to Water Bound Macadam specification including spreading in uniform thickness; hand packing, rolling with power roller 8-10 tonnes, in stages to proper grade and camber, applying and brooming requisite type of screening (Table 400-8) binding materials to fill up the interstices of coarse aggregates, watering (with water browser) and compacting to required density, making necessary earthen bund to protect edges as per clause 404 of MoRT&H specification including all material, labour, machinery, lighting, guarding and maintenance of diversion under sewer line and manhole work complete including allowances for any additional road restoration beyond the drawings (measurement for payment to be as per standard drawings) to complete the task.		
6.12.1	Hand broken - Grade-I (90-45mm)	Cum	2103.00
6.12.2	Hand broken - Grade-II (63-45mm)	Cum	2051.00
6.12.3	Crusher broken - Grade-II (63-45mm)	Cum	2298.00
6.12.4	Crusher broken - Grade-III (53-22.4mm)	Cum	2276.00
6.13	Providing and applying tack coat on the prepared surface with bitumen emulsion as per IS: 8887 and approved quality @ 0.2 kg/sqm with the help of spray Set fitted on bitumen Container (boiler) after cleaning the surface with brooms or soft brushes and finally dusting with old gunny bags and compressed air to receive bituminous treatment complete as per clause 502 of MoRT&H specification including all material, labour, machinery, lighting, guarding under sewer line and manhole work including allowances for any additional road restoration beyond the drawings (measurement for payment to be as per standard drawings) to complete the task.		
		Sqm	14.40
6.14	Extra for additional bitumen emulsion used in above item for every 1 kg per 10 sqm including allowances for any additional road restoration beyond the drawings (measurement for payment to be as per standard drawings) to complete the task.		
		Sqm	6.50



Item no.	Description	Unit	Rate (Rs.)
6.15	Providing and laying open graded premix carpet 20mm thick (compacted), on prepared surface in a single course as wearing course, composed of specified graded crushed stone aggregate as per Table 500-23, premixed with bituminous binder @ 14.60 kg/ 10sqm (including Cost of anti-stripping compound Minimum 1% in Lime/Cement as per design wherever required), including loading of material with F.E. loader, hot mixing of stone aggregate and bitumen in computerised hot mix plant, transporting the mixed material by tippers to paver and laying with paver finisher fitted with electronic sensor control to the required level and grade, compacting smooth wheeled roller 8-10 tonne capacity and finishing to required level to achieve the desired density as per clause 511 of MoRT&H specification including all material, labour, machinery, lighting, guarding but excluding cost of tack coat/ seal coat under sewer line and manhole work including allowances for any additional road restoration beyond the drawings (measurement for payment to be as per standard drawings) to complete the task.		
6.15.1	With Bitumen VG-grade 30	Sqm	143.00
6.15.2	With bitumen of grade CRMB-60	Sqm	148.00
6.16	Providing and applying liquid seal coat type "A" comprising of a layer of bituminous binder @ 9.8 kg/ 10 Sqm (including Cost of anti- stripping compound Minimum 1% in Lime/Cement as per design wherever required) followed by a cover of stone chipping @ 0.09 Cum/10 sqm of specified grading and rolling with power roller 8-10 tonne complete as per clause 513 of MoRT&H specification including all material, labour, machinery, lighting, guarding under sewer line and manhole work including allowances for any additional road restoration beyond the drawings (measurement for payment to be as per standard drawings) to complete the task.		
6.16.1	With Bitumen VG-grade 30	Sqm	82.80
6.16.2	With bitumen of grade CRMB-60	Sqm	86.00
6.17	Providing and applying premixed seal coat Type "B" comprising of thin application of fine aggregate 0.06 Cum/ 10 sqm premix with bitumen binder @ 6.8 Kg/ 10 Sqm (including Cost of anti-stripping compound Minimum 1% in Lime/Cement as per design wherever required) laying with paver finisher with electronic sensor control and rolling with power roller 8-10 tonne complete as per clause 513 of MoRT&H specification including all material, labour, machinery, lighting, guarding under sewer line and manhole work including allowances for any additional road restoration beyond the drawings (measurement for payment to be as per standard drawings) to complete the task.		
6.17.1	With Bitumen VG-grade 30	Sqm	57.70
6.17.2	With bitumen of grade CRMB-60	Sqm	59.90

Item no.	Description	Unit	Rate (Rs.)
6.18	Providing at site, lowering & laying in trenches, aligning & jointing of RCC pipes NP4 class (with s/s ends) IS: 458 - 2003 (amended up to date) marked and pipes from 300 mm and upto 1800 mm manufactured through vertical / vibrated casting process at all depths with Rubber gaskets (EPDM/SBR) for sewer lines as per IS: 5382 (including cost of Rubber gaskets, lubricants) as per drawing, sectional hydro testing of the sewer pipe line (including cost and conveyance of water to site for testing) etc., complete as per specification and / or as directed by Engineer. Note : E/w to be measured and paid separately. Length of pipe shall be measured in between the outer wall of two manholes / Inspection chambers. Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber shall not be payable.		
6.18.1	150 mm internal diameter	Metre	506.00
6.18.2	200 mm internal diameter	Metre	644.00
6.18.3	250 mm internal diameter	Metre	856.00
6.18.4	300 mm internal diameter	Metre	1202.00
6.18.5	350 mm internal diameter	Metre	1794.00
6.18.6	400 mm internal diameter	Metre	1989.00
6.18.7	450 mm internal diameter	Metre	2156.00
6.18.8	500 mm internal diameter	Metre	2550.00
6.18.9	600 mm internal diameter	Metre	3565.00
6.19	Providing at site, lowering & laying in trenches, aligning & jointing of RCC pipes NP3 class (with s/s ends) IS: 458 - 1988 (amended up to date) marked and pipes from 300 mm upto 2000 mm manufactured through vertical / vibrated casting process all levels with Rubber gaskets (EPDM/SBR) for sewer lines as per IS: 5382 (including cost of Rubber gaskets lubricants) as per drawing, sectional hydro testing of the sewer pipe line (including cost and conveyance of water to site for testing) etc., complete as directed by Engineer. Note : E/w to be measured and paid separately. Length of pipe shall be measured in between the outer wall of two manholes / Inspection chambers. Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber shall not be payable.		
6.19.1	150 mm internal diameter	Metre	482.00
6.19.2	200 mm internal diameter	Metre	597.00
6.19.3	250 mm internal diameter	Metre	804.00
6.19.4	300 mm internal diameter	Metre	1090.00
6.19.5	350 mm internal diameter	Metre	1506.00
6.19.6	400 mm internal diameter	Metre	1676.00
6.19.7	450 mm internal diameter	Metre	1846.00
6.19.8	500 mm internal diameter	Metre	2064.00
6.19.9	600 mm internal diameter	Metre	2459.00
6.20	Providing at site, lowering & laying in trenches, aligning & jointing of RCC pipes NP2 class (with s/s ends IS: 458 - 1988 (amended up to date) marked and manufactured through spun process at all levels		

Item no.	Description	Unit	Rate (Rs.)
	with Rubber gaskets (EPDM/SBR) for sewer lines as per IS: 5382 (including cost of Rubber gaskets lubricants) as per drawing, sectional hydro testing of the sewer pipe line (including cost and conveyance of water to site for testing) etc., complete as directed by Engineer. Note : E/w to be measured and paid separately. Length of pipe shall be measured in between the outer wall of two manholes / Inspection chambers, Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber shall not be payable.		
6.20.1	150 mm internal diameter	Metre	456.00
6.20.2	200 mm internal diameter	Metre	617.00
6.20.3	250 mm internal diameter	Metre	671.00
6.20.4	300 mm internal diameter	Metre	813.00
6.20.5	350 mm internal diameter	Metre	977.00
6.20.6	400 mm internal diameter	Metre	1139.00
6.20.7	450 mm internal diameter	Metre	1308.00
6.20.8	500 mm internal diameter	Metre	1674.00
6.20.9	600 mm internal diameter	Metre	1880.00
6.21	Add extra for manufacturing of RCC pipe with Sulphate Resistant Cement instead of OPC/PPC cement		
6.21.1	NP2 Pipes		
6.21.1.1	150 mm internal diameter	Metre	19.30
6.21.1.2	200 mm internal diameter	Metre	24.80
6.21.1.3	250 mm internal diameter	Metre	30.30
6.21.1.4	300 mm internal diameter	Metre	43.60
6.21.1.5	350 mm internal diameter	Metre	53.90
6.21.1.6	400 mm internal diameter	Metre	60.90
6.21.1.7	450 mm internal diameter	Metre	74.80
6.21.1.8	500 mm internal diameter	Metre	82.50
6.21.1.9	600 mm internal diameter	Metre	128.00
6.21.2	NP3 and NP4 Pipes		
6.21.2.1	150 mm internal diameter	Metre	19.30
6.21.2.2	200 mm internal diameter	Metre	30.40
6.21.2.3	250 mm internal diameter	Metre	37.00
6.21.2.4	300 mm internal diameter	Metre	59.90
6.21.2.5	350 mm internal diameter	Metre	140.50
6.21.2.6	400 mm internal diameter	Metre	157.00
6.21.2.7	450 mm internal diameter	Metre	173.50
6.21.2.8	500 mm internal diameter	Metre	190.00
6.21.2.9	600 mm internal diameter	Metre	256.50
6.22	Extra for providing 2.5mm thick HDPE Lining inside RCC pipe (while casting of pipe) as required.		
6.22.1	600 mm internal diameter	Metre	765.00

Item no.	Description	Unit	Rate (Rs.)
6.23	Providing at site, lowering, laying, aligning, fixing in position and jointing in trenches at all level/ depths, ISI marked following class AC (Mazza process) pipes for sewer and drainage application as per IS 6908-1991 (amended upto date) with AC coupler joints sealed with Rubber gaskets (EPDM/SBR) as per IS 5382 complete including cost of all materials, labour, jointing, water, sectional hydro testing (including cost and conveyance of water to site for testing) etc. and commissioning as per Technical Specifications and as per direction of Engineer. Note : E/w to be measured and paid separately. Length of pipe shall be measured in between the outer wall of two manholes		
	/ Inspection chambers. Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber shall not be payable.		
6.23.1	Class-1		
6.23.1.1	150mm Nominal dia	Metre	576.00
6.23.1.2	200 mm Nominal dia	Metre	878.00
6.23.1.3	250 mm Nominal dia	Metre	1140.00
6.23.1.4	300 mm Nominal Dia	Metre	1438.00
6.23.1.5	350 mm Nominal Dia	Metre	1840.00
6.23.1.6	400 mm Nominal Dia	Metre	2224.00
6.23.1.7	450 mm Nominal Dia	Metre	2595.00
6.23.1.8	500 mm Nominal Dia	Metre	3295.00
6.23.1.9	600 mm Nominal Dia	Metre	5220.00
6.23.2	Class-2		
6.23.2.1	150mm Nominal dia	Metre	699.00
6.23.2.2	200 mm Nominal dia	Metre	1137.00
6.23.2.3	250 mm Nominal dia	Metre	1412.00
6.23.2.4	300 mm Nominal Dia	Metre	1933.00
6.23.2.5	350 mm Nominal Dia	Metre	2451.00
6.23.2.6	400 mm Nominal Dia	Metre	3090.00
6.23.2.7	450 mm Nominal Dia	Metre	3655.00
6.23.2.8	500 mm Nominal Dia	Metre	4560.00
6.23.2.9	600 mm Nominal Dia	Metre	6440.00
6.23.3	Class-3		
6.23.3.1	150mm Nominal dia	Metre	863.00
6.23.3.2	200 mm Nominal dia	Metre	1407.00
6.23.3.3	250 mm Nominal dia	Metre	1744.00
6.23.3.4	300 mm Nominal Dia	Metre	2460.00
6.23.3.5	350 mm Nominal Dia	Metre	3070.00
6.23.3.6	400 mm Nominal Dia	Metre	4005.00
6.23.3.7	450 mm Nominal Dia	Metre	4825.00
6.23.3.8	500 mm Nominal Dia	Metre	5860.00
6.23.3.9	600 mm Nominal Dia	Metre	8290.00

6.24 Providing, lowering, laying in trenches, aligning, fixing in position and jointing Ductile Iron (DI) ISI marked K-7 grade S&S pipes as per IS:8329-2000 (amended up to date), with internal High Alumina Cement (HAC) mortar lining for gravity sewer network with rubber ring (EPDM) joints as per IS: 5382-1985 (excluding special accessories) complete including all material, labour, hydraulic testing and commissioning as per technical specifications and as per direction of Engineer.

Note : E/w to be measured and paid separately.

Item no.	Description	Unit	Rate (Rs.)
6.24.1	100mm	Metre	1535.00
6.24.2	150mm	Metre	2207.00
6.24.3	200mm	Metre	2900.00
6.24.4	250mm	Metre	3720.00
6.24.5	300mm	Metre	4680.00
6.24.6	350 mm	Metre	5740.00
6.24.7	400 mm	Metre	6820.00
6.24.8	450 mm	Metre	7960.00
6.24.9	500 mm	Metre	9560.00
6.24.10	600mm	Metre	12600.00
6.25	Providing, lowering & laying in trenches, aligning & jointing of IS marked SW pipes (IS: 651:1980 amended up date) at all depths with rubber gaskets (EPDM/ SBR) for sewer lines and laying as per IS:4127:1983 (amended up to date) including cost of Rubber gaskets, lubricants and sectional hydro testing of the sewer pipe line (including the cost and conveyance of water to site for testing) complete in all respect as per specification and the directed of the Engineer. Note : E/w to be measured and paid separately. Length of pipe shall be measured in between the outer wall of two manholes / Inspection chambers. Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber shall not be payable.		
6.25.1	100 mm Nominal Dia	Metre	353.50
6.25.2	150 mm Nominal Dia	Metre	618.00
6.25.3	200 mm Nominal Dia	Metre	997.00
6.25.4	250 mm Nominal Dia	Metre	1172.00
6.25.5	310 mm Nominal Dia	Metre	1692.00
6.26	Providing at site, lowering & laying in trenches, aligning & jointing of PVC-U pipes (SN 8) as per IS 15328 (amended up to date) and as per specifications with rubber rings with socket and spigot joint, (EPDM/SBR) for all depths for pipe length as per drawing and specification including hydraulic field testing (including the cost and conveyance of water to site for testing) and commissioning etc complete as directed by Engineer. Note : E/w to be measured and paid separately. Length of pipe shall be measured in between the outer wall of two manholes / Inspection chambers. Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber shall not be payable.		
6.26.1	110 mm Nominal Dia	Metre	263.50
6.26.2	160 mm Nominal Dia	Metre	548.00
6.26.3	200 mm Nominal Dia	Metre	850.00
6.26.4	250 mm Nominal Dia	Metre	1300.00
6.26.5	315 mm Nominal Dia	Metre	2069.00

Item no.	Description	Unit	Rate (Rs.)
6.27	Providing at site, lowering & laying in trenches, aligning & jointing of U-PVC pipe as per IS 13592 (amended up to date) and as per specifications with rubber rings with socket and spigot joint, (EPDM/SBR) for all depths for pipe length as per drawing and specification including hydraulic field testing (including the cost and conveyance of water to site for testing) and commissioning etc complete as directed by Engineer for house sewer connection work. Note : E/w to be measured and paid separately. Length of pipe shall be measured in between the outer wall of two manholes / Inspection chambers. Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber shall not be payable.		
6.27.1	110 mm Nominal Dia	Metre	245.00
6.28	Providing, lowering, laying, aligning, fixing in position at and jointing at all level/ depths ISI marked HDPE pipes of PE-100 grade and PN 6 for sewer application as per IS 14333-1996 (amended upto date) in trenches in complete including all material, labour, sectional hydro testing (including the cost and conveyance of water to site for testing) and commissioning as per Technical Specifications and as per direction of Engineer. Note: E/w to be measured and paid separately. Length of pipe shall be measured in between the outer wall of two manholes / Inspection chambers. Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber shall not be payable.		
6.28.1	200mm Nominal dia	Metre	1718.00
6.28.2	225 mm Nominal dia	Metre	1951.00
6.28.3	250 mm Nominal dia	Metre	2665.00
6.28.4	315 mm Nominal dia	Metre	4310.00
6.28.5	355 mm Nominal Dia	Metre	5040.00
6.28.6	400 mm Nominal Dia	Metre	6950.00
6.28.7	450 mm Nominal Dia	Metre	8760.00
6.28.8	500 mm Nominal Dia	Metre	11550.00
6.28.9	560 mm Nominal Dia	Metre	14350.00
6.28.10	630 mm Nominal Dia	Metre	18050.00
6.29	Providing, lowering, laying, aligning, fixing in position and jointing at all level/ depths full round HDPE DWC (double wall corrugated) pipes of SN8 grade as per IS 16098 (Part 2) amended upto date in trenches in complete including all material, labour, sectional hydro testing (including the cost and conveyance of water to site for testing) and commissioning as per Technical Specifications, drawings and as per direction of Engineer. Note : E/w to be measured and paid separately. Length of pipe shall be measured in between the outer wall of two manholes / Inspection chambers. Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber shall not be payable.		
6.29.1	150 mm ID	Metre	429.50
6.29.2	200 mm ID	Metre	618.00
6.29.3	250 mm ID	Metre	949.00
6.29.4	300 mm ID	Metre	1306.00

Item no.	Description	Unit	Rate (Rs.)
6.29.5	400 mm ID	Metre	2250.00
6.29.6	500 mm ID	Metre	3400.00
6.29.7	600 mm ID	Metre	5810.00
6.30	Providing granular bedding having width = outer dia of pipe (Bc) + 500mm, thickness below pipe = 0.25Bc or 100mm (whichever is higher) and haunching = 0.5Bc, with graded hard crusher broken stone of 100% passing through 20mm sieve, 20 to 50 % passing through 10mm sieve and 100 % retain on 6.3mm sieve, laying in layers of thickness 10/15cm including ramming, consolidation etc complete for all type of pipes of following sizes as per drawing and or as directed by Engineer.		
6.30.1	100 mm internal diameter	Metre	128.00
6.30.2	150 mm internal diameter	Metre	144.50
6.30.3	200 mm internal diameter	Metre	167.00
6.30.4	250 mm internal diameter	Metre	185.00
6.30.5	300 mm internal diameter	Metre	210.00
6.30.6	350 mm internal diameter	Metre	276.50
6.30.7	400 mm internal diameter	Metre	313.00
6.30.8	450 mm internal diameter	Metre	352.00
6.30.9	500 mm internal diameter	Metre	389.50
6.30.10	600 mm internal diameter	Metre	490.00
6.31	Providing granular bedding having width = outer dia of pipe (Bc) + 500mm, thickness below pipe = 0.25Bc or 100mm (whichever is higher) and haunching = 0.5Bc, with graded hard crusher broken stone of 100% passing through 20mm sieve, 20 to 50 % passing through 10mm sieve and 100 % retain on 6.3mm sieve, laying in layers of thickness 10/15cm including ramming, consolidation etc complete for PVC/HDPE pipes of following sizes as per drawing and or as directed by Engineer.		
6.31.1	110mm nominal dia	Metre	115.50
6.31.2	160mm nominal dia	Metre	131.50
6.31.3	200mm nominal dia	Metre	146.50
6.31.4	250mm nominal dia	Metre	164.00
6.31.5	315mm nominal dia	Metre	186.50
6.32	Providing and laying plain cement concrete M15 grade (using mechanical concrete mixer) using 20mm graded hard crusher broken stone aggregate, laying in layers of not more than 15cm thick, for bedding having width = outer dia of pipe (Bc) + 200mm or 1.25Bc (whichever is higher), thickness below pipe = 0.25Bc or 100mm (whichever is higher) and haunching = 0.25Bc, for all type of pipes of following sizes, including compaction, curing, form work, etc complete as per drawing and/ or as directed by Engineer.		
6.32.1	150 mm internal diameter	Metre	283.00
6.32.2	200 mm internal diameter	Metre	345.00
6.32.3	250 mm internal diameter	Metre	400.00
6.32.4	300 mm internal diameter	Metre	482.00
6.32.5	350 mm internal diameter	Metre	725.00
6.32.6	400 mm internal diameter	Metre	849.00
6.32.7	450 mm internal diameter	Metre	981.00
6.32.8	500 mm internal diameter	Metre	1124.00

Item no.	Description	Unit	Rate (Rs.)
6.32.9	600 mm internal diameter	Metre	1503.00
6.33	Providing and laying reinforced cement concrete M15 grade (using mechanical concrete mixer) with 0.4% steel reinforcement) using 20mm graded hard crusher broken stone aggregate, laying in layers of not more than 15cm thick, for bedding having width = outer dia of pipe (Bc) + 200mm or 1.25Bc (whichever is higher), thickness below pipe = 0.25Bc or 100mm (whichever is higher) and haunching = 0.25Bc, for all type of pipes of following sizes, including reinforcement, compaction, curing, form work, etc complete as per drawing and/ or as directed by Engineer.		
6.33.1	150 mm internal diameter	Metre	425.00
6.33.2	200 mm internal diameter	Metre	519.00
6.33.3	250 mm internal diameter	Metre	600.00
6.33.4	300 mm internal diameter	Metre	723.00
6.33.5	350 mm internal diameter	Metre	1090.00
6.33.6	400 mm internal diameter	Metre	1275.00
6.33.7	450 mm internal diameter	Metre	1475.00
6.33.8	500 mm internal diameter	Metre	1689.00
6.33.9	600 mm internal diameter	Metre	2258.00
6.34	Providing and laying granular bedding in layers of not more than 15cm thick, for bedding having width = outer dia of pipe (Bc) + 500mm, thickness below pipe = 0.25Bc or 100mm (whichever is higher), haunching = 0.5Bc and reinforced cement concrete M15 grade (using mechanical concrete mixer) with 1% steel reinforcement) using 20mm graded hard crusher broken stone aggregate to cover pipe having width = outer dia of pipe (Bc) + 200mm or 1.25Bc (whichever is higher), thickness over pipe = 0.25Bc or 100mm (whichever is higher) for all type of pipes of following sizes, including reinforcement, compaction, curing, form work, etc complete as per drawing and/ or as directed by Engineer.		
6.34.1	150 mm internal diameter	Metre	902.00
6.34.2	200 mm internal diameter	Metre	1100.00
6.34.3	250 mm internal diameter	Metre	1273.00
6.34.4	300 mm internal diameter	Metre	1523.00
6.34.5	350 mm internal diameter	Metre	2211.00
6.34.6	400 mm internal diameter	Metre	2555.00
6.34.7	450 mm internal diameter	Metre	2925.00
6.34.8	500 mm internal diameter	Metre	3315.00
6.34.9	600 mm internal diameter	Metre	4345.00
6.35	Providing arranging and Hydraulic testing of following RCC sewer pipe line as per IS: 783 code of practice and / or as directed by Engineer-in-charge complete including cost of water.		
6.35.1	150 mm Nominal Inside dia	Metre	71.50
6.35.2	200 mm Nominal Inside dia	Metre	85.50
6.35.3	250 mm Nominal Inside dia	Metre	87.00
6.35.4	300 mm Nominal Inside dia	Metre	92.50
6.35.5	350 mm Nominal Inside dia	Metre	130.00
6.35.6	400 mm Nominal Inside dia	Metre	132.00
6.35.7	450 mm Nominal Inside dia	Metre	151.00
6.35.8	500 mm Nominal Inside dia	Metre	153.00
6.35.9	600 mm Nominal Inside dia	Metre	219.00



Item no.	Description	Unit	Rate (Rs.)
6.36	Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-E" with internal dia 1.40m and depth upto 3.50m having 150 mm thick RCC M-20 wall, including 350 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, RCC M20 for 200mm thick cover slab, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC foot steps of approved make at every 0.30m height, supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance & cost of water, dewatering etc. complete as directed by the Engineer.		
	Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.36.1	Manhole of depth 1.8m as per drawing and direction of Engineer.	Each manhole	46400.00
6.36.2	Providing and constructing extra depth of manhole for depth beyond 1.8 m and upto 3.5 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	12000.00
6.37	Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-E" with internal dia 1.50m and depth upto 3.50m having 150 mm thick RCC M-20 wall, including 350 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, RCC M20 for 200mm thick cover slab, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC foot steps of approved make at every 0.30m height, supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance & cost of water, dewatering etc. complete as directed by the Engineer.		
	Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.37.1	Manhole of depth 1.8m as per drawing and direction of Engineer.	Each manhole	49700.00
6.37.2	Providing and constructing extra depth of manhole for depth beyond 1.8 m and upto 3.5 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	12650.00
6.38	Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-E" with internal dia 1.55m and depth upto 3.50m		

Item no.	Description	Unit	Rate (Rs.)
	having 150 mm thick RCC M-20 wall, including 350 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, RCC M20 for 200mm thick cover slab, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC foot steps of approved make at every 0.30m height, supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance & cost of water, dewatering etc. complete as directed by the Engineer.		
6.38.1	Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately. Manhole of depth 1.8m as per drawing and direction of Engineer.	Each manhole	50900.00
6.38.2	Providing and constructing extra depth of manhole for depth beyond 1.8 m and upto 3.5 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	12950.00
6.39	Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-E" with internal dia 1.75m and depth upto 3.50m having 150 mm thick RCC M-20 wall, including 350 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, RCC M20 for 200mm thick cover slab, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC foot steps of approved make at every 0.30m height, supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance & cost of water, dewatering etc. complete as directed by the Engineer. Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.39.1	Manhole of depth 1.8m as per drawing and direction of Engineer.	Each manhole	59300.00
6.39.2	Providing and constructing extra depth of manhole for depth beyond 1.8 m and upto 3.5 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	14400.00

Item no.	Description	Unit	Rate (Rs.)
6.40	<p>Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-E" with internal dia 2.00m and depth upto 3.50m having 150 mm thick RCC M-20 wall, including 350 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, RCC M20 for 200mm thick cover slab, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC foot steps of approved make at every 0.30m height,</p> <p>supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance &amp; cost of water, dewatering etc. complete as directed by the Engineer.</p> <p>Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.</p>		
6.40.1	Manhole of depth 1.8m as per drawing and direction of Engineer.	Each manhole	64000.00
6.40.2	<p>Providing and constructing extra depth of manhole for depth beyond 1.8 m and upto 3.5 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.</p>	Metre	16100.00
6.41	<p>Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-E" with internal dia 2.20m and depth upto 3.50m having 150 mm thick RCC M-20 wall, including 350 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, RCC M20 for 200mm thick cover slab, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC foot steps of approved make at every 0.30m height, supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance &amp; cost of water, dewatering etc. complete as directed by the Engineer.</p> <p>Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.</p>		
6.41.1	Manhole of depth 1.8m as per drawing and direction of Engineer.	Each manhole	75100.00
6.41.2	<p>Providing and constructing extra depth of manhole for depth beyond 1.8 m and upto 3.5 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.</p>	Metre	17450.00

Item no.	Description	Unit	Rate (Rs.)
6.42	Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-F" with internal dia 1.4m and depth upto 8.0m (2.0 in conical shape) having 150 mm thick RCC M-20 wall, including 350 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC foot steps of approved make at every 0.30m height, supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance & cost of water, dewatering etc. complete as directed by the Engineer.		
	Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.42.1	Manhole of depth 3.6m as per drawing and direction of Engineer.	Each manhole	53900.00
6.42.2	Providing and constructing extra depth of manhole for depth beyond 3.6 m and upto 8.0 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	12950.00
6.43	Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-F" with internal dia 1.5m and depth upto 8.0m (2.0 in conical shape) having 150 mm thick RCC M-20 wall, including 350 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC foot steps of approved make at every 0.30m height, supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance & cost of water, dewatering etc. complete as directed by the Engineer.		
	Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.43.1	Manhole of depth 3.6m as per drawing and direction of Engineer.	Each manhole	56500.00
6.43.2	Providing and constructing extra depth of manhole for depth beyond 3.6 m and upto 8.0 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	13650.00

Item no.	Description	Unit	Rate (Rs.)
6.44	Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-F" with internal dia 1.55m and depth upto 8.0m (2.0 in conical shape) having 150 mm thick RCC M-20 wall, including 350 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC foot steps of approved make at every 0.30m height, supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance & cost of water, dewatering etc. complete as directed by the Engineer.		
	Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.44.1	Manhole of depth 3.6m as per drawing and direction of Engineer.	Each manhole	57200.00
6.44.2	Providing and constructing extra depth of manhole for depth beyond 3.6 m and upto 8.0 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	14200.00
6.45	Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-F" with internal dia 1.75m and depth upto 8.0m (2.0 in conical shape) having 150 mm thick RCC M-20 wall, including 350 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC foot steps of approved make at every 0.30m height, supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance & cost of water, dewatering etc. complete as directed by the Engineer.		
	Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.45.1	Manhole of depth 3.6m as per drawing and direction of Engineer.	Each manhole	63600.00
6.45.2	Providing and constructing extra depth of manhole for depth beyond 3.6 m and upto 8.0 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	15600.00

Item no.	Description	Unit	Rate (Rs.)
6.46	Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-F" with internal dia 2.0m and depth upto 12.0m (2.0 in conical shape) having 150 mm thick RCC M-20 wall, including 350 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC foot steps of approved make at every 0.30m height, supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance & cost of water, dewatering etc. complete as directed by the Engineer.		
	Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.46.1	Manhole of depth 3.6m as per drawing and direction of Engineer.	Each manhole	74800.00
6.46.2	Providing and constructing extra depth of manhole for depth beyond 3.6 m and upto 8.0 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	17950.00
6.46.3	Providing and constructing extra depth of manhole for depth beyond 8.0 m and upto 12.0 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	21000.00
6.47	Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-F" with internal dia 2.2m and depth upto 12.0m (2.0 in conical shape) having 150 mm thick RCC M-20 wall, including 350 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC foot steps of approved make at every 0.30m height, supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance & cost of water, dewatering etc. complete as directed by the Engineer.		
	Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.47.1	Manhole of depth 3.6m as per drawing and direction of Engineer.	Each manhole	84500.00
6.47.2	Providing and constructing extra depth of manhole for depth beyond 3.6 m and upto 8.0 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	19400.00
6.47.3	Providing and constructing extra depth of manhole for depth beyond 8.0 m and upto 12.0 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	22900.00

Item no.	Description	Unit	Rate (Rs.)
6.48	Providing and constructing of RCC M-20 grade cast-in-situ circular manholes of "Type-F" with internal dia 2.4m and depth upto 12.0m (2.0 in conical shape) having 150 mm thick RCC M-20 wall, including 360 mm thick RCC M-20 grade base slab (foundation), PCC M15 for benching and channel portion, PCC M20 250mm thick for fixing the manhole frame and cover, vata in CM1:1 around pipe entering and leaving the manhole, providing and fixing of SFRC footsteps of approved make at every 0.34m height, supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 330mm, including form work, reinforcement, curing, watering, hydro testing of manhole, conveyance & cost of water, dewatering etc. complete as directed by the Engineer. Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.49.1	Manhole of depth 3.6m as per drawing and direction of Engineer.	Each	94800.00
6.49.2	Providing and constructing extra depth of manhole for depth beyond 3.6 m and upto 8.0 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	20900.00
6.49.3	Providing and constructing extra depth of manhole for depth beyond 8.0 m and upto 12.0 with 150mm thick RCC M-20 wall as per drawing and direction of Engineer.	Metre	24100.00
6.50	Providing and constructing of pre-cast RCC M-40 grade circular manholes with internal dia 0.56m and depth upto 0.90 m, including concreting PCC M-10 grade (1:3:6) for 225mm thick foundation including curing compaction and foRM work etc complete, PCC M15 for benching and channel portion, PCC M15 for fixing the manhole frame and cover using stone aggregate 20mm Nominal size, 20mm thick inside and outside plaster in C. M. 1:3, inside plaster finished  with floating coat of neat cement, vata in CM1:1 around pipe entering and leaving the manhole and also at the junction of masonry and roof. Supplying and fixing heavy duty SFRC manhole frame and cover as per IS 12592 (Part I and II) having clear opening of 560mm, including refilling of Jhiri, including curing, watering, ramming, hydro testing of manhole, conveyance & cost of water, and dewatering complete as directed by the Engineer. Note-Only Excavation work will be measured and paid separately	Each	8520.00

Item no.	Description	Unit	Rate (Rs.)
6.51	Providing, fixing and constructing of pre-cast RCC M-40 grade circular manholes with internal dia 1.0m and up to specified depth having pre-cast RCC M-40 grade circular manhole cover frame (ID 0.56m, OD 0.92m), conical piece (top ID 0.56m, bottom ID 1.0m, vertical height 0.805m, wall thickness 125mm), and circular rings of required heights (ID 1.0m, height 150/225/300/600 mm, wall thickness 125mm) below conical piece as per required depth of manhole and having steel reinforcement in conical piece @ not less than 80 kg per cum of concrete, including cast-in-situ PCC M-10 grade (1:3:6) foundation of 1.625m dia and 150mm thickness, PCC M15 grade circular wall ID 0.925m, wall thickness 200mm, height equal to ID of sewer pipe + one wall thickness of pipe + 50 mm (to flush the manhole frame with road top, height of wall can be increased but not more than 100mm), PCC M15 grade benching and channel portion and up to top level of sewer pipe etc complete with curing compaction and form work, supplying and fixing heavy duty SFRC manhole cover as per IS 12592 (Part I and II), supplying and fixing plastic encapsulated CI/MS foot steps / SFRC foot steps, including cost of shuttering, steel reinforcement, testing for water tightness etc. complete in all respect as per drawing, as per specification and the direction of the Engineer. Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.51.1	Pre-cast RCC M-40 grade circular manhole conical piece with inbuilt cover and frame (height 0.805), cast-in-situ PCC M-10 grade foundation, PCC M15 grade circular wall ID 0.925m, wall thickness 200mm, wall height equal to ID of sewer pipe + one wall thickness of pipe + 50 mm, PCC M15 grade benching and channel portion. Depth of manhole shall be measured from top of manhole cover upto lowest invert of pipe. (Depth includes in the item = height of Conical piece + ID of Sewer pipe + 1 Wall thickness of pipe + 50mm)	Each manhole	14150.00
6.51.2	Providing and fixing pre-cast RCC M-40 grade circular ring of ID 1.0m, wall thickness 125mm, height 150/225/300/600 mm for constructing extra depth of manhole beyond depth mentioned in item no-17.59.1 as per drawing.	Metre	6990.00
6.52	Providing, fixing and constructing of pre-cast RCC M-40 grade circular manholes with internal dia 1.2m and up to specified depth having pre-cast RCC M-40 grade circular manhole cover frame (ID 0.56m, OD 0.92m), conical piece (top ID 0.56m, bottom ID 1.2m,		



Item no.	Description	Unit	Rate (Rs.)
	vertical height 1.005m, wall thickness 125mm), and circular rings of required heights (ID 1.2m, height 150/225/300/600/900mm, wall thickness 125mm) below conical piece as per required depth of manhole and having steel reinforcement in Conical piece @ not less than 80 kg per cum of concrete, including cast-in-situ PCC M-10 grade (1:3:6) foundation of 1.825m dia and 150mm thickness, PCC M15 grade circular wall ID 1.125m, wall thickness 200mm, height equal to ID of sewer pipe + one wall thickness of pipe + 50 mm (to flush the manhole frame with road top, height of wall can be increased but not more than 100mm), PCC M15 grade benching and channel portion and up to top level of sewer pipe etc complete with curing compaction and form work, supplying and fixing heavy duty SFRC manhole cover as per IS 12592 (Part I and II), supplying and fixing plastic encapsulated CI/MS footsteps / SFRC footsteps, including cost of shuttering, steel reinforcement, testing for water tightness etc complete in all respect as per drawing, as per specification and the direction of the Engineer. Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.52.1	Pre-cast RCC M-40 grade circular manhole conical piece with inbuilt cover and frame (height 1.005), cast-in-situ PCC M-10 grade foundation, PCC M15 grade circular wall ID 1.125m, wall thickness 200mm, wall height equal to ID of sewer pipe + one wall thickness of pipe + 50 mm, PCC M15 grade benching and channel portion. Depth of manhole shall be measured from top of manhole cover upto lowest invert of pipe. (Depth includes in the item = height of Conical piece + ID of Sewer pipe + 1 Wall thickness of pipe + increased height of wall (if any) + 50mm)	Each manhole	17800.00
6.52.2	Providing and fixing pre-cast RCC M-40 grade circular ring of ID 1.2m, wall thickness 125mm, height 150/225/300/600/900mm for constructing extra depth of manhole beyond depth mentioned in item no-17.60.1 as per drawing.	Metre	7810.00
6.53	Providing, fixing and constructing of pre-cast RCC M-40 grade circular manholes with internal dia 1.5m and up to specified depth having pre-cast RCC M-40 grade circular manhole cover frame (ID 0.56m, OD 0.92m), conical piece (top ID 0.56m, bottom ID 1.5m, vertical height 1.305m, wall thickness 125mm), and circular rings of required heights (ID 1.5m, height 150/225/300/600/900/1200 mm, wall thickness 125mm) below conical piece as per required depth of manhole and having steel reinforcement in conical piece @ not less than 80 kg per cum of concrete, including cast-in-situ PCC M-10 grade (1:3:6) foundation of 2.125m dia and 150mm thickness, PCC M15 grade circular wall ID 1.425 m, wall thickness 200mm, height equal to ID of sewer pipe + one wall thickness of pipe + 50 mm (to flush the manhole frame with road top, height of wall can be increased but not more than 100mm), PCC M15 grade benching and channel portion and up to top level of sewer pipe etc complete with curing compaction and form work, supplying and fixing heavy duty SFRC manhole cover as per IS 12592 (Part I and II), supplying and		

Item no.	Description	Unit	Rate (Rs.)
	fixing plastic encapsulated CI/MS footsteps / SFRC footsteps, including cost of shuttering, steel reinforcement, testing for water tightness etc complete in all respect as per drawing, as per specification and the direction of the Engineer. Note:- Excavation of earth work and road cutting for manhole will be measured and paid separately.		
6.53.1	Pre-cast RCC M-40 grade circular manhole conical piece with inbuilt cover and frame (height 1.305), cast-in-situ PCC M-10 grade foundation, PCC M15 grade circular wall ID 1.425m, wall thickness 200mm, wall height equal to ID of sewer pipe + one wall thickness of pipe + 50 mm, PCC M15 grade benching and channel portion. Depth of manhole shall be measured from top of manhole cover upto lowest invert of pipe. (Depth includes in the item = height of Conical piece + ID of Sewer pipe + 1 Wall thickness of pipe + increased height of wall (if any) + 50mm)	Each manhole	23900.00
6.53.2	Providing and fixing pre-cast RCC M-40 grade circular ring of ID 1.5m, wall thickness 125mm, height 150/225/300/600/900/1200mm for constructing extra depth of manhole beyond depth mentioned in item no-17.61.1 as per drawing.	Metre	9220.00
6.54	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS: 1786, having minimum cross section as 23 mmx25mm and overall minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes while casting in RCC manhole and with 30x20x15 cm cement concrete block 1:3:6 in brick/RR stone manhole complete as per design.	Each	456.50
6.55	Construction of brick masonry cylindrical road side inspection chamber of 450mm dia (internal) with 230mm thick wall of brick masonry (75 class designation brick) in cement mortar 1:4 (1 cement : 4 coarse sand), wall 230mm thick, filling of Jhiri, 20mm thick inside and outside plastering with CM (1:3), inside plaster finished with neat coat of cement, with cast in situ PCC M10 grade foundation of 1010 mm dia and 100 mm thickness, 75mm thick PCC M15 flooring, precast SFRC/RCC circular 450mm dia MD manhole frame and cover (as per IS 12592 amended upto date) embedded in 200mm thick PCC M20 grade concrete, including providing and fixing 2 Nos 110mm OD, 0.5m long PVC-U pipe pieces of stiffness class SN 8 as per IS 15328 and plugging the same, testing for water tightness etc. complete as per approved drawing and/or directed by Engineer. Note: Excavation of earth work and road cutting will be measured and paid separately		
6.55.1	BM Road side inspection chamber of 450mm depth	Each	5690.00

Item no.	Description	Unit	Rate (Rs.)
6.55.2	BM Road side inspection chamber of 600mm depth	Each	6390.00
6.55.3	BM Road side inspection chamber of 900mm depth	Each	7790.00
6.56	Construction of stone masonry cylindrical road side inspection chamber of 450mm dia (internal) with 300mm thick wall of stone masonry in cement mortar 1:4 (1 cement : 4 coarse sand), filling of Jhiri, 20mm thick inside and outside plastering with CM (1:3), inside plaster finished with neat coat of cement, with cast in situ PCC M10 grade foundation of 1150 mm dia and 100 mm thickness, 75mm thick PCC M15 flooring, precast SFRC/RCC circular 450mm dia MD manhole frame and cover (as per IS 12592 amended upto date) embedded in 200mm thick PCC M20 grade concrete, including providing and fixing 2 Nos 110mm OD, 0.5m long PVC-U pipe pieces of stiffness class SN 8 as per IS 15328 and plugging the same, testing for water tightness etc. complete as per approved drawing and/or directed by Engineer. Note: Excavation of earth work and road cutting will be measured and paid separately		
6.56.1	SM Road side inspection chamber of 450mm depth	Each	6490.00
6.56.2	SM Road side inspection chamber of 600mm depth	Each	7310.00
6.56.3	SM Road side inspection chamber of 900mm depth	Each	8940.00
6.57	Constructing providing and fixing of pre-cast RCC M-40 grade circular Road Side Inspection Chamber including earthwork with following dia and depth cylindrical piece with 100mm wall thickness, inbuilt 100mm thick base slab, inbuilt cover & frame on top, provision for 110mm OD in and out sewer connection with making proper inbuilt benching and channel with PCC M-15 grade including providing cast-in-situ 100mm thick base foundation of PCC M-10 grade, supplying and fixing circular precast SFRC Circular 300 / 450 mm dia manhole cover with frame MD-10 (as per IS-12592 amended upto date), including steel reinforcement minimum @ 80kg/cum, testing for water tightness complete in all respect as per drawing, specification and the direction of the Engineer.		
6.57.1	Pre-cast Road side inspection chamber of 300mm dia (internal), 450mm depth and 600mm dia base foundation	Each	4445.00
6.57.2	Pre-cast Road side inspection chamber of 450mm dia (internal), 600mm depth and 750mm dia base foundation	Each	6220.00
6.57.3	Pre-cast Road side inspection chamber of 450mm dia (internal), 900mm depth and 750mm dia base foundation	Each	7520.00
6.58	Providing and making connection to the manhole/ road side chamber/ property chamber by cutting hole in wall, making good the same with brick work/ stone masonry work in cement mortar 1:4, plaster in cement mortar 1:3, encasement of pipe at manhole with 75mm thick M15 grade concrete etc complete as directed by Engineer.	Each	999.00

Item no.	Description	Unit	Rate (Rs.)
6.59	Providing PVC-U pipes as per IS 15328 drop connection externally for depth from 0.60 m and upto 1.0 m drop from branch sewer line to main sewer manhole or vice versa including inspection and cleaning eye, PVC-U drop pipe and bend encased around with cement concrete M15 with all form work, cutting holes in walls and making good with brick/ stone masonry work in cement sand mortar 1:4 plastered with cement sand mortar 1:3 with stiff cement mortar 1:1 around PVC-U pipe in masonry wall, making required channels complete as per standard design and specifications and/ or as the directed of the Engineer:		
6.59.1	110mm dia	Each	6590.00
6.59.2	160mm dia	Each	10300.00
6.59.3	200mm dia	Each	13650.00
6.59.4	250mm dia	Each	20900.00
6.59.5	315mm dia	Each	31700.00
6.59.6	350mm dia	Each	32600.00
6.59.7	400mm dia	Each	35200.00
6.59.8	500mm dia	Each	37900.00
6.60	Extra for additional drop depth of PVC-U pipes as per IS 15328 drop connection beyond 1.0 m complete as per standard specification and the direction of the Engineer. (To be paid for actual depth beyond 1.0 m)		
6.60.1	110mm dia	Metre	1750.00
6.60.2	160mm dia	Metre	2287.00
6.60.3	200mm dia	Metre	2855.00
6.60.4	250mm dia	Metre	3480.00
6.60.5	315mm dia	Metre	5190.00
6.60.6	350mm dia	Metre	5500.00
6.60.7	400mm dia	Metre	5670.00
6.60.8	500mm dia	Metre	5890.00
6.61	Providing, fixing and erecting precast RCC (M20) Vent shaft with cowl, 125mm and 225mm internal and external dia respectively at top, 300mm and 450mm internal and external dia at bottom and 9.0m overall length, bottom 1.175m below ground level fixed in the pit 900mmx900mmx1500mm with PCC M15, 250mm in bed and minimum 200mm all around with top 150mm in PCC M15 with 20mm nominal size graded stone aggregate , junction of vent shaft and concrete grouted with cement mortar 1: including making connection with sewer manhole with 150mm dia NP4 RCC pipe (IS 458-amended upto date) as required including Type-A bedding complete as per standard design and finished with water proofing cement of approved brand as per drawings and/or as directed by Engineer.		
	Note : Only Excavation work will be measured and paid separately	Each	31900.00

Item no.	Description	Unit	Rate (Rs.)
6.62	<p>Construction of House Sewer Connection inside and outside of a dwelling properties to connect all the outlets of Kitchen, Bath, toilet/WC of the property to existing inspection chamber of Sewer Network, which includes Door-to-door survey of all properties to be connected with Sewer Network, Preparation of sketch / drawing of arrangement for Each house with all the details and obtain approval from Engineer In-charge or his representative and Preparation of as built drawing (Layout plan) in AutoCAD for Each property / dwelling connection with sewer network up to manhole. Including Dismantling of all type of flooring and roads,</p> <p>i.e. BT/CC/WMM/interlocking block etc with mechanical cutter. Including Required Excavation of pipe trench/chamber in all type of strata of specified width up to all depth, Providing, laying, jointing and aligning of PVC-U pipes (SN-8) as per 15328 (amended up to date) / HDPE DWC (double wall corrugated) pipes of SN-8 grade as per IS 16098 (amended up to date)/ SWR Pipes with required PVC/ DWC/SWR fittings with required level &amp; location in buried position</p> <p>over bedding of 50 mm thick M-10 grade and in open position above ground/floor with an encasing of pipe 50 mm cover at 3 sides with M10 grade concrete, Providing, laying, jointing and aligning 160 mm dia PVC-U pipes (SN-8) as per IS15328 (Amended up to date) providing as sleeve to 110 mm dia PVC-U pipes / HDPE DWC (double wall corrugated) pipes (exposed to atmosphere) for crossing open drains, demolishing, If required and reconstruction of drain in original position with PCC M-10, Brick work with modular extruded burnt fly ash clay sewer bricks (Conforming to IS: 4885 - 1988) in CM 1:4, 12 mm thick plaster in CM 1:3 and Construction of 2 Nos brick masonry chamber of bricks class designation 75 of 115 mm wall thickness in cement mortar 1:4, clear inside dimension 320 x 320 x 550 mm, 50 mm thick base PCC 1:3:6, providing &amp; fixing 350 x 350 mm RCC precast cover with frame of LD-2.5, earth filling in gaps, finishing with PCC 1:3:6 inside the chamber, Chamber-1 with square mouth S.W. gulley trap P-type of size 100 x 100 mm as per IS 651: 1992 (amended up to date) with CI grating, in slope around the mouth of Gulley Trap including provision for fixing of 2 nos. 110 mm dia PVC-U pipe etc. to connect a single inlet after connecting all the outlets of kitchen &amp; bath &amp; outlet of this chamber will connect to Chamber-2 or inspection chamber and the Chamber-2 with a provision for fixing of 2 nos. 110 mm dia PVC-U pipe etc. i.e. a single inlet after connecting all outlets of toilet &amp; WC of premises to exiting Inspection chamber, Emptying of septic tank/soakage well etc. disposing of sludge within a lead of 5 Km and taking out the sewage, Bypass of septic tank/soakage</p>		

Item no.	Description	Unit	Rate (Rs.)
	well by providing, laying, jointing of 110 mm dia PVC-U pipes for all length from inlet to outlet, including PVC coupler, MS clamp and dismantling, repairing, making good the holes etc, Making connection with 110 mm dia PVC-U pipe with exiting inspection chamber (including making holes in Inspection Chamber) for pipes coming out from inside property and Chamber 1/2, making and repairing holes with CM in 1:4, repairing of floor and road with CC M-30 grade same as original thickness of floor and road, watering, backfilling, compaction and disposal of all surplus material and sewage etc. to a suitable location with all lead and lift, repairing of underground utilities, if damaged, Complete job to connect a dwelling premises to sewer network including all material, labour, taxes, charges etc. as per Specifications, drawing and directions of Engineer In- charge		
6.62.1	Length up to 5 m	Each	8450.00
6.62.2	Length more than 5 m and upto 10 m	Each	10900.00
6.62.3	Length more than 10 m and upto 15 m	Each	13600.00
6.63	Temporary bypassing of sewer including Plugging the mouth of pipe/s inside sewer manhole using suitable plugging system and installation of bypass arrangement for bypassing the sewage flow, including, but not limited, to pumps, pipes, connections, couplings, electrical accessories, support traffic diversions arrangements etc. including desilting of manholes, disposal of debris as per the instructions of Engineer-in-Charge and keeping the manhole free from seepage and removal of bypass by de-plugging the mouth of pipe inside sewer manhole and removal of by pass system and making the sewer system operational including all labour, Machinery, material, taxes etc. as per the specifications and directions of the Engineer.		
6.63.1	For manholes of pipes upto 1200 mm dia	per manhole	64800.00
6.63.2	For Manholes of above pipes from 1200 mm dia and upto 1500 mm dia	per manhole	1,04,200.00
6.63.3	For manholes of pipes above 1500 mm dia and upto 1800 mm	per manhole	1,27,600.00
6.64	Raising circular brick/RR stone masonry manhole with circular opening 560mm dia and frame slab to required level including dismantling existing slab, taking out the existing CI frame & cover of manhole and raising it upto ground/ road level, refixing of frame and cover in M15 (1:2:4) concrete all around the frame, including making good the damage, form work, curing, complete as directed by Engineer. (Brick work / RR stone work of raising depth of manhole to be paid separately)	Each	610.00

Item no.	Description	Unit	Rate (Rs.)
6.65	Raising circular inspection chamber with circular cover 450mm dia and frame slab to required level including dismantling existing slab, taking out the existing CI frame & cover of inspection chamber and raising it upto ground/ road level, refixing of frame and cover in M15 (1:2:4) concrete all around the frame, including making good the damage, form work, curing, complete as directed by Engineer. (Brick/ concrete work of raising depth of manhole to be paid separately)	Each	349.00
6.66	Raising precast circular manhole cover and frame by taking out existing precast frame and cover, providing and fixing precast SFRC circular spacer of required height, re-fixing existing manhole cover frame and cover with cement sand mortar (1:3), including making good the damage, complete as directed by Engineer.	Each	1955.00
6.67	Lowering of circular brick / RR stone masonry manhole with circular opening 560mm dia and frame slab to required level including dismantling existing slab and manhole wall, taking out the existing CI frame & cover of manhole and lowering it upto ground/ road level, refixing of frame and cover in M15 (1:2:4) concrete all around the frame, including making good the damage, form work, curing, complete as directed by Engineer. (Dismantling of brick work / RR stone work depth of manhole to be paid separately)	Each	610.00
6.68	Lowering of circular inspection chamber with circular cover 450mm dia and frame slab to required level including dismantling existing slab and inspection chamber wall, taking out the existing CI frame & cover of inspection chamber and lowering it upto ground/ road level, refixing of frame and cover in M15 (1:2:4) concrete all around the frame, including making good the damage, form work, curing, complete as directed by Engineer. (Dismantling of brick/ concrete work depth of manhole to be paid separately)	Each	349.00
6.69	Supplying & fixing 560mm dia opening SFRC manhole frame & cover as per IS : 12592-2002 in existing manholes including grouting the frame in PCC M-15 complete in all respect as directed by the Engineer.		
6.69.1	HD-20	Each	2675.00
6.69.2	EHD-35	Each	2990.00
6.70	Supplying & fixing 560mm opening dia SFRC manhole cover as per IS : 12592-2002 in existing manholes frame complete in all respect as directed by the Engineer.		
6.70.1	HD-20	Each	1389.00
6.70.2	EHD-35	Each	1698.00
6.71	Supplying and fixing of 560 mm opening dia Ductile Iron manhole frame & cover, Hinged Type, Heavy Duty with test load of 400 KN, class D-400 as per BS EN 124, in existing manholes including grouting the frame in PCC M-15 complete in all respect as directed by the Engineer.	Set	7000.00

Item no.	Description	Unit	Rate (Rs.)
6.72	Extra for supplying and fixing of 560 mm opening dia Ductile Iron manhole frame & cover, Hinged Type, Heavy Duty with test load of 400 KN, class D-400 as per BS EN 124, in place of RCC/ SFRC manhole frame & cover (ED/EHD) in manhole.	Each	4235.00
6.73	Supplying and fixing of approved brand composite fiberglass reinforced polymer manhole cover with frame 560mm opening Dia (circular) confirming to BSEN – 124 : 1994 of specified load capacity including grouting. Top shall have abrasion resistant layer of decorative grey granite finish. It shall also confirm “permanent Set” criterion as per BSEN 24. Product should be tested MSME accredited test lab for load capacity and permanent Set as per IS - 1726.		
6.73.1	HD - 20 Ton	Each	7840.00
6.73.2	EHD - 35 Ton	Each	9450.00
6.74	Emptying of domestic septic tank/ soakage well etc, disposing of sludge within a lead of 5km and taking out sewage by mechanical means including refilling with local earth, ramming and compaction in layers, cleaning of site.	Each	4930.00
6.75	Emptying of septic tank/ soakage well etc, disposing of sludge within a lead of 5km and taking out sewage & sludge	Each	1506.00
6.76	Supply and Pushing of MS casing pipe of specified thickness by trenchless method adopting micro-tunnelling or any suitable mechanical technology or technology approved by Railway below ground at all depth under running traffic condition as per railway standard including carrying out survey work at the job site for determining underground cable trenches like telephone, cable, water & sanitary lines and resistivity test for finding the soil strata using necessary equipment's for completion of works, mobilizing of machineries and specialized crew at the job site complete in all respect, including excavation of driven pit and exit pit (upto 3 Metre depth) with proper protection at three sites with shoring sheets and ISMB's. Providing MS cutting edges for front shield and Constructing thrust bed at designated level. Necessary de-watering and providing concrete foundation at the base of the driven pit, PVC/Rubber saddle as per the requirement of Railway Authority, crane for handing of pipe and any other machinery, tools, and tackles required, construction of temporary works as per requirement and as per approved by railway authorities, specification and the direction of the Engineer. (Protective coating/ lining if done that will be paid extra) Note- 1. Manual Pipe jacking is not permitted for workmen safety reasons. 2. Length of pipe shall be measured in between the outer wall of two manholes / Inspection chambers. Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber shall not be payable.		
6.76.1	In all type of soils		
6.76.1.1	600 mm dia 12 mm thick casing pipe	Metre	66900.00
6.76.1.2	700 mm dia 12 mm thick casing pipe	Metre	95600.00
6.76.1.3	800 mm dia 12 mm thick casing pipe	Metre	1,00,200.00



Item no.	Description	Unit	Rate (Rs.)
6.77	Providing, laying and jointing RCC NP4 jacking pipe (with steel pushing collar) with suitable leak proof joints (with using 12mm MDF sheets etc.) with compliance for maintaining slope as per design by trenchless method adopting Micro tunnelling method or any suitable mechanical technology below ground at all depth under running traffic condition including carrying out survey work at the job site for determining underground cable trenches like telephone, power cable, water & sanitary lines and resistivity tests for finding the soil strata using necessary equipment's for completion of work, mobilizing of machineries and specialized crew at the job site, etc. complete in all respects, including excavation of drive pit and exit pit (upto 3 Metre depth) with proper protection at the three sides, providing and casting of MS cutting edges for front shield and constructing thrust bed at designed level as directed by the Engineer, necessary de-watering and providing concrete foundations at the base of the Drive pit, crane for handling of pipes, and any other machinery, tool & tackles required, construction of temporary works as per requirement complete in all respect (all depths) with all lead and lifts, as per specification and the direction of the Engineer. Note-1. Manual Pipe jacking is not permitted for workmen safety reasons. 2. Length of pipe shall be measured in between the outer wall of two manholes / Inspection chambers. Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber shall not be payable.		
6.77.1	In all type of soils including mixed strata / soil		
6.77.1.1	150 mm dia RCC pipe	Metre	28500.00
6.77.1.2	200 mm dia RCC pipe	Metre	28900.00
6.77.1.3	250 mm dia RCC pipe	Metre	29700.00
6.77.1.4	300 mm dia RCC pipe	Metre	30600.00
6.77.1.5	350 mm dia RCC pipe	Metre	33700.00
6.77.1.6	400 mm dia RCC pipe	Metre	34400.00
6.77.1.7	450 mm dia RCC pipe	Metre	35400.00
6.77.1.8	500 mm dia RCC pipe	Metre	44700.00
6.77.1.9	600 mm dia RCC pipe	Metre	46300.00

Item no.	Description	Unit	Rate (Rs.)
6.78	Providing, jointing, laying, testing and commissioning of HDPE PE- 100 /PN-6 (suitable for pulling method for jointing) pipes for sewer line as per IS-14333 (amended upto date) with compliance for maintaining slope as per design by trenchless adopting HDD method (Horizontal Directional Drilling) below ground at all depth including carriage etc. complete in all respect, construction of thrust pit and receiving pit of required size upto 3 Metre depth and soil investigation, making suitable arrangement for barricading of pits, traffic diversion, lights, traffic permission from relevant authority (though department will assist in getting the permission), refilling of pits in compacted layers of 150 mm including disposal of surplus material with all lift and lead upto 50 Metre as per specification and the direction of the Engineer. Note- 1 Length of pipe shall be measured in between the outer wall of two manholes / Inspection chambers, Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber		
	shall not be payable. Note- 2. Manual Pipe jacking is not permitted for workmen safety reasons.		
6.78.1	In all types of soil including mixed strata		
6.78.1.1	200 mm outer dia	Metre	5020.00
6.78.1.2	225 mm outer dia	Metre	6990.00
6.78.1.3	250 mm outer dia	Metre	7690.00
6.78.1.4	315 mm outer dia	Metre	9300.00
6.78.1.5	400 mm outer dia	Metre	15800.00
6.78.1.6	450 mm outer dia	Metre	17600.00
6.78.1.7	500 mm outer dia	Metre	31500.00
6.79	Extra for excavation of driven pit/ exit pit / intermediate pit beyond 3 Metre depth, required for pushing/ pulling of MS/HDPE/RCC pipe in trenchless technology, with proper protection at three sides with shoring sheets/ wooden planks and ISMB's, maintaining during pushing/ pulling of pipe, back filling, necessary de-watering including all machinery, tools, and tackles required as per specification and the direction of the Engineer		
6.79.1	In all types of soil	per pit per Metre depth per pit	32500.00
6.79.2	In rocks		
6.80	Cleaning of RCC / SW / DWC / HDPE pipes and intermediate manholes which includes removal of vegetation, garbage, muck, brick and stone pieces or any type of trash etc. and Flow Test of already laid but not commissioned (including cost and conveyance of water to site, Manpower and machineries deployed) complete by mechanical means in all respect as per direction of Engineer-In- Charge.		
6.80.1	150 mm dia	Metre	47.50
6.80.2	200 mm dia	Metre	63.00
6.80.3	250 mm dia	Metre	64.50
6.80.4	300 mm dia	Metre	70.00

Item no.	Description	Unit	Rate (Rs.)
6.80.5	400 mm dia	Metre	93.00
6.80.6	450 mm dia	Metre	99.50
6.80.7	500 mm dia	Metre	114.00
6.80.8	600 mm dia	Metre	121.00
6.81	Operation & maintenance of sewerage collection & conveyance system (RCC/ HDPE/HDPE DWC pipes) from consumer point to STP complete. (line between property chamber and sewer manhole will not be measured for payment purpose).	Km per month	4583.00
6.82	Desilting the sewer lines through jetting and suction machines including cleaning, barricading, and reconstruction of manholes for section isolation by plugging and flow stoppage, Setting up the over- pumping arrangements, traffic management jetting and dislodging of accumulated silt from the pipelines, removal of silt through suction hose, disposal of removed silt upto a distance of 20 Km, necessary temporary repairs of sewers to stop locational collapses, ingress of ground water in the desilted section of the pipelines all complete as per the specifications and direction of Engineer. Evaluation pipeline condition through inline Closed Circuit Television survey to assess the internal condition and material of the buried pipelines including accurate measurement of the length & diameter / cross section, invert levels and other physical attributes of buried pipelines, identification of all defects, joints and connections, measurement and recording of their location / position, sizes, & conditions of such pipelines including provision of survey report and records of the conditions, both through video recording in PAL format on a new VHS cassette as well as a report on the structural condition of the pipelines as per the specifications and direction of Engineer.		
6.82.1	200 mm dia sewer	Metre	349.50
6.82.2	300 mm dia sewer	Metre	654.00
6.82.3	350 mm dia sewer	Metre	993.00
6.82.4	450 mm dia sewer	Metre	1239.00
6.82.5	600 mm dia sewer	Metre	1668.00
6.83	Locating buried manholes through magnetic tracking process / appropriate technology in all types of soil conditions by the use of universal precision cable & manhole locator including marking the estimated findings on the plan of the area & making recommendations for related work execution location as per the specifications and direction of Engineer.	Each	237.00
6.84	Rehabilitation of existing sewer pipeline by Cured-in-Place Pipe CIPP/ Machine Wound Spiral Lining (MWSL) method including site survey, plugging and flow diversion, cleaning, pre-lining CCTV survey, repair of defects, pre-lining measurements, designing, site preparatory work, installation of impregnated liner/ MWSL Liner, curing of liner using hot water/ steam recirculation, jointing, grouting, post-lining CCTV survey and measurement, commissioning and restoration of roads and services all inclusive.		
6.84.1	Above 200 upto 500 mm	Metre	32900.00

Item no.	Description	Unit	Rate (Rs.)
6.84.2	Above 500 upto 750 mm	Metre	42800.00
6.85	Replacement of pipelines through Pneumatic / Static Pipe Bursting process including making of bursting tool entry pits, all related civil works for site preparation, like excavation, shoring/strutting, maintaining the pits (upto 3 m depth), traffic management etc., flow stoppage by the appropriate stinking methods, bypass pumping, installing the HDPE PE 100 PN-6 pipe, restoring the manholes after replacement pipe installation etc., completion and service reconnection as per the specifications and direction of Engineer(Extra 30% on above for executing under water table)		
6.85.1	200 mm	Metre	14250.00
6.85.2	250 mm	Metre	16450.00
6.85.3	300 mm	Metre	18900.00
6.85.4	350 mm	Metre	19700.00
6.85.5	400 mm	Metre	26300.00
6.85.6	450 mm	Metre	33600.00
6.85.7	500 mm	Metre	36400.00
6.85.8	600 mm	Metre	44600.00
6.86	Smart Manhole Monitoring System – Providing and installation of smart manhole device with battery powered, LDR and cable float switch water level sensor-based device capable for providing data over GSM/GPRS network to the management system. Device should be capable for continuous monitor of sewer water level in the manhole.	Each	35400.00
6.87	AMC of smart manhole monitoring system per month including change of battery as required excluding cost of replacement of any defective part after warranty period.	Each	1062.00
6.88	Construction for RCC Sedimentation Tank (1800 x 1800 mm) of following size in all tyoe of soils with 150 mm thick RCC wall, basic of raft with 300 mm thick Dry stone soling, Under 100mm thick C.C. M10 grade norminal mix in foundation 20mm thick insider plaster with 1:4 Cement sand motor finished with floating neat cement, 150 mm thick RCC slab as per approved Drawing. This work including Earth work man hole cover rectangular shape 600 x 450 mm precast RCC manhole cover HD etc. complete as per drawing & specifications including disposal of surplus earth within a lead of 50 mtr.		
	Inside size 1800 X 1800 mm	Each	53412.00
6.89	Horizontal directional drilling (by trenchless technology) of suitable dia hole minimum 1.0 mtr below natural ground level in all type of soil under CC/BT roads and pulling HDPE pipes of dia up to 110 mm, which are available in the form of a coil including excavation, shoring/ strutting, preparation, maintain the thrust and including, road dismantling, excavation and refilling of drive pit and exit pit, restoration of road cut as per technical specification and scope of work, but excluding the cost of pipe line.	Each	289.00

Item no.	Description	Unit	Rate (Rs.)
6.90	Construction of chamber in all type of soil with 230 mm thick masonry with CM 1:4 m 15 cm thick C.C. 1:3:6 in foundation, 20mm thick insider plaster in Cm 1:4, finished with floating neat cement, 50mm thick M-15 grade C.C. flooring, earthwork etc. complete as per design including disposal of surplus earth within a lead of 50 mtr. with precast RCC main hole cover with frame as per approved drwaing & direction engineer- in- charges.		
a	Internal size 450 x 450 mm	Each	4594.00
b	Internal size 600 x 600 mm	Each	5537.00
c	Internal size 750 x 600 mm	Each	6800.00

### Sewage Treatment Plant

6.91	Supply delivery at site with necessary packing, receiving, unloading, shifting, storing, installation, testing and commissioning of Non clog submersible pumping Set of 2% Ni Cl Cascading, Impeller CF 8M ,Shaft SS 410,mechanical seal with 10M Power & Control cable , 5M Galvanized Chain,,10M, 50mm MS galvanized Guide pipe, Duck Foot Bend, with Guide wire SS 304 etc. complete with all respect as per specification		
6.91.1	Discharge 36 cum/hr and head 8 to 10 M	Each	1,51,700.00
6.91.2	Discharge 36 cum/hr and head 11 to 15 M	Each	1,51,700.00
6.91.3	Discharge 36 cum/hr and head 16 to 20 M	Each	1,51,700.00
6.91.4	Discharge 75 cum/hr and head 8 to 10 M	Each	1,63,600.00
6.91.5	Discharge 75 cum/hr and head 11 to 15 M	Each	1,63,600.00
6.91.6	Discharge 75 cum/hr and head 16 to 20 M	Each	1,63,600.00
6.91.7	Discharge 90 cum/hr and head 8 to 10 M	Each	1,68,200.00
6.91.8	Discharge 90 cum/hr and head 11 to 15 M	Each	1,68,200.00
6.91.9	Discharge 90 cum/hr and head 16 to 20 M	Each	1,68,200.00
6.92	Supply, Installation, Testing and Commissioning of Grit Separator Mechanism including Classifier on one side in inclined position and Organic Return pump interconnection pipes, valves and accessories complete in all respect for following PEAK FLOW as per specification and direction of the of Engineer.		
6.92.1	Up to 5 MLD	Set	19,02,500.00
6.93	Supply, fabrication, fixing and Testing of stainless steel (SS-316) Manual Coarse Bar screen with flat bar 50mm X 10mm, Spacing of bars 50mm suitable for mounting in channel of specified size with inclination not more than 45 degree and a movable covered containers of 1 cum capacity complete in all respect as per technical specification and the direction of the Engineer. Manually Raked Coarse Bar Screen with 50 mm clear opening for following PEAK FLOW and upto 3m channel depth.		
6.93.1	Up to 3 MLD	Set	1,06,300.00
6.93.2	3.1 MLD to 5 MLD	Set	1,06,300.00
6.93.3	Add extra for additional depth of channel in manual coarse bar screen beyond 3M depth	Metre	8100.00

Item no.	Description	Unit	Rate (Rs.)
6.94	Supply, fabrication and fixing of stainless steel (SS-316) Coarse Bar screen (mechanically raked) with flat bar 50mm X 10mm Spacing of bars 50mm suitable for mounting in channel of specified size with inclination not more than 75 degree complete in all respect as per technical specification and the direction of the Engineer for following PEAK FLOW and upto 3m channel depth.		
6.94.1	5 MLD to 10 MLD	Set	16,03,900.00
6.94.2	Add extra for additional depth of channel in mechanical coarse bar screen beyond 3 m depth.	Metre	52000.00
6.95	Supply, Installation, Testing and Commissioning of stainless steel (SS-316) Fine Bar screen (Mechanical operated) with flat bar 50 mm X 2 mm with 6 mm spacing suitable for mounting in channel of specified size with suitable inclination complete in all respect as per technical specification, reputed make and direction of the Engineer inclusive of Banner Make Upstream Type Ultrasonic Level Sensor for following PEAK FLOW and length up to 3M.		
6.95.1	5 MLD to 7.5 MLD	Set	7,79,200.00
6.95.2	Add extra for additional depth of channel in Mechanical Fine bar screen beyond 3m length	Metre	52000.00
6.96	Supply, Installation, Testing and commissioning of CI Open Channel Sluice Gates, Manually operated, Rising Spindle type suitable for mounting in between two parallel walls of an Open Channel. Water sealing shall be provided at two vertical sides and bottom side of gate aperture by means of rubber seal, mounted on gate slide and having forced contact with gate aperture. The gate shall be designed in such a manner, so that it can be operated at 2 meter head. Gate frame & Shutter of CI Grade IS 210 FG 260, Head Stock IS 210 Grade FG 260, Hinge Pin SS ASTM A276, Yoke IS MS 2062, Flush Bottom Seal Support Bar of SS ASTM A276 , Stem Operating Nut ASTM A276., Duly tested for tensile strength, Chemical testing and tested Shop tested for overall dimensions as per approved GA drawing complete in all respect as per specification and direction of Engineer for following PEAK FLOW up to 3m channel depth.		
6.96.1	Up to 5 MLD	Set	86000.00
6.96.2	Add extra for additional depth of open channel beyond 3m depth	Metre	5200.00

Item no.	Description	Unit	Rate (Rs.)
6.97	Supply, Installation, Testing and Commissioning of CI Thimble Mounted Sluice Gate, Manually operated, Rising Spindle type. Sluice gates are as per IS 13349 Including all taxes, Freight, loading, unloading, fitting in position including Sluice gates are upward opening wall thimble mounted suitable for isolating the flow of sewer into out of the opening in the wall. It consists Gate frame, wall thimble, gate slide, shutter, seating/sealing faces .The gates will be provided with pads on sides, top and bottom to mount the wedges. The gate shall be designed in such a manner, so that it can be operated at 2 meter head. Gate frame & Shutter of CI Grade IS 210 FG 260, Head Stock assembly bolts & SS ASTM A276 Type 316, Stem, Operating Nut SS ASTM A276 Type 316., Duly tested for tensile strength, Tested for overall dimensions as per approved GA drawing complete in all respect as per specification and direction of Engineer for following PEAK FLOW and depth up to 3M.		
6.97.1	Up to 5 MLD	Set	1,10,600.00
6.97.2	Add extra for additional depth beyond 3m depth.	Metre	5200.00
6.98	Supplying, erecting, testing & commissioning of Hand operated Travelling Crane (HOT) (single bridge girder carrying two wheels , complete with chain pulley block, load chain of welded construction of alloy steel as per IS:2429, hand chains for hoisting & traverse mechanism, totally encased Gears, trolley, trolley track wheels. Axle & shaft, swivel type lifting hook as per IS:3815, lock to prevent hook from swivelling, brakes for lifting gear, suitable for the above parameters and as per the direction of the Engineer.		
6.98.1	2 MT Capacity		
6.98.1.1	Span 3 M and Lift 3 M	Set	2,87,100.00
6.98.1.2	Span 4 M and Lift 3 M	Set	2,96,700.00
6.98.1.3	Span 5 M and Lift 3 M	Set	3,15,500.00
6.98.2	3 MT Capacity		
6.98.2.1	Span 3 M and Lift 3 M	Set	3,01,100.00
6.98.2.2	Span 4 M and Lift 3 M	Set	3,16,800.00
6.98.2.3	Span 5 M and Lift 3 M	Set	3,35,100.00
6.98.3	Add extra for additional per Metre lift.	Metre	1094.00
6.99	Supplying, erecting, testing & commissioning of Electrically Operated Travelling Crane (EOT) .Main girder & End Carriage fabricated from Rolled Steel Section, Gear Box for all motion, Electro Magnetic Friction Disc Type Brakes, all safety limit switches , LT wheels EN 9, Double Flanged 4No, with Sq. Cage motor of adequate rating (KW), duly painted mechanical cleaning and one coat of primer and two coat of synthetic paint and as per the direction of the Engineer.		
6.99.1	2 MT Capacity		
6.99.1.1	Span 7 M and Lift 6 M	Set	4,82,700.00
6.99.1.2	Span 9 M and Lift 6 M	Set	5,55,100.00
6.99.2	3 MT Capacity		
6.99.2.1	Span 7 M and Lift 6 M	Set	5,91,400.00
6.99.2.2	Span 9 M and Lift 6 M	Set	6,73,000.00
6.99.3	5 MT Capacity		
6.99.3.1	Span 7 M and Lift 6 M	Set	6,89,700.00
6.99.3.2	Span 9 M and Lift 6 M	Set	7,55,700.00

**S - 150**

Item no.	Description	Unit	Rate (Rs.)
6.99.4	Add extra for additional per Metre lift.	Metre	1094.00
6.100	Supply, installation and commissioning of Mono Rail Single Girder Crane suitable for lift up to 9m with chain 9m pulley block and traveling trolley excluding cost of girder complete in all respect as per the direction of the Engineer.		
6.100.1	1 MT Capacity	Set	31900.00
6.100.2	2 MT Capacity	Set	41100.00
6.100.3	3 MT Capacity	Set	50500.00
6.100.4	Add extra for additional per Metre lift.	Metre	1094.00
6.101	Providing, lowering, laying, aligning, fixing in position in pipe line, manually operated Knife Gate Valves of approved make for sewage applications of PN 10 class with valve Body of Cast Iron IS 210 FG 260 / Ductile Iron, Seal Retainer ring with Stainless Steel ASTM A743 type CF8, Inlet Seal / Rubber Seals of EPDM Rubber, Knife gate of Stainless Steel ASTM A 743 type 304, Bracket / Adaptor plate of Carbon Steel IS : 2062 grade A and packing of PTFE impregnated synthetic yarn of following dia complete in all respect (excluding jointing and jointing material) including all material, labour, testing and commissioning along with pipe line as per Technical Specifications and as per direction of Engineer.		
6.101.1	80 mm dia	Each	10050.00
6.101.2	100 mm dia	Each	13050.00
6.101.3	125 mm dia	Each	16050.00
6.101.4	150 mm dia	Each	18900.00
6.101.5	200 mm dia	Each	31500.00
6.101.6	250 mm dia	Each	41000.00
6.101.7	300 mm dia	Each	49700.00
6.101.8	350 mm dia	Each	74600.00
6.101.9	400 mm dia	Each	1,01,800.00
6.101.10	450 mm dia	Each	1,40,500.00
6.102	Supply, installation, testing and commissioning of following capacity Air Blowers coupled with suitable capacity 415V 3 phase 50Hz AC induction motor complete with base frame, suction air filter, silencer, pressure relief valve, delivery non return valve complete with all required accessories with Technical Specifications.		
6.102.1	810 cum per hour	Set	4,00,700.00
6.102.2	1600 cum per hour	Set	6,17,200.00
6.103	Supply and installation of Bio digester toilet system tank. Tank is made of FRP (Fibre Reinforced Plastic) with 7 mm thick sheet with inocolumn (bacteria). A specific high graded bacteria used to convert the facial matter into methane and water of pH value 6 to 9 only. (Excluding earth work and concrete base)		
6.103.1	325 liter tank capacity, 1000*1000*500 mm, 8 users	Each	29500.00
6.103.2	725 liter tank capacity, 1000*1000*725 mm, 18 users	Each	55600.00
6.103.3	1000 liter tank capacity, 1200*1000*1000 mm,25 users	Each	76000.00
6.104	Providing, installation of prefabricated septic tank made from Plastic with all accessories excluding earth work.		
6.104.1	800 liter	Each	28200.00



Item no.	Description	Unit	Rate (Rs.)
6.104.2	1200 liter	Each	34000.00
6.105	Desludging of septage from soak wells/pits/ septic tanks and transporting and emptying at inlet of FSTP including operation and maintenance of the equipment with all accessories complete in all respect over the O&M period as per specification and direction of Engineer.		
6.105.1	O&M for 4000 liter truck	Trip	800.00
6.105.2	O&M for 1000 liter truck	Trip	500.00
6.106	Designing, providing, constructing, hydraulic testing, commissioning and giving satisfactory trials of STP based on SBR technology consisting of Inlet Chamber, Screen Chamber, Detritus Tanks, Distribution Chamber and prefabricated with SS 306 lining Biological CASP Basins, Sludge Sump, Chlorine Contact Tank, Chlorinator Room/Shed, Sludge Centrifuge necessary piping work with required valves, gates, drains, pathways Administration Block cum Laboratory, Laboratory Equipments, Tools and Plants, Spare Parts, etc. complete as turnkey job with all involved civil, electrical, Instrumentation and mechanical works inclusive of following items, units as per detailed specification for civil, electrical, Instrumentation and mechanical components with all duties and taxes, etc. complete to achieve BOD < 10 ppm, COD < 100 ppm, TSS < 10 ppm, to get recyclable quality of water for industrial / agricultural purposes. (In Case Cyclic activated sludge plant is designed for N, P outlet parameters shall also include TN < 10 ppm, Nh3N < 2 ppm and TP < 1 ppm) with full automation, reuse arrangement (storage - GLR, OHSR and pumps) and disposal line for treated water 1 KM as per specifications. (Rates in Lacs)		
6.106.1	Capacity 1 MLD, Area 0.16 Hectare, 2 No of basins	LS	330.00
6.106.2	Capacity 2 MLD, Area 0.20 Hectare, 2 No of basins	LS	440.00
6.106.3	Capacity 5 MLD, Area 0.40 Hectare, 2 No of basins	LS	693.00
6.107	Complete online monitoring of Sewage Treatment Plant through Artificial Intelligence including complete online monitoring system (analyser at Inlet and outlet), DO analysers and Hydrostatic level sensor, DLT, Other necessary instrumentation like flow meter, pressure gauge and accessories to run the complete system in automation, AI System, 10 days services as per specifications and direction of Engineer. (Rates in Lacs)		
6.107.1	Above 1 upto 5 MLD	LS	68.44
6.107.2	Above 5 upto 20 MLD	LS	74.93
6.107.3	Above 20 upto 50 MLD	LS	89.68
6.107.4	Above 50 to 100 MLD	LS	98.94

**CHAPTER : S-7**  
**OPERATION AND MAINTENANCE (O&M) SEWERAGE WORK**

Item no.	Description	Unit	Rate (Rs.)
7.1	Operation and Maintenance of sewer line including sewer manholes, laid sewer line from 200 mm to 450 mm dia having the sewer manhole of 1000 mm to 1500 mm internal dia and depth upto 4.50 mtr. below from existing road level. Man power for cleaning of deep manholes not allowed and to carryout the material away from the site. It also includes the all safety measures should keep during the cleaning of sewer line and manholes regarding any type of man hazards.		
A	Upto 2.0 Km length of sewer line with manholes For One month	Per Km Per Month	12518.00
B	From 2.0 Km to 5.0 Km length of sewer line with manholes  For 5.00 Km length of sewer line including manholes	Per Km Per Month	9143.00
C	For more than 5.0 Km length of sewer line with manholes  For 10.00 Km length of sewer line including manholes	Per Km Per Month	7929.00
7.2	Operation and Maintenance of sewer line including sewer manholes, laid sewer line Above 450 mm dia having the sewer manhole from 1200 mm to 1500 mm internal dia and depth upto 6.00 mtr. below from existing road level . Man power for cleaning of deep manholes not allowed and to carryout the material away from the site. It also includes the all safety measures should keep during the cleaning of sewer line and manholes regarding any type of man hazards.		
	For One month	Per Km Per Month	27583.00
7.3	Operation and Maintenance of Rain water harvesting structure including all chambers i.e. sedimentation tank, fitteration unit and recharge well etc. For one RWH structure For One Year	Each per Year	5005.00
7.4	Operation & Maintenance of recycle water system for distribution of treated water to green belt area at various locations through Pump house and pipe line. For One Month	Per Month	23430.00

Item no.	Description	Unit	Rate (Rs.)
7.5	Operation and Maintenance of sewer sump tank using pumping machinery complete job including Pump driver. For One Month	Per Month	15510.00
7.6	Operation and maintenance of sewerage treatment plant of SBR technology consisting of Inlet Chamber, Screen Chamber, Grit- Detritus Tanks and Biological CASP Basins, Chlorine Contact Tank, Chlorinator with Chlorinator shed & tonner Shed, Chemical Storage & Dosing shed with dosing Equipments, Sludge Sump, Gravity Sludge Thickener, Sludge dewatering system equipment and building, sludge storage shed, necessary piping work with required valves, gates, storm water drains and rain water harvesting system, bypass drains, roads & pathways, landscaping, Compound wall with gates, Administration Block cum Laboratory, Laboratory Equipments, staff quarters, Tools and Plants, Spare Parts, ESR and Tanker Filling points, Metering Room, Guard Room etc. complete electrical, instrumentation and mechanical components complete to achieve required parameter of BOD, COD, TSS and PH etc. as per direction of site engineer.		
A	STP of 1.0 MLD Capacity For One Month	Per Month	51480.00
B	STP of 2.0 MLD Capacity For One Month	Per Month	72490.00
C	STP of 3.0 MLD Capacity For One Month	Per Month	85635.00
7.7	Operation & Maintenance of community septic tank consisting of upflow anaerobic filter upto 1500 KL capacity complete job including all required Machineary and T&P.  For One Month	Per Month	40205.00
7.8	Construction of chamber in all type of soil with 230 mm thick masonry with CM 1:4 m 15 cm thick C.C. 1:3:6 in foundation, 20mm thick insider plaster in Cm 1:4, finished with floating neat cement, 50mm thick M-15 grade C.C. flooring, earthwork etc. complete as per design including disposal of surplus earth within a lead of 50 mtr. with precast RCC main hole cover with frame as per approved drwaing & direction engineer- in- charges.		
a	Internal size 450 x 600 mm	Nos.	5242.00

Item no.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

**Operation and maintenance (O&M) related to water supply work**

7.9	Operation and maintenance of pipe line for water supply of various material having size upto 150/160 mm dia regarding rising, distribution and transfer water mains using all jointing material and T&P etc. as per direction of engineer-in-charge.		
A	Upto 2.0 Km length of pipe line For One month	Per Km Per month	13475.00
B	From 2.0 Km to 5.0 Km length of pipe line For One month	Per Km Per month	8316.00
C	For more than 5.0 Km length of pipe line For One month	Per Km Per month	6380.00
7.10	Operation and maintenance of pipe line for water supply of various material having size more than 150/160 mm dia regarding rising, distribution and transfer water mains using all jointing material and T&P etc. as per direction of engineer-in-charge.		
A	Upto 2.0 Km length of Pipe line For One month	Per Km Per month	15400.00
B	From 2.0 Km to 5.0 Km length of pipe line For One month	Per Km Per month	9570.00
C	For more than 5.0 Km length of pipe line For One month	Per Km Per month	7040.00
7.11	Operation and maintenance of Tube well for water supply including lowering and un-lowering charges of motor pump set. It also includes the rebinding/repairing charges of motor pump or any part of electrical feeder panel as per direction of engineer-in-charge.	Per Month	3850.00
7.12	Operation and maintenance of pump house which includes complete operation of pump motor, maintenance of log-books as directed by Engineer-In-charge, general upkeeping of premises, security arrangements, regular chemical dosing in CWR, cleaning and desilting of SR/CWR/Sump as required, daily valve operation under the campus of pump house and all other works as mentioned in scope of work in tender document for per pump house. It also includes the repairing of pumping machinery etc. as per direction of engineer-in-charge		
A	Upto 100 HP For One Month	Per Month	19140.00

**S - 155**

Item no.	Description	Unit	Rate (Rs.)
B	Above 100 HP to 200 HP For One Month	Per Month	35970.00
7.13	Work of the cleaning of OHSR by mechanized means including dewatering, removal of all silt, scrapping of wall with high pressure cleaning followed by vacuum cleaning and disinfection of reservoir with antibacterial spray and ultra violet radiation under jurisdiction as per direction of engineer in-charge		
a	Up to 101 to 500 KL	KL	100.00
b	Up to 501 to 1000 KL	KL	80.00
c	Up to 1001 to above KL	KL	60.00
7.14	Work of the cleaning of CWR by mechanized means including dewatering, removal of all silt, scrapping of wall with high pressure cleaning, followed by vacuum cleaning and disinfection of reservoir with antibacterial spray and ultra violet radiation under jurisdiction as per direction of engineer in-charge		
a	Up to 501 to 1000 KL	KL	120.00
b	Up to 1001 to 2000 KL	KL	100.00
c	Up to 2001 to Above KL	KL	100.00

**RHB BSR - 2024**

# **ELECTRIC WORK**

# ELECTRIC WORKS

## INDEX

CHAPTER NO.	DESCRIPTION	Page No.
E-01	ELECTRICAL WIRING IN PVC CONDUIT	1-3
E-02	ELECTRICAL WIRING IN STEEL CONDUIT	4-6
E-03	ELECTRICAL WIRING IN PVC TRUNKING	7-8
E-04	DRAWING OF WIRES AND SUB MAINS	9-12
E-05	G.I. /M. S./ WOODEN BOXES, LAMINATES & DISMANTLING	13-15
E-06	DISTRIBUTION BOARD & IT'S ACCESSORIES	16-25
E-07	ELECTRICAL ACCESSORIES	26-33
E-08	LT PANELS & ACCESSORIES	34-44
E-09	AIR CIRCUIT BREAKERS & MCCB	45-49
E-10	SWITCH FUSE UNIT & CHANGE OVER SWITCH & BUS BAR CHAMBER	50-54
E-11	LT CABLES	55-60
E-12	LT CABLE TERMINATION & ACCESSORIES	61-68
E-13	H T CABLES & TERMINATION KITS	69-71
E-14	EARTHING & LIGHTNING ARRESTER	72-79
E-15	FANS	80-84
E-16	STORAGE WATER HEATERS	85-87
E-17	INDOOR LIGHTING	88-92
E-18	OUTDOOR LIGHTING & POLE TABLES	93-107
E-19	OVER HEAD LINES	108-117
E-20	LOCAL AREA NETWORKING	118-125
E-21	ELECTRICAL MOTOR PUMP SETS	126-131
E-22	AIR COOLING & AIR CONDITIONING	132-149
E-23	SUBSTATION EQUIPMENTS	150-169
E-24	FIRE PROTECTION WORK	170-193
E-25	HIRE CHARGES FOR PA SYSTEM & TEMPORARY LIGHTING	194-205
E-26	REPAIRING OF FANS, COOLERS, PUMPS, MOTORS, FRIDGES & AIR CONDITIONERS	206-215
E- 27	MISCELLANEOUS ITEMS	216-233
	ANNEXURE "A"	234-235

**CHAPTER : E-1**  
**ELECTRICAL WIRING IN PVC CONDUIT**

Item No.	Description	Unit	Rate (Rs.)
1.1	Wiring of light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) in recessed ISI marked MMS ( IS:9537 P - III ) virgin material PVC conduit & it's ISI marked (IS:3419-1988) accessories, round tiles, 1.2 mm thick Hot Dipped Galvanized Modular Box with earth terminal, 10A Modular switch, Modular face plate with grid plate, 3 pin ceiling rose / Holder /3 way connector, screws, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
1.1.1	Short point (up to 3 mtr.)	P. point	359.00
1.1.2	Medium point (up to 6 mtr.)	P. point	578.00
1.1.3	Long point (up to 10 mtr.)	P. point	772.00
1.2	Wiring of twin control light point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) in recessed ISI marked MMS ( IS:9537 P - III ) PVC conduit & it's ISI marked (IS:3419-1988) accessories, round tiles, 2 Nos Hot Dipped Galvanized M.S Modular box of 1.2 mm thick with earth terminal, 2 Nos 10 A two way Modular switch, 3 pin ceiling rose / holder / 3 way connector ,Modular face plate with grid plate, screws, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
1.2.1	Short point (up to 3 mtr.)	P. point	772.00
1.2.2	Medium point (up to 6 mtr.)	P. point	1137.00
1.2.3	Long point (up to 10 mtr.)	P. point	1226.00
1.3	Wiring of 3/5 pin 6 amp. Light plug point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) in recessed ISI marked MMS ( IS:9537 P - III ) PVC conduit & it's ISI marked (IS:3419-1988) accessories, Hot Dipped Galvanized Modular box of 1.2 mm thick with earth terminal, 10 A modular switch, 3/5 pin 6 A modular socket, Modular face plate with grid plate, screws, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		



Item No.	Description	Unit	Rate (Rs.)
1.3.1	On board	P. point	357.00
1.3.2	Short point (up to 3 mtr.)	P. point	507.00
1.3.3	Medium point (up to 6 mtr.)	P. point	726.00
1.3.4	Long point (up to 10 mtr..)	P. point	920.00
1.4	S&F following sizes (dia.) of ISI marked virgin material MMS ( IS:9537 P - III ) PVC conduit along with ISI marked (IS:3419-1988) accessories as required in recess including cutting the wall, covering conduit and making good the same as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
1.4.1	20 mm	R. mtr.	40.00
1.4.2	25 mm	R. mtr.	56.00
1.4.3	32 mm	R. mtr.	84.00
1.4.4	40 mm	R. mtr.	115.00
1.4.5	50 mm	R. mtr.	170.00
1.5	Rewiring of light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) in recessed ISI marked MMS ( IS:9537 P - III ) virgin material PVC conduit & it's ISI marked (IS:3419-1988) accessories, round tiles, 1.2 mm thick MS box with earth terminal, 6 A switch, 3 pin ceiling rose/holder / 3 way connector , 3.0 mm thick ISI marked (IS:2036-1995) phenolic laminated sheet, Al.alloy / Cadmium plated iron/ brass screws, cup washers, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
1.5.1	Short point (up to 3 mtr.)	P. point	256.00
1.5.2	Medium point (up to 6 mtr.)	P. point	472.00
1.5.3	Long point (up to 10 mtr.)	P. point	662.00
1.6	Rewiring of twin control light / fan / call bell point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) in recessed ISI marked MMS ( IS:9537 P - III ) virgin material PVC conduit & it's ISI marked (IS:3419-1988) accessories, round tiles, 2 Nos 1.2 mm thick MS box with earth terminal, 2 Nos 6 A two way switch, 3 pin ceiling rose / holder/ 3 way connector, 3.0 mm thick ISI marked (IS:2036-1995) phenolic laminated sheet, Al.alloy / Cadmium plated iron/ brass screws, cup washers, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
1.6.1	Short point (up to 3 mtr.)	P. point	471.00
1.6.2	Medium point (up to 6 mtr.)	P. point	877.00
1.6.3	Long point (up to 10 mtr..)	P. point	1231.00

E - 3

Item No.	Description	Unit	Rate (Rs.)
1.7	Rewiring of 3/5 pin 6 amp. Light plug point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) in recessed ISI marked MMS ( IS:9537 P - III ) virgin material PVC conduit & it's ISI marked (IS:3419-1988) accessories, 1.2 mm thick MS box with earth terminal of required size, 6 A switch, 3/5 pin 6 A socket, 3.0 mm thick ISI marked (IS:2036-1995) phenolic laminated sheet, Al.alloy / Cadmium plated iron/ brass screws, cup washers, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
1.7.1	On board	P. point	136.00
1.7.2	Short point (up to 3 mtr.)	P. point	283.00
1.7.3	Medium point (up to 6 mtr.)	P. point	499.00
1.7.4	Long point (up to 10 mtr.)	P. point	689.00

**CHAPTER : E-2**  
**ELECTRICAL WIRING IN STEEL CONDUIT**

Item No.	Description	Unit	Rate (Rs.)
2.1	Wiring of light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) in recessed ISI marked ( IS:9537 P - II ) rigid steel conduit & it's ISI marked (IS:14768 P-II 2003) accessories, round tiles, Hot Dipped Galvanized Modular Box of 1.2 mm thick with earth terminal, 10A Modular switch, 3 pin ceiling rose / holder / 3 way connector ,Modular face plate with grid plate, pvc bushes, check nuts, screws, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
2.1.1	Short point (up to 3 mtr.)	P. point	476.00
2.1.2	Medium point (up to 6 mtr.)	P. point	853.00
2.1.3	Long point (up to 10 mtr..)	P. point	1185.00
2.2	Wiring of twin control light / Fan / Call bell point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) in recessed/surface ISI marked ( IS:9537 P - II ) rigid steel conduit & it's ISI marked (IS:14768 P-II 2003) accessories, round tiles, 2 Nos Hot Dipped Galvanized Modular box of 1.2 mm thick with earth terminal, 2 Nos 10A two way Modular switch, 3 pin ceiling rose / holder / 3 way connector ,Modular face plate with grid plate, screws, pvc bushes, check nuts, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
2.2.1	Short point (up to 3 mtr.)	P. point	918.00
2.2.2	Medium point (up to 6 mtr.)	P. point	1585.00
2.2.3	Long point (up to 10 mtr..)	P. point	2310.00

Item No.	Description	Unit	Rate (Rs.)
2.3	Wiring of 3/5 pin 6 amp. Light plug point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) in recessed ISI marked ( IS:9537 P - II ) rigid steel conduit & it's ISI marked (IS:14768 P-II 2003) accessories, Hot Dipped Galvanized Modular box of 1.2 mm thick with earth terminal, 10A modular switch, 3/5 pin 6 A modular socket, Modular face plate with grid plate, pvc bushes, check nuts, screws, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
2.3.1	On board	P. point	357.00
2.3.2	Short point (up to 3 mtr.)	P. point	623.00
2.3.3	Medium point (up to 6 mtr.)	P. point	1001.00
2.3.4	Long point (up to 10 mtr.)	P. point	1333.00
2.4	S&F following sizes (dia.) of ISI marked ( IS:9537 P - II ) rigid steel conduit with wall thickness according to IS Specified along with ISI marked (IS:14768 P-II 2003) accessories in recessed using saddles, clamps, fasteners, pvc bushes, check nuts, as required including cutting jhiris in the wall and making good the same as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
2.4.1	20 mm	R. mtr.	122.00
2.4.2	25 mm	R. mtr.	156.00
2.4.3	32 mm	R. mtr.	214.00
2.4.4	40 mm	R. mtr.	337.00
2.4.5	50 mm	R. mtr.	483.00
2.5	Rewiring of light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) in recessed ISI marked ( IS:9537 P - II ) rigid steel conduit & it's ISI marked (IS:14768 P-II 2003) marked accessories, round tiles, 1.2 mm thick MS box with earth terminal, 6 A switch, 3 pin ceiling rose/holder / 3 pin connector, 3.0 mm thick ISI marked (IS:2036-1995) phenolic laminated sheet, pvc bushes, check nuts, Al.alloy / Cadmium plated iron/ brass screws, cup washers, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this RSR		
2.5.1	Short point (up to 3 mtr.)	P. point	370.00

Item No.	Description	Unit	Rate (Rs.)
2.5.2	Medium point (up to 6 mtr.)	P. point	738.00
2.5.3	Long point (up to 10 mtr.)	P. point	1058.00
2.6	Rewiring of twin control light / Fan / Call bell point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) in recessed ISI marked ( IS:9537 P - II ) rigid steel conduit & it's ISI marked (IS:14768 P-II 2003) accessories, round tles, 2 Nos 1.2 mm thick MS box with earth terminal, 2 Nos 6 A two way switch, 3 pin ceiling rose / holder / 3 way connector, 3.0 mm thick ISI marked (IS:2036-1995) phenolic laminated sheet, pvc bushes, check nuts, Al.alloy / Cadmium plated iron/ brass screws, cup washers, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
2.6.1	Short point (up to 3 mtr.)	P. point	665.00
2.6.2	Medium point (up to 6 mtr.)	P. point	1387.00
2.6.3	Long point (up to 10 mtr..)	P. point	2014.00
2.7	Rewiring of 3/5 pin 6 amp. Light plug point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) in recessed ISI marked ( IS:9537 P - II ) rigid steel conduit & it's ISI marked (IS:14768 P-II 2003) accessories, required size 1.2 mm thick , G.I. box with earth terminal, 6 A switch, 3/5 pin 6 A socket, 3.0 mm thick ISI marked (IS:2036-1995) phenolic laminated sheet, pvc bushes, check nuts, Al.alloy / Cadmium plated iron/ brass screws, cup washers, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
2.7.1	On board	P. point	136.00
2.7.2	Short point (up to 3 mtr.)	P. point	397.00
2.7.3	Medium point (up to 6 mtr.)	P. point	765.00
2.7.4	Long point (up to 10 mtr..)	P. point	1085.00

**CHAPTER : E-3**  
**ELECTRICAL WIRING IN PVC TRUNKING**

Item No.	Description	Unit	Rate (Rs.)
3.1	Wiring of light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) on surface ISI marked ( IS:14927 P - II ) virgin material UPVC trunking & it's accessories, Hot Dipped Galvanized Modular box of 1.2 mm thick with earth terminal/ Surface Moulded virgin material UPVC Modular Box , 10 A Modular switch, Modular face plate with grid plate, 3 pin ceiling rose/holder /3 way Connector, screws, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
3.1.1	Short point (up to 3 mtr.)	P. point	361.00
3.1.2	Medium point (up to 6 mtr.)	P. point	584.00
3.1.3	Long point (up to 10 mtr.)	P. point	814.00
3.2	Wiring of twin control light point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) of approved make on surface ISI marked ( IS:14927 P - II ) virgin material UPVC trunking & it's accessories, Hot Dipped Galvanized Modular box of 1.2 mm thick with earth terminal/ Surface 2 No. Moulded virgin material UPVC Modular Box , 2 Nos 10 A two way Modular switch, 3 pin ceiling rose / holder/3 way Connector , Modular face plate with grid plate, screws, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
3.2.1	Short point (up to 3 mtr.)	P. point	730.00
3.2.2	Medium point (up to 6 mtr.)	P. point	1148.00
3.2.3	Long point (up to 10 mtr..)	P. point	1516.00

Item No.	Description	Unit	Rate (Rs.)
3.3	Wiring of 3/5 pin 6 amp. Light plug point with 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq. mm nominal size FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) on surface ISI marked ( IS:14927 P - II ) virgin material UPVC Trunking & it's accessories, Hot Dipped Galvanized Modular box of 1.2 mm thick with earth terminal/ Surface Moulded virgin material UPVC Modular Box, modular 10A switch, 3/5 pin 6 A modular socket, Modular face plate with grid plate, screws, making connections, testing etc. as required. For specification of copper Conductor, Phenolic Laminated sheet's & Electrical/ Wiring accessories refer Chapter E - 04, E - 05 & E - 07 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
3.3.1	On board	P. point	389.00
3.3.2	Short point (up to 3 mtr.)	P. point	509.00
3.3.3	Medium point (up to 6 mtr.)	P. point	732.00
3.3.4	Long point (up to 10 mtr..)	P. point	929.00
3.4	S&F following sizes of ISI marked ( IS:14927 P - II ) virgin material UPVC trunking along with accessories like coupler, inner, outer, elbow, square box, tee, end cap etc. on surface with screws, expansion fasteners as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
3.4.1	20 mm x 12 mm	R. mtr.	41.00
3.4.2	25 mm x 12 mm	R. mtr.	50.00
3.4.3	32 mm x 12 mm	R. mtr.	64.00
3.4.4	25 mm x 16 mm	R. mtr.	61.00
3.4.5	38 mm x 16 mm	R. mtr.	88.00
3.4.6	38 mm x 25 mm	R. mtr.	98.00
3.4.7	38 mm x 38 mm	R. mtr.	126.00
3.4.8	50 mm x 16 mm	R. mtr.	139.00
3.4.9	50 mm x 50 mm	R. mtr.	224.00
3.4.10	75 mm x 50 mm	R. mtr.	525.00
3.4.11	75 mm x 75 mm	R. mtr.	674.00
3.4.12	100 mm x 50 mm	R. mtr.	844.00
3.4.13	150 mm x 50 mm	R. mtr.	1274.00

**CHAPTER : E-4**  
**DRAWING OF WIRES AND SUB MAINS**

Item No.	Description	Unit	Rate (Rs.)
4.1	Supplying and drawing FR PVC insulated & unsheathed flexible copper conductor as per PWD specification for electrical Works with ISI marked (IS:694) and as per IS 8130 : 2013 of 1.1 kV grade . Wire should be made from 99.90 % purity copper, class 5 stranding in acc. to IS:8130/IEC 60228 for lower watt loss , oxygen free for less chances of oxidization, insulation PVC type A/C/D , flame retardant as per IS 10810-53, better amperage rating as per IS:3961 part 5, in existing surface or recessed PVC/ MS conduit/casing capping making connections with Copper Lugs of suitable size, Ferrules,testing etc. as required. OEM Must have its own in house NABL lab setup for all testing facilities for wires. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
4.1.1	1 x 1.5 sq.mm	Mtr.	22.00
4.1.2	2 x 1.5 sq.mm	Mtr.	43.00
4.1.3	3x 1.5 sq.mm	Mtr.	63.00
4.1.4	4 x 1.5 sq.mm	Mtr.	83.00
4.1.5	1 x 2.5 sq.mm	Mtr.	31.00
4.1.6	2 x 2.5 sq.mm	Mtr.	61.00
4.1.7	2 x 2.5 sq. mm. + 1x1.5sqmm	Mtr.	81.00
4.1.8	3 x 2.5 sq.mm	Mtr.	90.00
4.1.9	4 x 2.5 sq.mm	Mtr.	119.00
4.1.10	1 x 4.0 sq.mm	Mtr.	48.00
4.1.11	2 x 4.0 sq.mm	Mtr.	93.00
4.1.12	3 x 4 sq. mm.	Mtr.	137.00
4.1.13	4 x 4.0 sq.mm	Mtr.	182.00
4.1.14	2 x 4.0 sq. mm. + 1 x 2.5 sq. mm.	Mtr.	122.00
4.1.15	1 x 6.0 sq.mm	Mtr.	71.00
4.1.16	2 x 6.0 sq.mm	Mtr.	140.00
4.1.17	3 x 6.0 sq. mm.	Mtr.	208.00
4.1.18	4 x 6.0 sq.mm	Mtr.	276.00
4.1.19	2 x 6.0 sq. mm. + 1 x 2.5 sq. mm.	Mtr.	170.00
4.1.20	2 x 6.0 sq. mm. + 1 x 4.0 sq. mm.	Mtr.	185.00
4.1.21	1 x 10.0 sq.mm	Mtr.	136.00
4.1.22	2 x 10.0 sq.mm	Mtr.	267.00
4.1.23	4 x 10.0 sq.mm	Mtr.	531.00
4.1.24	1 x 16.0 sq.mm	Mtr.	221.00
4.1.25	2 x 16.0 sq.mm	Mtr.	432.00
4.1.26	4 x 16.0 sq.mm	Mtr.	857.00
4.2	Supplying and drawing coaxial cable 75 ohm impedance with foam PE insulated solid bare copper inner conductor, and 1st outer conductor of bonded alum. tape and second outer conductor of alum. alloy braid in existing surface or recessed conduit/casing capping including making connections as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
4.2.1	RG - 6	Mtr.	30.0
4.2.2	RG -11	Mtr.	58.00



Item No.	Description	Unit	Rate (Rs.)
4.3	Supplying and drawing PE Insulated & PVC Sheathed unarmoured telephone cable with 0.5 mm dia. Solid Annealed electrolytic grade bare Copper Conductor as per IS: 8130/84 & confirming to TEC specification GR / WIR/06-03 March 2002 in existing surface or recessed conduit/casing capping. including ferruling on each pair for Identification etc. as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
4.3.1	1 pair	Mtr.	12.0
4.3.2	2 pair	Mtr.	18.00
4.3.3	3 pair	Mtr.	26.00
4.3.4	4 pair	Mtr.	33.00
4.3.5	5 pair	Mtr.	41.00
4.3.6	10 pair	Mtr.	83.00
4.3.7	20 pair	Mtr.	159.00
4.3.8	50 pair	Mtr.	392.00
4.3.9	100 pair	Mtr.	822.00
4.3.10	200 pair	Mtr.	1554.00
4.4	Supply and Laying of PE Insulated, PVC Inner Sheathed, armoured & PVC Sheathed Telephone Cable. with 0.5 mm thick Solid Annealed Bare Copper Conductor as per IS: 8130/84 telephone cable confirming to TEC specifications GR/WIR 06/03, Mar.-2002 in existing pipe / open trench / Cable tray / on surface including making necessary connection, testing etc. as required of size. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
4.4.1	5 pair	Mtr.	91.0
4.4.2	10 pair	Mtr.	142.00
4.4.3	20 pair	Mtr.	231.00
4.4.4	50 pair	Mtr.	491.00
4.4.5	100 pair	Mtr.	906.00
4.4.6	200 pair	Mtr.	1729.00
4.5	Supply and Laying of PE Insulated jelly filled Armoured Telephone Cable. with 0.6 mm thick Solid Annealed Bare Copper Conductor and confirming to TEC specifications confirming. to DOT GR/CUG-01/Aug.2003 in existing pipe / open trench / Cable tray / on surface including making necessary connection, testing etc. as required of size. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
4.5.1	5 pair	Mtr.	113.0
4.5.2	10 pair	Mtr.	169.00
4.5.3	20 pair	Mtr.	254.00
4.5.4	50 pair	Mtr.	529.00
4.5.5	100 pair	Mtr.	951.00
4.5.6	200 pair	Mtr.	1765.00

Item No.	Description	Unit	Rate (Rs.)
4.6	Supply & drawing Wiring for sub mains ISI marked (IS:694) 1100 Volts grade PVC insulated flat twin core sheathed solid aluminium conductor with 10 SWG G.I. Support wire duly clipped etc. as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
4.6.1	4.0 sq.mm	Mtr.	60.0
4.6.2	6.0 sq.mm	Mtr.	73.00
4.6.3	10.0 sq.mm	Mtr.	98.00
4.7	P/Laying ISI marked P.V.C. insulated submersible cable confirming to (IS:694) and as per IS 8130 : 2013 of 1.1 kV grade . Wire should be made from 99.90 % purity copper, stranding in acc. to IS:8130/IEC 60228 for lower watt loss , oxygen free for less chances of oxidization, insulation PVC type A/C/D , flame retardant as per IS 10810-53, better amperage rating as per IS:3961 part 5, existing pipe / open trench / Cable tray / on surface including making connection etc. as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
4.7.1	1.5 Sq.mm 3 core flat / Round	Mtr.	92.0
4.7.2	2.5 Sq.mm 3 core flat / Round	Mtr.	146.00
4.7.3	4.0 Sq.mm 3 core flat / Round	Mtr.	214.00
4.7.4	6.0 Sq.mm 3 core flat / Round	Mtr.	300.00
4.7.5	10.0 Sq.mm 3 core flat / Round	Mtr.	490.00
4.7.6	16.0 Sq.mm 3 core flat / Round	Mtr.	743.00
4.8	Supply and laying following size twin parallel type Speaker cables of IS/ISO 9001 CERTIFIED COMPANY made with multi wire, bright annealed flexible bare electrolytic grade copper conductor, insulated with specially formulated transparent grade PVC compound, red strip for identification in existing conduit etc. as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
4.8.1	0.75 sq.mm	Rmtr.	36
4.8.2	1.0 Sq. mm	Rmtr.	44.00
4.8.3	1.5 Sq.mm	Rmtr.	62.00
4.8.4	2.5 Sq.mm	Rmtr.	100.00
4.90	Supply and laying speaker cable of IS/ISO 9001 CERTIFIED COMPANY made following size 2 core twin twisted multi stranded electrolytic grade copper conductor, overall PVC insulated and armoured cable (Blue colour) on surface/ above false ceiling including cost of GI spacers, saddles etc. as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
4.9.1	0.75 sq.mm	Rmtr.	102
4.9.2	1.0 Sq. mm	Rmtr.	111.00
4.9.3	1.5 Sq.mm	Rmtr.	131.00
4.9.4	2.5 Sq.mm	Rmtr.	182.00

Item No.	Description	Unit	Rate (Rs.)
4.1	Supply and laying PVC Insulated and PVC Round Sheathed Multi Core copper conductor (IS:694) and as per IS 8130 : 2013 of 1.1 kV grade . Wire should be made from 99.90 % purity copper, stranding in acc. to IS:8130/IEC 60228 for lower watt loss , oxygen free for less chances of oxidization, insulation PVC type A/C/D , flame retardant as per IS 10810-53, better amperage rating as per IS:3961 part 5, in existing pipe / open trench / Cable tray / on surface including making connection etc. as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
4.10.1	1.5 sq.mm x 3 core	Rmtr.	95.00
4.10.2	1.5 sq.mm x 4 core	Rmtr.	118.00
4.10.3	1.5 sq.mm x 6 core	Rmtr.	185.00
4.10.4	1.5 sq.mm x 8 core	Rmtr.	241.00
4.10.5	2.5 sq.mm x 3 core	Rmtr.	148.00
4.10.6	2.5 sq.mm x 4 core	Rmtr.	195.00
4.10.7	2.5 sq.mm x 6 core	Rmtr.	294.00
4.10.8	2.5 sq.mm x 8 core	Rmtr.	381.00
4.10.9	4.0 sq.mm x 3 core	Rmtr.	222.00
4.10.10	4.0 sq.mm x 4 core	Rmtr.	281.00
4.10.11	4.0 sq.mm x 6 core	Rmtr.	455.00

**CHAPTER : E-5**  
**G.I. /M. S./ WOODEN BOXES, LAMINATES & DISMANTLING**

Item No.	Description	Unit	Rate (Rs.)
5.1	P & F 1.2 mm thick G. I. / M .S. Sheet boxes duly finished with two coats of red oxide and with earthing terminal of following sizes (nominal size) in recessed/surface as required.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
5.1.1	<b>1.2 mm thick M. S. Sheet boxes</b>		
5.1.1.1	75mm x 75mm x 60mm	Each	45.0
5.1.1.2	100mm x 100mm x 60mm	Each	58.0
5.1.1.3	150mm x 75mm x 60mm	Each	66.0
5.1.1.4	175mm x 100mm x 60mm	Each	83.0
5.1.1.5	150mm x 150mm x 60mm	Each	91.0
5.1.1.6	225mm x 100mm x 60mm	Each	99.0
5.1.1.7	200mm x 150mm x 60mm	Each	112.0
5.1.1.8	200mm x 125mm x 75mm	Each	120.0
5.1.1.9	200mm x 250mm x 75mm	Each	201.0
5.1.1.10	200mm x 250mm x 100mm	Each	223.0
5.1.1.11	250mm x 300mm x 75mm	Each	285.0
5.1.1.12	250mm x 300mm x 100mm	Each	313.0
5.1.1.13	300mm x 375mm x 75mm	Each	401.0
5.1.1.14	300mm x 375mm x 100mm	Each	429.0
5.1.1.15	250mm x 100mm x 60mm	Each	90.0
5.1.1.16	300mm x 100mm x 60mm	Each	129.0
5.1.1.17	300mm x 300mm x 75mm	Each	265.0
5.1.2	<b>1.2 mm thick G I boxes</b>		
5.1.2.1	75mm x 75mm x 60mm	Each	50.0
5.1.2.2	100mm x 100mm x 60mm	Each	63.0
5.1.2.3	150mm x 75mm x 60mm	Each	73.0
5.1.2.4	175mm x 100mm x 60mm	Each	94.0
5.1.2.5	150mm x 150mm x 60mm	Each	101.0
5.1.2.6	225mm x 100mm x 60mm	Each	112.0
5.1.2.7	200mm x 150mm x 60mm	Each	126.0
5.1.2.8	200mm x 125mm x 75mm	Each	135.0
5.1.2.9	200mm x 250mm x 75mm	Each	197.0
5.1.2.10	200mm x 250mm x 100mm	Each	258.0
5.1.2.11	250mm x 300mm x 75mm	Each	327.0
5.1.2.12	250mm x 300mm x 100mm	Each	355.0
5.1.2.13	300mm x 375mm x 75mm	Each	457.0
5.1.2.14	300mm x 375mm x 100mm	Each	486.0
5.1.2.15	250mm x 100mm x 60mm	Each	104.0
5.1.2.16	300mm x 100mm x 60mm	Each	143.0
5.1.2.17	300mm x 300mm x 75mm	Each	401.0
5.2	P & F in position frame made out of M.S. angle (riveted or welded) finished with two coats of red oxide and two coats enamel paint including cutting, welding, holes etc.of following sizes as required.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		

Item No.	Description	Unit	Rate (Rs.)
5.2.1	25mm x 25mm x 3mm	Mtr.	135.0
5.2.2	25mm x 25mm x 5mm	Mtr.	220.0
5.2.3	35mm x 35mm x 5mm	Mtr.	318.0
5.2.4	40mm x 40mm x 5mm	Mtr.	367.0
5.2.5	50mm x 50mm x 6mm	Mtr.	551.0
5.3	P & Fixing Powder coated CRCA sheet enclosures on existing angle iron frame by means of nuts and bolts and making holes , Din rail etc. as required.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
5.3.1	1.0 mm thick	Sqm.	1665.0
5.3.2	1.6 mm thick	Sqm.	2327.0
5.3.3	2.0 mm thick	Sqm.	2839.0
5.3.4	2.5 mm thick	Sqm.	3490.0
5.4	P & Fixing M.S. flat on existing angle iron frame and making required nos. of holes for fixing accessories including one coat of red oxide paint and two coats of enamel paint etc. as required.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
5.4.1	25 mm x 3 mm	Mtr.	73.0
5.4.2	25 mm x 5 mm	Mtr.	122.0
5.4.3	32 mm x 5 mm	Mtr.	159.0
5.4.4	40 mm x 6 mm	Mtr.	193.0
5.4.5	50 mm x 6 mm	Mtr.	293.0
5.4.6	50 mm x 10 mm	Mtr.	477.0
5.5	P & F paper phenolic resin bonded laminates confirming to IS : 2036 - 1995 for boxes/ frames including making holes for switches etc, with brass screws, washers/ zinc plated nut and bolts as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
5.5.1	3.0 mm thick	Sq.m	1002.0
5.5.2	4.8 mm thick	Sq.m	1150.0
5.5.3	6.4 mm thick	Sq.m	1291.0
5.5.4	9.0 mm thick	Sq.m	1638.0
5.5.5	12.0 mm thick	Sq.m	2161.0
5.5.6	19.0 mm thick	Sq.m	3359.0
5.5.7	25.0 mm thick	Sq.m	6107.0
5.6	P & F phenolic laminated sheet 2.0 mm thick of following size . Including screws, cup washer as required.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
5.6.1	75 mm dia	Each	10.0
5.6.2	100 mm dia.	Each	17.0
5.7	P & F P.V.C. sheet 2.0 mm thick of following size Including screws, cup washer as required.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
5.7.1	75 mm dia.	Each	6.0
5.7.2	100 mm dia.	Each	7.0

Item No.	Description	Unit	Rate (Rs.)
5.8	P & F Aluminium sheet 1.0 m thick of following size dia. Including screws, cup washer as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
5.8.1	75 mm dia.	Each	10.0
5.8.2	100 mm dia.	Each	13.0
5.9	P & F 1.2mm thick M.S. Recessed fan box, hexagonal/ round of size 130 mm dia, depth 75mm, 12 mm dia rod fan hook with 100 mm length extended on each side . All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR	Each	128.0
5.10	P & F 1.00mm thick M.S. Recessed concealed box, round of size 150 mm dia, depth 100 mm complete as required. All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR	Each	94.0
5.11	Labour charges for dismantling of surface PVC/ Steel conduit including wiring in conduit, conduit fittings and depositing the same with listing of material in store.	R. Mtr.	8.0
5.12	Labour charges for dismantling of surface/ recessed switch board of any size and depositing the same with listing of material in store.	Each	6.0
5.13	Labour charges for dismantling of switch accessories like switch, socket, ceiling rose, holder and depositing the same with listing of material in store.	Each	3.0
5.14	Labour charges for dismantling of wiring in existing conduit of following size and depositing the same with listing of material in store.		
5.14.1	up to 2.5 sq. mm. wire	R. Mtr.	2.0
5.14.2	4/ 6 sq. mm. wire	R. Mtr.	3.0
5.14.3	10 sq. mm. wire	R. Mtr.	4.0
5.15	P & F 3.0 mm thick Poly propylene plastic polished concealed fan box, square of size (106x106) mm dia, depth 50 mm , 10 mm dia rod of MS with chrome plated with 55 mm length extended on each side . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	119.0

**CHAPTER : E-6**  
**DISTRIBUTION BOARD & IT'S ACCESSORIES**

Item No.	Description	Unit	Rate (Rs.)
6.1	Providing & Fixing of 240/415 V AC MCB with positive isolation of 10 kA breaking capacity (B/ C/D tripping characteristic as per type of load and site requirement) 4 KV impulse withstand voltage, ISI marked IS 8828(1996) / conforming to IEC 60898-1 2002, IEC 60947-2, low watt losses, trip free mechanism, energy limiting of class 3 as per IEC, minimum phase termination capacity of 35sq.mm., conductor line load reversibility, IP 20 contact protection and fitted in existing distribution board/sheets, minimum electrical operation 20,000 upto 20 A rating and 10,000 upto 63 A, 5000 for 80 A & above rating including making connections, testing etc. as required. OEM shall have submit NABL / CPRI / ERDA accredited lab type test reports & All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.1.1	<b>Single pole MCB (With B/C curve tripping Characteristics)</b>		
6.1.1.1	0.5 A to 5 A rating	Each	296.00
6.1.1.2	6 A to 32 A rating	Each	187.00
6.1.1.3	40 A rating	Each	415.00
6.1.1.4	50/63 A rating	Each	415.00
6.1.1.5	80 A rating	Each	1541.00
6.1.1.6	100 A rating	Each	1722.00
6.1.1.7	125 A rating	Each	1851.00
6.1.2	<b>Double pole MCB(With B/C curve tripping Characteristics)</b>		
6.1.2.1	0.5 A to 5 A rating	Each	784.00
6.1.2.2	6 A to 32 A rating	Each	566.00
6.1.2.3	40 A rating	Each	900.00
6.1.2.4	50/63 A rating	Each	900.00
6.1.2.5	80 A rating	Each	3392.00
6.1.2.6	100 A rating	Each	3617.00
6.1.2.7	125 A rating	Each	2853.00
6.1.3	<b>Triple pole MCB (With B/C curve tripping Characteristics)</b>		
6.1.3.1	0.5A to 5 A rating	Each	1152.00
6.1.3.2	6 A to 32 A rating	Each	910.00
6.1.3.3	40 A rating	Each	1384.00
6.1.3.4	50/63 A rating	Each	1384.00
6.1.3.5	80 A rating	Each	5346.00
6.1.3.6	100 A rating	Each	5697.00
6.1.3.7	125 A rating	Each	6318.00

Item No.	Description	Unit	Rate (Rs.)
6.1.4	<b>Four pole MCB (With B/C curve tripping Characteristics)</b>		
6.1.4.1	0.5A to 5 A rating	Each	1445.00
6.1.4.2	6 A to 32 A rating	Each	1223.00
6.1.4.3	40 A rating	Each	1738.36
6.1.4.4	50/63 A rating	Each	1745.00
6.1.4.5	80 A rating	Each	6976.00
6.1.4.6	100 A rating	Each	7262.00
6.1.4.7	125 A rating	Each	8213.00
6.1.5	<b>Triple pole MCB (With D curve tripping Characteristics)</b>		
6.1.5.1	0.5 A to 5 A rating	Each	1186.00
6.1.5.2	6 A to 32 A rating	Each	947.00
6.1.5.3	40 A rating	Each	1452.00
6.1.5.4	50/63 A rating	Each	1452.00
6.2	Providing & Fixing of 240/415 V isolator ISI marked IS:13947-III/conforming to IEC 60947-3, suitable for AC22A utilization category, 4KV impulse withstand voltage, true contact indication, Red colour dolly / lever shall have single mould covering over all poles for operation , two position din rail mounting, minimum phase termination capacity of 35sq.mm. IP 20 contact protection and fitted in existing distribution board / sheet including making connections, testing etc. as required. OEM shall have submit NABL / CPRI / ERDA accredited lab type test reports & All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.2.1	<b>Double pole isolator</b>		
6.2.1.1	30 A / 40 A rating	Each	351.00
6.2.1.2	63 A rating	Each	453.00
6.2.1.3	80 A/ 100 A rating	Each	589.00
6.2.2	<b>Triple pole Isolator</b>		
6.2.2.1	40 A rating	Each	334.00
6.2.2.2	63 A rating	Each	705.00
6.2.2.3	80 A/ 100 A rating	Each	802.00
6.2.3	<b>Four pole Isolator</b>		
6.2.3.1	40 A rating	Each	780.00
6.2.3.2	63 A rating	Each	818.00
6.2.3.3	80 A/ 100 A rating	Each	957.00



Item No.	Description	Unit	Rate (Rs.)
6.3	Providing & Fixing of 240/415 V factory fitted RCBO with overload, short-circuit and earth leakage protection with ISI marked (IS12640-2)/ conforming to IEC 61009-1, breaking capacity 10 KA, provision for pad lock, min. Electrical operation 10,000 upto 63 A rating , minimum phase termination capacity of 35sq.mm. , IP 20 contact protection with existing distribution board / sheet including making connections, testing etc. as required. OEM shall have submit NABL / CPRI / ERDA accredited lab type test reports & All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.3.1	<b>Two pole 30 mA sensitivity</b>		
6.3.1.1	6A-32 A rating	Each	2942.00
6.3.1.1	40 A rating	Each	2942.00
6.3.1.3	63 A rating	Each	3703.00
6.3.2	<b>Two pole 100/300mA sensitivity</b>		
6.3.2.1	6A-32 A rating	Each	3004.00
6.3.2.2	40 A rating	Each	3038.00
6.3.2.3	63 A rating	Each	3955.00
6.3.3	<b>Four pole 30 mA sensitivity</b>		
6.3.3.1	6A-32 A rating	Each	3351.00
6.3.3.2	40 A rating	Each	3518.00
6.3.3.3	63 A rating	Each	4217.00
6.3.4	<b>Four pole 100/300 mA sensitivity</b>		
6.3.4.1	6A-32 A rating	Each	3801.00
6.3.4.2	40 A rating	Each	3829.00
6.3.4.3	63 A rating	Each	4296.00
6.4	P&F 240/415 V AC Change Over Miniature circuit breaker with three positions (I-O-II) which allows supply change over from one source to second source & vice- versa, conforming to IS/ IEC 60947-3 in existing board/sheets including making connections, testing etc. as required. OEM shall have submit NABL / CPRI / ERDA accredited lab type test reports & All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.4.1	<b>Double Pole</b>		
6.4.1.1	25 Amp, 2 Module	Each	1012.00
6.4.1.2	40 Amp, 2 Module	Each	1544.00
6.4.1.3	63 Amp, 3 Module	Each	1793.00
6.4.2	<b>Four Pole</b>		
6.4.2.1	40 Amp, 4 Module	Each	2649.00
6.4.2.2	63 Amp, 6 Module	Each	3007.00

Item No.	Description	Unit	Rate (Rs.)
6.5	Providing & Fixing of 240/415 V Residual current circuit breaker (RCCB) conforming to (IS:12640-1)/ IEC 61008 -1 , rated 4 KV impulse withstand voltage truly current operated and shall operate on CBCT mechanism, provision for pad lock, min. operation 10,000 upto 63 A rating and 5000 for 100 A rating and minimum phase termination capacity of 35 sq.mm. rigid wire , IP 20 contact protection with existing distribution board / sheet including making connections, testing etc. as required. OEM shall have submit NABL / CPRI / ERDA accredited lab type test reports & All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.5.1	<b>Two pole 30 mA sensitivity</b>		
6.5.1.1	16/25 A rating	Each	2001.00
6.5.1.2	32/40 A rating	Each	2237.00
6.5.1.3	63A rating	Each	2786.00
6.5.1.4	100 A rating	Each	4842.00
6.5.2	<b>Two pole 100/300mA sensitivity</b>		
6.5.2.1	16/25 A rating	Each	2073.00
6.5.2.2	40 A rating	Each	2366.00
6.5.2.3	63 A rating	Each	2850.00
6.5.3	<b>Four pole 30 mA sensitivity</b>		
6.5.3.1	25 A rating	Each	2642.00
6.5.3.2	40 A rating	Each	2666.00
6.5.3.3	63 A rating	Each	3021.00
6.5.3.4	100 A rating	Each	5196.00
6.5.4	<b>Four pole 100/300 mA sensitivity</b>		
6.5.4.1	25 A rating	Each	2717.00
6.5.4.2	40 A rating	Each	2762.00
6.5.4.3	63 A rating	Each	2225.00
6.5.4.4	100 A rating	Each	5288.00
6.6	Providing & Fixing of din rail mounting surge protection device confirming to IEC 61643-11 for Type 1 + 2 protection and Maximum discharge current 50 kA with following configuration in existing distribution board / sheet including making connections, testing etc. as required. OEM shall have submit NABL / CPRI / ERDA accredited lab type test reports & All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.6.1	1P + N	Each	3437.00
6.6.2	3P + N	Each	6315.00

Item No.	Description	Unit	Rate (Rs.)
6.7	Providing & Fixing of din rail mounting contactor and accessories confirming to IEC 61095 with following description and configuration in existing distribution board / sheet including making connections, testing etc. as required.OEM shall have submit NABL / CPRI / ERDA accredited lab type test reports & All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.7.1	Modular contactor 25A - 1NO	Each	1535.00
6.7.2	Modular contactor 25A - 2NO	Each	1919.00
6.7.3	Modular contactor 40A - 2NO	Each	3270.00
6.7.4	Modular contactor 40A - 3NO	Each	4676.00
6.7.5	Modular contactor 40A - 4NO	Each	5489.00
6.7.6	Modular contactor 63A - 2NO + 2 NC	Each	5820.00
6.7.7	Modular contactor 63A - 3NO	Each	5963.00
6.7.8	Modular contactor 63A - 4NO	Each	6555.00
6.7.9	Auxiliary contact, 2 NO	Each	1578.00
6.7.10	Auxiliary contact, 1 NO + 1 NC	Each	819.00
6.7.11	Under voltage Release	Each	1903.00
6.7.12	Shunt Trip Release	Each	2175.00
6.8	Providing & Fixing of din rail mounting LED Indicating Lights with following description and configuration in existing distribution board / sheet including making connections, testing etc. as required.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.8.1	Red / Yellow / Blue / Green	Each	924.00
6.8.2	Red-yellow-Blue	Each	1115.00
6.9	Providing & Fixing of Recessed/surface mounting heavy duty Enclosure made out from Galvanized steel / CRCA sheet not less then 1.2 mm thick conforming to IS-8623-1 & 3 / IEC 61439- 1 & 3. powder painted complete with din rail making internal DB terminations with copper lugs, detachable gland plate, including making connections, testing etc. as required.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.9.1	Suitable for Two / Three / Four module for MCB	Each	660.00
6.9.2	Suitable for Six / Eight module for MCB/ RCCB	Each	1099.00

Item No.	Description	Unit	Rate (Rs.)
6.10	Providing & Fixing of Recessed/surface mounting heavy duty horizontal type Double Door ( Metal / Glazed )Distribution board with Metal end box made out from Galvanized steel / CRCA sheet not less than 1.2 mm thick conforming to IS-8623-1 & 3 / IEC 61439- 1 & 3, powder painted complete with reversible door (for double door DB only )100 amp. insulated copper bus bar/shorting link , copper neutral link, copper earth link , color coded interconnecting wire set of suitable rating and din bar,masking sheet, making internal DB terminations with copper lugs, Ferrules, detachable gland plate, including making connections, testing etc. as required. OEM shall have submit NABL / CPRI / ERDA accredited lab type test reports & All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.10.1	<b>Metal door (single phase) IK-09 and IP-43 with Metal end box</b>		
6.10.1.1	4 Way (4+2)	Each	1795.00
6.10.1.2	6 Way (6+2)	Each	2018.00
6.10.1.3	8 Way (8+2)	Each	2184.00
6.10.1.4	12 Way (12+2)	Each	2590.00
6.10.1.5	16 Way (16+2)	Each	3389.00
6.10.2	<b>Glazed door (single phase) IK-09 and IP-43 with Metal end box</b>		
6.10.2.1	4 Way (4+2)	Each	2146.00
6.10.2.2	6 Way (6+2)	Each	2373.00
6.10.2.3	8 Way (8+2)	Each	2581.00
6.10.2.4	12 Way (12+2)	Each	2990.00
6.10.2.5	16 Way (16+2)	Each	3921.00
6.10.3	<b>Metal door (Three phase) IK-09 and IP-43 with Metal end box</b>		
6.10.3.1	4 Way	Each	3838.00
6.10.3.2	6 Way	Each	4811.00
6.10.3.3	8 Way	Each	5980.00
6.10.3.4	12 Way	Each	8852.00
6.10.4	<b>Glazed door (Three phase) IK-09 and IP-43 with Metal end box</b>		
6.10.4.1	4 Way	Each	4806.00
6.10.4.2	6 Way	Each	6126.00
6.10.4.3	8 Way	Each	7533.00
6.10.4.4	12 Way	Each	10660.00
6.10.5	<b>Metal door (Three phase) Per phase isolation, Horizontal IK-09 and IP-43 with Metal end box</b>		
6.10.5.1	4Way(Incomer 8,Sub Incomer2+2+2)	Each	6320.00
6.10.5.2	6Way(Incomer 8,Sub Incomer2+2+2)	Each	7618.00

Item No.	Description	Unit	Rate (Rs.)
6.10.5.3	8Way(Incomer 8,Sub Incomer2+2+2)	Each	9168.00
6.10.5.4	12 Way(Incomer 8,Sub Incomer2+2+2)	Each	12248.00
6.10.6	<b>Metal door (Three phase) Per phase isolation,Vertical IK-09 and IP-43 with Metal end box</b>		
6.10.6.1	4Way(Incomer 8,Sub Incomer2+2+2)	Each	7494.00
6.10.6.2	6Way(Incomer 8,Sub Incomer2+2+2)	Each	9153.00
6.10.6.3	8Way(Incomer 8,Sub Incomer2+2+2)	Each	9814.00
6.10.6.4	12 Way(Incomer 8,Sub Incomer2+2+2)	Each	10655.00
6.11	Providing & Fixing of Recessed/surface mounting heavy duty horizontal type TPN phase selector Distribution board with Metal end box made out from Galvanized steel / CRCA sheet not less then 1.2 mm thick conforming to IS-8623-1 & 3 / IEC 61439- 1 & 3. powder painted with reversible door (for double door DB only ) complete with 100 amp. insulated copper bus bar/ shorting link , neutral link, earth link , color coded interconnecting wire set of suitable rating and din bar,masking sheet provided with 3 nos 63 Amp rotary switches,3 nos rocker switches for phase identifications etc. making internal DB terminations with copper lugs, ferrules, detachable gland plate, including making connections, testing etc. as required. OEM shall have submit NABL / CPRI / ERDA accredited lab type test reports & All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.11.1	<b>Double door. IK-09 and IP-43 with Metal end box</b>		
6.11.1.1	4Way(Incomer 8,Outgoing 4+4+4)	Each	11591.00
6.11.1.2	6Way(Incomer 8,Outgoing6+6+6)	Each	11856.00
6.11.1.3	8Way(Incomer 8,Outgoing 8+8+8)	Each	13215.00
6.11.1.4	12Way(Incomer 8,Outgoing 12+12+12)	Each	15016.00
6.12	Providing & Fixing of Recessed/surface mounting heavy duty Flexi / Row type Distribution board with Metal end box made out from Galvanized steel / CRCA sheet not less then 1.2 mm thick conforming to IS-8623-1 & 3 / IEC 61439- 1 & 3. powder painted with reversible door (metal or Glazed) complete with 100 Amp. copper shorting link , neutral link, earth link , color coded interconnecting wire set of suitable rating and din bar,masking sheet, making internal DB terminations with copper lugs, ferrules detachable gland plate, including making connections, testing etc. as required. OEM shall have submit NABL / CPRI / ERDA accredited lab type test reports & All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		

Item No.	Description	Unit	Rate (Rs.)
6.12.1	<b>Metal door IK-09 &amp; IP-43 with Metal end box</b>		
6.12.1.1	2 Row 28 Module(14 module per row)	Each	4668.00
6.12.1.2	3 Row 42 Module(14 module per row)	Each	5423.00
6.12.1.3	4 Row 56 Module(14 module per row)	Each	5951.00
6.12.1.4	4 Row 64 Module(16 module per row)	Each	6836.00
6.12.2	<b>Glazed door IK-09 &amp; IP-43 with Metal end box</b>		
6.12.2.1	2 Row 28 Module(14 module per row)	Each	4994.00
6.12.2.2	3 Row 42 Module(14 module per row)	Each	5923.00
6.12.2.3	4 Row 56 Module(14 module per row)	Each	6663.00
6.12.2.4	4 Row 64 Module(16 module per row)	Each	7360.00
6.13	P&F metal clad / Plastic industrial plug top & socket unit with pin and sleeve type contact on porcelain/ bakelite base in Recessed/surface mounting heavy duty Enclosure made out from Galvanized steel / CRCA sheet not less then 1.2 mm thick conforming to IS-8623-1 & 3 / IEC 61439- 1 & 3. powder painted (without MCB) including making connections, testing etc.as required.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.13.1	20 amp, 2 pin + scrapping Earth, 1 Module	Each	1279.00
6.13.2	20 amp, 2 pin + scrapping Earth, 2 Module	Each	1386.00
6.13.3	20 amp, 3 pin + scrapping Earth, 4 Module	Each	2052.00
6.13.4	32 amp, 5 pin + scrapping Earth, 8 Module	Each	2754.00
6.13.5	63 amp, 5 pin + scrapping Earth, 8 Module	Each	9776.00
6.14	P & F of Industrial plug and socket conforming to IEC 60309-1/2 made out of self extinguishing engineering polymer / polyamide, nickel plated brass sleeve and pins, socket with shutter including making connection etc as reqd. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.14.1	<b>IP -67 Panel mounted socket</b>		
6.14.1.1	16 A 3 pin(2P+E)	Each	791.00
6.14.1.2	32 A 3 pin(2P+E)	Each	979.00
6.14.1.3	32 A 5 pin(3P+N+E)	Each	1234.00
6.14.1.4	63 A 5 pin(3P+N+E)	Each	3532.00
6.14.2	<b>IP -67 Surface/Wall mounted socket</b>		
6.14.2.1	16 A 3 pin(2P+E)	Each	1046.00
6.14.2.2	32 A 3 pin(2P+E)	Each	1222.00
6.14.2.3	32 A 5 pin(3P+N+E)	Each	2266.00
6.14.2.4	63 A 5 pin(3P+N+E)	Each	4517.00
6.14.3	<b>IP -67 Surface/Wall mounted Interlocked Switched socket Outlet Vertical</b>		
6.14.3.1	16 A 3 pin(2P+E)	Each	7186.00
6.14.3.2	32 A 3 pin(2P+E)	Each	8322.00
6.14.3.3	32 A 5 pin(3P+N+E)	Each	9762.00

Item No.	Description	Unit	Rate (Rs.)
6.14.4	<b>IP - 67 Plug top</b>		
6.14.4.1	16 A 3 pin(2P+E)	Each	762.00
6.14.4.2	32 A 3 pin(2P+E)	Each	1028.00
6.14.4.3	32 A 5 pin(3P+N+E)	Each	1142.00
6.14.4.4	63 A 5 pin(3P+N+E)	Each	2990.00
6.15	Providing & Fixing of Recessed/surface mounting heavy duty Vertical TPN Distribution board with Metal end box with provision of incomer suitable for MCB / RCCB and SP / TP MCB as outgoing ,made out from Galvanized steel / CRCA sheet not less then 1.2 mm thick conforming to IS-8623-1 & 3 / IEC 61439- 1 & 3. powder painted with reversible door (for double door DB only ) complete with insulated 100 A rating copper bus bar, neutral bars with shrouds, earth bar , color coded interconnecting wire set of suitable rating and din bar,masking sheet, making internal DB terminations with copper lugs, ferrules, detachable gland plate, including making connections, testing etc. as required. OEM shall have submit NABL / CPRI / ERDA accredited lab type test reports & All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.15.1	<b>Double door IK-09 &amp; IP-43 with Metal end box</b>		
6.15.1.1	4 Way(8+12)	Each	8255.00
6.15.1.2	6 Way(8+18)	Each	9425.00
6.15.1.3	8 Way(8+24)	Each	10580.00
6.15.1.4	12 Way(8+36)	Each	13984.00
6.16	Providing & Fixing of Recessed/surface mounting heavy duty Vertical TPN Distribution board with Metal end box with provision of incomer suitable for 3/4 pole MCCB and SP / TP MCB as outgoing ,made out from Galvanized steel / CRCA sheet not less then 1.2 mm thick conforming to IS-8623-1 & 3 / IEC 61439- 1 & 3. powder painted with reversible door (for double door DB only ) complete with insulated 160 (upto 160 A Incomer) / 250 Amp. copper bus bar, neutral bars with shrouds, earth bar , color coded interconnecting wire set of suitable rating and din bar,masking sheet, making internal DB terminations with copper lugs, ferrules, detachable gland plate, including making connections, testing etc. as required. OEM shall have submit NABL / CPRI / ERDA accredited lab type test reports & All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.16.1	<b>Double door IP-43 &amp; IK-09 with Provision of Incomer MCCB 100/ 125 A Rating with Metal end box</b>		
6.16.1.1	4 Way	Each	11538.00

Item No.	Description	Unit	Rate (Rs.)
6.16.1.2	6 Way	Each	12751.00
6.16.1.3	8 Way	Each	13775.00
6.16.1.4	12 Way	Each	17813.00
6.16.2	<b>Double door IP-43 &amp; IK-09 with Provision of Incomer MCCB 160 A Rating with Metal end box</b>		
6.16.2.1	4 Way	Each	13778.00
6.16.2.2	6 Way	Each	15274.00
6.16.2.3	8 Way	Each	16589.00
6.16.2.4	12 Way	Each	18858.00
6.16.3	<b>Double door IP-43 &amp; IK-09 with Provision of Incomer MCCB 250 A Rating with Metal end box</b>		
6.16.3.1	4 Way	Each	15200.00
6.16.3.2	6 Way	Each	16831.00
6.16.3.3	8 Way	Each	18103.00
6.16.3.4	12 Way	Each	20755.00
6.17	P & F Surface mounting IP-65, IK-09 Class-II self extinguishing insulating material weather proof cabinets confirming to EN60439-3 with IP-65 Key lock, fully reversible door and cabinet, removable chasis and face plates, of following size. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
6.17.1	1 row 3/4 module	Each	2487.00
6.17.2	1 row 6 module	Each	2955.00
6.17.3	1 row 12 module	Each	4550.00
6.17.4	1 row 18 module	Each	5303.00
6.17.5	2 row x 12 module	Each	5991.00
6.17.6	2 row x 18 module	Each	8628.00
6.17.7	3 row x 12 module	Each	10379.00



**CHAPTER : E-7**  
**ELECTRICAL ACCESSORIES**

Item No.	Description	Unit	Rate (Rs.)
7.1	P & F ISI marked (IS:3854) 6 amp. flush type non modular switch with CM/L no. printed and made out from industrial grade Polycarbonate or fire resistant ABS material including cutting hole in tile and making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	23.00
7.2	P & F ISI marked (IS :3854) 16 amp. flush type non modular switch CM/L no. printed and made out from industrial grade Polycarbonate or fire resistant ABS material including cutting hole in tile and making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	50.00
7.3	Providing & Fixing of 6 amp. Combined flush type non modular socket and switch set as per PWD specification for electrical Works,made out from industrial grade Polycarbonate or fire resistant ABS material including cutting hole in tile and making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	123.00
7.4	Providing & Fixing of 16 amp. Combined flush type non modular socket and switch set with indicator and fuse set as per PWD specification for electrical Works, made out from industrial grade Polycarbonate or fire resistant ABS material including cutting hole in tile and making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	180.00
7.5	Providing & Fixing of ISI marked (IS :3854) non modular 6A bell push surface type CM/L no. printed and made out from industrial grade Polycarbonate or fire resistant ABS material including making connection testing etc. as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	34.00

Item No.	Description	Unit	Rate (Rs.)
7.6	Providing & Fixing of ISI marked (IS :3854) twin control non modular 6A switch surface type as per PWD specification for electrical Works, made out from industrial grade Polycarbonate or fire resistant ABS material, brass terminal & captive screws including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	48.00
7.7	Providing & Fixing of ISI marked (IS :3854) non modular 6A bell push flush type CML no. printed and made out from industrial grade Polycarbonate or fire resistant ABS material including cutting hole in tile and making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	34.00
7.8	Providing & Fixing of ISI marked (IS :3854) twin control non modular 6A switch flush type as per PWD specification for electrical Works, made out from industrial grade Polycarbonate or fire resistant ABS material, including cutting hole in tile and making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	30.00
7.9	Providing & Fixing of ISI marked non modular 6A hanging bell push/one way switch made out from industrial grade Polycarbonate or fire resistant ABS material including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	38.00
7.10	Providing & Fixing of 3/5 pin 6 amp. flush type non modular socket made out from industrial grade Polycarbonate or fire resistant ABS material, brass terminal with Porcelain based back cover & captive screws including cutting hole in tile and making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	33.00
7.11	Providing & Fixing of 3/6 pin 16 amp flush type non modular socket made out from Industrial grade Polycarbonate or fire resistant ABS material, brass terminal with Porcelain based back cover & captive screws including cutting hole in tile and making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	78.00

Item No.	Description	Unit	Rate (Rs.)
7.12	Providing & Fixing of ISI marked (IS:371) 6 amp surface type 3 pin ceiling rose with CM/L no. printed and made out from industrial grade Polycarbonate or fire resistant ABS material, brass terminal & captive screws including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	30.00
7.13	Providing & Fixing of ISI marked (IS:1258) batten/angle lamp holder with CM/L no. printed and made out from industrial grade Polycarbonate or fire resistant ABS material, brass terminal & captive screws including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	30.00
7.14	Providing & Fixing of ISI marked (IS:1293) 6 amp unbreakable 3 pin plug top having lamp indicator with CM/L no. printed and made out from industrial grade Polycarbonate or fire resistant ABS material, brass terminal including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	44.00
7.15	Providing & Fixing of ISI marked (IS:1293) 16 amp unbreakable 3 pin plug top having lamp indicator with CM/L no. printed and made out from industrial grade Polycarbonate or fire resistant ABS material, brass terminal including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	68.00
7.16	Providing & Fixing of flush type non modular 2 pin telephone socket with plug top made out from industrial grade Polycarbonate or fire resistant ABS material, brass terminals including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	59.00
7.17	Providing & Fixing of flush type non modular single line telephone jack made out from industrial grade Polycarbonate or fire resistant ABS material, including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	72.00

Item No.	Description	Unit	Rate (Rs.)
7.18	Providing & Fixing of flush type non modular double line telephone jack made out from industrial grade Polycarbonate or fire resistant ABS material including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	86.00
7.19	Providing & Fixing of flush type non modular coaxial T.V. socket made out from industrial grade Polycarbonate or fire resistant ABS material, including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	48.00
7.20	Providing & Fixing of IS 11037:1984 marked non modular socket size flush type 120 watt rotary minimum 5 step fan regulator with CM/L no. printed and made out from industrial grade Polycarbonate or fire resistant ABS material including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	199.00
7.21	Providing & Fixing of IS 11037:1984 marked non modular socket size flush type 180 watt rotary minimum 5 step fan regulator with CM/L no. printed and made out from industrial grade Polycarbonate or fire resistant ABS material including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	219.00
7.22	P & F ISI marked 32 A D.P. switch with fuse and indicating lamp including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	173.00
7.23	Providing & Fixing of ISI marked (IS:2268-1994) gong bell with CM/L no. printed including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	173.00
7.24	Providing & Fixing of ISI marked surface type buzzer (IS:2268-1994) with CM/L no. printed including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	109.00

Item No.	Description	Unit	Rate (Rs.)
7.25	Providing & Fixing of single / multi tone electronic call bell as per PWD specification for electrical Works, including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	492.00
7.26	Providing & Fixing of ding dong/musical chime bell as per PWD specification for electrical Works, including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	328.00
7.27	Providing & Fixing of modular type switch/ bell push duly ISI marked (IS :3854) with CM/L no. printed and made out of unbreakable and fire retardant vergin UV Stabilized Polycarbonate with brass terminals and captive screws & silver alloy contact tip with IP-20 rating ,minimum width of switch toggle( PUSH PART ) should not less then 20mm, including all as per pre approved by Engineer in charge,making connections, testing etc. as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
7.27.1	10 A one way switch	Each	55.00
7.27.2	10 A two way switch	Each	79.00
7.27.3	10 A bell push	Each	110.00
7.27.4	16 A one way switch With Led Indicator	Each	113.00
7.27.5	16 Amp. 2 Module switch With Led Indicator	Each	147.00
7.27.6	25 Amp. 2 Module switch With Led Indicator	Each	200.00
7.27.7	32 Amp. 2 Module switch With Led Indicator	Each	369.00
7.28	Providing & Fixing of modular type lockable feature socket duly made out of unbreakable and fire retardant vergin poly carbonate with brass terminals and captive screws & silver alloy contact tip with IP-20 rating , including all as per pre approved by Engineer in charge,making connections, testing etc. as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
7.28.1	6 A 3/5 pin shuttered socket	Each	107.00
7.28.2	6/16 A shuttered socket	Each	176.00
7.28.3	13 A flat pin international socket	Each	187.00
7.28.4	25 Amp. 2 Module Socket	Each	228.00
7.29	Providing & Fixing of modular type 120 W Step Fan regulator duly ISI marked (IS 11037:1984 ) with CM/L no. printed made out of unbreakable and fire retardant vergin poly carbonate with brass terminals and captive screws & silver alloy contact tip with IP-20 rating , including all as per pre approved by Engineer in charge,making connections, testing etc. as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
7.29.1	5 step fan regulator 2 Module 360 dgree rotating	Each	398.00

Item No.	Description	Unit	Rate (Rs.)
7.30	Providing & Fixing of following modular accessories as per PWD specification for electrical Works, made out of unbreakable and fire retardant vergin poly carbonate with brass terminals and captive screws & silver alloy contact tip with IP-20 rating , including all as per pre approved by Engineer in charge,making connections, testing etc. as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
7.30.1	RJ-11 telephone jack single line	Each	142.00
7.30.2	RJ-11 telephone jack Double line	Each	169.00
7.30.3	USB Charger 1 A - 1 M with BIS mark	Each	483.00
7.30.4	RJ-45, Cat 6 computer jack with shutter	Each	316.00
7.30.5	T.V. coaxial socket	Each	159.00
7.30.6	Blanking plate	Each	22.00
7.30.7	25 Amp. 2 Module Motor Starter with on / off Push button	Each	388.00
7.30.8	LED Skirting /Foot Light 2 Module	Each	361.00
7.30.9	Electronic Chime/Buzzer 2M	Each	212.00
7.30.10	Modular MCB 6 A to 32 A SP	Each	225.00
7.30.11	Modular MCB 6 A to 32 A DP	Each	461.00
7.31	Providing & Fixing of following size mounting grid plates with cover plates made from fire retardent UV established high performance engineering plastic suitable for all universal metal boxes for front installation & removal direct fit type complete in all respect.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
7.31.1	1/2 Module	Each	65.00
7.31.2	3 Module	Each	86.00
7.31.3	4 Module	Each	89.00
7.31.4	5 Module	Each	105.00
7.31.5	6 Module	Each	114.00
7.31.6	8 Module	Each	155.00
7.31.7	10 Module	Each	198.00
7.31.8	12 Module	Each	214.00
7.31.9	16/18 Module	Each	316.00
7.32	Providing & Fixing of Wiring Accessories OEM fabricated following size GI box of 1.2 mm thick with earthing terminal and adjustable floating clamp in recess/ surface suitable for modular accessories as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
7.32.1	1-2 Module	Each	86.00
7.32.2	3 Module	Each	120.00
7.32.3	4/5 Module	Each	140.00
7.32.4	6 / 8 module	Each	204.00
7.32.5	10 / 12 module	Each	286.00
7.32.6	16/18 module	Each	417.00

Item No.	Description	Unit	Rate (Rs.)
7.33	Providing & Fixing of Wiring Accessories OEM fabricated following size virgin material UPVC modular boxes on surface suitable for modular accessories as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
7.33.1	1-2-3 Module	Each	98.00
7.33.2	4-5 Module	Each	152.00
7.33.3	6-8 Module	Each	216.00
7.33.4	10-12 Module	Each	287.00
7.33.5	16/18 Module	Each	332.00
7.34	Providing & Fixing of of ISO certified company made Multiple socket with surge and spikes protection cartridge not less then 5 KV as per PWD specification for electrical Works with minimum four nos. universal 6 A sockets, one 6 A switch and 3 pin company fitted plug top and 3 core multistrand copper lead minimum 1.5 mtr. including making connection etc as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	572.00
7.35	Providing & Fixing of ISO certified company made virgin material PVC trunking system as per PWD specification for electrical Works, with double lock feature for cable management including finishing accessories like corners, tees, adjustable angles, junction etc. as required . The trunking system shall have adaptable system for modular type RJ 45 data socket/ wiring accessories/ power sockets and shall be covered with peel off plastic cover. OEM shall have submit NABL accredited /CPET lab test reports before execution & All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
7.35.1	32mm X 20mm	Mtr.	228.00
7.35.2	80mm x 50mm	Mtr.	997.00
7.35.3	100/105mm x 50mm	Mtr.	1181.00
7.35.4	150/160mm x 50mm	Mtr.	1994.00
7.35.5	195/200mm x 50mm	Mtr.	2544.00
7.36	Providing and fixing of power plug point with non modular accessories as per PWD specification for electrical Works with Galvanized box of 1.2 mm thick with earth terminal with suitable size phenolic laminated sheet (IS : 2036 - 1995) cover including cost of 16 amp. Switch (IS :3854) and 3/6 pin 16 amp. socket outlet making connection , testing , etc. as required. . For specification of Wiring accessories refer Chapter E - 07 related item & For additional technical parameters of product / work refer Annexure 'A' attached with this BSR	Each	303.00

Item No.	Description	Unit	Rate (Rs.)
7.37	Supplying and fixing of power plug point with Modular accessories as per PWD specification for electrical Works, on hot dipped galvanized modular box of 1.2 mm thick with earthing terminal/connector on surface or in recessed with suitable size of modular face plate with grid plate and cover plate including cost of ISI marked modular 16 amp. Switch (IS :3854) and 6/16 amp. socket outlet (IS:1293) making connection , testing , etc. as required. For specification of Wiring accessories refer Chapter E - 07 related item & For additional technical parameters of product / work refer Annexure 'A' attached with this BSR	Each	580.00
7.38	P & F Krone module with base frame in the recess / surface made out of 1.2 mm thick sheet steel box, front openable, having locking arrangements duly powder painted,including dressing, ferruling and punching of telephone cable with krone tool etc. as required. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
7.38.1	10 Pairs	Each	943.00
7.38.2	20 Pairs	Each	1213.00
7.38.3	50 Pairs	Each	2561.00
7.38.4	100 Pairs	Each	4988.00
7.38.5	200 Pairs	Each	8424.00



**CHAPTER : E-8**  
**LT PANELS & ACCESSORIES**

Item No.	Description	Unit	Rate (Rs.)
8.1	<p>SITC of IP-42 and general construction confirming to IS:8623 : 1993, wall/ free standing floor mounted dust and vermin proof compartmentalised cubical panel as specifications and Other parameters required as per point (a) ,(b), (c),(d), (e), (f), (g), (h) as below:-</p> <p><b>(a)</b> Thickness of CRCA sheet shall be 2.0 mm, cable alley compartments having concealed hinged type doors with key type lock with / without detachable extension type structure. Removable 3 mm. thick sheet steel gland plates with appropriate size of knockouts for cables shall be provided</p> <p><b>(b)</b> complete panel shall undergo a process of degreasing, Water rinsing, Activation, derusting, pickling in acid bath, phosphatising &amp; shall be subjected to nine tank process and then Powder coated with approved shade of minimum 70 microns on both side of panel. The panel having PE foam/ Neoprene rubber gasket of not less than 3mm thickness ,required hardware , concealed hinged door with key type locking arrangement for equipment/switchgear earthed with 2.5 sq.mm braided copper wire.</p> <p><b>(c)</b> Interconnection between bus bar and switchgears /cable shall be rigidly supported and made out by flexible copper wires (up to 63 amp ) and by solid bus bar (&gt;63 amp ) . control wiring will be carried out with 1.5 Sq.mm, Earth wire with 2.5 Sq.mm and CT with 2.5 sq.mm flexible copper wire only. All joints / interconnections of copper bus bar shall be dully tinned . Clearance between main bus bar and risers / metal parts shall be at least 10 mm additional to width of bus bar Bus bar is insulated by Heat Shrinkable sleeves . Earth and Neutral bus bar shall be half of the size of phase bus bar. ( Cost of Bus bar / Flexible wire for Interconnection between Main busbar and Switchgear is to be Paid Extra )</p> <p><b>(d)</b>Wiring between components within switchgear and Incoming / outgoing cable shall be done through the terminal block only. Direct connection shall not be permitted. Each terminal block shall be one piece moulded, barrier type, 650 volt grade, complete with washers, heads, studs with two nuts and identification strips and shall have adequate continuous current rating. For tap-offs, adjacent terminals with shorting strips shall be used. 10% Spare terminal blocks shall be provided. Wire identification on marking strip shall correspond to the designation of the wiring diagrams. All wire terminals on the equipment shall also be marked with designation corresponding to those of the wiring diagram.</p> <p><b>(e)</b>All wiring shall be enclosed in plastic channels and neatly bunched and closed in metering chamber, Wiring between terminals of various devices shall be 'point to point' (no wire splitting or tee connections) with wires neatly trucked along the back of the panels, adequately supported to prevent sagging.</p> <p><b>(f)</b>Floor mounted panel shall be mounted on Base frame of ISMC channel size 100 x 50 x 5 mm ( to be paid Extra )</p>		

Item No.	Description	Unit	Rate (Rs.)
	<p>(g) Tests: The insulation resistance (with 1000 V Megger) and High voltage Power frequency test (by applying a voltage of 2.5KV for one minute) shall be measured between phases, between phase and neutral and between phase and earth. both before and after high voltage power frequency test. The insulation resistance shall not be less than three megaohm. CT Secondary current injection test shall also be carried out.</p> <p>(h) only outer surface area on all sides shall be measured &amp; panel to be fabricated only from CPRI approved fabricator only (CPRI Test certificates to be submitted)All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>	Sq. Mtr	5975.00
8.2	Supplying and fixing of Aluminium (IEC 60105 ISO 209-1,2) / Copper (IEC 60028) bus bar by means of SMC / DMC type insulator with standard short circuit withstand capacity , high tensile nuts and bolts spring washers in existing panel including bending , cutting in required shape and size and colour coding with heat shrinkable PVC sleeves. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.2.1	Electrolytic grade Aluminium bus bar 6010 grade	Kg.	542.00
8.2.2	Electrolytic grade (Cu-ETP) Tin Coated annealed copper bus bars IACS 100% grade	Kg.	1301.00
8.3	Providing & Fixing of IS: 13875 & IEC :61326 confirming LED Digital type (up to 500) V range Volt meter / Direct- Ammeter / CT oertated ammeter/ Frequency meter / KWH meter / Multi Function Meter / Power analyzer of class 1 accuracy as per IS : 1248 of size 96mm x 96 mm including making connection by PVC insulated copper conductor with PVC sleeves / channel etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.3.1	Single Phase Ammeter	Each	1172.00
8.3.2	Single Phase Voltmeter	Each	1172.00
8.3.3	Three phase Ammeter with Inbuilt Selector Switch	Each	1689.00
8.3.4	Three phase Voltmeter with Inbuilt Selector Switch	Each	1689.00
8.3.5	Three phase KWH Meter	Each	3530.00
8.3.6	Three phase KWH Meter Dual Source	Each	3858.00
8.3.7	Frequency Meter	Each	1172.00
8.3.8	Three phase AMP+HZ+PF+KW+KVA+KVAR+T.ENERGY+THD-I, THD-V & RUN HRS	Each	3252.00
8.3.9	Three phase AMP + HZ + PF + KW + KVA + KVAR + KVARH+KWH+DUAL ENERGY+ ENERGY+THD-I, THD-V & RUN HRS	Each	5241.00
8.3.10	Three phase with universal Auxiliary supply + AMP + HZ + PF + KW + KVA + KVAR + KVARH + KWH + DUAL ENERGY+ ENERGY+THD-I, THD-V & RUN HRS + MD with RS485	Each	6272.00

Item No.	Description	Unit	Rate (Rs.)
8.4	Providing & Fixing of BIS approved Current Transformer as per PWD specification for electrical Works ,ISI marked as per IS 2705-1992/ conforming to IEC 60044-1, with secondary terminal of CT shall be brought out suitable to a terminal block which shall be easier accessible for testing and terminal connection , with all necessary support in existing panel including connection etc. as required Current transformer Ring Type Tape Wound/Resin Cast Wound as per IS 16227 with, Accuracy Cl, CT ratio and burden as specified. ISF<=5, Cu cross section of secondary wire 1.5sqmm (minimum), including all necessary support in existing panel including connection etc. as required . All as per pre approved by Engineer in charge.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR		
<b>8.4.1</b>	<b>Ring type tape wound CT</b>		
8.4.1.1	C T Class 1, Ratio upto 150/5, Burden 5 VA	Each	614.00
8.4.1.2	C T Class 1, Ratio 200/5 to 300/5, Burden 10 VA	Each	788.00
8.4.1.3	C T Class 1, Ratio 400/5 to 1200/5, Burden 15 VA	Each	919.00
8.4.1.4	C T Class 1, Ratio 1600/5 to 3000/5, Burden 15 VA	Each	1768.00
8.4.1.5	C T Class 1, Ratio 3200/5 to 4000/5, Burden 15 VA	Each	2963.00
<b>8.4.2</b>	<b>Resin cast wound type CT</b>		
8.4.2.1	C T Class 1, Ratio upto 150/5, Burden 5 VA	Each	1214.00
8.4.2.2	C T Class 1, Ratio 200/5 to 300/5, Burden 10 VA	Each	1312.00
8.4.2.3	C T Class 1, Ratio 400/5 to 1200/5, Burden 15 VA	Each	1574.00
8.4.2.4	C T Class 1, Ratio 1600/5 to 3000/5, Burden 15 VA	Each	2586.00
8.4.2.5	C T Class 1, Ratio 3200/5 to 4000/5, Burden 15 VA	Each	4360.00
8.5	Providing & Fixing of selector switch of 10 A for voltmeter using high grade engineering material to international standards with cam assembly insulation of glass filled polyamide with high tracking index. For reliable and stable electrical and mechanical endurance double butt contacts with silver bi-metal on copper should provided . contact assembly is of operating temp range -25 degree C to 55 degree C, frequency upto 10 KHz. switch life under std. op. conditions shall be mechanically minimum 50000 operations @300 cycles/ hour and electrically 10,000 operations at 100% rated duty for 100 cycles/ hour including making connection etc. as required . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.5.1	Voltage Between Phases with OFF ( 4 Position )	Each	351.00
8.5.2	Voltage Between Phases & Individual Phases to Neutral with OFF ( 7 Position )	Each	692.00

Item No.	Description	Unit	Rate (Rs.)
8.6	Providing & Fixing of CT linked selector switch of 10 A for Ampere meter (4 position ) using high grade engineering material to international standards with cam assembly insulation of glass filled polyamide with high tracking index. For reliable and stable electrical and mechanical endurance double butt contacts with silver bi-metal on copper should provided . contact assembly is of operating temp range -25 degree C to 55 degree C, frequency upto 10 KHz. switch life under std. op. conditions shall be mechanically minimum 50000 operations @300 cycles/ hour and electrically 10,000 operations at 100% rated duty for 100 cycles/ hour , including making connection etc. as required .All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	384.00
8.7	Providing & Fixing of Cam operated rotary (Auto/manual) switches on existing panel with 2 way and off position using high grade engineering material to international standards with cam assembly insulation of glass filled polyamide with high tracking index. For reliable and stable electrical and mechanical endurance double butt contacts with silver bi-metal on copper should provided . contact assembly is of operating temp range -25 degree C to 55 degree C, frequency upto 10 KHz. switch life under std. op. conditions shall be mechanically minimum 50000 operations @300 cycles/ hour and electrically 10,000 operations at 100% rated duty for 100 cycles/ hour including making connection etc. as required . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.7.1	10 AMP	Each	363.00
8.7.2	16 Amp	Each	428.00
8.7.3	32 AMP	Each	504.00
8.7.4	63 AMP	Each	880.00
8.8	Providing & Fixing of 110/220 V, unibody LED Indicating lamp IEC 60947 with integral circuit, IP 65 above panel & IP 20 terminal block, Approx. body dia for panel not less then 20 mm, length min. 50mm, front LED cover dia min. 29 mm, contact material phospher bronze for Led, PCB contacts shall be of brass (tin plated), impulse dielectric tested for 2.5 KV, Rated insulation resistance shall be 100 M ohm at 500VDC including connection etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.8.1	Red/yellow/Green colour	Each	170.00
8.8.2	Blue / white Colour	Each	260.00
8.9	Providing & Fixing of flush head push button actuators IEC 60947 with integral circuit, IP 65 above panel & IP 20 terminal block, Approx. body dia for panel not less then 20 mm, length min. 50mm, front LED cover dia min. 29 mm, contact material phospher bronze for Led, PCB contacts shall be of brass (tin plated), impulse dielectric tested for 2.5 KV, including connection etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		

Item No.	Description	Unit	Rate (Rs.)
8.9.1	Non luminous type	Each	164.00
8.9.2	Luminous type Red , Yellow, Green, Amber	Each	215.00
8.9.3	Luminous type Blue , white	Each	344.00
8.10	Providing & Fixing of Electrical insulating rubber matts as per PWD specification for electrical Works, ISI marked confirming to IS: 15652 / 2006 with one side anti skid abberation marks and pasting the mat with synthetic rubber adhesive as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.10.1	3.3 KV, class A 2 mm thick with proof voltage 10 KV AC (rms) and Break Down Voltage 30 KV AC (rms)	SQ.Mtr.	1498.00
8.10.2	11 KV, Class B 2.5 mm thick with proof voltage 22 KV AC (rms) and Break Down Voltage 45 KV AC (rms)	SQ.Mtr.	2043.00
8.10.3	33 KV, class C 3 mm thick with proof voltage 36 KV AC (rms) for 3 min. and Break Down Voltage 65 KV AC (rms)	SQ.Mtr.	2316.00
8.11	Providing & Fixing of self healing IP20 MPP type shunt capacitor (banks) conforming to IS:13340-41 / IEC :831-1&2 OR IEC : 60831-1& 2 in existing panel or parallel with load terminals , the capacitor shall be fitted with discharge resistors, pressure sensitive disconnecter ( PSD ) and shall have dissipation factor less than 0.0025 at 50 Hz, Operating loss less than 0.30 Watt per KVAR. Min over current capacity 1.8 times rated current & peak inrush current min. 300 times of rated current, llife expectancy greater than 100000hrs (temp class - 25 D) in 440 V/480 V Capacitor and for 525 V should life expectancy minimum 1,65,000 hrs (temp class - 25 D) including making connections, testing etc. as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.11.1	Heavy duty Three phase 440 V, 50 Hz cylindrical type capacitor (Bank)	KVAR	374.00
8.11.2	Heavy duty Three phase 480 V, 50 Hz cylindrical type capacitor (Bank)	KVAR	415.00
8.11.3	Heavy duty Three phase 525V, 50 Hz cylindrical type capacitor (Bank)	KVAR	470.00
8.12	Providing & Fixing of 3-Phase 415/440 V , 7 % / 14 % Detuned Reactors conforming to IEC 61558-2-20 & IEC 60076-6 Aluminium wound for harmonics filter with 180% to 200 % Linearity, H - Class Insulation ( 180 degree C), high temp. Disconnection above 155 deg C., ambient temperature: +60 deg C. with thermal cut off switch in existing panel with following Capacitor ratings. including making connections, testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
<b>8.12.1</b>	<b>7 % (189 Hz) Aluminium wound Reactors</b>		
8.12.1.1	For 1 to 5 KVAR capacitor		5295.00
8.12.1.2	10 KVAR		7430.00
8.12.1.3	12.5 KVAR		8133.00
8.12.1.4	15 KVAR		8728.00
8.12.1.5	20 KVAR		10445.00
8.12.1.6	25 KVAR		11098.00

Item No.	Description	Unit	Rate (Rs.)
8.12.1.7	50 KVAR		17507.00
8.12.1.8	100 KVAR		35350.00
<b>8.12.2</b>	<b>14 % (133 Hz) Aluminium wound Reactors</b>		
8.12.2.1	For 1 to 5 KVAR capacitor		8208.00
8.12.2.2	10 KVAR		10291.00
8.12.2.3	12.5 KVAR		11727.00
8.12.2.4	15 KVAR		12202.00
8.12.2.5	20 KVAR		14930.00
8.12.2.6	25 KVAR		15720.00
8.12.2.7	50 KVAR		25702.00
8.12.2.8	100 KVAR		47811.00
8.13	Providing & Fixing of IP54 microprocessor based 3 CT's for all 3 phase sensing compensation power factor correction relay Size 139mm x 139 mm, Operating Voltage 415/440 V , IEC / EN 61000-6-(2&4) having 3 CT sensing, sensitivity up to 50 milli amp secondary current , self analysing auto c/k setting according to targeted power factor setting, the relay shall have digit display unit for display of real power factor, targeted power factor, lag/lead capacitor switching status, alarm output for under current, over current, insufficient compensation, communication interface with RS 485, indication of switching on units, auto/manual status, and shall have over load protection, no volt release , having multi parameter like KW, KVA, KVAR, RMS Value, step switching time 2 sec to 1800 sec. Lead & Lag parameters, metering facility and 3 no. Class- 0.5 Cast Resin CT ( refer CT specs in this chapter )for sensing the relay including making coonection with 1.5 Sq.mm copper wire etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.13.1	6 to 8 stage	Each	14995.00
8.13.2	12 to 14 stage	Each	19624.00
8.14	Providing & Fixing of AC operated heavy duty 230 /440 Volt power contactor as per PWD specification for electrical Works, ISI marked IS/IEC 60947-4-1 : 2000 having provision of mechanical interlocking, auxiliary contacts, Din rail mounting type including making connections, testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
<b>8.14.1</b>	<b>3 pole Power contactors with following AC 3 Rating</b>		
8.14.1.1	Up to 12 Amp	Each	1033.00
8.14.1.2	13 to 25 Amp	Each	1346.00
8.14.1.3	32 Amp.	Each	2784.00
8.14.1.4	40 Amp	Each	4019.00
8.14.1.5	50 Amp	Each	5450.00
8.14.1.6	70 Amp	Each	7618.00
8.14.1.7	80 Amp	Each	9405.00
8.14.1.8	95 Amp	Each	13429.00
8.14.1.9	140 Amp	Each	21906.00
8.14.1.10	185 Amp		
		Each	24680.00
8.14.1.11	250 Amp		
		Each	30614.00

Item No.	Description	Unit	Rate (Rs.)
8.14.1.12	300 Amp	Each	38637.00
8.14.1.13	400 Amp	Each	48984.00
8.14.1.14	550 Amp	Each	72214.00
8.14.1.15	630 Amp	Each	109755.00
<b>8.14.2</b>	<b>4 pole Power contactors with following AC 1 Rating</b>		
8.14.2.1	16 Amp.	Each	1134.00
8.14.2.2	25/32 Amp.	Each	1188.00
8.14.2.3	40 Amp	Each	1700.00
8.14.2.4	50 Amp	Each	2135.00
8.14.2.5	63 Amp	Each	4045.00
8.14.2.6	100 Amp	Each	7849.00
8.14.2.7	160 Amp	Each	14656.00
8.14.2.8	200 Amp	Each	19935.00
8.14.2.9	250 Amp	Each	20752.00
8.14.2.10	325 Amp	Each	37908.00
8.14.2.11	400 Amp	Each	47811.00
8.14.2.12	500 Amp	Each	58857.00
8.14.2.13	600 Amp	Each	64027.00
8.14.2.14	700 Amp	Each	81130.00
8.14.2.15	800 Amp	Each	105899.00
8.15	Providing & Fixing of 440 Volt 3 pole capacitor (AC 6 B ) duty contactor with 3 no. early make and post break auxiliary contacts in series with quick discharge damping resistors/ reactors to limit the inrush current as per PWD specification for electrical Works, IS/IEC 60947-4-1 : 2000, insulation voltage 1000V, impulse withstand voltage 8 KV,Din rail mounting type including making connections, testing etc. as required. suitable for following capacity capacitor bank. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.15.1	up to 6 KVAR	Each	1813.00
8.15.2	8.5 KVAR	Each	2127.00
8.15.3	10 KVAR	Each	2277.00
8.15.4	12.5 KVAR	Each	2304.00
8.15.5	15.0 KVAR	Each	3075.00
8.15.6	20.0 KVAR	Each	3518.00
8.15.7	25.0 KVAR	Each	3764.00
8.15.8	30.0 KVAR	Each	5993.00
8.15.9	40.0 KVAR	Each	10535.00
8.15.10	50.0 KVAR	Each	10787.00
8.15.11	60.0 KVAR	Each	12547.00
8.15.12	75.0 KVAR	Each	14047.00
8.15.13	85 KVAR	Each	15909.00
8.15.14	100 KVAR	Each	17218.00

Item No.	Description	Unit	Rate (Rs.)
8.16	P & F of Auxiliary Contactor for AC control standard. 24 V Coil 110, 240 V, 415 V, 50 Hz conforming to IS:13947-4-1/IEC:60947-4-1 with required NO & NC combination including making connections, testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer Annexure "A" attached with this BSR .	Each	1330.00
8.17	P & F of Front / Side mounting Add on Auxiliary Contact Block with required NO & NC combination including making connections, testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	629.00
8.18	Providing & Fixing of thermal over load relay with built in single phase protection and having at least 1NO & 1NC contacts, manual /auto reset facility including making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.18.1	Up to 14 Amp	Each	1158.00
8.18.2	14 to 23 Amp	Each	1295.00
8.18.3	20 to 33 Amp	Each	1840.00
8.18.4	24 to 40 Amp	Each	1977.00
8.18.5	36 to 60 Amp	Each	2931.00
8.18.6	45 to 75 Amp	Each	3341.00
8.18.7	66 to 110 Amp	Each	3750.00
8.19	P & F of 240 / 415 V Electronic ON - OFF Timer 3 -30 Sec / 12 - 120 Sec including making Connection etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1938.00
8.20	Providing & Fixing of mechanical / digital time switch having following day / week programme and minimum 100 hours reserve and AC1 rating of 16-20 amperes including making connection, programming conforming to IEC 60730-1 and 60730-2-7 etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.20.1	One day reserve (Analog type )	Each	4390.00
8.20.2	One day & week reserve (Analog type )	Each	4690.00
8.20.3	One day & week reserve (digital type )	Each	4100.00
8.21	Providing & Fixing of 110 - 240 V, AC, 1 ph. , 2 W Astronomical time switch with surge suppressor, memory card, Sunrise / Sunset selectable, software for programming including making connection, etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	5017.00



Item No.	Description	Unit	Rate (Rs.)
8.22	Providing & Fixing of IP51 direct or CT operated, 1x240 / 3x240 volts , 50 Hz static watt-hour meter (kwh) as per PWD specification for electrical Works, ISI marked (IS :13010-2002 ) having resolution 0.1 / 0.01 kwh, accuracy class 1 as per IS:13779, LED indicators for tamper operation ( Reverse &/or earth connection), pulsating LED indicator for meterology, LCD Display, cover plate for body and terminal sealing, push button for all standard parameters, including making connection, testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer Annexure "A" attached with this BSR .		
8.22.1	up to 30 ampere single phase meter	Each	1700.0
8.22.2	10 A to 60 ampere Single phase meter	Each	1836.0
8.22.3	3ph, 4W KWh CT Operated Base mounting 240 V, /5A	Each	5334.0
8.22.4	3ph, 4W KWh Direct Base mounting 240 V 10-40 /5-30 Amp	Each	4638.0
8.22.5	3ph, 4W KWh Direct Base mounting 240 V 10-60 Amp	Each	5647.0
8.22.6	3ph, 4W Trivector Meter, 240 V(L-N) 5A	Each	21600.0
8.23	P & F of Automatic Transfer Switch (ATS) conforming to IEC60947-6-1, Utilization category AC-33B in Existing panel for automatic on load transfer between two source power supply of 415V through Solenoid/Motorised mechanism and integrated with three positions realize fast transfer within 100 ms. ATS shall have three positions (S1-OFF-S2) , Manual / Auto Override feature, The two sources can be isolated in the off position with a padlock. capability to expand with RS 485 communication module, which can ensure real-time transmission of communication data. ATS shall have automatic generator start & stop control function; Auxillary contacts to indicate mechanical positions. Minimum Electrical operations 6000, of following Current ratings, including making connections etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.23.1	63 Amps	Each	37750.00
8.23.2	125 Amps	Each	71332.00
8.23.3	160 Amps	Each	73293.00
8.23.4	200 Amps	Each	83667.00
8.23.5	250 Amps	Each	105896.00
8.23.6	315 Amps	Each	112759.00
8.23.7	400 Amps	Each	128055.00
8.23.8	630 Amps	Each	156882.00
8.23.9	800 Amps	Each	192835.00
8.24	P & F Earth leakage relay for continuous surveillance of the earth leakage current of Rating 240 VAC at 50/60 Hz, Overload : x2 continuously, x10 for 3 secs as per BS6253, Voltage Tolerance : : - 25% to +10% Operating temp.: : -10 C to +70 C, Setting of trip point : : 0.030, 0.10, 0.30, 0.50, 1.0 ,3.0 ,5.0, 10.0,20.0 & 30.0 ( User Selectable) with Alarm Relay Output, Trip Relay Output etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
8.24.1	ELR with 35mm CBCT		2172.00
8.24.2	ELR with 70mm CBCT		2389.00
8.24.3	ELR with 120mm CBCT		2656.00
8.24.4	ELR with 210mm CBCT		3664.00

Item No.	Description	Unit	Rate (Rs.)
8.25	P & F of Direct on line (DOL) / Star - Delta Starter as per IEC <b>type-2 Co-ordination chart</b> of OEM in Existing Panel with circuit breaker having inbuilt overload protection or separate thermal Overload relay , Short circuit, phase loss protection, suitable Contactors, including wiring between switchgears, Indicating lamps for R,Y,B,ON,OFF, Push button for ON, OFF, Volt meter, Ammeter, selector switch for local/remote, auto/manual/OFF operation. Cast resin CT's, provision for potential free contacts making connection, testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
<b>8.25.1</b>	<b>Direct on line (DOL) Starter with following Motor rating</b>		
8.25.1.1	Motor rating 0.55 KW	Set	9990.00
8.25.1.2	Motor rating 0.75 KW	Set	11262.00
8.25.1.3	Motor rating 1.5 KW	Set	11499.00
8.25.1.4	Motor rating 2.2 KW	Set	11533.00
8.25.1.5	Motor rating 4.0 KW	Set	12288.00
8.25.1.6	Motor rating 5.5 KW	Set	12757.00
8.25.1.7	Motor rating 7.5 KW	Set	13075.00
8.25.1.8	Motor rating 9.0 KW	Set	16192.00
8.25.1.9	Motor rating 11.0 KW	Set	16305.00
8.25.1.10	Motor rating 15.0 KW	Set	24383.00
8.25.1.11	Motor rating 18.5 KW	Set	27500.00
8.25.1.12	Motor rating 22.0 KW	Set	30363.00
8.25.1.13	Motor rating 30.0 KW	Set	37668.00
8.25.1.14	Motor rating 37.0 KW	Set	44560.00
8.25.1.15	Motor rating 45.0 KW	Set	46033.00
8.25.1.16	Motor rating 55.0 KW	Set	49920.00
8.25.1.17	Motor rating 75.0 KW	Set	69634.00
8.25.1.18	Motor rating 90.0 KW	Set	77829.00
8.25.1.19	Motor rating 110.0 KW	Set	92373.00
<b>8.25.2</b>	<b>Star - Delta Starter with following Motor rating</b>		
8.25.2.1	Motor rating 4.0 KW	Set	17785.00
8.25.2.2	Motor rating 5.5 KW	Set	18427.00
8.25.2.3	Motor rating 7.5 KW	Set	18796.00
8.25.2.4	Motor rating 9.0 KW	Set	24116.00
8.25.2.5	Motor rating 11.0 KW	Set	24813.00
8.25.2.6	Motor rating 15.0 KW	Set	35864.00
8.25.2.7	Motor rating 18.5 KW	Set	44893.00
8.25.2.8	Motor rating 22.0 KW	Set	46824.00
8.25.2.9	Motor rating 30.0 KW	Set	54663.00
8.25.2.10	Motor rating 37.0 KW	Set	71611.00
8.25.2.11	Motor rating 45.0 KW	Set	77037.00
8.25.2.12	Motor rating 55.0 KW	Set	85874.00
8.25.2.13	Motor rating 75.0 KW	Set	91754.00
8.25.2.14	Motor rating 90.0 KW	Set	123832.00
8.25.2.15	Motor rating 110.0 KW	Set	157054.00
8.26	SITC of IP-42 and general construction confirming to IEC 61439-1&2. type tested assembly (TTA) wall/ free standing floor mounted dust and vermin proof compartmentalised cubical panel as specifications and Other parameters required as per point (a) ,(b), (c),(d), (e), (f), (q), (h) as below:-		

Item No.	Description	Unit	Rate (Rs.)
	<p>(a) Panel having short circuit withstand capacity of minimum of 50 kA for 1s (1cw rating) at 415 V, 50 HZ AC supply, Rated Impulse withstand voltage (Uimp) of 12kV for withstanding against transient Overvoltages, mechanical impact level of IK10 level and internal arc for 50kA for 0.3 second with aluminum busbar and fully type tested at an Independent Laboratory, Type test certificate has to be submitted for all rating of LV Switchgear to be used in Panel.</p> <p>(b) All four Horizontal Busbars shall be in same compartment. Certified design of switchboards shall be proven design from OEM (Switchgear Manufacturer). OEM name should be mentioned on top of each column of switchboard. Also, OEM Partnership Certificate shall be furnished by Panel builder. Panel shall be fabricated with a double door arrangement. Front Door shall be fitted with transparent Glass to allow maintenance staff to visually access device status, meter readings, indicating lamp status without opening the door.</p> <p>(c) Panels and cubicles shall be fabricated with CRCA Sheet Steel of thickness, same as as per OEM Design. Sheet Steel having vibration free structure chemically treated with nine tank process before painting for surface treatment and powder coated, with suitable electrolytic grade high conductivity Aluminium busbar extensible type, busbar supports, ( Cost of Bus bar / Flexible wire for Interconnection between Main busbar and Switchgear is to be Paid Extra )</p> <p>(d) Wiring between components within switchgear and Incoming / outgoing cable shall be done through the terminal block only. Direct connection shall not be permitted. Each terminal block shall be one piece moulded, barrier type, 650 volt grade, complete with washers, heads, studs with two nuts and identification strips and shall have adequate continuous current rating. For tap-offs, adjacent terminals with shorting strips shall be used. 10% Spare terminal blocks shall be provided. Wire identification on marking strip shall correspond to the designation of the wiring diagrams. All wire terminals on the equipment shall also be marked with designation corresponding to those of the wiring diagram.</p> <p>(e) All wiring shall be enclosed in plastic channels and neatly bunched and closed in metering chamber, Wiring between terminals of various devices shall be 'point to point' (no wire splitting or tee connections) with wires neatly trucked along the back of the panels, adequately supported to prevent sagging.</p> <p>(f) Floor mounted panel shall be mounted on Base frame of ISMC channel size 100 x 50 x 5 mm ( to be paid Extra )</p> <p>(g) Tests: The insulation resistance (with 1000 V Megger) and High voltage Power frequency test (by applying a voltage of 2.5KV for one minute) shall be measured between phases, between phase and neutral and between phase and earth. both before and after high voltage power frequency test. The insulation resistance shall not be less than three megaohm. CT Secondary current injection test and Heat run test(type test) shall also be carried out.</p> <p>(h) only outer surface area on all sides shall be measured &amp; panel to be fabricated only from Switchgear OEM approved fabricators only. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer Annexure "A" attached with this BSR .</p>	Sqm	9864.00

**CHAPTER : E-9**  
**AIR CIRCUIT BREAKERS & MCCB**

Item No.	Description	Unit	Rate (Rs.)
9.1	SITC of Draw out type 3/4 pole door interlock Air Circuit Breaker (ACB) as conforming to IS/IEC 60947 P - 2 :2003 in existing LT panel suitable for LT installation 440 V, 50 Hz and having adjustable over load short-circuit, Instantaneous , earth fault (LSIG) with separate LED indication for each type of fault shall confirm to EMI/ EMC test , LCD/LED display, last 10 trip history, provision of ZSI, Communication, Power metering module, Thermal memory , trip free mechanism , suitable for ambient 50 degree and utilization category B. In built electrical & mechanical anti pumping feature , 100% rated neutral . ACB shall have separate indication for service, test, isolation & maintenance position, Breaking capacity $I_{cu} = I_{cs} = I_{cw}$ ( 1 sec ) , $U_{imp}$ - 12 KV, break time not more than 25 ms. Provision for electrical & mechanical interlock between ACBs, Min.electrical operation 10000 upto 2000 A rating and 5,000 for 2500 A to 4000 A. including making connections, testing etc. as required. OEM shall have submit NABL / CPRI / ERDA accredited lab type test certificate before execution. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer <b>Annexure 'A' attached with this BSR</b>		
<b>9.1.1</b>	<b>Microprocessor based release Draw out type (Manual spring charged) 3 Pole</b>		
9.1.1.1	630/800 A Rating , 50 kA	Each	136853.00
9.1.1.2	1000 A Rating , 50 kA	Each	146321.00
9.1.1.3	1250 A Rating ,50 kA	Each	161878.00
9.1.1.4	1600 A Rating ,50 kA	Each	177381.00
9.1.1.5	2000 A Rating ,50 kA	Each	218379.00
9.1.1.6	2500 A Rating ,50 kA	Each	261020.00
9.1.1.7	3200 A Rating ,65 kA	Each	333331.00
9.1.1.8	4000 A Rating ,65 kA	Each	422228.00
<b>9.1.2</b>	<b>Microprocessor based release Draw out type ( Motorised charging type ) 3Pole</b>		
9.1.2.1	630/800 A Rating , 50 kA	Each	166488.00
9.1.2.2	1000 A Rating , 50 kA	Each	175949.00
9.1.2.3	1250 A Rating ,50 kA	Each	186343.00
9.1.2.4	1600 A Rating ,50 kA	Each	208833.00
9.1.2.5	2000 A Rating ,50 kA	Each	253265.00
9.1.2.6	2500 A Rating ,50 kA	Each	289229.00
9.1.2.7	3200 A Rating ,65 kA	Each	364180.00
9.1.2.8	4000 A Rating ,65 kA	Each	429335.00
<b>9.1.3</b>	<b>Microprocessor based release Draw out type (Manual spring charged) 4 Pole</b>		
9.1.3.1	630/800 A Rating , 50 kA	Each	171863.00
9.1.3.2	1000 A Rating , 50 kA	Each	178861.00
9.1.3.3	1250 A Rating ,50 kA	Each	208960.00
9.1.3.4	1600 A Rating ,50 kA	Each	226734.00
9.1.3.5	2000 A Rating ,50 kA	Each	281011.00
9.1.3.6	2500 A Rating ,50 kA	Each	333351.00
9.1.3.7	3200 A Rating ,65 kA	Each	406058.00
9.1.3.8	4000 A Rating ,65 kA	Each	564113.00

Item No.	Description	Unit	Rate (Rs.)
<b>9.1.4</b>	<b>Microprocessor based release Draw out type ( Motorised charging type ) 4 Pole</b>		
9.1.4.1	630/800 A Rating ,50 kA	Each	203823.00
9.1.4.2	1000 A Rating , 50 kA	Each	214095.00
9.1.4.3	1250 A Rating ,50 kA	Each	227825.00
9.1.4.4	1600 A Rating ,50 kA	Each	255522.00
9.1.4.5	2000 A Rating ,50 kA	Each	304023.00
9.1.4.6	2500 A Rating ,50 kA	Each	358982.00
9.1.4.7	3200 A Rating ,65 kA	Each	437943.00
9.1.4.8	4000 A Rating ,65 kA	Each	538469.00
<b>9.2</b>	Supply and fixing of following accessories for Air circuit breaker (ACB) compatible with MAin ACB OEM as per PWD specification for electrical Works, conforming to IS/IEC 60947 P - 2 :2003 including making connection etc complete in all respect. OEM shall have submit NABL / CPRI / ERDA accredited lab type test certificate before execution. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
9.2.1	Mechanical Interlocking Kit using key & Lock	Each	9058.00
9.2.2	Closing Release	Each	12304.00
9.2.3	Shunt Trip Release	Each	2783.00
9.2.4	Under voltage Release	Each	4434.00
9.2.5	External Neutral CT cast resin	Each	6630.00
9.2.6	Microswitch for Indication	Each	2421.00
9.2.7	Operation Counter	Each	8150.00
9.2.8	Door Interlock	Each	3301.00
9.2.9	Auxiliary Contact 4 NO + 4 NC	Each	5504.00
9.2.10	Breaker Control Switch (TNC)	Each	1290.00
<b>9.3</b>	SITC of 3 /4 pole current limiting Moulded case circuit breaker (MCCB) made of flame retardent & heat resistant material having following current rating, short circuit breaking capacity at 440/415 V, 50 Hz; O/L & S/C settings , conforming to IS/IEC 60947 P -2 :2003 with front face and centralised adjustable, trip free mechanism, true contact position indicator, line load interchangeability, designed for both horizontal & vertical mounting without any adverse effect on electrical performance, suitable for operation upto 55 degree and without derating upto 40 degree, pollution degree 3, having positive isolation capability, push (test) to trip, trip time less then 10 ms under s/c condition, <b>Breaking capacity Ics = 100% Icu.</b> U imp =8 KV, rated insulation voltage 690 V. provision for UVR , shunt trip , earth fault trip, door interlock, pad lock & rotary handle , including making connections etc. as required.OEM shall have submit NABL / CPRI / ERDA accredited lab type test certificate before execution All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
<b>9.3.1</b>	<b>3 pole MCCB With Thermal Magnetic release</b>		
9.3.1.1	up to 100 Amp , 10 kA, fixed O/L & fixed S/C setting	Each	1698.00
9.3.1.2	up to 100 Amp , 25 kA, adjustable O/L & adjustable S/C setting,	Each	5170.00
9.3.1.3	125 Amp , 25 kA, adjustable O/L & adjustable S/C setting,	Each	6387.00

Item No.	Description	Unit	Rate (Rs.)
9.3.1.4	160 Amp , 25 kA, adjustable O/L & adjustable S/C setting,	Each	9961.00
9.3.1.5	200 Amp , 25 kA, adjustable O/L & adjustable S/C setting,	Each	13188.00
9.3.1.6	250 Amp , 25 kA, adjustable O/L & adjustable S/C setting,	Each	15326.00
9.3.1.7	250 Amp , 35 kA, adjustable O/L & adjustable S/C setting,	Each	16117.00
9.3.1.8	400 Amp , 35 kA, adjustable O/L & adjustable S/C setting,	Each	19732.00
9.3.1.9	630 Amp , 50 kA, adjustable O/L & adjustable S/C setting,	Each	28237.00
9.3.1.10	800 Amp , 50 kA, adjustable O/L & adjustable S/C setting,	Each	51440.00
9.3.2	<b>3 pole MCCB With Microprocessor based release with adjustable O/L &amp; S/C setting with Inbuilt Instantaneous and Ground fault Protection.</b>		
9.3.2.1	250 Amp , 25 kA	Each	28482.00
9.3.2.2	400 Amp , 35 kA	Each	33918.00
9.3.2.3	630 Amp , 50 kA	Each	37833.00
9.3.2.4	800 Amp , 50 kA	Each	63519.00
9.3.3	<b>4 pole MCCB With Thermal Magnetic release</b>		
9.3.3.1	up to 100 Amp , 10 kA, fixed O/L & fixed S/C setting	Each	2215.00
9.3.3.2	up to 100 Amp , 25 kA, adjustable O/L & adjustable S/C setting,	Each	7112.00
9.3.3.3	125 Amp , 25 kA, adjustable O/L & adjustable S/C setting,	Each	8391.00
9.3.3.4	160 Amp , 25 kA, adjustable O/L & adjustable S/C setting,	Each	11835.00
9.3.3.5	200 Amp , 25 kA, adjustable O/L & adjustable S/C setting,	Each	15348.00
9.3.3.6	250 Amp , 25 kA, adjustable O/L & adjustable S/C setting,	Each	17480.00
9.3.3.7	250 Amp , 35 kA, adjustable O/L & adjustable S/C setting,	Each	19792.00
9.3.3.8	400 Amp , 35 kA, adjustable O/L & adjustable S/C setting,	Each	23846.00
9.3.3.9	630 Amp , 50 kA, adjustable O/L & adjustable S/C setting,	Each	34513.00
9.3.3.10	800 Amp , 50 kA, adjustable O/L & adjustable S/C setting,	Each	39173.00
9.3.4	<b>4 pole MCCB With Microprocessor based release with adjustable O/L &amp; S/C setting with Inbuilt Instantaneous and Ground fault Protection.</b>		
9.3.4.1	Upto 160 Amp , 50 kA	Each	34818.00
9.3.4.2	250 Amp , 50 kA	Each	38201.00
9.3.4.3	400 Amp , 50 kA	Each	40781.00
9.3.4.4	630 Amp , 50 kA	Each	46531.00
9.3.4.5	800 Amp , 50 kA	Each	76151.00
9.4	Supply and fixing of following accessories for Moulded case circuit breaker (MCCB) compatible to main MCCB OEM as per PWD specification for electrical Works, conforming to IS/IEC 60947 P - 2 :2003 including making connection etc complete in all respect. OEM shall have submit NABL / CPRI / ERDA accredited lab type test certificate before execution. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
9.4.1	Shunt Trip Release	Each	1424.00
9.4.2	Under Voltage Release	Each	2673.00
9.4.3	Extended Rotary Handle	Each	2713.00
9.4.4	Direct Rotary Handle	Each	1651.00
9.4.5	Mechanical Interlocking kit	Each	6943.00
9.4.6	Motor mechanism for 250A MCCB (240V, 50Hz)	Each	22292.00
9.4.7	Motor mechanism for 400A MCCB (240V, 50Hz)	Each	27447.00
9.4.8	Motor mechanism for 630A MCCB (240V, 50Hz)	Each	41221.00

Item No.	Description	Unit	Rate (Rs.)
9.4.9	Auxiliary contact	Each	1345.00
9.4.10	Trip Alarm contact	Each	1345.00
9.4.11	Auxiliary + Trip alarm contact	Each	1634.00
9.4.12	Spreaders upto 125A, 3 Pole MCCB	Set	389.00
9.4.13	Spreaders for 160A, 3 Pole MCCB	Set	1162.00
9.4.14	Spreaders for 160A, 4 Pole MCCB	Set	1507.00
9.4.15	Spreaders for 250A, 3 Pole MCCB	Set	1196.00
9.4.16	Spreaders for 250A, 4 Pole MCCB	Set	1541.00
9.4.17	Spreaders for 400A, 3Pole MCCB	Set	2204.00
9.4.18	Spreaders for 400A, 4Pole MCCB	Set	3101.00
9.4.19	Spreaders for 630A, 3Pole MCCB	Set	2594.00
9.4.20	Spreaders for 630A, 4Pole MCCB	Set	3427.00
9.4.21	Spreaders for 800A, 3Pole MCCB	Set	5376.00
9.4.22	Spreaders for 800A, 4Pole MCCB	Set	6767.00
9.4.23	Phase Barriers up to 630A, 3/4Pole MCCB	Set	1106.00
9.4.24	External Neutral CT with Adaptor Kit	Set	4596.00
9.4.25	Current Metering Module	Set	19125.00
9.5	Providing & Fixing of IK08 and IP-30 Recessed/surface mounting heavy duty Enclosure suitable for mounting 3 / 4 pole MCCB, Inbuilt neutral link made out from Galvanized steel / CRCA sheet not less than 1.2 mm thick conforming to IS-8623-1 & 3 / IEC 61439- 1 & 3. powder painted complete with din rail making internal DB terminations, detachable gland plate, including making connections, testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
9.5.1	Suitable to accommodate up to 70 sqmm 3.5 core Al arm. Cable	Each	1830.00
9.5.2	Suitable to accommodate above 70 sqmm 3.5 core Al arm. Cable to 185 Sqm , 3.5 core Al Arm. Cable	Each	3951.00
9.6	SITC of IP-43 surface mounting heavy duty modular Sub main Distribution board (SMDB) fabricated by switchgear OEM having short circuit withstand current 35 kA (upto 400 amp. Incomer ) and 50 kA for 630 amp. Incomer with suitable bottom cabling box, 4 no. corner boxes, 2 no. side cabling boxes, metering Extension box with provision of incomer suitable for 3 pole MCCB and 3 pole MCCB as outgoing ,made out from Galvanized steel / CRCA sheet not less than 1.6 mm thick conforming to IEC 61439 Part 1 & 2. , U imp 8 KV, form of separation 2b, powder painted complete with insulated suitable rating tinned copper bus bar, neutral bars with shrouds, earth bar , din bar, making internal DB terminations with copper lugs, detachable gland plate, including making connections, testing etc. as required. (Without MCCB, ammeter, voltmeter, selector switch , Indicating lamp) OEM shall have submit NABL / CPRI / ERDA accredited lab type test certificate before execution. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
9.6.1	SMDB with 250 Amp. Incoming and 4 no. 100 Amps Outgoing	Set	62558.00
9.6.2	SMDB with 250 Amp. Incoming and 8 no. 100 Amps Outgoing	Set	72351.00
9.6.3	SMDB with 250 Amp. Incoming and 12 no. 100 Amps Outgoing	Set	86012.00

Item No.	Description	Unit	Rate (Rs.)
9.6.4	SMDB with 400 Amp. Incoming and 4 no. 100 Amps Outgoing	Set	72482.00
9.6.5	SMDB with 400 Amp. Incoming and 8 no. 100 Amps Outgoing	Set	80007.00
9.6.6	SMDB with 400 Amp. Incoming and 12 no. 100 Amps Outgoing	Set	94061.00
9.6.7	SMDB with 630 Amp. Incoming and 4 no. 100 Amps Outgoing	Set	103968.00
9.6.8	SMDB with 630 Amp. Incoming and 8 no. 100 Amps Outgoing	Set	108948.00
9.6.9	SMDB with 630 Amp. Incoming and 12 no. 100 Amps Outgoing	Set	135558.00
9.6.10	SMDB with 630 Amp. Incoming and 6 no. 100 Amps + 2 No. 250 amp. Outgoing	Set	112229.00
9.6.11	SMDB with 630 Amp. Incoming and 10 no. 100 Amps + 2 No. 250 amp. Outgoing	Set	137142.00



**CHAPTER : E-10**  
**SWITCH FUSE UNIT & CHANGE OVER SWITCH & BUS BAR CHAMBER**

Item No.	Description	Unit	Rate (Rs.)
10.1	Providing & Fixing of ISO certified company made TP&N 415 V side handle operated double break fuse switch unit in sheet steel enclosure as per PWD specification for electrical Works conforming to IS/IEC 60947-3 : 1999 (W/O HBC fuses) including making connections with suitable lugs, testing etc. as required. Appropriate type test certificate / OEM test report shall be submitted . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
10.1.1	63 A rating	Each	6610.00
10.1.2	100 A rating	Each	8974.00
10.1.3	200 A rating	Each	15278.00
10.1.4	300/320 A rating	Each	17460.00
10.1.5	400 A rating	Each	24949.00
10.1.6	500 A rating	Each	34973.00
10.2	Providing & Fixing of ISO certified company made TP&N 415 V AC-23A front handle operated switch disconnecter fuse unit, cubical type, with metallic enclosure, as per PWD specification for electrical Works conforming to IS/IEC 60947-3 : 1999 with HBC fuses including making connections with lugs, testing etc as required. Appropriate type test certificate / OEM test report shall be submitted . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
10.2.1	32 A rating	Each	3841.00
10.2.2	63 A rating	Each	4537.00
10.2.3	100/125 A rating	Each	7344.00
10.2.4	160 A rating	Each	9320.00
10.2.5	200 A rating	Each	12707.00
10.2.6	250 A rating	Each	14596.00
10.2.7	300/320 A rating	Each	17038.00
10.2.8	400 A rating	Each	19440.00
10.2.9	630 A rating	Each	30849.00
10.3	Providing & Fixing of ISO certified company made TP&N 415 V AC-23A front handle operated switch disconnecter fuse unit, cubical type, without metallic enclosure (For Panel Mounting), as per PWD specification for electrical Works conforming to IS/IEC 60947-3 : 1999 in existing panel With HBC fuses including making connections with lugs, testing etc as required. Appropriate type test certificate / OEM test report shall be submitted . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
10.3.1	32 A rating	Each	1970.00
10.3.2	63 A rating	Each	2717.00
10.3.3	100/125 A rating	Each	5611.00
10.3.4	160 A rating	Each	7743.00
10.3.5	200 A rating	Each	9711.00
10.3.6	250 A rating	Each	11304.00
10.3.7	300/320 A rating	Each	13798.00

Item No.	Description	Unit	Rate (Rs.)
10.3.8	400 A rating	Each	16990.00
10.3.9	630 A rating	Each	26682.00
10.4	Providing & Fixing of ISO certified company made bakelite fuse fitting for HBC fuse links (front/bus bar connections) Conforms To IS 13703/IEC 269 w/o HBC fuses as per PWD specification for electrical Works on existing board including making connections with lugs, testing etc. as required. Appropriate type test certificate / OEM test report shall be submitted . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
10.4.1	20 A rating	Each	170.00
10.4.2	32 A rating	Each	190.00
10.4.3	63 A rating	Each	312.00
10.4.4	100/125 A rating	Each	878.00
10.5	Providing & Fixing of ISO certified company made 240/415 V porcelain kitkat fuse (/HBC type) as per PWD specification for electrical Works conforming to IS:2086,1983 on existing board/ sheet including making connections with lugs, testing etc. as required . Appropriate type test certificate / OEM test report shall be submitted . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
10.5.1	16 A ,240 V	Each	88.00
10.5.2	16 A ,415 V	Each	133.00
10.5.3	32 A ,240 V	Each	135.00
10.5.4	32 A ,415 V	Each	164.00
10.5.5	63 A , 415 V	Each	250.00
10.5.6	100 A ,415 V	Each	486.00
10.5.7	200 A , 415 V	Each	893.00
10.5.8	320 A , 415 V	Each	1363.00
10.6	Providing & Fixing of ISO certified company made bolted type/ Din type HBC (High breaking capacity) fuse links of 80 KA breaking capacity,as per PWD specification for electrical Works conforming to IS:13703 in the existing fuse base, fuse switch unit etc. of the following type and rating. Appropriate type test certificate / OEM test report shall be submitted . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
10.6.1	<b>Cylindrical Fuse Link</b>		
10.6.1.1	2 A to 32 A	Each	90.00
10.6.1.2	40 A	Each	99.00
10.6.1.3	50 A	Each	210.00
10.6.1.4	63A	Each	252.00
10.6.2	<b>Offset tag type</b>		
10.6.2.1	2 A to 20 A	Each	44.00
10.6.2.2	25 A to 32 A	Each	75.00
10.6.2.3	35 A to 63 A	Each	105.00
10.6.2.4	80 A to 125 A	Each	368.00

Item No.	Description	Unit	Rate (Rs.)
10.6.3	<b>Central tag type</b>		
10.6.3.1	80 A to 125 A	Each	293.00
10.6.3.2	160 A to 200 A	Each	333.00
10.6.3.3	250 A to 315 A	Each	487.00
10.6.3.4	400 A to 500 A	Each	1325.00
10.6.3.5	630 A	Each	1448.00
10.6.4	<b>Din (knife type) type</b>		
10.6.4.1	63 A to 125 A Size 000	Each	357.00
10.6.4.2	63 A to 160 A Size 00	Each	388.00
10.6.4.3	80 A to 200 A Size 0	Each	534.00
10.6.4.4	125 A to 315 A Size 1	Each	639.00
10.6.4.5	200 A to 400 A Size 2	Each	843.00
10.6.4.6	315A to 800 A Size 3	Each	2831.00
10.7	Providing & Fixing of ISO certified company made on load change over switch, front handle operated, four pole 415 V as per PWD specification for electrical Works conforming to IS/IEC 60947-3 : 1999 including connections , testing etc. as required .in the following rating. Appropriate type test certificate / OEM test report shall be submitted . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
10.7.1	<b>Open execution type</b>		
10.7.1.1	63 A	Each	4038.00
10.7.1.2	125 A	Each	7149.00
10.7.1.3	160 A	Each	8750.00
10.7.1.4	200 A	Each	11691.00
10.7.1.5	250 A	Each	15975.00
10.7.1.6	320 A	Each	17693.00
10.7.1.7	400 A	Each	26014.00
10.7.1.8	630 A	Each	33366.00
10.7.1.9	800 A	Each	43651.00
10.7.1.10	1000 A	Each	51154.00
10.7.2	<b>With sheet steel enclosure made out from CRCA sheet door 1.2mm &amp; body 1.6mm thick, powder quoted, door locking system allow opening of door in OFF position only with 2 nos external earthing points.</b>		
10.7.2.1	63 A	Each	5321.00
10.7.2.2	125 A	Each	9124.00
10.7.2.3	160 A	Each	11293.00
10.7.2.4	200 A	Each	13064.00
10.7.2.5	250 A	Each	17448.00
10.7.2.6	320 A	Each	21055.00
10.7.2.7	400 A	Each	29271.00
10.7.2.8	630 A	Each	34861.00
10.7.2.9	800 A	Each	49836.00
10.7.2.10	1000 A	Each	57567.00

Item No.	Description	Unit	Rate (Rs.)
10.8	Providing & Fixing of ISO certified company made off load change over switch four pole/two pole, 230/ 415 V ,side handle operated conforming to IS:13947 P-III in sheet steel enclosure complete with connections with lugs, testing etc. as required in the following rating: All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
10.8.1	32 A, Double pole	Each	1518.00
10.8.2	32 A, Four pole	Each	2593.00
10.8.3	63 A Four pole	Each	5081.00
10.8.4	100 A Four pole	Each	9806.00
10.8.5	200 A Four pole	Each	14789.00
10.8.6	315 A Four pole	Each	18995.00
10.8.7	400 A Four pole	Each	21870.00
10.9	Providing & Fixing of ISO certified company made Four Pole By pass Change Over Switch conforming to IS:13947(Part 3) : IEC:60947-3-1 and IEC:60947-6-1, Open execution type in the following ratings. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
10.9.1	63 A	Each	13430.00
10.9.2	100 A	Each	15388.00
10.9.3	200 A	Each	21040.00
10.9.4	320 A	Each	31470.00
10.9.5	400 A	Each	46810.00
10.9.6	630 A	Each	53363.00
10.9.7	800 A	Each	67925.00
10.9.8	1000 A	Each	121779.00
10.10	Providing & Fixing of ISO certified company made bus bar chamber housed in sheet metal box as per PWD specification for electrical Works Confirming to IEC-60439/IS-8623 & IEC-60529/IS-2147 made out from 1.6 mm thick powder coated CRCA sheet,degree of protection IP-31, front openable bus bar made out of aluminium or wrought aluminium alloy suitable for 100 amp. Capacity , bus bar fixed on porcelain/DMC insulators at approved spacing including making connections etc. as required. Appropriate type test certificate / OEM test report shall be submitted . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
10.10.1	300 mm long , 2 strip	Each	814.0
10.10.2	300 mm long , 4 strip	Each	1012.0
10.10.3	450 mm long , 2 strip	Each	1154.0
10.10.4	450 mm long , 4 strip	Each	1720.0
10.10.5	600 mm long ,2 strip	Each	1495.0
10.10.6	600 mm long , 4 strip	Each	1972.0
10.10.7	900 mm long , 2 strip	Each	1971.0
10.10.8	900 mm long , 4 strip	Each	2789.0

Item No.	Description	Unit	Rate (Rs.)
10.11	Providing & Fixing of ISO certified company made bus bar chamber housed in sheet metal box as per PWD specification for electrical Works Confirming to IEC-60439/ IS-8623 & IEC-60529/ IS-2147 made out from 1.6 mm thick powder coated CRCA sheet,degree of protection IP-31 front openable bus bar made out of aluminium or wrought aluminium alloy suitable for 200 amp. Capacity , bus bar fixed on porcelain/DMC insulators at approved spacing including making connections etc. as required. Appropriate type test certificate / OEM test report shall be submitted . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR		
10.11.1	300 mm long , 4 strip	Each	1701.0
10.11.2	450 mm long , 4 strip	Each	2654.0
10.11.3	600 mm long , 4 strip	Each	2825.0
10.11.4	900 mm long , 4 strip	Each	3812.0
10.12	Providing & Fixing of ISO certified company made bus bar chamber housed in sheet metal box as per PWD specification for electrical Works Confirming to IEC-60439/IS-8623 & IEC-60529/IS-2147 made out from 1.6 mm thick powder coated CRCA sheet,degree of protection IP-31, front openable bus bar made out of <b>Copper</b> suitable for 100 amp. Capacity , bus bar fixed on porcelain/DMC insulators at approved spacing including making connections etc. as required. Appropriate type test certificate / OEM test report shall be submitted . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
10.12.1	300 mm long , 2 strip	Each	2110.0
10.12.2	300 mm long , 4 strip	Each	4292.0
10.12.3	450 mm long , 2 strip	Each	2586.0
10.12.4	450 mm long , 4 strip	Each	5041.0
10.12.5	600 mm long ,2 strip	Each	3405.0
10.12.6	600 mm long , 4 strip	Each	6542.0
10.12.7	900 mm long , 2 strip	Each	4699.0
10.12.8	900 mm long , 4 strip	Each	8518.0
10.13	Providing & Fixing of ISO certified company made bus bar chamber housed in sheet metal box as per PWD specification for electrical Works Confirming to IEC-60439/IS-8623 & IEC-60529/IS-2147 made out from 1.6 mm thick powder coated CRCA sheet,degree of protection IP-31, front openable bus bar made out of <b>Copper</b> suitable for 200 amp. Capacity , bus bar fixed on porcelain/DMC insulators at approved spacing including making connections etc. as required. Appropriate type test certificate / OEM test report shall be submitted . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
10.13.1	300 mm long , 4 strip	Each	4974.0
10.13.2	450 mm long , 4 strip	Each	5723.0
10.13.3	600 mm long , 4 strip	Each	8178.0
10.13.4	900 mm long , 4 strip	Each	11246

**CHAPTER : E-11**  
**LT CABLES**

Item No.	Description	Unit	Rate (Rs.)
11.1	Providing & Laying P.V.C. / XLPE insulated & P.V.C. sheathed Un-Armoured Aluminium cable confirming to IS:1554 P-I / IS :7098 P - I of 1.1 KV with H4- Grade electrolytic aluminium conductor confirming to IS 8130 of purity >99.6 %, Inner / outer sheath confirming to IS:5831 in existing RCC / Hume / Stoneware / PVC pipe/ open duct/cable trench / Cable tray (with cable tie) including testing etc. as required of following size. OEM must have it's own in house NABL accredited Laboratory for testing procedure as per IS:10810. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
<b>11.1.1</b>	<b>4.0 Sq. mm</b>		
11.1.1.1	2 core	Mtr	49.00
11.1.1.2	3 core	Mtr	61.00
11.1.1.3	4 core	Mtr	70.00
<b>11.1.2</b>	<b>6.0 Sq. mm</b>		
11.1.2.1	2 core	Mtr	63.00
11.1.2.2	3 core	Mtr	78.00
11.1.2.3	4 core	Mtr	91.00
<b>11.1.3</b>	<b>10.0 Sq. mm</b>		
11.1.3.1	2 core	Mtr	89.00
11.1.3.2	3 core	Mtr	106.00
11.1.3.3	4 core	Mtr	117.00
<b>11.1.4</b>	<b>16.0 Sq. mm</b>		
11.1.4.1	2 core	Mtr	96.00
11.1.4.2	3 core	Mtr	118.00
11.1.4.3	4 core	Mtr	143.00
<b>11.1.5</b>	<b>25.0 Sq. mm</b>		
11.1.5.1	2 core	Mtr	123.00
11.1.5.2	3 core	Mtr	166.00
11.1.5.3	3.5 core	Mtr	205.00
<b>11.1.6</b>	<b>35.0 Sq. mm</b>		
11.1.6.1	2 core	Mtr	168.00
11.1.6.2	3 core	Mtr	225.00
11.1.6.3	3.5 core	Mtr	250.00
<b>11.1.7</b>	<b>50.0 Sq. mm</b>		
11.1.7.1	2 core	Mtr	204.00
11.1.7.2	3 core	Mtr	283.00
11.1.7.3	3.5 core	Mtr	334.00
<b>11.1.8</b>	<b>70.0 Sq. mm</b>		
11.1.8.1	2 core	Mtr	282.00
11.1.8.2	3 core	Mtr	401.00
11.1.8.3	3.5 core	Mtr	454.00
<b>11.1.9</b>	<b>95.0 Sq. mm</b>		
11.1.9.1	1 core	Mtr	201.00
11.1.9.2	3.5 core	Mtr	571.00
<b>11.1.10</b>	<b>120.0 Sq. mm</b>		
11.1.10.1	1 core	Mtr	245.00
11.1.10.2	3.5 core	Mtr	723.00
<b>11.1.11</b>	<b>150.0 Sq. mm</b>		
11.1.11.1	1 core	Mtr	290.00
11.1.11.2	3.5 core	Mtr	849.00
<b>11.1.12</b>	<b>185.0 Sq. mm</b>		

Item No.	Description	Unit	Rate (Rs.)
11.1.12.1	1 core	Mtr	356.00
11.1.12.2	3.5 core	Mtr	1062.00
<b>11.1.13</b>	<b>240.0 Sq. mm</b>		
11.1.13.1	1 core	Mtr	410.00
11.1.13.2	3.5 core	Mtr	1277.00
<b>11.1.14</b>	<b>300.0 Sq. mm</b>		
11.1.14.1	1 core	Mtr	502.00
11.1.14.2	3.5 core	Mtr	1621.00
<b>11.1.15</b>	<b>400.0 Sq. mm</b>		
11.1.15.1	1 core	Mtr	630.00
11.1.15.2	3.5 core	Mtr	2054.00
<b>11.1.16</b>	<b>500.0 Sq. mm</b>		
11.1.16.1	1 core	Mtr	816.00
11.1.16.2	3.5 core	Mtr	2643.00
<b>11.1.17</b>	<b>630.0 Sq. mm</b>		
11.1.17.1	1 core	Mtr	1010.00
11.1.17.2	3.5 core	Mtr	3604.00
<b>11.1.18</b>	<b>800.0 Sq. mm</b>		
11.1.18.1	1 core	Mtr	1308.00
<b>11.1.19</b>	<b>1000.0 Sq. mm</b>		
11.1.19.1	1 core	Mtr	1663.00
<b>11.2</b>	Providing & Laying P.V.C. / XLPE insulated & P.V.C. sheathed Armoured Aluminium cable confirming to IS:1554 P-I / IS :7098 P - I of 1.1 KV with H4- Grade electrolytic aluminium conductor confirming to IS 8130 of purity >99.6 %, round / flat strip armouring of cables, Inner / outer sheath confirming to IS:5831 in existing RCC / Hume / Stoneware / PVC pipe/ open duct/cable trench / Cable tray(with cable tie) including testing etc. as required of following size. OEM must have it's own in house NABL accredited Laboratory for testing procedure as per IS:10810.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
<b>11.2.1</b>	<b>4.0 Sq. mm</b>		
11.2.1.1	2 core	Mtr	87.00
11.2.1.2	3 core	Mtr	98.00
11.2.1.3	4 core	Mtr	111.00
<b>11.2.2</b>	<b>6.0 Sq. mm</b>		
11.2.2.1	2 core	Mtr	102.00
11.2.2.2	3 core	Mtr	117.00
11.2.2.3	4 core	Mtr	133.00
<b>11.2.3</b>	<b>10.0 Sq. mm</b>		
11.2.3.1	2 core	Mtr	122.00
11.2.3.2	3 core	Mtr	143.00
11.2.3.3	4 core	Mtr	154.00
<b>11.2.4</b>	<b>16.0 Sq. mm</b>		
11.2.4.1	2 core	Mtr	137.00
11.2.4.2	3 core	Mtr	154.00
11.2.4.3	4 core	Mtr	186.00
<b>11.2.5</b>	<b>25.0 Sq. mm</b>		
11.2.5.1	2 core	Mtr	160.00
11.2.5.2	3 core	Mtr	195.00
11.2.5.3	3.5 core	Mtr	228.00
<b>11.2.6</b>	<b>35.0 Sq. mm</b>		
11.2.6.1	2 core	Mtr	197.00
11.2.6.2	3 core	Mtr	254.00

Item No.	Description	Unit	Rate (Rs.)
11.2.6.3	3.5 core	Mtr	278.00
<b>11.2.7</b>	<b>50.0 Sq. mm</b>		
11.2.7.1	2 core	Mtr	240.00
11.2.7.2	3 core	Mtr	333.00
11.2.7.3	3.5 core	Mtr	366.00
<b>11.2.8</b>	<b>70.0 Sq. mm</b>		
11.2.8.1	1 core	Mtr	204.00
11.2.8.2	2 core	Mtr	318.00
11.2.8.3	3 core	Mtr	435.00
11.2.8.4	3.5 core	Mtr	488.00
<b>11.2.9</b>	<b>95.0 Sq. mm</b>		
11.2.9.1	1 core	Mtr	230.00
11.2.9.2	3.5 core	Mtr	612.00
<b>11.2.10</b>	<b>120.0 Sq. mm</b>		
11.2.10.1	1 core	Mtr	282.00
11.2.10.2	3.5 core	Mtr	756.00
<b>11.2.11</b>	<b>150.0 Sq. mm</b>		
11.2.11.1	1 core	Mtr	329.00
11.2.11.2	3.5 core	Mtr	877.00
<b>11.2.12</b>	<b>185.0 Sq. mm</b>		
11.2.12.1	1 core	Mtr	397.00
11.2.12.2	3.5 core	Mtr	1132.00
<b>11.2.13</b>	<b>240.0 Sq. mm</b>		
11.2.13.1	1 core	Mtr	493.00
11.2.13.2	3.5 core	Mtr	1386.00
<b>11.2.14</b>	<b>300.0 Sq. mm</b>		
11.2.14.1	1 core	Mtr	597.00
11.2.14.2	3.5 core	Mtr	1690.00
<b>11.2.15</b>	<b>400.0 Sq. mm</b>		
11.2.15.1	1 core	Mtr	752.00
11.2.15.2	3.5 core	Mtr	2165.00
<b>11.2.16</b>	<b>500.0 Sq. mm</b>		
11.2.16.1	1 core	Mtr	916.00
11.2.16.2	3.5 core	Mtr	2758.00
<b>11.2.17</b>	<b>630.0 Sq. mm</b>		
11.2.17.1	1 core	Mtr	1115.00
11.2.17.2	3.5 core	Mtr	3778.00
<b>11.2.18</b>	<b>800.0 Sq. mm</b>		
11.2.18.1	1 core	Mtr	1421.00
<b>11.2.19</b>	<b>1000.0 Sq. mm</b>		
11.2.19.1	1 core	Mtr	1778.00
<b>11.3</b>	Providing & Laying P.V.C. / XLPE insulated & P.V.C. sheathed Un-armoured Copper cable confirming to IS:1554 P-I / IS :7098 P - I of 1.1 KV with electrolytic grade Copper made of copper rods confirming to IS 613-1964, of purity >99.7 %, Inner / outer sheath confirming to IS:5831 in existing RCC / Hume / Stoneware / PVC pipe/ open duct/cable trench / Cable tray (with cable tie) including testing etc. as required of following size. OEM must have it's own in house NABL accredited Laboratory for testing procedure as per IS:10810 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
<b>11.3.1</b>	<b>1.5 Sq. mm</b>		
11.3.1.1	2 core	Mtr	70.00
11.3.1.2	3 core	Mtr	87.00



Item No.	Description	Unit	Rate (Rs.)
11.3.1.3	4 core	Mtr	108.00
11.3.1.4	6 core	Mtr	147.00
11.3.1.5	8 core	Mtr	197.00
11.3.1.6	10 core	Mtr	242.00
11.3.1.7	12 core	Mtr	252.00
<b>11.3.2</b>	<b>2.5 Sq. mm</b>		
11.3.2.1	2 core	Mtr	96.00
11.3.2.2	3 core	Mtr	126.00
11.3.2.3	4 core	Mtr	161.00
11.3.2.4	6 core	Mtr	220.00
11.3.2.5	8 core	Mtr	299.00
11.3.2.6	10 core	Mtr	339.00
11.3.2.7	12 core	Mtr	414.00
<b>11.3.3</b>	<b>4.0 Sq. mm</b>		
11.3.3.1	2 core	Mtr	133.00
11.3.3.2	3 core	Mtr	182.00
11.3.3.3	4 core	Mtr	225.00
<b>11.3.4</b>	<b>6.0 Sq. mm</b>		
11.3.4.1	2 core	Mtr	186.00
11.3.4.2	3 core	Mtr	256.00
11.3.4.3	4 core	Mtr	323.00
<b>11.3.4</b>	<b>10.0 Sq. mm</b>		
11.3.5.1	2 core	Mtr	312.00
11.3.5.2	3 core	Mtr	425.00
11.3.5.3	4 core	Mtr	499.00
<b>11.3.5</b>	<b>16.0 Sq. mm</b>		
11.3.5.1	1 core	Mtr	234.00
11.3.5.2	2 core	Mtr	389.00
11.3.5.3	3 core	Mtr	610.00
11.3.5.4	4 core	Mtr	761.00
<b>11.3.6</b>	<b>25.0 Sq. mm</b>		
11.3.6.1	1 core	Mtr	346.00
11.3.6.2	2 core	Mtr	642.00
11.3.6.3	3 core	Mtr	922.00
11.3.6.4	4 core	Mtr	1178.00
<b>11.4</b>	Providing & Laying P.V.C. / XLPE insulated & P.V.C. sheathed Armoured Copper cable confirming to IS:1554 P-I / IS:7098 P - I of 1.1 KV with electrolytic grade Copper made of copper rods confirming to IS 613-1964, of purity >99.7 %, round / flat strip armouring, Inner / outer sheath confirming to IS:5831 in existing RCC / Hume / Stoneware / PVC pipe/ open duct/cable trench / Cable tray(with cable tie) including testing etc. as required of following size. OEM must have it's own in house NABL accredited Laboratory for testing procedure as per IS:10810 For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
<b>11.4.1</b>	<b>1.5 Sq. mm</b>		
11.4.1.1	2 core	Mtr	94.00
11.4.1.2	3 core	Mtr	114.00
11.4.1.3	4 core	Mtr	134.00
11.4.1.4	6 core	Mtr	178.00
11.4.1.5	8 core	Mtr	225.00
11.4.1.6	10 core	Mtr	269.00
11.4.1.7	12 core	Mtr	297.00
<b>11.4.2</b>	<b>2.5 Sq. mm</b>		

Item No.	Description	Unit	Rate (Rs.)
11.4.2.1	2 core	Mtr	124.00
11.4.2.2	3 core	Mtr	150.00
11.4.2.3	4 core	Mtr	185.00
11.4.2.4	6 core	Mtr	257.00
11.4.2.5	8 core	Mtr	330.00
11.4.2.6	10 core	Mtr	374.00
11.4.2.7	12 core	Mtr	436.00
<b>11.4.3</b>	<b>4.0 Sq. mm</b>		
11.4.3.1	2 core	Mtr	157.00
11.4.3.2	3 core	Mtr	203.00
11.4.3.3	4 core	Mtr	259.00
<b>11.4.4</b>	<b>6.0 Sq. mm</b>		
11.4.4.1	2 core	Mtr	210.00
11.4.4.2	3 core	Mtr	278.00
11.4.4.3	4 core	Mtr	370.00
<b>11.4.5</b>	<b>10.0 Sq. mm</b>		
11.4.5.1	2 core	Mtr	326.00
11.4.5.2	3 core	Mtr	441.00
11.4.5.3	4 core	Mtr	552.00
<b>11.4.6</b>	<b>16.0 Sq. mm</b>		
11.4.6.1	1 core	Mtr	278.00
11.4.6.2	2 core	Mtr	426.00
11.4.6.3	3 core	Mtr	638.00
11.4.6.4	4 core	Mtr	817.00
<b>11.4.7</b>	<b>25.0 Sq. mm</b>		
11.4.7.1	1 core	Mtr	398.00
11.4.7.2	2 core	Mtr	667.00
11.4.7.3	3 core	Mtr	982.00
11.4.7.4	4 core	Mtr	1258.00
<b>11.4.8</b>	<b>35 Sq. mm</b>		
11.4.8.1	1 core	Mtr	534.00
11.4.8.2	2 core	Mtr	923.00
11.4.8.3	3 core	Mtr	1321.00
11.4.8.4	4 core	Mtr	1801.00
<b>11.4.9</b>	<b>50 Sq. mm</b>		
11.4.9.1	1 core	Mtr	750.00
11.4.9.2	2 core	Mtr	1256.00
11.4.9.3	3 core	Mtr	1825.00
11.4.9.4	4 core	Mtr	2410.00
<b>11.5</b>	Add Extra for Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade direct in ground including excavation of trench of size 75 cm (Depth) x 35 cm(Width) , with procedure as per following points:- (a) Make a river sand bed of height 125 mm along the trench, (b) Lay the cable in the middle of the trench, (c) Provide river sand bed of height 125 mm on top of the cable, (d) Lay the protective Common burnt clay F.P.S. Bricks of Class designation 75 / Sand stone slabs of 50 mm thickness and 225 mm wide just above the sand bed vertically across the cable ( Approx. 9 no. Bricks per Mtr.), (e) Backfill the excavated soil leaving 300 mm from the Ground level, (f)Lay the Cable warning tape and again back-fill the remaining portion of the trench upto the ground level and compacting the earth	Mtr	185.00
<b>11.6</b>	Add Extra in Item no.11.5 if Excavation done in Hard Rock / CC road / TAR Road and making Good the same	Mtr	24.00

Item No.	Description	Unit	Rate (Rs.)
11.7	Add Extra for Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade direct in ground in the same trench in one tier horizontal formation including excavation of trench of size additional 20 cm in width, with procedure as per following points :- (a) Make a river sand bed of height 125 mm along the trench, (b) Lay another cable in middle of trench in such manner that spacing between another cable is 20 cm., (c) Provide river sand bed of height 125 mm on top of the cable. (d) Lay the protective Common burnt clay F.P.S. Bricks of Class designation 75 /Sand stone slabs of 50 mm thickness and 225 mm wide just above the sand bed vertically across the cable ( Approx. 9 no. Bricks per Mtr.), (e) Backfill the excavated soil leaving 300 mm from the Ground level, (f)Lay the Cable warning tape and again back-fill the remaining portion of the trench upto the ground level and compacting the earth	Mtr	127.00
11.8	Add Extra in Item no. 11.7 if Excavation done in Hard Rock / CC road / TAR Road and making Good the same	Mtr	14.00
11.09	Add Extra in item no. 11.1 to 11.4 for Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.		
11.09.1	Up to 35 Sq.mm fixed with 25 mm x 2 mm thick suitable length red oxide and enamel painted MS clamp and base, pvc rawl plug and screws of sufficient size with spacing 0.6 Mtr. Between Clamps.	Mtr	39.00
11.09.2	Above 35 sq. mm and upto 95 sq. mm fixed with 40 mm x 3 mm thick suitable length red oxide and enamel painted MS clamp and base, pvc rawl plug and screws of sufficient size with spacing 0.6 Mtr. Between Clamps.	Mtr	67.00
11.09.3	Above 95 sq. mm and upto 185 sq. mm fixed with 40 mm x 4 mm thick suitable length red oxide and enamel painted MS clamp and base, pvc rawl plug and screws of sufficient size with spacing 0.6 Mtr. Between Clamps.	Mtr	92.00
11.09.4	Above 185 sq. mm and upto 400 sq. mm fixed with 50 mm x 5 mm thick suitable length red oxide and enamel painted MS clamp and base, pvc rawl plug and screws of sufficient size with spacing 0.6 Mtr. Between Clamps.	Mtr	141.00
11.10	Add extra in item no. 11.1 to 11.4 for Laying Charges for cable through Manual Boggi by making pit at regular interval and repairing the pit after laying of cable with PCC/ Bitumin as required.	Mtr	114.00
11.11	Add Extra in item no. 11.1 to 11.4 for Laying Charges for cable through Vermeer machine by making pit at regular interval and repairing the pit after laying of cable with PCC/ Bitumin as required.	Mtr	267.00

**CHAPTER : E-12**  
**LT CABLE TERMINATION & ACCESSORIES**

Item No.	Description	Unit	Rate (Rs.)
12.1	Supplying and making one end termination with Nickel plated heavy duty brass single compression gland (as per IS 12943-1990) SIBG type consisting of Check Nut, Gland Body, Metal Washer(3 Nos.), Outer Seal Rubber Ring, Compression Nut, heavy duty aluminium lugs (as per IS 8309 -1993) duly crimped with crimping tool, PVC tape as per IS 8337-1976 of following size of PVC insulated & PVC sheathed/ XLPE aluminium conductor cable of 1100 volt grade as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.1.1	2 x 4.0 sq.mm	Set	106.00
12.1.2	2 x 6.0 sq.mm	Set	142.00
12.1.3	2 x 10.0 sq.mm	Set	143.00
12.1.4	2 x 16.0 sq.mm	Set	145.00
12.1.5	2 x 25.0 sq.mm	Set	172.00
12.1.6	2 x 35.0 sq.mm	Set	200.00
12.1.7	2 x 50.0 sq.mm	Set	218.00
12.1.8	2 x 70.0 sq.mm	Set	251.00
12.1.9	3 x 4.0 sq.mm	Set	121.00
12.1.10	3 x 6.0 sq.mm	Set	157.00
12.1.11	3 x 10.0 sq.mm	Set	159.00
12.1.12	3 x 16.0 sq.mm	Set	172.00
12.1.13	3 x 25.0 sq.mm	Set	216.00
12.1.14	3 x 35.0 sq.mm	Set	219.00
12.1.15	3 x 50.0 sq.mm	Set	263.00
12.1.16	3 x 70.0 sq.mm	Set	282.00
12.1.17	3.5 x 25.0 sq.mm	Set	231.00
12.1.18	3.5 x 35.0 sq.mm	Set	258.00
12.1.19	3.5 x 50.0 sq.mm	Set	286.00
12.1.20	3.5 x 70.0 sq.mm	Set	382.00
12.1.21	3.5 x 95.0 sq.mm	Set	601.00
12.1.22	3.5 x 120.0 sq.mm	Set	708.00
12.1.23	3.5 x 150.0 sq.mm	Set	777.00
12.1.24	3.5 x 185.0 sq.mm	Set	1072.00
12.1.25	3.5 x 240.0 sq.mm	Set	1174.00
12.1.26	3.5 x 300.0 sq.mm	Set	1441.00
12.1.27	3.5 x 400.0 sq.mm	Set	2070.00
12.1.28	3.5 x 500.0 sq.mm	Set	2639.00
12.1.29	3.5 x 630.0 sq.mm	Set	3145.00
12.1.30	4 x 4.0 sq.mm	Set	136.00
12.1.31	4 x 6.0 sq.mm	Set	172.00
12.1.32	4 x 10.0 sq.mm	Set	185.00
12.1.33	4 x 16.0 sq.mm	Set	189.00
12.1.34	1 x 70.0 sq.mm	Set	202.00
12.1.35	1 x 95.0 sq.mm	Set	203.00
12.1.36	1 x 120.0 sq.mm	Set	234.00
12.1.37	1 x 150.0 sq.mm	Set	254.00
12.1.38	1 x 185.0 sq.mm	Set	374.00

Item No.	Description	Unit	Rate (Rs.)
12.1.39	1 x 240.0 sq.mm	Set	350.00
12.1.40	1 x 300.0 sq.mm	Set	465.00
12.1.41	1 x 400.0 sq.mm	Set	715.00
12.1.42	1 x 500.0 sq.mm	Set	860.00
12.1.43	1 x 630.0 sq.mm	Set	952.00
12.1.44	1 x 800.0 sq.mm	Set	1592.00
12.1.45	1 x 1000.0 sq.mm	Set	1840.00
12.2	Supplying and making one end termination with Nickel plated heavy duty brass single compression gland (as per IS 12943-1990)) SIBG type consisting of Check Nut, Gland Body, Metal Washer(3 Nos.), Outer Seal Rubber Ring, Compression Nut, heavy duty Copper lugs (IS 8337- 1976) duly crimped with crimping tool, PVC tape for following size of PVC insulated & PVC sheathed/ XLPE copper conductor cable of 1100 volt grade as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.2.1	1 x 16.0 sq.mm	Set	113.00
12.2.2	1 x 25.0 sq.mm	Set	133.00
12.2.3	1 x 35.0 sq.mm	Set	140.00
12.2.4	1 x 50.0 sq.mm	Set	202.00
12.2.5	1 x 70.0 sq.mm	Set	228.00
12.2.6	1 x 95.0 sq.mm	Set	278.00
12.2.7	1 x 120.0 sq.mm	Set	337.00
12.2.8	2 x 4.0 sq.mm	Set	128.00
12.2.9	2 x 6.0 sq.mm	Set	131.00
12.2.10	2 x 10.0 sq.mm	Set	154.00
12.2.11	2 x 16.0 sq.mm	Set	161.00
12.2.12	2 x 25.0 sq.mm	Set	197.00
12.2.13	2 x 35.0 sq.mm	Set	210.00
12.2.14	2 x 50.0 sq.mm	Set	279.00
12.2.15	2 x 70.0 sq.mm	Set	351.00
12.2.16	2 x 95.0 sq.mm	Set	422.00
12.2.17	2 x 120.0 sq.mm	Set	580.00
12.2.18	3 x 1.5 sq.mm	Set	130.00
12.2.19	3 x 2.5 sq.mm	Set	132.00
12.2.20	3 x 4.0 sq.mm	Set	148.00
12.2.21	3 x 6.0 sq.mm	Set	174.00
12.2.22	3 x 10.0 sq.mm	Set	176.00
12.2.23	3 x 16.0 sq.mm	Set	197.00
12.2.24	3 x 25.0 sq.mm	Set	255.00
12.2.25	3 x 35.0 sq.mm	Set	273.00
12.2.26	3 x 50.0 sq.mm	Set	354.00
12.2.27	3 x 70.0 sq.mm	Set	432.00
12.2.28	3 x 95.0 sq.mm	Set	604.00
12.2.29	3 x 120.0 sq.mm	Set	905.00
12.2.30	4 x 1.5 sq.mm	Set	135.00
12.2.31	4 x 2.5 sq.mm	Set	137.00
12.2.32	4 x 4.0 sq.mm	Set	176.00
12.2.33	4 x 6.0 sq.mm	Set	181.00
12.2.34	4 x 10.0 sq.mm	Set	208.00

Item No.	Description	Unit	Rate (Rs.)
12.2.35	4 x 16.0 sq.mm	Set	222.00
12.2.36	4 x 25.0 sq.mm	Set	286.00
12.2.37	4 x 35.0 sq.mm	Set	333.00
12.2.38	4 x 50.0 sq.mm	Set	411.00
12.2.39	4 x 70.0 sq.mm	Set	588.00
12.2.40	4 x 95.0 sq.mm	Set	972.00
12.2.41	4 x 120.0 sq.mm	Set	1128.00
12.2.42	6 x 1.5 sq.mm	Set	181.00
12.2.43	6 x 2.5 sq.mm	Set	183.00
12.2.44	8 x 1.5 sq.mm	Set	190.00
12.2.45	8 x 2.5 sq.mm	Set	204.00
12.2.46	10 x 1.5 sq.mm	Set	224.00
12.2.47	10 x 2.5 sq.mm	Set	228.00
12.2.48	12 x 1.5 sq.mm	Set	234.00
12.2.49	12 x 2.5 sq.mm	Set	265.00
12.3	Supplying and making end termination with heavy aluminium lugs ( Pin / ring type ) confirming to IS 8309 -1993 & IS 8337-1976 duly crimped with crimping tool, PVC tape etc of following size.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.3.1	1.5 Sq.mm	Each	2.00
12.3.2	2.5 Sq.mm	Each	2.00
12.3.3	4.0 Sq.mm	Each	2.00
12.3.4	6.0 Sq.mm	Each	3.00
12.3.5	10.0 Sq.mm	Each	4.00
12.3.6	16.0 Sq.mm	Each	5.00
12.3.7	25.0 Sq.mm	Each	7.00
12.3.8	35.0 Sq.mm	Each	9.00
12.3.9	50.0 Sq.mm	Each	12.00
12.3.10	70.0 Sq.mm	Each	18.00
12.3.11	95.0 Sq.mm	Each	19.00
12.3.12	120.0 Sq.mm	Each	26.00
12.3.13	150.0 Sq.mm	Each	34.00
12.3.14	185.0 Sq.mm	Each	44.00
12.3.15	240.0 Sq.mm	Each	69.00
12.3.16	300.0 Sq.mm	Each	95.00
12.3.17	400.0 Sq.mm	Each	135.00
12.3.18	500.0 Sq.mm	Each	198.00
12.3.19	630.0 Sq.mm	Each	243.00
12.3.20	800.0 Sq.mm	Each	399.00
12.3.21	1000.0 Sq.mm	Each	554.00
12.4	Supplying and making end termination with heavy duty Copper lugs ( ANY type ) confirming to IS 8337 -1976 duly crimped with crimping tool, PVC tape etc of following size.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.4.1	1.5 Sq.mm	Each	6.00
12.4.2	2.5 Sq.mm	Each	6.00
12.4.3	4.0 Sq.mm	Each	7.00

Item No.	Description	Unit	Rate (Rs.)
12.4.4	6.0 Sq.mm	Each	8.00
12.4.5	10.0 Sq.mm	Each	10.00
12.4.6	16.0 Sq.mm	Each	13.00
12.4.7	25.0 Sq.mm	Each	20.00
12.4.8	35.0 Sq.mm	Each	27.00
12.4.9	50.0 Sq.mm	Each	43.00
12.4.10	70.0 Sq.mm	Each	67.00
12.4.11	95.0 Sq.mm	Each	88.00
12.4.12	120.0 Sq.mm	Each	128.00
12.5	Supply, Fabricating & installing following sizes of perforated Hot dipped Galvanized iron cable tray ( Galvanized thickness not less then 50 microns) with perforation not more then 17.5% in convenient section including horizontal and vertical bends, reducers tees,cross members and other accessories as required and duly suspended from the ceiling with GI suspenders including GI bolts & nuts , fastners, supports etc. as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.5.1	100mm x 50mm x 1.6mm	Mtr	553.00
12.5.2	150mm x 50mm x 1.6mm	Mtr	675.00
12.5.3	225mm x 50mm x 1.6mm	Mtr	874.00
12.5.4	300mm x 50mm x 1.6mm	Mtr	1053.00
12.5.5	375mm x 50mm x 2.0mm	Mtr	1633.00
12.5.6	450mm x 50mm x 2.0mm	Mtr	1876.00
12.5.7	600mm x 50mm x 2.0mm	Mtr	2376.00
12.5.8	300mm x 62.5mm x 2.0mm	Mtr	1471.00
12.5.9	375mm x 62.5mm x 2.0mm	Mtr	1728.00
12.5.10	450mm x 62.5mm x 2.0mm	Mtr	1971.00
12.5.11	600mm x 62.5mm x 2.0mm	Mtr	2470.00
12.5.12	750mm x 62.5mm x 2.0mm	Mtr	2997.00
12.5.13	600mm x 75mm x 2.0mm	Mtr	2565.00
12.5.14	750mm x 75mm x 2.0mm	Mtr	3078.00
12.6	Supply, Fabricating & installing following sizes of perforated Powder coated MS cable tray with perforation not more then 17.5% in convenient section including horizontal and vertical bends, reducers tees,cross members and other accessories as required and duly suspended from the ceiling with GI suspenders including GI bolts & nuts , fastners, supports etc. as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.6.1	100mm x 50mm x 1.6mm	Mtr	480.00
12.6.2	150mm x 50mm x 1.6mm	Mtr	584.00
12.6.3	225mm x 50mm x 1.6mm	Mtr	755.00
12.6.4	300mm x 50mm x 1.6mm	Mtr	907.00
12.6.5	375mm x 50mm x 2.0mm	Mtr	1402.00
12.6.6	450mm x 50mm x 2.0mm	Mtr	1609.00
12.6.7	600mm x 50mm x 2.0mm	Mtr	2036.00
12.6.8	300mm x 62.5mm x 2.0mm	Mtr	1265.00

Item No.	Description	Unit	Rate (Rs.)
12.6.9	375mm x 62.5mm x 2.0mm	Mtr	1485.00
12.6.10	450mm x 62.5mm x 2.0mm	Mtr	1691.00
12.6.11	600mm x 62.5mm x 2.0mm	Mtr	2118.00
12.6.12	750mm x 62.5mm x 2.0mm	Mtr	2571.00
12.6.13	600mm x 75mm x 2.0mm	Mtr	2200.00
12.6.14	750mm x 75mm x 2.0mm	Mtr	2640.00
12.7	Supply, Fabricating & installing following sizes of Hot dipped Galvanized iron cable tray ( Galvanized thickness not less then 50 microns) with rungs at span of 250mm including horizontal and vertical bends, reducers tees,cross members and other accessories as required and duly suspended from the ceiling/wall with M.S. suspenders etc. as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.7.1	100mm x 50mm x 1.6mm	Mtr	440.00
12.7.2	150mm x 50mm x 1.6mm	Mtr	533.00
12.7.3	225mm x 50mm x 1.6mm	Mtr	689.00
12.7.4	300mm x 50mm x 1.6mm	Mtr	826.00
12.7.5	375mm x 50mm x 2.0mm	Mtr	1274.00
12.7.6	450mm x 50mm x 2.0mm	Mtr	1460.00
12.7.7	600mm x 50mm x 2.0mm	Mtr	1847.00
12.7.8	300mm x 62.5mm x 2.0mm	Mtr	1150.00
12.7.9	375mm x 62.5mm x 2.0mm	Mtr	<b>1350.00</b>
12.7.10	450mm x 62.5mm x 2.0mm	Mtr	1536.00
12.7.11	600mm x 62.5mm x 2.0mm	Mtr	1922.00
12.7.12	750mm x 62.5mm x 2.0mm	Mtr	2335.00
12.7.13	600mm x 75mm x 2.0mm	Mtr	1998.00
12.7.14	750mm x 75mm x 2.0mm	Mtr	2397.00
12.8	Supplying and fixing of CE certified and UL listed GI wire mesh cable tray made from spot welded steel wire hot dipped galvanised between 60 and 80 microns of zinc as per BS 729 including horizontal and vertical bends, reducers, tees, cross members and other OEM made accessories like wall clamp, hold down clamps, Earthing terminal, brackets as required, and duly suspended from the ceiling with electro-zinc coated TF rods, etc. as required of following sizesAll as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.8.1	100 mm x 50 mm x 6 mm	Mtr	533.00
12.8.2	150 mm x 50 mm x 6 mm	Mtr	649.00
12.8.3	200 mm x 50 mm x 6 mm	Mtr	841.00
12.8.4	300 mm x 50 mm x 6 mm	Mtr	1012.00
12.8.5	400 mm x 50 mm x 6 mm	Mtr	1569.00
12.8.6	500 mm x 50 mm x 6 mm	Mtr	1802.00
12.8.7	100 mm x 100 mm x 6 mm	Mtr	779.00
12.8.8	150 mm x 100 mm x 6 mm	Mtr	896.00
12.8.9	200 mm x 100 mm x 6 mm	Mtr	1025.00
12.8.10	300 mm x 100 mm x 6 mm	Mtr	1258.00



Item No.	Description	Unit	Rate (Rs.)
12.8.11	400 mm x 100 mm x 6 mm	Mtr	1505.00
12.8.12	500 mm x 100 mm x 6 mm	Mtr	1738.00
12.9	Supply and fixing following size of Hot dipped Galvanized (275 GSM) floor raceways / Under floor trunking with/ without partition, including common cover, joint sleeve, cross over junction Box etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.9.1	75 mm x 25 mm x 1.5 mm	Mtr	1107.00
12.9.2	100 mm x 25 mm x 1.5 mm	Mtr	1365.00
12.9.3	150 mm x 25 mm x 1.5 mm	Mtr	2022.00
12.9.4	250 mm x 25 mm x 1.5 mm	Mtr	3169.00
12.9.5	300 mm x 25 mm x 1.5 mm	Mtr	3705.00
12.9.6	75 mm x 38 mm x 1.5 mm	Mtr	1491.00
12.9.7	100 mm x 38 mm x 1.5 mm	Mtr	1712.00
12.9.8	150 mm x 38 mm x 1.5 mm	Mtr	2223.00
12.9.9	250 mm x 38 mm x 1.5 mm	Mtr	3189.00
12.9.10	300 mm x 38 mm x 1.5 mm	Mtr	3800.00
12.9.11	150 mm x 38 mm x 2.0 mm with 2 Compartment	Mtr	3298.00
12.9.12	250 mm x 38 mm x 2.0 mm with 3 Compartment	Mtr	4805.00
12.9.13	300 mm x 38 mm x 2.0 mm with 3 Compartment	Mtr	5222.00
12.9.14	Supply and fixing following Hot dipped Galvanized (275 GSM) accessories for floor raceways / Under floor trunking etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.9.15	Access Outlet 200 mm x 200 mm x 40-75 mm with Galvanized Lid	Mtr	8808.00
12.9.16	Access Outlet 250 mm x 250 mm x 40-75 mm with Galvanized Lid	Mtr	11210.00
12.9.17	Access Outlet 300 mm x 300 mm x 40-75 mm with Galvanized Lid	Mtr	13911.00
12.9.18	Access Outlet 350 mm x 350 mm x 40-75 mm with Galvanized Lid	Mtr	18819.00
12.9.19	Access Outlet 250 mm x 250 mm x 40-75 mm with stainless steel Lid	Mtr	14081.00
12.9.20	Access Outlet 300 mm x 300 mm x 40-75 mm with stainless steel Lid	Mtr	21737.00
12.9.21	Access Outlet 350 mm x 350 mm x 60-120 mm with stainless steel Lid	Mtr	26747.00
12.10	S & Making Heat shrinkable type Tubular sleeve version outdoor straight through joint for following size of PVC/ XLPE insulated aluminium conductor cable of 1.1 KV grade as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.10.1	1 x 25 sq.mm-50 sq.mm	Set	1997.00
12.10.2	1 x 70 sq.mm-150 sq.mm	Set	3197.00
12.10.3	1 x 185 sq.mm-300 sq.mm	Set	4822.00

Item No.	Description	Unit	Rate (Rs.)
12.10.4	1 x 400 sq.mm	Set	4542.00
12.10.5	1 x 500 sq.mm	Set	5148.00
12.10.6	1 x 630 sq.mm	Set	5327.00
12.10.7	1 x 800 sq.mm	Set	5891.00
12.10.8	1 x 1000 sq.mm	Set	7152.00
12.10.9	2 x 1.5 sq.mm-6 sq.mm	Set	625.00
12.10.10	2 x 10.0-16.0 sq.mm	Set	1545.00
12.10.11	2 x 25.0 sq.mm-50 sq.mm	Set	2529.00
12.10.12	2 x 70.0 sq.mm-150 sq.mm	Set	4390.00
12.10.13	2 x 185.0 sq.mm-300 sq.mm	Set	8302.00
12.10.14	2 x 400 sq.mm	Set	8932.00
12.10.15	2 x 500 sq.mm	Set	9634.00
12.10.16	3/3.5/4 x 1.5 sq.mm-6 sq.mm	Set	1016.00
12.10.17	3/3.5/4 x 10.0-16.0 sq.mm	Set	1768.00
12.10.18	3/3.5/4 x 25.0 sq.mm-50 sq.mm	Set	3231.00
12.10.19	3/3.5/4 x 70.0 sq.mm-150 sq.mm	Set	4918.00
12.10.20	3/3.5/4 x 185.0 sq.mm-300 sq.mm	Set	9006.00
12.10.21	3/3.5/4 x 400 sq.mm	Set	9626.00
12.10.22	3/3.5/4 x 500 sq.mm	Set	11381.00
12.11	S/F cable route marker with 10cm x 10cm x 5mm thick or 10 cm dia. G.I.plate with inscription thereon, bolted/welded to 35mm x 35mm x 5mm angle iron, 60cm long and fixing the same in ground in C C ( 1:3:6 ) as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	388.00
12.12	P / L of Double wall corrugated HDPE pipe confirming to IS : 16205 P-24, Stiffness Class 750 N, Externally corrugated and having smooth surface inside with HDPE Coupler, Elbow, Tee at required Depth below the ground for laying cable of following Nominal Outer dia. MFR Test report from NABL accredited is to be submitted.(Excavation of Earth & Back filling with compaction is to be Paid Extra)All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.12.1	50 mm	Mtr	85.00
12.12.2	63 mm	Mtr	99.00
12.12.3	75 mm	Mtr	130.00
12.12.4	90 mm	Mtr	176.00
12.12.5	110 mm	Mtr	226.00
12.12.6	120 mm	Mtr	256.00
12.12.7	160 mm	Mtr	366.00
12.12.8	200 mm Dia.	Mtr	494.00

Item No.	Description	Unit	Rate (Rs.)
12.13	Providing and laying Non Pressure NP-3 class R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) etc. as required. (Excavation of Earth & Back filling with compaction is to be Paid Extra). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
12.13.1	200 mm Dia.	Mtr	560.00
12.13.2	250 mm dia.	Mtr	698.00
12.13.3	300 mm dia	Mtr	917.00
12.13.4	450 mm dia.	Mtr	1753.00
12.14	labour charges for Excavating trenches of required width for pipes dressing of sides, ramming of bottoms, depth up to 1.5 Mtr. including taking out the excavated soil, and then returning the soil as required in layers not exceeding 20cm in depth including consolidating each deposited layer by ramming, watering etc. and disposal of surplus excavated soil as directed within a lead of 50 Mtr.:		
12.14.1	All kind of Soils	Cum	213.00
12.14.2	Ordinary Rocks	Cum	305.00

**CHAPTER : E-13**  
**H T CABLES & TERMINATION KITS**

Item No.	Description	Unit	Rate (Rs.)
13.1	Providing & Laying XLPE insulated three core Armoured Aluminium cable for working voltage 11 K.V.(E) confirming IS :7098 P - 2 with H4- Grade electrolytic aluminium conductor confirming to IS: 8130 class-2 of purity >99.6 %, Insulation Screening: Extruded Semiconducting Compound followed by helically wrapped Copper Tape, round / flat strip armouring of cables , Inner / outer sheath PVC type ST-2 confirming to IS:5831 in existing RCC / Hume / Stoneware / PVC pipe/ open duct/cable trench / Cable tray including testing etc. as required of following size. OEM must have it's own in house NABL accredited Laboratory for testing procedure as per IS:10810 All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this RSR		
13.1.1	3 core 95.0 Sq.mm	Mtr	1030.00
13.1.2	3 core 120.0 Sq.mm	Mtr	1172.00
13.1.3	3 core 150.0 Sq.mm	Mtr	1322.00
13.1.4	3 core 185.0 Sq.mm	Mtr	1523.00
13.1.5	3 core 240.0 Sq.mm	Mtr	1839.00
13.1.6	3 core 300.0 Sq.mm	Mtr	2152.00
13.2	Providing & Laying XLPE insulated three core Armoured Aluminium cable for working voltage 33 K.V.(E) confirming IS :7098 P - 2 with H4- Grade electrolytic aluminium conductor confirming to IS: 8130 class-2 of purity >99.6 %, Insulation Screening: Extruded Semiconducting Compound followed by helically wrapped Copper Tape, round / flat strip armouring of cables , Inner / outer sheath PVC type ST-2 confirming to IS:5831 in existing RCC / Hume / Stoneware / PVC pipe/ open duct/cable trench / Cable tray including testing etc. as required of following size. OEM must have it's own in house NABL accredited Laboratory for testing procedure as per IS:10810 All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this RSR		
13.2.1	3 core 150.0 Sq.mm	Mtr	2224.00
13.2.2	3 core 185.0 Sq.mm	Mtr	2454.00
13.2.3	3 core 240.0 Sq.mm	Mtr	2829.00
13.2.4	3 core 300.0 Sq.mm	Mtr	3167.00

Item No.	Description	Unit	Rate (Rs.)
13.3	Add Extra for Laying of one number XLPE power cable of 11/33 KV (Earthed) voltage grade direct in ground including excavation of trench of size 120 cm (Depth) x 35 cm(Width) , with procedure as per following points:- (a) Make a river sand bed of height 125 mm along the trench, (b) Lay the cable in the middle of the trench, (c) Provide river sand bed of height 125 mm on top of the cable. (d) Lay the protective Common burnt clay F.P.S. Bricks of Class designation 75 / Sand stone slabs of 50 mm thickness and 225 mm wide just above the sand bed vertically across the cable ( Approx. 9 no. Bricks per Mtr.), (e) Backfill the excavated soil leaving 300 mm from the Ground level, (f)Lay the Cable warning tape and again back-fill the remaining portion of the trench upto the ground level and compacting the earth	Mtr	233.00
13.4	Add Extra in Item no. 13.3 if Excavation done in Hard Rock / CC road / TAR Road and making Good the same	Mtr	39.00
13.5	Add Extra for Laying of one number additional XLPE power cable of 11/33 KV (Earthed) voltage grade direct in ground in the same trench in one tier horizontal formation including excavation of trench of size additional 20 cm in width, with procedure as per following points:- (a) Make a river sand bed of height 125 mm along the trench, (b) Lay another cable in middle of trench in such manner that spacing between another cable is 20 cm, (c) Provide sand bed of height 125 mm on top of the cable. (d) Lay the protective Common burnt clay F.P.S. Bricks of Class designation 75 / Sand stone slabs of 50 mm thickness and 225 mm wide just above the sand bed vertically across the cable ( Approx. 9 no. Bricks per Mtr.) (e) Backfill the excavated soil leaving 300 mm from the Ground level. (f)Lay the Cable warning tape and again back-fill the remaining portion of the trench upto the ground level and compacting the earth	Mtr	155.00
13.6	Add Extra in Item no. 13.5 if Excavation done in Hard Rock / CC road / TAR Road and making Good the same	Mtr	22.00
13.12	Providing & making heat shrinkable type indoor/outdoor/straight through terminations/ joint kit suitable for 11 KV / 33 KV (Earthed) cable with required components, preparation of cable ends. Type test report should be as per IS13573:2011 which covered all sequence for table 2 for termination kit and table 3 for streight through joint inclusive thermal & dynamic short circuit test, humidity test, soil fog test. Cross linking shall be done out side factory with E- beam/ peroxide technology. Extrusion process shall be in house OEM within same vicinity. including testing etc. as required of following sizes. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
<b>13.12.1</b>	<b>11 KV End Termination Kit Indoor type</b>		
13.12.1.1	3 core up to 35 Sqmm	Each	3975.00
13.12.1.2	3 core 50/70/95 Sq.mm	Each	4812.00
13.12.1.3	3 core 120/150/185 Sq.mm	Each	5862.00
13.12.1.4	3 core 240/300 Sq.mm	Each	6845.00
13.12.1.5	3 core 400 Sq.mm	Each	7840.00
<b>13.12.2</b>	<b>11 KV End Termination Kit Outdoor type</b>		

Item No.	Description	Unit	Rate (Rs.)
13.12.2.1	3 core up to 35 Sqmm	Each	5987.00
13.12.2.2	3 core 50/70/95 Sq.mm	Each	7041.00
13.12.2.3	3 core 120/150/185 Sq.mm	Each	8063.00
13.12.2.4	3 core 240/300 Sq.mm	Each	9330.00
13.12.2.5	3 core 400 Sq.mm	Each	10136.00
<b>13.12.3</b>	<b>11 KV Straight Through Joint Kit</b>		
13.12.3.1	3 core up to 35 Sq.mm	Each	8282.00
13.12.3.2	3 core 50/70/95 Sq.mm	Each	9265.00
13.12.3.3	3 core 120/150/185 Sq.mm	Each	12076.00
13.12.3.4	3 core 240/300 Sq.mm	Each	14357.00
13.12.3.5	3 core 400 Sq.mm	Each	15971.00
<b>13.12.4</b>	<b>33 KV End Termination Kit Indoor type</b>		
13.12.4.1	3 core 95 Sq.mm	Each	7212.00
13.12.4.2	3 core 120/150/185 Sq.mm	Each	8191.00
13.12.4.3	3 core 240/300/400 Sq.mm	Each	9886.00
<b>13.12.5</b>	<b>33 KV End Termination Kit Outdoor type</b>		
13.12.5.1	3 core 95 Sq.mm	Each	7442.00
13.12.5.2	3 core 120/150/185 Sq.mm	Each	8948.00
13.12.5.3	3 core 240/300/400 Sq.mm	Each	10332.00
<b>13.12.6</b>	<b>33 KV Straight Through Joint Kit</b>		
13.12.6.1	3 core 95/120/150 Sq.mm	Each	18287.00
13.12.6.2	3 core 185/240/300 Sq.mm	Each	21657.00
13.12.6.3	3 core 400 Sq.mm	Each	24581.00

**CHAPTER : E-14**  
**EARTHING & LIGHTNING ARRESTER**

Item No.	Description	Unit	Rate (Rs.)
14.1	Pipe Earthing as per IS:3043- 1987 with 3.0 Mtr. Long, 40 mm dia. ' B ' class G.I. Pipe IS: 1239 (Part-1) 2004, Equivalent to BS : 1387 with perforated holes of 12 mm dia ,including all accessories like nut, bolts, reducer, nipple, wire meshed funnel, and Heavy duty weather proof poly-propylene earth pit chamber with lockable Jam free lid suitable for safe working load 5000 Kg or more of size Top Dia. 225 to 260 mm, Bottom Dia 300 to 350 mm. and Height 250 to 300 mm. and embodying the pipe complete with alternate layers salt and coke/ charcoal, testing of earth resistance for value of 5 ohms or less as required & must record by engineer in charge during site visit and ensure to enter in measurment book.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Set	3643.0
14.2	Plate Earthing as per IS:3043 with Hot dipped G.I. Earth plate of size 600mm x 600mm x 6.0mm by embodying 3 to 4 mtr. below the ground level with 20 mm dia. G.I. 'B' class watering Pipe ,including all accessories like nut, bolts, reducer, nipple, wire meshed funnel, and Heavy duty weather proof poly-propylene earth pit chamber with lockable Jam free lid suitable for safe working load 5000 Kg or more of size Top Dia. 225 to 260 mm, Bottom Dia 300 to 350 mm. and Height 250 to 300 mm. and embodying the pipe complete with alternate layers salt and coke/ charcoal, testing of earth resistance for value of 5 ohms or less as required & must record by engineer in charge during site visit and ensure to enter in measurment book.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Set	5733.0

Item No.	Description	Unit	Rate (Rs.)
14.3	<p>Plate Earthing as per IS:3043 with copper Earth plate of purity &gt;95% of size 600mm x 600mm x 3.0mm by embodying 3 mtr. below the ground level with 20 mm dia. G.I. 'B' class watering Pipe ,including all accessories like nut, bolts, reducer, nipple, wire meshed funnel, and Heavy duty weather proof poly-propylene earth pit chamber with lockable Jam free lid suitable for safe working load 5000 Kg or more of size Top Dia. 225 to 260 mm, Bottom Dia 300 to 350 mm. and Height 250 to 300 mm. and embodying the pipe complete with alternate layers salt and coke/ charcoal, testing of earth resistance for value of 5 ohms or less as required &amp; must record by engineer in charge during site visit and ensure to enter in measurment book. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>	Set	15144.0
14.4	<p>Supply and installation of high tensile low carbon steel rod molecularly bonded with 99.9 % Copper thickness (250 microns) and confirming to UL 467, IS/IEC 62561-2 of following size and length and as per point mentioned (a), (b), [c), (d), (e) below :-</p> <p>(a) Bore a hole of dia. 100 mm of required length, Place the rod in the centre of Hole</p> <p>(b) filled with anti corrosive conductive compounds with the permanent sealings at both the ends, CPRI/ ERDA tested with RMS capacity of minimum 30 KA for withstanding 1 second .To ensure the moisture content and electrical conductivity, 25 kg for 2000 mm &amp; 50 Kgs for 3000mm of resistance lowering earth enhancement material shall be used as a backfill compound. The compound shall be tested form NABL acredeated lab for low resistivity ( less than 0.12 Ohm - meter ) &amp; high conductivity in nature with carbon as a major content as per reference of IS 3043-1987,IEEE 80-2013 (clause 14.5d) , IEEE 837 &amp; IER 1956 with latest amendemnts</p> <p>© Connect the rod with copper Strip/Conductor/Wire with suitable clamp made from tinned copper and SS 304 Bolt</p> <p>(d) Place Heavy duty weather proof poly-propylene earth pit chamber with lockable Jam free lid suitable for safe working load 5000 Kg or more of size Top Dia. 225 to 260 mm, Bottom Dia 300 to 350 mm. and Height 250 to 300 mm.</p> <p>(d) Testing of earth resistance for value of 5 ohms or less as required &amp; must record by engineer in charge during site visit and ensure to enter in measurment book.</p> <p>(e) Test certificates for confirming above standards from OEM is mandatory. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
14.4.1	17.2 mm thick and 3 Mtr. Long	Set	7010.00
14.4.1	25 mm thick and 3 Mtr. Long	Set	7955.00



Item No.	Description	Unit	Rate (Rs.)
14.5	Supply & Laying following size earth strip in horizontal or vertical run in surface by means of Earth strip DMC Insulator including riveting/ soldering/ welding, Jointing shall be done by overlapping and with 2 set of Brass (for Cu strip) / GI (for GI Strip) nut bolt & spring washer spaced at 50cm making connection etc. as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
14.5.1	20mm x 3mm copper strip	Mtr.	781.0
14.5.2	25mm x 3mm copper strip	Mtr.	1037.0
14.5.3	25mm x 5mm copper strip	Mtr.	1551.0
14.5.4	30mm x 5 mm copper strip	Mtr.	1940.0
14.5.5	40mm x 6mm copper strip	Mtr.	3090.0
14.5.6	50mm x 6mm copper strip	Mtr.	4120.0
14.5.7	20mm x 3mm tinned copper strip	Mtr.	866.0
14.5.8	25mm x 3mm tinned copper strip	Mtr.	1150.0
14.5.9	25mm x 5mm tinned copper strip	Mtr.	1720.0
14.5.10	30mm x 5 mm tinned copper strip	Mtr.	2152.0
14.5.11	40mm x 6mm tinned copper strip	Mtr.	3429.0
14.5.12	50mm x 6mm tinned copper strip	Mtr.	4572.0
14.5.13	20mm x 3mm G.I. ( Hot Dipped ) Strip	Mtr.	88.0
14.5.14	25mm x 3mm G.I. ( Hot Dipped ) Strip	Mtr.	105.0
14.5.15	25mm x 6mm G.I. ( Hot Dipped ) Strip	Mtr.	196.0
14.5.16	32mm x6mm G.I. ( Hot Dipped ) Strip	Mtr.	245.0
14.5.17	50mm x 6mm G.I. ( Hot Dipped ) Strip	Mtr.	406.0
14.5.18	20mm x 3mm Alum. Strip	Mtr.	110.0
14.5.19	25mm x 3mm Alum. Strip	Mtr.	133.0
14.5.20	25mm x 4 mm Alum. Strip	Mtr.	177.0
14.5.21	25mm x 5 mm Alum. Strip	Mtr.	215.0
14.5.22	30mm x 6mm Alum. Strip	Mtr.	304.0
14.5.23	50mm x 5mm Alum. Strip	Mtr.	429.0
14.5.24	50mm x 8mm Alum. Strip	Mtr.	695.0
14.5.25	100mm x 8mm Alum. Strip	Mtr.	1363.0
14.5.26	100mm x 10mm Alum. Strip	Mtr.	1690.0
14.5.27	200mm x 20mm Alum. Strip	Mtr.	6279.0
14.6	Supply & Laying following size earth wire in horizontal or vertical run in ground/surface/recess including riveting, soldering, saddles, making connection with GI/Cu purity purity >95% thimble etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
14.6.1	6 SWG tinned copper Wire	Mtr.	232.0
14.6.2	8 SWG tinned copper Wire	Mtr.	163.0
14.6.3	10 SWG tinned copper. Wire	Mtr.	107.0
14.6.4	6 SWG copper Wire	Mtr.	210.0
14.6.5	8 SWG copper Wire	Mtr.	148.0
14.6.6	10 SWG copper. Wire	Mtr.	97.0
14.6.7	6 SWG G.I. ( Hot Dipped ) Wire	Mtr.	27.0

Item No.	Description	Unit	Rate (Rs.)
14.6.8	8 SWG G.I. ( Hot Dipped ) Wire	Mtr.	20.0
14.6.9	10 SWG G.I. ( Hot Dipped ) Wire	Mtr.	14.0
14.6.10	16 Sq.mm Copper coated steel stranded conductor (Wt. 130 Kg/Km	Mtr.	48.0
14.6.11	25 Sq.mm Copper coated steel stranded conductor ( Wt. 200Kg/Km	Mtr.	74.0
14.7	Supply & Laying following size ' B ' class , G.I. Pipe confirming to IS : 1239 P - 1 ( 2004 ) with accessories like bend, socket etc. for laying earth conductor/ strip / cable in ground/ surface/ recess as required. All as per pre approved by Engineer in charge. (Earth Excavation will be Paid Extra)All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .		
14.7.1	15 mm dia.	Mtr.	205.0
14.7.2	20 mm dia.	Mtr.	259.0
14.7.3	25 mm dia.	Mtr.	358.0
14.7.4	32mm dia	Mtr.	448.0
14.7.5	40 mm dia.	Mtr.	516.0
14.7.6	50 mm dia.	Mtr.	718.0
14.7.7	65 mm dia.	Mtr.	915.0
14.7.8	80 mm dia.	Mtr.	1155.0
14.7.9	100 mm dia.	Mtr.	1657.0
14.7.10	150 mm dia.	Mtr.	2575.0
14.8	Mesh earthing as per IS:3043 with Hot dipped galvanized earth strip of size 25 mm x 6 mm to form a mesh of size 1000 mm x 1000 mm in horizontal formation to create equal sections of 200 mm x 200 mm by means of welding and embodying 1 mtr. Below the ground level, refilling the pit by alternative layers of charcoal & salt up to 500 mm with 20 mm dia. GI 'B' class watering pipe, wire mesh funnel and and Heavy duty weather proof poly-propylene earth pit chamber with lockable Jam free lid suitable for safe working load 5000 Kg or more of size Top Dia. 225 to 260 mm, Bottom Dia 300 to 350 mm. and Height 250 to 300 mm testing of earth resistance for value of 5 ohms or less as required & must record by engineer in charge during site visit and ensure to enter in measurment book. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	7235.0
14.10	P & F of Heavy duty weather proof poly-propylene earth pit chamber with lockable Jam free lid suitable for safe working load 5000 Kg or more of size Top Dia. 225 to 260 mm, Bottom Dia 300 to 350 mm. and Height 250 to 300 mm. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1012.0

Item No.	Description	Unit	Rate (Rs.)
14.11	S & F of Earth Bar with Disconnecting link Made out from 50 mm x 6 mm copper purity >95% /GI strip pre fitted on epoxy powder coated metal base mounted on hexagonal SMC Insulators of following Size.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .		
14.11.1	400 mm , 6 Way Copper	Each	2160.0
14.11.2	600 mm , 10 Way Copper	Each	2970.0
14.11.3	400 mm , 6 Way GI	Each	809.0
14.11.4	600 mm , 10 Way GI	Each	1079.0
14.12	Providing & Making of Exothermic joint in Tee / Square / Straight through joint in Strip for permanently bonding of copper to copper or copper to GI including required exothermic jointing kit comprising of graphite mould, weld powder, tools etc. as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .		
		per Joint	1145.0
14.13	Supply, installation, testing & commissioning of following size & Material air termination rods confirming to IEC/EN 62561 with suitable OEM recommended mounting arrangement on parapet wall all as per standard , complete as required. the test report accredited by third party accreditation body like VDE/ ILAC/ DAKKS/ UL/ NABL is to be submitted.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .		
14.13.1	700 mm long, 10 mm Dia. Aluminium / AlMgSi	Set	1754.0
14.13.2	1000 mm long, 10 mm Dia. Aluminium / AlMgSi	Set	2430.0
14.13.3	1500 mm long, 10 mm Dia. Aluminium / AlMgSi	Set	3374.0
14.13.4	2000 mm long, 16mm rod tapered to 10 mm, AlMgSi	Set	8502.0
14.13.5	3000 mm long, 16mm rod tapered to 10 mm, AlMgSi	Set	12817.0
14.14	Supply & Laying of Aluminum / SS / AlMgSi Round Conductor confirming to IEC/EN 62561 etc. as required. the test report accredited by third party accreditation body like VDE/ILAC/ DAKKS/ UL/ NABL is to be submitted. ( Supporting Clamps to be paid Extra )All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .		
14.14.1	8 mm Dia. Aluminium conductor	Mtr	263.0
14.14.2	8 mm Dia. AlMgSi conductor	Mtr	286.0

Item No.	Description	Unit	Rate (Rs.)
14.15	Supply & Fixing Air-termination rod clamps for connecting air-termination rods with one or two conductors. Material of clamp Al, with clamping range of air-termination rod 10 / 16 mm and Clamping range of conductor Rd 2x 8-10 mm, & Complied as per Standard EN 62561-1, tested to carry from 100KA (10/350µs) lightning current the test report accredited by third party accreditation body like VDE/ILAC/ DAKKS/ UL/ NABL is to be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Set	513.0
14.16	Supply and Fixing of stainless steel clamp for holding 8 mm dia. conductor on Parapet Wall / Side Fl 20 mm, Height- 20 mm & Complied as per Standard EN 62561-4. With accessories SS Screw and Gitty etc. as required. the test report accredited by third party accreditation body like VDE/ILAC/ DAKKS/ UL/ NABL is to be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Set	144.0
14.17	Supply and Fixing Polyamide Roof conductor Holder for Roof with Concrete Block with 8 mm conductor Holder including adhesive material to paste with roof where drilling not allowed.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Set	391.0
14.18	Supply and Fixing of Test Joint (Folding Clamp) made of SS,suitable to connect 8mm round conductor with 25 mm x 6 mm GI strip etc. as required. the test report accredited by third party accreditation body likeVDE/ILAC/ DAKKS/ UL/ NABL is to be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Set	1444.0
14.19	Supply and Fixing GI flat (25x6mm) Strip. Having width- 25mm, Thickness- 6mm, Material- Hot dipped Galvanized Iron, Coating thickness- Avg. 70 microns. & Complied as per IEC 62561-2 GI strip holder of material- Dow moulded compound, at spacing of 0.5 Mtr. having height- 19mm, Slot Size- 25x6 mm Etc. as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Mtr.	364.0

Item No.	Description	Unit	Rate (Rs.)
14.20	Clamps to connect reinforcing steel mesh or reinforcement at every 2 meters with round and flat conductors. of material- St/bare, having clamping range- Rd / Rd 6-22 / 6-10 mm, Clamping range- Rd / FI 6-22 / 40 mm & Complied as per Standard EN 62561-1 the test report accredited by third party accreditation body like VDE/ILAC/ DAKKS/ UL/ NABL is to be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Each	540.0
14.21	P & F cross universal connector: For T and cross / parallel connection, to route vertical down conductor /mesh formation made of hot dipped galvanised iron with necessary screws etc as required. Installed with 4 hexagonal bolts M8*25 with M8 hexagonal nuts Complied as per Standard EN 62561-1.,the test report accredited by third party accreditation body like VDE/ILAC/ DAKKS/ UL/ NABL is to be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Each	648.0
14.22	P & F Universal clamp made of SS to connect rod with flat conductor Complied as per Standard EN 62561-1.,the test report accredited by third party accreditation body like VDE/ILAC/ DAKKS/ UL/ NABL is to be submitted.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Each	1256.0
14.23	P & F Lightning counter - To count no of lightning strike & it can record the date and time of the lightning incident also tested as per IEC 62561-6. the test report accredited by third party accreditation body like VDE/ILAC/ DAKKS/ UL/ NABL is to be submitted.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Each	9046.00
14.24	Providing & Fixing of ISO Certified company made lightning conductor finial as per PWD specification for electrical Works as per IS 2309-1989 made out of 25 mm dia.,300 mm long copper solid rod having single prong at top with 85 mm dia., 3 mm thick copper base plate including holes etc. complete as required. All as per pre approved by Engineer in charge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Each	3102.00

Item No.	Description	Unit	Rate (Rs.)
14.25	Providing & Fixing of ISO Certified company made lightning conductor finial as per PWD specification for electrical Works as per IS 2309-1989 made out of 25 mm dia., 300 mm long G.I. solid Rod having single prong at top with 85 mm dia., 3 m thick G.I. base plate including holes etc. complete as required. All as per pre approved by Engineer in charge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Each	1752.00
14.26	Providing & Fixing of testing joint, made out of 20mm x 3mm copper Strip, 125 mm long, with 4 no. tinned brass bolts, nuts, checknuts, spring washer etc. complete as required. All as per pre approved by Engineer in charge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Each	1012.00
14.27	Providing & Fixing of testing joint, made out of 20mm x 3mm G.I. Strip, 125 mm long, with 4 no. G.I. bolts, nuts, checknuts, spring washer etc. complete as required. All as per pre approved by Engineer in charge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Each	606.00

**CHAPTER : E-15**  
**FANS**

Item No.	Description	Unit	Rate (Rs.)
15.1	Making of hole in wall (brick/stone) of required and placing NP-2 RCC pipe ring of required size for housing exhaust fan and making good the same, with cement plaster required of following size. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.1.1	Up to 457 mm size	Each	348.00
15.1.2	more than 457 mm & up to 610 mm	Each	488.00
15.2	Supply & Fixing of phenolic laminated board of 6.4 mm thick for fresh air fan/exhaust fan up to size of 300 mm on existing window frame including cost of board, cutting of hole, Nut bolts etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sqm	1369.00
15.3	Installation , testing and Commissioning of ceiling fan (any size) including wiring the down rod up to 30 cm with 3 x 1.5 sq.mm pvc insulated flexible copper conductor making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.3.1	With regulator	Each	100.00
15.3.2	Without regulator	Each	87.00
15.4	Providing & Fixing of 1200 mm sweep BLDC technology power saving ceiling fan which can withstand on votage fluctuations from 140 volts to 240 volts ,power factor not less then 0.9 , service value (CMM/W) minimun 6.85 , air delivery minimun 220 CMM, speed minimum 330 RPM ( tolerance as per IS:374 2019 ) THD less then 10% and complete with down rod of 15 mm dia . ERW (Electrical resistance welded ) of 1.6mm nominal thick medium duty steel pipe up to 80 cm , cotter pin with 3 x 1.5 sq.mm pvc insulated flexible copper conductor making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.4.1	Without Remote	Each	3378.00
15.4.2	With Remote	Each	3568.00

Item No.	Description	Unit	Rate (Rs.)
15.5	Providing & Fixing of BLDC Technology ventilating fans , single phase with PVC impeller, ABS body, Double Ball bearing, automatic back lower shutter including making connection, testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.5.1	150 mm sweep with Min. Air delivery 350 cmh, 2000 RPM	Each	2417.00
15.5.2	200 mm sweep with Min. Air delivery 800 cmh, 1600 RPM	Each	2538.00
15.5.3	250 mm sweep with Min. Air delivery 1150 cmh, 1300 RPM	Each	2741.00
15.6	Providing & Fixing of 400 mm Sweep BLDC technology Oscillating type Wall mounting / Pedestal type fans with Three speed, ON and OFF position, Double Wall bearing with front and back 120 or more ribs guard; Three no. blades, noise level should be $\leq 75$ dB, including fixing with anchor bolts, making connection testing etc. as required. ( With Remote ) All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.6.1	Wall mounting type with Service value 2.0 CMM /W, Min. Air Delivery 71 CMM	Each	4699.00
15.6.2	Pedestal Type having Adjustable Height with Service value 2.6 CMM /W, Min. Air Delivery 85 CMM	Each	6023.00
15.7	Providing & Fixing of BEE Star rated copper wounded double ball bearing capacitor start, aluminium body & Metallic blade ceiling fan Conforming to all the performance requirements laid down in IS 374:2019 including all amendments, as applicable ; & Carry BIS licensing (i.e. ISI marking) with down rod up to 80 cm with secondary support safety cable ( steel rope ) , cotter pin with 3 x 1.5 sq.mm pvc insulated flexible copper conductor making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.7.1	1200 mm Sweep BEE 1 Star rated (service value $\geq 4.0$ to $< 4.5$ )	Each	1890.00
15.7.2	1200 mm Sweep BEE 2 Star rated (service value $\geq 4.5$ to $< 5$ )	Each	2025.00
15.7.3	1200 mm Sweep BEE 3 Star rated (service value $\geq 5.0$ to $< 5.5$ )	Each	2190.00
15.7.4	1400 mm Sweep BEE 2 Star rated (service value $\geq 4.5$ to $< 5$ )	Each	2430.00
15.7.5	1400 mm Sweep BEE 3 Star rated (service value $\geq 5.0$ to $< 5.5$ )	Each	2565.00



Item No.	Description	Unit	Rate (Rs.)
15.8	Providing & Fixing of shackle (iron hook) made from 2mm nominal thick CRCA sheet and bolts (2nos) of 6mm with spring washer nut, checknut & split pin as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	135.00
15.9	Providing & Fixing of of M.S. J- hook of standard design made out of 16 mm dia. M.S. round bar and fixed with cement concrete mortar with required support as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	179.00
15.10	P & F 1.2mm thick M.S. Recessed fan box, hexagonal/ round of size 130 mm dia, depth 75mm, 12 mm dia rod fan hook with 100 mm length extended on each side . All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR	Each	128.00
15.11	Providing & Fixing of of Double ball bearing, copper wounded capacitor start single phase metallic blade fresh air fan, in existing opening including cost of hardware , flexible 3 core copper conductor ,making connections, testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.11.1	225 mm sweep	Each	1687.00
15.11.2	300 mm sweep	Each	1822.00
15.12	Providing & Fixing of Heavy duty capacitor start, copper wound Double ball bearing 900/1400 RPM single phase Exhaust fan conforming to IS:2312 ISI marked in existing opening including making connections testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.12.1	300 mm sweep(900/1400 RPM)	Each	3175.00
15.12.2	380 mm sweep(900/1400 RPM)	Each	4255.00
15.12.3	450 mm sweep(900/1400 RPM)	Each	5883.00
15.12.4	600 mm sweep(700 / 900 RPM)	Each	10559.00
15.13	Providing & Fixing of of ventilating fans Capacitor start, copper wounded, single phase with PVC impeller, ABS body, automatic openable louver shutter in existing opening including making connection, testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.13.1	150 mm sweep	Each	1579.00

Item No.	Description	Unit	Rate (Rs.)
15.13.2	200 mm sweep	Each	1687.00
15.13.3	250 mm sweep	Each	1957.00
15.14	Providing & Fixing of Wall mounting / Pedestal type Heavy duty Air Circulator , Double ball bearing and with metal sturdy mesh guard; Aluminium alloy one piece blade and conforming to IS:2997, including fixing with anchor bolts, making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.14.1	450 mm sweep Wall mounting and three speed regulator with Minimum Air Delivery 150 Cum. / Minute	Each	7265.00
15.14.2	450 mm sweep Pedestal type and three speed regulator with Minimum Air Delivery 150 Cum. / Minute	Each	7961.00
15.14.3	600 mm sweep Wall mounting with Minimum Air Delivery 270 Cum. / Minute	Each	9459.00
15.14.4	600 mm sweep Pedestal type with Minimum Air Delivery 270 Cum. / Minute	Each	9830.00
15.14.5	750 mm sweep Wall mounting with Minimum Air Delivery 400 Cum. / Minute	Each	11522.00
15.14.6	750 mm sweep Pedestal type with Minimum Air Delivery 400 Cum. / Minute	Each	11927.00
15.15	Providing & Fixing of 450 mm Sweep Oscillating type Wall mounting / Pedestal type fans with Three speed, ON and OFF position, Sintered Iron bush oil impregnated, with metal front and back 120 or more ribs guard; Three no. Aluminium blades, minimum Air delivery 100 Cum. / Minute , Minimum Service Value 1.11 Cum./min/watt, noise level should be <= 75 dB, power consumption <= 120 watts, motor protection through thermal overload protection device, including fixing with anchor bolts, making connection testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.15.1	Wall mounting type with Adjustable Vertical Angle	Each	4969.00
15.15.2	Pedestal Type with Adjustable Height	Each	5294.00
15.16	Providing & Fixing of extra down rod of 15 mm dia . ERW (Electrical resistance welded ) of 1.6mm nominal thick medium duty steel pipe including cutting, threading, drilling, fixing quarter pin etc as reqd. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Mtr.	212.00
15.17	Numbering of ceiling fans/ fixtures with approved enamel paint etc as reqd. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	27.00

Item No.	Description	Unit	Rate (Rs.)
15.18	P & F of Gravity Louver shutter of superior quality made out of frame of 18 swg M.S. sheet & Louvers made from 24 swg MS Sheet with enamel paint including cost of nuts, bolts, etc as reqd. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.18.1	Up to 380 mm size	Each	287.00
15.18.2	above 380 mm size	Each	361.00
15.19	P & F of Wall cowl with Bird Screen Suitable for Outside Wall of Exhaust Fan Opening of following size and made out from 24 SWG GI sheet as per instructions of Engineer in charge including fixing with suitable fasteners etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
15.19.1	Suitable for 300 mm sweep Exhaust Fan	Each	1090.00
15.19.2	Suitable for 380 mm sweep Exhaust Fan	Each	1524.00
15.19.3	Suitable for 450 mm sweep Exhaust Fan	Each	2033.00
15.20	S & F Extruded Aluminium Fresh Air / External Weather Louvre, Small Format type with 38 mm Flange width & 50 mm depth. Finish - Powder coated Off white with Alum. Mesh of required Size. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
		Sqm	8759.00

**CHAPTER : E-16**  
**STORAGE WATER HEATERS**

Item No.	Description	Unit	Rate (Rs.)
16.1	Providing & Fixing of Vertical(BEE 5 star rated) / Horizontal( BEE 3 star rated) storage water heater with outer casing made of Engineering Plastic sheet (Upto 25 Ltr) / Metal rust proof Body (35 & 50 Ltr), Glass - line / Titanium Enamel coated Pressure Pump Compatible 8 bar pressure Inner tank, Glass Line Coated , mineral filled heating element, stem type, snap action adjustable thermostat , Dual indicating lamps Injected PUF insulation, Multi Function Valve etc. as required held in position with 2/4 no. 10/12 mm anchor Fastener, duly wired with 3 core 2.5/4.0 Sqmm PVC insulated & sheathed copper conductor and 16 A/25A three pin plug top with Portable Residual Current Device ( PRCD ) , including making inlet, outlet Flexible alloy connection, testing etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
16.1.1	6 Ltr.	Each	8511.00
16.1.2	10 Ltr.	Each	9189.00
16.1.3	15 Ltr.	Each	10304.00
16.1.4	25 Ltr.	Each	11568.00
16.1.5	35 Ltr.	Each	13970.00
16.1.6	50 Ltr.	Each	16565.00
16.2	Providing & Fixing of stem type ISI marked (IS 3017 / 85) snap action adjustable thermostat storage water heater including making connection testing etc. complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	602.00
16.3	Providing & Fixing of stem type ISI marked (IS 3017 / 85) , snap action bipolar adjustable thermostat with built in auto thermal cut out of storage water heater including making connection testing etc. complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	883.00
16.4	Providing & Fixing 2 / 3 KW nickle plated, mineral filled heating element including making connection testing etc complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1043.00

Item No.	Description	Unit	Rate (Rs.)
16.5	Providing & Fixing of Glass Line Coated , mineral filled heating element including making connection testing etc complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1805.00
16.6	Providing & Fixing of Multi safety valve of 8.5 bar capacity with built in drain, NRV, Vacuum release, Pressure release etc. as required complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .I technical parameters of products/ work , refer Annex ure "A" attached with this BSR .	Each	441.00
16.7	Providing & Fixing of Twin neon indicating lamp of superior quality for storage water heater complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	120.00
16.8	Providing & Fixing of 13 mm Brass with C.P. finished ISI marked angle valve for storage water heater as required complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	433.00
16.9	Providing & Fixing of heavy duty flexible alloy pipe for storage water heater for inlet and outlet of suitable length including the cost of nuts, washers etc complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
16.9.1	450 mm	Set	562.00
16.9.2	600 mm	Set	642.00
16.10	Charges for descaling of storage water heater including replacement of Multi Function Valve as required.	P.Job	720.00
16.11	Charges for Fixing of storage water heater including 10/12 mm Anchor fasteners of suitable size, testing, carrying from store to site,etc. as required.	P.Job	313.00
16.12	Providing & Fixing of 2.0 KW twin ceramic cartridge, Withstands temperatures up to 1000 C long lasting even in hard water including making connection testing etc complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1043.00

Item No.	Description	Unit	Rate (Rs.)
16.13	SITC of MNRE approved & confirming to IS:12933 P-1,2,3 & 5 Flat Plate Collector type solar hot water system having collector with Zincaum sheet outer body , Glass - line / Titanium Enamel coated Inner tank with Metal rust proof PUF insulated Body including electrical back up, Thermostat, Powder coated / Hot dipped galvanized MS stand for Collector & Tank etc. as required. of following capacity complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR.		
16.13.1	100 litre/ day	Set	31470.00
16.13.2	200 litre/ day	Set	59122.00
16.13.3	250 litre/ day	set	73393.00
16.13.4	300 litre/ day	Set	90075.00
16.13.5	500 litre/ day	Set	159698.00

**CHAPTER : E-17**  
**INDOOR LIGHTING**

Item No.	Description	Unit	Rate (Rs.)
17.1	Providing & Fixing of IP20 SMD Mid Power LED batten type integrated light fixture made from Powder coated Extruded aluminium housing with in built driver , System lumen efficacy $\geq 110$ lm/Watt output, internal surge protection of 2.5 KV with Short & Open circuit protection ,THD < 10% , P. F. $\geq 0.95$ , CRI >80 , life time of minimum 50000 Burning Hours with , 70% of intial Lumen maintaned till life ends , CCT 3000°K / 4000°K / 5700°K /6000°K/6500°K (As per ANSI Bin) , Maximum power consumption should not more than the specified rating and Fixture shall be of BIS standard and trade mark certificate ( T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. OEM must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79 & LM80) certificate / Report from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
17.1.1	1170mm(+/-10%) LED batten with min. lumen output 2200 lm	Each	492.00
17.1.2	570mm (+/-10%) batten with min. lumen output 1000 lm	Each	405.00
17.2	Providing & Fixing of energy efficient direct fit (Retrofit) Polycarbonate/ Glass housing SMD Mid Power LED tube rod (with integral driver & alumn. heat sink ) , on existing fixture. system lumen efficacy $\geq 100$ lm/Watt output, internal surge protection of 2.5 KV ,THD < 20% ,p.f. $\geq 0.95$ ,CRI >80 , life time of minimum 35000 Burning Hours with , 70% of intial Lumen maintaned till life ends , CCT 3000°K / 4000°K / 5700°K /6000°K/6500°K (As per ANSI Bin) , maximum power consumption should not more than the specified rating and Fixture shall be of BIS standard and trade mark certificate ( T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. OEM must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79 & LM80)certificate / Report from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
17.2.1	600mm , Min. Lumens output 1800 lm LED Tube rod with Polycarbonate Housing	Each	202.00
17.2.2	1200mm , Min. Lumens output 2000 lm LED Tube rod with Polycarbonate Housing	Each	270.00
17.2.3	1200mm, Min. Lumens output 2000 lm LED Tube rod with Glass Housing	Each	250.00

Item No.	Description	Unit	Rate (Rs.)
17.3	<p>Providing &amp; Fixing of IP-20 LED Recessed / Surface Mounted, Round / Square SMD Mid Power LED Downlight with power coated die-cast aluminum housing with UV Stabilized non yellowish Diffuser with BIS compliance 2.5 KV surge protected Isolated driver, with Short &amp; Open circuit protection, having efficiency &gt; 85% . System Lumen efficacy of <math>\geq 110</math> lm / watt, THD &lt; 10 % , <math>P_f \geq 0.95</math>, CRI &gt;80, life time of minimum 50000 Burning Hours with , 70% of initial Lumen maintained till life ends , CCT 3000°K / 4000°K/ 5700°K /6000°K/6500°K (As per ANSI Bin) , maximum power consumption should not more than the specified rating and Fixture shall be of BIS standard and trade mark certificate ( T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing.</p> <p>OEM must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79 &amp; LM80) certificate / Report from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
<b>17.3.1</b>	<b>Recessed Mounting</b>		
17.3.1.1	Minimum lumen output 330 lm	Each	506.00
17.3.1.2	Minimum lumen output 650 lm	Each	675.00
17.3.1.3	Minimum lumen output 1300 lm	Each	1046.00
17.3.1.4	Minimum lumen output 1600 lm	Each	1161.00
17.3.1.5	Minimum lumen output 1950 lm	Each	1451.00
17.3.1.6	Minimum lumen output 2400 lm	Each	1850.00
<b>17.3.2</b>	<b>Surface Mounting (with extruded alumn. Housing )</b>		
17.3.2.1	Minimum lumen output 650 lm	Each	810.00
17.3.2.2	Minimum lumen output 1300 lm	Each	1181.00
17.3.2.3	Minimum lumen output 1950 lm	Each	1620.00
17.3.2.4	Minimum lumen output 2400 lm	Each	2059.00
17.4	<p>Providing &amp; Fixing of IP20, 2'x2' LED Surface/ Recessed mounting Mid power SMD type LED Light fixture not less than 50mm housing depth made from CRCA sheet steel housing, high purity / transmissivity UV stabilized Non -yellowish diffuser for uniform light distribution. High efficiency with 4 KV internal/external surge protection BIS certified isolated driver having efficiency &gt; 85% , with Short &amp; Open circuit protection (Integral with light fixture). System lumen efficacy of <math>\geq 120</math> lm/Watt ,THD &lt; 10 % , <math>p.f. \geq 0.95</math>,CRI &gt;80 , life time of minimum 50000 Burning Hours with , 70% of initial Lumen maintained till life ends , CCT 3000°K / 4000°K / 5700°K /6000°K/6500°K (As per ANSI Bin) , maximum power consumption should not more than the specified rating and Fixture shall be of BIS standard and trade mark certificate ( T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing.</p> <p>OEM must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79 &amp; LM80) certificate / Report from OEM shall be submitted. All as per pre approved by Engineer in charge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
<b>17.4.1</b>	<b>Recessed Mounting</b>		
17.4.1.1	Minimum lumen output 3000 lm	Each	2288.00
17.4.1.2	Minimum lumen output 3600 lm	Each	2558.00



Item No.	Description	Unit	Rate (Rs.)
17.4.1.3	Minimum lumen output 4200 lm	Each	2984.00
<b>17.4.2</b>	<b>Surface Mounting</b>		
17.4.2.1	Minimum lumen output 3000 lm	Each	2491.00
17.4.2.2	Minimum lumen output 3600 lm	Each	2862.00
17.4.2.3	Minimum lumen output 4200 lm	Each	3308.00
17.5	<p>Providing &amp; Fixing of IP20, 1100-1200 mm x 50-60 mm x 70-85 mm size Suspended mounting Mid power SMD type LED linear Light fixture made from Extruded Aluminium housing, PMMA diffuser for uniform light distribution. High efficiency with 4 KV internal/external surge protection BIS certified isolated driver having efficiency &gt; 85% , with Short &amp; Open circuit protection (Integral with light fixture). System lumen efficacy of <math>\geq 100</math> lm/Watt ,THD &lt; 10 % , p.f.<math>\geq 0.95</math>,CRI &gt;80 , life time of minimum 50000 Burning Hours with , 70% of initial Lumen maintained till life ends , CCT 3000°K / 4000°K / 5700°K /6000°K/6500°K (As per ANSI Bin) , maximum power consumption should not more than the specified rating and Fixture shall be of BIS standard and trade mark certificate ( T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing.</p> <p>OEM must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79 &amp; LM80) certificate / Report from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
17.5.1	Minimum lumen output 2000 lm	Each	4466.00
17.5.2	Minimum lumen output 3000 lm	Each	5422.00
17.6	<p>Providing &amp; Fixing of IP65 IK08 rated Integrated SMD Mid power LED bulk head type light fixture made from Pressure Die Cast AL housing suitable with integral driver, system lumen efficacy <math>\geq 100</math> lm/Watt output , THD &lt; 10% ,p.f.<math>\geq 0.95</math>,CRI &gt;80 , life time of minimum 50000 Burning Hours with , 70% of initial Lumen maintained till life ends , CCT 3000°K / 4000°K / 5700°K /6000°K/6500°K (As per ANSI Bin) , maximum power consumption should not more than the specified rating and Fixture shall be of BIS standard and trade mark certificate ( T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. surge protection 4 KV. OEM must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79 &amp; LM80) certificate / Report from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
17.6.1	Minimum lumen output 1000 lm	Each	1647.00

Item No.	Description	Unit	Rate (Rs.)
17.7	<p>Providing &amp; Fixing of IP65 IK08 rated Integrated High power LED ( each LED between 3 to 5 watt power with secondary lencs on each LED) Highbay light fixture made from Pressure Die Cast Aluminium housing, toughned glass diffuser, potted driver, Eye bolt for mounting, system lumen efficacy <math>\geq 140</math> lm/Watt output , THD &lt; 10% ,p.f.<math>\geq 0.95</math>,CRI &gt;80 , life time of minimum 50000 Burning Hours with , 70% of intial Lumen maintaned till life ends , CCT 3000°K / 4000°K / 5700°K /6000°K/6500°K (As per ANSI Bin) , maximum power consumption should not more than the specified rating and Fixture shall be of BIS standard and trade mark certificate ( T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. surge protection 4 KV inbuilt &amp; 10 KV external inside fixture</p> <p>OEM must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79 &amp; LM80) certificate / Report from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
17.7.1	Minimum lumen output 10000 lm	Each	6683.00
17.7.2	Minimum lumen output 14000 lm	Each	7764.00
17.7.3	Minimum lumen output 16500 lm	Each	9790.00
17.8	<p>Providing &amp; Fixing of Suspended mounting IP66 IK08 rated Integrated High power LED Wellglass light fixture made from Pressure Die Cast Aluminium housing, potted driver, Eye bolt for mounting, PC clear / Opal Diffuser, system lumen efficacy <math>\geq 120</math> lm/Watt output , THD &lt; 10% ,p.f.<math>\geq 0.95</math>,CRI &gt;70 , life time of minimum 50000 Burning Hours with , 70% of intial Lumen maintaned till life ends , CCT 3000°K / 4000°K / 5700°K /6000°K/6500°K (As per ANSI Bin) , maximum power consumption should not more than the specified rating and Fixture shall be of BIS standard and trade mark certificate ( T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. surge protection 4 KV . OEM must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79 &amp; LM80)certificate / Report from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
17.8.1	Minimum lumen output 3500 lm	Each	2429.00
17.8.2	Minimum lumen output 4800 lm	Each	3239.00

Item No.	Description	Unit	Rate (Rs.)
17.9	Providing & Fixing of energy efficient /energy saving IP 20 LED direct retrofit Bulb in existing holder or fixture as required with system lumen efficacy $\geq 100$ lm/Watt output ,pf 0.95 , CRI >70, minimum life time of minimum 25000 Burning Hours with , 70% of initial Lumen maintained till life ends , CCT 3000°K / 4000°K / 5700°K /6000°K/6500°K (As per ANSI Bin) , maximum power consumption should not more than the specified rating and Fixture shall be of BIS standard and trade mark certificate ( T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. OEM must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79/LM80) certificate / Report from OEM shall be submitted. All as per pre approved by engineer in charge . for additional technical parameters of product/ work, refer Annexure "A" attached with this BSR.		
17.9.1	2/3 Watt	Each	81.00
17.9.2	6/7 Watt	Each	94.00
17.9.3	9 Watt	Each	115.00
17.9.4	15 Watt	Each	135.00
17.9.5	18/20 Watt	Each	162.00
17.10	Providing & Fixing of IP20 SMD Mid Power LED batten with integrated box (min.1200mmx40mmx60mm including reflector) with replacable driver fixture made from Powder coated Extruded aluminium housing ,Min. lumen output 4400 lm, System lumen efficacy $\geq 110$ lm/Watt output, internal surge protection of 4.0 KV with Short & Open circuit protection,THD < 10% , P. F. $\geq 0.95$ , CRI >80 , life time of minimum 50000 Burning Hours with , 70% of initial Lumen maintained till life ends , CCT 3000°K / 4000°K / 5700°K /6000°K/6500°K (As per ANSI Bin) , Maximum power consumption should not more than the specified rating and Fixture shall be of BIS standard and trade mark certificate ( T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing.  OEM must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79 & LM80) certificate / Report from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1620.00
17.11	Providing & Fixing of IP 20 box made out from 1.2mm thick CRCA sheet steel with depth of minimum 30 mm and finished with powder coating and suitable for mounting LED tube including side covers, holders , internal wiring to illuminate the single sided connection LED tube. ( Without tube). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
17.11.1	Suitable for 2' LED Tube shape fixture for single rod	Each	151.00
17.11.2	Suitable for 4' LED Tube shape fixture for single rod	Each	227.00
17.11.3	Suitable for 4' LED Tube shape fixture for double rod	Each	358.00

**CHAPTER : E-18**  
**OUTDOOR LIGHTING & POLE TABLES**

Item No.	Description	Unit	Rate (Rs.)
18.1	Supply and erection of Galvanized Iron pole with galvanizing done in single dipping (Average coating thickness Minimum 65 Microns) continuously tapered poles having Octagonal / Circular cross-sections designed to withstand the maximum wind speed as per IS 875, The pole shaft shall be made from sheet steel (HT Steel Conforming to grade S355JO) and conforming to BSEN 10025 and shall be continuously tapered with single longitudinal welding. There shall not be any circumferential welding. The welding of pole shaft shall be done by Submerged Arc Welding (SAW) process. pole shafts shall be provided with the rigid flange plate of suitable thickness (Fe 410 conforming to IS 226 / IS 2062) with provision for fixing 4 no. foundation bolts, This base plate shall be fillet welded to the pole shaft at two locations i.e. from inside and outside. The octagonal Poles shall have lockable door of approximate 500 mm length at the elevation of 500 mm from the Base plate with bakelite sheet having 6A SP MCB and 16 sqmm stud type connector ( 4 nos) inside the pole at door opening for cable connection of following length and dimension as per <b>table P-01</b> with base plate and foundation bolt on the Existing cement concrete foundation. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
<b>18.1.1</b>	<b>Poles with Octagonal Cross Section</b>		
18.1.1.1	3 Mtr.	Each	6361.00
18.1.1.2	4 Mtr.	Each	7806.00
18.1.1.3	5 Mtr.	Each	9588.00
18.1.1.4	6 Mtr.	Each	11164.00
18.1.1.5	7 Mtr.	Each	13152.00
18.1.1.6	8 Mtr.	Each	15141.00
18.1.1.7	9 Mtr.	Each	18981.00
18.1.1.8	10 Mtr.	Each	22823.00
18.1.1.9	11 Mtr.	Each	30725.00
18.1.1.10	12 Mtr.	Each	35453.00
18.2	Supply and Fixing of Pole OEM fabricated hot dipped galvanised M.S. Overhang (48.3 X 3.25 mm) with cap (400 x 88.9 / 114.3 x 3.25 mm) over the existing poles. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.2.1	Single arm overhang	Mtr.	1889.00
18.2.2	Double arm overhang	Mtr.	3314.00

Item No.	Description	Unit	Rate (Rs.)
18.3	Supply and erection of Galvanized Iron pole with galvanizing done in single dipping (Average coating thickness Minimum 65 Microns) Swaged tubular pole conforming to IS: 2713-1980 (part I to II) with galvanised base plate, The pole shall be made from steel tube & Pipe (IS:1141, Fe 410) including excavation of the pit and filling the same with C.C. of M-20 grade (1:1.5:3) from base plate to 50 cm above ground level, with the help of steel frame not less than 40 cm dia up to 114.3mm outer dia and 50 cm beyond 114.3mm outer dia around the pole. Duly finished with cement plaster, earthing terminals, cable entry with 32 mm dia. 'B' class GI cable sleeves complete as required. of following height & designation. ( See Table P - 02 for specs. ) All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer Annexure "A" attached with this BSR .		
18.3.1	7.5 Mtr. ( 410 SP - 5 )	Each	15419.00
18.3.2	8.5 Mtr. ( 410 SP - 17 )	Each	17098.00
18.3.3	9.0 Mtr. ( 410 SP - 28 )	Each	20938.00
18.3.4	10 Mtr. ( 410 SP - 42 )	Each	26675.00
18.3.5	11 Mtr. ( 410 SP - 51 )	Each	29898.00
18.3.6	12 Mtr. ( 410 SP - 60 )	Each	36827.00
18.4	Add for supply and fixing of Pole OEM fabricated Galvanized Overhang of following size over the existing poles. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.4.1	76.1 mm OD x 3.25 mm thickness	Mtr.	1748.00
18.4.2	88.9 mm OD x 3.25 mm thickness	Mtr.	2275.00
18.4.3	114.3 mm OD x 3.65 mm thickness	Mtr.	3167.00
18.5	Supply and erection of Mild steel Swaged tubular pole conforming to IS: 2713-1980 (part I to II) with base plate, The pole shall be made from steel tube & Pipe (IS:1141, Fe 410) including excavation of the pit and filling the same with C.C. of M-20 grade (1:1.5:3) from base plate to 50 cm above ground level, with the help of steel frame not less than 40 cm dia up to 114.3mm outer dia and 50 cm beyond 114.3mm outer dia around the pole. Duly finished with cement plaster, earthing terminals, cable entry with 32 mm dia. 'B' class GI cable sleeves. After erection pole shall be painted with two coat of red oxide primer and two quote of enamel paint of silver colour as per the direction of Engineer incharge complete as required of following height & designation. ( See Table P - 02 for specs. ) All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.5.1	7.5 Mtr. ( 410 SP - 5 )	Each	13102.00
18.5.2	8.5 Mtr. ( 410 SP - 17 )	Each	14499.00
18.5.3	9.0 Mtr. ( 410 SP - 28 )	Each	17666.00
18.5.4	10 Mtr. ( 410 SP - 42 )	Each	22384.00
18.5.5	11 Mtr. ( 410 SP - 51 )	Each	25045.00

Item No.	Description	Unit	Rate (Rs.)
18.5.6	12 Mtr. ( 410 SP - 60 )	Each	30739.00
18.6	Add for supply and fixing of Pole OEM fabricated Mild steel Overhang of following size over the existing poles, Overhang shall be painted with two coat of red oxide primer and two quote of enamel paint of silver colour as per the direction of Engineer incharge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.6.1	76.1 mm OD x 3.25 mm thickness	Mtr.	1490.00
18.6.2	88.9 mm OD x 3.25 mm thickness	Mtr.	2014.00
18.6.3	114.3 mm OD x 3.65 mm thickness	Mtr.	2813.00
18.7	Supply installation testing & Commissioning of high mast lighting system (as per PLG 07 of ILP UK technical report no 7 of ILE UK /IS:875 Part-1 – 2015//BSEN10025/and IS:2062 )consisting of totally hot dip galvanised by piecwise single dipped method high mast, lantern carriage suitable for up to 12 nos luminaries with welded arm (excluding luminaires), mast head frame assembly with full cover, including 1 No. LED 15 Watts aviation obstruction lights, double drum type self sustaining winch, integral power tool accesible from door with padlocking arrangement (winch motor with control circuit) hot dipped galvanised heavy duty pipe lightening finial, Stainless steel 6 mm dia. wire ropes (AISI 316, 7 / 19 costruction 3 no. rope for lantern carrage & 2 no. rope for winch assembly ) foundation bolt, torque limiter,EPR insulated PCP sheathed 5 core x 2.5 Sq.mm trailing cable, including outdoor type control panel for auto on / off, reverse / forward motor operation. The mast is constructed from mild steel plates (as per IS 5986 Gr. 510 ) cut and folded to form a polygonal section, telescopic jointed and welding as per BS 5135.etc. as required on Existing Foundation. ( See table P - 03 for specs.) OEM Must have Type test certificate for wind tunnel test . All as per pre approved by Engineer in charge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.7.1	12.5 Mtr HM (in 2 section) suitable for 6 No. Luminaries 2 no. rope for lantern carrage & 2 no. rope for winch assembly	Each	225679.00
18.7.2	16.0 Mtr HM (in 2 section) suitable for 9 No. Luminaries	Each	287292.00
18.7.3	20.0 Mtr Hm (in 2 section) suitable for 12 No. Luminaries	Each	330476.00
18.7.4	25.0 Mtr HM (in 3 section) suitable for 12 No. Luminaries	Each	483603.00
18.7.5	30.0 Mtr HM (in 3 section) suitable for 12 No. Luminaries	Each	555287.00
18.8	Providing and Laying RCC Foundation for Octagonal / Conical Street Light poles, High mast Poles as per Drawing attach at Table P-4 with Following Procedure & All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR . A) Excavation of Pit for Foundation Size upto required depth from Ground level B) Dressing of Pit and Dry stone pitching 200 mm thick including supply of stones and preparing surface complete. C) Providing and laying in position cement concrete of M-10 grade of 75 mm thickness		

Item No.	Description	Unit	Rate (Rs.)
	D) Reinforcement for R.C.C. work with TMT bars including straightening, cutting, bending, placing in position and binding all complete.		
	E) Centring and shuttering including strutting , propping etc. and removal of form work for Footing and Pedestal		
	F) Providing & Fixing of 2 no. Required Size PLB HDPE Pipe & Foundation Bolt with template as per OEM Recommendations.		
	G) Providing and Laying Reinforce cement Concrete of M-25 grade in Footing and Pedestal including Curing the foundation for 7 days.		
	H) Providing and Fixing Nosing Angle 40 mm x 40 mm x 6mm with 2 no. 100 mm long, 10 mm dia. Lugs on each face.		
18.8.1	Pole Foundation for Octagonal pole from 3 Mtr. To 6 Mtr.		5827.00
18.8.2	Pole Foundation for Octagonal pole from 7 Mtr. To 9 Mtr.		7943.00
18.8.3	Pole Foundation for Octagonal pole from 10 Mtr. To 12 Mtr.		11921.00
18.9	Providing & Fixing of IP-65 Protected LED aviation obstruction light luminaire comprising of die cast aluminium alloy housing with Polycarbonate enclosure having more than 200 No's Low Power LED's having minimum power consumption 15 watts complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer, Annexure "A" attached with this BSR .		
18.9.1	aviation obstruction LED light luminaire Min. 15 Watts	Each	5494.00
18.10	Providing & Fixing of IK08 IP65 protected Top/Bottom mounted LED Post top Luminarie made of single piece construction powder coated die cast alluminium housing with UV stabalized Clear / frosted Polycarbonate diffuser and Aluminium anodised with sand blast reflector. The System level Luminous efficacy $\geq 100$ Lumen/W. SMD LEDs is to be used, System CRI>70, CCT: 3000/4000/6500 K. The integral electronic driver must be potted & has a unique BIS R number must be potted & has a unique BIS R number constant current and Internal/external surge protection device of min. 4KV(L-N) and efficiency > 85%, PF>0.9, THD<10% and input Voltage range of 140-270V AC at 50Hz. System life of 50000 Burning hours with 70% of Initial Lumens maintained . Driver current <750mA. Fixture must be in compliance with BIS Standards and Trade mark Certificate complete in all respect.OEM Must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79/LM80) Certificate/ report with liable warranty of product/accessories from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.10.1	Minimum lumen output 2500 lm Post top Luminarie	Each	5075.00
18.10.2	Minimum lumen output 3000 lm Post top Luminarie	Each	5703.00
18.10.3	Minimum lumen output 4000 lm Post top Luminarie	Each	6575.00
18.10.4	Minimum lumen output 4500 lm Post top Luminarie	Each	8195.00

Item No.	Description	Unit	Rate (Rs.)
18.11	Providing & Fixing of IK08 IP-66 protected high power LED flood light system with single piece Pressure diecast aluminium housing, toughened glass diffuser with suitable lenses on LED to achieve various beam angles, of high power LED of 3 to 5 watt each . Integrated potted driver as a unique BIS R number having efficiency more than 85 % and in compliance to BIS certified and Trade mark certificate. The System level Luminaire efficacy $\geq 125$ lm/ wt. LED driver Input Voltage AC 120 to 270 V AC with High voltage Cutoff $\geq 300$ V AC and Auto resetting Safety .Power Factor $>0.95$ , THD(I) $<10\%$ , driver current $\leq 750$ mA. driver should be Phase to phase protection of 440 V for 4 Hrs. Electrical Connector , Surge Protection Min $\geq 4$ KV internal and 10KV external but inside driver compartment, System life of 50000 Burning hours with 70% of Initial Lumens maintained, CRI $>70$ and CCT 5700K $\pm 355$ K. Manufactures Word Mark/Name Engraved/Embossing/Screen printing on die cast housing to allow traceability/authenticity. Fixture shall be IS 10322 Compliant.OEM Must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79/LM80) Certificate/ report with liable warranty of product/accessories from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.11.1	High Power LED Flood Light Minimum lumen output 3700 lm	Each	2127.00
18.11.2	High Power LED Flood Light Minimum lumen output 6200 lm	Each	2570.00
18.11.3	High Power LED Flood Light Minimum lumen output 8700 lm	Each	2991.00
18.11.4	High Power LED Flood Light Minimum lumen output 10000 lm	Each	3856.00
18.11.5	High Power LED Flood Light Minimum lumen output 12400 lm	Each	4720.00
18.11.6	High Power LED Flood Light Minimum lumen output 14800 lm	Each	7098.00
18.11.7	High Power LED Flood Light Minimum lumen output 18650 lm	Each	8686.00
18.11.8	High Power LED Flood Light Minimum lumen output 22400 lm	Each	10640.00
18.11.9	High Power LED Flood Light Minimum lumen output 25000 lm	Each	12466.00
18.11.10	High Power LED Flood Light Minimum lumen output 30000 lm	Each	15038.00
18.11.11	High Power LED Flood Light Minimum lumen output 37500 lm	Each	17166.00
18.11.12	High Power LED Flood Light Minimum lumen output 43750 lm	Each	21790.00



Item No.	Description	Unit	Rate (Rs.)
18.12	Providing & Fixing of IK08, IP 66 protected LED Street Light Luminaire on existing bracket/pole. Fixture made of powder coated single piece pressure die cast aluminum material with heat dissipation fins on housing with UV stabilized PC (UV stablization report submitted for UV cover ) /Toughened Glass cover and secondary lens on each LED & should be SMD type of 3 to 5 watt each . The System efficacy $\geq 125$ lm/ wt and potted driver & has a unique BIS R number with Input Voltage AC 120 to 270 V AC with High voltage Cutoff @ $\geq 300$ V AC and Auto resetting Safety , Power Factor $>0.95$ driver Efficiency $>85\%$ ,THD(I) $<10\%$ Humidity 10% to 90% RH Working Temp -5C to 45C . driver current $<750$ mA. The luminaire shall be BIS certified and Trade mark certified. Life Expectancy Equal or more than 50000 burning hrs with Minimum 70% lumen maintained , CRI $>70$ and CCT 5700K +355K. Surge protection shall be min $\geq 4$ KV internal and min 10 KV external inside driver compartment. driver should be Phase to phase protection of 440 V for 4 Hrs. Manufactures Word Mark/Name Engraved/Embossing on die cast housing to allow traceability/authenticity. Fixture shall be AS PER IS 10322 Complianced.OEM Must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79/LM80) Certificate/ report with liable warranty of product/accessories from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.12.1	LED Street Light fixture with Minimum lumen output 2450 lm	Each	2043.00
18.12.2	LED Street Light fixture with Minimum lumen output 3700 lm	Each	2696.00
18.12.3	LED Street Light fixture with Minimum lumen output 5600 lm	Each	3316.00
18.12.4	LED Street Light fixture with Minimum lumen output 7500 lm	Each	3954.00
18.12.5	LED Street Light fixture with Minimum lumen output 8700 lm	Each	4678.00
18.12.6	LED Street Light fixture with Minimum lumen output 11225 lm	Each	5412.00
18.12.7	LED Street Light fixture with Minimum lumen output 12500 lm	Each	6136.00
18.12.8	LED Street Light fixture with Minimum lumen output 15000 lm	Each	6978.00
18.12.9	LED Street Light fixture with Minimum lumen output 17500 lm	Each	8426.00
18.12.10	LED Street Light fixture with Minimum lumen output 18750 lm	Each	9171.00
18.12.11	LED Street Light fixture with Minimum lumen output 22500 lm	Each	10370.00
18.12.12	LED Street Light fixture with Minimum lumen output 25000 lm	Each	11623.00

Item No.	Description	Unit	Rate (Rs.)
18.13	Providing & Fixing of IK10 IP65 protected 600 mm height LED Bollard Luminarie with base plate made of powder coated die cast aluminium housing with UV stabilized PC diffuser. The System level Luminous efficacy $\geq 90$ Lumen/W. SMD LEDs is to be used, System CRI $>70$ , CCT: 3000/4000/6500 K. The integral electronic driver must be potted & has a unique BIS R number must be potted & has a unique BIS R number constant current and Internal/external surge protection device of min. 4KV(L-N) and efficiency $> 85\%$ , PF $>0.9$ , THD $<20\%$ and input Voltage range of 90-270V AC at 50Hz. System life of 30000 Burning hours with 70% of Initial Lumens maintained Light output in Cool white or Warm White Colour as per engineers choice. driver current $<750\text{mA}$ . Fixture must be in compliance with BIS Standards and Trade mark Certificate complete in all respect.OEM Must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79/LM80) Certificate/ report with liable warranty of product/accessories from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.13.1	Minimum lumen output 800 lm Bollard	Each	9546.00
18.13.2	Minimum lumen output 980 lm Bollard	Each	11241.00
18.14	Providing & Fixing of IK10 IP66 / IP67 protected Rectangular shape LED Step Luminarie made of powder coated die cast aluminium housing with UV stabilized PC diffuser. The System level Luminous efficacy $\geq 90$ Lumen/W. SMD LEDs is to be used, System CRI $>70$ , CCT: 3000/4000/6500 K. The integral electronic driver must be potted & has a unique BIS R number constant current and Internal/external surge protection device of min. 4KV(L-N) and efficiency $> 85\%$ , PF $>0.9$ , THD $<10\%$ and input Voltage range of 140-270V AC at 50Hz. System life of 50000 Burning hours with 70% of Initial Lumens maintained . driver current $<750\text{mA}$ . Fixture must be in compliance with BIS Standards and Trade mark Certificate complete in all respect.OEM Must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79/LM80) Certificate/ report with liable warranty of product/accessories from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.14.1	Minimum lumen output 450 lm Step light	Each	3698.00
18.14.2	Minimum lumen output 630 lm Step light	Each	4508.00
18.14.3	Minimum lumen output 800 lm Step light	Each	4886.00

Item No.	Description	Unit	Rate (Rs.)
18.15	Providing & Fixing of IK10 IP65 / IP66 protected LED Up - Down Luminarie Wall / Surface mounting made of powder coated die cast alluminium housing with UV stabalized PC diffuser. The System level Luminous efficacy $\geq 90$ Lumen/W. COB LEDs is to be used, System CRI $>70$ , CCT: 3000/4000/6500 K. The integral electronic driver must be potted & has a unique BIS R number constant current and Internal/external surge protection device of min. 4KV(L-N) and efficiency $> 85\%$ , PF $>0.9$ , THD $<10\%$ and input Voltage range of 140-270V AC at 50Hz. System life of 50000 Burning hours with 70% of Initial Lumens maintained Light output in Cool white or Warm White Colour as per engineers choice. driver current $<750\text{mA}$ . Fixture must be in compliance with BIS Standards and Trade mark Certificate complete in all respect.OEM Must have its own in house NABL lab setup for all testing facilities for LED fixtures. (LM79/LM80) Certificate/ report with liable warranty of product/accessories from OEM shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.15.1	Minimum lumen output 800 lm Up-Down Luminary	Each	6426.00
18.15.2	Minimum lumen output 1300 lm Up-Down Luminary	Each	8074.00
18.15.3	Minimum lumen output 2150 lm Up-Down Luminary	Each	9519.00
18.16	Providing and fixing of fuse box size 250(H) x 200(W) x 150(D) mm fabricated of 1.6mm MS sheet with hinged cover, dust and vermin proof, rubber gasket, locking arrangement, duly holded with 2 nos pole clamps of 20 mm x 3 mm flat with nut and bolts, complete with anticorrosive treatment, finished with two coat of approved enamel paint. The box shall be provided with 2 / 4 nos copper bus bar 125 x 20 x 3 mm with brass screws suitable supports,earth terminal, inter connection, knock outs for 20 / 25 mm cable gland, 1 no. 6 Amp MCB complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	2274.00
18.17	Providing and fixing of IP 65 protected Polycarbonate / Polysterene fuse box moulded with inside knock outs of following size with hinged cover, transparent window, PU gasket, locking arrangement, duly holded with 2 nos. pole clamps of 20 mm x 3 mm flat with nut and bolts, The box shall be provided with Din rail, 4 / 8 way 10.0 / 16.0 sq.mm heavy duty connector, earth terminal, complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.17.1	125 mm X 200 mm X 122 mm	Each	1827.00
18.17.2	160 mm X 225 mm X 100 mm	Each	2185.00
18.17.3	200 mm X 200 mm X 122 mm	Each	2854.00
18.17.4	225 mm X 225 mm X 100 mm	Each	3550.00

Item No.	Description	Unit	Rate (Rs.)
18.18	Providing & Fixing of Street light bracket made out from following size of ' B ' class , Medium class G.I. Pipe confirming to IS : 1239 P - 1 ( 2004 ) with heavy duty pole clamp, Saddles suitable fastners etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.18.1	20 mm Dia.	Mtr.	405.00
18.18.2	25 mm Dia.	Mtr.	540.00
18.18.3	32 mm Dia.	Mtr.	742.00
18.18.4	40 mm Dia.	Mtr.	958.00
18.19	Providing & Fixing of IP - 65 protected impact resistant polycarbonate / Polysterene enclosures with knock out for cable entry/out including fixing with nut, bolt, fater etc as required complete in all respect of following sizes.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.19.1	180 x 180 x 91 mm	Each	1498.00
18.19.2	250 x 200 x 115 mm	Each	2174.00
18.19.3	300 x 450 x 132 mm	Each	3450.00
18.19.4	320 x 440 x 179 mm	Each	4982.00
18.19.5	320 x 640 x 179 mm	Each	6616.00
18.20	Supply and erection of PU coated , 6 to 7 mm thick Glass / Fibre Reinforced Pole (GRP /FRP) made by CNC filament winding machine using thermoset resin polyester/epoxy resin system) having minimum 62% glass content. designed to withstand the maximum wind speed as per IS 875, and Tested for deflection not more than 15% length of pole as per ASTM D 4923, The pole should be in one piece and tapered round in shape, pole shafts shall be provided with FRP Anchor with suitable MS cated Base with provision for fixing 4 no. foundation bolts( Including cost of Foundation Bolt), The Pole shall have lockable door of approximate 500 mm length at the elevation of 500 mm from the Base plate with bakelite sheet having 6A SP MCB and 16 sqmm stud type connector ( 4 nos) inside the pole at door opening for cable connection of following length and dimension on Existing cement concrete foundation. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.20.1	3 Mtr. Long, Top/ Bottom OD Dia 89/126mm $\pm$ 2mm approx. With Base 250X250 X 10mm	Each	16910.00
18.20.2	4 Mtr. Long, Top/ Bottom OD Dia 89/131mm $\pm$ 2mm approx. With Base 250X250 X 10mm	Each	20672.00
18.20.3	5 Mtr. Long, Top/ Bottom OD Dia 89/141mm $\pm$ 2mm approx. With Base 250X250 X 10mm	Each	22091.00
18.20.4	6 Mtr. Long, Top/ Bottom OD Dia 89/152mm $\pm$ 2mm approx. With Base 250X250 X 10mm	Each	23796.00

Item No.	Description	Unit	Rate (Rs.)
18.20.5	7 Mtr. Long, Top/ Bottom OD Dia 89/157mm $\pm$ 2mm approx. With Base 300X300 X 12mm	Each	29036.00
18.20.6	8 Mtr. Long, Top/ Bottom OD Dia 89/157mm $\pm$ 2mm approx. With Base 300X300 X 12mm	Each	31280.00
18.20.7	9 Mtr. Long, Top/ Bottom OD Dia 89/183mm $\pm$ 2mm approx. With Base 300X300 X 12mm	Each	33160.00
18.20.8	10 Mtr. Long, Top/ Bottom OD Dia 89/207mm $\pm$ 2mm approx. With Base 350X350 X 15mm	Each	42052.00
18.20.9	11 Mtr. Long, Top/ Bottom OD Dia 89/217mm $\pm$ 2mm approx. With Base 350X350 X 15mm	Each	44246.00
18.20.10	12 Mtr. Long, Top/ Bottom OD Dia 89/226mm $\pm$ 2mm approx. With Base 400X400 X 20mm	Each	53300.00
18.21	Supply, Erection and Fixing of GRP Overhang with cap over the existing poles. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
18.21.1	Single arm overhang	Mtr.	4318.00
18.21.2	Double arm overhang	Mtr.	6168.00

**Table P- 01**  
**GI octagonal pole Standard Dimensions**

<b>Pole Height (Mtrs.)</b>	<b>3 Mtrs.</b>	<b>4 Mtrs.</b>	<b>5 Mtrs.</b>	<b>6 Mtrs.</b>	<b>7 Mtrs.</b>	<b>8 Mtrs.</b>	<b>9 Mtrs.</b>	<b>10 Mtrs.</b>	<b>11 Mtrs.</b>	<b>12 Mtrs.</b>
Material of Construction	BS EN 10025	BS EN 10025	BS EN 10025	BS EN 10025	BS EN 10025	BS EN 10025	BS EN 10025	BS EN 10025	BS EN 10025	BS EN 10025
Metal Protection Treatment	Galvanized	Galvanized	Galvanized	Galvanized	Galvanized	Galvanized	Galvanized	Galvanized	Galvanized	Galvanized
Avg. Thickness of Galvanization	65 Microns	65 Microns	65 Microns	65 Microns	65 Microns	65 Microns	65 Microns	65 Microns	65 Microns	65 Microns
Thickness of Sheet	3 mm	3 mm	3 mm	3 mm	3 mm	3 mm	3 mm	3 mm	3 mm	3 mm
Thickness of Base Plate	12 mm	12 mm	12 mm	12 mm	16 mm	16 mm	20 mm	20 mm	20 mm	25 mm
Bottom Diameter	130 mm	130 mm	130 mm	135 mm	135 mm	135 mm	155 mm	200 mm	200 mm	240 mm
Top Diameter	65 mm	65 mm	70 mm	70 mm	70 mm	70 mm	70 mm	90 mm	100 mm	110 mm
Number of Foundation Bolts X Length	4 x 450 mm	4 x 450 mm	4 x 450 mm	4 x 450 mm	4 x 600 mm	4 x 750 mm	4 x 750 mm	4 x 750 mm	4 x 750 mm	4 x 850 mm
PCD of Foundation Bolt	200 mm	200 mm	200 mm	200 mm	220 mm	225 mm	240 mm	310 mm	320 mm	340 mm
Bolt Diameter	16 mm	16 mm	16 mm	16 mm	20 mm	20 mm	20 mm	25 mm	25 mm	25 mm
Bracket	Single & Double Arm	Single & Double Arm	Single & Double Arm	Single & Double Arm	Single & Double Arm	Single & Double Arm	Single & Double Arm	Single & Double Arm	Single & Double Arm	Single & Double Arm

Table P - 02

Swaged Tubular pole as per IS : 2713 P - I, II 1980

S.No.	Pole Designation	Over all length ( Mtr. )	Base Plate Size	Planting Depth ( Mtr. )	Length of sections			Outside dia. & thickness of sections			Approx. Wt. of Pole (Including Base Plate)
					Bottom	Middle	Top				
					h1	h2	h3				
1	410 SP - 5	7.5	300 x 300 x 5 mm	1.25	4.5	1.50	1.50	114.3 x 4.5	88.9 x 4.05	76.1 x 3.25	3.52 Kg + 79 Kg
2	410 SP - 17	8.5	300 x 300 x 5 mm	1.50	5.0	1.75	1.75	114.3 x 4.5	88.9 x 4.05	76.1 x 3.25	3.52 Kg + 89 Kg
3	410 SP - 28	9.0	300 x 300 x 5 mm	1.50	5.0	2.0	2.0	139.7 x 4.5	114.3 x 3.65	88.9 x 3.25	3.52 Kg + 113 Kg
4	410 SP - 42	10.0	400 x 400 x 7 mm	1.8	5.2	2.4	2.4	139.7 x 5.4	114.3 x 4.5	88.9 x 3.25	8.8 Kg + 144 Kg
5	410 SP - 51	11	400 x 400 x 7 mm	1.8	5.6	2.7	2.7	139.7 x 5.4	114.3 x 5.4	88.9 x 3.25	8.8 Kg + 164 Kg
6	410 SP - 60	12	400 x 400 x 7 mm	2	5.8	3.1	3.1	165.1 x 5.4	139.7 x 4.5	114.3 x 3.65	8.8 Kg + 208 Kg

Table P - 03

**High mast suitable for 2 / 3 point suspension system of lantern carriage for wind speed up to 180 Km / Hour**

Height of Mast	Unit	30 Mtr.	25 Mtr.	20 Mtr.	16 Mtr.	12.5 Mtr.
Material Construction		IS 2062 grade E350 / BS EN 10025 or Equivalent having minimum yield strength of 350 N/Sq. mm	IS 2062 grade E350 / BS EN 10025 or Equivalent having minimum yield strength of 350 N/Sq. mm	IS 2062 grade E350 / BS EN 10025 or Equivalent having minimum yield strength of 350 N/Sq. mm	IS 2062 grade E350 / BS EN 10025 or Equivalent having minimum yield strength of 350 N/Sq. mm	IS 2062 grade E350 / BS EN 10025 or Equivalent having minimum yield strength of 350 N/Sq. mm
No. of Longitude Welds	No.	Single	Single	Single	Single	Single
Top/ Bottom (diameter of High Mast)	mm.	150/540	150/540	150/410	150/410	150/360
Cross section of Mast polygone ( No. of Sides)	No.	20 Sides	20 Sides	20 Sides	20 Sides	20 Sides
Nos. of Section of Mast	No.	3	3	2	2	2
Thickness of Section	MM	3-4-5	3-4-5	3-4	3-4	3-3
Thickness of Galvanisations (Min.)	Micron	As per BSEN ISO 1461 (For Steel $\leq$ 3 mm- 55 Microns & For Steel > 3mm to $\leq$ 6 mm - 70 Microns)	As per BSEN ISO 1461 (For Steel $\leq$ 3 mm- 55 Microns & For Steel > 3mm to $\leq$ 6 mm - 70 Microns)	As per BSEN ISO 1461 (For Steel $\leq$ 3 mm - 55 Microns)	As per BSEN ISO 1461 (For Steel $\leq$ 3 mm - 55 Microns)	As per BSEN ISO 1461 (For Steel $\leq$ 3 mm - 55 Microns)
Size of Base Plate (Min.)	MM	730	730	590	570	520
Thickness of Base Plate (Min.)	MM	30	30	25	25	20
Foundation Bolts						
Nos of Bolts	No.	12	12	8	8	6
PCD of Foundation	MM	635	635	500	490	445
Bolt Diameter/Grade/Tensile Strength	MM	30X1200/ EN 8 Grade Minimum tensile strength 600 N/mm2	30X1200/ EN 8 Grade Minimum tensile strength 600 N/mm2	30X850/ EN 8 Grade Minimum tensile strength 600 N/mm2	24X850/ EN 8 Grade Minimum tensile strength 600 N/mm2	24X850/ EN 8 Grade Minimum tensile strength 600 N/mm2
Lantern Carriage (No. of Half)	No.	2	2	2	2	2
Material of construction of LC/Lantern carriage finish		50 NB ERW Class A - M. S. Pipe	50 NB ERW Class A - M. S. Pipe	50 NB ERW Class A - M. S. Pipe	50 NB ERW Class A - M. S. Pipe	40 NB ERW Class A - M. S. Pipe

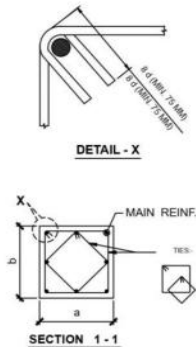


Table P - 03

**High mast suitable for 2 / 3 point suspension system of lantern carriage for wind speed up to 180 Km / Hour**

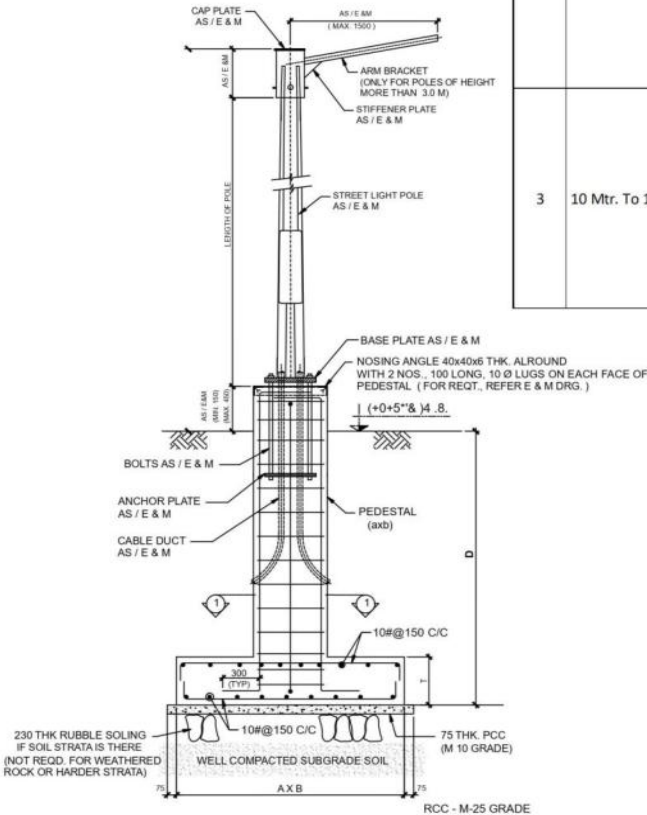
Height of Mast	Unit	30 Mtr.	25 Mtr.	20 Mtr.	16 Mtr.	12.5 Mtr.
Lantern Carriage ( No of Arms)	No.	9	9	6	6	6
Lantern Carriage Minimum Inner Dia	mm	711	535	535	535	450
Lantern Carriage Minimum Length of Arms	mm	600	600	600	600	500
Hardwares		Less than 10 mm stainless steel AISI 304 & 12 mm above hot dip galvanized	Less than 10 mm stainless steel AISI 304 & 12 mm above hot dip galvanized	Less than 10 mm stainless steel AISI 304 & 12 mm above hot dip galvanized	Less than 10 mm stainless steel AISI 304 & 12 mm above hot dip galvanized	Less than 10 mm stainless steel AISI 304 & 12 mm above hot dip galvanized
Nos of fittings LED 400W	No.	12	12	9	8	6
Winch						
Nos. of Drum	Drum/Winch	2	2	2	2	2
Capacity (Min.)	Kg.	SWL 750	SWL 750	SWL 500	SWL 350	SWL 250
Wire Rope (Nos./Thickness)	Nos. (MM)	3/6mm, AISI 316	3/6mm, AISI 316	3/6mm, AISI 316	3/6mm, AISI 304	2/6mm, AISI 304
Input Supply/Power tool /Torque Limitor		415V , 3 Phase/ (Reversible with Plate arrangement for adjusting the tension in the coupling chain between motor & winch/Mechanical	415V , 3 Phase/ (Reversible with Plate arrangement for adjusting the tension in the coupling chain between motor & winch/Mechanical	415V , 3 Phase/ (Reversible with Plate arrangement for adjusting the tension in the coupling chain between motor & winch/Mechanical	415V , 3 Phase/ (Reversible with Plate arrangement for adjusting the tension in the coupling chain between motor & winch/Mechanical	415V , 3 Phase/ (Reversible with Plate arrangement for adjusting the tension in the coupling chain between motor & winch/Mechanical
Cable Connectors (Plug & Socket)		6 Pin Male/Female Connectors	6 Pin Male/Female Connectors	6 Pin Male/Female Connectors	5 Pin Male/Female Connectors	5 Pin Male/Female Connectors
Motor	HP	1.5 HP	1.5 HP	1.0 HP	1.0 HP	1.0 HP
Trailing Cable ( Condcutor/Type/ Size)		Copper/EPR insulated PCP scheathed cotton braided/5CX4.0 sqmm	Copper/EPR insulated PCP scheathed cotton braided/5CX4.0 sqmm	Copper/EPR insulated PCP scheathed cotton braided/5CX4.0 sqmm	Copper/EPR insulated PCP scheathed cotton braided/5CX4.0 sqmm	Copper/EPR insulated PCP scheathed cotton braided/5CX2.5 sqmm

OCTAGONAL / CONICAL POLE FOUNDATION DRAWING



STRUCTURAL DETAILS OF STREET LIGHT POLES

Sl. No.	Length of Pole		
1	3 Mtr. To 6 Mtr.	Foundation Depth w.r.t Finished Ground level	800 mm
		Footing	RCC Size A x B 700mm x 700 mm
			Thickness (T) 250 mm
		Pedestal	Size a x b 300 mm x 300 mm
			Main Reinf. 4 - 16 #
			Ties 8 # @ 150 c/c
2	7 Mtr. To 9 Mtr.	Foundation Depth w.r.t Finished Ground level	1000 mm
		Footing	RCC Size A x B 900mm x 900 mm
			Thickness (T) 300 mm
		Pedestal	Size a x b 350 mm x 350 mm
			Main Reinf. 4 - 16 # + 4 - 12 #
			Ties 8 # @ 150 c/c
3	10 Mtr. To 12 Mtr.	Foundation Depth w.r.t Finished Ground level	1250 mm
		Footing	RCC Size A x B 1100mm x 1100 mm
			Thickness (T) 350 mm
		Pedestal	Size a x b 400 mm x 400 mm
			Main Reinf. 4 - 16 # + 4 - 12 #
			Ties 8 # @ 150 c/c



**CHAPTER : E-19**  
**OVER HEAD LINES**

Item No.	Description	Unit	Rate (Rs.)
19.1	Supply and erection of P.C.C. pole as per REC manual no 15/1979 (ammended upto date) and as per latest Discom specifications with factor of safety 2.5 including excavation of pit upto pole planting depth 1/6th of pole length. and back filling with stone aggregate/boulders and soil by ramming and watering etc complete as required. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
19.1.1	8.0 Mtr long PCC pole of 200 Kg Working Load	Each	3343.00
19.1.2	9.0 Mtr long PCC pole of 200 Kg Working Load	Each	5037.00
19.1.3	9.0 Mtr long PCC pole of 400 Kg Working Load	Each	5918.00
19.1.4	11.0 Mtr long PCC pole of 400 Kg Working Load	Each	7177.00
19.2	Supply and erection of GI stay set confirming to pattern-1 of BS:16/1974 and as per latest Discom Specifications complete with stay rod with anchor plate fitted with cast iron cross head and steel bow, in cement concrete 1:3:6 including excavation of pit-re-filling etc complete as reqd. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
19.2.1	Stay set of dia 20mm, 2.4m long stay rod and anchor plate 380 x 380 x 4.0 mm	Each	1358.00
19.2.2	Stay set of dia 16mm, 1.8m long stay rod and anchor plate 300 x 300 x 4.0 mm	Each	836.00
19.3	Supply and fixing of following LT Supporting accessories with nut bolt & Clamps made out as per standard Discom's specifications with two coats of Red oxide and two coats of Aluminium paint etc. as required. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
19.3.1	LT cross arm 600 mm long with clamp	Each	460.00
19.3.2	LT cross arm 1200 mm long with clamp	Each	787.00
19.3.3	Suspension clamp with eye hook & Pole clamp	Each	527.00
19.3.4	Dead end clamp with eye hook & Pole clamp	Each	612.00
19.3.5	Type A LT connector for Aerial bunched cable	Each	71.00
19.3.6	Type B LT connector for Aerial bunched cable	Each	55.00

Item No.	Description	Unit	Rate (Rs.)
19.4	Supply and fixing of LT porcelain pin insulator as per IS 1445-1997 and as per Discom's standard specifications, suitable for working voltage 1100 volts including all accessories like MS Forged GI LT Pin confirming to IS:7935/1975 (latest amended) Nut, Bolt etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
19.4.1	100 mm x 70 mm	Each	107.00
19.5	Supply and fixing of LT porcelain shackle insulator as per IS:1443 1979 and as per Discom's standard specifications, suitable for working voltage 1100 volts including all accessories like GI Hardware fittings confirming to IS:7935/1975 (latest amended) Nut, Bolt etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
19.5.1	75mm x 90mm	Each	109.00
19.5.2	100mm x 110mm	Each	119.00
19.6	Supplying and drawing overhead steel core Aluminium conductor (ACSR) ISI marked (IS 398 part II-1996) on existing cross arms through insulator with all necessary T&P required including binding and twisting etc. complete in all respect as required. All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
19.6.1	30 Sqmm of (6+1) 2.59mm (Weasel)	Mtr.	40.00
19.6.2	50 Sqmm of (6+1) 3.35 mm (Rabbit)	Mtr.	60.00
19.6.3	50 Sqmm of (6+1) 3.35 mm (Insulated Rabbit) for LT	Mtr.	92.00
19.6.4	80 Sqmm of (6+1) 4.09 mm (Raccon)	Mtr.	96.00
19.6.5	100 sqmm of (6/4.72 mm+1/1.57 mm) (Dog)	Mtr.	117.00
19.6.6	ACSR Panther Aluminium 30/3 MM	Mtr.	218.00
19.6.7	AAA Conductor (Equivalent size Weasel)	Mtr.	38.00
19.7	Supply and fixing of 'V' type cross arms with top hamper and clamps as per latest Discom specifications made of MS angle on the existing poles complete including all necessary nut and bolt, clamps with two coats of Red oxide and two coats of Aluminium paint etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		1417.00

Item No.	Description	Unit	Rate (Rs.)
19.8	Supply and fixing of top hamper on the existing pole as per latest Discom specifications complete including nut bolts with two coats of Red oxide and two coats of Aluminium paint etc as required. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
<b>19.8.1</b>	<b>Vertical type</b>		
19.8.1.1	11 kV (.7m long) (65 x 65 x6mm angle)	Each	275.00
19.8.1.2	11 kV(50 x 6 mm flat)	Each	194.00
<b>19.8.2</b>	<b>Horizontal type</b>		
19.8.2.1	11 kV (65 x 65 x6mm angle)	Each	222.00
19.8.2.2	11 kV with double top hamper (65 x 65 x 6mm angle)	Each	285.00
19.9	Supply and fixing of MS. Channel Bracket with clamp as per Discom Specifications including Nut, Bolt with two coats of Red oxide and two coats of Aluminium paint etc. as Required. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
19.9.1	1.8 Mtr. Long	Each	1929.00
19.9.2	1.4 Mtr. Long	Each	1676.00
19.10	Supply and fixing of 11 kV pin insulator confirming to IS:731:1971 with latest ammendment on existing bracket including all accessories like MS forged hot dipped GI Pin confirming to IS 2486(Part-I)/1993 & IS:2486 (Part-II)/1989 with latest amendment, and as per latest Discom specs. etc. as required. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR	Each	175.00
19.11	Supply and fixing of 11kV Disc insulator and Hot dipped galvanized Hardware confirming to IS:731:1971 with latest ammendment and as per latest Discom Specs. on existing bracket including all accessories etc. as required. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
19.11.1	B & S type hardware 45 KN	Each	640.00
19.11.2	T & C type hardware 45 KN	Each	204.00
19.11.3	B & S disc insulator 45 KN	Each	374.00
19.11.4	T & C disc insulator 45 KN	Each	350.00

Item No.	Description	Unit	Rate (Rs.)
19.12	Supply and fixing of PG / T clamps on overhead lines/jumpers, made of aluminium alloy 4600 of IS 617-1994 (with latest amendment if any) with steel nut and bolts conforming to IS 1363-1992 & IS 1367/1979-80 (with latest amendments if any) all ferrous metal parts intended for outdoor use except those made of stainless steel shall be protected by hotdip galvanising in accordance with IS 2633-1986 complete in all respect as required. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
19.12.1	PG Clamp for Panther Conductor	Each	373.55
19.12.2	PG Clamp for Dog Conductor Type - A	Each	294.92
19.12.3	PG Clamp for Weasel Conductor	Each	94.81
19.12.4	PG Clamp for Rabbit Conductor	Each	83.57
19.12.5	T Clamp for Panther Conductor	Each	420.62
19.13	Supplying and laying of Hot dip galvanized steel stay wire of 550-900 N/mm Quality confirming to IS-2141/2000 in all respect Including chemical composition (Heavily coated Hard quality) of dia 7/3.15 mm(7/10 SWG) and as per latest Discom specs. etc. as required. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR	Mtr	114.66
19.14	Supply and fixing of 11 / 33. KV Stay insulator as per IS:5300/1969 and as per Discom's standard specifications etc. as required. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		
19.14.1	110 x 75 x 22mm 11 KV Stay Insulator	Set	44.46
19.14.2	140 x 85 x 25mm 33 KV Stay Insulator	Set	69.53
19.15	Supply and fixing of LT Distribution Kiosk confirming to IS:13947/1993/ IEC 60947 Pt.3 amended up-to-date and as per DISCOM specifications made of 2 mm thick powder coated CRCA sheet of 415 volts 3 phase 4 wire triple pole and neutral type, complete in all respect as required. Including Incoming Switch Disconnecter Fuse unit, Aluminium Busbar with copper one piece U contacts base, brass studs and nuts, copper busbar for main and interconnection, MS Channel frame of 75 mm x 40 mm grouted with C.C. of M-10 grade to achieve the height of 1.5 feet above the road level suitable for required no. outgoing. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR		

Item No.	Description	Unit	Rate (Rs.)
19.15.1	200 Amp. LT Distribution Kiosk for 63/100 KVA Transformer	Each	37639.00
19.15.2	400 Amp. LT Distribution Kiosk for 250/315 KVA Transformer	Each	64700.00
19.15.3	100 Amp. Distribution Kiosk suitable for Underground cable of Size 500mm x 550 mm x 700 mm	Each	23390.00
19.16	Supply and fixing of 11 KV Outdoor 4 way feeder pillar Box confirming to Discom specifications and made of 3.15 mm thick powder coated CRCA sheet enclosure confirming to IS 14772/IEC 60670 (1989) of Size 1000 mm x 1000 mm x 1500 mm, Both front and rear doors should have 3 heavy duty M.S. hinges with Brass pin inserted inside and locking arrangements. The bottom foundation frame stand should be made from 65x65x6mm MS Angle with four legs of 200mm height provided with 150x150x6mm flats grouted with C.C. of M-10 grade to achieve the height of 2.0 feet above the road level suitable for four outgoing. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	60098.00
19.17	Supply and fixing of 100 Amp, 11kV Horn gap fuse set IS 9385 on existing DP structure with 6 nos 24kV/22kV post insulator (IS:5350 part III), hot dipped hard ware, fuse wire of required size etc. complete in all respect as per Discom specification etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	9071.00
19.18	Supply and fixing of 11kV, 400 Amp 3 pole, central pot rotating double break type isolator (IS:9921 part I to V) without earth blade operating mechanism with GI spring loaded reverse loop type fixed contact, solid hard drawn electrolytic copper tubular moving contact with silver/ nickel plated at end points, 9 nos post insulator of 12 kV (IS:2554 & IS 5350 part III), hot dipped galvanising hard ware, nut, bolts etc complete in all respect as per Discom specification etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	22632.00

Item No.	Description	Unit	Rate (Rs.)
19.19	Supply and fixing of distribution type Lightning arrestor ( Set of 3 Nos.) 9 kV, 10 kA (IS:3070) with mounting breaking to be installed on existing DP structure etc. as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Set	5583.00
19.20	Supply and fixing Substation structure for mounting 11/0.4 Kv Transformer on Double pole as per DISCOM specification complete in all respect as required including nuts and bolts etc (excluding the cost of poles) made of MS channel of 4 nos 100 x 50 x 6mm and 4 nos 75 x 40 x 6mm and MS flat 50 x 6mm etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	18245.00
19.21	Supply and fixing of 1.6 mm thick MS 11 kV Danger plates as per IS :2551-1982 & specification of Discom on the existing poles complete in all respectas as required. All as per pre approved by Engineer in charge.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR	Each	308.00
19.22	Providing and fixing of single pole mounted substation structure set for isolator / single phase transformer as per DISCOM specification complete in all respect with nuts and bolts as required MS flat 50 x 6mm, MS angle 65 x 65 x6mm, MS channel 100 x 50 x 6mm. ( Excluding cost of pole ). Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	3539.00
19.23	Supply and erection of RS joist of 116 x 100 mm, 11 Meter long with the welded/ bolted top hamper 65 x 65 x 6mm (0.7 Mtr long) making necessary arrangement for fixing 11 kV 'V' cross arm, LT bracket and guard wire bracket, grouted in ground 1/6 th of its length and fixed with cement, coarse and grit in 1:3:6 ratio in 1/5th of its length (40cm dia) from the bottom including two coats of aluminium paint over the complete length of joist etc. as required. (Excavation of pit PCC and CC foundation as per Discom specs. to be Paid Extra) All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	24427.00



Item No.	Description	Unit	Rate (Rs.)
19.24	Supplying and drawing of XLPE insulated LT Aerial bunched Aluminium conductor cable confirming to IS 14255/1995 and IS 398 (Pt-4)/ 1994 and as per Discom Specs. on existing cross arms through I hook with all necessary T&P required including binding and twisting etc. complete in all respect as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
19.24.1	1 X 25 sq. mm. + 1X25 sq. mm. (Bared)	Mtr	58.00
19.24.2	1 X 25 sq. mm. + 1X25 sq. mm. (insulated)	Mtr	63.00
19.24.3	3 X 16 sq. mm. + 1X25 sq. mm. (Bared)	Mtr	82.00
19.24.4	3 X 16 sq. mm. + 1X25 sq. mm. (insulated)	Mtr	89.00
19.24.5	3 X 25 sq. mm. + 1X25 sq. mm. (Bared)	Mtr	113.00
19.24.6	3 X 25 sq. mm. + 1X25 sq. mm. (insulated)	Mtr	123.00
19.24.7	3 X 50 sq. mm. + 1X35 sq. mm. (Bared)	Mtr	190.00
19.25	Supply & Erection of M S lattice structure of height 12.8 mtr as per DISCOMs approved design & details in alignment, including painting of tower of approved make two coat of red oxide paint and one coat of aluminium paint before installation and one coat of Aluminium paint after erection work completed as per technical specifications & drawing of DISCOM. (Excavation of pit PCC and CC foundation as per Discom specs. to be Paid Extra). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	57638.00
19.26	Supply & Erection of M S lattice structure of height 11.0 mtr as per DISCOMs approved design & details in alignment, including painting of tower of approved make two coat of red oxide paint and one coat of aluminium paint before installation and one coat of Aluminium paint after erection work completed as per technical specifications & drawing of DISCOM. (Excavation of pit PCC and CC foundation as per Discom specs. to be Paid Extra) All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	46560.00

Item No.	Description	Unit	Rate (Rs.)
19.27	Supply of Fabricated 33 KV of 'V' type cross arms as per Discom specifications made of MS channel 100x50 ISMC (9.5Kg. Per Mtr.) on the existing poles complete including all necessary nut and bolt etc with clamps including two coats of Red oxide and two coats of Aluminium paint etc. as Required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	2340.00
19.28	Supply and fixing of top hamper as per Discom specifications on the existing pole complete including nut bolts etc as required. Vertical type 33 kV. 0.75mtr. IS 75x75x6mm as per tech specs. Of DISCOM (Steel weight 6.5Kg. Approx. per top hamper). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	405.00
19.29	Supply & Erection of special stud structure for 33KV lattice structure as per Discom specifications made of M.S. angle, channer, flats complete in all respects with bracings including painting of tower of approved make two coat of red oxide paint and one coat of aluminium paint before installation and one coat of Aluminium paint after erection work completed as per technical specifications & drawing of DISCOM. (Excavation of pit PCC and CC foundation as per Discom specs. to be Paid Extra). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	25434.00
19.30	Supply and fixing of 33 kV pin insulator confirming to IS:731:1971 with latest ammendment on existing bracket including all accessories like MS forged hot dipped GI Pin confirming to IS 2486(Part-I)/1993 & IS:2486 (Part-II)/1989 with latest amendment, and as per latest Discom specs. etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	510.00
19.31	Supply and fixing of 33kV Disc insulator and Hot dipped galvanized Hardware confirming to IS:731:1971 with latest ammendment and as per latest Discom Specs. on existing bracket including all accessories etc. as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		

Item No.	Description	Unit	Rate (Rs.)
19.31.1	B & S type hardware 120KN	Each	984.00
19.31.2	B & S disc insulator 120KN	Each	1139.00
19.32	Supply and fixing of guard bracket 2.2 mtr. long made from (75x40) ISMC 7.14Kg. Per Mtr. M.S. channel including necessary clamp and bolts etc. as per technical specification & drawing of DISCOM. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1456.00
19.33	Supply and fixing M.S. channel (cut point) 100x50mm ISMC (9.5Kg. Per Mtr.) 2x1.8mtr. long with pilot patti 50x6mm thick necessary nuts and bolts etc. as per technical specification & drawing of DISCOM. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	3644.00
19.34	Supply and installation of spike of M.S. rod 20mm dia 3.0mtr. long for earthing of (tower/pole) drive into earth by mechanical means structure connection the spike with cross arm top hamper PCC pole, lattices tower to earth etc. complete as per technical specification of DISCOM.	Each	1819.00
19.35	Labour charges for Dismantling the structure with pole mounted transformer different capacity along with distribution boards and re- erecting the transformer in the structure to be newly erected along with distribution boards and erecting testing, testing and commissioning (as well as cabling)	Job	3183.00
19.36	Labour charges for Dismantling of existing electric poles (PCC poles, MS channel, Lattice tower 12.6mtr. , 11 mtr. along with the ACSR Conductors, 11KV/33KV/LT line etc. 11KV insulator LT insulator guard wires, staywires and other electric items of the pole coming along the alignment of the road and removal and re- rolling PCC pole, MS channel different sizes as well as handing over the same to DISCOM store including transportation from site to store and stacking of dismantling material in store and as per the direction of Engineer Incharge and clean the site good as per the requirement and submit the receipt from DISCOM/ concurring authority, including all complete works.	Job	1203.00

Item No.	Description	Unit	Rate (Rs.)
19.37	Labour charges for Dismantling of following existing street light electric poles with street light fixtures, underground cable, MS box and other electric items of the pole coming along the alignment of the road and removal and re-rolling MS poles/PCC poles of different sizes as well as handing over the same to DISCOM/UIT/MC store and as per the direction of Engineer Incharge and clean the site good as per the requirement and submit the receipt from concurring authority, all complete works.	Job	528.00
19.38	Labour charges for Dismantling of service line connection of industrial/domestic connection, single phase supply/three phase supply system on existing cross arm PCC pole, MS channel different sizes of poles along with the ACSR conductor/service line weather proof cable/ Armoured cable, guard wire, stay wire and other electrical item of the pole coming along the alignment of the road and removal and re-rolling as well as handing over the same to DISCOM store including transportation from site to store and stacking of dismantling material in store and temporary supply electrical connection to domestic/industrial connection to consumer where supply disconnected and as per the direction of Engineer Incharge and clean the site good as per the requirement , all complete works.	Job	107.00
19.39	Labour charges for Trimming of tree branches/plants and preparing route approaches for electric proposed line complete with prior permission of local authority in writing , taking proper shutdown from discom office and inform to DISCOM after complete the work.	Job	53.00

**CHAPTER : E-20**  
**LOCAL AREA NETWORKING**

Item No.	Description	Unit	Rate (Rs.)
20.1	Supply, Drawing and Testing of 4 pair, 23 AWG Solid Bare Copper wire insulated with PVC, UTP (Unshielded Twisted Pair), Category 6, Class E, 100 Ohm Impedance, Indoor Cable as per latest ammendments of ANSI/TIA/EIA-568 , The copper conductors should be balanced twisted in pairs, seperated by a cross-member fluted pair divider & protected by PVC Jacket. Certified performance in a 4-connector configuration upto 100 Mtrs channel requirements & transmission frequencies up to 250 Mhz. in existing MS/PVC Conduits/casing capping including making connections to Information outlets and Patch Panels with jack & ferruling at both ends for identification with necessary tools for punching, stripping, crimping and testing etc as required complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Mtr.	49.00
20.2	Supply, Drawing and Testing of 4 pair, 23 AWG Solid Bare Copper wire insulated with HDPE, <b>U/UTP (Unscreened/Unshielded Twisted Pair), Category 6</b> , Class E, 100 Ohm Impedance, <b>Outdoor</b> Cable as per latest ammendments of ANSI/TIA/EIA-568 C.2 & ISO/IEC 11801 2nd Ed, The copper conductors should be balanced twisted in pairs, seperated by a cross divider & protected by LSZH PVC outer jacket of UV resistant. Certified performance in a 4-connector configuration upto 100 Mtrs channel requirements & transmission frequencies up to 250 Mhz. Should meet IEEE 802.3af & IEEE 802.3at for POE applications. Cable Should support Ethernet 10GBASE-T according to the standards. in existing MS/PVC Conduits/casing capping including making connections to Information outlets and Patch Panels with jack & ferruling at both ends for identification with necessary tools for punching, stripping, crimping and testing etc as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Mtr.	83.00

Item No.	Description	Unit	Rate (Rs.)
20.3	Supply, Drawing and Testing of 4 pair, 23 AWG Solid Bare Copper wire insulated with HDPE, <b>Category 6A/Class Ea, U/FTP (Unscreened/Foiled Twisted Pair)</b> , 100 Ohm Impedance, <b>Indoor</b> Cable as per latest ammendments of ANSI/TIA/EIA-568 C.2 & ISO/IEC 11801 2nd Ed, The copper conductors should be balanced twisted in pairs, Unscreened and Aluminum Foil Sheilding of Individual pairs protected by a Low Smoke Zero Halogen (LSZH)(IEC 60332-1) Jacket. Certified performance in a 4-connector configuration upto 100 Mtrs channel requirements & transmission frequencies up to 500 Mhz. Should meet IEEE 802.3af & IEEE 802.3at for POE applications. Cable Should support Ethernet 10GBASE-T according to the standards. in existing MS/PVC Conduits/casing capping including making connections to Information outlets and Patch Panels with jack & ferruling at both ends for identification with necessary tools for punching, stripping, crimping and testing etc as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Mtr.	95.00
20.4	Supply and Installation of unsheilded/360 degree sheilded Information outlets made of high impact plastic body with ABS, FR Grade halogen free material with provision for protection against dust in jack, suitable for Cat 6/6A application complying to latest ammendments, According. to Cat. 6/6A channel, It should support channel as well as components requirements of Cat.6/6A standards at frequencies of up to 250 to 500 Mhz. Cat 6/6A unshielded/shielded Jack should be suitable to terminate 4 pair, 23/24 AWG solid/stranded wire diameters, using 100 Ohm unshielded/shielded balance twisted pair cable, the jack should have tooless/impact termination on reliable copper tin plated Insulation displacement contact, with easy lock mechanism, It supports IEC 60603-7-4 and complied with ANSI/TIA/EIA 568 C.2 standard. jack should be RJ11,RJ12 & RJ45 compatible. Should support Ethernet 1.2 Gb/s ATM,Digital video and broadband/baseband analog video, Voice over internet protocol (VOIP) Specifications in existing modular/MS Boxes along with necessary connections as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
20.4.1	Cat 6, Un-sheilded Information Outlet	Each	398.00
20.4.2	Cat 6A, Sheilded Information Outlet	Each	580.00
20.5	Supply & fixing of square Faceplate for Flush / Surface Mount Information Outlets Single/Dual or Quad Aperture , material should be PC+ABS body, Suitable for RJ45 unshielded/shielded connection modules. Should match with I. O. OEM. Dimensions should be 86mm X 86mm as required complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
20.5.1	Single Aperture	Each	81.00
20.5.2	Dual Aperture	Each	101.00
20.5.3	Quad Aperture	Each	121.00

Item No.	Description	Unit	Rate (Rs.)
20.6	Supply, Installation, Testing and Commissioning of Rack mounted 19" 1U, Cat6 24 Port <b>loaded</b> , 1.5-1.6 MM CRS chasis, powder coated, sheet steel, made of plastic (ABS), Modular Patch Panels with Rear Cable management system and mounting hardware to mount the patch panel. Should have port identification numbers printed/engraved on front of the panel. Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer Annexure "A" attached with this BSR.		
20.6.1	Modular Patch Panel Loaded with Cat -6 I/O	Each	8765.00
20.6.2	Modular Patch Panel Loaded with Cat -6A I/O	Each	12817.00
20.7	Supply, Installation and Testing of 4 pair, 100 Ohm impedance, Cat 6/6A /Class E/Ea <b>patch cords</b> should be constructed of minimum 23/24 AWG, stranded bare Copper cable with FRPVC/LSZH Jacket, with an enhanced performance by factory moulded RJ45 connectors with strain relief boots as per ANSI/TIA/EIA 568-C.2 suitable for Cat 6/6A application complying to latest amendments Category 6/6A Standards, According to TIA568C.2, ISO/IEC 11801, EN 50173, IEC 60603-7-51, EN 60603-7, IEEE 802.3an minimum requirement for 1G BASE-T to 10G BASE-T performance. Patch cords shall be straight thru cable compatible with both T568-A and T568-B wiring schemes, should support IEEE 802.3af / IEEE 802.3at for POE applications, Minimum 750 to 1000 mating cycles in plug contacts for long durability, Should support Ethernet 10GBASE-T, 1.2 Gb/s ATM, Token ring 4/16, Digital video and broadband/baseband analog video, Voice over internet protocol (VOIP). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer Annexure "A" attached with this BSR.		
20.7.1	<b>Cat 6, U/UTP (Unscreened/Un-shielded Twisted Pair) Patch Cord</b>		
20.7.1.1	0.50 Mtr	Each	148.00
20.7.1.2	1 Mtr	Each	223.00
20.7.1.3	2 Mtr	Each	290.00
20.7.1.4	3 Mtr	Each	358.00
20.7.2	<b>Cat 6A, U/FTP (Unscreened/Foiled Twisted Pair) Patch Cord</b>		
20.7.2.1	0.50 Mtr	Each	283.00
20.7.2.2	1 Mtr	Each	425.00
20.7.2.3	2 Mtr	Each	560.00
20.7.2.4	3 Mtr	Each	695.00
20.8	Supply, Drawing and Testing, of stranded Multi mode (50/125 µm) glass optic fiber cable, as per latest amendments of TIA/EIA 568/ISO/IEC 11801:2011/ IEC 60794-1-2 E1, E3, E11, F1/ EN 50173-1/ EN 187 000/ IEC 60974-2, 2-20, 2-21/ ITU G.652D, construction of LSZH outer sheath cable, cable should be used for LAN and WAN back bones, . With its LSZH sheathing these cables should be ideal for indoor/outdoor installations in existing MS/PVC /HDPE Conduits/ slotted channels with ferruling at both ends for identification complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer Annexure "A" attached with this BSR.		

Item No.	Description	Unit	Rate (Rs.)
20.8.1	6 fiber	mtr	142.00
20.8.2	12 Fiber	mtr	182.00
20.8.3	24 Fiber	mtr	236.00
20.9	Supply, Installation, OTDR Testing & Fusion Splicing of Fiber Multimode Pigtail (50/125 µm) made of glass fiber optic, should be fitted at one end with any one type of single ST/E-2000/SC/LC/MT-RJ/PC type connector in acc., as per latest ammendments of TIA/EIA 569 Standard Specification as per requirments complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1212.00
20.10	Supply, Installation, & Testing of Indoor duplex <b>Multimode patch cord</b> (50/125 µm made of glass fiber optic with LSZH jacket, F8 2.0x4.1 mm, Multimode G652.D Mounted on both sides with ST/E-2000/SC/LC/MT-RJ/PC type Duplex connectors in acc. with IEC 61754-20. Zirconia (ceramic) ferrule with a PC polished endface geometry, connectors should be tuned in accordance with IEC 61755-3-1 and qualified in acc. with IEC 61753-1 for category U (uncontrolled environment, duplex clip and white plastic dust cover, should comply to delta IL < 0.2 dB after 500 mating cycles, there should be an optional Visual coding, mechanical coding and lock protection on the patch cords which can be added on later stage. patch cords's performance should be acc. to IEC 61753-1 (Table A.12) as per latest ammendments of TIA/EIA 569B.3, as per requirements.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
20.10.1	1 Mtr	Each	1688.00
20.10.2	2 Mtr	Each	1958.00
20.10.3	3 Mtr	Each	2228.00
20.10.4	5 Mtr	Each	2498.00
20.11	Supply, Installation, & Testing of 19" 1U Rack Mounted/ surface mounted aluminum/ CRCA 1.2mm powder coated, multimode glass Fiber Optic Cable Patch panel/LIU loaded with flangless/screwable adapters for ST/E-2000/SC/LC/MT-RJ/PC type, It should have easy removable Top plate with push buttons, there should be a splice tray installed in the Patch panel/LIU which can handle the fiber cores, splice tray should be PC+ABS material, it should include accessories like mounting hardware, gormetts, heat shrink tubes/sleevs, screws, nuts to install the panel for rack/wallmount applications as per requirement complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
20.11.1	Multi Mode LIU 6 Ports	Each	6402.00
20.11.2	Multi Mode LIU 12 Ports	Each	8691.00
20.11.3	Multi Mode LIU 24 Ports	Each	11453.00



Item No.	Description	Unit	Rate (Rs.)
20.12	Supply, Drawing and Testing, of stranded Single mode (9/125 $\mu$ m) glass optic fiber cable, as per latest ammendments of TIA/EIA 568/ISO/IEC, construction of LSZH outer sheath cable, cable should be used for LAN and WAN back bones, . With its LSZH sheathing these cables should be ideal for indoor/outdoor installations in existing MS/PVC /HDPE Conduits/ slotted channels with ferruling at both ends for identification complete in all respect.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
20.12.1	6 fiber	Mtr	94.00
20.12.2	12 Fiber	Mtr	121.00
20.12.3	24 Fiber	Mtr	162.00
20.13	Supply, Installation, OTDR Testing & <b>Fusion Splicing of Fiber Singlemode Pigtail</b> (9/125 $\mu$ m (OS1/OS2) made of glass fiber optic, with semi-tight buffer PA/PBT, Ø 0.9 mm, yellow, singlemode G652.D (9/125 $\mu$ m (OS1, OS2), should have length of min 1.5m, should be fitted at one end with any one type of single ST/E-2000/SC/LC/MT-RJ/PC type connector in acc. with IEC 61754-20, Should be delta IL < 0.2 dB after 500 mating cycles, It should be Zirconia (ceramic) ferrule with a PC polished endface geometry connector qualified in acc. with IEC 61753-1 for category U (uncontrolled environment). and qualified in acc. with IEC 61753-1, Performance acc. to IEC 61753-1 (Table A.12) as per latest ammendments of TIA/EIA 569B.3, Standard Specification as per requirments.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1212.00
20.14	Supply, Installation, & Testing of Indoor duplex <b>Singlemode patch cord</b> (9/125 $\mu$ m (OS1/OS2) made of glass fiber optic with LSZH jacket, F8 2.0x4.1 mm, yellow, singlemode G652.D (9/125 $\mu$ m (OS1, OS2) Mounted on both sides with ST/E-2000/SC/LC/MT-RJ/PC type Duplex connectors in acc. with IEC 61754-20. Zirconia (ceramic) ferrule with a PC polished endface geometry, connectors should be tuned in accordance with IEC 61755-3-1 and qualified in acc. with IEC 61753-1 for category U (uncontrolled environment, duplex clip and white plastic dust cover, should comply to delta IL < 0.2 dB after 500 mating cycles, there should be an optional Visual coding, mechanical coding and lock protection on the patch cords which can be added on later stage. patch cords's performance should be acc. to IEC 61753-1 (Table A.12) as per latest ammendments of TIA/EIA 569B.3, as per requirements.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
20.14.1	Single Mode Patch Cord 1 Mtr.	Each	1417.00
20.14.2	Single Mode Patch Cord 2 Mtr.	Each	1688.00
20.14.3	Single Mode Patch Cord 3 Mtr.	Each	1823.00
20.14.4	Single Mode Patch Cord 5 Mtr.	Each	2039.00

Item No.	Description	Unit	Rate (Rs.)
20.15	Supply, Installation, & Testing of 19" 1U Rack Mounted/ surface mounted aluminum/ CRCA 1.2mm powder coated, Singlemode glass Fiber Optic Cable Patch panel/LIU loaded with flangless/screwable duplex adapters for ST/E-2000/SC/LC/MT-RJ/PC type, It should have easy removable Top plate with push buttons, there should be a splice tray installed in the Patch panel/LIU which can handle the fiber cores, splice tray should be PC+ABS material, it should include accessories like mounting hardware, gormetts, heat shrink tubes/sleeves, screws, nuts to install the panel for rack/wallmount applications as per requirement complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
20.15.1	6 Ports	Each	6739.00
20.15.2	12 Ports	Each	8759.00
20.15.3	24 Ports	Each	10778.00
20.16	Supply & Installation of IP-20 & IK-08 , UL Listed <b>Wall mounted Double Section Communication enclosure (Rack)</b> made from powder coated (60 to 80 Micron) CRCA sheet, front sturdy sheet steel frame folded from one piece and welded with minimum 5mm toughened glass door, Vertical Mounting Rail 1.6 MM with 'U'Marking , with All round protective channel on the door aperture, lock integrated on front door, top and bottom cover with cable entry provision with gland plates, integrated side walls, 2 pair of 19" angles with wall mounting provision on wall. Accessories like: 1 No of 19" 1U Horizontal Cable manager, 1 No of 90 cfm 230V AC Fan with 1 mts long cable, mounting hardware , 1 No of 19" 1U, mountable socket strips with 5 nos of 5A universal sockets with 2 mts long power chord for supplying power to switches, fans etc along with earth continuity kit, indicator, moulded power supply cable. fixing on wall with Suitable Anchor fastner etc as required.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
20.16.1	6 U Rack with Width 600 mm & Depth 400 mm + 100 mm	Each	9173.00
20.16.2	9 U Rack with Width 600 mm & Depth 400 mm + 100 mm	Each	12142.00
20.16.3	12 U Rack with Width 600 mm & Depth 400 mm + 100 mm	Each	15244.00
20.16.4	15 U Rack with Width 600 mm & Depth 400 mm + 100 mm	Each	18213.00

Item No.	Description	Unit	Rate (Rs.)
20.17	Supply & Installation of IP-20 & IK-08 , UL Listed Communication enclosure (Rack) made from powder coated (60 to 80 Micron) CRCA sheet, Vertical Mounting Rail 1.6 MM with 'U' Marking, front sturdy sheet steel frame folded from one piece and welded with 5mm toughened glass door, with All round protective channel on the door aperture, lock integrated on front door, top and bottom cover with cable entry provision with gland plates, integrated side walls, Set of 75 mm height 4 castors, 2 of which have brakes, Accessories like: 5 Nos of 19" 1U Horizontal Cable manager, 2 Nos of vertical cable managers, 1 no. Keyboard Tray, 4 Nos of 90 cfm 230V AC Fan with 1 mts long cable, mounting hardware , 2 No of 19" 1U, mountable socket strips with 6 nos of 5A universal sockets with 2 mts long power chord for supplying power to switches, fans etc along with earth continuity kit, indicator, moulded power supply cable complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
20.17.1	17 U Rack with Width 600 mm & Depth 800 mm	Each	28616.00
20.17.2	22 U Rack with Width 600 mm & Depth 800 mm	Each	33069.00
20.17.3	27 U Rack with Width 600 mm & Depth 800 mm	Each	41841.00
20.17.4	36 U Rack with Width 600 mm & Depth 800 mm	Each	46227.00
20.17.5	42 U Rack with Width 600 mm & Depth 800 mm	Each	58716.00
20.17.6	42 U Rack with Width 800 mm & Depth 1000 mm with 3 no. Heavy Duty Sliding Drawer	Each	93136.00
20.18	Supply , Installation, Testing and Commissioning of Unmanaged Switch Plug-and-play - easy setup with no configuration or no software needed, following Port fast ethernet - 8 port 10/100 MBPS auto-negotiation RJ45 ports, IEEE 802.3x flow control ,supports auto-MDI/MDIX, eliminating the need for crossover cables including making connection etc as required complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
20.18.1	8 Port	Each	2969.00
20.18.2	24 Port	Each	6841.00
20.19	Supply , Installation, Testing and Commissioning of Managed Layer-2 Intelligent 10/100 Ethernet Switch providing 24 x 10/100/1000 MBPS Giga Ethernet ports / with min 2 SFP Giga Ports (provision for Fiber Giga connectivity) with related LAN Base Software including making connections etc as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	36783.00
20.20	Supply , Installation, Testing and Commissioning of Managed Layer-2 Intelligent Giga Ethernet Switch providing 24 x 10/100/1000 MBPS Giga Ethernet ports and with min 4 SFP Giga Ports (provision for Fiber Giga connectivity) all switches & related Fiber modules should be of same make & category for seamless integration with each other of Enterprise class Catalyst Series including making connections etc as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	101259.00

Item No.	Description	Unit	Rate (Rs.)
20.21	Supply , Installation, Testing and Comissioning of Managed Layer-2 Intelligent PoE Giga Ethernet Switch providing 24 x 10/100/1000 MBPS PoE Giga Ethernet ports and with min 4 SFP Giga Ports (provision for Fiber Giga connectivity) with provision of minimum Stacking of 06 Switches with minimum 370 Watt PoE Power Budget with related LAN Base Software including making connections etc as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	149428.00
20.22	Supply , Installation, Testing and Comissioning of Hot pluggable Small Form Factor Pluggable (SFP Module), 1000BASE-SX, 1.25/2.125G Fiber Channel, LC Type Duplex Connector, 850nm laser transmitter, Should support distance upto 500m on 50/125um of data rate upto 2.125 Gb/s on bi-directional data links. Should also support industrial temperature, should have metal enclosure for lower EMI. The transceiver should be ROHS Compliant. (For Each MM Fiber) all switches & related Fiber modules should be of same make & category for seamless integration with each other of Enterprise class, complete in all respect.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	13850.00
20.23	Supply , Installation, Testing and Comissioning of Hot pluggable Small Form Factor Pluggable (SFP Module), 1000BASE-LX, 1G Fiber Channel, LC Type Duplex Connector, 1310 nm laser transmitter, Should support distance upto 10 km on 9/125 um of data rate upto 1.25 Gb/s on bi-directional data links. Should also support industrial temperature, should have metal enclosure for lower EMI. The transceiver should be ROHS Compliant. (For Each SM Fiber) all switches & related Fiber modules should be of same make & category for seamless integration with each other of Enterprise class. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR	Each	25499.00
20.24	Supply, installation, Testing and Commissioning of 1000 base-LX/LH single mode/Multi mode fibre to 1000 base-T copper giga bit , Media Convertor complete as required complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	9447.00
20.25	Fiber Fusion Splicing with OTDR Testing of Fiber Single/ Multi mode (per splice) of glass Fiber Optic Cable including cleaning the cable and making splice as per standard practice complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	802.00
20.26	System Certification & Documentation by OEM for 20 Years as Per Node required		154.00

**CHAPTER : E-21**  
**ELECTRICAL MOTOR PUMP SETS**

Item No.	Description	Unit	Rate (Rs.)
21.1	Labour charges for installation of submersible motor pump set including lowering/ delowering of pipes, cables, accessories etc. in tube-well/ open well complete including T&P, transportation of tripod, chain pulley block & any other material required for this purpose complete in all respect.		
21.1.1	Lowering only	Each	4012.0
21.1.2	Delowering only	Each	3343.0
21.1.3	Delowering and Lowering	Each	6686.0
21.2	Supply & fixing of PVC threaded casing pipes for Tube well (IS 12818:1992) of 3mtr. Each for depth up to 1200 ft. Plain and strainer Casing CS for Depth upto 400ft. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
21.2.1	<b>Up to 400 ft Depth</b>		
21.2.1.1	150 mm dia	Mtr.	669.0
21.2.1.2	175mm dia	Mtr.	861.0
21.2.1.3	200 mm dia	Mtr.	1163.0
21.2.1.4	250 mm dia	Mtr.	1730.0
21.2.2	<b>more than 400 ft to 1200 ft. Depth</b>		
21.2.2.1	40mm dia	Mtr.	140.0
21.2.2.2	50 mm dia	Mtr.	197.0
21.2.2.3	80mm dia	Mtr.	273.0
21.2.2.4	100 mm dia	Mtr.	354.0
21.2.2.5	125 mm dia	Mtr.	552.0
21.2.2.6	150 mm dia	Mtr.	755.0
21.2.2.7	175 mm dia	Mtr.	973.0
21.2.2.8	200 mm dia	Mtr.	1314.0
21.2.2.9	250 mm dia	Mtr.	1961.0
21.3	Providing & Laying of Polypropylene rope Confirming to IS:5175 for submersible pump of following sizes. complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
21.3.1	12mm (suitable up to 50 mm OD pipe)	Mtr.	43.0
21.3.2	16mm (suitable above 50mm & up to 75mm OD pipe)	Mtr.	54.0
21.3.3	20mm (suitable for 90 mm OD pipe)	Mtr.	61.0
21.4	Providing & Fixing of HDPE pipe Confirming to IS:4984:2021 for water supply suitable for submersible & jet pump with required fittings ie socket, elbows, tee etc. complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
21.4.1	<b>for vertical installation</b>		
21.4.1.1	40 mm OD 6 kg / cm <sup>2</sup>	Mtr.	94.0

Item No.	Description	Unit	Rate (Rs.)
21.4.1.2	50 mm OD 6 kg / cm <sup>2</sup>	Mtr.	115.0
21.4.1.3	63 mm OD 6 kg / cm <sup>2</sup>	Mtr.	148.0
21.4.1.4	75 mm OD 6 kg / cm <sup>2</sup>	Mtr.	196.0
21.4.1.5	90 mm OD 10 kg / cm <sup>2</sup>	Mtr.	337.0
<b>21.4.2</b>	<b>for Horizontal installation</b>		
21.4.2.1	40 mm OD 4kg/ cm <sup>2</sup>	Mtr.	81.0
21.4.2.2	50 mm OD 4 kg/ cm <sup>2</sup>	Mtr.	101.0
21.4.2.3	63 mm OD 4 kg/ cm <sup>2</sup>	Mtr.	142.0
21.4.2.4	75 mm OD 4 kg/ cm <sup>2</sup>	Mtr.	182.0
21.4.2.5	90 mm OD 6 kg/ cm <sup>2</sup>	Mtr.	283.0
21.5	SITC of Single Stage, water cooled, High Speed (2880 RPM), Horizontal, Centrifugal, Openwell Submersible pumps set pre filled with coolant water and fitted with mechanical seal - T/C Vs T/C, Thrust bearing shall be of carbon + S.S.The stator body of single phase pump shall be of SS and rest of all shall be of cast iron. All casting parts should be cathod electro deposition (CED) coated and other construction material should be confirming to IS : 14220: 2018 . The overall performance of pump shall confirm to BEE energy efficiency level of 3 star. Valid BEE certificate from OEM must be submitted for the same. Motor should be IE2 class as per IEC 60034-2-1: 2007, IEC 60034-30: 2008, & IS12615:2011, including making connection etc as required complete in all respect. OEM shall have submit NABL / CPRI / ERDA accredited lab type test certificate before execution. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
21.5.1	0.5 HP, 1-Ø, (7 -15) Mtr, (130 - 72) LPM	Each	12527.0
21.5.2	1.0 HP, 1-Ø, (7 -12) Mtr, (405- 240) LPM	Each	16052.0
21.5.3	1.5 HP, 1-Ø, (18 -26) Mtr, (126 - 78) LPM	Each	21249.0
21.5.4	2.0 HP, 1-Ø, (12 -25) Mtr, (350 - 115) LPM	Each	22937.0
21.5.5	3.0 HP, 3-Ø, (17 -27) Mtr, (680 - 300) LPM	Each	25922.0
21.5.6	5.0 HP, 3-Ø, (14 -28) Mtr, (995-500) LPM	Each	28389.0
21.5.7	7.5 HP, 3-Ø, (12 -32) Mtr, (1240-475) LPM	Each	36999.0
21.5.8	10.0 HP, 3-Ø, (22 -36) Mtr, (1860 - 1020) LPM	Each	47946.0
21.5.9	12.5 HP, 3-Ø, (19.5 -33) Mtr, (2150-1300) LPM	Each	66415.0
21.5.10	15.0 HP, 3-Ø, (16 -32) Mtr, (2300-1250) LPM	Each	75794.0

Item No.	Description	Unit	Rate (Rs.)
21.6	SITC of Radial / mixed flow ISI marked water and anti-corrosive liquid filled submersible motor pump sets suitable for 100/150mm dia borewell. The size of adopter fixed on top of the motor should exceed the top of coupler , for safegaurd the coupler. The construction material of motor and pump should match IS: 8034 : 2018 and IS: 9283 guideline. The radial flow pumpset should operate at 5 star energy efficiency level of BEE and mixed flow pump set should operate at 3 star energy level of BEE, accompanied by valid BEE certificate. Motor should be IE2 class as per IEC 60034-2-1: 2007, IEC 60034-30: 2008, & IS12615:2011 with required accessories including making connection suitable for Bore well. The job includes labour part of lowering of riser pipe G.I./ H.D.P.E. with rope, cables & pump, installation of complete fitting and accessories, jointing of electrical cables up to Starter. All labour for testing of submersible pumps set and supply of water to water mains, complete in all respect. OEM shall have submit NABL / CPRI / ERDA accredited lab type test certificate before execution. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
<b>21.6.1</b>	<b>100 mm diameter Submersible pump shall have following HP Rating, phase, Head range, Discharge range respectively.</b>		
21.6.1.1	1.0 HP, 1-Ø, (10 - 83)Mtr, (40- 10) LPM	Each	21866.0
21.6.1.2	1.5HP, 1-Ø, (11 - 94)Mtr, (40 - 10) LPM	Each	23500.0
21.6.1.3	2.0 HP, 1-Ø, (7- 95)Mtr, (55-22) LPM	Each	25202.0
21.6.1.4	3.0 HP, 1-Ø, (40 -170)Mtr, (60- 20) LPM Copper Wound	Each	42469.0
21.6.1.5	5.0 HP, 1-Ø, (56 - 236)Mtr, (90 - 25) LPM Copper wound	Each	49445.0
<b>21.6.2</b>	<b>150 mm diameter Submersible pump shall have following HP Rating, phase, Head range, Discharge range respectively.</b>		
21.6.2.1	3.0 HP, 3-Ø, (54 -95)Mtr, (250-50) LPM	Each	45400.0
21.6.2.2	5.0 HP, 3-Ø, (68 - 102)Mtr, (225-85) LPM	Each	53024.0
21.6.2.3	7.5 HP, 3-Ø, (76 - 96)Mtr, (285-180) LPM	Each	56583.0
21.6.2.4	10.0 HP, 3-Ø, (91 - 115)Mtr, (285-180) LPM	Each	71959.0
21.6.2.5	12.5 HP, 3-Ø, (78 - 126)Mtr, (395-245) LPM	Each	78975.0
21.6.2.6	15.0 HP, 3-Ø, (80 - 123)Mtr, (465-305) LPM	Each	86343.0

Item No.	Description	Unit	Rate (Rs.)
21.7	SITC of Monoblock motor pump set ISI marked (IS:9079-2002) with TEFC motor, motor should be IE2 class as per IEC 60034-2-1: 2007, IEC 60034-30: 2008, & IS12615:2011. with Stainless steel Impellor, Stainless steel shaft, Mechanical seal, Single/Three phase ( 240 - 440 V ) permanent split capacitor type (PSC), fitted with thermal overload protection, Including cost of hardware etc on existing platform complete. Pump shall have following HP Rating, phase, Head, minimum Discharge respectively complete in all respect. OEM shall have submit NABL / CPRI / ERDA accredited lab type test certificate before execution. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
21.7.1	0.5 HP, 1-Ø, (3 - 18)Mtr, (100-26) LPM	Each	10730.0
21.7.2	1.0 HP, 1-Ø, (10-120)Mtr, (30-12) LPM	Each	13877.0
21.7.3	1.5 HP, 1-Ø, (6-24)Mtr, (400-80) LPM	Each	17291.0
21.7.4	2.0 HP, 3-Ø, (6-27)Mtr, (425-100) LPM	Each	27943.0
21.7.5	3.0 HP, 3-Ø, (14 - 26)Mtr, (760-600) LPM	Each	35287.0
21.7.6	5.0 HP, 3-Ø, (24-44)Mtr, (680-370) LPM	Each	41929.0
21.7.7	7.5 HP, 3-Ø, (20-32)Mtr, (1060-900) LPM	Each	50515.0
21.7.8	10.0 HP, 3-Ø, 32- 48)Mtr, (830-450) LPM	Each	63963.0
21.8	SITC of Dewatering Submersible Motor Pump set, motor should be IE2 class as per IEC 60034-2-1: 2007, IEC 60034-30: 2008, & IS12615:2011. with SS Impellor, body, shaft, mechanical seal etc. as required. Pump shall have following HP Rating, phase, Head, minimum Discharge respectively complete in all respect. OEM shall have submit NABL / CPRI / ERDA accredited lab type test certificate before execution. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
21.8.1	1.0 HP, 3-Ø, (5 - 12)Mtr, (333 - 95) LPM	each	27896.0
21.8.2	2.0 HP, 3-Ø, (5 - 18)Mtr, (480 - 66) LPM	each	43033.0
21.8.3	3.0 HP, 3-Ø, (5 - 20)Mtr, (810 - 126) LPM	each	46149.0
21.8.4	5.0 HP, 3-Ø, (5 - 24)Mtr, (1170 - 174) LPM	each	85323.0
21.9	SITC of Drain Sewage pump Non-clog fully floodable submersible pump suitable to handle raw sewage suitable for up to 40 mm solid with Cast iron CED coated Impellor, CI body & housing, SS shaft, Mechanical seal etc. as required. Pump shall have following HP Rating, phase, Head, minimum Discharge respectively complete in all respect. Appropriate type test certificate / OEM test report shall be submitted.All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer Annexure "A" attached with this BSR .		
21.9.1	1.0 HP, 3-Ø, (6 - 12)Mtr, (333 - 45) LPM	Each	24938.0
21.9.2	2.0 HP, 3-Ø, (8 - 16)Mtr, (375 - 120) LPM	Each	47935.0



Item No.	Description	Unit	Rate (Rs.)
21.9.3	3.0 HP, 3-Ø, (8 - 20)Mtr, (590 - 220) LPM	Each	51322.0
21.1	SITC of Pressure boosting pump with 24 Ltr. MS Tank, pressure switch, pressure gauge, and all standard fittings fully automatic ON / OFF system, 2900 RPM with stainless steel casing, & impellor suitable for following capacity complete in all respect. Appropriate type test certificate / OEM shall have submit NABL / CPRI / ERDA accredited lab type test certificate before execution. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
21.10.1	0.5 HP ( 15 - 10 ) Mtr, (24 - 40 ) LPM	Each	25654.0
21.10.2	0.75 HP ( 30 - 10 ) Mtr, (09 - 40 ) LPM	Each	27717.0
21.10.3	1.0 HP ( 25 - 15 ) Mtr, (30 - 48 ) LPM	Each	35723.0
21.10.4	1.5 HP ( 37 - 20 ) Mtr, (24 - 48 ) LPM	Each	45565.0
21.11	Providing & Fixing of CI foot valve complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
21.11.1	Rocket type (for bore well) 50/ 60 mm	Each	1321.0
21.11.2	Handi type (for open well) 80/ 100 mm	Each	2088.0
21.12	Supply & fixing of GI pipes confirming to IS : 1239 P - 1 ( 2004 ) with flanges duly screwed & welded including rubber washer, nuts & bolts of 8mm dia complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
21.12.1	B class 32mm dia	P mtr	513.0
21.12.2	B class 40mm dia	P mtr	608.0
21.12.3	B class 50mm dia	P mtr	848.0
21.12.4	B class 65mm dia	P mtr	1080.0
21.12.5	B class 80mm dia	P mtr	1340.0
21.12.6	B class 100mm dia	P mtr	1848.0
21.13	SITC of Contactor OEM Fabricated DOL/Star-Delta Starter panel with switchgear selection as per Type-2 Cordinatiom Chart and made out from 1.6 mm thick powder coated CRCA sheet, enclosure comprising of over load protection relay, short circuit & single phasing protection, Illuminated ON / OFF push buttons, ammeter, voltmeter, indicating lamps etc. suitable for following rating motors complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
<b>21.13.1</b>	<b>For single phase Submersible / Monoblock pump</b>		
21.13.1.1	0.5 HP to 1.5 HP (DOL starter)	Each	4923.0
21.13.1.2	2.0 HP to 3.0 HP (DOL starter)	Each	5406.0

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

**21.13.2 For Three phase Submersible / Mono block pump**

21.13.2.1	Upto 3.0 HP ( DOL starter )	Each	7246.0
21.13.2.2	3.0 HP to 5.0 HP ( DOL starter )	Each	10173.0
21.13.2.3	7.5 HP to 10.0 HP ( DOL starter )	Each	13318.0
21.13.2.4	3.0 HP to 5.0 HP ( Star / Delta starter )	Each	14370.0
21.13.2.5	7.5 HP to 10.0 HP ( Star / Delta starter )	Each	18932.0
21.13.2.6	12.5 HP to 15.0 HP ( Star / Delta starter )	Each	21711.00

**CHAPTER : E-22**  
**AIR COOLING & AIR CONDITIONING**

Item No.	Description	Unit	Rate (Rs.)
22.1	<p>Supply, Installation, Testing and Commissioning of factory assembled double skin central evaporative cooling plant having specifications as per A, B, C, D, E</p> <p>A. Air washer comprising of 2nos Pre-Filters. First filter shall be 50mm thick Aluminium wiremesh filter &amp; second filter shall be 50 mm thick MERV-8 synthetic media filter with efficiency 90 % down to 10 microns. Both filters to be placed over the common frame.</p> <p>B. Humidification section comprising of Wet pads 200 mm thick impregnated cellulose paper media ( Celdec pads ) with 2 bend PVC eliminator. The End plates of Pad &amp; Eliminator shall be in SS 304 construction. Also, the inner blank offs of Wet section shall be in SS304 construction.</p> <p>C. Fan Section comprising of belt driven, DIDW Backward curved AMCA certified centrifugal fan with maximum air outlet velocity of 10m/s suitable for required cfm at 50 mm static pressure (Total static of the unit shall be verified by the OEM before the design &amp; supply of the units). Fan &amp; Motor should be mounted over Aluminium channel of suitable thickness and should be isolated from the unit's bottom panel by means of Spring isolators.</p> <p>D. TEFC High efficiency IE-3 class motors as required with pulley, belt , Guard</p> <p>E. The unit shall be fabricated with frame work hollow extruded aluminium profile with 0.80 mm preplasticised GSS on outside and 0.80mm 275gsm plain GSS on inside complete with 25 mm thick CFC free PUF insulation of minimum 40 kg/cum density sandwiched in between inner and outer skins. Unit should have MS powder coated legs to give height to unit's base channel from the floor surface. SS-304 ( 18 g ) Sump, UPVC Internal piping, make up, drain &amp; quick fill and drain connection, Butterfly/Gate valves for pumps, make up, drain &amp; quick fill and drain connections of sump, 2 no. Vertical Pumps of suitable capacity to be placed inside the unit's housing (external pumps are not acceptable), Y strainers and necessary fittings, Concrete Blocks / M S stand, anti vibration pads etc.as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
22.1.1	Upto 7500 cfm	per cfm	28.0
22.1.2	more than 7500 cfm to 15000 cfm	per cfm	26.0
22.1.3	more than 15000 cfm to 25000 cfm	per cfm	23.0
22.1.4	more than 25000 cfm to 35000 cfm	per cfm	20.0

Item No.	Description	Unit	Rate (Rs.)
22.2	SITC of Wall mounting cubical type Starter panel made out of 1.6 mm thick sheet steel powder coated enclosure designed as per Switchgear OEM type -2 coordination chart and suitable for operation of following cfm range Air Washer's Blower motor, pump comprising of over load protection relay, short circuit & single phasing protection, ON / OFF push buttons, ammeter, voltmeter, indicating lamps, MCB etc. complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.2.1	Upto 7500 cfm	Set	14843.0
22.2.2	more than 7500 cfm to 15000 cfm	Set	23281.0
22.2.3	more than 15000 cfm to 25000 cfm	Set	32394.0
22.2.4	more than 25000 cfm to 35000 cfm	Set	39282.0
22.3	Supply, Installation, Testing and Comissioning of wall mounted remote ON/OFF Push Button station for AHU/Air washers made out from powder quoted CRCA sheet of 16 SWG, illuminated ON/OFF push button including making connections etc as required complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Set	6412.0
22.4	P & F of Fire retardent flexible canvass connection made of fibreglass weave having silver grey silicon rubber coating, of height 200 mm with sufficient fold to avoid transmission of vibration with GI frame,Gasket Nut Bolts for air cooling Plants/AHU/FCU etc as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sq Mtr	2023.0

Item No.	Description	Unit	Rate (Rs.)
22.5	SITC of VFD OEM fabricated VFD cum Bypass starter panel Confirming to IEC60721-3-3, IEC60068-2-60 & IEC60068-2 for variable torque applications, 3C3 avg., 200% torque producing capability at min freq of 0.5 Hz, integrated with 3 to 5% of input reactor or built in DC reactor, Max output frequency 400Hz, built in braking chopper till 30KW, built in RS485 Modbus RTU, Min 7DI, 2DO, 2AI, 1AO, onboard control supply of 24V -150 mA for external operations, RJ45 port, Monitoring parameters – V, I, Torque, Freq, RPM, Watt Hour, DC bus voltage, Analog input V or mA, I/O Status, PID loop monitoring, Torque speed, speed limit, Cooling fan, Protection functions – Ground fault, Over current, Overload, UV/OV, Under/over torque, I/P & O/P phase loss, DBR O/L, inverter over hit alarm, DC bus charge LED indication, heatsink thermistor open detection, stall prevention, fault history of min 4 last faults. Bypass starter shall be provided as per type 2 coordination etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.5.1	1.5 KW	Each	70760.0
22.5.2	2.2 KW	Each	73311.0
22.5.3	3.7 KW	Each	79317.0
22.5.4	5.5 KW	Each	92954.0
22.5.5	7.5 KW	Each	100959.0
22.5.6	11.0 KW	Each	105997.0
22.5.7	15.0 KW	Each	122604.0
22.5.8	18.5 KW	Each	140750.0
22.6	Supply, Installation, Testing and Comissioning of site fabricated ducting made from GI sheet metal conforming to IS:277 with a zinc coating grade not less than 120 GSM (both side inclusive) & fabricated as per IS:655 and as per approved drawings & designs including the cost of hangers, supports, angle, expansion fasteners, closed cell neoprene gasket T&P etc. as required of following thickness. Test Certificate for Galavanizing with lot no. to be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.6.1	0.60 mm	Sqm	970.0
22.6.2	0.80mm	Sqm	1155.0
22.6.3	1.00mm	Sqm.	1386.0
22.6.4	1.25mm	Sqm.	1663.0

Item No.	Description	Unit	Rate (Rs.)
22.7	Supply, Installation, Testing and Commissioning of site fabricated ducting made from aluminium sheet conforming to IS:737, Grade 31000 fabricated as per IS:655 and as per approved drawings & designs including the cost of hangers, supports, angle, expansion fasteners, closed cell neoprene gasket T&P etc. as required of following thickness. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.7.1	0.60 mm	Sq Mtr	1236.0
22.7.2	0.80mm	Sq Mtr	1540.0
22.7.3	1.00mm	Sq Mtr	1872.0
22.7.4	1.20mm	Sq Mtr	2189.0
22.8	Supply, Installation, Testing and Commissioning of factory fabricated SMACNA standard ducting made from GI sheet metal conforming to IS:277 with a zinc coating grade of 120GSM (both side inclusive) & fabricated as per IS:655 and as per approved drawings & designs including the cost of hangers, supports, angle, expansion fasteners, closed cell neoprene gasket T&P etc. as required of following thickness. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.8.1	0.60mm	Sqm	1295.0
22.8.2	0.80mm	Sqm	1552.0
22.8.3	1.00mm	Sqm.	1903.0
22.8.4	1.25mm	Sqm.	2301.0
22.9	Supplying, installing, testing and balancing of extruded Aluminium Powder coated supply/return Grilles with fixed bars at front having 0 / 15 / 30 / 45 degrees deflection as required. with Flange size 20 mm with rounded edges including fixing with steel screws etc. complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sq.m	6345.0
22.10	Supplying, installing, testing and balancing of double louvered of extruded Aluminium Powder coated supply/return air grills of various sizes, Each grill shall be with fixed aerofoil shaped horizontal front bar at 0 deflection and back adjustable vertical louvers, air distribution grid for straightening the air flow through the collar and register including fixing with steel screws etc. complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.10.1	Supply air grill with key operated volume control damper	Sqm.	10530.0
22.10.2	Return air grill without volume control damper	Sqm.	8438.0

Item No.	Description	Unit	Rate (Rs.)
22.11	Supplying, installing, testing and balancing of extruded Aluminium powder coated Air Diffuser and complete with Flush, 20mm flanges with PVC/neoprene gasket, anti – smudge frame and removable inner core to facilitate the adjustable of air control damper, square/round/ rectangular as required.including fixing with steel screws etc. complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.11.1	Supply Air Diffuser with Volume Control damper	Sqm.	12219.0
22.11.2	Return Air Diffuser without Volume Control damper	Sqm.	9855.0
22.12	Supplying, installing and balancing of extruded Aluminium powder coated fresh air inlet louvers with bird screen & volume control damper fixing with steel screws etc. complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sqm.	8371.0
22.13	Supply, installation, testing & balancing of 20 Gauge G I Damper with brass bushes and 6" pitch multiblade box type galvanised sheet steel construction volume control damper for Ducting and air washers to be provided with suitable links and quadrants for control of volume of air as per specifications complete as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer Annexure "A" attached with this BSR .	Sq Mtr	5128.0
22.14	Supply and fixing of acoustic lining of ducts with chemically cross link Oxide acetate foam open cell structure Acoustic Insulation with density 30 Kg / Sqm, UV protected and Class O Fire property Water Vapour absorption 0.002 gm / Sqcm, including cost of adhesive etc. complete in all respect. All as per pre approved by Engineer in charge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.14.1	10 mm thick	Sqm	755.0
22.14.2	15 mm thick	Sqm.	978.0
22.14.3	25 mm thick	Sqm.	1423.0
22.15	Supply and fixing duct insulation with 50 mm thick Expanded Polystyrene Thermocol (ESP) sheet of density 24 kg/cu.m after applying two coats of cold setting adhesive (CPRX Compound) and binding sheet with chicken wire mesh and applying cement mortar plaster (1:4) including primer & painting (suitable for outdoor aplication) matching with building colour or as per direction of Engineer incharge as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sqm.	985.0

Item No.	Description	Unit	Rate (Rs.)
22.16	Supply and fixing aluminium foil faced 50 mm thick Rock wool insulation of density 36 kg/cu.m after applying two coats of cold setting adhesive (CPRX Compound) sealing all joints with self adhesive tape & finished with 26 G Aluminium cladding. complete in all respect. (For Outdoor applications-air conditioning ducts) All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer Annexure "A" attached with this BSR .	Sqm.	1126.0
22.17	Supply & fixing of external thermal closed-cell Nitrile rubber Insulation material FM/UL approved with high water vapor diffusion resistance and low thermal conductivity should be certified 'Class O' in Fire Propagation as per BS 476 Part 6 in form of sheet on duct including cost of adhesive (CPRX Compound) complete as required. All as per pre approved by Engineer in charge.		
22.17.1	9mm thick for indoor Application	Sqm	718.0
22.17.2	13mm thick for indoor Application	Sqm	926.0
22.17.3	13mm thick for Outdoor Application with 26 SWG Aluminium Cladding	Sqm	1148.0
22.17.4	19mm thick for Outdoor Application with 26 SWG Aluminium Cladding	Sqm	1460.0
22.18	Supplying, installing of external thermal closed cell cross linked polyethelene (XLPE) foam insulation made out from non-fibrous, fire retardant (FR), closed cell, tri-dimensional chemically crosslinked polyethylene foam. should be certified 'Class O' in Fire Propagation and 'Class 1' in Surface Spread of Flame as per BS 476 Part 6 & Part 7 respectively in the form of sheet on ducts including cost of adhesive, tape complete as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.18.1	9mm thick	Sqm	680.0
22.18.2	13mm thick	Sqm	814.0
22.18.3	25 mm thick		1096.0
22.19	Supply and fixing duct insulation with 50 mm thick Expanded Polystyrene Thermocol (ESP) sheet of density 24 kg/cu.m after applying two coats of cold setting adhesive (CPRX Compound) and binding sheet with chicken wire mesh and applying 26 G aluminium cladding complete as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sq Mtr	1086.0



Item No.	Description	Unit	Rate (Rs.)
22.20	Supply, Installation, Testing and Comissioning of expanded polysterene over deck insulation having thickness of 50 mm and density of 36 Kg / m3 including binding of fibre cloth and applying of two coats of UV paint suitable for exposed atmosphere complete as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sq Mtr	1197.0
22.21	Supplying and fixing of thermal insulation on exposed roof (underdeck) with 25 mm thick Cross Linked Closed Cell Polyethylene FR-XPE insulation of density 33 Kg/m³ with adhesive etc. as required & finally fixed with the help of rawl plug, dash fasteners & adhesive in ceiling of pieces in size of 900x900 mm or 1200x1200 mm. etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sq Mtr	1171.0
22.22	Supplying, fixing acoustic lining on wall and ceiling of AHU rooms with 50mm thick, density 32 kg/cu.m resin bonded glass fiber insulation friction fixed in 610mm x 610 mm frame work made of 25X50X50X50X25 mm made out of 0.6mm thick GI sheet U shaped channel and covered with reinforced fiber glass tissue and finished with 0.80 mm perforated aluminium sheet etc. complete as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sq Mtr	1092.0
22.23	Supply, Installation, Testing and Comissioning of Window type Air conditioners as per BEE star rating complete with copper power cable upto 3 Mtr, wireless Remote, suitable for working between 230 V +/- 10% with low & high voltage cutoff and 50 Hz,1 phase AC supply capable of performing, cooling, dehumidification, air circulation R-32/R-410 Green Refrigerant with Scroll / rotary compressor complete with fixing including T&P & labour etc as required complete in all respect as specified of following capacity. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.23.1	1.5 TR ISEER not less then 3.0	Each	32340.0
22.23.2	1.8 TR	Each	35338.0

Item No.	Description	Unit	Rate (Rs.)
22.24	Supply, Installation, Testing and Comissioning of Inverter type Air Cooled Hi Wall split type Air conditioners with latest star rating system as per BEE amended upto date complete with Indoor unit(IDU), Out door unit (ODU), surface / concealed copper Refrigerant piping with insulation (closed cell elastomeric nitrile rubber tubular pipe section) upto 3 Mtr (IDU to ODU), copper power cable upto 3.5 Mtr (IDU to ODU), R-32/R-410 Green Refrigerant, wireless Remote control, suitable for working between 230V +/- 10% with low & high voltage cutoff and 50 hz, single phase AC supply capable of performing cooling, dehumidification, air circulation of following capacity with Scroll / rotary compressor. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this RSR		
22.24.1	1.0 TR ISEER not less then 3.8	Each	40096.0
22.24.2	1.0 TR ISEER not less then 4.6	Each	50225.0
22.24.3	1.5 TR ISEER not less then 3.8	Each	48875.0
22.24.4	1.5 TR ISEER not less then 4.6	Each	58329.0
22.24.5	1.8 TR ISEER not less then 3.8	Each	62380.0
22.24.6	1.8 TR ISEER not less then 4.6	Each	66432.0
22.24.7	2.0 TR ISEER not less then 3.8	Each	63731.0
22.24.8	2.0 TR ISEER not less then 4.6	Each	67783.0
22.25	Supply, Installation, Testing and Comissioning of Air Cooled Floor standing Tower type split Air conditioners complete with Indoor unit(IDU), Out door unit (ODU), surface / concealed copper Refrigerant piping with insulation (closed cell elastomeric nitrile rubber tubular pipe section) upto 3 Mtr (IDU to ODU), copper power cable upto 3.5 Mtr (IDU to ODU), R-32/R-410 Green Refrigerant, wireless Remote control, suitable for working between 415 V +/- 10%,3 phase 50 Hz AC Supply with low & high voltage cutoff and capable of performing cooling, dehumidification, air circulation of following capacity with Scroll / rotary compressor. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.25.1	3.0/3.3 TR	Each	132985.0
22.25.2	3.6 TR	Each	146490.0
22.25.3	4.0 TR	Each	153243.0
22.25.4	4.6 TR	Each	159996.0

Item No.	Description	Unit	Rate (Rs.)
22.26	SITC of air cooled ducted split type air conditioning machine with each having a capacity and details as mentioned below suitable for operation on factory charged R-32/R-410A Green refrigerant comprising of Scroll /rotary type compressor hermetically sealed complete with automatic capacity, safety switches, lubrication system, Suitable capacity squirrel cage induction motor with class 'B' insulation suitable for operation on single / three phase supply, 50 Hz, A.C. supply for Blower motor, Necessary drive arrangement for blower motor, Matching Air cooled condenser with necessary fittings for refrigerant piping connections, necessary structural support for mounting condensers, Microprocessor based control panel complete with accessories, machine isolation / disconnect switch, valves and accessories to inter connect compressor and condenser including pressure testing, vacuum. Necessary starters suitable for Indoor & outdoor unit complete with O/L, U/V, phase reversal protection, single phase preventors etc complete as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.26.1	3.0 TR	Each	78962.0
22.26.2	4 TR	Each	101908.0
22.26.3	5.5 TR	Each	162002.0
22.26.4	8.5 TR	Each	226789.0
22.26.5	11 TR	Each	289571.0
22.26.6	16.5 TR	Each	445488.0
22.27	Supply, Installation, Testing and Commissioning of Air Cooled Cassette type Air conditioners complete with Indoor unit(IDU), Out door unit (ODU), R-32/R410A Green Refrigerant, wireless Remote, inbuilt drain pump, suitable for 400/230V, +/- 10% 50 Hz, 1 /3 phase AC supply, capable of performing cooling, dehumidification, Air circulation, filtration & ventilation of following capacity with Scroll /rotary/twin rotary compressor. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
<b>22.27.1 Inverter Type</b>			
22.27.1.1	1.5 TR with ISEER not less than 3.5 (compact 2x2)	Each	92481.0
22.27.1.2	1.8 ISEER not less than 3.5 (compact 2x2)	Each	107337.0
22.27.1.3	1.5 TR ISEER not less than 3.5	Each	91130.0
22.27.1.4	1.8 TR ISEER not less than 3.5	Each	104636.0
22.27.1.5	2.0 TR ISEER not less than 3.5	Each	106662.0
22.27.1.6	3.0 TR	Each	111389.0
22.27.1.7	3.8 / 4.0 TR	Each	124894.0
<b>22.27.2 Non Inverter</b>			
22.27.2.1	1.5 TR with ISEER not less than 3.0 (compact 2x2)	Each	84377.0
22.27.2.2	1.8 ISEER not less than 3.0 (compact 2x2)	Each	92481.0
22.27.2.3	1.5 TR ISEER not less than 3.0	Each	91130.0
22.27.2.4	1.8 TR ISEER not less than 3.0	Each	100584.0
22.27.2.5	2.0 TR ISEER not less than 3.0	Each	103285.0
22.27.2.6	3.0 TR	Each	108688.0

Item No.	Description	Unit	Rate (Rs.)
22.27.2.7	3.8 / 4.0 TR	Each	120843.0
22.28	Supply, Installation, Testing & Commissioning of modular type Variable Refrigerant Flow/Variable Refrigerant Volume air cooled Outdoor units suitable for cooling and heating, having 100% hermetically sealed inverter type Scroll Compressor(s) with and minimum two compressors along with two Condensing fan, above 14/18 HP modules, microprocessor based Controller, Side / top discharge type condensing unit(s), with R-410 A Refrigerant, vibration isolators, with suitable foundation etc. complete as required. The unit shall deliver the rated capacity at AHRI Conditions and work even at 50°C ambient temperature without tripping. The unit shall be suitable to work on 400V +/- 10%, 3 Phase, 50Hz AC power supply. The unit shall be filled with first charge of the refrigerant and ready for use as required. The EER at 100% load with AHRI conditions shall not be less than 3.5 and Including OEM supplied Piping connection Kit etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Per HP	24270.0
22.29	Supply, installation, testing and commissioning of following minimum capacity 4-way flow VRV/VRF Cassette Type Indoor ceiling mounted unit equipped with synthetic washable media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX Copper coil, electronic expansion valve, outer cabinet, drain pump, grill, necessary supports, vibration isolation, Corded remote control etc., suitable for operation on single phase 230 V $\pm$ 10%, 50Hz AC supply, complete, as required. The unit shall have automatic force shut down valve in case of fire on receiving signal from BMS System. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature. (Make will be same as of Outdoor). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR		
22.29.1	0.8 TR	Each	51234.0
22.29.2	1 TR	Each	52720.0
22.29.3	1.2 TR	Each	55691.0
22.29.4	1.6 TR	Each	56785.0
22.29.5	2 TR	Each	58230.0
22.29.6	2.4 TR	Each	64943.0
22.29.7	3.2 TR	Each	66172.0
22.29.8	4 TR	Each	69278.0
22.29.9	4.6 TR	Each	71588.0

Item No.	Description	Unit	Rate (Rs.)
22.30	Supply, installation, testing and commissioning of following minimum capacity 4-way flow compact VRV/VRF Cassette ( 2' x 2' ) Type Indoor ceiling mounted unit equipped with synthetic washable media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX Copper coil, electronic expansion valve, outer cabinet, drain pump, grill, necessary supports, vibration isolation, Corded remote control etc., suitable for operation on single phase 230 V $\pm$ 10%, 50Hz AC supply, complete, as required. The unit shall have automatic force shut down valve in case of fire on receiving signal from BMS System. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature. (Make will be same as of Outdoor) All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.30.1	0.6 TR	Each	57879.0
22.30.2	0.8 TR	Each	61418.0
22.30.3	1 TR	Each	62093.0
22.30.4	1.2 TR	Each	66550.0
22.30.5	1.6 TR	Each	67495.0
22.31	Add Extra for OEM make Wireless remote in place of Wired remote including receiver as required.	Each	5396.0
22.32	Supply, installation, testing and commissioning of following minimum capacity VRV/VRF High wall type Indoor unit equipped with and comfort washable synthetic media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, outer cabinet, cord less remote control, drain pan, necessary accessories etc., suitable for operation on 230 V $\pm$ 10%, 50 Hz, single phase AC supply, complete as required. The unit shall have automatic force shut down valve in case of fire on receiving signal from BMS System. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature. (Make will be same as of Outdoor) All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.32.1	0.6 TR	Each	34478.0
22.32.2	0.8 TR	Each	34896.0
22.32.3	1.0 TR	Each	35572.0
22.32.4	1.2 TR	Each	36787.0
22.32.5	1.65 TR	Each	37867.0
22.32.6	2 TR	Each	38948.0

Item No.	Description	Unit	Rate (Rs.)
22.33	Supply, installation, testing and commissioning of following minimum capacity and external static pressure VRF/VRV ceiling mounted ductable type Indoor unit equipped with washable synthetic media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, corded remote control, outer cabinet, vibration isolators, drain pan, drain pump, other necessary supports etc., suitable for operation on single phase AC supply 230 V $\pm$ 10%, 50 Hz complete as required. The unit shall have automatic force shut down valve in case of fire on receiveing signal from BMS System. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
<b>22.33.1</b>	<b>Low static ductable units (19 to 30 pascal external static pressure)</b>		
22.33.1.1	0.8 TR	Each	46413.0
22.33.1.2	1 TR	Each	46899.0
22.33.1.3	1.2 TR	Each	48182.0
22.33.1.4	1.6 TR	Each	49803.0
22.33.1.5	2 TR	Each	52909.0
22.33.1.6	2.4 TR	Each	58446.0
<b>22.33.2</b>	<b>Mid Static Ductable units ( 35 to 77 pascal external static pressure)</b>		
22.33.2.1	3.2 TR	Each	67887.0
22.33.2.2	4 TR	Each	76517.0
22.33.2.3	4.6 TR	Each	88672.0
<b>22.33.3</b>	<b>High Static Ductable units ( 78 pascal or above external static pressure)</b>		
22.33.3.1	5.5 TR		128778.0
22.33.3.2	6.6 TR	Each	138353.0
22.33.3.3	8.0 TR	Each	148476.0
22.33.3.4	13.0 TR	Each	205842.0
22.33.3.5	16.0 TR	Each	239566.0

Item No.	Description	Unit	Rate (Rs.)
22.34	Supply, installation, testing & commissioning of Group controller for monitoring the status and working condition of all indoor and outdoor units, The controller shall act as an advanced air conditioning management system to given complete control of VRV/VRF air conditioning equipment with Starting/stopping of air-conditioning as a zone or group of individual units. Temperature setting for each Indoor units of zone, Switching between temperature control modes, switching of the fan speed and direction of airflow, enabling/disabling of individual remote controller operation, Alarm code display in case of any problem. It shall be able to control up to 64 (max. 512 if required) number of Indoor units. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	43192.0
22.34.1	Add Extra for extenders/adaptors compatible with central controller to enable the controller to work with 128 IDU's	Each	17517.0
22.34.2	Add Extra for extenders/adaptors compatible with central controller to enable the controller to work with 256 IDU's	Each	32360.0
22.34.3	Add Extra for extenders/adaptors compatible with central controller to enable the controller to work with 512 IDU's	Each	79563.0
22.35	Supply, installation, Testing & commissioning of VRV/VRF compatible OEM make AHU KIT' including expansion valve and controller for connecting AHU with VRF.	Each	59358.0
22.36	Supplying and installation of high-pressure grade required size OEM make copper connection Y or T Joints / refnet for liquid and suction line complete erected on wall/ceiling with supports/raceways, Nitrile rubber insulation, painting etc. with brazing and testing for leakages confirming the normal operation of the VRV / VRF air conditioning system. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	6881.0
22.37	Gas charging of VRF/VRV system with R410A refrigerant gas. Before gas charging system shall be flushed with high purity Nitrogen Gas to remove carbon content, dirt particles to make sure that there is no chance of mixing any impurity with Refrigerant Gas. Thereafter System shall be tested with Nitrogen Gas at 1.5 Times of working pressure of R410 Refrigerant Gas to ensure leakproof system. Whole system shall be Vacuumed up to 500-micron level which ensures the zero-moisture content level in piping to ensure better cooling efficiency and long life of the system. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Kg	1821.0

Item No.	Description	Unit	Rate (Rs.)
22.38	Supplying and drawing flexible / stranded bare copper conductor, PVC / XLPE insulated, overall aluminium mylar tape shielded ATC drain wire and outer PVC sheathed industrial Instrumentation (shielded)cables voltage grade 300/500 V as per BS /EN 50288-7 in existing surface or recessed PVC/ MS conduit/casing capping / Cable tray / Open Duct making connections, testing etc. as required. OEM Must have its own in house NABL lab setup for all testing facilities for cables. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer Annexure "A" attached with this BSR .		
22.38.1	<b>Un Armoured</b>		
22.38.1.1	2 core x 1.0 Sq.mm	Mtr.	75.0
22.38.1.2	2 core x 1.5 Sq.mm	Mtr.	94.0
22.38.1.3	2 core x 2.5 Sq.mm	Mtr.	135.0
22.38.1.4	4 core x 2.5 Sq.mm	Mtr.	232.0
22.38.2	<b>Armoured</b>		
22.38.2.1	2 core x 1.0 Sq.mm	Mtr.	135.0
22.38.2.2	2 core x 1.5 Sq.mm	Mtr.	158.0
22.38.2.3	2 core x 2.5 Sq.mm	Mtr.	204.0
22.38.2.4	4 core x 2.5 Sq.mm	Mtr.	329.0
22.39	Supply, installation, testing and comissioning of interconnecting copper refrigerant piping of DHE Grade C12200- ASTM B68, B75, chemical composition of copper %-99.0 Min and Phosphorus %- 0.015 to 0.040 . For Annealed copper tube :- Tensile strength = 210 Mpa wih elongation % = 40 Min . Ink Mark Brand Printing on Hard Tubes should be present. duly insulated with tubular elastomeric nitrile rubber FM/UL approved with high water vapor diffusion resistance and low thermal conductivity should be certified 'Class O' in Fire Propagation as per BS 476 Part 6 including chase cutting andfilling with mortar, Slotted channel supports mounted on 10 mm threaded rod at suitable spacing the exposed piping shall be wrapped with glass woven cloth and lag coating for vapour barrier and weather protection. Joints shall be covered with nitrile rubber tape of 3 mm thick complete as required of following sizes. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.39.1	41.1 mm O.D., wall thinkness $\geq 1.4$ mm (insulation – 19 mm thick)	Mtr.	4316.0
22.39.2	38 mm O.D., wall thinkness $\geq 1.4$ mm (insulation – 19 mm thick)	Mtr.	4019.0
22.39.3	34.9 mm O.D., wall thinkness $\geq 1.4$ mm (insulation – 19 mm thick)	Mtr.	3399.0
22.39.4	28.6 mm O.D., wall thinkness $\geq 1.2$ mm (insulation – 19 mm thick)	Mtr.	2563.0
22.39.5	25 mm O.D., wall thinkness $\geq 1.2$ mm (insulation – 19 mm thick)	Mtr.	2124.0
22.39.6	22.2 mm O.D., wall thinkness $\geq 1.0$ mm (insulation – 19 mm thick)	Mtr.	1821.0



Item No.	Description	Unit	Rate (Rs.)
22.39.7	19.1 mm O.D., wall thickness $\geq$ 1.0mm (insulation – 13 mm thick)	Mtr.	1295.0
22.39.8	15.9 mm O.D., wall thickness $\geq$ 0.8mm (insulation – 13 mm thick)	Mtr.	1066.0
22.39.9	12.7 mm O.D., wall thickness $\geq$ 0.8mm (insulation – 13 mm thick)	Mtr.	728.0
22.39.10	9.5 mm O.D., wall thickness $\geq$ 0.8mm (insulation – 13 mm thick)	Mtr.	553.0
22.39.11	6.4 mm O.D., wall thickness $\geq$ 0.8mm (insulation – 13 mm thick)	Mtr.	383.0
22.40	Providing & Fixing of IS : 4985 - 2000 Class -4 (10 Kgf / Sqcm) UPVC drain water piping with fittings (IS:7834 & 10Kgf/sqcm) like elbow, socket, Tee, solvent cement jointing, support with MS hanger on ceiling or recessed in wall with chasing & plastering with 6 mm thick closed cell elastomeric nitrile rubber insulation including leakage testing etc. as required of following Nominal sizes. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.40.1	20 mm	Mtr.	189.0
22.40.2	25 mm	Mtr.	229.0
22.40.3	32 mm	Mtr.	296.0
22.40.4	40 mm	Mtr.	350.0
22.40.5	50 mm	Mtr.	431.0
22.40.6	63 mm	Mtr.	526.0
22.41	Supply, Fixing and testing of following capacity ISO certified company made wall mounted stabilizer having output voltage variation from 200 V to 250 V(+/-5%) with input voltage variation from 170 V to 260 V, time delay facility from 2 to 4 minute and high cutoff at 270 V with providing of 16 Amp /20 Amp Industrial plug top making connection etc complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.41.1	3 kVA	Each	2970.0
22.41.2	4 kVA	Each	3375.0
22.41.3	5 kVA	Each	4185.0
22.42	Making hole in stone masonry/ RCC wall/ RCC slab with core cutter for accomodating refrigerant pipe/ drain pipe/ MS pipe/ cables etc of following dia		
22.42.1	50 mm dia per running inch length	per inch	80.0
22.42.2	100 mm dia per running inch length	per inch	160.0
22.42.3	150 mm dia per running inch length	per inch	241.0
22.42.4	200 mm dia per running inch length	per inch	334.0

Item No.	Description	Unit	Rate (Rs.)
22.43	Providing and making wall openings in existing stone / Brick masonry partition wall complete with all required T & P, Scaffolding and providing lintel of required size and strength, repairing,plastering and cleaning the site debris as required.	Cu. Ft.	738.0
22.45	Supply & fixing MS powder coated stand suitable for 1.0/1.5/ 2.0 Tr outdoor type of Split AC. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	580.0
22.46	Supply & fixing MS powder coated stand suitable for 2.5/3.0/4.0 Tr outdoor type of Split/Ductable/Tower AC. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1349.0
22.47	P & F of trap door for AHU / FCU's in existing false ceiling duly made from 12 mm thick laminated board, hinged with wooden frame of cheed wood size 50mm x 80mm, Frame suspended with MS strip 25 x 3 mm with ancor fastner min 8 supports from ceiling, Hinges, Locking arrangement etc as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sq Mtr	5055.0
22.48	SITC of Condensate water Drain pump suitable to Install with Existing Split type AC Indoor unit, single phase, 230V, including all accessories of pump like discharge tube, filter, reservoir etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	6746.0
22.49	SITC of VRF OEM manufactured treated fresh air unit (TFA) equipped with pre-filter, fan section with low noise fan, multispeed motor, coil section with DX coil, outer cabinet, insulated drain pan, pipe connections etc. of following Nominal capacities with Tolerance +/- 5%. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.49.1	4.12 TR/635 CFM	Each	70176.0
22.49.2	6.6 TR/988 CFM	Each	107952.0
22.49.3	8.25 TR/1230 CFM	Each	126833.0
22.49.4	10 TR/1750 CFM	Each	191621.0
22.49.5	13.2 TR/2050 CFM	Each	263161.0
22.49.6	16.5 TR/2150 CFM	Each	330623.0

Item No.	Description	Unit	Rate (Rs.)
22.51	Supply, Installation, Testing and Comissioning of IS:1475 marked self contained drinking water cooler with hermetically sealed compressor,non CFC refrigerent suitable for operation on 230V/1pH/50Hz AC supply,Full stainless steel (SS304)body (0.8 mm thick) and tank (0.5 mm thick), stainless steel water tray,minimum two nos Brass Chrome plated faucets and suitable drainage system complete in all respect with required height MS fabricated and Painted Angle iron frame ( Cost of frame to be paid Extra )complete in all respect of the following capacity. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.51.1	cooling capacity 150 Ltr./Hr. and storage capacity 150 Ltrs	Each	75878.0
22.51.2	cooling capacity 60 Ltr./Hr. and storage capacity 120 Ltrs	Each	64428.0
22.51.3	cooling capacity 40 Ltr./Hr. and storage capacity 80 Ltrs	Each	57859.0
22.52	Supply and Installation of Box type EU13 Hepa Filter of 99.997% efficiency down to 0.3 micron particle size installed in zero leakage Aluminium frame as per ISO 14644-1 clean room including sealing and packing material cost like silicon and hardware cost and Labour cost for the dismantling of existing worn out filters & shifting the same to the store as required as under. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work, refer Annexure "A" attached with this BSR .		
22.52.1	305 mm Thick	Sq Mtr	40259.0
22.52.2	150 mm thick	Sq Mtr	29078.0
22.53	Supply and Installation of Box type EU13 Hepa Filter of 99.997% efficiency down to 0.3 micron particle size installed in zero leakage Aluminium frame as per ISO 14644-1 clean room including sealing and packing material cost like silicon and hardware cost and Labour cost. NABL accredeated / appropriated lab testing reports with OEM certificate must submitted to engineer in charge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.53.1	305 mm Thick	Sq Mtr	37858.0
22.53.2	150 mm thick	Sq Mtr	26700.0
22.54	Providing & Fixing of ISO certified company made submersible pump of rating 18 W to 24 Watts,minimum water discharge capacity 2800 LPH and suitable for central/large size desert cooler complete with making connections, testing etc as required. NABL accredeated / appropriated lab testing reports with OEM certificate must submitted to engineer in charge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	each	1139.0

Item No.	Description	Unit	Rate (Rs.)
22.55	Dismantling of split air conditioner of any capacity/any type including existing indoor unit & outdoor unit, refrigerant piping, connecting cables, drain pipe etc. including shifting of dismantled material to store complete as required	Job	936.0
22.56	Providing & Fixing of 26 SWG thick Aluminium sheet cladding on existing refrigerant copper pipe /insulated chiller pipe or any other surface with nut & bolts complete as required. All as per pre approved by Engineer in charge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sq Mtr	617.0
22.57	Providing & Fixing of BIS certified Oil filled radiator having following fins with temperature control setting sound free operation with minimum 1 year warranty & temperature setting, Rated Voltage:-230 V, Rated Wattage:-2400 W made out from CRCA sheet with powder coating, tubular type element castor wheel, 1.5 mtr PVC power cord along with 16 Amp plug top. net weight should not be less then 12 Kg and minimum dimensions are 520 X 165 X 710mm complete in all respect. NABL accredated / appropriated lab testing reports with OEM certificate must submitted to engineer in charge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
22.57.1	9 Fins	Each	15799.0
22.57.2	11 Fins	Each	18365.0
22.57.3	13 Fins	Each	20121.0
22.58	Supply & fixing of evaporative cooling Celdec pads of 200mm Thick made out from impregnated cellulose paper media of imported origin including fixing in Air washer complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sq.ft	742.00
22.59	SITC of Interconnecting refrigerant copper pipe for split/Ductable/ Casseette AC of DHE Grade C12200- ASTM B68, B75, chemical composition of copper %- 99.0 Min and Phosphorus %- 0.015 to 0.040 . For Annealed copper tube :- Tensile strength = 210 Mpa wih elongation % = 40 Min . Ink Mark Brand Printing on Hard Tubes should be present. Piping between each set of indoor & outdoor units of different sizes as per OEM requirement & specifications including class 'O' Nitrile rubber sleeves, chase cutting, supports, making good the same with sand cement plaster etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Kg	1987.00

**CHAPTER : E-23**  
**SUBSTATION EQUIPMENTS**

Item No.	Description	Unit	Rate (Rs.)
23.1	<p>Supply installation testing &amp; Commissioning of Copper wound distribution Transformer of following rating and % Impedance, 11/0.433KV Delta-Star Connected, Vector Group Dyn 11, ONAN Cooled losses as per IS 1180 part I 2014 (Fourth Revision) Level-1, with boltless core design including standard accessories like conservator with prismatic oil level gauge , silica gel breather, Bucholz relay, pressed steel radiator fins, Radiator Valve(above 800 Kva) Suitable size HT cable box, LT cable box with Busbar connection for outgoing cables, Off -LTC (+/- 2.5%, +/- 5% to - 7.5% ), temperature rise of 40 degree C in oil / 45 degree C in winding , drain valve, Air release device, Dial type Oil &amp; Winding Temperature gauge with alarm &amp; trip contacts, first filling of transformer oil as per IS :335-1953 , Epoxy primer and PU based paint as Top coat, Unidirectional rollers for rating upto 800 kva &amp; bi- directionalabove 800 Kva rollers with locking arrangement etc. as required. The Transformer shall be subjected to routine factory tests (as per IS:2026 and IS:1180) including Temperature rise test in OEM's own lab shall be witnessed by Department engineer Physically. Transformer shall be tested from CTL of discom before charging of transformer &amp; complete installaion must be certified from Electrical Inspectorate office as per Indian Electricity rule, (CTL testing charges and Electrical Inspection charges shall be reimbursed by the department to the contractor)Following tests shall be carried out on each transformer at site by OEM enginer in presence of department authorised representative:- a) Ratio test on each tapping.b) Resistance of windings at principal and all tapings.c) Insulation resistance of the winding between HV to earth / HV to LV / LV to earth.d) Vector group test.e) Magnetic Balance test. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
23.1.1	500 KVA with % Impedance 4.5	Each	1665580.00
23.1.2	630 KVA with % Impedance 4.5	Each	1918965.00
23.1.3	800 KVA with % Impedance 4.5	Each	2169269.00
23.1.4	1000 KVA with % Impedance 5.0	Each	2583252.00
23.1.5	1250 KVA with % Impedance 5.0	Each	2910231.00
23.1.6	1600 KVA with % Impedance 6.25	Each	3161324.00
23.1.7	2000 KVA with % Impedance 6.25	Each	3619014.00
23.1.8	2500 KVA with % Impedance 6.25	Each	4116435.00

Item No.	Description	Unit	Rate (Rs.)
23.2	<p>S I T C of star rated Aluminium wound distribution Transformer of following rating 11/0.433KV Delta-Star Connected, Vector Group Dyn 11, ONAN Cooled &amp; as per BEE star - 1 &amp; BIS approved as per IS 2026- 1977 &amp; losses as defined as per 2014 (Fourth Revision) Level-1 . including standard accessories like conservator, silica gel breather, radiator, fins, HT cable box &amp; LT cable boxes, temperature rise in winding/oil 35-40 degree C upto 200 KVA &amp; 40-45 degree C for above 200 KVA, ISI marked drain valve, Dial type Temperature gauge, first filling of transformer oil as per IS :335-1953, Epoxy based paint, including carrying of pre-commission Testing &amp; Charging of Transformer complete in all respect .</p> <p>The Transformer shall be subjected to routine factory tests (as per IS:2026 and IS:1180) including testing from CTL of discom before charging of transformer &amp; complete installaion must be certified from Electrical Inspectorate office as per Indian Electricity rule, (CTL testing charges and Electrical Inspection charges shall be reimbursed by the department to the contractor). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
23.2.1	63 KVA	Each	197732.00
23.2.2	100 KVA	Each	255138.00
23.2.3	160KVA	Each	318922.00
23.2.4	200 KVA	Each	401842.00
23.2.5	250 KVA with Off -LTC (+5% to - 10% @ 2.5%)	Each	427356.00
23.2.6	315 KVA with Off -LTC (+5% to - 10% @ 2.5%)	Each	619551.00
23.2.7	400 KVA with Off -LTC (+5% to - 10% @ 2.5%)	Each	744713.00
23.2.8	500 KVA with Off -LTC (+5% to - 10% @ 2.5%)	Each	872656.00
23.3	<p>SITC of Marshalling box fabricated out of 2.0 mm thick sheet steel, provided with water tight hinged doors with padlock arrangement, neoprene gasket all around door to make enclosure water and dust proof (IP-55). Space Heater, Illumination lamp, 5A switch &amp; Socket, MCB, Viewing window, detachable gland plate completely wired, ready for external connections at the terminal blocks. All wirings shall be carried out with 1100 V grade PVC insulated stranded conductors. Power circuits if any shall be wired with stranded copper conductors of adequate sizes to suit the rated current. The minimum size shall be 2.5 sq.mm. Control, alarm and indication circuits, shall be wired with stranded copper conductor of sizes not smaller than 1.5 sq. mm. CT circuits shall be wired with stranded copper conductor of size not smaller than 4 sq.mm. including 150 mm dia. Winding temperature indicator with A&amp;T contacts, 150 mm dia. Oil temperature indicator with A&amp;T contacts , 150 mm dia. Magnetic Oil level Gauge ( MOG) with alarm contact, double float type Buchholz relay with isolating valves on both sides and as per IS: 3637 with A&amp;T Contacts etc. as required.</p>	Each	107158.00

Item No.	Description	Unit	Rate (Rs.)
	All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
23.4	<p>Supply &amp; Installation of D.P. Structure With AIR BREAK SWITCH having following specifications A, B, C, D, E. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p> <p>A) Double pole structure on 2 no ISMB ( I beam ) of size 150 x 75 mm, 10 mtr length using 7 no MS channel each of size 100 mm x 50 mm x 2500 mm complete in all respect with nuts, springs washers, clamps as required.</p> <p>B) Off load type gang operated 3-pole vertical flute type switch suitable for 11KV ; 400A ,3-ø, central post rotating double break isolator complete with MS hardware , copper moving &amp; fixed contact ,assembly of 9 nos pin insulator ,GI pipe of suitable length for operation.</p> <p>C) 3nos Vertical / Horizontal mounted 11kv horn gap fuse set /drop out 11kv barrel fuses mounted on 6no pin insulators</p> <p>D) 3 piece non linear resistor type. lighting arrestor of approved make suitable for 3 wire, 11kv Overhead line with rated voltage of 9kv rms &amp; nominal discharge current rating of 5 ka &amp; complete with galvanized clamping arrangement GI bolts, nuts, washer etc as required.</p> <p>E) 3 no 11kv ACSR conductors mounted on pin type insularors as required. 6.GENERAL:The go shall be operated by hand operated liver properly earthed with provision for locking mounted at 3'</p>	Set	102164.00

Item No.	Description	Unit	Rate (Rs.)
23.5	SITC of 11kV 630 Amps 21KA for 3 Sec. SF6 insulated, outdoor duty (IP54) , Extensible / Non extensible type Ring main unit (RMU) manually operated in combination of VCB modules and Load Break switch consisting of Copper busbar in SF6 insulated 304 (Non-Ferrite Non-Magnetic Grade) stainless steel enclosure of thickness 2.5mm with manometer. The HV switchgear and control gear should be confirming to IEC-62271-100, IEC-62271-200-2003 & IEC-60694-1996. The RMU should be internal arc tested for 21KA for 1Second with IAC-AFL classification for gas tank. Vacuum Interrupter of VCB should be RMU Manufacturer's own make. Each feeder of RMU should have voltage presence indicator. . and comprising of followings:- 1 no. microprocessor based Self powered numerical relay with over Current/ earth fault & short circuit protection with each VCB feeder. - 3 Nos. Protection CT shall be of Burden 2.5VA, ratio 50/1A, Class of Accuracy class 5P10 for O/C and E/F protection for each VCB.- 1 No. Manometer for each tank,- 1 nos. Fault Passage indicator,- Right angle boots for all the feeder Modules All the type test certificates as per IEC from Third party NABL / CPRI / ERDA accredited lab to be submitted. (Cost of RCC Foundation / Steel Structure to be paid Extra) All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR		
23.5.1	Non Extensible 3 way RMU with 1 no. VCB & 2 No. Load Break Switch	Each	438067.00
23.5.2	Extensible 3 way RMU with 1 no. VCB & 2 No. Load Break Switch	Each	465880.00
23.5.3	Extensible 2 way RMU with 1 no. VCB & 1 No. Load Break Switch	Each	382439.00
23.5.4	Non Extensible 1 way RMU with 1 no. VCB & Direct Cable Entry	Each	340718.00



Item No.	Description	Unit	Rate (Rs.)
23.6	<p>SITC of Indoor Type Floor mounted metal clad 11 KV, 630 Amps 3 phase, 50 Hz Vacuum Circuit Breaker (VCB) <b>Panel Fabricated in VCB Manufacturer's own Factory</b> as per IEC 62271-1,100,200 Standard made from Powder painted pre-fabricated, CRCA sheet steel /High quality Aluminium-Zinc (Aluzinc) coated sheet steel. Fabrication shall be done through CNC turret press and CNC bending machine having a rupturing capacity of 500 MVA, 26.3 KA breaking capacity for 3 sec, Internal arc type tested for 26.3KA for 1 sec with AFLR clasification totally enclosed with Aluminium bus bar of 630 Amps for each phase, flush front, Horizontal isolation, Horizontal drawout type with Electrical and Mechanical interlock and automatic safety shutter gear including padlocking arrangement, isolation plugs, assambly of 3 vaccum interrupters (VCB manufacturer's own make) , with each pole individually encapsulated by epoxy insulations to make it dust proof and self - aligning finger type isolating contacts, truck having integral racking with necessary interlocks (for insertion and removing of VCB), manual and automatic motor charged independent closing/ tripping spring , trip free operating mechanism with closing and tripping push buttons and mechanical breaker.</p> <p>interconnected with HT sleeve bus bar of 630 Amps , Basic Insulation level (BIL) : 28KV (RMS) / 75KV (Peak) and Altiude less than 1000 meters, including all protection, indication, Operation, monitoring and control and accessories etc. as required. .Factory Tests of VCB panel as per OEM's QAP in it's own Manufacturing facility shall be witnessed by department Engineer virtually / Physically. (Cost of RCC Foundation / Steel Structure to be paid Extra) All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		

Item No.	Description	Unit	Rate (Rs.)
23.6.1	<p><b>Incoming Cum Outgoing Panel comprising of Side cable box &amp; Transformer Auxiliary protection and comprising of following.</b></p> <ul style="list-style-type: none"> <li>- VCB 630 Amps . VI of VCB should be sealed for 30000 operation. VCB operating mechanism should be of M2 duty for minimum 10000 mechanical operation.</li> <li>- Closing &amp; tripping coil of VCB should be of continuous rating to achieve minimal failure.</li> <li>- Resin Cast type CT having Ratio : 400-200A/ 1-1 A, Core1: 5P20, 5 VA; Core 2: 0.5, 5 VA (How ever CT Ratio shall be decided as per load requirement)</li> <li>- VT Ratio: 11KV/1.732/110V/1.732/110V/1.732, -Core 1: 0.5, 20VA should be floor mounted and to be connected from the back side of the panel.</li> <li>- Numerical relay (should be VCB manufacturer's own make) having protections of 50,51, 50N,51N,TCS. The relay shall have programable 4 digital Input , programable 6 Digital Output and programable 4 nos. LED at HMI.</li> <li>- Ammeter with Selector switch and Volt meter with Selector switch</li> <li>- Multifunction Meter of Acc Class 0.5, having facility to monitor KW, KVA, KVAR, PF, KWH, KVARH, KVAH, A,V etc.</li> <li>- Trip circuit supervision relay (feature of numerical relay)</li> <li>- LR, TNC switch, indication lamp - CB ON/OFF, spring charge, Auto trip, TCS healthy etc., Space heaters</li> <li>- Power Pack (230V AC- 110V DC) and 8/12 window Annunciator.</li> </ul>	Each	869180.00
23.6.2	<p><b>Incoming Panel comprising of following:</b></p> <ul style="list-style-type: none"> <li>- VCB 630 Amps . VI of VCB should be sealed for 30000 operation. VCB operating mechanism should be of M2 duty for minimum 10000 mechanical operation.</li> <li>- Closing &amp; tripping coil of VCB should be of continuous rating to achieve minimal failure.</li> <li>- Resin Cast type CT having Ratio : 400-200A/ 1-1 A, Core1: 5P20, 5 VA; Core 2: 0.5, 5 VA (How ever CT Ratio shall be decided as per load requirement)</li> <li>- VT Ratio: 11KV/1.732/110V/1.732/110V/1.732, -Core 1: 0.5, 20VA should be floor mounted and to be connected from the back side of the panel.</li> <li>- Numerical relay (should be VCB manufacturer's own make) having protections of 50,51, 50N,51N,TCS. The relay shall have programable 4 digital Input , programable 6 Digital Output and programable 4 nos. LED at HMI.</li> <li>- Ammeter with Selector switch and Volt meter with Selector switch</li> <li>- Multifunction Meter of Acc Class 0.5, having facility to monitor KW, KVA, KVAR, PF, KWH, KVARH, KVAH, A,V etc.</li> <li>- Trip circuit supervision relay (feature of numerical relay)</li> <li>- LR, TNC switch, indication lamp - CB ON/OFF, spring charge, Auto trip, TCS healthy etc., Space heaters</li> <li>- Power Pack (230V AC- 110V DC) and 8/12 window Annunciator.</li> </ul>	Each	848319.00

Item No.	Description	Unit	Rate (Rs.)
23.6.3	<b>Outgoing Panel comprising of following:</b> <ul style="list-style-type: none"> <li>- VCB 630 Amps . VI of VCB should be sealed for 30000 operation. VCB operationg mechanism should be of M2 duty for minimum 10000 mechanical operation.</li> <li>- Closing &amp; tripping coil of VCB should be of continious rating to achive minimal failure.</li> <li>- Resin Cast type CT having Ratio : 400-200A/ 1-1 A, Core1: 5P20, 5 VA; Core 2: 0.5, 5 VA (How ever CT Ratio shall be decided as per load requirement)</li> <li>- Numerical relay (should be VCB manufacturer's own make) having protections of 50,51, 50N,51N,TCS. The relay shall have programable 4 digital Input , programable 6 Digital Output and programable 4 nos. LED at HMI.</li> <li>- Ammeter with Selectorswitch and Volt meter with Selector switch</li> <li>- Multifunction Meter of Acc Class 0.5, having facility to monitor KW, KVA, KVAR, PF, KWH, KVARH, KVAH, A,V etc.</li> <li>- Trip circuit supervision relay (feature of numerical relay)</li> <li>- LR, TNC switch, indication lamp - CB ON/OFF, spring charge, Auto trip, TCS healthy etc., Space heaters</li> <li>- Power Pack (230V AC- 110V DC)</li> </ul>	Each	813552.00
23.6.4	<b>Bus Coupler Panel comprising of following:</b> <ul style="list-style-type: none"> <li>-VCB 630 Amps . VI of VCB should be sealed for 30000 operation. VCB operationg mechanism should be of M2 duty for minimum 10000 mechanical operation.</li> <li>- Closing &amp; tripping coil of VCB should be of continious rating to achive minimal failure.</li> <li>- LR, TNC switch, indication lamp - CB ON/OFF, spring charge, Space heaters</li> <li>- Power Pack (230V AC- 110V DC)</li> </ul>	Each	764878.00

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

- 23.7 SITC of Indoor Type Floor mounted metal clad 11 KV, 630 Amps 3 phase, 50 Hz Vacuum Circuit Breaker (VCB) **Panel Fabricated by System Integrator of VCB Manufacturer** as per IEC 62271-1,100,200 Standard made from Powder painted pre-fabricated, CRCA sheet steel /High quality Aluminium-Zinc (Aluzinc) coated sheet steel. Fabrication shall be done through CNC turret press and CNC bending machine having a rupturing capacity of 500 MVA, 26.3 KA breaking capacity for 3 sec, Internal arc type tested for 26.3KA for 1 sec with AFLR clasification totally enclosed with Aluminium bus bar of 630 Amps for each phase, flush front, Horizontal isolation, Horizontal drawout type with Electrical and Mechanical interlock and automatic safety shutter gear including padlocking arrangement, isolation plugs, assambly of 3 vaccum interrupters (VCB manufacturer's own make) , with each pole individually encapsulated by epoxy insulations to make it dust proof and self - aligning finger type isolating contacts, truck having integral racking with necessary interlocks (for insertion and removing of VCB), manual and automatic motor charged independent closing/ tripping spring , trip free operating mechanism with closing and tripping push buttons and mechanical breaker.

interconnected with HT sleeve bus bar of 630 Amps , Basic Insulation level (BIL) : 28KV (RMS) / 75KV (Peak) and Altitude less than 1000 meters, including all protection, indication, Operation, monitoring and control and accessories etc. as required. Factory Tests of VCB panel as per System Integrator's QAP in it's own Manufacturing facility shall be witnessed by department Engineer virtually / Physically. (Cost of RCC Foundation / Steel Structure to be paid Extra). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .

Item No.	Description	Unit	Rate (Rs.)
23.7.1	<p><b>Incoming Cum Outgoing Panel comprising of Side cable box &amp; Transformer Auxiliary protection and comprising of following.</b></p> <ul style="list-style-type: none"> <li>- VCB 630 Amps . VI of VCB should be sealed for 30000 operation. VCB operationg mechanism should be of M2 duty for minimum 10000 mechanical operation.</li> <li>- Closing &amp; tripping coil of VCB should be of continious rating to achive minimal failure.</li> <li>- Resin Cast type CT having Ratio : 400-200A/ 1-1 A, Core1: 5P20, 5 VA; Core 2: 0.5, 5 VA (How ever CT Ratio shall be decided as per load requirement)</li> <li>- VT Ratio: 11KV/1.732/110V/1.732/110V/1.732, -Core 1: 0.5, 20VA should be floor mounted and to be connected from the back side of the panel.</li> <li>- Numerical relay (should be VCB manufacturer's own make) having protections of 50,51, 50N,51N,TCS. The relay shall have programable 4 digital Input , programable 6 Digital Output and programable 4 nos. LED at HMI.</li> <li>- Ammeter with Selectorswitch and Volt meter with Selector switch</li> <li>- Multifunction Meter of Acc Class 0.5, having facility to monitor KW, KVA, KVAR, PF, KWH, KVARH, KVAH, A,V etc.</li> <li>- Trip circuit supervision relay (feature of numerical relay)</li> <li>- LR, TNC switch, indication lamp - CB ON/OFF, spring charge, Auto trip, TCS healthy etc., Space heaters</li> <li>- Power Pack (230V AC- 110V DC) and 8/12 window Annunciator.</li> </ul>	Each	625809.00

Item No.	Description	Unit	Rate (Rs.)
23.7.2	<b>Incoming Panel comprising of following:</b> <ul style="list-style-type: none"> <li>- VCB 630 Amps . VI of VCB should be sealed for 30000 operation. VCB operating mechanism should be of M2 duty for minimum 10000 mechanical operation.</li> <li>- Closing &amp; tripping coil of VCB should be of continuous rating to achieve minimal failure.</li> <li>- Resin Cast type CT having Ratio : 400-200A/ 1-1 A, Core1: 5P20, 5 VA; Core 2: 0.5, 5 VA (How ever CT Ratio shall be decided as per load requirement)</li> <li>- VT Ratio: 11KV/1.732/110V/1.732/110V/1.732, -Core 1: 0.5, 20VA should be floor mounted and to be connected from the back side of the panel.</li> <li>- Numerical relay (should be VCB manufacturer's own make) having protections of 50,51, 50N,51N,TCS. The relay shall have programmable 4 digital Input , programmable 6 Digital Output and programmable 4 nos. LED at HMI.</li> <li>- Ammeter with Selector switch and Volt meter with Selector switch</li> <li>- Multifunction Meter of Acc Class 0.5, having facility to monitor KW, KVA, KVAR, PF, KWH, KVARH, KVAH, A,V etc.</li> <li>- Trip circuit supervision relay (feature of numerical relay)</li> <li>- LR, TNC switch, indication lamp - CB ON/OFF, spring charge, Auto trip, TCS healthy etc., Space heaters</li> <li>- Power Pack (230V AC- 110V DC) and 8/12 window Annunciator.</li> </ul>	Each	604949.00
23.7.3	<b>Outgoing Panel comprising of following:</b> <ul style="list-style-type: none"> <li>- VCB 630 Amps . VI of VCB should be sealed for 30000 operation. VCB operating mechanism should be of M2 duty for minimum 10000 mechanical operation.</li> <li>- Closing &amp; tripping coil of VCB should be of continuous rating to achieve minimal failure.</li> <li>- Resin Cast type CT having Ratio : 400-200A/ 1-1 A, Core1: 5P20, 5 VA; Core 2: 0.5, 5 VA (How ever CT Ratio shall be decided as per load requirement)</li> <li>- Numerical relay (should be VCB manufacturer's own make) having protections of 50,51, 50N,51N,TCS. The relay shall have programmable 4 digital Input , programmable 6 Digital Output and programmable 4 nos. LED at HMI.</li> <li>- Ammeter with Selector switch and Volt meter with Selector switch</li> <li>- Multifunction Meter of Acc Class 0.5, having facility to monitor KW, KVA, KVAR, PF, KWH, KVARH, KVAH, A,V etc.</li> <li>- Trip circuit supervision relay (feature of numerical relay)</li> <li>- LR, TNC switch, indication lamp - CB ON/OFF, spring charge, Auto trip, TCS healthy etc., Space heaters</li> <li>- Power Pack (230V AC- 110V DC)</li> </ul>	Each	584089.00

Item No.	Description	Unit	Rate (Rs.)
23.7.4	<b>Bus Coupler Panel comprising of following:</b> -VCB 630 Amps . VI of VCB should be sealed for 30000 operation. VCB operating mechanism should be of M2 duty for minimum 10000 mechanical operation. - Closing & tripping coil of VCB should be of continuous rating to achieve minimal failure. - LR, TNC switch, indication lamp - CB ON/OFF, spring charge, Space heaters - Power Pack (230V AC- 110V DC)	Each	549322.00
23.8	<b>SITC of 11 kV Outdoor Package Sub-Station Factory Assembled and Factory fitted by RMU &amp; LT Switchgear OEM of Following Transformer &amp; ACB Rating</b> and consisting of A, B, C, D & E (Cost of RCC Foundation / Steel Structure to be paid Extra). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .  <b>A) HT Compartment:</b> Ring Main Unit 11kV 630 Amps 21KA for 3 Sec. SF6 insulated, non-extensible, Ring main unit consisting of 2 nos. manually operated Load Break Switch and 1 Nos. 630 Amp Vacuum Circuit Breaker (manually operated) with Copper busbar in SF6 insulated stainless steel enclosure of thickness 2.5mm Non ferrite nonmagnetic type 304 grade. Interconnection between HT switchgear and transformer by Suitable Sized Aluminium un-armoured HT XLPE Cable. The HV switchgear and control gear should be confirming to IEC-62271-100, IEC-62271-200-2003 & IEC-60694-1996. The Gas tank of the RMU should be internal arc tested for 20KA for 1Second. VI should be RMU Manufacturer's own make. - 1 no. microprocessor based Self powered numerical relay with over Current/ earth fault & short circuit protection with each VCB feeder. - 3 Nos. Protection CT shall be of Burden 2.5VA, ratio 50/1A, Class of Accuracy class 5P10 for O/C and E/F protection for each VCB feeder -1 No. Manometer - 1 No. Fault Passage Indicator for each Load Break switch.  <b>B) Transformer:</b> 11kV/433V, 3phase,50 HZ, Copper wound Dry Type outdoor type step down transformer having delta connection on primary side and star connection on secondary side complete with all modern fitting as given in the specification , off load tap changer (-10% +5% in the step of 2.5%) etc. as required as per compete with losses as latest ECBC Standards , Class H with 115 Deg temperature rise allowed . - One No. Winding Temperature Indicator with Alarm and trip Contc		

Item No.	Description	Unit	Rate (Rs.)
	<p><b>C)</b> LV Compartment: Incoming cum Outgoing with One number Fixed type 4 pole 415V ACB with molded case construction having breaking capacity 50KA with Ics = Icu = Icw (1 sec) = 50KA with microprocessor release for over current, earth fault &amp; short circuit protections. Interconnection between Transformer &amp; LT switchgear using Aluminum Bus bars of ACB Current rating with heat shrinkable colored sleeves.</p> <p><b>D)</b> The Outdoor enclosure shall be made of 1.5 mm mm thickness Galvanized Sheet Steel tropicalised to meet Indian weather conditions including all the partition Sheets &amp; doors. The enclosure base shall be of 4.0 mm thickness Hot Dip Galvanized Sheet Steel. The entire Package Substation shall be Factory Assemble &amp; Factory Fitted. The enclosure shall have IP54 degree of protection for HT &amp; LT switchgear compartment IP-23 degree of protection for Transformer compartment. The Enclosure should be type tested for Internal Arc fault test to the tune of at least 21 KA for 1 second adhering to as per latest IEC 62271- 202. The offered enclosure should be type tested for K10 class temperature raise. TTR to be submitted. The enclosure exterior shall be powder coated. The compartment illumination lamp with door operated switch shall be provided for MV &amp; LV compartment. Internal earthing connections by using 50x6mm GI Strips. Vacuum Interrupter, RMU, Transformer, LV switchgear, Outdoor enclosure should be of same make for better life cycle optimization.</p> <p><b>E)</b> All the Type test certificates of RMU, Transformer &amp; LT Switchgear will be provided by Manufacturer and factory Tests of Package Substation as per OEM's QAP in it's own Manufacturing facility shall be witnessed by department Engineer virtually / Physically</p>		
23.8.1	Transformer Capacity 250 KVA, ACB Rating 630 Amps.	Each	2614493.00
23.8.2	Transformer Capacity 500 KVA, ACB Rating 1000 Amps.	Each	3265334.00
23.8.3	Transformer Capacity 630 KVA, ACB Rating 1250 Amps.	Each	3682541.00
23.8.4	Transformer Capacity 750 KVA, ACB Rating 1600 Amps.	Each	4032994.00
23.8.5	Transformer Capacity 1000 KVA, ACB Rating 2000 Amps.	Each	4505828.00
23.9	<p>SITC of battery bank of min 150 AH capacity comprising SMF/VRLA batteries, FCBC ( Float cum boost charger)suitable for 415V +/-10%, 50 Hz , 1-<math>\phi</math> / 3 -<math>\phi</math> Input &amp; 24/ 48 /110 V DC Output Natural Cooled, free standing in Sheet Steel enclosure, SCR controlled , regulation +/-1% , Efficiency &gt; 75% on FLAC/ DC Instruments, Selector Switch ,Built in DC Distribution Board (6 No MCB), indication , control as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>	Each	134656.00



Item No.	Description	Unit	Rate (Rs.)
23.10	SITC of following capacity IK10 Sandwich Type Rising Mains / Bus Duct Confirming to IEC 61439 part 1 & part 6 standard & IS 8623 P-II and Manufactured in India for use on 3 phase 4 wire , 50% internal earth , 415 volts, 50Hz A.C. supply , class F insulation, rated insulation voltage 1000V, impulse withstand voltage 12 KV, min. seismic zone 4 as per IS1892, with IP-54 / IP-66 (With Canopy) enclosure made of 1.6mm thick sheet steel duly powder coated in convenient sections complete with 4 Nos aluminium (with 6101 or 63401 grade) bus bars, necessary joints & expansion joints, fire barrier at each floor, provision of tapping at every metre, continuous earthing with 2 Nos aluminium strip of suitable size (one on each side) including, G.I. clamping brackets, angle iron bracket, steel fasteners, connecting to earthing system including making opening in RCC / Brick Masonary and repairing the same etc. as required. Type Tests reports like (i) Short Circuit Test (ii) Degree of Protection (iii) Temperature rise test of Rising main in CPRI / UL / ASTA accredited lab will be submitted by OEM.		
	Routine test as per OEM's QAP in It's own Manufacturing facility in India shall be witnessed by department Engineer virtually / Physically. Complete Installation of Rising Mains shall be Vetted by Manufacturer before Comissioning. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
<b>23.10.1</b>	<b>Sandwich Type Bus Rising Main</b>		
23.10.1.1	400 amps 25 KA SC for 1 sec	Mtr	17683.00
23.10.1.2	500 amps 30 KA SC for 1 sec	Mtr	19389.00
23.10.1.3	630 amps 40 KA SC for 1 sec	Mtr	21142.00
23.10.1.4	800 amps 50 KA SC for 1 sec	Mtr	24586.00
23.10.1.5	1000 amps 50 KA SC for 1 sec	Mtr	27455.00
23.10.1.6	1250 amps 50 KA SC for 1 sec	Mtr	31333.00
23.10.1.7	1600 amps 50 KA SC for 1 sec	Mtr	37693.00
23.10.1.8	2000 amps 65 KA SC for 1 sec	Mtr	46845.00
<b>23.10.2</b>	<b>Sandwich Type Bus Duct</b>		
23.10.2.1	1000 Amps 50kA SC for 1 sec	Mtr	21251.00
23.10.2.2	1250 Amps 65kA SC for 1 sec	Mtr	24043.00
23.10.2.3	1600 Amps 80kA SC for 1 sec	Mtr	29782.00
23.10.2.4	2000 Amps 80kA SC for 1 sec	Mtr	38313.00
23.10.2.5	2500 Amps 120kA SC for 1 sec	Mtr	51033.00
23.10.2.6	3200 Amps 120kA SC for 1 sec	Mtr	57393.00
23.10.2.7	4000 Amps 120kA SC for 1 sec	Mtr	72904.00
23.10.2.8	5000 Amps 120kA SC for 1 sec	Mtr	93845.00
<b>23.10.3</b>	<b>Out Door Bus Duct IP66 with Canopy</b>		
23.10.3.1	1000 Amps 50kA SC for 1 sec	Mtr	24818.00
23.10.3.2	1250 Amps 65kA SC for 1 sec	Mtr	27921.00
23.10.3.3	1600 Amps 80kA SC for 1 sec	Mtr	35211.00
23.10.3.4	2000 Amps 80kA SC for 1 sec	Mtr	43277.00
23.10.3.5	2500 Amps 120kA SC for 1 sec	Mtr	58944.00

Item No.	Description	Unit	Rate (Rs.)
23.10.3.6	3200 Amps 120kA SC for 1 sec	Mtr	66700.00
23.10.3.7	4000 Amps 120kA SC for 1 sec	Mtr	83894.00
23.10.3.8	5000 Amps 120kA SC for 1 sec	Mtr	105789.00
23.11	SITC of Bus Rising Main OEM manufactured following capacity End Feed Unit Confirming to ANSI C37.23 standard & IS 8623 P-II suitable for Sandwich / Compact Air Insulated type for use on 3 phase 4 wire 415 volts, 50Hz A.C. supply made with 1.6mm thick steel sheet enclosure duly powder coated with provision of MCCB/ACB (but without MCCB/ACB), Interlocking feature complete with necessary joints including clamping brackets, angle iron bracket, steel fasteners, connecting to earthing system etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
23.11.1	For 200 Amp. (Without MCCB)	Each	11634.00
23.11.2	For 250 Amp. (Without MCCB)	Each	12099.00
23.11.3	For 325 Amp. (Without MCCB)	Each	12719.00
23.11.4	For 400 Amp. (Without MCCB)	Each	18611.00
23.11.5	For 500 Amp. (Without MCCB)	Each	20142.00
23.11.6	For 630 Amp. (Without MCCB)	Each	22741.00
23.11.7	For 800 Amp. (Without MCCB)	Each	26311.00
23.11.8	For 1000/1250 Amp. (Without ACB)	Each	106874.00
23.11.9	For 1600 Amp. (Without ACB)	Each	124402.00
23.11.10	For 2000 Amp. (Without ACB)	Each	153099.00
23.12	SITC of following capacity IK10 Compact Air Insulated Rising Mains / Bus Bar trunking Confirming to IEC 61439 part 1 & part 6 standard & IS 8623 P-II and Manufactured in India for use on 3 phase 4 wire , 50% internal earth , 415 volts, 50Hz A.C. supply , The busbars shall be supported through class "F" Insulator at interval not exceeding 250mm. impulse withstand voltage 12 KV, min. seismic zone 4 as per IS1892, with IP-54 enclosure made of 1.6mm thick sheet steel duly powder coated in convenient sections complete with 4 Nos aluminium (with 6101 or 63401 grade) bus bars, necessary joints & expansion joints, fire barrier at each floor, provision of tapping at every metre, continuous earthing with 2 Nos aluminium strip of suitable size (one on each side) including, G.I. clamping brackets, angle iron bracket, steel fasteners, connecting to earthing system including making opening in RCC / Brick Masonary and repairing the same etc. as required.		

Item No.	Description	Unit	Rate (Rs.)
	<p>Type Tests reports like (i) Short Circuit Test (ii) Degree of Protection (iii) Temperature rise test of Rising main in CPRI / UL / ASTA accredited lab will be submitted by OEM &amp; Routine test as per OEM's QAP in It's own Manufacturing facility in India shall be witnessed by department Engineer virtually / Physically. Complete Installation of Rising Mains shall be Vetted by Manufacturer before Commissioning. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
23.12.1	200 amps 10 KA SC for 1 sec	Mtr	11013.00
23.12.2	250 amps 15 KA SC for 1 sec	Mtr	11479.00
23.12.3	315 amps 25 KA SC for 1 sec	Mtr	12642.00
23.12.4	400 amps 30 KA SC for 1 sec	Mtr	14115.00
23.12.5	500 amps 35 KA SC for 1 sec	Mtr	15977.00
23.12.6	630 amps 50 KA SC for 1 sec	Mtr	18924.00
23.12.7	800 amps 50 KA SC for 1 sec	Mtr	24477.00
23.12.8	1000 amps 50 KA SC for 1 sec	Mtr	27300.00
23.13	<p>SITC of Bus Rising Main OEM manufactured following capacity Plug in / Tap off Box suitable for Sandwich / Compact Air Insulated type bus bar trunking Confirming to ANSI C37.23 standard &amp; IS 8623 P-II &amp; IEC-60947-2-2000 for use on 3 phase 4 wire 415 volts, 50Hz A.C. supply made with 1.6mm thick steel sheet enclosure duly powder coated with provision of MCB/MCCB / ACB (but without MCB/MCCB/ACB) with Interlocking complete with necessary joints including clamping brackets, angle iron bracket, steel fasteners, connecting to earthing system etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
<b>23.13.1</b>	<b>Plug in Box suitable for Sandwich Type Bus rising Main</b>		
23.13.1.1	up to 32 amps (Suitable for MCB) without MCB Without Interlocking	Each	7446.00
23.13.1.2	63 amps (Suitable for MCCB) without MCCB	Each	9462.00
23.13.1.3	100/125 amps (Suitable for MCCB) without MCCB	Each	9772.00
23.13.1.4	160/200/250 amps (Suitable for MCCB) without MCCB	Each	11634.00
23.13.1.5	400 amps (Suitable for MCCB) without MCCB	Each	15356.00
23.13.1.6	500 / 630 amps (Suitable for MCCB) without MCCB	Each	21561.00
<b>23.13.2</b>	<b>Plug in Box suitable for Compact Air Insulated Type Bus rising Main</b>		
23.13.2.1	up to 32 amps (Suitable for MCB) without MCB Without Interlocking	Each	6360.00
23.13.2.2	63 amps (Suitable for MCCB) without MCCB	Each	8299.00
23.13.2.3	100/125 amps (Suitable for MCCB) without MCCB	Each	8531.00
23.13.2.4	160/200/250 amps (Suitable for MCCB) without MCCB	Each	10548.00
23.13.2.5	400 amps (Suitable for MCCB) without MCCB	Each	13805.00
23.13.2.6	630 amps (Suitable for MCCB) without MCCB	Each	18459.00

Item No.	Description	Unit	Rate (Rs.)
23.14	SITC of Bus Rising Main OEM manufactured Tinned copper flexible joint with enclosure of following capacity with Transformer / DG / Panel as required complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
23.14.1	1000 Amp. Rating	Each	48086.00
23.14.2	1250 Amp.	Each	69802.00
23.14.3	1600 Amp.	Each	85313.00
23.14.4	2000 Amp.	Each	131848.00
23.14.5	2500 Amp.	Each	162871.00
23.14.6	3200 Amp.	Each	204752.00
23.14.7	4000 Amp.	Each	266798.00
23.14.8	5000 Amp.	Each	333498.00
23.15	SITC of following capacity bus trunking with aluminium bus bars, The busbars shall be supported through class "F" Insulator, Enclosure made of 1.6mm thick sheet steel duly powder coated in convenient sections for use on, 3 phase, 4 wire, 415 V, 50 Hz, A.C. supply including jointing of sections, flexible joints, expansion joints, bends and earthing with 2 runs of galvanised iron strips, suspenders, angle iron bracket, steel fasteners, connecting to earthing system etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
23.15.1	800 Amp.	Mtr	12750.00
23.15.2	1000 Amp.	Mtr	15822.00
23.15.3	1250 Amp.	Mtr	18769.00
23.15.4	1600 Amp.	Mtr	22957.00
23.15.5	2000 Amp.	Mtr	27921.00
23.16	SITC of HT metering cubical panel as approved By DISCOMs fabricated out of 18 SWG CRCA sheet steel in two compartment & MS angle of size 60mmX 6mm having provision for Following: (i)Provision for fixing Trivector / Import - Export Meter (To be supplied by DISCOMs) (ii)Provision for fixing of combined CT PT Set with Copper strip for Connection (To be supplied by DISCOMs), (iii)Test terminal Block, (iv) 6mm thick Bakelite sheet on all sides, (V) 3/6 corex 1.5 / 2.5 Sq.mm copper cable for interconnections, etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	32051.00
23.17	SITC of Radiator Cooled and Turbo charged Silent DG Set (As per latest CPCB emission norms) having specifications as per A, B, C, D, E, F,G,H & I		

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

**A)** 1500 RPM Diesel Engine conforming to BS:649/5514 of suitable BHP (up to 82.5 kVA 6 cylinder or Below required, 125 kVA & Above ratings 6 cylinder or above required ) capable of taking 10% over loading for one hour after 12 hours of continuous operation., Dry exhaust manifold with Hospital grade silencer and catalytic convertor(isolated from main DG chamber), up to 3 M exhaust piping (with LRB insulation & Alum. cladding ) as required .

**B)** AC Brush less SPDP Alternator conform to BS 5000 (part 99) or IS/IEC 60034-1. . Alternator shall be self regulated with standard Alternator Protection( Over voltage , over speed & under voltage, under speed warning & shutdown).Engine & Alternator mounted on a common base Frame & coupled through a flexible coupling or close coupled

**C)** **CPCB / ARAI approved** Standard canopy with Weatherproof, powdercoated Accoustic enclosure for DG set for sound attenuation fabricated from 1.6 mm CRCA sheet steel (structure) with sidewall fabricated from 1.6 mm CRCA sheet & filled with glasswool (96Kg/m3) / Foam. as per IS8183 the doors of 28/40/50/85mm thick as perrating and fabricated from 1.6mm CRCA sheet packed with accoustic material, All doors/opening are sealed with neoprene /EPDNgaskets. The DG Set has Inbuilt / External in fuel tank to run 6 to 8 Hrs as per OEM standard, with protection and tripping of DG set against temperature of more than 50 degree centigrade.

**D)** Electronic / Mechanical governor, Manual & electric Start ,Batteries with battery charger, Engine instruments panel,AVM pads All controls for operation of DG set are from outside the enclosure with DG control panel having Microprocessor based Genset monitoring like Running Hour, RPM, Low Lube Oil tripping & control system, Panel mounted MCCB/ACB of suitable rating, Ammeter, Voltmeter, PF meter, frequency meter, KWH meter,digital fuel display meter, Ind.lamps etc. mounted inside enclosure , visible and accessible from outside. The enclosure should be suitable for following capacity DG sets and alternator. Noise level shall be less than 75 dB at a distance of 1 Mtrs. duly certified by authorised agency etc. complete in all respect of following capacity :

**E)** (i) Accoustic glass wool wall thickness should not be less then 40mm and not less then 20mm PU foam upto rating 100 KVA. (ii).Accoustic glass wool wall thickness should not be less then 65mm and not less then 50mm PU foam upto rating 250 KVA. (iii)Accoustic glass wool wall thickness should not be less then 100mm for rating above 250 KVA.

**F)** First filling of the fuel tank shall be done by contractor and the prevailing fuel cost at that time shall be reimbursed to the contactor by department.

Item No.	Description	Unit	Rate (Rs.)
	<p><b>G)</b> Servicing Contract of DG Set from OEM's Authorised Service Dealer as per OEM guidelines during the DLP period shall be done by contractor including all consumables, actual charges shall be reimbursed to the contractor by End User Department.</p> <p><b>H)</b> Manufacturer / OEM must have its authorized service dealer in Rajasthan. Which can provide service within 6 Hours of complaint registration.</p> <p><b>I)</b> DG set will be offered for Inspection and Testing at Manufacturer's Works in presence of Departmental Engineers. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
23.17.1	20 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	498872.00
23.17.2	25 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	478546.00
23.17.3	30 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	509457.00
23.17.4	40 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	617432.00
23.17.5	50 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	703132.00
23.17.6	62.5 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	733247.00
23.17.7	82.5 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	886085.00
23.17.8	100 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	1049657.00
23.17.9	125 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	1072760.00
23.17.10	140 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	1373796.00
23.17.11	160 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	1481181.00
23.17.12	180 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	1620674.00
23.17.13	200 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	1759163.00
23.17.14	250 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	2137495.00
23.17.15	320 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	2693450.00
23.17.16	400 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	3318649.00
23.17.17	500 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	3952709.00
23.17.18	625 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	4844006.00
23.17.19	750 KVA at 0.8 pf 415V 50Hz 3-Ø	Set	6228007.00
23.18	<p>Providing, Fixing, Jointing, Testing &amp; Commissioning of Medium duty MS B class pipes conforming to IS 3589 / 1239 part-I for DG Exhaust applications (beyond 1.5 Mtr. length) including cutting, welding etc &amp; fittings like elbows, flanges, tapers, reducer, gaskets etc. fixing the pipe on the wall/ceiling with suitable clamps, hanger and nuts bolts . including the cost of thermal insulation with 50 mm thick layers of LRB rock wool as per IS : 8183-1993 (64 kg/m3 density) &amp; 26 SWG aluminium sheet claddings etc complete as required complete in all respect. (Cost of Steel Structure for Exhaust pipe will be paid Extra). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
23.18.1	80 mm dia	Mtr.	2453.00
23.18.2	100 mm dia	Mtr.	3441.00
23.18.3	125 mm dia	Mtr.	4462.00
23.18.4	150 mm dia	Mtr.	5270.00
23.18.5	200 mm dia	Mtr.	8175.00

Item No.	Description	Unit	Rate (Rs.)
23.18.6	250 mm Dia.	Mtr.	10810.00
23.19	Supply, installation and testing of metal flexible coupling (bellow) of following dia required for horizontal length more than 3 mtr.as per standard of guide line of D.G. set company complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
23.19.1	80 mm dia	Each	14054.00
23.19.2	100 mm dia	Each	16290.00
23.19.3	125 mm dia	Each	18526.00
23.19.4	150 mm dia	Each	23212.00
23.19.5	200 mm dia	Each	26566.00
23.19.6	250 mm Dia.	Each	35564.00
23.20	Supply & fabrication steel structure with MS channel / angle / joist / ISMB / sheet etc. including welding, rivetting, cutting, nut & bolt , one coat of primer & two coat of enamel paint etc. as required complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Kg	135.00
23.21	Earth work in excavation/ by mechanical means (Hydraulic Excavator) / Manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sum on plan) including disposal of excavated earth, lead upto 50 m and lift upto 1.5 m, disposed earth to be levelled and neatly dressed:	Cum	213.00
23.22	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with Cement Mortar 1:6 ( 1- Cement : 6-Sand).	Cum.	6699.00
23.23	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.	Kg	101.00
23.24	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level		
23.24.1	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	Cum.	4977.00
23.24.2	1:3:6 (1 Cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources)	Cum.	4707.00

Item No.	Description	Unit	Rate (Rs.)
23.24.3	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)	Cum.	4437.00
23.25	Plaster on new surface on wall in cement sand mortar 1:4 including racking of joints etc. complete fine finish :		
23.25.1	20mm thick	Sqm	471.00
23.25.2	12mm thick	Sqm	376.00
23.26	Finishing wall with water proofing cement paint of approved brand and manufacture and or required shade to give an even shade including all scaffolding:		
23.26.1	New work (Two or more coats applied @ 3.84 kg/10 sqm).	Sqm	121.00
23.27	Providing and fixing welded mesh/expanded metal mesh 25 mmx 25 mm x 3mm in frame work, flat iron beading 20x3mm including top cross laps inside and out sides welding, iron bolts, crews, clips etc. including two coat of red oxide and two coat of enamel paint or more required complete with frame work with 50 X 50 X 6mm angle iron post 30 cm in ground embedded in cement concrete 1:3:6 (30X30X45cm) at corner and every three mtr including painting with one coat of primer and two coat of enamel paint work will be done as per direction of engineer incharge of size complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sqm	1617.00
23.28	Gravelling of Transformer / RMU Yard with 100 mm Height Gravels of Size 20 to 25 mm including leveling, Dressing etc. as Required.	Sqm	1347.00
23.29	SITC of PLC Based Auto main failure (AMF) Panel fabricated from CRCA sheet steel 2 mmThick , Powder coated finish , Engine Start & Stop commands, control Relays , Ammeter & Voltmeter with selector switches, Control & 2 nos 4 pole Power Contactors with 2 no. of required size 4 pole MCCB, Timers, Electronic Hooter ,Visual & Alarm indication for faults, UPS, operator interface panel complete in all respect suitable for following capacity DG sets: Appropriate Test Certificate/ report of product/accessories from OEM/Panel Manufacturer shall be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
23.29.1	20 to 40 KVA	Set	71132.00
23.29.2	50 to 82.5 KVA	Set	85454.00
23.29.3	100 to 140 KVA	Set	106936.00
23.29.4	160 to 200 KVA	Set	146082.00
23.29.5	250 KVA	Set	189047.00
23.29.6	320 KVA	Set	210529.00
23.29.7	380 KVA	Set	232011.00
23.29.8	500 KVA	Set	278318.00



**CHAPTER : E-24**  
**FIRE PROTECTION WORK**

Item No.	Description	Unit	Rate (Rs.)
24.1	<p>Supplying, Installation, Testing &amp; Commissioning of Electrical Driven fire fighting duty pump as per TAC and IS 12469-1988., Factory assembled in Pump make OEM for Sprinkler / Hydrant applications suitable for automatic operation and consisting of following details given as A, B, C, D, E, F, G and H.</p> <p>(A) End Suction / Horizontal Axially split casing volute type Single / Multi stage Centrifugal pump complete for delivery of below mentioned discharge and Head</p> <p>(B) Material of construction : Pump Casing - Cast Iron, Impellor - Bronze, Shaft - SS 410, Packing - Mechanical Seal</p> <p>(C) Pump shall be capable of furnishing not less than 150 % of rated capacity at a head not less than 65 % of the rated head. The shut off head shall not exceed 120 % of rated head</p> <p>(D) Squirrel cage induction motor (IE-3 Class) suitable for 3 phase, 415 V, 50 HZ, Ac supply , Class -F Insulation, Synchronous speed 2900 / 1500 RPM, T.E.F.C confirming to IP:55 , of required HP suitable for the above pump ,along with flexible (Love Joy type) coupling , coupling guard complete in all respect .</p> <p>( E) Common bed plate fabricated from mild steel channel for installation of pump and Motor including anti vibration pads.</p> <p>(F) The Hydrostatic tests (2 times of design operating head or 1.5 times the shut off head whichever is higher) and performance tests (to determine developed head, Pump BHP and efficiency v/s Flow) of pumps along with trip test shall be carried out at manufacturer's works in Physical presence of Department's representatives.</p> <p>(G) Physical &amp; Chemical Test reports of i) Pump casing (ii) Impeller (iii) Shaft (iv) Shaft sleeve and Dynamic Balance certificate is to be submitted by OEM</p> <p>(H) Suitable size Reinforced cement concrete (M-30) foundation with foundation bolt, Nozing Angle of size 40mm x40mm x5 mm ( Cost of RCC Foundation to be paid Extra ). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
24.1.1	1620 LPM suitable for 56 Mtr Head End Suction Back pull type Single Stage, 2900 RPM	Each	290,996.00
24.1.2	1620 LPM suitable for 70 Mtr Head End Suction Back pull type Single Stage, 2900 RPM	Each	295,165.00
24.1.3	1620 LPM suitable for 88 Mtr Head Horizontal Axially split casing volute type Two stage, 1500 RPM	Each	741,468.00
24.1.4	2280 LPM suitable for 56 Mtr Head End Suction Back pull type Single Stage, 2900 RPM	Each	400,221.00

Item No.	Description	Unit	Rate (Rs.)
24.1.5	2280 LPM suitable for 70 Mtr Head End Suction Back pull type Single Stage, 2900 RPM	Each	418,616.00
24.1.6	2280 LPM suitable for 88 Mtr Head Horizontal Axially split casing volute type Two stage, 1500 RPM	Each	776,070.00
24.1.7	2850 LPM suitable for 56 Mtr Head End Suction Back pull type Single Stage, 2900 RPM	Each	428,685.00
24.1.8	2850 LPM suitable for 70 Mtr Head Horizontal Axially split casing volute type Two stage, 1500 RPM	Each	740,500.00
24.1.9	2850 LPM suitable for 88 Mtr Head Horizontal Axially split casing volute type Two stage, 1500 RPM	Each	873,004.00
24.2	<p>Supplying, Installation, Testing &amp; Commissioning of Diesel Engine Driven fire fighting duty pump as per TAC and IS 12469-1988., Factory assembled in Pump make OEM for Sprinkler / Hydrant applications suitable for automatic operation and consisting of following details given as A, B, C, D, E, F, G and H.</p> <p>(A) End Suction / Horizontal Axially split casing volute type Single / Multi stage Centrifugal pump complete for delivery of below mentioned discharge and Head</p> <p>(B) Material of construction : Pump Casing - Cast Iron, Impellor - Bronze, Shaft - SS 410, Packing - Mechanical Seal</p> <p>(C) Pump shall be capable of furnishing not less than 150 % of rated capacity at a head not less than 65 % of the rated head. The shut off head shall not exceed 120 % of rated head</p> <p>(D) Heat Exchanger cooled Diesel Engine as per NFPA 20 developing suitable BHP for the below mentioned discharge at 1500 / 1800 RPM, flexible coupling and coupling guard with the Pump, common bed plate for mounting of the Engine and Pump, Antivibration damping arrangement by cushy foot, Diesel Engine starting Panel for starting of the engine automatically if the Normal electrical supply fails with a unit of battery bank of 12/24v, 180 Ah, Lead Acid Battery with Boost / Trickle charger as required for operation of Diesel engine, Exhaust Pipe of suitable diameter upto 10 M length (with LRB insulation &amp; Alum. Cladding), with muffler, Diesel tank of 300 Lts capacity (made out from 2 mm thick MS sheet with filling Cap) with drain cock, Diesel level Indicator, Suitable MS angle iron stand for placing tank, first Filling of Diesel tank.</p>		

Item No.	Description	Unit	Rate (Rs.)
	(E) Diesel Engine Control comprising Automatic/Manual selector switch & 3 attempts starting device, timers and relays as required, push buttons, start/stop in manual mode Indicating lamp for high/ Low Lub. Oil pressure, High Water Temp and Engine on indication, Battery charger suitable for 12V/24 V DC with boost and trickle selector switch, 0-30 V DC volt meter, and 0- 20 A DC Ammeter, All standard relays and accessories for automatic operation of diesel engine System Controller in Existing Fire Fighting Control panel		
	(F) The Hydrostatic tests (2 times of design operating head or 1.5 times the shut off head whichever is higher) and performance tests (to determine developed head, Pump BHP and efficiency v/s Flow) of pumps along with trip test shall be carried out at manufacturer's works in Physical presence of Department's representatives.		
	(G) Physical & Chemical Test reports of i) Pump casing (ii) Impeller (iii) Shaft (iv) Shaft sleeve and Dynamic Balance certificate is to be submitted by OEM		
	(H) Pump to be placed on Suitable size Existing Reinforced cement concrete (M-30) foundation with foundation bolt, Nozing Angle of size 40mm x40mm x5 mm ( Cost of RCC Foundation to be paid Extra ). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR		
24.2.1	1620 LPM suitable for 56 Mtr Head End Suction Back pull type Single Stage, 1800 / 2300 RPM	Each	623555.0
24.2.2	1620 LPM suitable for 70 Mtr Head End Suction Back pull type Single Stage, 1800 / 2300 RPM	Each	672465.0
24.2.3	1620 LPM suitable for 88 Mtr Head Horizontal Axially split casing volute type Two stage, 1500 RPM	Each	863788.0
24.2.4	2280 LPM suitable for 56 Mtr Head End Suction Back pull type Single Stage, 1800 / 2300 RPM	Each	623555.0
24.2.5	2280 LPM suitable for 70 Mtr Head End Suction Back pull type Single Stage, 1800 / 2300 RPM	Each	853042.0
24.2.6	2280 LPM suitable for 88 Mtr Head Horizontal Axially split casing volute type Two stage, 1500 RPM	Each	1110656.0
24.2.7	2850 LPM suitable for 56 Mtr Head End Suction Back pull type Single Stage, 1800 / 2300 RPM	Each	610237.0
24.2.8	2850 LPM suitable for 70 Mtr Head Horizontal Axially split casing volute type Two stage, 1500 RPM	Each	817114.0
24.2.9	2850 LPM suitable for 88 Mtr Head Horizontal Axially split casing volute type Two stage, 1500 RPM	Each	1143034.0
24.3	Supplying, Installation, Testing & Commissioning of Electrical Driven fire fighting duty Jockey pump as per TAC and IS 12469-1988., Factory assembled in Pump make OEM suitable for automatic operation and consisting of following details given as A, B, C, D, E,F and G		

Item No.	Description	Unit	Rate (Rs.)
	<p>(A) Horizontal End suction Single / Multi Stage Centrifugal Back pull type pump complete for delivery of below mentioned discharge and Head</p> <p>(B) Material of construction : Pump Casing - Cast Iron, Impellor - Bronze, Shaft - SS 410, Packing - Mechanical Seal</p> <p>(C) Squirrel cage induction motor (IE-3 Class) suitable for 3 phase, 415 V, 50 HZ, Ac supply , Class -F Insulation, Synchronous speed not Exceeding 2900 RPM, T.E.F.C confirming to IP:55 , of required HP suitable for the above pump ,along with flexible (Love Joy type) coupling , coupling quard complete in all respect .</p> <p>(D) Common bed plate fabricated from mild steel channel for installation of pump and Motor including anti vibration pads.</p> <p>(E) The Hydrostatic tests (2 times of design operating head or 1.5 times the shut off head whichever is higher) and performance tests (to determine developed head, Pump BHP and efficiency v/s Flow) of pumps along with trip test shall be carried out at manufacturer's works in Virtual / Physical presence of Department's representatives.</p> <p>(F) Physical &amp; Chemical Test reports of i) Pump casing (ii) Impeller (iii) Shaft (iv) Shaft sleeve and Dynamic Balance certificate is to be submitted by OEM</p> <p>(G) Suitable size Reinforced cement concrete (M-30) foundation with foundation bolt, Nozing Angle of size 40mm x40mm x5 mm ( Cost of RCC Foundation to be paid Extra ) All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .</p>		
24.3.1	180 LPM suitable for 88 Mtr Multi Stage	Each	186055.0
24.3.2	180 LPM suitable for 70 Mtr Single Stage	Each	160359.0
24.3.3	180 LPM suitable for 56 Mtr Single Stage	Each	152021.0
24.4	<p>Supplying, Installation, Testing &amp; Commissioning of Electrical Driven fire fighting duty Terrace pump as per TAC and IS 12469-1988., Factory assembled in Pump make OEM suitable for automatic operation and consisting of following details given as A, B, C, D, E, F, G and H.</p> <p>(A) Horizontal End suction Centrifugal Back pull type pump complete for delivery of below mentioned discharge and Head</p> <p>(B) Material of construction : Pump Casing - Cast Iron, Impellor - Bronze, Shaft - SS 410, Packing - Mechanical Seal</p>		

Item No.	Description	Unit	Rate (Rs.)
	(C) Squirrel cage induction motor (IE-3 Class) suitable for 3 phase, 415 V, 50 HZ, Ac supply , Class -F Insulation, Synchronous speed not Exceeding 3000 RPM, T.E.F.C confirming to IP:55 , of required HP suitable for the above pump ,along with flexible (Love Joy type) coupling , coupling guard complete in all respect .		
	(D) Common bed plate fabricated from mild steel channel for installation of pump and Motor including anti vibration pads.		
	(E) The Hydrostatic tests (2 times of design operating head or 1.5 times the shut off head whichever is higher) and performance tests (to determine developed head, Pump BHP and efficiency v/s Flow) of pumps along with trip test shall be carried out at manufacturer's works in Virtual / Physical presence of Department's representatives.		
	(F) Physical & Chemical Test reports of i) Pump casing (ii) Impeller (iii) Shaft (iv) Shaft sleeve and Dynamic Balance certificate is to be submitted by OEM		
	(G) Suitable size Reinforced cement concreat (M-30) foundation with foundation bolt, Nozing Angle of size 40mm x40mm x5 mm ( Cost of RCC Foundation to be paid Extra )		
	(H) Weather proof hood fabricated from 5mm thick UV stabilised FRP sheet supported by 50 mm x 50 mm x 5 mm Angle Iron fram above pumpset to protect it from weather All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.4.1	450 LPM with 35 mtr head	Each	119796.0
24.4.2	900 LPM with 35 mtr head	Each	157612.0
24.5	Supplying, Installation, Testing & Commissioning submersible type dewatering pump of stainless steel casing and Noryl impellor of discharge and head given below complete with all accessories suitable for operation on 230 V, single phase/415 V /3 phase, 50 Hz. AC supply complete with starter for automatic operation including water level sensing device / float switch inter connection with submersible cable etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.5.1	180 LPM with 10 mtr head	Each	28565.0
24.6	SITC of pressure switches of pressure range 3 to 15 Bar for Main, Jockey, Terrace pump and Diesel pumps, Etc. as Required ( Control Cable from Pressure switch to Panel to be Paid Extra ). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	2024.0

Item No.	Description	Unit	Rate (Rs.)
24.7	Providing and fixing 20/25 mm dia. (PN - 1.6, Type-S1, Flanged, ISI marked) air release valve confirming to IS - 14845 : 2000 with Double Flange isolating valve (pressure rating PN 1.6) complete with 1 no. Matching Flanges (Minimum 10 mm thick), nuts, bolts, washers, gaskets etc as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	7012.0
24.8	SITC of UL listed and FM Approved Polyethelene vane type water flow switch with actuation & delay mechanism for sensitivity in the range of 4 to 10 GPM and suitable for installation in following sizes of Sprinkler pipe for a Static pressure rating up to 250 PSI in cluding making connections, making hole in pipe for inserting the vane etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.8.1	80 mm Dia.	Each	6074.0
24.8.2	100 mm Dia.	Each	7558.0
24.8.3	150 mm Dia.	Each	9042.0
24.9	SITC of suitable Pressure release valve of 50 mm dia, of CI body, with pressure setting range 7-15 kg/sqcm, on discharge header / Air Vessel, complete in all respect etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	7627.0
24.10	Providing & fixing pressure transducer in M.S. Pipe line (pressure range 0 to 10 kg/cm <sup>2</sup> ) suitable for 12 volts/24 volt DC. Including connection etc. as required. ( Control Cable from Pressure Transducer to Panel to be Paid Extra ). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	9383.0
24.11	SITC of UL listed / FM Approved Brass Test and drain valve assembly for sprinkler system comprising of 3-position ( off, test and Drain ) ball valves with drain orifice having K-factor 5.6 and maximum working pressure 300 PSI and Inbuilt sight glass etc. as required of following size. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.11.1	25 mm Dia.	Each	6345.0
24.11.4	50 mm Dia.	Each	13999.0

Item No.	Description	Unit	Rate (Rs.)
24.12	Providing, Fixing, Jointing, Testing & Commissioning of Heavy duty MS 'C' class (Heavy) pipes conforming to IS 3589 / 1239 part-I for hydrant and sprinkler applications including cutting, screwing, welding etc. & forged steel fittings like elbows, tees, tapers, reducer, gaskets etc. fixing the pipe on the wall/ceiling with suitable clamps, hanger and nuts bolts including cutting hole and chase in brick or RCC walls/ slab and making good the same. complete with painting of one coats of Red Oxide and two or more coats of synthetic enamel paint of required shade complete as required. (Pipe to be tested @ 10Kgf/Sqcm for 2 Hrs.). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.12.1	25 mm dia	Mtr.	457.0
24.12.2	32 mm dia	Mtr.	587.0
24.12.3	40 mm dia	Mtr.	682.0
24.12.4	50 mm dia	Mtr.	954.0
24.12.5	65 mm dia	Mtr.	1218.0
24.12.6	80 mm dia	Mtr.	1508.0
24.12.7	100 mm dia	Mtr.	2172.0
24.12.9	150 mm dia	Mtr.	3202.0
24.12.10	200 mm dia, 6.0 mm thick	Mtr.	4852.0
24.12.11	250 mm dia, 6.35 mm thick	Mtr.	6031.0
24.12.12	300 mm dia., 7.0 mm thick	Mtr.	8003.0
24.13	Providing, Fixing, Jointing, Testing & Commissioning of Heavy duty MS 'C' class (Heavy) pipe conforming to IS 3589 / 1239 part-I for hydrant and sprinkler applications in Existing trench with cement concrete block as supports including cutting, welding etc & forged steel fittings like elbows, tees, tapers, reducer with cleaning,wrapping and coating of the pipe with 4 mm thick tar based polymaric corrosion protection tape including applying uniform coat of cold pipekot primer as per IS; 10221 for protection against corrosion complete in all respect. ( Pipe to be tested @ 10Kgf/Sqcm for 2 Hrs. & Excavation of Trench and refilling of trench to be paid extra). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.13.1	80 mm dia	Mtr.	1599.0
24.13.2	100 mm dia	Mtr.	2300.0
24.13.3	150 mm dia	Mtr.	3392.0
24.13.4	200 mm dia, 6.0 mm thick	Mtr.	5130.0

Item No.	Description	Unit	Rate (Rs.)
24.14	Providing, laying, testing & commissioning of 'C' class heavy duty G.I. pipe conforming to IS 1239 including welding, Forged GI fittings like elbows, tees, tapers, nuts, bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required. (Pipe to be tested @ 10Kgf/Sqcm for 2 Hrs.). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.14.1	25 mm dia	Mtr.	493.0
24.14.2	32 mm dia	Mtr.	634.0
24.14.3	40 mm dia	Mtr.	737.0
24.14.4	50 mm dia	Mtr.	1034.0
24.14.5	65 mm dia	Mtr.	1318.0
24.14.6	80 mm dia	Mtr.	1632.0
24.14.7	100 mm dia	Mtr.	2303.0
24.14.8	150 mm dia	Mtr.	3345.0
24.15	Supplying and fixing cylindrical air vessel of continuous welded construction for pump room made of 450 mm dia,fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, 2000 mm in height with flanged connection, Provision for 25 mm dia drain valve,air release valve,safety valve pressure gauge as required accessories and painting with two coats of Red Oxide and two coat of post office red enamel paint including The tank shall be installed on suitable vertical legs. The legs shall be provided with M.S. Angle of size 75 mm x 75 mm x 5 mm at the bottom. The legs shall be grouted in cement concrete foundation. as required. ( Air Release valve, Drain valve, PRV, Pressure Gauge shall be Paid Extra ). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	40477.0
24.16	Supplying and fixing cylindrical air vessel of continuous welded construction fixed at riser top made of 250 mm dia, fabricated out of 8 mm thick MS sheet, 1200 mm in height with flanged connection, Provision for 25 mm dia drain valve,air release valve,safety valve pressure gauge as required accessories and painting with two coats of Red Oxide and two coat of post office red enamel paint including The tank shall be installed on suitable vertical legs. The legs shall be provided with M.S. Angle of size 75 mm x 75 mm x 5 mm at the bottom. The legs shall be grouted in cement concrete foundation. as required. ( Air Release valve, Drain valve, PRV, Pressure Gauge shall be Paid Extra ). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	9022.0



Item No.	Description	Unit	Rate (Rs.)
24.17	Supplying and Fixing of PN 16 Flanged Y strainer fabricated out of cast iron body, SS 304 strainer with perforated screen with 3 mm. dia holes in existing MS / GI pipe complete with 2 no. Matching Flanges (Minimum 16 mm thick), nuts, bolts, washers, gaskets etc as required of following sizes. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.17.1	80 mm dia	Each	8636.0
24.17.2	100 mm dia	Each	11828.0
24.17.3	150 mm dia	Each	23975.0
24.17.4	200 mm dia	Each	41966.0
24.17.5	250 mm dia	Each	63672.0
24.18	Supplying and Fixing of PN 16 Flanged <b>sluice valve</b> with non rising spindle, bronze /gun metal seat confirming to IS:14846 complete with 2 no. Matching Flanges (Minimum 16 mm thick), nuts, bolts, washers, gaskets, etc as required of following sizes. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.18.1	80 mm dia	Each	12446.0
24.18.2	100 mm dia	Each	17631.0
24.18.3	150 mm dia	Each	27077.0
24.18.4	200 mm dia	Each	43892.0
24.18.5	250 mm dia	Each	64377.0
24.19	Providing and constructing masonry chamber 90 x 90 x 100 cms inside with brick work in cement mortar 1:5 (1cement : 5fine sand) for water meter ,M.S. cover (6mmthick sheet with locking arrangement, 600 x600 with M.S. frame etc. all epoxy coated and R.C.C. top slab 1:2:4 mix(1 Cement : 2 coarsesand : 4 graded stone aggregate 20mm nominalsize) including necessary excavation, back fillingfoundation concrete 1:5:10 mix (1 cement : 5 fine sand and 10 graded stone aggregate 20mmnominal size) leaving a pocket of 30x30 cmwith out concrete and filled with pebbles andinside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finishedwith a floating coat of neat cement and outside plaster finished rough complete. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	23568.0

Item No.	Description	Unit	Rate (Rs.)
24.20	Supplying and Fixing of PN 16 Cast Iron Dual Plate Wafer Type Check Valve / Non return valve with SS / Bronze flap complete with 2 no. Matching Flanges (Minimum 16 mm thick), nuts, bolts, washers, gaskets, etc as required of following sizes. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.20.1	65 mm dia	Each	5423.0
24.20.2	80 mm dia	Each	6181.0
24.20.3	100 mm dia	Each	7804.0
24.20.4	150 mm dia	Each	10541.0
24.20.5	200 mm dia	Each	22385.0
24.21	Supplying and Fixing of PN 1.6 Butterfly Valve (Wafer Type) with S.G Iron Disc and conforming to IS:13095 complete with 2 no. Matching Flanges (Minimum 16 mm thick), nuts, bolts, washers, gaskets, etc as required of following sizes. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.21.1	50 mm dia	Each	3181.0
24.21.2	65 mm dia	Each	3452.0
24.21.3	80 mm dia	Each	3756.0
24.21.4	100 mm dia	Each	4891.0
24.21.5	150 mm dia	Each	7648.0
24.21.6	200 mm dia Gear Operated	Each	17320.0
24.21.7	250 mm dia Gear Operated	Each	27788.0
24.22	Supplying and Fixing of PN 16 Brass/GM Ball valves with screwed end, SS Ball including teflon tape etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.22.1	20 mm dia.	Each	1220.0
24.22.2	25 mm dia.	Each	1489.0
24.22.3	32 mm dia	Each	2841.0
24.22.4	40 mm dia	Each	3943.0
24.22.5	50 mm dia	Each	6164.0
24.23	Supplying and Fixing of Brass/GM gate valves with screwed end , Non rising stem and conforming to IS:778 Class-1 including teflon tape etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.23.1	20 mm dia.	Each	1318.0
24.23.2	25 mm dia.	Each	1977.0
24.23.3	32 mm dia	Each	2783.0
24.23.4	40 mm dia	Each	3689.0
24.23.5	50 mm dia	Each	5378.0

Item No.	Description	Unit	Rate (Rs.)
24.24	SITC of installation control valve of cast iron body and brass/bronze working parts comprising of water motor alarm, bronze seat clapper, and clapper arm, hydraulically driven mechanical gong bell to sound continuous alarm when the wet riser/Sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, with 2 no. Matching Flanges (Minimum 16 mm thick), nuts, bolts, washers, gaskets, etc as required of following sizes. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.24.1	100 mm	Each	48284.0
24.24.2	150 mm	Each	53186.0
24.25	Supplying and fixing of SS 304 Single / Double headed oblique pattern hydrant landing valve (internal/external) with 75 / 100 mm dia flanged inlet & 63 mm dia instantaneous type female outlet coupling with cast iron wheel complete with ABS cap and chain and all accessories as per IS:5290-93 (Type-A) including matching flange (14 mm thick), nuts, bolts, washers, gaskets, etc as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.25.1	Single Headed with 75 mm Dia. Flanged Inlet	Each	8022.0
24.25.2	Double Headed with 100 mm Dia. Flanged Inlet	Each	14686.0
24.26	Supplying and fixing orifice plate made of 6 mm thick stainless steel with orifice of required size in between flange & landing valve of external and internal hydrant to reduce pressure to working pressure of 3.5 kg/cm <sup>2</sup> complete with rubber gasket, GI bolts, nuts, washers etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1457.0
24.27	Supplying and fixing of flexible hose made with 100% polyester, black EPDM internal rubber lining with External coat of synthetic elastomer (IS:636, type-A) 63 mm dia, 15 mtr. Long RRL hose pipe with instantaneous type 63 mm dia SS-304 male and female couplings (IS:903) duly bound and riveted to hose pipes with copper rivets and SS wire etc. as required. Appropriate Test Certificate/ report with liable warranty of product/accessories from OEM shall be submitted.	Each	7596.0

Item No.	Description	Unit	Rate (Rs.)
24.28	Supplying & fixing SS-304 Short Branch Pipe conforming to IS: 903:93 fitted with 20mm (nominal internal diameter) bore nozzle, for projecting water in form of solid jet. The Branch shall have 63mm Male Instantaneous Inlet, suitable for use with 63 mm size Fire fighting hoses. H.P. tested to 21 kgf/cm <sup>2</sup> for 2.5 minutes. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	2565.0
24.29	Supplying and fixing first -Aid Fire hose reel Drum wall mounted swinging type with MS construction powder painted in post office Red, conforming to IS 884-1985 with upto date amendments, complete with the following as required. (A) Thermoplastic / Rubber Hose (B)20 mm dia UL, FM Bronze / SS nozzle with 5mm orifice (C)Drum and brackets for fixing the equipments on wall. (D) Connections from riser with 20/25 mm dia Brass/GM gate valves with screwed end and conforming to IS:778 Class-1 through Forged steel Screwed Union & M.S. pipe. Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.29.1	With 30 m x 20 mm Thermoplastic hose as per IS:12585 Type-2 and Bursting pressure 42 Kg/sqcm	Each	11872.0
24.29.2	With 30 m x 20 mm High Pressure Braided Rubber Hose as per IS:5132 - 1969 and Bursting pressure 42 Kg/sqcm	Each	12479.0
24.30	Supplying and fixing Inlet Breeching Connection of CI body with Gun Metal male instantaneous inlet couplings with Inbuilt NRV, Drainage Connection with 50 mm Brass gate valve complete with PVC blank cap and chain as required for 150mm dia Outlet with 1 no. Matching Flange (Minimum 16 mm thick), nuts, bolts, washers, gaskets, etc as required of following Ways. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.30.1	2 Way	Each	10214.0
24.30.2	3 Way	Each	12034.0
24.30.3	4 Way	Each	13854.0
24.31	Providing and fixing of 100 mm Dia. Flanged Gun Metal Fire brigade Suction hose coupling (draw out connection) for female coupling as per IS:902-1974 complete with Matching Flange (Minimum 14 mm thick), nuts, bolts, washers, gaskets, etc as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	10548.0

Item No.	Description	Unit	Rate (Rs.)
24.32	Supply and Fixing of Cast iron body one side Flanged and other side strainer ball type foot valve with Reinforced rubber Nitrile rubber coated Ball including Matching Flange (Minimum 16 mm thick), nuts, bolts, washers, gaskets, etc as required of following Sizes. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.32.1	80 mm Dia.	Each	7226.0
24.32.2	100 mm Dia.	Each	11294.0
24.32.3	150 mm Dia.	Each	22742.0
24.32.4	200 mm Dia.	Each	45138.0
24.33	Providing and Fixing of PN16 Resilient rubber lined single arch vibration eliminators suitable for raw water up to 45 deg. C temperature, working pressure 8.5 Kg/cm <sup>2</sup> and test pressure 14 Kg/cm <sup>2</sup> to provide relief from stresses at pipe including Matching Flange (Minimum 16 mm thick), nuts, bolts, washers, gaskets, etc as required of following Sizes. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.33.1	80 mm Dia. x 150 mm Oal	Each	8357.0
24.33.2	100 mm Dia. x 150 mm Oal	Each	10021.0
24.33.3	150 mm Dia. x 150 mm Oal	Each	12838.0
24.34	Supplying and fixing of <b>750 mm x 600 mm x 250 mm</b> Outdoor application Fire Hose Cabinet made of 1.6 mm thick MS sheet Duly powder coated in red color externally and white internally with 6 mm thick glazed doors with Expanded Metal 2 mm thick Jali including necessary locking arrangement suitable to accommodate 2 Nos 15 Mtr. Long RRL Hose and 1 No. branch pipe on Existing Wall / Angle Iron Frame as required. (Cost of MS structure for mounting Frame is to be Paid Extra) All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	5601.0
24.35	Supplying and fixing of <b>1000 mm x 600 mm x 500 mm</b> Outdoor application Fire Hose Cabinet made of 1.6 mm thick MS sheet Duly powder coated in red color externally and white internally with 6 mm thick glazed doors with Expanded Metal 2 mm thick Jali including necessary locking arrangement suitable to accommodate External hydrant with butterfly valve, 2 Nos 15 Mtr. Long RRL Hose and 1 No. branch pipe on Existing Wall / Angle Iron Frame as required. (Cost of MS structure for mounting Frame is to be Paid Extra). All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	16869.0

Item No.	Description	Unit	Rate (Rs.)
24.36	Providing and fixing of Fire / Electrical Shaft Door made from powder coated (50 Micron) aluminium partially glazed with 6 mm thick glass and Partialy / Fully Louvered with Outer frame of Aluminium Section of Size 100 mm x 45 mm x 1.5 mm and Shutter's Top, Middle & side Section of Size 82 mm x 45 mm x 1.5 mm, Bottom Section of Size 110 mm x 45 mm x 1.5 mm Complete with Hinges, Tower bolt, Handle, Aldrop, Locking Arrangement including dash fasteners of required dia and size, necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. as per drawings and the directions of Engineer-in-charge. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Sqm	9852.0
24.37	Providing and Fixing of 15 mm dia Bronze quartzoid bulb type <b>sprinkler heads</b> with Maximum working pressure 11.6 Kg / Sqcm and suitable for 68 degree centigrade rating standard response (UL Listed) chrome plated complete in all respect of the following type. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.37.1	Pendant/ Upright type	Each	290.0
24.37.2	Sidewall Sprinklers (ordinary)	Each	303.0
24.37.3	Extended Throw Sidewall type .	Each	506.0
24.37.4	Concealed type with Tin alloy fusible metal plate for temperature 57 degree Centigrade	Each	1046.0
24.38	Providing & fixing of UL listed 1.5 mm thick chrome plated Dual type MS Escutcheon plates fixed at junction of Sprinkler piping with the false ceiling. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	108.0
24.39	Supply & Fixing of Fire Man's Axe with carbon steel head & rubber moulde handel usable upto 20 KV and confirming to IS :926 with length approx 0.4 M & weight 3.0 Kg. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1918.0

Item No.	Description	Unit	Rate (Rs.)
24.40	Providing & fixing sprinkler flexible pipe (UL Listed) of stainless steel complete with 15 NPT on reducer thread with maximum working pressure of 175 PSI test pressure of 875 PSI (Burst) with branch line (Inlet) 25mm NPT male thread to sprinkler head (Outlet) 15mm NPT female thread with reducer, nipple, 2 side brackets, center bracket, stockbar of following sizes complete as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.40.1	700 mm Long	Each	944.0
24.40.2	1000 mm Long	Each	1106.0
24.40.3	1200 mm Long	Each	1281.0
24.40.4	1500 mm Long	Each	1450.0
24.41	Providing & fixing Stainless Steel pressure gauge with dial of 150 mm dia size and range 0 to 20 kg/sq.cm with 3 / 8 " BSP bottom entry , Ball valve , SS Syphon tube all fittings etc, duly calibrated before installation in MKS and FPS units, Accuracy Level +/- 1% including Making Drilling in Existing MS Pipe Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	2632.0
24.42	SITC of UL 10th edition / EN54 / VDS certified Automatic Floating Sensitivity type Analog addressable Multi criteria (two optical/Smoke sensor to reduce false alarm) detector with mounting base & LED etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	3104.0
24.43	SITC of UL 10th edition / EN54 / VDS certified Rate of Rise Heat Detectors (Thermal Detectors):GRADE-I Analouge Addressable type Heat Detectors with solid state design with sensing element combination of fixed type and rate of rise of temperature mounting base & LED etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	2969.0

Item No.	Description	Unit	Rate (Rs.)
24.44	SITC of UL 10th edition / EN54 / VDS certified Analogue Addressable type Multi criteria (Heat & smoke) Beam detector along with interface module having a coverage area with a distance of min. 10 m and max. 100 m ,Operating temperature range: -20 C to +55 C, Response sensitivity of 40% , shall UL/EN54 certification including transmitter and receiver unit with mounting base & LED etc including the cost of all accessories, mouting arrangement Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Set	48594.0
24.45	SITC of UL 10th edition / EN54 / VDS certified Addressable type fault isolator with base for isolating shorted, dewired and loose circuits between two successive fault, isolators with automatic resetting arrangement etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	2726.0
24.46	SITC of UL 10th edition / EN54 / VDS certified Addressable Manual Call point (MCP) with LED / FIRE Indication Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	3509.0
24.47	SITC of UL 10th edition / EN54 / VDS certified Addressable sounder with strobe light, Loop Powered / Direct powered from FACP with sound level 90 dB and programmable from the panel etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	8128.0
24.48	<b>SITC of UL 10th edition / EN54 / VDS certified</b> addressable automatic fire detector for monitoring of ventilation ducts which can perform alarm pattern analysis, with even response sensitivity for all fires with smoke development with 1 no outlet tube & with 1 no. analogue addressable Photo Electric type Smoke Detector with mounting base , address switch etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	11203.0



Item No.	Description	Unit	Rate (Rs.)
24.49	SITC of Response Indicator for indicating the activation of the Remotely located Detector for Addressable type Detectors Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	269.0
24.50	SITC of UL 10th edition / EN54 / VDS certified Addressable control (input/output) modules/ Relay Module for shutting down lifts, Hooters, AHU's, Acknowledgement of Sprinkler system with potential free contact monitoring Etc. as Required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	5009.0
24.51	SITC of UL 10th edition / EN54 / VDS certified Microprocessor based intelligent, Analogue addressable,modular, expandable networkable loop Fire Alarm Control Panel with each loop capacity of min 125 detectors per loop with total of 125 detectors & devices with Loop length up to 1 KM as per NFPA 72 approval. The Panel shall be able to give pin point location of addressable units via the address code for each unit. The Panel shall also be able to automatically switch off all control switches whenever any Alarm is triggered. . The panel shall have 230 + 5 % volts power supply, Automatic battery charger 24V, sealed lead acid maintenance free batteries sufficient for 24 hours normal working and then be capable of operating the system for 30 minutes during emergency condition. Loop interface cards, communication module, LCD/LED unit to indicate Fire / Fault Signal of individual unit, inbuilt networking port(both RS485&Ethernet),Serial port for printer,two supervisory inputs,two position key switch and USB port for programming.including the cost of all accessories Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.51.1	1 - Loop Panel	Each	222644.0
24.51.2	2 - Loop Panel	Each	296858.0
24.51.3	Add Extra for per Loop expansion beyond Two Loop	per Loop	67462.0
24.51.4	Add Extra for Graphics User Interface (GUI) Software for programming the fire detection and voice alarm system through FACP / PC.	Each	121485.0

Item No.	Description	Unit	Rate (Rs.)
24.51.5	Add Extra for Workstation latest Intel® i5 processor, Intel Chipset motherboard, 08 GB RAM, 1 TB SATA HDD at 7200 rpm, with 2 x 4GB GPU type higher end Graphic card for H.265 compression technique with dual display ports/DVI/ HDMI port, Giga LAN Card, wireless Keyboard, wireless optical Mouse. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	91130.0
24.52	SITC of UL 10th edition / EN54 / VDS certified Active Repeater Panel for Fire Alarm System with inbuilt networking port (both RS485 & Ethernet),Serial port for printer,two supervisory inputs,two position key switch and USB port for programming. The Repeater Panel shall allow users to acknowledge, reset,silence, program, view history events.etc (All functions similar to main panel)The user interface of the repeater panel shall be same as the Main Controller with menu driven user interface with smart search.including the cost of all accessories Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	80967.0
24.53	SITC of UL 10th edition / EN54 / VDS certified 6 ZONE Digital Voice Command Center with FACP, it shall contain all equipment required for all audio control, signaling and supervisory functions. This shall include speaker zone indication and control, digital voice units, microphone etc. The Digital Voice Command Center shall have digital voice call station suitable for 6 zone, digital voice controller & router suitable for 6 zone, 4 nos 240 watt & 1no 480 watt amplifier & digital amplifier capable for 1440 watt load etc.including the cost of all accessories Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	124186.0
24.54	SITC of EN / LPCB/ UL listed / approved conventional automatic fire Alarm Optical/Photoelectric type smoke detectors of photo-optic sensing chamber, 12 / 24 volt D.C., visual alarm indicator (LED's) "Blink - green" in stand by and "Steady - red" in alarm complete in all respects with base as required.including the cost of all accessories Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1484.0

Item No.	Description	Unit	Rate (Rs.)
24.55	SITC of EN / LPCB/ UL listed / approved conventional automatic fire Alarm Rate of Rise cum fixed temperature thermister type Heat Detectors , 12 / 24 volt D.C., visual alarm indicator (LED's) "Blink - green" in stand by and "Steady - red" in alarm complete in all respects with base as required.including the cost of all accessories Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1416.0
24.56	SITC of EN / LPCB/ UL listed / approved conventional type Manual call point resettable complete with Glass, hammer and chain etc.including the cost of all accessories Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	606.0
24.57	SITC of EN / LPCB/ UL listed / approved conventional type Hooter cum strobe including the cost of all accessories,Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	673.0
24.58	SITC of Response Indicator for indicating the activation of the Remotely located Detector for Conventional type detectors as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	269.0
24.59	SITC of wall type following zone (each zone accessing minimum 20 units (detectors/ devices )) Conventional Type microprocessor based with LCD display EN / LPCB/ UL listed / approved main control panel fabricated from 16 SWG CRCA sheet steel sealed maintenance free (SMF) batteries of min2X7AH of 12 V or as required.including the cost of all accessories, Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.59.1	4 zone	Each	40450.0
24.59.2	6 zone	Each	63383.0
24.59.3	Add extra for every 2 Zone	Each	16180.0
24.60	SITC of 2 way communication Fire Fighter's Telephone Jack.Complete as required . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	1753.0

Item No.	Description	Unit	Rate (Rs.)
24.61	SITC of 2 way communication Fire Fighter's Telephone Handset to make a call to the Main FACP from Telephone Jack Location Complete as required . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	12222.0
24.62	Supplying and drawing Fire Resistant flexible / stranded bare copper conductor, PVC / XLPE insulated, overall aluminium mylar tape shielded ATC drain wire and outer PVC sheathed industrial Instrumentation (shielded)cables voltage grade 300/500 V as per BS /EN 50288-7 in existing surface or recessed PVC/ MS conduit/casing capping / Cable tray / Open Duct making connections, testing etc. as required. OEM Must have its own in house NABL lab setup for all testing facilities for cables. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.62.1	2 x 1.5 Sq.mm Unarmoured With Outer Sheath in Red Color	Mtr	94.0
24.62.2	2 x 1.5 Sq.mm Armoured With Outer Sheath in Red Color	Mtr	158.0
24.63	SITC of PA system Operator Console of following wattage to be installed with Conventional fire alarm system complete with following capacity , channel mixing amplifier , 1 no cardioids goose neck microphone , 1 no professional grade cassette deck/ CD Player , 16 zone floor selector console , equipment rack complete in all respects. PA system shall be coupled to the Fire Alarm System. Etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.63.1	1 x 120 Watt	Each	48607.0
24.63.2	1x 240 Watt	Each	62782.0
24.63.3	1x 350 Watt	Each	70203.0
24.64	SITC 6 watt Speaker mounted in M S sheet box with perforated front mesh for PA and Emergency System. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	943.0

Item No.	Description	Unit	Rate (Rs.)
24.65	Supply & Fixing of Water + AFFF 6% Mechanical Foam type Fire Extinguisher ( <b>Stored Pressure type</b> ) conforming to <b>IS:15683:2018</b> , Powder coated Internal & External Surface Deep drawn cylinder body of Mild Steel CR2 grade conforming to IS: 513, Squeeze grip Forged brass release valve with Inbuilt safety release device, Diaphragm Type, 0 to 25 bar range pressure gauge, 450 mm long EPDM discharge tube, QR code for Product Traceability including Fixing on wall with suitable Anchor Fasteners as required of following capacity. Test Certificates of all the Parameters along with Hydro test & Burst test (For Cylinder Body) Certificate from OEM / External NABL Accrediated Lab is to be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.65.1	Capacity - 6 Ltrs.	Each	3577.0
24.65.2	Capacity - 9 Ltrs.	Each	4522.0
24.66	Supply & Fixing of CO2 type Fire Extinguisher conforming to IS:15683:2018, charged with CO2 gas (purity 99.7% conforming to IS 15222), Powder coated Internal & External Surface Manganese steel ISI marked as per IS 7285 cylinder body , Wheel type Forged brass release valve ISI Marked as per IS 3224 with Inbuilt safety release device ((Fusible plug and Rupture Disc Type), 1.0 Mtr. Metal wire braided hose having minimum bursting pressure of 140 Kgf/cm2, Horn with metallic thread connection, QR code for Product Traceability, including Fixing on wall with suitable Anchor Fasteners as required of following capacity. Test Certificates of all the Parameters along with Hydro test & Burst test (For Cylinder Body) Certificate from OEM / External NABL Accrediated Lab is to be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.66.1	Capacity 3.0 Kg.	Each	7332.0
24.66.2	Capacity 4.5 Kg.	Each	8547.0

Item No.	Description	Unit	Rate (Rs.)
24.67	Supply & Fixing of Dry Powder Agent (as per IS 4308:2019), ABC type Fire Extinguisher ( <b>Stored Pressure type</b> ) conforming to <b>IS:15683:2018</b> , Powder coated Internal & External Surface Deep drawn cylinder body of Mild Steel CR2 grade conforming to IS: 513, Squeeze grip Forged brass release valve with Inbuilt safety release device, Diaphragm Type, 0 to 28 bar range pressure gauge, 450 mm long EPDM discharge tube, QR code for Product Traceability including Fixing on wall with suitable Anchor Fasteners as required of following capacity. Test Certificates of all the Parameters along with Hydro test & Burst test (For Cylinder Body) Certificate from OEM / External NABL Accredited Lab is to be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.67.1	2 kg	Each	2767.0
24.67.2	4 kg	Each	4104.0
24.67.3	6 kg	Each	4576.0
24.67.4	9 kg	Each	5954.0
24.68	Supply & Fixing of Trolley mounted 22.5 Kg CO2 type Fire Extinguisher conforming to IS: 16018:2012, charged with CO2 gas (purity 99.7% conforming to IS 15222), Powder coated Internal & External Surface Manganese steel ISI marked as per IS 7285 cylinder body , Wheel type Forged brass release valve ISI Marked as per IS 3224 with Inbuilt safety release device ((Fusible plug and Rupture Disc Type), 1.5 Mtr. long Metal wire braided hose having minimum bursting pressure of 140 Kg/cm <sup>2</sup> , Horn with metallic thread connection, QR code for Product Traceability, including Double mounted handle as required of following capacity. Test Certificates of all the Parameters along with Hydro test & Burst test (For Cylinder Body) Certificate from OEM / External NABL Accredited Lab is to be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Each	26442.0

Item No.	Description	Unit	Rate (Rs.)
24.69	Supply & Fixing of Ceiling mounted Dry Powder Agent (as per IS 4308:2019), Modular stored pressure type ABC Fire Extinguisher , Powder coated Internal & External Surface Deep drawn cylinder body of Mild Steel CR2 grade conforming to IS: 513, Fixed Bulb with Temperature 68 deg C, QR code for Product Traceability including Fixing on Ceiling with suitable Anchor Fasteners as required of following capacity. Test Certificates of all the Parameters along with Hydro test & Burst test (For Cylinder Body) Certificate from OEM / External NABL Accrediated Lab is to be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.69.1	5 Kg Capacity	Each	6179.0
24.69.2	10 Kg Capacity	Each	9349.0
24.70	Supply & Fixing of Ceiling mounted UL listed clean Agent (HFC-236fa), Modular type Fire Extinguisher , Powder coated Internal & External Surface Deep drawn cylinder body of Mild Steel CR2 grade conforming to IS: 513, Fixed Bulb with Temperature 68 deg C, QR code for Product Traceability including Fixing on Ceiling with suitable Anchor Fasteners as required of following capacity. Test Certificates of all the Parameters along with Hydro test & Burst test (For Cylinder Body) Certificate from OEM / External NABL Accrediated Lab is to be submitted. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.70.1	5 Kg Capacity	Each	24304.0
24.70.2	10 Kg Capacity	Each	44626.0
24.71	Supplying and Fixing of Galvanized Mild Steel fire bucket Confirming to IS: 2546 : 1974 with one coat of primer and two coat of enamel paint of approved shade on Angle Iron ( 50 x 50 x 5 mm) Stand of Size 800 x 1240 x 400 mm with MS 22 SWG Galvanized Canopy, 4 Hooks for Buckets including associated civil works etc. as required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Set	11466.0

Item No.	Description	Unit	Rate (Rs.)
24.72	Providing and fixing signages as per required content printed on photoluminescent U1000 aluminium sheet of 1.0 mm (+-10%) containing Lumigen II as base chemical, covered under UV stablized coating with suitable colour combination (Glow in dark) with high intensity properties for indoor surface glow visibility not less than 6 hrs. in total darkness and of appropriate size including fixing on wall, door, ceiling etc. with proper clamps, hangers, cleats, anchor fasteners etc. complete in all respects required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.72.1	Single sided signage board	Sq.Inch	9.00
24.72.2	Double sided signage board	Sq.Inch	14.00
24.73	Providing and fixing of Aluminium housing body self contained Rechargeable LED Emergency Light with required content and Size Approx. 300 mm x 180 mm, confirming to IS:9583 :1981with Ni-Mh / Ni - Cd Battery, 3 Hrs Back Up, Constant Current Charger, Input Voltage 230 V , 50 Hz including fixing on wall, door, ceiling etc. with proper clamps, hangers, cleats, anchor fasteners etc. complete in all respects required. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .		
24.73.1	Single sided signage	Each	4386
24.73.2	Double sided signage	Each	5128



**CHAPTER : E-25**  
**HIRE CHARGES FOR PA SYSTEM & TEMPORARY LIGHTING**

Item No.	Description	Unit	Rate (Rs.)
25.1	Hire charges for LED Flood light luminaire ( white or warm white as required )for 90- 150 watt with the standard housing ,pole & mounting accessories with wiring, connection with skilled operator to operate system as and when etc as required. <b>(If work continueue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>		
25.1.1	With suitable pole	Each/Day	254.00
25.1.2	With out pole	Each/Day	170.00
25.2	Hire charges for LED Flood light luminaire ( white or warm white as required )for 200- 250 watt with the standard housing ,pole & mounting accessories with wiring, connection with skilled operator to operate system as and when etc as required. <b>(If work continueue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>		
25.2.1	With suitable pole	Each/Day	339.00
25.2.2	With out pole	Each/Day	254.00
25.3	Hire charges for weather proof round LED Rope/neon flex LED / Flexible strip type LED having 2 to 5 watts/meter capacity and consisting suitable power adapter with mains , switchgear etc complete with connection with skilled operator to operate system as and when etc as required. <b>(If work continueue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Mtr/day	8.00
25.4	Hire charges for IP 66 protected programmable RGB LED flood light with alluminium alloy housing and having 180 degree bracket adjustment complete with driver switchgear , wiring, connection , testing etc. with skilled operator to operate system as and when etc as required. <b>(If work continueue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>		
25.4.1	100 watt	Each/Day	509.00
25.4.2	150 watt	Each/Day	576.00
25.4.3	180 watt	Each/Day	848.00
25.4.4	300 watt	Each/Day	1187.00

Item No.	Description	Unit	Rate (Rs.)
25.5	Hire Charges for LED Screen Day light type of suitable size for Display complete with mounting arrangement/scaffolding, masking of mounting stand, signal booster, network switch /splitter, data and power cables and sound system arrangement etc. with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	sq.ft/ day	264.00
25.6	Hire Charges for HD Video camera suitable for HDMI output, recording in DVD/hard disk fuction complete with two operator as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each/Day	5528.00
25.7	Hire charges for video Projection Arrangement (excluding screens) with 3 Nos. Video Camera (PWM 120 sony NX 5Z7/Equivalent) including mixer (Pansonix MX70/Data Video MX500/ Equivalent) Complete with required HDMI/VGA etc. wiring VTR, switchers, with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each/Day	35382.00
25.8	Hire charges of Crane with operators for video camera for 360° movement complete arrangement with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Job / day	10615.00
25.9	Providing experienced and Highly skilled/skilled/ semi-skilled/Un Skilled labour for electric repair/ maintenance / operation of Air conditioning/Air cooling/Fire fighting/Lift/DG set/CCTV/EPABX or any other electromechanical systems as per requirement (one shift of 8 Hrs per day for 26 Working Days in a month)		
25.9.1	Highly skilled Labour	Each Per Month	11334.00
25.9.2	skilled Labour	Each Per Month	9596.00
25.9.3	Semi skilled labour	Each Per Month	9179.00
25.9.4	Un skilled labour	Each Per Month	8761.00

Item No.	Description	Unit	Rate (Rs.)
25.10	Add for extra working on Holidays.		
25.10.1	Highly skilled Labour	Each Per Day	436.00
25.10.2	skilled Labour	Each Per Day	369.00
25.10.3	Semi skilled labour	Each Per Day	353.00
25.10.4	Un skilled labour	Each Per Day	337.00
25.11	NOTE: Over time rates shall be two times of that category.		
25.12	NOTE: Part time rates up to 4 Hours shall be charged @ 50% of that category .		
25.13	NOTE: Part time rates for more than 4 Hours but less than 8 Hours shall be charged @ 100% of that category .		
25.14	Charges for Providing of experienced and Highly skilled/ skilled/semi-skilled/ Un skilled labour for electric repair/ maintenance/operation of Air conditioning /Air cooling / Fire fighting /Lift/D G set /CCTV/EPABX or any other electromechanical services/ systems as required.( One shift of 8 Hours per day )		
25.14.1	Highly Skilled Labour	shift / day	436.00
25.14.2	Skilled Labour	shift / day	369.00
25.14.3	Semi skilled labour	shift / day	353.00
25.14.4	Un skilled labour	shift / day	337.00
25.15	Hire charges for 42" HD LED/Plazma TV complete with mounting arrangement , connections, testing etc. with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Job / day	3538.00
25.16	Hire charges for 50/55" HD LED/Plazma TV complete with mounting arrangement , connections, testing etc.with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Job / day	4193.00

Item No.	Description	Unit	Rate (Rs.)
25.17	Hire charges for Equipments Required for Public Address & Sound System for a very important public function/ VVIP visits including transportation,T&P,Scaffolding, testing and connections with trial etc. with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>		
25.17.1	VERTEK / RCF TT+ (55/56) 3 way Speakers 3500 to 8000 watt JBL or Equivalent make	Each/Day	3156.00
25.17.2	VERTEK / RCF TT+ (55/56) 3 way Speakers above 8000 watt JBL or Equivalent make.	Each/Day	4497.00
25.17.3	VERTEK / RCF TT+ (55/56) sub Woofers sound output 4000 to 8000 watt JBL or Equivalent make.	Each/Day	3156.00
25.17.4	VERTEK / RCF TT+ (55/56) sub Woofers sound output above 8000 watt JBL or Equivalent make.	Each/Day	4497.00
25.17.5	Core i5/i7 Laptop with HDMI cable & Stereo sound output make-HP/Dell/Lenovo or Equivalent.	Each/Day	631.00
25.17.6	Digital CD consoles with built in CD players & DJ mixer make : pioneer or equivalent.	Each/Day	3156.00
25.17.7	D.I. Boxes of Make DBX or equivalent .	Each/Day	1262.00
25.17.8	32 Channels Equalizers make-DBX or Equivalent.	Each/Day	5049.00
25.17.9	Cross Overs for the speakers Distributions make- DBX or equivalent.	Each/Day	3156.00
25.17.10	5000 watts Amplifiers for up to the 06 nos Vertek 3 way speakers make -crown or equivalent	Each/Day	3156.00
25.17.11	6000 watts Amplifiers for up to the 04 nos Vertek sub woofers make-Crown or Equivalent.	Each/Day	3156.00
25.17.12	Suspension kits with suitable stand for the High wattage speakers	Each/Day	1262.00
25.17.13	Required necessary audio connection cables, speakers cables,electrical wiring, boards, connector etc for speakers/horns etc. as required	Job/Day	3156.00
25.17.14	Flying Speakers 1200 watts RMS JBL/Yamaha/RCF/ Eq	Each/Day	2525.00
25.17.15	Top Speakers 1200 watts RMS JBL/Yamaha/RCF/Eq	Each/Day	2525.00

Item No.	Description	Unit	Rate (Rs.)
25.17.16	Monitor Speakers JBL/Yamaha/RCF/ Eq (For Stage)	Each/Day	1893.00
25.17.17	Cordless Mike Make:-Shure/AKG or equivalent .	Each/Day	379.00
25.17.18	CD Player Make:-Pioneer /Philips or Equivalent.	Each/Day	631.00
25.17.19	Digital Mixer 32 Channel, 12 output Make:-Yamaha/Sound Craft or equivalent.	Each/Day	3156.00
25.17.20	Analog Mixer 24 Channel, 7 output Make:- Yamaha/Sound Craft or equivalent.	Each/Day	2525.00
25.17.21	Effect Processors. Make:-LSS/Behringer or equivalent.	Each/Day	631.00
25.17.22	Compressors. Make:-LSS/Behringer or equivalent.	Each/Day	631.00
25.17.23	Amplifiers 700 Watt RMS at 100 Ohm. Make:-Ahuja/QSC or equivalent.	Each/Day	631.00
25.17.24	Podium Microphones. Make:-Shure/AKG or equivalent.	Each/Day	631.00
25.17.25	Mikes with Big stand. Make:-Shure/AKG or equivalent.	Each/Day	631.00
25.17.26	Head Phone. Make:-Shure/AKG or equivalent.	Each/Day	947.00
25.17.27	Digital Audio recorder. Make:-Cinex or equivalent.	Each/Day	2525.00
25.17.28	31 Band Equalizer. Make:-LSS/Behringer or equivalent.	Each/Day	2525.00
25.17.29	Snake Cable 2 x 100 mtr as required.	Job/Day	505.00
25.17.30	Crossover Make:-LSS/Behringer or equivalent.	Job/Day	1262.00
25.18	Hire charges for 500/1000 Watt halogen flood luminaire(with lamp) with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>		
25.18.1	With suitable pole	Each/Day	42.00
25.18.2	With out pole	Each/Day	25.00

Item No.	Description	Unit	Rate (Rs.)
25.19	Hire charges for LED post top lantern upto 25-45 watt on suitable pole with skilled operator to operate system as and when etc as required. as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each/Day	93.00
25.20	Hire charges for light point complete with lamp,holder,wiring in casing or in PVC conduit , controlling switch and circuit protection MCB's with skilled operator to operate system as and when etc as required. for shops/ stalls etc. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each/Day	68.00
25.21	Hire charges for power/light plug on board incl. wiring in PVC casing or in PVC conduit , controlling switch and circuit protection MCB's with skilled operator to operate system as and when etc as required. for shops/ stalls etc. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each/Day	102.00
25.22	Hire charges for Jhalar bulb 15/25 watt coloured/clear with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each/Day	4.00
25.23	Hire charges for miniature bulb with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>		
25.23.1	for 60 nos. 6.2 v miniature bulb	Each/Day	12.00
25.23.2	for 50 nos. 0.25 v LED miniature bulb	Each/Day	14.00
25.24	Hire charges of niwar patti with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>		
25.24.1	niwar patti 60 no. 6.2 v miniature lamps.	Each/Day	15.00
25.24.2	niwar patti 50 no. 0.25 v LED miniature lamps.	Each/Day	20.00

Item No.	Description	Unit	Rate (Rs.)
25.25	Hire charges for LED tube light fixture with 18/20 watt with skilled operator to operate system as and when etc as required. <b>(If work continue for more than one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each/Day	34.00
25.26	Hire charges for Light fixture with CFL 9 / 11/ 13 / 15 watt with skilled operator to operate system as and when etc as required. <b>(If work continue for more than one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each/Day	17.00
25.27	Hire charges for LED bulb 6 watt to 13 watt of white/ warm white colour etc. mounted on wooden batten/niwar patti or in holder (with required CCT )as per choice of client or engineer in charge complete with wiring etc with skilled operator to operate system as and when etc as required. <b>(If work continue for more than one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each/Day	10.00
25.28	Hire charges for 250/400 watt metal halide luminaire with lamp and pole of required height with skilled operator to operate system as and when etc as required. <b>(If work continue for more than one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each/Day	127.00
25.29	Hire charges for 500/1000 watt appollo light for shops/ stalls with skilled operator to operate system as and when etc as required. (with lamp) <b>(If work continue for more than one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each/Day	68.00
25.30	Hire charges for Silent type D.G. Set, including change over switch. Control panel etc. and excluding POL with skilled operator to operate system as and when etc as required. of following capacity:		
25.30.1	15 to 25 KVA	Each/Day	3052.00
25.30.2	40 KVA	Each/Day	3899.00
25.30.3	62.5 KVA	Each/Day	5086.00
25.30.4	82.5 KVA	Each/Day	6103.00
25.30.5	125 KVA	Each/Day	8477.00
25.30.6	180 KVA	Each/Day	11020.00
25.30.7	250 KVA	Each/Day	15259.00
25.30.8	500 KVA	Each/Day	21193.00

Item No.	Description	Unit	Rate (Rs.)
25.31	Hire charges of Main service line for 3 phase connection upto 50 mtr. Length (without any joint) including meter board, panel/distribution Board and supports with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one week , rates for next subsequent weeks will be 50% of the original rates.)</b>		
25.31.1	Upto 25.0 sq.mm size PVC insulated and Sheathed cable(Armoured or Un-armoured as required.)	Each / week	254.00
25.31.2	above 25.0 sq.mm & upto 95 Sq.mm PVC insulated and Sheathed cable(Armoured or Un-armoured as required.)	Each / week	381.00
25.31.3	above 95.0 sq.mm PVC insulated and Sheathed cable(Armoured or Un-armoured as required.)	Each / week	678.00
25.32	Hire charges of Sub service line for single/ three phase connection upto 30 mtr. Length including dist. Board and supports with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one week , rates for next subsequent weeks will be 50% of the original rates.)</b>		
25.32.1	Single phase upto 6 Sqmm PVC insulated and Sheathed cable	Each / week	68.00
25.32.2	Three phase & neutral upto 10 SqmmPVC insulated and Sheathed cable	Each / week	136.00
25.33	Hire charges for Desert cooler of size 20" fan with stand, wiring including filling of water complete with skilled operator to operate system as and when etc as required.	Each / week	212.00
25.34	Hire charges for pedestal fan of size 18" / ceiling fan of size 48"/56" sweep including connections etc.with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each / day	85.00
25.35	Supply and filling of POL for DG sets	KVA / Hour	17.00



Item No.	Description	Unit	Rate (Rs.)
25.36	Hire charges for LPG Heater including commercial gas cylinder,regulator and operator with skilled operator to operate system as and when etc as required. <b>(If work contineue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each / day	2034.00
25.37	Hire charges for Mist Fan complete with required connections and operator with skilled operator to operate system as and when etc as required. <b>(If work contineue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each / day	848.00
25.38	Hire charges for Jumbo polycarbonate/fiber body moveable desert cooler complete with water filling and operator with skilled operator to operate system as and when etc as required. <b>(If work contineue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each / day	1187.00
25.39	Hire charges for following type of Airconditioners including copper piping , drain piping and electrical connections with skilled operator to operate system as and when etc as required. <b>(If work contineue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>		
25.39.1	1.5 TR Split AC	Each / day	3258.00
25.39.2	2.0 TR Split AC	Each / day	3450.00
25.39.3	3.0 /4.0 TR Tower type split AC	Each / day	6708.00
25.39.4	5.0/5.5 TR ductable type Split AC	Each / day	9583.00
25.40	Hire charges of public address system for a important public function with 5/ 6 no. of microphones with following nos of stand Hi Fi box, speakers/ Horns, stand by amplifiers , battery backup complete including transportation etc. with skilled operator to operate system as and when etc as required. : ( At district Head Quarters ) <b>(If work contineue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>		
25.40.1	4 Nos 3 Way Big Box Speakers,(upto 5000 audiences)	Each / day	5256.00

Item No.	Description	Unit	Rate (Rs.)
25.40.2	6 Nos 3 Way Big Box Speakers,(above 5000 to 10000 audiences)	Each / day	10172.00
25.40.3	8 Nos 3 Way Big Box Speakers,(above 10000 to 25000 audiences)	Each / day	14411.00
25.40.4	10 Nos 3 Way Big Box Speakers,(above 25000 audiences)	Each / day	18649.00
25.40.5	With 5/6 Mikes, 15 to 20 nos. reflex horns (upto 25000 audiences)	Each / day	6782.00
25.40.6	With 5/6 Mikes, 25-30 nos. reflex horns (above 25000 audiences)	Each / day	9325.00
25.40.7	Hire charges for table microphone ( Delegate type ) (If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)	Each / day	339.00
25.40.8	Hire charges for clip microphone with long lead lavilier. (If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)	Each / day	407.00
25.40.9	Hire charges for collar cordless/ Handheld microphone with long lead lavilier. (If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)	Each / day	509.00
25.41	Hire charges for public address system consisting of 2 Microphone with stand, Battery Backup, Amplifier,2 Loudspeakers with skilled operator to operate system as and when etc as required. (If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)	Each / day	2204.00
25.42	Hire charges for 2 nos. 3 way Bigbox speakers with 5/6 Microphones, mixer, echo chamber, Amplifier, Battery back up with skilled operator to operate system as and when etc as required. for Musical programme. (If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)	Job / day	8477.00

Item No.	Description	Unit	Rate (Rs.)
25.43	Hire charges for extra battery of 12 V , 125 AH with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each / day	254.00
25.44	Hire charges for cut glass chendilier of 20 lamps with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each / day	678.00
25.45	Hire charges for cut glass chendilier of 15 lamps with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each / day	509.00
25.46	Hire charges for cut glass chendilier of 7 lamps with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each / day	237.00
25.47	Hire charges for spot /palican lights (1000 watt) for stage function with dimmer as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each / day	339.00
25.48	Hire charges for colour effect scanners for stage functions with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each / day	1865.00
25.49	Hire charges for jumbo strove light for stage functions with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each / day	1187.00
25.50	Hire charges for Back or Front Projection Screen with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each / day	509.00

Item No.	Description	Unit	Rate (Rs.)
25.51	Hire charges for High Lumens LCD Projectors with operator ( 3500 Lumens ) and projector screen of size 8' X 6' with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each p. day	2543.00
25.52	Hire charges for Medium Lumens LCD Projectors with operator ( 2500 Lumens ) and projector screen of size 8' X 6' with skilled operator to operate system as and when etc as required. <b>(If work continue for more then one day , rates for next subsequent days will be 50% of the original rates.)</b>	Each p. day	2034.00
25.53	Hire charges for Cable fault locator machine with manpower for detecting fault in underground cable of LT 1.1 KV grade or 11/33KV HT cable	Each per Fault	10172.00

**CHAPTER : E-26**  
**REPAIRING OF FANS, COOLERS, PUMPS, MOTORS, FRIDGES & AIR**

Item No.	Description	Unit	Rate (Rs.)
26.1	Rewinding of ceiling fan motor (starting and running winding) including all necessary material. The motor is to be wound taking no. of coils, turns and pitch as it was originally wound with required size super enamelled wire with 'E' class insulation material and making connections etc. as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor. (New model ceiling fan)		
26.1.1	900/1200 mm sweep (New model ceiling fan)	Each	525.00
26.1.2	1400 mm sweep (New model ceiling fan)	Each	620.00
26.1.3	All sizes (Old model ceiling fan)	Each	1666.00
26.2	Labour charges for removing and refixing of Ceiling fan/ Exhaust fan from site	Each	67.00
26.3	Charges for oiling, overhauling of ceiling fan, table fan, pedestal fan irrespect to the size of fan including removing,refixing of fan from site and testing etc. as required.		
26.3.1	Fans w/o Removing & Refixing	Each	40.00
26.3.2	Fans with Removing & Refixing at Suitable Location	Each	107.00
26.4	Providing and Replacement of ball bearing of ceiling/ exhaust fan and refixing the same at suitable location as requiredand as per OEM recommendations. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	261.00
26.5	Provinding & Replacement of M.S. Shaft of ceiling fan. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	154.00
26.6	P & Replacement of cover/ bearing seat of ceiling/ exhaust fan. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	140.00
26.7	P & F Aluminium Blades (a set of 3 blades) duly painted and well finished 900/ 1200 mm. The material of the fan blade shall be of designation 31500B with condition HX6 aluminium alloy sheet confirming to IS 737/2008	Each	247.00

Item No.	Description	Unit	Rate (Rs.)
26.8	P & F Aluminium Blades (a set of 3 blades) duly painted/ powder coated. ( 1400/ 1500 mm) The material of the fan blade shall be of designation 31500B with condition HX6 aluminium alloy sheet confirming to IS 737/2008	Each	314.00
26.9	P & F of rubber gromet (fan insulator)	Each	36.00
26.10	Providing and Replacement of Gun metal bush of ceiling/exhaust/cooler fan/ as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	154.00
26.11	P & F 3 Speed rotary switch for Desert Cooler complete with testing etc as required.	Each	83.00
26.12	P & Replacement of M.S. Shaft of fan motor for Desert Cooler/ exhaust fan. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	160.00
26.13	P & replacement of supporting legs(4 no.) of vertical pump of desert cooler as required for Desert Cooler/ exhaust fan. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	114.00
26.14	P & F of stud with nuts and washer for Desert Cooler/ exhaust fan.All the scrap material should be retained by the contractor.	Each	49.00
26.15	Servicing and overhauling of 20" sweep desert cooler including oiling, greasing, painting of tank from inside with rubber paint after properly desmantling each assembly and refixing the same as required.	Each	247.00
26.16	Painting of desert cooler with two coats of rubber paint inside of water tank and two coat of synthetic enamelled paint on both side of cooler body, fan body, grills etc.after cleaning with sand paper, complete in all respect as required.	Each	428.00
26.17	Replacement of cooler pads (heavy) set of 3 no. of size 25" x 27"	Each	100.00
26.18	P & F Brass float valve of weighing approx. 250 gm, 8" long rod,PVC ball of 4" dia. For desert coler as required.	Each	227.00
26.19	P & F adjustable M.S.grill 20/22 gauge of size approx. 24" x 26" including painting etc. as required.	Each	314.00

Item No.	Description	Unit	Rate (Rs.)
26.20	P & F aluminium blade for 20" desert cooler fan as required.	Each	221.00
26.21	P & F outer/inner threaded PVC nipple 1/2" dia and 2" long	Each	13.00
26.22	P & Replacement of pvc pipe of 1/2" size for vertical pump of desert cooler as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	31.00
26.23	P & replacement of shaft for vertical pump of desert cooler as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	EACH	67.00
26.24	Spray painting of ceiling fan of size 900/1200/ 1400/ 1500 mm with two coats of white/ brown enamelled paint after cleaning with sand paper. Filling etc. as required.	Each	154.00
26.25	P & replacement of 4 nos. supporting legs of 20" fan motor with rubber pads of desert cooler as required.Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	147.00
26.26	P & replacement of high quality pvc distribution ' T 'and 3 no. elbow for cooler	Each	23.00
26.27	P & F ISI marked commercial plywood 4.0 mm thick including cutting, hardwares etc. as required.	SQ.Mtr.	281.00
26.28	Labour Charges for fixing of desert cooler in windows including handling of cooler upto desired location, making electrical/water connections, testing etc. as required.		
26.28.1	Ground floor	Each	74.00
26.28.2	First floor	Each	120.00
26.28.3	Second floor	Each	154.00
26.29	P & F of ISI marked vertical pump suitable for 20" desert cooler including making connection testing etc. as required.		
26.29.1	ISI marked vertical pump	Each	542.00
26.3	P & F of submercible pump set suitable for 18/24 "Desert coolers.	Each	308.00
26.31	P & F of submercible pump set suitable for 36 "Desert coolers.	Each	675.00

Item No.	Description	Unit	Rate (Rs.)
26.32	P & F fan motor suitable for 20" desert cooler including making connection testing etc. as required.		
26.32.1	with copper winding Motor ISI Marked	Each	3510.00
26.32.2	with Aluminium winding Motor ISI Marked	Each	2025.00
26.33	Rewinding of Heavy duty Exhaust fan motor including all necessary material, The motor is to be wound taking no. of coils, turns and pitch as it was originally wound with required size super enamelled wire with 'E' class insulation material and making connections etc. as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.		
26.33.1	300/ 380 mm sweep	Each	783.00
26.33.2	450 mm sweep	Each	1016.00
26.33.3	600 mm sweep	Each	1429.00
26.34	Rewinding of 400 mm table fan/pedestal fan motor including all necessary material, The motor is to be wound taking no. of coils, turns and pitch as it was originally wound with required size super enamelled wire with 'E' class insulation material and making connections etc. as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	425.00
26.35	Rewinding of single phase motor of 1400 RPM including all necessary material and of the same characteristics as original with required size of super enamelled wire 'E' class insulation material and testing etc. as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.		
26.35.1	0.25 H.P. To 0.50 H.P.	Each	915.00
26.35.2	0.75 H.P. To 1.0 H.P.	Each	1256.00
26.35.3	2.0 H.P.	Each	2073.00
26.36	Rewinding of three phase squirrel cage induction motor of 1400 to 2800 RPM including all necessary material and of the same characteristics as original with required size of super enamelled wire 'E' class insulation material and testing etc. as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.		
26.36.1	3.0 H.P.	Each	3400.00
26.36.2	5.0 H.P.	Each	4220.00
26.36.3	7.5 H.P.	Each	4941.00
26.36.4	10.0 H.P.	Each	6292.00
26.36.5	12.5 H.P.	Each	7622.00
26.36.6	15.0 H.P.	Each	9648.00



Item No.	Description	Unit	Rate (Rs.)
26.37	Rewinding of motor of desert cooler pump with super enamelled copper wire, 'E ' class insulation material including removing,refixing,testing etc. as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	250.00
26.38	Rewinding of motor of desert cooler fan with super enamelled copper wire, 'E ' class insulation material including removing,refixing,testing etc. as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	891.00
26.39	Providing and replacement of heating element of blower type heat convector as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	120.00
26.40	Providing and replacement of heating element rod of radiation type heat convector as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	114.00
26.41	Providing and replacement of Superior quality Chrome plated reflector of radiation type heat convector as required.Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.		
26.41.1	single rod	Each	134.00
26.41.2	double rod	Each	160.00
26.42	Supplying and charging of fresh refrigerant and testing of performance of air conditioner/ fridge/ water cooler of following capacity including capillary and strainer/ filter.		
26.42.1	1.0 TR Window/ Split A.C.	Each	1738.00
26.42.2	1.5 TR Window/ Split A.C.	Each	2407.00
26.42.3	2.0 TR Window/ Split A.C.	Each	3076.00
26.42.4	25/50 / 40/80 Ltr. Water cooler	Each	1872.00
26.42.5	60/120 Ltr. Water cooler	Each	2140.00
26.42.6	150/150 Ltr. Water cooler	Each	2541.00
26.42.7	165 Ltr Refrigerator	Each	1404.00
26.42.8	200/210 Ltr Refrigerator	Each	1939.00
26.42.9	280/310 Ltr Refrigerator	Each	2340.00

Item No.	Description	Unit	Rate (Rs.)
26.43	Replacement of defective compressor by company repaired compressor as per OEM recommendations of following gadgets including testing etc. as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.		
26.43.1	1.0 TR A.C.	Each	10698.00
26.43.2	1.5 TR A.C.	Each	12035.00
26.43.3	2.0 TR A.C.	Each	12703.00
26.43.4	25/50 / 40/80 Ltr. Water cooler	Each	5951.00
26.43.5	60/120 Ltr. Water cooler	Each	7956.00
26.43.6	150/150 Ltr. Water cooler	Each	8625.00
26.43.7	165 Ltr Refrigerator	Each	3544.00
26.43.8	200/210 Ltr Refrigerator	Each	4279.00
26.43.9	280/310 Ltr Refrigerator	Each	4613.00
26.44	P & Replacement of condensing/ cooling coil of copper fins for following capacity A.C./ Water cooler/ Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.		
26.44.1	1.0 TR A.C.	Each	3209.00
26.44.2	1.5 TR A.C.	Each	3610.00
26.44.3	2.0 TR A.C.	Each	4012.00
26.44.4	25/50 / 40/80 Ltr. Water cooler	Each	2407.00
26.44.5	60/120 Ltr. Water cooler	Each	2942.00
26.44.6	150/150 Ltr. Water cooler	Each	3209.00
26.44.7	165 Ltr Refrigerator	Each	1471.00
26.44.8	200/210 Ltr Refrigerator	Each	1738.00
26.44.9	286/310 Ltr Refrigerator	Each	2006.00
26.45	Servicing of 1.0/1.5/2.0 TR capacity Split/ Window type air conditioner	Each	669.00
26.46	P & Replacement of overload protection of A.C./ Water cooler as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	468.00
26.47	P & Replacement of thermostat of A.C./ Water cooler/fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	401.00

Item No.	Description	Unit	Rate (Rs.)
26.48	P & Replacement of selector switch of 1.0/1.5/2.0 TR A.C Fan as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	120.00
26.49	P & Replacement of starting relay of A.C/water cooler/fridge compressor as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	468.00
26.50	P & Replacement of door liner of 165/200 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	1203.00
26.51	P & Replacement of door liner of 286/310 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	1471.00
26.52	P & Replacement of main liner of 165/200 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	2006.00
26.53	P & Replacement of main liner of 286/310 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	2273.00
26.54	P & Replacement of door gasket of 165/200 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	234.00
26.55	P & Replacement of door gasket of 286/310 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	374.00
26.56	P & Replacement of PVC/ acrylic vegetable basket of 165/200 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	374.00
26.57	P & Replacement of PVC/acrylic vegetable basket of 280/310 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	374.00

Item No.	Description	Unit	Rate (Rs.)
26.58	P & Replacement of glass/acrylic cover for vegetable basket of 165/200 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	274.00
26.59	P & Replacement of glass/acrylic cover for vegetable basket of 286/310 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	308.00
26.60	P & Replacement of PVC /acrylic bottle supporter of 165/200/286/310 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	140.00
26.61	P & Replacement of aluminium bottle supporter of 165/200/286/310 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	160.00
26.62	P & Replacement of PVC./acrylic freezer door of 165/200 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	334.00
26.63	P & Replacement of PVC./acrylic freezer door of 286/310 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	401.00
26.64	P & Replacement of door handle of 165/200/286/310 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	301.00
26.65	P & Replacement of lamp of Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	33.00

Item No.	Description	Unit	Rate (Rs.)
26.66	P & Replacement of PVC/acrylic chiller tray of 165/200 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	294.00
26.67	P & Replacement of PVC/acrylic chiller tray of 286/310 Ltr. Fridge as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	328.00
26.68	P & Replacement of fridge lock complete as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	207.00
26.69	Spray painting of complete fridge (inside and outside ) of 165/ 200 Ltr. Capacity.	Each	1404.00
26.70	Spray painting of complete fridge (inside and outside ) of 286/310 Ltr. Capacity.	Each	1538.00
26.71	P & Replacement of fan motor of evaporator/ condensor complete as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	2073.00
26.72	S & F of capacitor of 230V/ 275V, 50Hz rating of plastic casing and terminals -Lugs or copper wire.		
26.72.1	Starting capacitor		
26.72.1.1	20-30 micro farad	Each	134.00
26.72.1.2	40-60 micro farad	Each	177.00
26.72.1.3	60-80 micro farad	Each	233.00
26.72.1.4	80-100 micro farad	Each	294.00
26.72.1.5	100-120 micro farad	Each	308.00
26.72.1.6	120-150 micro farad	Each	361.00
26.72.2	Running capacitor		
26.72.2.1	2.5/3.15 micro farad	Each	47.00
26.72.2.2	4.0 micro farad	Each	56.00
26.72.2.3	6.0 micro farad	Each	72.00
26.72.2.4	8.0 micro farad	Each	82.00
26.72.2.5	10.0 micro farad	Each	95.00
26.72.2.6	15.0 micro farad	Each	127.00
26.72.2.7	20.0 micro farad	Each	206.00
26.72.2.8	25.0 micro farad	Each	229.00

Item No.	Description	Unit	Rate (Rs.)
26.73	P & Replacement of plastic/metallic sheet condensor holder suitable for ceiling fan/ exhaust fan /motor etc complete as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.	Each	23.00
26.74	Rewinding of single phase/3phase submersible motor including all necessary material and of the same characteristics as original with required size of super enamelled wire 'E' class insulation material and testing etc. as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.		
26.74.1	0.5 H.P. To 1.0 H.P.	Each	3610.00
26.74.2	2.0 H.P.to 3.0 HP	Each	6285.00
26.74.3	Above 3.0 HP to 5.0 HP	Each	8291.00
26.74.4	From7. 5 HP to 10.0 HP	Each	10296.00
26.75	Repairing of submersible pump of with replacement of broken impellers ,diffuser,bush/bearing set , oil seal complete with testing etc. as required. Replacement of material or components shall be use as per guidelines of OEM of original product. All the scrap material should be retained by the contractor.		
26.75.1	0.5 H.P. To 1.0 H.P.	Each	2541.00
26.75.2	2.0 H.P.to 3.0 HP	Each	3945.00
26.75.3	Above 3.0 HP to 5.0 HP	Each	5349.00
26.75.4	From7. 5 HP to 10.0 HP	Each	6686.00

### CHAPTER : E-27 MISCELLANEOUS ITEMS

Note 1 The items related to Discom's must confirm last latest approved GTP and specifications of Discom's and relevant ISS and IECs.

Note 2 The makes of different items must be approved by Discom's/ RE (Electrical), RHB, Jaipur.

Note 3 The latest specification of different items can be seen on Discom's sites.

Item No.	Description	Unit	Labour Rate	Complete Rate
27.1	Supply and erection of 7.5 Mtr. "AB-1" type sub-station structure fabricated from M.S. Angle 65 × 65 × 6 mm with bracing of M.S. Flat 50 × 6 mm including excavation of pits of size 1 × 1 × 1.25 meter (as per specification & drawing approved by Nigam) Steel Wt. 350 Kg. Each structure.	Each	770.00	20900.00
27.2	Supply and erection of 6.0 Mtr. "AB-1" type sub-station structure fabricated from M.S. Angle 65 × 65 × 6 mm with bracing of M.S. Flat 50 × 6 mm including excavation of pits of size 0.9 × 0.9 × 1 meter (as per specification & drawing approved by Nigam) Steel Wt. 280 Kg. Each structure.	Each	660.00	17600.00
27.3	Supply and erection of 5.8 Mtr. "AB-1" type sub-station structure fabricated from IAS M.S. Angle 65 × 65 × 6 mm with bracing of M.S. Flat 50 × 6 mm including excavation of pits of size 0.9 × 0.9 × 1 meter (as per specification & drawing approved by Nigam) Steel Wt. 250 Kg. Each structure.	Each	550.00	15400.00
27.4	Supply and erection of 4.3 meter long "C" type beam fabricated from ISA M.S. Angle 65 × 65 × 6 mm with bracing of M.S. Flat 50 × 6 mm on "AB" and AB structure with Nut & Bolt 5" dia (as per specification & drawing approved by Nigam) Steel Wt. 195 Kg. Each structure.	Each	440.00	14300.00
27.5	Supply and fixing of double break without EB Isolator on existing bracket complete in all respect as required including hardware nut, bolts & washer etc. complete in all respect as per latest specifications of Discoms.			
	33 KV (with 18 × 24 KV Post Insulator) 630 Amp.	Set	1650.00	43164.00
27.6	Supply and fixing of lightening arrestors on the existing brackets in all respect as required including hardware, nut, bolt & washer etc. for O&M works complete in all respect as per latest specifications of Discoms.			
27.6.1	33 KV Sub-station type (30KV 10 KA Sub-station Class)	Set	440.00	19795.00
27.6.2	11 KV Sub-Station type ( 9 KV 10 KA Station Class	Set	165.00	12100.00
27.6.3	11 KV Feeder type	Set	165.00	2750.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.7	Constrn. of 33/11 KV Transformers plate form 2.4 × 2.4 × 2.0 Mtrs. including excavation in all type of soil up to the depth of 900 mm, foundation concrete in C.C. - 1 : 5 : 10 for 150 mm thickness brick masonry in cement mortar of mix. 1:8 with top of the plate form finished with 100 mm layer of C.C. 1:2:4 alongwith 2 Nos. M.S. Rails 90 Pounds of 2.4 Mtr. length each, alongwith cement plaster - 20 mm thick of mix ration 1 : 6, on all the exposed surfaces of the plate form - complete in all respect.	Each	4400.00	22000.00
27.8	Constrn. of 33 KV Kiosk/VCB Plate form 3.0 × 1.3 × 1.3 Mtrs. Including excavation in all type of soil up to the depth of 900 mm, foundation concrete in C.C. - 1 : 5 : 10 for 150 mm thickness, stone masonry in cement mortar of mix. 1:8 with top of the plate form finished with 100 mm layer of C.C. 1:2:4 including fixing of foundation bolts and cement plaster - 20 mm thick of mix ration 1 : 6, on all the exposed surfaces of the plate form - complete in all respect.	Each	1650.00	7700.00
27.9	One H/w with 3 Disc insulator (120KN) for Panther	Set	440.00	4070.00
27.10	Supply and laying/stringing of Bus bar with ACSR and jumber connection using tie rod, 11 KV insulator string, required hardware, PG clamps/T-clamps etc., as per requirement including Y-connection at bus bar jumpering point complete in all respect as per latest specifications of Discoms.			
27.10.1	PG Clamp for ACSR Panther to Panther	Nos.	22.00	349.00
27.10.2	T/Clamp for Panther to Panther	Nos.	20.00	253.00
27.10.3	ACSR panther conductor	Mtr.	20.00	251.00
27.11	SITC of VCB out door type complete with accessories including use of special tools & conducting all pre commissioning tests before energisation, I etc. complete in all respect with erection & grouting of structure (excluding civil works). complete in all respect as per latest specifications of Discoms. The relays will be tested by Discom.			
27.11.1	36 KV VCB, 1250 Amp.	Set	1980.00	386997.00
27.12	SITC of 12KV VCB indoor type with one incomer of 630Amp. and two outgoing of 630 Amp. each complete with accessories including use of special tools & conducting all pre commissioning tests before energisation, etc. complete in all respect with erection & grouting of structure (excluding civil works). complete in all respect as per latest specifications of Discoms. (including CTs,PT with metering equipment )			
27.12.1	12 KV VCB, 630 Amp. (Indoor Type)	Set	3960.00	1243000.00



Item No.	Description	Unit	Labour Rate	Complete Rate
27.13	SITC of 33 KV oil filled current / potential transformers on supporting structure including wiring and conducting all pre commissioning tests before energisation, including making necessary terminal connections complete in all respect as per latest specifications of Discoms. ( The CT/PT set will be tested by Discom). The work include installation of structure and foundation as per latest Discom specifications.			
27.13.1	33KV CT (1 Set of 3 Nos.) 240-120-60/5A-5A	Set	1650.00	176000.00
27.13.2	33KV CT (1 Set of 3 Nos.) 400-200-100/5A-5A	Set	1650.00	198000.00
27.13.3	33KV PT, 33 KV/110 V	Set	550.00	99918.00
27.13.4	11KV CT (1 Set of 3 Nos.) 300-150-100/5A-5A	Set	990.00	126500.00
27.13.5	11KV PT, 11 KV/110 V	Set	440.00	38577.00
27.13.6	11KV RVT, 11 KV/110 V	Set	440.00	40150.00
27.14	SITC of control and relay panel including checking of wiring and conducting all pre commissioning tests before energisaion, satisfactory operation of all equipment existing thereof complete in all respect as per latest specifications of Discoms.			
27.14.1	33 KV Control Panel Feeder Type	Set	8800.00	200750.00
27.14.2	33 KV Control Panel Transformer Type	Set	11000.00	259122.00
27.14.3	11KV Control & Relay Panel for 3 MVAR Capacitor Bank and breaker.	Set	19800.00	482240.00
27.15	SITC of 33/11 KV, 5 MVA star delta transformer on existing platform with one bucholdg, MOG, winding and oil temperature indicator complete in all respect as per latest specifications of Discoms including making necessary connection etc. ( The Transformer will be tested by Discom).	Nos.	8800.00	4074428.00
27.16	SITC of 33/11 KV, 3.15 MVA star delta transformer on existing platform with one bucholdg, MOG, winding and oil temperature indicator complete in all respect as per latest specifications of Discoms including making necessary connection etc. ( The Transformer will be tested by Discom).	Nos.	7700.00	3293103.00
27.17	SITC of dry type maintenace free 110 V DC ,120 AH capacity battery set inclduing making necessary connection complete in all respect as per latest specifications of Discoms.	Set	4400.00	244302.00
27.18	SITC of battery charger of 120 AH, 110 V DC inclduing making necessary connection complete in all respect as per latest specifications of Discoms.	Set	1320.00	100595.00
27.19	Supply and fixing of X-15 type structure for isolator made of M.S. Angle of size 75×75×6 mm for main and 65×65×6 mm M.S. Angle for bracing including execution of pit of required size complete in all respect as per latest specification of JVVNL approximate weight 150 Kg.	Set	550.00	13354.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.20	SITC of 12 KV outdoor type breaker including foundation and installation structure complete in all respect as per latest Discom specifications and makes.	Set	16500.00	237226.00
27.21	<b>Bus Duct : Supply, testing &amp; commissioning of TPN 4 wire busduct for indoor installation IP42 with Electrolytic grade alm. Bus bars of suitable rating, with PVC sleeves, SMC support insulators, CRCA sheet enclosure minimum 3mm. Thick with 2 coats of primer and 2 coats over backed epoxy paint, 2 nos. Glearth bus bonded to GI enclosure, including connection at both ends, with at least 10 Nos. right angle bends (cost of which to be included at rate). Bus duct shall be designed to withstand 33 KA/1 sec short circuit test. All other features as per technical specs and data sheet and conductors (A1) of following sizes.</b>			
27.21.1	Busduct 1600 A Neutral 1 No. 100 × 10 mm. Phase 3 Nos. 100 × 10 mm.	Mtr.	880.00	11869.00
27.21.2	Busduct 1250 A Neutral 1 No. 100 × 10 mm. Phase 3 Nos. 100 × 10 mm.	Mtr.	770.00	8905.00
27.22	SITC of 3 MVar capacitor bank set including capacitors foundation and installation structure complete in all respect as per latest Discom specifications.	Set	33000.00	556375.00
27.23	Supply and fixing of Auto source change over pannel of 2 mm thick sheet, fitted with two contactors of 400 A capacity. It should be automatically switch over from one source to other or as per direction of RE (Electrical). The pannel must facilitated with two incoming and two outgoing sources.	Nos.	1980.00	61600.00
27.24	Supply & installation of LT Piller Box <b>as per latest specification of Discoms</b> to be fixed in Brick masonry using cement mortar of ratip 1:6 the work include supply of brick & cement mortar by the contractor. 400 Amp.	Nos.	1595.00	38500.00
27.25	S/F of following accessories of Transformer			
27.25.1	Bucholz relay with shut off valve	Each	550.00	3300.00
27.25.2	Silica gel Breather	Each	110.00	660.00
27.25.3	Dial Type Temperature Gauges	Each	110.00	792.00
27.26.4	Magnetic Oil level Gauge ( MOG)	Each	110.00	2640.00
27.26.5	HT CABLE Box (in place of bushing)	Each	550.00	2640.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.27	<p>Supply &amp; fixing of outdoor / indoor 1600 KVA, 33/433 KV, 3 Phase, 50 Hz, core type, double wound, HV/LV Connected in Delta/Star, vector group Dyn11, with off load tapping swith having tapping +5% to -5% on HV Side, with first filling to Transformer oil, generally conforming to IS; 2026, complete with standard fitting and accessories. Cooper wound Transformer having no load loss 2.5 kw and load loss 16 kw (maximum) as per JVVNL requirement with accessories(As per Direction of site Engineer) like LV Cable Box, Buchholz Relay, Oil Temp. indicator, Marshalling Box, Winding temp. indicator, Magnetic Oil Level Gauge &amp; HV Cable Box complete are in all respect as per JVVNL sepcification with following details:</p> <ol style="list-style-type: none"> <li>1. Maximum Ambient Air Temperatur - 50 Degree Centgrate</li> <li>2. Type of colling - ONAN</li> <li>3.Maximum Temperature Rise:               <ol style="list-style-type: none"> <li>a) Top Oil (by Thermometer) - 45 Degree Centgrate</li> <li>b) Winding (by Resistance) - 50 Degree Centgrate</li> </ol> </li> <li>4. Percentage Impedance at 75 Degree Centgrate at rated current &amp; for Principal tapping (HV-LV) - 6.25% (Subject to tolerance as per ISS)</li> <li>5. Reactance at rated current &amp; rated Frequency (HV-LV)-6.169%</li> <li>6. Percentage No load current               <ol style="list-style-type: none"> <li>a) at rated voltage &amp; Frequency-1.5%</li> <li>b) at 12.5% over fluxing -3.0 %</li> </ol> </li> <li>7. Max Flux Density- 1.69 Tesla</li> <li>8. Insulation Level:               <ol style="list-style-type: none"> <li>A) Separate Source poer frequency voltage withstand:                   <ol style="list-style-type: none"> <li>a) HV winding - 70 kV rms</li> <li>b) LV winding - 3 kV rms</li> </ol> </li> <li>B) Induced over voltage withstand:                   <ol style="list-style-type: none"> <li>a) HV winding - 66 kV Induced</li> <li>b) LV winding - Twice the rated voltage applied across LV terminals</li> </ol> </li> </ol> </li> </ol>	Each	15000.00	1450000.00
27.28	SITC of VCB Indoor type with controle panel complete in all respect including required CTs, PTs, relays and other accessories including use of special tools & conducting all pre commissioning tests before energisation complete in all respect with erection & grouting of structure (excluding civil works). As per latest specifications of Discoms. The relays will be tested by Discom.			
27.28.1	36 KV VCB, 800 Amp. (Transformer Type)	Each	3000.00	1050000.00
27.28.2	36 KV VCB, 800 Amp. (Feeder Type)	Each	3000.00	1050000.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.29	Supply & erection of 12.8 m long lattice tower (565 Kg approx.) made of 65×65×6 mm MS angle with 50×6 mm flat for bracing with 33 KV top hamper including excavating of pit and back filling of soil in length. The pole shall be treated with two coats of primer and two coats of aluminium paint/ enamel paint (as per specification of JVVNL). For angle tower made of M.S. angle 50×50×6 mm instead of MS flat add of 10% extra. The tower must be grouted as per JVVNL norms with cement concret works.	Each	5500.00	33000.00
27.30	<p><b>MAIN CUBICAL PANEL :- Providing fixing testing and commissioning of Kiosk type weather proof outdoor main cubical panel size 1500 × 1250 mm × 500 mm (app.) made out of 14 guage MS sheet front back side openable duly hinged doors with locking arrangement by providing both side hold draft and all required hardware. The cubical should be dust and vermin proof followed by two coats of enamel paint in desired colour. The cubical should be counted with angle iron frame of size 50 × 50 × 6 mm and 1500 mm legs duly painted. Frame be grouted 750 mm below ground level with cement concrete 1:3:6 in 150 × 150 × 750 mm and providing brick masonry along angle iron frame above ground level with a provision of hinged doors with locking arrangements. The panel shall be in sections comprised as follows :-</b></p> <p><b>FIRST SECTION :-</b></p> <p>(1) Provisions for JVVNL supply connections with 1 No. 3 phase energy meter.</p> <p>(2) Provision of 100/5 or 60/5,0.5 class, 15 VA CT with required shapes and length of 25 mm × 3mm copper bus bars and clamps to house the C.T. and making connections etc.</p> <p>(3) P/F 100 amp Wickman type HRC fuse links with fuse open type (FF/Siemens/L&amp;T).</p> <p>(4) Providing and fixing 6 mm thick bakelite sheet electric grade for above items.</p> <p>(5) A wiremesh of required size should also be provided on the door to take meter reading.</p> <p><b>SECOND SECTION :-</b></p> <p>(1) Providing and fixing 1 (ONE) No. 415 V TPN combination double break HRC switch fuse unit 125 amp. rating for incoming supply with HRC fuses 100 amp rating (BCH/L&amp;T/EE).</p> <p>(2) P/F 3 Nos. copper bus bars 25 mm × 3 mm as required length duly covered by heat shrinkable sleeves with busbar supporters.</p> <p>(3) P/F 4 (FOUR) Nos. of 415 TPN combination double brak switch fruse unit 63 amp. rating with HRC fuses (EE/L&amp;T/BCH) for outgoing cable and maing connections etc. should also have a provision/ space for two Nos. of switches as above.</p>			

Item No.	Description	Unit	Labour Rate	Complete Rate
	<p>(4) P/F 3 NOs. RYB indicator resistance type compete with lamp (Takaic/ACWS)</p> <p>(5) P/F MV danger Plate of size 200 × 110 mm made of aluminium sheet 20 gauge.</p> <p>(6) Providing 2 Nos. earth terminals including lugs and hardware only inter connection with 8 SWG bars copper wire.</p> <p>(7) Inter connection of main busbar to each out going switch to cable terminal shall be 7/18 PVC copper wire duly crimped with Al lugs.</p> <p>(8) Cable terminations shall be on 8 mm × 100 mm bakelite strip fixed at backside of the panel with hardware and spring washer.</p>	Each	1100.00	31900.00
27.31	<p><b>FEEDER PILLAR :-</b></p> <p>Providing &amp; fixing testing &amp; commissioning of kiosk type weather proof outddoor feeder pillar box made of 14 gauge M.S. Sheet size 600mm × 450mm × 37mm (App.). This shall comprise following items :-</p> <p>a) Providing and fixing of incoming 1 No. 415 V TPN combination double break HRC fuse switch unit - 32 Amp. with HRC fuse (BHC/ L&amp;T/ EE Make).</p> <p>b) Providing and fixing 6 Nos. 250 V A.C. single pole MCB 5 Amp. (Load contact/ standard with mounting channel for outgoig cables of 6 Nos. 10 Sqmm.)</p> <p>c) Providing and fixing of 1 No. of neutral bus bar of 20 mm × 3 mm copper with support for incomming and out going connections.</p> <p>d) Providng and earth terminals with hardware and connecting earth wise.</p> <p>e) Making connections in the feeder pillar of the main and load side cable in the SFU and the MCBs complete in all respect i.e. providing lugs/ crimping etc.</p> <p>f) Providing and fixing bakelite sheet 6 mm thick electric grade and mounting all the acess less on it.</p> <p>g) Providing and fixing 1 No. MV danger notice plate on both side 200 × 150 mm of Al. sheet 20 gauge. The pillar box shall be front and back side openable.</p> <p>h) Duly hinged doors with locking arrangements with providing along with angle iron frame the complete feeder pillar as above.</p>	Each	275.00	5500.00
27.32	Supply and fixing of Distribution transformer structure with the provision for collection and discharge of oil from transformer's seting to ground through G.I. Pipe and sump tray under DT including RS joist and other still items including G.I. Pipe and sump tray as per approved drawing and BOQ of JVVNL including necessary foundation as per specification.			
27.32.1	2 Pole DT Structure	Each	8800.00	88000.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.32.2	4 Pole DT Structure	Each	11000.00	137500.00
27.33	SITC of 12 KV VCB out door incoming type complete with accessories including use of special tools & conducting all pre commissioning tests before energisation, I etc. complete in all respect with erection & grouting of structure (excluding civil works). complete in all respect as per latest specifications of Discoms. The relays will be tested by Discom.			
	12 KV VCB, 1260 Amp.	Set	5500.00	330000.00
27.34	SITC of 12 KV VCB out door outgoing type complete with accessories including use of special tools & conducting all pre commissioning tests before energisation, I etc. complete in all respect with erection & grouting of structure (excluding civil works). complete in all respect as per latest specifications of Discoms. The relays will be tested by Discom.			
	12 KV VCB, 630 Amp.	Set	5500.00	275000.00
27.35	Maintenance and operation of existing 40 watt fluorescent lamp fixtures and other their accessories including main switch, brackets, clamp, acrylic diffusers, canpoy, reflectors etc. with material using spares of category i.e. PVC insulated copper wire for internal wiring, copper wound ballast, condenser, starter holder starter, side holder, fluorscent lamp 40 watt. (Cat I) PVC insulation tape, PVC insulated solid aluminum conductor 1.5 sqmm for making connections including line jumber maintenance using PVC insulated, single core 16 sqmm aluminum cable etc. all material of Cat-I and of make approved by RE, RHB, ISI marked.	Nos.		55.00
27.36	Maintenance and operation of existing 250/150/70 watt HPSV luminair fixtures/ Decorative Lights and their accessories including main switch brackets, clapms, acrylic, diffusers, canopy, reflectors etc. with material using spares of category-I. PVC insulated copper wire for internal wireing copper wound ballast, condenser, electronic ignitor, porcelain, terninal block, clamps, gasket, die cast body etc. 250/150 watt HPSV/70 watt lamp Cat-I its lamp holder. PVC insulation tape, PVC insulated solid aluminum conductor 2.5 sqmm for making connections including line jumper maintenance using PVC insulated, single core 16 sqmm aluminum cable etc. all material of Cat-I and of approved by RE, RHB, ISI marked.	Nos.		160.00
27.37	Fixing of new fluorescent lamp fixture of 40 watt including brackets provided by RHB in position including wiring / connection on existing poles, to be operate and taken in maintenance as per terms and conditions (labour charge only).	Nos.		69.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.38	Fixing of new HPSV luminair fixturez of 150 watt including brackets provided by RHB in position including wiring / connection on existing poles, to be operated and taken in maintenance as per terms and conditions (labour charge only).	Nos.		158.00
27.39	Supply and fixing 33kV pin insulator with GI Pin as per latest Discom specification & Discom approved make.	Each	15.00	603.00
27.40	Supply and fixing of cross arms made out from 100 × 50 × 6mm MS channel complete in all respect as required including nuts and bolts and clamp as per Discom specification etc. as required 1.8 m long	Each	50.00	1560.00
27.41	Supply and fixing of 33 KV 'V' type cross arms made of MS channel on the existing poles complete including all necessary nut and bolt etc. with clamps as per Discom specification	Each	30.00	534.00
27.42	<b>Safety &amp; Mesurement Equipments</b> Rubber Hand Gloves	Pairs		281.75
27.43	<b>Replacement of following faulty items/ Consumable items of DG Set</b>			
27.43.1	Oil Filter of 75/80KVA DG Sets	Nos.		2620.00
27.43.2	Diesel filter of 75/80KVA DG Sets	Nos.		2490.00
27.43.3	Lubricant oil	Ltrs.		420.00
27.43.4	180 AH Lead Acid Battery	Nos.		18000.00
27.43.5	RYB Indication	Nos.		350.00
27.43.6	Diesel Pipe	Nos.		550.00
27.43.7	Canopy Lock	Nos.		650.00
27.43.8	DG Pannel Relay	Nos.		1250.00
27.43.9	RPM Meter	Nos.		5500.00
27.43.10	Fuel Strainer	Nos.		270.00
27.43.11	Stop Solenoid	Nos.		6800.00
27.43.12	Fan Belt	Nos.		1250.00
27.43.13	Fuel Injection Pump Repair	Nos.		18000.00
27.43.14	Coolent	Ltr.		395.00
27.43.15	VMR D2	Nos.		2400.00
27.43.16	4 Pole, 130 A , Contractor with NO/NC	Nos.		8600.00
27.43.17	CSENEX-I 101 -S-D-C-H 110 V DC Relay	Nos.		25200.00
27.43.18	JRV 161 A/B/C 110 V DC Auxiliary Relay	Nos.		18450.00
27.43.19	Transformer Panel Annunciator 24 Windows	Nos.		35700.00
27.43.20	PROM	Nos.		15200.00
27.43.21	AVR(auto voltage regulator)	Nos.		2300.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.44	Refilling of fire fighting cylinder ABC Powder Type 4 KG.	Nos.		450.00
27.45	Refilling of fire fighting cylinder CO2 Type 4.5 KG.	Nos.		150.00
27.46	Replacement of Burnt wiring of TRF Panels feeder panels and AMF Panels with Suitable size PVC insulated copper conductor	Job		5000.00
27.47	Regularly operation and maintenance of electronics pole mounting dusk down photo cell timer, clock type timer, ON-OFF panel 63/100 amp rating main switch by required replacement all defective accessories which are burnt, broken and missing such as air break, contractor, 3 pole MCCB, Single Pole MCCB, solar plate, electronic/micro controller, copper strip lead wire insulator, hard ware up to supply sources and also regularly maintain log sheet of time ON-OFF and must be intimate to site incharge/engineering incharge & if any type of need from JVVNL immediate to inform related office and any type required help to take them 1) For 63/100 Amp rating (3-phase)	Each per Month		585.00
27.48	Regularly operation and maintenance of manual main switch operated ON-OFF & including all needful replacement by defective , burnt , and broken accessories such as kitkat fuse , handle unclip fuse wire HRC fuse copper strip connecting rode etc maintain log sheet and time to time intimate to site incharge / Engineer in charge & any type of need from JVVNL immediate to inform related office and type required help to taken them 0.32 Amp Switch/100 amp switch/200 amp switch.	Each per Month		360.00
27.49	Regularly operation and maintenance of existing LED lights (20-25 watt, 30-40 watt, 80-90 watt, 110-120 watt and 40W/60W LED Post Top fixture with replacement of defective accessories as per direction of engineering incharge	Each per Month		70.00
27.50	Regularly operation and maintenance of existing High mast lights (12.5/16/30 mtr) high power LED Flood Light 120 W/160W/200 W & Panel with replacement of defective accerious as per direction of engineering incharge.	Each per Month		1551.00



Item No.	Description	Unit	Labour Rate	Complete Rate
27.51	Providing & Laying P.V.C. / XLPE insulated & P.V.C. sheathed Armoured Aluminium cable confirming to IS:1554 P-I / IS :7098 P - I of 1.1 KV with H4- Grade electrolytic aluminium conductor confirming to IS 8130 of purity >99.6 %, round / flat strip armouring of cables, Inner / outer sheath confirming to IS:5831 in existing RCC / Hume / Stoneware / PVC pipe/ open duct/cable trench / Cable tray(with cable tie) including testing etc. as required of following size. OEM must have it's own in house NABL accredited Laboratory for testing procedure as per IS:10810.For additional technical parameters of product / work refer Annexure 'A' attached with this BSR			
27.51.1	4CX185 Sq. MM	Mtr.		1446.00
27.51.2	4CX120 Sq. MM	Mtr.		962.00
27.51.3	4CX95 Sq. MM	Mtr.		784.00
27.51.4	4CX70 Sq. MM	Mtr.		627.00
27.52	SITC of Automatic boom barrier shall be consisting of following specifications. Barrier Front Design: Round Barrier, Colour : Silver/Grey Colour, PARKI Electromechanical Drive ,Mechanism 3-6 meters boom arm Illuminated, Boom Arm (Red/Green) ,Opening Speed : 1.5 Sec Reverse on Obstacle Detection , intelligent control mechanism, Automatic Fault Detection Arrow , Led Indication on barrier body (Red/Green) ,Duty Cycle 100 %, IP Rating : IP 55, RS 485 Communication complete in all respect.make is to be approved by department.	Each		125400.00
27.53	Buy back for street light luminaire on existing bracket. Fixture shall have street light suitable for replacing 1x36 W / 70 W/ 150 W / 250 W Sodium lamps, fixture			
27.53.1	up to 36 Watt T/L Fixture	Each		100.00
27.53.2	up to 70/150/250 Watt Sodium Light	Each		200.00
27.54	SITC of Outdoor LED sign board with LOGO on size of min. 24*8 feet including sub component :- ACP sheet of 3 MM thickness, Acrylic sheet of 3 MM rising of 2.5 inches with male and female option . Best quality LED modules with three year warranty having 170 degree viewing angle with 100 LM with complete water and dust proofing . MS angle and iron framing etc as required	Sets		207000.00
27.55	SITC of outdoor LED Round Board with LOGO (name in hindi) of 8 feet Dia size on MS square pipe of 20 feet length . CP acrylic Rounded Board on MS Square pipe of 1*1 (20 feet length ) 3 mm acrylic 3 make 3630 series vinyl on acrylic or polycarbonate MS tubes ACP support LED drivers and iron framing etc. as required	Sets		99100.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.56	SITC of outdoor LED sign board (name in hindi ) on size of min. 15*4 feet including sub component :- ACP sheet of 3 MM thickness, Acrylic sheet of 3 MM rising of 2.5 inches with male and female option . Best quality LED modules with three year warranty having 170 degree viewing angle with 100 LM with complete water and dust proofing . MS angle and iron framing etc. as required	Sets		72200.00
27.57	Supply, installation, testing and commissioning of Monitoring software video surveillance all channels real-time live monitoring simultaneously The VMS shall support client applications including System client, Web client, Video wall management client and mobile client, The VMS shall support login by user name and password. It shall also manage all user information, permissions, license, operation information and system information, The VMS shall support unified time synchronization among all devices in the system and daily user and maintenance information management, The video recording management shall support several types of storage device such as DAS, NAS, IPSAN, direct storage etc. It shall enable centrally management of NVR, storage devices offering video searching, playback, managing and downloading, The video recording management shall support several types of storage device such as DAS, NAS, IPSAN, direct storage etc. It shall enable centrally management of NVR, storage devices offering video searching, playback, managing and downloading, Shall have Network management server which regularly acquires the status of video devices such as NVR, Network camera, storage boxes and running status of servers of system, Shall have Network management server which regularly acquires the status of video devices such as NVR, Network camera, storage boxes and running status of servers of system, Shall have an Alarm management server which provides alarm events and maintains the logs of alarm management. It shall also receive I/O alarms triggered by alarm host such as recorder, camera and so on. IT shall also be responsible to trigger linked actions like push alarm notification to clients, sending e mail, calling presents in PTZ, video wall linkages etc., Shall have an Alarm management server which provides alarm events and maintains the logs of alarm management. It shall also receive I/O alarms triggered by alarm host such as recorder, camera and so on. IT shall also be responsible to trigger linked actions like push alarm notification to clients, sending e mail, calling presents in PTZ, video wall linkages etc.	Per channel		9555.00
		Per channel		9555.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.58	8ch Network Video Recorder- Connect Up to 8 IP Cameras, Dual OS, Up to 8 Megapixels Resolution, HDMI and VGA independent outputs provided, HDMI Video output at up to 4K (3840 × 2160) resolution , VGA upto 1920 × 1080, Support H.265, MJPEG, Incoming Bandwidth 80 Mbps, 4 SATA Hard Disks, ANR Technology, 4 SATA interfaces for 4 HDDs and capacity of each HDD upto 6TB, 3× USB at least 1 × USB with 3.0, Alarm I/O 16/4, RS-485, RS-232, 2 RJ-45 10 /100/1000 Mbps self-adaptive Ethernet interface, Multiple network monitoring: Web viewer, CE, FCC, BIS certified.	Nos.		14700.00
27.59	16ch Network Video Recorder- Connect Up to 16 IP Cameras, Dual OS, Up to 8 Megapixels Resolution, HDMI and VGA independent outputs provided, HDMI Video output at up to 4K (3840 × 2160) resolution , VGA upto 1920 × 1080, Support H.265, MJPEG, Incoming Bandwidth 160 Mbps, 4 SATA Hard Disks, ANR Technology, 4 SATA interfaces for 4 HDDs and capacity of each HDD upto 6TB, 3× USB at least 1 × USB with 3.0, Alarm I/O 16/4, RS-485, RS-232, 2 RJ-45 10 /100/1000 Mbps self-adaptive Ethernet interface, Multiple network monitoring: Web viewer, CE, FCC, BIS certified.	Nos.		30029.00
27.6	32ch Network Video Recorder- Connect Up to 32 IP Cameras, Dual OS, Up to 8 Megapixels Resolution, HDMI and VGA independent outputs provided, HDMI Video output at up to 4K (3840 × 2160) resolution , VGA upto 1920 × 1080, Support H.265, MJPEG, Incoming Bandwidth 256 Mbps, 4 SATA Hard Disks, ANR Technology, 4 SATA interfaces for 4 HDDs and capacity of each HDD upto 6TB, 3× USB at least 1 × USB with 3.0, Alarm I/O 16/4, RS-485, RS-232, 2 RJ-45 10 /100/1000 Mbps self-adaptive Ethernet interface, Multiple network monitoring: Web viewer, CE, FCC, BIS certified.	Nos.		36750.00
27.61	128ch Network Video Recorder-Connect Up to 128 IP Cameras, Dual OS, Up to 12 Megapixels Resolution, Two independent HDMI outputs of 4K resolution, 1 VGA output with output upto 1920 × 1080, Support H.265, MJPEG, Supports N+1 hot spare system, Supports RAID0, RAID1, RAID5, RAID6 and RAID10, Supports HDD hot swap, Supports Dual Power-Redundant, Incoming Bandwidth 512 Mbps, 16 SATA Hard Disks, ANR Technology, 16 SATA interfaces for 16 HDDs and capacity of each HDD upto 8TB, 4× USB at least 2 × USB with 3.0, Alarm I/O 16/8, RS-485, RS232, 4 RJ-45 10 /100/1000 Mbps self-adaptive Ethernet interface, Multiple network monitoring: Web viewer, CE, FCC, UL certified.	Nos.		426300.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.62	Supply Installation, Testing & Commissioning of Intel i7 4th Generation processor 3Ghz or latest, 4GB RAM with 2TB hard disk, DVD-RW/keyboard/optical mouse/LAN card/24" LED monitor. Minimum 6 USB ports. With pre-loaded licensed Windows 10 or latest software PC	Each		69818.00
27.63	SITC of 55" 4k Resolution or Better LED TV with remote control and wall mount unit / floor stand complete with making connections etc. as required.	Each		73500.00
27.64	Supply, Installation, Testing & Commissioning of 5 MP IR Fixed Dome Network Camera -1/2.7 inch Progressive Scan CMOS, 2592 × 1944 at 25fps, 2.8 mm Fixed lens, 0.003 Lux at F1.4, 0 Lux with IR on, ICR, ONVIF (PROFILE S, PROFILE G, PROFILE T), support H.265, H.264, MJPEG, 120db WDR, 3D Digital Noise Reduction, BLC, HLC, Three individually configurable stream, 12 VDC & PoE, IR range: 40m, Support on-board storage up to 256 GB (SD card not included), IP67, IK10, Edge Analytics- Line crossing detection, Intrusion detection, Motion detection, Region entrance detection, Region exiting detection, Scene change detection, Face capture, Video tampering, audio exception detection, False alarm reduction through human and vehicle target classification based on deep learning CE, FCC, BIS certified	Each		12495.00
27.65	Supply, Installation, Testing & Commissioning of 5 MP IR Fixed Bullet Network Camera -1/2.7 inch Progressive Scan CMOS, 2592 × 1944 at 25fps, 2.8 mm Fixed lens, 0.003 Lux at F1.4, 0 Lux with IR on, ICR, ONVIF (PROFILE S, PROFILE G, PROFILE T), support H.265, H.264, MJPEG, 120db WDR, 3D Digital Noise Reduction, BLC, HLC, Three individually configurable stream, 12 VDC & PoE, IR range: 40m, Support on-board storage up to 256 GB (SD card not included), IP67, Alarm 1 inputs, 1 outputs, Audio 1 inputs, 1 outputs, Edge Analytics- Line crossing detection, Intrusion detection, Motion detection, Region entrance detection, Region exiting detection, Scene change detection, Face capture, Video tampering, audio exception detection, False alarm reduction through human and vehicle target classification based on deep learning CE, FCC, BIS certified	Each		12789.00
27.66	Supply, Installation, Testing & Commissioning of 5 MP Varifocal Bullet Network Camera complete with all required specification and supporting accessories.	Each		33310.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.67	Supply, Installation, Testing & Commissioning of 8 MP Varifocal Bullet Network Camera complete with all required specification and supporting accessories.	Each		44100.00
27.68	Supply, Installation, Testing & Commissioning of 4MP IR Outdoor PTZ Camera-1/1.8" Progressive Scan CMOS, 2560 × 1440 at 25fps, 5.9 mm to 188 mm, 32× Optical, 16x digital zoom, Colour: 0.005 Lux at F1.5, B/W: 0.001Lux at F1.5, ICR, ONVIF, support H.265,MJPEG, 120 dB WDR, 3D Digital Noise Reduction, HLC, BLC, Defog, EIS, Triple individually configurable stream, 24 VAC & PoE, IR range: 200m, Pan: 360° endless, Tilt: From -15° to 90° (auto-flip), Pan Speed - from 0.1°/s to 160°/s, Pre-set Speed: 240°/s, Tilt Speedfrom 0.1°/s to 120°/s, present Speed: 200°/s, Pre-sets- 300, Alarm Input-2-ch alarm input, Alarm Output-1-ch alarm output, Audio-1 channel input & output, Support on-board storage up to 256 GB (SD card not included), IP66, Line crossing detection, intrusion detection, CE FCC BIS certified	Each		117600.00
27.69	Supply, Installation, Testing & Commissioning of 2MP IR Outdoor PTZ Camera with 32X Zoom complete with all required specification and supporting accessories.	Each		95550.00
27.70	Supply, Installation, Testing & Commissioning of ONVIF, IP based 4d PTZ control Joystick complete with all required specification and supporting accessories	Each		36750.00
27.71	All in All Maintenance to keep up Traffic-cam Cameras with Software & Hardware Complete in all respect.			
27.71.1	Cameras with Power Supply	Each per month		1128.00
27.71.2	Modules	Each per month		592.00
27.72	Replacement of existing transformer oil confirming to IS: 335 after removing of old oil and remove from site (old oil shall be retained by the contractor)	Ltr.		89.00
27.73	Charges for Testing of transformer oil for its viscosity and dielectric strength including collection of sample from top and bottom of the existing transformer tank and submission of test report complete with all T & P, labour etc as required	Per Job		2499.00
27.74	Charges for Collection , Filtration and dehydration of existing transformer oil with the help of high vaccum filtration machine and cleaning of core-coil assembly by hot oil for removal of sludge / dust particles etc. as required.	Per Ltr.		16.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.75	Supply and filling of fresh transformer oil as per IS: 335 in existing transformer along with submission of oil test report for its physical and chemical properties. The oil shall be clear and free from any suspended matter or sediments complete as required complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR .	Per Ltr.		105.00
27.76	AMC of invertor with Battery up to 2.00 KW capacity including chainging of water in Battery as required at H. O. Building.	Each		8917.00
27.77	AMC of LED Board with timer & wiring & led bulb etc as required for one year at H. O. Building.	Each		17185.00
27.78	AMC for the maintenance of electric panels and capacitor bank including repair & replacement of various parts. (as MCB, wire, relay, contractor, capacitor, air finishing fan as required) (For one year)	Each		16023.00
27.79	Annual Maintenance contract for all Water Cooler provided in the various floors of RHB, H.O. Building, Jyoti Nagar, Jaipur. The AMC includes all in all repair / replacement of various parts, motor, Condensor etc.(Excluding painting, body, frame work) The spare parts shall be replaced / repaired by its original make spares. Contractor will provide at least four services in year for dusting off checking, changing, oiling greasing etc. Overhauling shll be provided once in a year. The contractor will attend complaints immediately on breakdown calls. Replacement defective parts shall not be returened to RHB. For compressor should be replace only by original manufacture.	Each		3251.00
27.80	AMC of Expandable Digital Key telephone system panasonic make having 8 Junction. 24 KTS part and 16 analogne telephone port complete with (7 Nos. KTS 3 line display and 24 programable key, 11 KTS 1 line display and 8 programable keys and 10 nos. analogue speakertelephone.) instruments.	Nos.		65938.00
27.81	AMC of main EPBAX SIEMENS 1190 suitable for 120 extension	Nos.		72688.00
27.82	AMC of Telephone Instruments.	Nos.		144.00
27.83	AMC of Plan 1+1 Telephone instruments with adaptor	Nos.		752.00
27.84	AMC of Wiring MDF and DP boxes	Nos.		32450.00

Item No.	Description	Unit	Labour Rate	Complete Rate
27.85	Supply of high intensity retro reflecting type XI class C sign plate made out of 2mm thick aluminum sheet face to be fully covered with blue/green high intensity grade recto reflective sheet and logo/letters, boarder made of similar type of white sheeting after anodizing treatment of aluminum sheet. the back side is to be painted with epoxy gray paint. the plate is to be fix on 40X40X5 mm angle iron frame with the help of aluminum rebates	Sqm.		4500.00
27.86	Providing , fixing , testing and commissioning 25 mm diameter and testing assembly with gunmetal isolation valve gunmetal sight glass bypass valve and connected to 50mm drain line complete as required complete in all respect. All as per pre approved by Engineer in Charge.	Each		4201.00

**ANNEXURE "A"****Additional Technical parameters of products/ work**

- 1 PWD specifications for Electrical works -2012 (as amended upto date ), relevent IS codes, National Building Code / National Lighting Code / National electric Code / Indian Electricity Rules ( all as amended upto date ) shall be treated as part of this Electric BSR-2022 for the purpose of detailed specifications & clarifications, if any. Henceforth this BSR-2022 shall be considered as part of all contracts/ agreements, controversy / dispute in interpretation of BSR - 2022, decision of Chief Engineer (Electrical ) PWD Rajasthan shall be final & binding.
- 2 Agency must ensure to take prior approval for makes and models in writing before / at the time of layout by Engineer-in-Charge as per specifications with submitting TDS of products & all items used from any particular chapter of this BSR for any individual project, should be of same brand which is approved before execution as per availability.
- 3 OEM installation mannual guideline practice for execution of work at site must be followed by agency's engineer & verified by department.
- 4 Agency must ensure to execute all hidden items in presence of engineer-in-charge or site engineer. GPS Photo be attach at the time of measurment.
- 5 Tests of specified items below must be done in Government approved **OEM's authorised Labs** / outsource from government approved any authorised Lab by agency & no extra payment shall be made for below mentioned tests & procedures at all :-↓

Sr.No.	Item Name	Tests must be done in Government approved <b>OEM's authorised Labs</b> / outsource from government approved any authorised Lab as mentioned below :-
	↓	01 test if quantity in BOQ/execution is more then ↓
1	Wiring accessories ( switch / socket)	500 wiring points
2	Wiring accessories Regulator / dimmer	150 Nos.
3	PVC / Steel Conduit ( Total of all sizes)	500 wiring points
4	Sheet Steel Box/ M.S. Box/ GI Box/ PVC Box ( Total of all sizes)	300 Nos. ( Total of all sizes)
5	MCB/RCCB/Isolator ( 1 Pole to 4 Pole) ( Total of all amp rating)	150 Nos. ( Total of all amp rating)
6	Ceiling Fan/ Exhaust /fresh air/ wall mounting fan. (Total All sizes )	100 Nos. (Total All sizes )

- 6 Factory Inspection for testing of specified items below must be done in Government approved **OEM's authorised Labs** by departmental Engineer. Agency must ensure to make all necessary permission and arrangements for the visit & no extra payment shall be made for all this procedure :-↓



Sr.No.	Item Name	Factory inspection for testing in Government approved OEM's authorised Labs by department engineer as mentioned below :-
	↓	If quantity in BOQ/execution is more then ↓
1	Indoor LED Lighting fixture all types	200 Nos.
2	Outdoor LED Lighting fixture all types	50 Nos.
3	Lattice tower all sizes	5 Nos.
4	Air Conditioner	30 Nos.
5	Air cooling machine/ Chillers	5 Nos.
6	Street light pole	30 Nos.
7	Transformer	compulsary for Each quantity
8	High mast pole	compulsary for each if height is 16 Mtr. or more.
9	DG set	compulsary for Each quantity
10	RMU	compulsary for Each quantity
11	Bus Bar Trunking	compulsary for Each quantity

- 7 Any Items can be send for testing by Engineer-in-Charge in Government Authorised any approved Lab. Payment of testing charge shall be borne by department for that. Agency is liable to make all necessary arrangement to send the sample & get reports from lab without any extra cost.
- 8 Agency will submit minimum one year valid guarantee certificate of Product & Liability product genuineness purchase proof from OEM/ Authorised Dealer .
- 9 Appropriate/ Routine type Test Certificates/ reports related to IS code with liability standard warranty proof / certificate of product from OEM / authorised dealer shall be submitted by agency during / at the time of execution & duly verified by Engineer-in-Charge.
- 10 Agency must ensure to prepare the Satisfactory installation service report from OEM engineer for major items like DG set, Transformer, PSS, RMU, Fire fighting pumps, VRF/VRV, package AC units, ACB, High Mast ( 16 mtr. or higher ) etc. and submit the same in Engineer In charge office. All record be kept with agreement file.

**RHB BSR - 2024**

# **LIFT WORK**

**CHAPTER : 1**  
**LIFT/ELEVATORS**

Item No.	Description	Unit	Rate (Rs.)
1	<p>Supplying, installation, Testing and commissioning of the Passenger/Goods/Stretcher or Bed elevator With Machine room/Machine room less (MRL) as per IS:15665(Part 1, Part2/Sec 1 &amp; 2 and Sec 2) : 2000 having following main features:</p> <p>(a) Motor : Gearless lift drive comprising of high starting torque lift duty, 3 phase 440 Volts A.C. permanent magnetic synchronous motor of proper rating with high efficiency shall be used.</p> <p>(b) Operation / Drive : Microprocessor based /PLC, AC Variable Voltage variable frequency variable speed (V3F) vector control drive with encoder feedback closed loop system shall be used for lift car and door operation which shall be full collective selective operation hall call demand response, UP/Down hall stops, main, Up/Down contactor with overload and phase reversal relay and safety controls.</p> <p>(c) Traction Media: main hoist flat coated steel belt / rope. Thimbles of spring permit adjustment of uniform tension for smooth operation of the elevator Pulse belt monitoring system to avoid the cut in the belt.</p> <p>(d) Car : car should be with M S platform with bracings of adequate size and to sustain the impact load cabin plus passengers with safety</p> <p>factor of fire finished with emergency stop device, emergency alarm, mechanical door safety device, full length infra-red curtain in car door, facility of auto/attended mode. All car panel buttons and all floor switches must be with brail language as per lift act. Agency shall also provide &amp; install one No. 2 MP, IR, IP based ceiling mounted Dome Camera in the car complete with connecting cables &amp; accessories (To be connected with existing CCTV system in the Building) .The inspection unit shall be provided at the top of the car. for steel with Anti-skid</p>		

Item No.	Description	Unit	Rate (Rs.)
----------	-------------	------	------------

PVC/Granite/Wooden flooring and side panels should be of Stainless steel with hair line finish of sheet of grade 304 duty with S.S. handrails on all walls. Car ceiling shall be steel finish with aesthetic appearances with LED ceiling lights . Vanity Mirror on front inside wall, The size of the car shall be taken as per available lift well size and relevant BIS code of lifts. Car panel will also be of S S 304 grade

(e) Landing Doors: All landing door shall be fully automatic centre opening / telescopic made of hair line finish stainless steel grade 304 with key holes and infrared curtains with unlocking facility from outside. Ventilating slits as per engineer in charge.

(f) Emergency light: Appropriate rechargeable battery operated LED emergency light in the car and along with alarm switch shall be provided.

(g) ARD: Automatic rescue Device (ARD) shall be provided according to passenger capacity with SMF batteries of approved brands as per BSR.

(h) Audio-Visual Indication: Audio visual indication in the lift car, showing over loading such that doors kept open till excess load is removed.

(i) Scrolling Indicators: Digital scrolling indicator system for up-down arrow with floor position indicator shall be provided inside the car and at all stops/floors.

(j) Buffers: Spring buffers/PU Buffers shall be provided.

(k) Car Fan: ENERGY EFFICIENT Car fan/blower with automatic sleep timer shall be provided.

(l) Voice Annunciator: Voice annunciator with suitable music shall be provided in lift car.

(m) Self diagnostics system for operational and safety parameters shall be provided in control panel.

(n) Mechanical/Electronic over speed governor, door key holes in the floor doors, fireman switch shall be provided.

Item No.	Description	Unit	Rate (Rs.)
	<p>(o) Lift machine hoisting arrangement in the lift machine room, counter balance to promote smooth and economic operation complete with steel guide rails for the car &amp; counter weight, Trap Door, Lifting hooks as required and monkey ladders for lift pit should be provided by the agency along with all other steel structure works, foundations for the machine etc as required.</p> <p>(p) Permanent wiring in lift machine room and in lift well with providing and fixing of electrical distribution board complete with SP &amp; TP MCB's, proper numbers of light points, with LED fixtures, exhaust fan, 2 nos copper plate /chemical earthing with 8 SWG copper earth wire and plug points shall be provided by the agency. (Power supply of 3 phase 440 V shall be made available by department in lift machine room.)</p> <p>(q) Agency has to provide all working drawings and documents to comply latest BIS specifications and make proper liaison services for obtaining all necessary permissions.</p>		
1.1	6 passengers/408 Kg, 3 stops, rated speed adjustable up to 1.0 mtr /sec with 2 years comprehensive maintenance / DLP.	Job	1083180.00
1.2	8 passengers/544 Kg, 3 stops, rated speed adjustable up to 1.0 mtr /sec with 2 years comprehensive maintenance / DLP.	Job	1171920.00
1.3	10 passengers/680 Kg, 3 stops, rated speed adjustable up to 1.0 mtr /sec with 2 years comprehensive maintenance / DLP.	Job	1260700.00
1.4	13 passengers/884 Kg, 3 stops, rated speed adjustable up to 1.0 mtr /sec with 2 years comprehensive maintenance / DLP .	Job	1451800.00
1.4.1	Add extra per stop in the above rate for elevator up to 13 passenger and 10 stops.	Per Stop	60,000.00
1.4.2	Add extra additional for 11 stops to 20 stops	Per Stop	82,500.00
1.4.3	Add extra rated speed adjustable from 1.0 m/sec to 2.0 m/sec	Per Stop	9,100.00
1.5	15/16 passengers/1020/1088 Kg, 3 stops, rated speed Adjustable up to 1.0 mtr /sec with 2 years comprehensive maintenance.	Job	1734600.00
1.5.1	Add extra per stop in the above rate for elevator up to 15/16 passenger and 10 stops.	Per Stop	83,000.00
1.5.2	Add extra additional for 11 stops to 20 stops	Per Stop	60,000.00

Item No.	Description	Unit	Rate (Rs.)
1.5.3	Add extra for equivalent bed elevator in place of normal passenger elevator	Job	46,500.00
1.5.4	Add extra rated speed adjustable from 1.0 m/sec to 2.0 m/sec	Per Stop	11,200.00
1.6	20 passengers/1360 Kg, 3 stops, rated speed Adjustable up to 1.0 mtr /sec with 2 years comprehensive maintenance / DLP .	Job	2070500
1.6.1	Add extra per stop in the above rate for elevator up to 10 stops.	Per Stop	82,000.00
1.6.2	Add extra additional for 11 stops to 20 stops	Per Stop	65,000.00
1.6.3	Add extra for equivalent bed elevator in place of normal passenger elevator	Job	70,000.00
1.6.4	Add extra rated speed adjustable from 1.0 m/sec to 2.0 m/sec	Per Stop	11,000.00
1.7	Goods Elevator /1000 Kg, 2 stops, rated speed adjustable up to 1.0 mtr /sec with 2 years comprehensive maintenance / DLP .	Job	181080.00
1.7.1	Add extra per stop in the above rate for elevator up to 10 stops.	Per Stop	83,000.00
1.7.2	Add extra additional for 11 stops to 20 stops	Per Stop	65,000.00
1.8	Goods Elevator /1500 Kg, 2 stops, rated speed adjustable up to 1.0 mtr /sec with 2 years comprehensive maintenance / DLP .	Job	2145500.00
1.8.1	Add extra per stop in the above rate for elevator up to 10 stops.	Per Stop	82,500.00
1.8.2	Add extra additional for 11 stops to 20 stops	Per Stop	65,000.00
1.9	Deduct for Geared drive of all Elevator with machine room.		
1.9.1	Up to 13 passenger capacity	Job	46,500.00
1.9.2	Above 13 passenger capacity.	Job	70,000.00
1.10	Add extra for machine room less (MRL) in place of with machine room		
1.10.1	Up to 13 passenger capacity elevator	Job	50,000.00
1.10.2	Above 13 passenger capacity elevator	Job	75,000.00
1.11	Add Extra for all elevators with Honeycomb / moonrock finish S. S. car		
1.11.1	For car unit	Job	37,500.00
1.11.2	For landing doors	Per Stop	9,250.00

Item No.	Description	Unit	Rate (Rs.)
2	All in all comprehensive maintenance after defect liability period of the passenger /bed cum stretcher /goods elevator having various speed as per IS:15665(Part2/Sec 1 & 2 and Sec 2) : 2000 OEM guidelines and maintenance manual including car with all car accessories, hoist way accessories and complete with machine room accessories but excluding replacement of diffused battery bank of ARD system as per following details .		
2.1	6 Passenger, 408 Kg Elevator up to 5 Stops with Machine Room	Job P. Month	6,600.00
2.2	8 Passenger, 544 Kg Elevator up to 5 Stops with Machine Room	Job P. Month	7,100.00
2.3	10 Passenger, 680 Kg Elevator up to 5 Stops with Machine Room	Job P. Month	7,600.00
2.4	13 Passenger, 884 Kg Elevator up to 5 Stops with Machine Room	Job P. Month	8,600.00
2.5	15/16 Passenger, 1020/1088 Kg Elevator up to 5 Stops with Machine Room	Job P. Month	10,150.00
2.6	20 Passenger, 1360 Kg Elevator up to 5 Stops with Machine Room	Job P. Month	13,000.00
2.7	1000 Kg Goods Elevator up to 5 Stops with Machine Room	Job P. Month	10,000.00
2.8	1500 Kg Goods Elevator up to 5 Stops with Machine Room	Job P. Month	11,700.00
2.9	Add for AMC of all capacity lift from 6 stops to 10 stops	Job P. Month Per stop	300.00
2.10	Add for AMC of all capacity lift from 11 stops to 20 stops	Job P. Month Per stop	450.00
2.11	Add for AMC of all capacity lift above 20 stops	Job P. Month Per stop	750.00

**RHB BSR - 2024**

# **HORTICULTURE WORKS**



# HORTICULTURE WORK

## INDEX

CHAPTER NO.	DESCRIPTION	PAGE NO.
H-1	SUPPLY OF MANURE, INSECTICIDES, PLANTS, POTS, T & P ETC.	1-8
H-2	MAINTENANCE OF GRADENS	9-10
H-3	DEVELOPMENT OF GRADENS	11
H-4	MAINTENANCE OF ROADS SIDE PLANTATION	12
H-4	PLANTATIONS AND MAINTENANCE OF PLANTS ON ROAD SIDE FOR FIVE YEARS	13-14

**CHAPTER : H-1**  
**SUPPLY OF MANURE, INSECTICIDES, PLANTS, POTS, T & P ETC.**

Note : The rates are inclusive of all taxes etc. and for

Item No.	Description	Unit	Rate ( Rs.)
1.1	Supply of dry manure including loading unloading, transportation & stacking at site.		
1.1.1	Fram yard manure (organic).	Cum.	600.00
1.1.2	Compost	Cum.	650.00
1.1.3	Goat dungmanure.	Cum.	1200.00
1.1.4	Vermi Compost	Per 50 Kg	
		Bag	250.00
1.1.5	Neem Cake	Per 50 Kg	
		Bag	1250.00
1.2	Supply of Chemical Fertilizers at store in bags weighing not less than 50 kg. each including loading unloading & transporation etc.		
1.2.1	Urea	Per 50 kg.Bag	400.00
1.2.2	D.A.P.	Per 50 kg.Bag	1400.00
1.2.3	Super Phosphate.	Per 50 kg.Bag	350.00
1.2.4	Murrate of Photash.	Per 50 kg.Bag	450.00
1.2.5	Straw meal.	Per 50 kg.Bag	1080.00
1.2.6	Bone meal.	Per 50 kg.Bag	1800.00
1.2.7	Calcium Nitrate	Per 50 kg.Bag	2500.00
1.3	Supply & Stacking good earth at site complete including loading unloading & transporation with all lead and lift etc.	Cum.	175.00
1.4	Supply of Insecticides & Pesticides at store in dust / liquid form complete.		
1.4.1	Methyl Prathion 2%.	Per 25 kg. Beg	500.00
1.4.2	Karathion (Liquid).	Per 250 ml.	600.00
1.4.3	Metacid (Liquid).	Per Liter	444.00
1.4.4	Roger (Liquid).	Per Liter	325.00
1.4.5	Cholorophyriphos 20 Ec.	Per Liter	400.00
1.4.6	Bauiston 50 %.	Per 100 Grms.	120.00

**H - 2**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate ( Rs.)</b>
1.5	Supply of Graden Tools & Implements at store complete :		
1.5.1	Spade weighing 1.5 kg. with Handle.	Each	175.00
1.5.2	Khurpa weighing 500 gm with Handle.	Each	90.00
1.5.3	Gurvana weighing 800 gm. with Handle.	Each	108.00
1.5.4	Hedge Shear (kamani Steel)	Each	720.00
1.5.5	Secaetur	Each	360.00
1.5.6	Garden Rack with Handle.	Each	182.00
1.5.7	Pick - Axe.	Each	180.00
1.6	Supply of different sized pots at site store including loading unloading & transporatation etc. Complete :		
1.6.1	Cement pot 300 mm size	Each	140.00
1.6.2	Cement pot 350 mm size	Each	175.00
1.6.3	Cement pot 375 mm size	Each	225.00
1.6.4	Cement pot 450 mm size	Each	300.00
1.6.5	Cement pot 525 mm size	Each	500.00
1.6.6	Asbestos pot 350 mm size	Each	120.00
1.6.7	Asbestos pot 400 mm size	Each	200.00
1.6.8	Asbestos pot 450 mm size	Each	350.00
1.6.9	Asbestos pot 600 mm size	Each	600.00
1.7	Supply of different sized earthen pots at site/ store including loading unloading & transportation etc complete :		
1.7.1	Earthen pot 140 mm size.	Each	18.00
1.7.2	Earthen pot 225 mm size.	Each	30.00
1.7.3.	Earthen pot 300 mm size.	Each	43.00
1.7.4	Earthen pot 350 mm size.	Each	125.00
1.7.5	Earthen pot 225 mm size. (Kundi Shape)	Each	30.00
1.7.6	Earthen pot 300 mm size. (Kundi Shape)	Each	45.00
1.7.7	Earthen pot 350 mm size. (Kundi Shape)	Each	125.00
1.8	Supply of defferent sized lawn mower including transporation etc. as store complete :		
1.8.1	300 mm Size Hand Lawn Mower.	Each	4320.00
1.8.2	350 mm Size Hand Lawn Mower.	Each	4800.00
1.8.3	450 mm Size Hand Lawn Mower.	Each	6500.00
1.8.4	500 mm Size Hand Lawn Mower.	Each	7700.00
1.8.5	600 mm Size Hand Lawn Mower.	Each	8800.00
1.8.6	Electric Lawn Mower 16 EL (Superior Quality)	Each	27000.00
1.8.7	Electric Lawn Mower 18 EL (Superior Quality)	Each	33000.00
1.8.8	Electric Lawn Mower 21 EL (Superior Quality)	Each	36000.00
1.9	Supply of different size Tokaras / Tokaris etc. at store complete :		
1.9.1	Big Size (600 mm dia)	Each	140.00
1.9.2	Small Size (450 mm dia)	Each	90.00

**H - 3**

Item No.	Description	Unit	Rate ( Rs.)
1.10	Supply of P.V.C. hose pipe of heavy quality of different sizes at store including transportation etc complete:		
1.10.1	50 mm dia.	R.Mtr.	165.00
1.10.2	38 mm dia.	R.Mtr.	140.00
1.10.3	25 mm dia.	R.Mtr.	80.00
1.10.4	17 mm dia.	R.Mtr.	65.00
1.10.5	12.5 mm dia.	R.Mtr.	45.00
1.11	Supply of different varieties of tree / shrubs / climbers according to height and age of the plant at site including loading/ unloading & transportation etc. complete :		
1.11.1	Different flowering plants 900 mm to 1400 mm.	Each	50.00 to 140.00
1.11.2	Different varieties of shrubs 600 mm to 900 mm.	Each	25.00 to 160.00
1.11.3	Different varieties of climbers 900 mm to 1400 mm.	Each	48.00 to 144.00
1.12	Supply of different varieties of Bougainvillea in poly bags / earthen pots according to height growth & age of plant at site including loading. unloading & transportation etc. complete :		
1.12.1	Local variety of Bougainvillea 600 mm to 900 mm.	Each	25.00 to 60.00
1.12.2	Different varieties of Bougainvillea 600 mm to 900 mm.	Each	60.00 to 120.00
1.13	Supply of different varieties of Rose plants in polyethylene bags / earthen pots according to height. growth & age of the plant at site including loading, unloading & transportation etc. complete :		
1.13.1	Desi Rose / Root stock Plants / Ganganagri.	Each	40.00 to 50.00
1.13.2	Different varieties of Grafted Rose Plant.	Each	100.00 to 140.00
1.13.3	Different varieties of Ganganagari Rose Plant in poly bag	Each	80.00 to 125.00
1.13.4	Different varieties of Grafted Rose Plant in poly pot/earthen	Each	200.00 to 250.00
1.14	Supply of different varieties of Outdoor palms in polyethylene bags / earthen pots according to height. growth & age of the plant at site including loading. unloading & transportation etc. complete :		
1.14.1	Raffish Palm (height 600 mm to 900 mm)	Each	350.00
1.14.2	Desi Palm (height 600 mm to 900 mm)	Each	140.00

H - 4

Item No.	Description	Unit	Rate ( Rs.)
1.14.3	China Palm (height 600 mm to 900 mm)	Each	125.00
1.14.4	Arecca Palm many branches (Ht.1400 mm to 1800 mm)	Each	450.00
1.14.5	Bottle Palm (Ht.1400 mm to 2400 mm)	Each	700.00 to 900.00
1.14.6	Fox tail Palm (Ht.1400 mm to 2400 mm)	Each	900.00 to 1200.00
1.14.7	T Cycus (Ht.900 mm to 1400 mm)	Each	900.00 to 1200.00
1.15	Supply of different varieties of palms indoor plants in polyethylene bags / earthen pots according to height. growth & age of the plant at site including loading. unloading & transportation etc. complete :		
1.15.1	Desi Crotons.	Each	50.00 to 60.00
1.15.2	Selective Varieties of Crotons. (height 600 mm to 900 mm)	Each	70.00 to 100.00
1.15.3	Bangalore Crotons. (height 450 mm to 600 mm)	Each	250.00 to 2300.00
1.15.4	Rubber plants	Each	120.00 to 140.00
1.15.5	Daffen Bachia.(height 450 mm to 600 mm)	Each	100.00 to 250.00
1.15.6	Arecca Palm.(height 450 mm to 600 mm)	Each	200.00 to 400.00
1.15.7	Song of India. (height 450 mm to 600 mm)	Each	80.00 to 140.00
1.15.8	Aglonmia (height 450 mm to 600 mm)	Each	100.00 to 140.00
1.15.9	Drassina (height 450 mm to 600 mm)	Each	100.00 to 240.00
1.15.10	Singonium with Moss stick.(height 600 mm to 900 mm)	Each	125.00 to 250.00
1.15.11	Cycusseventa (50 mm to 75 mm dia)	Each	1200.00
1.15.12	Furcaria Gingetica (50 mm to 75 mm dia)	Each	900.00 to 1000.00
1.15.13	Different fycus plants tolaury 100 cm to 125 cm height	Each	800.00 to 1000.00
1.15.14	Different champa 125 cm to 214 cm height	Each	400.00 to 900.00
1.16	Supply of different varities of tree (neem,gulmohar, Cassia, alstonia, ashoka,etc.) according to height and age of the plant at site including loading/ unloading & transportation etc. complete :		
1.16.1	Different tree 900 mm to 1400 mm.	Each	50.00 to 100.00

**H - 5**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate ( Rs.)</b>
1.16.2	Different tree 1401 mm to 2400 mm.	Each	100.00 to 200.00
1.16.3	Different tree 2401 mm to 3000 mm.	Each	200.00 to 400.00
1.17	Supply of Various Items		
1.17.1	Jute Band (Sutali)	Per Kg.	140.00
1.17.2	Broom (Bamboo)	Per Kg.	50.00
1.17.3	Shednet (50% UV Sun Protected for Terrace, Garden, Green House, Balcony & Gardening Multipurpose Agronet)	Per Sqm	25.00
1.17.4	Shednet ( 75% UV Sun Protected for Terrace, Garden, Green House, Balcony & Gardening Multipurpose Agronet)	Per Sqm	30.00
1.17.5	Shednet (90% UV Sun Protected for Terrace, Garden, Green House, Balcony & Gardening Multipurpose Agronet)	Per Sqm	35.00
1.18	Supply and fixing of bird Ptotecting net made of 25mm,14 ply.HDPC wire	Per Sqm	100.00
1.19.1	Supply of different varieties of caladium blubs	Each	18.00
1.19.2	Supply of different varieties of amrilis lilly bulb	Each	25.00
1.19.3	Supply of tube rose bulbs	Each	12.00
1.19.4	Supply of hemaniths bulb	Each	28.00
1.19.5	Supply of Asiatic Lilly bulb	Each	30.00
1.19.6	Supply of oriental lilly bulb	Each	42.00
1.19.7	Supply of different variety of gladioli bulb	Each	18.00
1.20	Supply of flower Garlands & Flower petal's including transportation at site.(Complete)		
1.20.1	Merigold Garland A Class ( Big flowers) 2 feet long	Each	75.00
1.20.2	Merigold Garland B Class ( Small flowers) 1.5 feet long	Each	50.00
1.20.3	Green Garland ( Ashok Leaf) 2 feet long	Each	14.00
1.20.4	Rose Garland 1.5 feet long	Each	125.00
1.20.5	Jalusi Garland( VIP A Class) Double fold	Each	500.00
1.20.6	Jalusi Garland( VIP B Class) Single fold	Each	400.00
1.20.7	Mogra Garland 1.5 feet long	Each	125.00
1.20.8	Kunj Garland 1.0 feet long	Each	140.00
1.20.9	Rose petal's	Per Kg.	400.00
1.20.10	Merigold petal's	Per Kg.	250.00
1.20.11	Crisenthimum petal's	Per Kg.	300.00
1.20.12	Chandine flower	Per Kg.	300.00
1.20.13	Mogra Flower	Per Kg.	450.00

H - 6

Item No.	Description	Unit	Rate ( Rs.)
1.20.14	Kunj Flower	Per Kg.	475.00
1.21	Supply of Cut Flower at site including transportation Complete		
1.21.1	Tata Rose	Each	14.00
1.21.2	Carnation	Each	18.00
1.21.3	Gladioli	Each	20.00
1.21.4	Tube rose single	Each	12.00
1.21.5	Tube rose double	Each	14.00
1.21.6	Ilium Asiatic	Each	75.00
1.21.7	Ilium Oriental	Each	125.00
1.21.8	An thorium	Each	75.00
1.21.9	Arched Mix	Each	40.00
1.21.10	Zarbera	Each	20.00
1.21.11	Dasy	Each	25.00
1.21.12	Chrysanthemum	Each	20.00
1.21.13	Candytuft	Each	4.00
1.21.14	Aster	Each	6.00
1.21.14	Lotus	Each	40.00
1.22	Supply of Flower Bucket & flower Bunch at site including transportation ( Complete)		
1.22.1	Flower Bunch / Bucket ( 20 Roses)	Each	500.00
1.22.2	Flower Bunch / Bucket ( 30 Roses, Carnation)	Each	700.00
1.22.3	Flower Bunch / Bucket ( 7 Lily & 14 Roses)	Each	950.00
1.22.4	Flower Bunch / Bucket ( 10 Lily, 20 Roses & Carnation Mix)	Each	1800.00
1.22.5	Flower Bunch / Bucket ( 14 Lily )	Each	1650.00
1.22.6	Flat Flower Bucket ( 20 Mix Flower's)	Each	490.00
1.22.7	Flat Flower Bunch ( 25 Mix Flower's) lily Carnation Rose	Each	1200.00
1.22.8	Flower Bunch / Bucket (Small 14 Flower Stic)	Each	400.00
1.22.9	Flower Bunch / Bucket ( 10 Roses, 5 Carnation)	Each	350.00
1.22.10	Flower Bunch / Bucket ( 14 Roses)	Each	280.00
1.20	Hybrid Seasonal Plants of Flowring		
1.23.1	In P.B many branches (7"X8")	Each	32.00
1.23.2	In Tray (100 Plants)	Each	1000.00
1.23.3	Fully developed many branches Daheliya plant in pots (12" Pot's)	Each	140.00
1.23.4	Fully developed many branches Chrysanthemum (Guldaudi)		
	Plants Special varieties in pots (12" Pot's)	Each	125.00

Item No.	Description	Unit	Rate (Rs.)
1.23.5	Fully developed many branches Marigold in pots	Each	125.00
1.24	Ground Cover of various varieties		
1.24.1	Syngonium in P.B(7"X8") - 6"-1'	Each	60.00
1.24.2	Ribbon grass P.B (7"X8") - 6"	Each	50.00
1.24.3	Lalsaggin P.B(5"X5") - 6"	Each	12.00
1.24.4	Lenthra in P.B - 6"	Each	12.00
1.24.5	Vadali in P.B - 6"	Each	8.00
1.24.6	Jade Plant in P.B(7"X8") - 6"	Each	40.00
1.24.7	Pendanus in P.B(9"X11") - 1'	Each	85.00
1.25	Hedges of various varieties		
1.25.1	Golden duranta in P.B(5"X6") - 6"-1'	Each	20.00
1.25.2	Tecoma Goudichoudi in P.B(9"X11") - 2'	Each	80.00
1.25.3	Enarmia in P.B(5"X5") - 1'	Each	14.00
1.26	Diffrent varieties of Scented Plants		
1.26.1	Mogra in P.B(9"X11") - 1'	Each	80.00
1.26.2	Gardenia in P.B(9"X11") - 1'	Each	100.00
1.26.3	Juhi in P.B(9"X11") - 1'	Each	80.00
1.26.4	Kunj in P.B(9"X11") - 1'	Each	80.00
1.26.5	Madhukamini(Round Shaped dwarf variety) in P.B(9"X11") -1'	Each	125.00
1.26.6	Raat Rani in P.B(9"X11") - 2'-3'	Each	80.00
1.27	Ornamental Plants of different varieties		
1.27.1	Arucaria Plant in P.B(9"X11") - 1½'- 2'	Each	225.00
1.27.2	Sapleria variegated in P.B(9"X11") - 1'-2'		110.00
1.27.3	Money Plant in P.B(9"X11") - 1'	Each	80.00
1.27.4	Money Plant (with moss stick) In (12" Pot's) - 2'-3'	Each	300.00
1.27.5	Florodendon Plant in P.B(9"X11") - 1'	Each	100.00
1.27.6	Florodendon Plant in round shape pot (12" Pot's) 1½'- 2'	Each	285.00
1.27.7	Phonic Palm in P.B(14"x14") - 2'-3'		280.00
1.27.8	Ixora Palm Many branches at flowering stage in P.B(12"X12") - 2'-3'	Each	200.00
1.27.9	Ixora Chinesis in Pot (8" Pot's) - 6"-1'	Each	140.00
1.27.10	Silver Euca in P.B(9"X11") - 1'-2'	Each	100.00
1.27.11	Umbrella Palm in P.B(9"X12") - 2'	Each	90.00
1.27.12	Salem in Pot (12" Pot's) - 2'	Each	205.00



H - 8

Item No.	Description	Unit	Rate ( Rs.)
1.27.13	Canna variegated, yellow, red and pink etc. In P.B(8"X8") - 6"-1'	Each	40.00
1.27.14	Geranium in P.B(9"X11") - 1'	Each	85.00
1.27.15	Euphorbia Milii D.varieties in P.B(12"X2") - 1'-1½'	Each	140.00
1.27.16	Kalanchoe of Different varieties in P.B(8"X8") - 6"-1'	Each	125.00
1.27.17	Bamboo plant of Different varieties in P.B(12"X12") - 2'-3'	Each	210.00
1.27.18	Bamboo plant of Different varieties P.B(14"X14") - 4'-5'	Each	445.00
1.27.19	Nolinaplamin P.B(12"X12") - 1'-2'	Each	160.00
1.27.20	Mussaenda plant of many branches in P.B(12"X12") - 1½'-2½'	Each	180.00
1.27.21	Different varieties of Ficus plant in P.B(9"X11") - 2'	Each	125.00
1.27.22	Different varieties of Poinsettia in Fiber pot (10" Pot's) – 1'	Each	300.00
1.27.23	Spathiphyllum (Peace lily) in pot (8" Pot's) - 6"-1'	Each	125.00
1.27.24	Thuja Orientalis plant (12" Pot's) 1'-2'	Each	200.00
1.28	Different varieties of Shady plants		
1.28.1	Height 5'-6' (14"x14") Many Branches	Each	125.00
1.28.2	Height 7'-8' (18"x18") Many Branches Straight stem	Each	250.00

**CHAPTER : H-2**  
**MAINTENANCE OF GARDENS**

Note : The rates are inclusive of all taxes etc. and for estimation purpose only.

Item No.	Description	Unit	Rate (Rs.)
2.1	Maintenance of Lawns :		
2.1.1	Spreading of manure and good earth in required thickness (cost of manure and good earth to be paid separately).	Cum.	4.00
2.1.2	Irrigation of Lawns	Per Hect. Per day	1400.00
2.1.3	Uprooting weeds from the lawn plots and treched area after 10 to 15 days of its flooding with including disposal of uprooted vegetation.	100 Sqm.	150.00
2.1.4	Mowing manually / with power machines.		
(a)	Manually.	Per Hect.	1300.00
(b)	With power machines.	Per Hect.	700.00
2.1.5	Maintenance of shrubbary or Hedge cutting including disposal of rubbish with all leads & lifts.	100 Sqm.	390.00
2.1.6	Sweeping / Cleaning of Garden roads. Lawns & paths & disposal of all rubbish.	Per 100 Sqm.	1.85
2.1.7	Security of the Garden per gate for 24 hours in 3 shift with the Exilitary personss.	Per day (24 Hours)	25650.00
2.1.8	Maintenance / fitting of permanent ornamental pots / seasonal plots.		
(a)	Mixing earth and manure inproportion as specified or directed for pots.	Cum.	30.00
(b)	Filling and planting of sapplings and Watering of plots.	Per 100 Pots Per day.	80.00
2.1.9	Preparation of beds for bedging and shrubbary by excavating 60 cms. deep and trenching the excavated base to a further depth of 30 cms. refilling the excavated earth after breaking clods & mixing with manure in the ratio 8 :1 (8 parts of stacked valume of earth after reduction by 20 % one part of stacking valume of manure after reduction by 8% flooding with water filling with earth if necessary (cost of manure of extra earth to be paid for seperately).	Each	13.00

H - 10

Item No.	Description	Unit	Rate (Rs.)
2.2	Digging pits in ordinary soil & refilling the same with the excavated earth mixed with manure in the ratio of 2: 1 by volume (2 parts of stacked volume of earth after reduction by 20% 1 parts of stacked volume of manure after reduction by 8%) flooding with water and dressing including removal of surplus earth (Cost of manure or extra good earth if needed to be paid seperately) pit dia 60 cm x60 cm deep.	Each	13.00
2.3	Planting of annual sapplings watering in the bed.	Sqm.	0.70
2.4	Watering of Grup plantation at the bed.	Sqm.	0.11
2.5	Prefaration of Eding cutting lawn.	Sqm.	0.25
2.6	Group plantation in the bed specified place.	Sqm.	1.11

**CHAPTER : H-3**  
**DEVELOPMENT OF GRADENS**

Note : The rates are inclusive of all taxes etc. and for estimation purpose only.

Item No.	Description	Unit	Rate (Rs.)
3.1	Laying of lawns including ploughing levelling breaking of clods manuring & removal of stones etc.(Cost of manure or extra good earth to be paid seperately) Maintenance of lawns for 30 daysor more till the grass forms a thick lawns free from weeds & fit for mowing in the duration of planting if lawn die some where the contractor will replant it at his own cost.		
3.1.1	In rows 15 Cms. apart in either direction	100 Sqm.	1621.00
3.1.2	In rows 7.5 Cms. apart in either direction	100 Sqm.	2520.00
3.1.3	In rows 5 Cms. apart in either direction	100 Sqm.	3330.00
3.1.4	laying of selection No. 1 grass tiles (2 feet X 2 feet size) for development of garden including levelling of soil and spreading of mannure	Sqm	250.00
3.1.5	Maxican(Carpet) grass tiles (2'X2' size) for development of garden, including levelling of soil and spreading of manure	Sqm	400.00
3.1.6	Dugging of weedy soil from garden including loading and unloading of the soil and throwing it away out of the city	Cum	250
3.2	Renovating lawns including weeding cheeling the grass forking the ground top dressing with manure. Mixing the same with forked soil watering maintaing the lawns for 30 days or more till grass forms a thick lawns free from weeds & fit for mowing & disposal of rubbish as directed.	100 Sqm.	4300.00
3.3	Planting of trees / Shurbs / hedge & climbers plants at desired distance in a row & watering.		
(a)	Trees	100 Plants.	44.00
(b)	Shrubs/climbers	100 Plants.	22.00
(c)	Hedge	100 Plants.	8.80
3.4	Preparation of different sized beds as directed.	100 Sqm.	377.00

**CHAPTER : H-4**  
**MAINTENANCE OF ROADS SIDE PLANTATION**

Item No.	Description	Unit	Rate (Rs.)
4.1	Preparation of soil including cleaning & removing of unwanted shrubs removal of stones & garbage.	Per 100 Sqm.	100.00
4.2	Digging of pits size 60x60x60 cms. Including removal of stones. Manuring applicable of insecticides & watering atleast 15 litre per plant after planting.	Per Pit.	19.00
4.3	Loading & unloading of plants from Deptt. Nursery to site per km.	Per 1000 Plants.	100.00
4.4	Preparation of Thavala sizing 60 cms. Diameter & 10 cms. Deep once in a month.	Per Thavala .	0.65
4.5	Inter cultural operations hoeing & weeding etc. in 90 cms. Dia & 15 cms. Deep.	Per Plants.	0.80
4.6	Watering of plants with the own tanker i.e. at least 20 literwater for plant at one time.	Per Plants.	1.10
4.7	Transportation of tree guards from Depot to the plantation site including loading & unloading.	Per Tree Guard	10.00
4.8	Security of plants & fencing etc.	Per Plant Per Month	0.70
4.9	Pruning & trumming andcutting of old big trees on the road side The contractor will deposit the cut wood in the Deptt.	Per Tree	38.00
4.10	Maintenance of plants by the contractor including of pits/bids watering preparation of Thavala Hoeing weeding etc. & application of insecticieds etc. & security if the plant die during maintenance contractor has to replace same height plant at his own cost.		
(a)	Trees	Per Plant Per Month	19.00
(b)	Shrubs	Per Plant Per Month	10.00
(c)	Hedge	Per Sqm	86.30
(d)	Boungainvillea / Climbers	Per Plant Per Month	9.20

**CHAPTER : H-5**  
**PLANTATIONS AND MAINTENANCE OF PLANTS ON ROAD SIDE FOR**

**Note :** The rates are inclusive of all taxes etc. and for estimation purpose only.

Item No.	Description	Unit	Rate (Rs.)
5.1	Supply & Planting of shady plants ( Neem. Peepal, Goolar, Jamun, Imli or other specified) along road side including the following activities:-		
(i)	Preparation of soil including cleaning & removing of unwanted shrubs removal of stones & garbage.		
(ii)	Supply of plant at site of two years of age & height more than 1500 mm		
(iii)	Supply of dry manure(Farm yard manure organic)		
(iv)	Supply of Insecticides.		
(v)	Digging of pits size 60x60x60 cms. Including removal of stones. Manuring application of insecticides & watering at least 1.5 Liter per plant after planting		
(vi)	Half brick Circular tree guard in second class bricks, internal dia 1.25 meter and height 1.20 meter above ground and 0.20 meter above ground and 0.20 meter below ground. Bottom two courses laid dry and top three courses in cement mortar 1:6 ( 1 Cement : 6 Sand) and the intermediate courses being in dry honey comb masonry. As per design complete.		
(vii)	Watering to plants		
(viii)	Maintenance of plants by the contractor including pits, preparation of Thavala Hoeing weeding etc & application of insecticides etc. & security. If the plant die during maintenance contractor has to replace same height plant at his own cost.	Per Plant	1886.00
5.2	Supply & Planting of ornamental plants ( Kachnar, Amaltas, Gulmohar, Arjun, Kala, Siris, Jacranda etc. or other specified) along road side including the following activities :-		
(i)	Preparation of soil including cleaning & removing of unwanted shrubs removal of stones & garbage		
(ii)	Supply of plant at site of two years of age & height more than 1.50 Mtr.		
(iii)	Supply of dry manure( Farm yard manure organic)		

Item No.	Description	Unit	Rate (Rs.)
(iv)	Supply of Insecticides		
(v)	Digging of pits size 60x60x60 cms. Including removal of stones. Manuring application of insecticides & watering at least 1.5 liter per plant after planting.		
(vi)	Half brick Circular tree guard in second class bricks. Internal dia 1.25 meter and height 1.20 meter above ground and 0.20 meter below ground. Bottom two courses laid dry and top three courses in cement mortar 1:6(1 Cement : 6 Sand) and the intermediate courses being in dry honey comb masonry. As per design complete.		
(vii)	Watering to Plants.		
(viii)	Maintenance of plants by the contractor including pits. Preparation of Thaana Hoeing weeding etc. & application of insecticides etc. & security. If the plant die during maintenance contractor has to replace same height plant at his own cost.	Per Plant	2198.00
5.3	Planting & Maintenance of shrubs.		
	Planting of shrubs in central verge		
(i)	Preparation of soil including cleaning & removing of unwanted shrubs removal of stones & garbage.		
(ii)	Supply of plant at site like Bougainvillea & Kaner.		
(iii)	Supply of dry manure ( Farm yard manure organic)		
(iv)	Supply of Insecticides		
(v)	Digging of pits size 60x60x60 cms. Including removal of stones. Manuring application of insecticides & watering at least 1.5 liter per plant after planting.		
(vi)	Watering to Plants.		
(vii)	Maintenance of plants by the contractor including pits. Preparation of Thavala Hoeing weeding etc. & application of insecticides etc. & security. If the plant die during maintenance contractor has to replace same height plant at his own cost.	Per Plant	1069.00

**RHB BSR - 2024**

# **ROAD WORK**



# ROAD WORK

## INDEX

CHAPTER NO.	DESCRIPTION	PAGE
1	GENERAL EARTHWORK AND MISC. WORK	1-5
2	GRANULAR SUB-BASES, BASES (NON-BITUMINOUS)	6-9
3	BASES AND SURFACE COURSES (BITUMINOUS)	10-14
4	CEMENT CONCRETE PAVEMENT	15-16
5	PIPE CULVERTS	17-18
6	TRAFFIC SIGNS, MARKINGS AND ROAD APPURTENANCES	19-28
7	FOUNDATION AND SUPERSTRUCTURE	29-31
8	MAINTENANCE OF ROADS	32-33

**CHAPTER : R-1**  
**GENERAL EARTHWORK AND MISC. WORK**

Item No.	Description	Unit	Rate (Rs.)
1.1	Loading and Unloading of Lime, Aggregate, Stone Boulder, Brick Aggregate, Kankar, Building Rubbish, Crushed Slag, Stone for Masonry Work by Manual Means		
	(i) Loading of Earth, Sand, Moorum, Manure, Flyash by manual means including a lead upto 30 m	Cum	26.00
1.2	Clearing Grass and Removal of Rubbish Clearing grass and removal of rubbish up to a distance of 30 m outside the periphery of the area as per Technical Specification Clause 201.		
	By Manual Means	hectare	10125.00
1.3	Dismantling of Structures Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 m as per Technical Specification Clause 202.		
	(I) By Manual Means		
	(A) Lime Concrete	Cum	254.00
	(B) Cement Concrete	Cum	305.00
	(C) Reinforced Cement Concrete	Cum	842.00
	(II) By Mechanical Means		
	(A) Cement Concrete	Cum	310.00
	(B) Reinforced Cement Concrete	Cum	554.00
1.4	Dismantling Kerb Stones Dismantling kerb stones by manual means and disposal of dismantled material with all lifts and upto a lead of 1000 m as per Technical Specification Clause 202.	Running m	9.00
1.5	Dismantling of Fencing Dismantling of barbed wire fencing / wire mesh fencing including posts, foundation concrete, backfilling of pit by manual means including disposal of dismantled material with all lifts and upto a lead of 1000 m, stacking serviceable material and unserviceable material separately as per Technical Specification Clause 202.	Running m	37.00

Item No.	Description	Unit	Rate (Rs.)
1.6	Preparation of Foundation for Embankment Scarifying Existing Granular Surface to a Depth of 50 mm by Manual Means Scarifying existing granular surface to a depth of 50 mm and disposal of scarified material with a lift upto 3 m and leads upto 1000 m as per Technical Specification Clause 301.4.	Sqm	14.00
1.7	Preparation of Foundation for Embankment Scarifying Existing Bituminous Surface to a Depth of 150 mm by Mechanical Means Scarifying the existing bituminous road surface to a depth of 150 mm and disposal of scarified material with a lift upto 3 m and lead upto 1000 m as per Technical Specification Clause 301.4.	Sqm	7.00
1.8	Construction of Embankment with Material Obtained from Roadway Cutting Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of Tables 300.1 and 300.2 as per Technical Specification Clause 301.5	Cum	40.00
1.9	Deduct if excavated earth as per item No. 1.11(II) is used and pushed for filling in embankment.	Cum	3.00
1.10	Construction of Embankment with Material Obtained from Borrow Pits Construction of embankment with approved material obtained from borrow pits with a lift upto 1.5 m, transporting to site, spreading, grading to required slope and compacting to meet requirement of Tables 300.1 and 300.2 with a lead upto 1000 mtr as per Technical Specification Clause 301.5	Cum	116.00
1.11	(i) Excavation in Cutting in Soil by manual means with lead upto 50 m Excavation for roadway in soil using manual means for carrying of cut earth to embankment site with a lift upto 1.5 m and lead upto 50 m as per Technical Specification Clause 302.3 (for petty work qty upto 100 Cum)	Cum	95.00
	(ii) Excavation in Soil with Dozer with lead upto 100 m Excavation for roadway in soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 m, including trimming bottom and side slopes in accordance with requirements of lines, grades and cross-sections.	Cum	18.00

Item No.	Description	Unit	Rate (Rs.)
	(iii) Excavation in Soil using Hydraulic Excavator and Tippers with disposal upto 1000 m Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross-sections, and transporting to the embankment location with a lift upto 1.5 m and lead upto 1000 m as per Technical Specification Clause 302.3	Cum	31.00
1.12	Excavation in Marshy Soil Excavation for roadway in marshy soil with hydraulic excavator 0.9 cum bucket capacity including cutting and loading in tippers and disposal with a lift upto 1.5 m and lead upto 1000 m, trimming of bottom and side slopes in accordance with requirements of lines, grades and cross-sections as per Technical Specification Clause 302.3.6.	Cum	36.00
1.13	Removal of Unsuitable Soil with Disposal upto 1000 m Removal of unsuitable soil including excavation, loading and disposal upto 1000 m lead but excluding compaction ground supporting embankment subgrade replacement by suitable soil, which shall be paid separately as per Clause 303.5.2 as per Technical Specification Clause 302.3.11	Cum	31.00
1.14	(i) Excavation in ordinary Rock by manual means Excavation in ordinary rock using manual means including loading in a truck and carrying of excavated material to embankment site with a lift upto 1.5 m and lead upto 50 m as per Technical Specification Clause 302.3.5.	Cum	148.00
	(ii) Excavation in Ordinary Rock with Dozer with lead Excavation for roadway in ordinary rock by deploying a dozer D-50 including cutting and pushing the cut earth to site of embankment upto a distance of 100 m (average lead 50 m), trimming bottom and side slopes in accordance with the requirements of lines, grades and cross-sections with lift upto 1.5 m.	Cum	22.00

Item No.	Description	Unit	Rate (Rs.)
	(iii) Excavation in Ordinary Rock using Hydraulic Excavator and Tippers with disposal upto 1000 m Excavation for roadway in ordinary rock with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, transporting to embankment site with a lift upto 1.5 m and lead upto 1000 m, trimming bottom and side slopes in accordance with requirements of lines, grades and cross-sections as per Technical Specification Clause 302.3.5	Cum	45.00
1.15	(i) Excavation in Hard Rock (requiring blasting) with disposal upto 1000 m Excavation for roadway in hard rock (requiring blasting) by drilling, blasting and breaking, trimming of bottom and side slopes in accordance with requirements of lines, grades and cross-sections, loading and disposal of cut rock with a lift upto 1.5 m and leads upto 1000 m as per Technical Specification Clause 302.3.5	Cum	155.00
	(ii) Excavation in Hard Rock (blasting prohibited) Excavation for roadway in hard rock (blasting prohibited) with rock breakers including breaking rock, loading in tippers and disposal with a lift upto 1.5 m and lead upto 1000 metres, trimming bottom and side slopes in accordance with requirements of lines, grades and cross- sections as per Technical Specification Clause 302.3.5 (A) Mechanical Means	Cum	208.00
	(iii) Excavation in Hard Rock (controlled blasting) with disposal upto 1000 m Excavation for roadway in hard rock with controlled blasting by drilling, blasting and breaking, trimming of bottom and side slopes in accordance with requirements of lines, grades and cross-sections, loading and disposal of cut rock with a lift upto 1.5 m and leads upto 1000 m as per Technical Specification Clause 302.3.5	Cum	242.00

Item No.	Description	Unit	Rate (Rs.)
1.17	Compacting Original Ground		
(i)	Compacting original ground supporting embankment Loosening, Levelling and Compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150 mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density as given in Tables 300.1 and 300.2 for embankment construction as per Technical Specification Clause 301.4.1.	Cum	12.00
(ii)	Compacting original ground supporting subgrade Loosening of the ground upto a level of 300 mm below the subgrade level, watered, graded and compacted in layers to meet requirement of Tables 300.1 and 300.2 for subgrade construction as per Technical Specification Clause 303.5.2.	Cum	34.00
1.18	Removal of blown sand including taking out and disposal of excavated material with lead up to 50Mtr. and lift up to 1.5 Mtr disposed soil to be levelled and neatly dressed.	P. Cum	12.00
1.19	Construction of embankment with approved material obtained from borrow pits with a lift upto 1.5 m, transporting to site, spreading, grading to required slope and compacting to meet requirement of Tables 300.1 and 300.2 as per Technical Specification Clause 301.5		
	(i) with a lead upto 50m	P.Cum	63.00
	(ii) with a lead 50m to 250m	P.Cum	96.00
	(iii) with a lead 250m to 500m	P.Cum	101.00
	(iv) with a lead 500m to 1000m	P.Cum	115.00
1.20	Dagbelling.		
	(i) 100 x 100mm	100 Mtr.	113.00
	(ii) 200 x 100mm	100 Mtr.	141.00
1.21	Compacting soil at optimum moisture content with power		
	(i) 95%	P.Cum	12.00
	(ii) 97%	P.Cum	13.00
	(iii) 100%	P.Cum	14.00

**CHAPTER : R-2**  
**GRANULAR SUB-BASES, BASES (NON-BITUMINOUS)**

Item No.	Description	Unit	Rate (Rs.)
2.1	Granular sub-base with close graded material table 400-1 Plant Mix Method Construction of granular sub-base by providing well graded material, mixing in a mechanical mix plant at OMC, carriage of mixed material to work site upto lead of 1000 m spreading in uniform layers with motor grader on prepared surface and compacting with smooth wheel roller to achieve the desired density, complete as per Technical Specification Clause 401		
	(i) For Grading I Material	Cum	881.00
	(ii) For Grading II Material	Cum	857.00
	(iii) For Grading III Material	Cum	805.00
2.2	Water Bound Macadam Sub-base/base		
	1) WBM Grading 1 Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with three wheel 80-100 kN static roller in stages to proper grade and camber, applying and brooming, stone screening/binding materials to fill-up the interstices of coarse aggregate, watering and compacting to the required density Grading 1 as per Technical Specification Clause 404.		
	(A) By Manual Means	Cum	865.00
	(B) By Mechanical Means	Cum	738.00
	2) WBM Grading 2 Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with smooth wheel roller 80-100 kN in stages to proper grade and camber, applying and brooming, stone screening/binding materials to fill-up the interstices of coarse aggregate, watering and compacting to the required density grading 2 as per Technical Specification Clause 405.		
	I Using Hand Broken Aggregate		
	(A) By Manual Means	Cum	913.00
	(B) By Mechanical Means	Cum	786.00
	II Using Using Crusher Broken Aggregate		
	(A) By Manual Means	Cum	1240.00
	(B) By Mechanical Means	Cum	1112.00

Item No.	Description	Unit	Rate (Rs.)
3)	WBM Grading 3 Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with smooth wheel roller 80-100 kN in stages to proper grade and camber, applying and brooming, stone screening to fill-up the interstices of coarse aggregate, watering and compacting to the required density Grading 3 as per Technical Specification Clause 405 (using crusher broken aggregate only)		
	(A) By Manual Means	Cum	1236.00
	(B) By Mechanical Means	Cum	1109.00
2.3	Water Bound Macadam with Crushable Screenings		
1)	WBM Grading 1 Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with three wheel 80-100 kN static roller in stages to proper grade and camber, applying and brooming, crushable screening to fill-up the interstices of coarse aggregate, watering and compacting to the required density Grading 1 as per Technical Specification Clause 405.		
	(A) By Manual Means	Cum	805.00
	(B) By Mechanical Means	Cum	678.00
2)	WBM Grading 2 Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with three wheel 80-100 kN static roller in stages to proper grade and camber, applying and brooming, crushable screening to fill-up the interstices of coarse aggregate, watering and compacting to the required density Grading 2 as per Technical Specification Clause 405.		
	I Using Hand Broken Aggregate		
	(A) By Manual Means	Cum	751.00
	(B) By Mechanical Means	Cum	624.00
	II Using Using Crusher Broken Aggregate		
	(A) By Manual Means	Cum	1078.00
	(B) By Mechanical Means	Cum	951.00



Item No.	Description	Unit	Rate (Rs.)
3)	WBM Grading 3 Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with three wheel 80-100 kN static roller in stages to proper grade and camber, applying and brooming, crushable screening to fill-up the interstices of coarse aggregate, watering and compacting to the required density Grading 3 as per Technical Specification Clause 405 (using crusher broken		
	(A) By Manual Means	Cum	1115.00
	(B) By Mechanical Means	Cum	987.00
2.4	Wet Mix Macadam Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mixer (Pug Mill), carriage of mixed material by tipper to site, laying in uniform layers in sub-base/base course on a well prepared sub-base and compacting with smooth wheel roller of 80 to 100kN weight to achieve the desired density including lighting, barricading and maintenance of diversion, etc as per Tables 400.11 & 400.12 and Technical Specification Clause 406.		
	By Mechanical Means with 1 km lead	Cum	1117.00
2.5	Supply of graded broken hard stone aggregates free from Katcha stuff, deleterious and organic matter, as per IRC/MORTH Specifications, including stacking as per the Standard Specifications at crusher :		
	(i) 63mm to 45mm Crusher broken	Cum	540.00
	(ii) 53mm to 22.4mm Crusher broken	Cum	567.00
	(iii) 13.2mm/11.2mm Crusher broken	Cum	428.00
	(iv) 6.7mm Crusher broken	Cum	618.00
	(v) 13.2mm Crusher-broken screening (IRC Grade 'A')	Cum	817.00
	(vi) 11.2mm Crusher-broken screening (IRC Grade 'B')	Cum	380.00

Item No.	Description	Unit	Rate (Rs.)
2.6	Providing Laying Spreading and Compacting Specified graded sand, gravel (crushed stone) as per Table-400-1, 400-2 or any other course material as per design mix, as per CBR in sub base course including premixing the material at OMC in wet mix plant, carriage or mixed material spreading in uniform layers with motor grader F.E. leader on a prepared base and compacting with vibratory roller to achieve desired density (as per I.S. 2720) including all material labour, machinery, lighting guarding, cerrading and maintenance of diversion complete (MoRTH specification : Clause 401) by mechanical means.		
(i)	For Grading -I Material	Cum	882.00
(ii)	For Grading -II Material	Cum	859.00
(iii)	For Grading -III Material	Cum	845.00
(iv)	For Grading -IV Material	Cum	845.00
(v)	For Grading -V Material	Cum	894.00
(vi)	For Grading -VI Material	Cum	869.00
2.7	Construction of Granular sub-base by providing well graded material, spreading in uniform layers with Tractor Mount Grader on prepared surface, mixing by mix in place method with relavator at OMC, and compacting with smooth wheel roller to achieve the desired density, complete as per MoRTH specification Cluase 401.) By Mix in Place Method		
(i)	For Grading I Material	Cum	512.00
(ii)	For Grading II Material	Cum	482.00
(iii)	For Grading III Material	Cum	450.00
2.8	Collection of binding material/mooram for W.B.M. course (P.I. 4 to 6), including stacking as per Standard Specifications	Cum	214.00
2.9	Collection of quarry rubbish (P.I. less than 6), grading as per MoRTH specification's Table 400-1, including stacking as per the Standard Specifications:	Cum	228.00
2.10	Labour charges for patching W.B.M. using crushed / broken aggregates including preparation of pot hole scarifying & reshaping to the required grade and camber as per the standard specifications, spreading of material consolidation with mechanical drop hammer of 11.40 kg hand rammer or 8-10 tone power roller, spreading and consolidation of binding material including cost of fuel & lubricants and hire charges of T&P.	Cum	201.00

**CHAPTER : R-3**  
**BASES AND SURFACE COURSES (BITUMINOUS)**

Item No.	Description	Unit	Rate (Rs.)
3.1	Prime Coat		
(i)	Low porosity Providing and applying primer coat with bitumen emulsion (SS-1) on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.70-1.0 kg/sqm using mechanical means as per Technical Specification Clause 502	Sqm	51.00
(ii)	Medium porosity Providing and applying primer coat with Bitumen emulsion (SS-1) on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.90- 1.2 kg/sqm using mechanical means as per Technical Specification Clause 502.	Sqm	63.00
3.2	Tack Coat		
(i)	Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.20 to 0.25 kg per sqm on the prepared bituminous surface cleaned with Hydraulic broom as per Technical Specification Clause 503.	Sqm	14.00
(ii)	Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared dry and hungry bituminous surface cleaned with Hydraulic broom as per Technical Specification Clause 503.	Sqm	17.00
(iii)	Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surfaces treated with primer & cleaned with Hydraulic broom as per Technical Specification Clause 503.	Sqm	17.00
(iv)	Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion pressure distributor at the rate of 0.30 to 0.35 kg per sqm on the prepared non-bituminous surfaces (cement concrete pavement) cleaned with Hydraulic broom as per Technical Specification Clause 503.	Sqm	19.94

Item No.	Description	Unit	Rate (Rs.)
3.3	Bituminous Macadam		
	Providing and laying bituminous macadam with hot mix plant using crushed aggregates of grading as per Table 500.4 premixed with bituminous binder, transported to site upto a lead of 1000 m laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled to achieve the desired compaction as per Technical Specification Clause 504.		
	(i) Bitumen VG-10	MT	2554.00
	(ii) Bitumen VG-30	MT	2655.00
3.4	Seal Coat		
	Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A, Type B and Type C as per Technical Specification Clause 510		
	A. By Manual Means		
	Case - I : Type A		
	(I) Bitumen (V-10)	Sqm	60.00
	(II) Bitumen (VG-30)	Sqm	64.00
	(III) Polymer Modified Bitumen	Sqm	66.00
	(IV) Crumb Rubber Modified Bitumen	Sqm	80.00
	Case - II : Type B		
	(I) Bitumen (V-10)	Sqm	41.00
	(II) Bitumen (VG-30)	Sqm	43.00
	(III) Polymer Modified Bitumen	Sqm	45.00
	(IV) Crumb Rubber Modified Bitumen	Sqm	55.00
	Case - III : Type C		
	(I) Bitumen (V-10)	Sqm	44.00
	(II) Bitumen (VG-30)	Sqm	47.00
	(III) Polymer Modified Bitumen	Sqm	48.00
	(IV) Crumb Rubber Modified Bitumen	Sqm	58.00
	B. By Mechanical Means		
	Case - I : Type A		
	(I) Bitumen (V-10)	Sqm	55.00
	(II) Bitumen (VG-30)	Sqm	58.00
	(III) Polymer Modified Bitumen	Sqm	61.00
	(IV) Crumb Rubber Modified Bitumen	Sqm	75.00
	Case - II : Type B		
	(I) Bitumen (V-10)	Sqm	41.00
	(II) Bitumen (VG-30)	Sqm	44.00
	(III) Polymer Modified Bitumen	Sqm	46.00
	(IV) Crumb Rubber Modified Bitumen	Sqm	56.00
	Case - III : Type C		
	(I) Bitumen (V-10)	Sqm	43.00
	(II) Bitumen (VG-30)	Sqm	46.00
	(III) Polymer Modified Bitumen	Sqm	47.00
	(IV) Crumb Rubber Modified Bitumen	Sqm	57.00

Item No.	Description	Unit	Rate (Rs.)
3.5	Providing and laying dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tones per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H Specifications Clause 507 complete in all respects.		
		P. Cum	7314.00
		P. MT	3169.00
3.6	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT & H Specifications Clause 509 complete in all respects		
(i)	for Grading-I (19 mm nominal size) Bitumen VG-10	P. Cum	8018.00
		P. MT	3403.00
(ii)	for Grading-I ( 19 mm nominal size ) Bitumen VG-30	P. Cum	8414.00
		P. MT	3571.00
(iii)	for Grading-II (13 mm nominal size) Bitumen VG-10	P. Cum	7972.00
		P. MT	3384.00
(iv)	for Grading-II (13 mm nominal size) Bitumen VG-30	P. Cum	8368.00
		P. MT	3552.00
3.7	Providing and laying semi dense bituminous concrete with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.5 to 5 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth whelled, vibratory and tandem rollers to ahchieve the desired compaction as per MoRT&H Specifications Clause 508 complete in all respects.		
(i)	for Grading-I (13 mm nominal size) Bitumen VG-10	P. Cum	6988.00
		P. MT	3028.00
(ii)	for Grading-I ( 13 mm nominal size ) Bitumen VG-30	P. Cum	7322.00

Item No.	Description	Unit	Rate (Rs.)
		P. MT	3173.00
	(iii) for Grading-I ( 13 mm nominal size ) Bitumen CRMB-	P. Cum	7604.00
		P. MT	3295.00
	(iv) for Grading-I ( 13 mm nominal size ) Bitumen PMB-	P. Cum	7974.00
		P. MT	3455.00
	(v) for Grading-II (10 mm nominal size) Bitumen VG-10	P. Cum	7041.00
		P. MT	3051.00
	(vi) for Grading-II (10 mm nominal size) Bitumen VG-30	P. Cum	7376.00
		P. MT	3196.00
3.8	Expansion joint 25 mm wide and depth 200 to 300 mm using 25 mm thick bitumen impregnated board/SILFLEX (Capcel HD 100) confirming manufactures specifications, dowel bars 25mm M.S. rod 500 mm long @ 200 mm C/C with pvc sleeve as per IRC 58 (1988) including required steel bar (16 mm dia.) chairs, making holes in board, placing whole assembly in groove including cost of sealing compound.	Mtr.	880.00
3.9	Providing & Fixing in position bitumen impregnated board / SILFLEX (Capcell HD 100) confirming manufactures specifications in expansion joint with sealent as per IRC-15-2002 of size :		
	(i) 12mm thick	Sqm	750.00
	(ii) 18mm thick	Sqm	1111.00
	(iii) 25mm thick	Sqm	1463.00
3.10	Labour charges for premix patch work using mixed material from the hot mix plant, including cleaning of patch/pot holes area, cutting it to regular shape vertical edges, removing all loose and disintegrated material, application of tack coat as per specifications laying of patching material and compacting with power roller including cost of fuel, hire charges of T & P etc. complete.		
	(i) Using Straight run bitumen	Sqm	28.00
	(ii) Using cationic emulsion.	Sqm	23.00
3.11	Supply at plant site mix seal surfacing material for patch work with specified graded crushed aggregate preimxed with bitumen binder 4% in Hot Mix Plant (30-40tonne) including cost of aggregate, binder and machines with fuel etc.	P.MT	3195.00
3.12	Carriage of mix material from Plant Site to Work Site for patch repairing work including staying at site up to completion of patch repair work upto 1 km.	MT/Km	119.00

Item No.	Description	Unit	Rate (Rs.)
3.13	Extra rate for carriage of mixed material beyond 1st Km.		
	(i) 2nd Km to 10th Km	MT/Km	3.10
	(ii) 11th Km to 20th Km	MT/Km	2.80
	(iii) Beyond 20th Km	MT/Km	2.50
3.14	Providing and laying 20mm thick open graded premix carpet with specified graded crushed aggregates for wearing course (including cost of anti-stripping compound to bring the stripping value of aggregate within permissible limits as per specifications) including loading of aggregates with F.E. loader, heating & mixing 3.5% to 3.6% binder and aggregates in hot mix plant 30 to 40 tonne, transporting the mixed material with tipper and laying with paver finisher to the required level and grade, rolling with power road roller 8-10 tonne, complete, but excluding cost of tack and seal coat with all lead of mix material, as per MoRTH specification Cl. 511.		
	(i) Bitumen (VG-10)	MT	2811.00
	(ii) Bitumen (VG-30)	MT	2923.00
	(iii) Polymer Modified Bitumen (PMB-40)	MT	3022.00
	(iv) Crumb Rubber Modified Bitumen (CRMB-60)	MT	3570.00

## CHAPTER : R-4

### CEMENT CONCRETE PAVEMENT

Item No.	Description	Unit	Rate (Rs.)
4.1	<p><b>Cement Concrete Pavement</b>  Construction of un-reinforced, dowel jointed at expansion and construction joint only, plain cement concrete pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 1501.2.2 M30 (Grade), coarse and fine aggregates conforming to IS:383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weigh batcher using approved mix design, laid in approved fixed side formwork (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the formwork as per drawing), spreading the concrete with shovels, rakes, compacted using needle, screed and plate vibrators and finished in continuous operation including provision of contraction and expansion, construction joints, applying debonding strips, primer, sealant, dowel bars, near approaches to bridge/culvert and construction joints, admixtures as approved, curing of concrete slabs for 14-days, using curing compound and water finishing to lines and grade as per drawing and Technical Specification Clause 1501, Including vacuum dewatering process with all required equipments</p>	Cum	7772.00
4.2	<p><b>Roller Compacted Concrete Pavement</b>  Construction of Roller Compacted Concrete Pavement (RCCP) with coarse and fine aggregates conforming to IS:383, the size of coarse aggregate not exceeding 25 mm with minimum aggregate cement ratio of 5:1 mm and with minimum cement content of 310 kg per cum, aggregate gradation to be as per Table 602.2 after blending, mixing in concrete mixer at optimum moisture content, transporting to site, laying with wheel barrows or steel pans or with mechanical paver, compacting with 80-100 kN smooth wheel, tandem vibratory roller, to achieve, the designed flexural strength, finishing and curing as per drawings and Technical Specification Clause 1502</p>	Cum	5448.00
4.3	<p><b>Rectangular Concrete Block Pavement</b>  Manufacturing, laying of cement concrete blocks of size 0.450 m x 0.300 m x 0.15 m of Cement Concrete (C.C.) M30 grade and spreading 25 mm thick sand under neath and filling joints with sand on existing W.B.M. base as per Technical Specification Clause 1503.</p>	Sqm	1268.00



Item No.	Description	Unit	Rate (Rs.)
4.4	Interlocking Concrete Block Pavement		
(1)	Providing and Laying of Interlocking M-30 grade Concrete Block Pavements having thickness 60mm as per drawings and Technical Specification Clause 1504 with spreading 25mm thick sand under neath and filling joints with sand including providing and laying CC M30 Edge blocks 300mm x 150mm x 300mm size.	Sqm	927.00
(2)	Providing and Laying of Interlocking M-30 grade Concrete Block Pavements having thickness 80mm as per drawings and Technical Specification Clause 1504 with spreading 30mm thick sand under neath and filling joints with sand including providing and laying CC M30 Edge blocks 300mm x 150mm x 300mm size.	Sqm	942.00
(3)	Providing and Laying of Interlocking M-30 grade Concrete Block Pavements having thickness 100mm as per drawings and Technical Specification Clause 1504 with spreading 30mm thick sand under neath and filling joints with sand including providing and laying CC M30 Edge blocks 300mm x 150mm x 300mm size.	Sqm	954.00
4.5	Cutting of construction joint/ longitudinal joint 4 to 6 mm. wide & 75 to 100 mm deep using mechanical concrete cutter including cost of diamond bit cutting wheel and filling of bitumen sealing compound in groove including cost of sealing compound.	Mtr	55.00

## CHAPTER : R-5 PIPE CULVERTS

Item No.	Description	Unit	Rate (Rs.)
5.1	Providing and Laying Reinforced Cement Concrete Pipe NP3 as per design in Single Row Providing and laying reinforced cement concrete pipe NP3 for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets Clause 1106.		
	(A) 1200 mm dia	M	6657.00
	(B) 1000 mm dia	M	4631.00
	(C) 750 mm dia	M	3291.00
	(D) 600 mm dia	M	1859.00
	(E) 300 mm dia	M	742.00
5.2	Providing and Laying Reinforced Cement Concrete Pipe NP4 as per design in Single Row Providing and laying reinforced cement concrete pipe NP4 for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets Clause 1106.		
	(A) 1200 mm dia	M	7809.00
	(B) 1000 mm dia	M	5407.00
	(C) 750 mm dia	M	3617.00
5.3	Providing and Laying Reinforced Cement Concrete Pipe NP3 as per Design in Double Row Providing and laying reinforced cement concrete pipe NP3 for culverts on first class bedding of granular material in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls		
	(A) 1200 mm dia	M	13368.00
	(B) 1000 mm dia	M	9295.00
	(C) 750 mm dia	M	6580.00
5.4	Providing and Laying Reinforced Cement Concrete Pipe NP4 as per Design in Double Row Providing and laying reinforced cement concrete pipe NP4 for culverts on first class bedding of granular material in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets as per Clause 1106.		
	(A) 1200 mm dia	M	15672.00
	(B) 1000 mm dia	M	10847.00
	(C) 750 mm dia	M	7232.00

Item No.	Description	Unit	Rate (Rs.)
5.5	Laying Cement Concrete Pipe NP3 (burried conduits) on first class bedding of granular material including fixing collar with cement sand mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry work in head wall and parapets 500 mm dia	M	744.00
5.6	Providing & Laying Cement Concrete Pipe NP4 (burried conduits) on first class bedding of granular material including fixing collar with cement sand mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry work in head wall and parapets 500 mm dia	M	1108.00
5.7	Providing and laying Precast reinforced cement concrete Box culvert section of M-40 grade designed for 'AA' class loading as per IRC specifications including the effect of impact, EQ etc. complete on firm base of 200mm thick lean concrete of M-10 grade with aggregate of size 40mm nominal of following internal sizes. The work includes required safety measures, construction of drain for diversion of flowing water, cost of design of RCC Precast Box and its proof checking from IIT/MNIT Jaipur etc. complete in all respect as per specifications		
(i)	Size 0.60 M x 0.60 M	Mtr	6300.00
(ii)	Size 0.75 M x 0.75 M	Mtr	7660.00
(iii)	Size 1.00 M x 1.00 M	Mtr	11400.00
(iv)	Size 1.00 M x 1.25 M	Mtr	14000.00
(v)	Size 1.25 M x 1.25 M	Mtr	15750.00
(vi)	Size 1.25 M x 1.50 M	Mtr	20000.00
(vii)	Size 1.50 M x 1.50 M	Mtr	21800.00
(viii)	Size 1.75 M x 1.75 M	Mtr	27500.00
(ix)	Size 2.00 M x 2.00 M	Mtr	33000.00

**CHAPTER : R-6**  
**TRAFFIC SIGNS, MARKINGS AND ROAD APPURTENANCES**

Item No.	Description	Unit	Rate (Rs.)
6.1	Printing New Letters and Figures of any Shade Printing new letter and figures of any shade with synthetic enamel paint black or any other approved colour to give an even shade as per drawings and Technical Specification Clause 1701		
	i) Hindi (Matras commas and the like not to be measured and paid for. Half letters shall be counted as half only)	Per cm height per letter	0.85
	ii) English and Roman	Per cm height per letter	0.49
6.2	Traffic Signs		
	A. Retro-reflectorised Traffic Signs		
	(1) Providing and fixing of retro-reflectorised cautionary, mandatory and informatory sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 1701.2.3 fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per drawings and Technical Specification Clause 801		
	i) 900 mm equilateral & triangle	Each	4066.00
	ii) 600 mm equilateral & triangle	Each	2866.00
	iii) 600 mm circular	Each	3651.00
	iv) 800 mm x 600 mm rectangular	Each	4870.00
	v) 600 mm x 450 mm rectangular	Each	3571.00
	vi) 600 mm x 600 mm	Each	4128.00
	vii) 900 mm side octagon	Each	6058.00
	(2) Providing and fixing of retro-reflectorised cautionary, mandatory and informatory sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 1701.2.3, fixed over aluminium sheeting, 1.5 mm thick supported on GI pipe 50 mm dia firmly fixed to the ground by means of properly designed foundation with M-15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per drawings and Technical Specification Clause 1701		
	i) 900 mm equilateral & triangle	Each	4868.00
	ii) 600 mm equilateral & triangle	Each	3668.00
	iii) 600 mm circular	Each	4454.00
	iv) 800 mm x 600 mm rectangular	Each	5673.00
	v) 600 mm x 450 mm rectangular	Each	4373.00
	vi) 600 mm x 600 mm	Each	4930.00

Item No.	Description	Unit	Rate (Rs.)
	vii) 900 mm side octagon	Each	4600.00
6.3	Direction and Place Identification signs upto 0.9 sqm size board		
	A. Retro-reflectorised Traffic Signs		
	(i) Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 1701.2.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel single angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M-15 grade cement concrete 450 x 450 x 600 mm, 600 mm below ground level as per approved drawing and Technical Specification Clause 1701	Sqm	12951.00
	(ii) Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 1701.2.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on 2 inch dia GI Pipe firmly fixed to the ground by means of properly designed foundation with M-15 grade cement concrete 450 x 450 x 600 mm, 600 mm below ground level as per approved drawing and Tehnical Specification Clause 1701.	Sqm	12991.00
	(iii) Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 1701.2.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 Sqm supported on RCC Post 100 mm x 100 mm firmly fixed to the ground by means of properly designed foundation with M-15 grade cement concrete 450 x 450 x 600 mm, 600 mm below ground level as per approved drawing and Technical Specification Clause 1701	Sqm	11718.00
	B. Semi-Reflective Traffic signs		
	Direction and place indentification signs up to 0.9 sqm size board		

Item No.	Description	Unit	Rate (Rs.)
	Providing and erecting direction and place identifications of semi reflective sign boards as per IRC:67 made of 2 mm thick M.S. Sheet duly stove enameled paint in white colour in front and grey colour on back with red reflective border of 70 mm width and required message, letters, figures with reflective engineering grade tape as per MORD specifications of required shade and colour. Supported and welded on 47 mm x 47mm of 12 SWG Square tube of 3050 mm height duly strengthened by 25 mm x 5 mm M/s flat iron on edges on back firmly fixed to the ground by means of properly designed foundations with M-15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per approved drawing and Technical Specification Clause 1701	Sqm	2870.72
6.4	Direction and Place Identification signs with size more than 0.9 sqm size board		
A.	Retro-reflectorised Traffic Signs		
(i)	Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 1701.2.3, fixed over aluminium sheeting, 2 mm thick with area exceeding 0.9 sqm supported on mild steel angle iron posts 75 mm x 75 mm x 6 mm, 2 Nos. firmly fixed to the ground by means of properly designed foundation with M-15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per approved drawing and Technical Specification Clause 1701	Sqm	12486.00
(ii)	Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 1701.2.3, fixed over aluminium sheeting, 2 mm thick with area exceeding 0.9 sqm supported on dia GI Pipe firmly fixed to the ground by means of properly designed foundation with M-15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per approved drawing and Technical Specification Clause 1701	Sqm	14484.00

Item No.	Description	Unit	Rate (Rs.)
	(iii) Providing and erecting direction and place identification retro- reflectorised sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 1701.2.3, fixed over aluminium sheeting, 2 mm thick with area exceeding 0.9 sqm supported on RCC Posts 100 mm x 100 mm firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per approved drawing and Technical Specification Clause 1701	Sqm	11945.00
B.	Semi-Reflective Traffic signs Direction and place identification signs more than 0.90 sqm sign board Providing and erecting direction and place identification of semi reflective sign boards as per IRC-67 made of 2 mm thick M.S. Sheet duly stove enameled paint white colour in front and grey colour on back with reflective border of 70 mm width and required message, letters, figures with reflective tape of engineering grade as per MORD specifications of required shade and colour. Supported and welded on two nos. 47 mm x 47 mm of 12 SWG square tube of 3050 mm height duly strengthened by 25 mm x 5 mm MS flat iron on edges on back firmly fixed to the ground by means of properly designed foundations with M-15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per approved drawing and Technical Specification Clause 1701	Sqm	3204.00
6.5	Painting Two Coats on New Concrete Surfaces Painting two coats including primer coat after filling the surface with synthetic enamel paint in all shades on new, plastered / concrete surfaces as per drawing and Technical Specification Clause 1701	Sqm	93.00
6.6	Painting on Steel Surfaces Providing and applying two coats of ready mix paint including primer coat of approved brand on steel surface after through cleaning of surface to give an even shade as per drawing and Technical Specification Clause 1701	Sqm	93.00
6.7	Painting on Concrete/Steel Surfaces with Epoxy Painting two coats including prime coat with epoxy paint of approved brand on concrete/steel surfaces after through cleaning of surface to give an even shade as per drawing and Technical Specification Clause 1701	Sqm	143.00

Item No.	Description	Unit	Rate (Rs.)
6.8	Painting lines, Dashes, Arrows, etc. on Road in Two Coats on New Work Painting lines, dashes, arrows, etc. on roads in two coats on new work with ready mixed road marking paint conforming to IS:164 on bituminous/concrete surface, including cleaning the surface of all dirt, dust and other foreign matter, demarcation at site	Sqm	105.00
6.9	Painting lines, Dashes, Arrows, etc. on Roads in Two Coats on Old Work Painting lines, dashes, arrows, etc. on roads in two coats on old work with ready mixed road marking paint conforming to IS:164 on bituminous/concrete surface, including cleaning the surface of all dirt, dust and other foreign matter, demarcation at site and traffic control as per drawing and technical specification Clause 1702	Sqm	70.00
6.10	G.I Barbed Wire Fencing 1.2 m high Providing and fixing 1.2 m high GI barbed wire fencing with 1.8 m RCC posts 150 mm x 150 mm placed every 3 m centre-to-centre founded in M15 grade cement concrete, 0.6 m below ground level, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 9 horizontal lines and 2 diagonals interwoven with horizontal wires, fixed with GI staples, turn buckles etc. complete as per Clause 1705.	Running m	474.00
6.11	G.I Barbed Wire Fencing 1.8 m high Providing and fixing 1.8 m high GI barbed wire fencing with 2.4 m RCC M15 grade 150 mm x 150 mm concrete post placed every 3 m centre-to-centre founded in M15 grade cement concrete, 0.6 m below ground level, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 12 horizontal lines and 2 diagonals interwoven with horizontal wires, fixed with GI staples, turn buckles etc. complete as per Clause 1705.	Running m	674.00
6.12	Tubular Steel Railing on Medium Weight Steel Channel (ISMC series) 100 mm x 50 mm Providing, fixing and erecting 50 mm dia steel pipe railing in 3 rows duly painted on medium weight steel channels (ISMC series) 100 mm x 50 mm, 1.2 m high above ground, 2 m centre-to-centre, complete as per approved drawings Clause 1706	Running m	1097.00



Item No.	Description	Unit	Rate (Rs.)
6.13	Providing and Erecting typical Citizen's information Board as per approved drawing & specification of MoRTH made of two MS sheet of 1.6 mm thick each of size 900mm x 750mm stiffend by angle iron 25mmx25mm x 3mm all around the plate & plates fixed on frame of 75mm dia pipe of 12 SWG sheet (vertical post 3050 mm with angle holdfasts and horizontal member 900mm) to be joined by embedded in cement concrete M-15 grade of block of 600mmx 600mm x 750 mm size below ground level as per enclosed drawings & as directed by Engineering incharge. All MS will be stove anmeled on both side lettering. Figuring and border will be with ready mixed synthethic enamel paint of superior quality in required shade and colour etc complete in all respect. All sections of framed post and steel tube will be painted with primer and two coat of epoxy paint as per drawing and as per MoRD Specification.	each	6600.00
6.14	Supplying & Fixing informatory reflective sign boards make of 2mm thick M.S. sheet, stove enamelled paint as per IRC-67-1977 fixed on Angle Iron of size 65 x 65 x 6 mm of 3 meter long.		
	(i) 80 x 60 mm with size of square 40 cm.	Each	1385.00
	(ii) 60 x 45 cm with size of square 30 cm.	Each	1275.00
6.15	Supplying & Fixing Direction and place identification sign board made out of 2 mm thick M.S. sheet framed to angle iron 40x40x5 mm and two vertical posts of angle iron of size 65x65x6 mm 3 meter long with hold fasts, stove enameled paint reflective letter symbol complete of size. :		
	(i) 150 x 120 cm.	Each	3620.00
	(ii) 120 x 75 cm.	Each	1275.00
	(iii) 90 x 75 cm.	Each	2278.00
	(iv) 90 x 60 cm.	Each	2190.00
	(v) 75 x 45 cm.	Each	1695.00
	(vi) 60 x 45 cm.	Each	1651.00
6.16	Supply of Sign Board size 120x75 made out of 1.25 mm thick M.S. sheet duly framed with 33.3 mm ODMS black tube medium class as per IS- 1239 (Part-I) 1979 with inner support of M.S. flat 12x3 mm whole structure is fixed on two posts of 42 mm ODMS black tube (Medium class) as per IS-1239 processed with blue stoving enamel paint and white figuring direction arrow in superior quality of synthetic enamel paint	Each	1585.00

Item No.	Description	Unit	Rate (Rs.)
6.17	Supply of Hazard Marker made out of 2 mm thick M.S. sheet size 300x300x3 mm framed with angle iron 25x25x3 mm and fixed on channel posts 75x40x6 mm and hold fast at bottom whole body is painted in white stoving enamel and 6 Nos., 5 cm dia reflective sheet on white reflective background with additional border of 1.25 cm all around it.	Each	760.00
6.18	Painting with superior grade enamel paint of approved quality to give an even shade including writing lettering figuring etc. complete as per IRC standers of Bollards with 3 Nos. reflective type 7 cm wide strips including cost of providing new strips.		
	(i) Painting old work (Labour Rate)	Each	298.00
	(ii) Painting old work (Complete Rate)	Each	479.00
6.19	Providing & fixing letters/ borders from reflective tape of approved quality of standard width (Most Specification Cl.800)	Mtr. Per C.M. length	3.96
6.20	Supplying of Cat's Eye made of aluminium alloy size 75x100x22 mm having 21 biconvex lenses embedded in circular disk of ABS plastic on each side.	Each	194.00
	Providing & Fixing two way reflective plastic body raised road studs with anchor with shank 100x100x19.8 special reflective elements 19 degree tiled etc. complete made by swareflex at 9m. Centre to centre on edge lenes, lane lines and 1.0m centre to centre on pedestrian crossing including fixing, cost of conveyance of all materials to site including labour and hire charges for machineries involved etc. complete as per standered specifications and directions of the Engineer-in-charge.	Each	327.00
6.21	Providing and fixing of Reinforced Ferro cement Drain cover designed for class "AA" loading duly marked on cover with adequate steel reinforcement having thickness 75 mm to 150 mm anti- corrosive bitumen painted M.S. plate Rim and on M.S. lifting hooks admixture like plasticizer bond improving compound shrinkage resistance compound abrasion resistant complete as per approved design etc.		
	<b>Drain Opening Size</b>	<b>Standard</b>	
(i)	300 mm to 450 mm	600 x 800 mm	Sqm 1260.00
(ii)	451 mm to 700 mm	1000 x 800 mm	Sqm 1418.00
(iii)	701 mm to 1200 mm	1500 x 600 mm	Sqm 1785.00
(iv)	1201 mm to 1500 mm	2100 x 500 mm	Sqm 2499.00

Item No.	Description	Unit	Rate (Rs.)
6.22	Supply &fixing of Fiber reinforced Ferro cement drain cover (light duty) designed for side drain for class "B" Road loading duly marked on cover with adequate steel reinforcement having thickness 50 mm to 75 mm anti corrosive bitumen painted M.S. plate Rim and on M.S. lifting hooks additives & admixture like plasticizer shrinkage resistance compound abrasion resistant as per approved drawing and design complete in all respect.		
	<b>Drain Opening Size</b>	<b>Standard</b>	
	(i) 300 mm to 450 mm	600 x 1200 mm	Sqm 473.00
	(ii) 451 mm to 700 mm	1000 x 900 mm	Sqm 572.00
	(iii) 701 mm to 1200 mm	1500 x 700 mm	Sqm 688.00
	(iv) 1201 mm to 1500 mm	1800 x 600 mm	Sqm 914.00
6.23	Marking Centre Line and stop lines etc. on road as per IRC pattern with thermoplastic paint of approved quality and make with 8% glass beads laid on the road surface at temperature 160° C with a special applicator machine complete with a special applicator machine complete with labour material and traffic diversion arrangements.		
		Sqm	450.00
6.24	Marking Centre Line and stop lines etc. on road as per IRC pattern with thermoplastic paint of approved quality and make without glass beads laid on the road surface at temperature 160° C with a special applicator machine complete with a special applicator machine complete with labour material and traffic diversion arrangements.		
		Sqm	422.00
6.25	Supply & fixing of M-20 grade precast cement concrete Kerb or Dand upto 60 cm length over 20 mm thick base of cement mortar 1:6 including jointing earth work, painting & jointing with cement mortar 1:4 of size		
	(i) 10 x 15 cm	Rmt.	141.00
	(ii) 15 x 15 cm	Rmt.	179.00
	(iii) 20 x 20 cm	Rmt.	273.00
	(iv) 20 x 25 cm	Rmt.	329.00
	(v) (20 x 25) / 2 x 30 cm	Rmt.	424.00
	(vi) (22.5 x 25) / 2 x 30 cm	Rmt.	440.00
6.26	Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 409		
6.26.1	Using Kerb laying machine		
	(i) Using concrete mixture	Mtr	241.00
	(ii) Using Concrete Batching and Mixing Plant	Mtr	207.00

Item No.	Description	Unit	Rate (Rs.)
6.26.2	Cast in Situ Cement Concrete M 20 Kerb with Channel		
	(i) Using concrete mixture	Mtr	445.00
	(ii) Using Concrete Batching and Mixing Plant	Mtr	388.00
6.27	Supply and fixing Jodhpur sand stone Machine cut Kerb stone (10cm wide 40 cm. height) fixed in white cement sand mortar 1:4 with pigment including	Mtr	857.00
6.28	Providing and fixing PVC Bump Speed Breakers size 350 mm x 250 mm x 50 mm fitted with key hooks complete with labour material and traffic	Mtr	2593.00
6.29	Providing and laying rounded hump type speed breakers for crossing speed 25 km/h as per IRC design including providing and applying bitumen emulsion tack coat, making speed breaker in designed profile with bituminous macadam, providing seal coat type B for sealing the voids and marking chequered pattern with thermoplastic paint complete as per IRC : 99-1988		
	(i) 3.70 meter wide and 10 cm high for general traffic	Mtr	2788.00
	(ii) 5.0 meter wide and 10 cm high for heavy truck and	Mtr	3555.00
6.30	Supply of 'L' type Bollard made out of 1.25 mm thick M.S. sheet height 134 cm, welded in circular type ring section having upper Dia 15 cm. and lower Dia 21 cm with another attachment of 15x15 cm circular section with 15 cm. face plate and hold fast at bottom, whole body is processed in white stoving enamel and red reflective 3 hands, each of 7.5 cm end one reflective sheet of 15 cm. dia provided to it complete in all respect.	Each	2033.00
6.31	Supply of Swiss Type Bollard made out of 1.25 mm thick M.S. sheet, total height 135 cm, the lower portion is made in tapered circular section having upper dia 15 cm and lower dia 20 cm with attachment of one mandatory plate 7 mm thick & fixed with the help of 7 cm long, 30mm dia chrome plated M.S. tube this part is fixed on the body with another attachment of a cap 30x7 cm. whole body is processed in black stoving enamel and mandatory plate in Azure blue, with one compulsory keep left arrow with 10mm border reflective strip each of 7.5 cm on body complete in all respect.	Each	2339.00

Item No.	Description	Unit	Rate (Rs.)
6.32	Supply & fixing of direction and place identification sign board made out of 1.2 mm thick MS sheet framed to angle iron 35 x 35 x 5mm and two verticle post of angle iron 35 x 35 x 5mm 3 meter long with hold fast , stove enameled painting and lettering as per design and pattern of size 120 x 90 cm including of digging pits size 30 x 30 x 45 cm and fixing in C.C.1:5:10 including curing complete in all respect.	Each	3800.00
6.33	Providing & Fixing two way reflective plastic body raised road studs with anchor with shank 100x100x19.8 special reflective elements 19 degree tiled etc. complete made by swareflex at 9m. Centre to centre on edge lenes, lane lines and 1.0m centre to centre on pedestrian crossing including fixing, cost of conveyance of all materials to site including labour and hire charges for machineries involved etc. complete as per standered specifiications and directions of the Engineer-in-charge.	Nos.	327.00

**CHAPTER : R-7**  
**FOUNDATION AND SUPERSTRUCTURE**

Item No.	Description	Unit	Rate (Rs.)
7.1	Excavation for Structures Earthwork in excavation for structures as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material.		
I.	Ordinary soil		
(i)	Upto 3 m depth	Cum	203.00
(ii)	3 m to 6 m depth	Cum	240.00
II.	Ordinary rock (not requiring blasting) Upto 3 m depth	Cum	253.00
III.	Hard rock (requiring blasting)	Cum	453.00
IV.	Hard rock (blasting prohibited)	Cum	363.00
V.	Marshy soil	Cum	380.00
7.2	Fillling in foundation trenches as per drawing and technical specification Clause 305.3.9		
I.	Sand filling	Cum	1965.00
II.	Earth filling (For marshy soil)	Cum	131.00
7.3	Filling annular space around footing in rock as per technical specification Clause 1203.4.3. P.C.C grade M 15 Nominal mix 1:2.5:5	Cum	4036.85
7.4	Providing weepholes in brick masonry/stone masonry, plain/reinforced concrete abutment, wing wall, return wall with 100 mm dia AC pipe extending through the full width of the structures with slope of 1(V):20(H) towards drawing face complete as per drawing and technical specification Clauses 614, 709, 1204.3.7	Nos.	73.00
7.5	Backfilling behind abutment, wing wall and return wall complete as per drawings & technical specification		
I)	Granular material	Cum	568.00
II)	Sandy material	Cum	2154.00
7.6	Providing and laying cement concrete wearing course M 30 grade including reinforcement complete as per drawing and technical specifications Clauses 800 and 1206.3	Cum	13779.00
7.7	Providing fitting and fixing mild steel railing complete as per drawing and technical specifications Clause 1208.2	Running m	2999.00

Item No.	Description	Unit	Rate (Rs.)
7.8	Providing and fixing in position pipe railing consisting of IS Rolled steel joist posts designation IS MB 100 (100x75) at 2.5 m interval and three rows of 50 mm dia steel pipes (light) including fixing in position on bridge deck complete as per drawing and technical specifications Clause 1208.2	Running m	1606.00
7.9	Drainage spouts complete as per drawing and technical specifications Clause 1209	Nos.	1341.00
7.10	Reinforced Cement Concrete M 25 grade approach slab including reinforcement and formwork complete as per drawing and technical specifications Clauses 800 and 1211	Cum	10445.00
7.11	Providing and laying of an elastomeric slab seal expansion joint complete as per approved drawing and approved specifications to be installed by manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation and as per technical specifications Clause 1207.2.5	Running m	9827.00
7.12	Filler Joint		
I)	Providing and fixing 2 mm thick corrugated copper plate in expansion joint as per drawing and technical specifications Clause 1207.2.2	Running m	1625.00
II)	Providing and fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing and technical specifications	Running m per c.m.depth	7.00
III)	Providing and fixing in position 20 mm thick premoulded joint filler in expansion joint for fixed ends of simply supported spans, covered with sealant complete as per drawing and technical specifications	Running m per c.m.depth	15.00
IV)	Providing and filling joint sealing compound as per drawings and technical specifications with coarse sand and 6 per cent bitumen by weight.	Running m	29.00
7.13	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and technical specification Clauses 615, 710 and 1204.3.11, with coating by neat cement of 50mm thick.	P.Sqm	125.00

Item No.	Description	Unit	Rate (Rs.)
7.14	Providing and laying of boulder apron laid in wire crates with 4 mm dia GI wire conforming to IS:280 and IS:4826 in 100 mm x 100 mm mesh (woven diagonally) including 10 per cent extra for laps and joints laid with stone boulders weighing not less than 25 kg each as per drawing and technical specifications Clause 1301	Cum	1673.00
7.15	Providing and laying pitching on slopes laid over prepared filter media as per drawing and technical		
	I. Stone/Boulder	Cum	530.00
	II. Cement concrete blocks of size as per Table 1300.2		
	a) Concrete grade M 15	Cum	3592.00
7.16	P&F precast cement concrete post having size 100x100 mm on top and 150x150 mm at bottom and 1.80m height with sufficient reinforcement, hold fast of 6 mm thick plate & extended 150 mm both side and embedded in C.C. 1:2:4 (M-15) Mix. The post to be fixed on the boundary line of any scheme. the latitude & longitude of point to be marked on pillar as well as in the layout plan of scheme		
		Nos.	450.00
7.17	Providing & Fixing two way reflective plastic body raised road studs with anchor with shank 100x100x19.8 special reflective elements 19 degree tiled etc. complete made by swareflex at 9m. Centre to centre on edge lenes, lane lines and 1.0m centre to centre on pedestrian crossing including fixing, cost of conveyance of all materials to site including labour and hire charges for machineries involved etc. complete as per standered specifications and directions of the Engineer-in-charge.		
		Nos.	327.00
7.18	Providing and laying Precast reinforced cement concrete Box culvert section of M-40 grade designed for 'AA' class loading as per IRC specifications including the effect of impact, EQ etc. complete on firm base of 200mm thick lean concrete of M-10 grade with aggregate of size 40mm nominal of following internal sizes. The work includes required safety measures, construction of drain for diversion of flowing water, cost of design of RCC Precast Box and its proof checking from IIT/MNIT Jaipur etc. complete in all respect as per specifications		
(i)	Size 0.60 M x 0.60 M	Metre	6300.00
(ii)	Size 0.75 M x 0.75 M	Metre	7660.00
(iii)	Size 1.00 M x 1.00 M	Metre	11400.00
(iv)	Size 1.00 M x 1.25 M	Metre	14000.00
(v)	Size 1.25 M x 1.25 M	Metre	15750.00
(vi)	Size 1.25 M x 1.50 M	Metre	20000.00
(vii)	Size 1.50 M x 1.50 M	Metre	21800.00
(viii)	Size 1.75 M x 1.75 M	Metre	27500.00
(ix)	Size 2.00 M x 2.00 M	Metre	33000.00



**CHAPTER : R-8**  
**MAINTENANCE OF ROADS**

Item No.	Description	Unit	Rate (Rs.)
8.1	Maintenance of bituminous surface road		
i.	Repair to pot holes by removal of filled material, trimming the sides to vertical and levelling the bottom, cleaning the same with compressed air or any appropriate method filled with 75mm B.M, applying bitumen emulsion prime coat at the bottom and bitumen emulsion tack coat on sides and on bottom as per technical specifications Clauses 502 and 503.	Cum	6732.00
ii.	Patch repair on already filled pot holes with 75 mm BM with 20 mm premix carpet and seal coat Type B as per drawings and technical specification Clause 1904.2	Sqm	193.00
iii.	Repair to pot holes and removal of loose material, trimming of sides, cleaning of surface by providing tack coat, 20 mm thick pre-mix carpet and seal coat type B specification Clause 1904.2	Sqm	208.00
iv.	Repair to pot holes and removal of loose material, trimming of sides, cleaning of surface by providing tack coat with bitumen emulsion, 20 mm thick pre-mix carpet using catonic bitumen emulsion and seal coat type B with bitumen emulsion	Sqm	259.00
8.2	Maintenance of Gravel Road Maintenance of gravel road including making up the loss of profile, rectifying corrugated surface, filling up of depressions, pot holes and erosion gullies by adding fresh material and compacting it with appropriate equipment or to strip excess of material from the road surface as per drawings and technical specification Clause 1905	Sqm	66.00
8.3	Maintenance of WBM Road Maintenance of WBM road including filling up of pot holes, ruts and rectifying corrugated surface, damaged edges and ravelling as per technical specification Clause 1906.	Sqm	103.00
8.4	Scarifying old bituminous road by making 50x50mm furrows criss-cross at 1.0 metre intervals at 45 degree to the center line of the carriageway	10 Sqm	12.00
8.5	Cutting black top surface upto 1.5 M depth including all layers of crust for laying pipe line etc. and making good to original condition (excluding cost of bitumen)	P.Sqm	330.00

Item No.	Description	Unit	Rate (Rs.)
8.6	Providing and laying of kandhal readymade cold patching mix for repair of potholes in adverse climatic conditions including the bituminous mix with a minimum of 5.6% MC-100 cutback bitumen (containing a suitable antistripping agent) by weight of mix and in strict conformance in gradation and other requirements such as 6 month storage life as per the specifications laying in proper camber & grade compaction with road roller and transportation with all lead & lift complete in all respect as per direction of engineer-in-charge	Per kg	13.50
8.7	Labour charge only for laying and compacting kandhal readymade cold patching mix in proper camber and grade and compaction with a road roller as per direction of engineer-in-charge	Per kg	4.50

**RHB BSR - 2024**

# **MISC. CIRCULARS**

**OFFICE OF THE CHIEF ENGINEER, PWD (B &R), RAJASTHAN, JAIPUR**

**CIRCULAR No. 19 (Building 6)**

**Sub : General Instructions to be followed while preparing detailed estimates.**

It has been observed that while submitting estimates for Technical sanction instructions contained in Section 5 of the Manual of Orders of PWD/B&R and those issued by previous Circular are not followed strictly, it is therefore, enjoined upon all the detailed estimates for works costing more than Rs.3.00 lacs and requiring technical sanction by Addl. Chief Engineer and submitted to this office should contain the following schedules and details:

**1. SCHEDULES:**

**Schedule-I (Technical Report):**

Performa at Annexure 'A' may be used for submission of a detailed report which should be full & comprehensive and preferably written by the Executive Engineer.

**Schedule-II (General Abstract):**

It should indicate abstract cost of the sub-work included in the sanctioned proposal and provide for the increase in the market rates as may be approved by Superintending Engineer.

**Schedule-III**

Detailed estimates of each sub-work with abstract of cost and details of quantities.

**Schedule-IV (Drawing) :**

- (a) The drawings accompanying the detailed estimates should be as follows:-
  - (i) A site plan showing the situation of the proposed building with reference to others, the various structure in proximity to the intended site, the North point, the prevailing direction of the wind and other matters capable of graphic delineation which may have influenced the selection.
  - (ii) A ground floor plan or plans of the building and plans of the foundations and of various storey's as required.
  - (iii) Section through the buildings of such number and in such directions are necessary to exhibit the intended form and dimensions of every part.
  - (iv) Such elevations as are necessary.

- (v) A drawing or drawings showing the general arrangement of the floor and roof and the distribution of timbers, iron work etc. and such working drawing as will enable the officer responsible for the project to judge the details.
- (b) The drawings should bear the signatures of authority approving the plan and other details duly attested by Superintending Engineer.
- (c) The drawings should clearly indicate the proposed works, existing portions, dismantling work (if required in the existing building) in different colors.

## **2. GENERAL CONDITIONS:**

The total estimated cost of the proposed construction should not exceed the Administrative sanction. Only such work which can be built within the sanctioned amount should be included in the detailed estimate. Detailed estimate for the portion of work, which is although essential as per requirement of concerned department but cannot be included on account of inadequate sanction may be submitted as part 'B' to facilitate to move the case for Revised/Supplementary Administrative sanction.

In the case of estimate for Additions and Alterations the drawings and specifications of existing buildings should also be submitted along with the estimate. If there is any deviation from existing specifications, proper justification for the changes may be reported.

Estimate should be submitted in quadruplicate so that a copy of sanctioned estimate may be retained in Chief Engineer's office and the remaining three could be made available for circle, divisional and sub divisional office.

In the detailed estimates, the dimensions assumed in working out the quantities should be susceptible of identification of the dimensions shown on the drawings. Cross references to the dimensions of the estimates and also drawings should be indicated.

The items of detailed estimate should conform to the specifications described in technical report and also the PWD specifications.

Provisional rates for non-BSR items must be supported invariably by detailed rate analysis approved by Superintending Engineer.

All building estimate must include detailed estimates for sanitary, electrification, water supply and development works and no lump-sum provision on percentage basis should be provided in the estimate.

Estimates for works incorporating RCC items must include complete RCC details and bar bending schedules so as to facilitate in arriving at the correct quantities of concrete and steel.

Wherever necessary, detailed estimates may be supported by sketches to supplement drawings.

It those cases where a portion of work or entire work has already been taken in hand/executed before issue of sanction the quantities of complete portion should be taken as per actual measurements and a certificate to this effect may be recorded by the Executive Engineer. The specifications already adopted should also be clearly indicated in the technical report.

Detailed design for foundations and other structural components should be sent along with the estimate.

The type of soil met within the foundation, the test carried out for assessing the SBC of the soil at the foundation level, the SBC of the soil and the justification for the type of foundation adopted should be given.

The Executive Engineer and Superintending Engineers should particularly examine the foundation, the specifications for floors, roof windows and doors, ornamental features, finishing item etc. and observe in the forwarding letter or in the report it self the need for adopting expensive specifications.

## **TECHNICAL REPORT**

### **1. GENERAL**

Name of Work

Circle

Division

### **2. AUTHORITY**

Reference of Sanction

Amount of Administrative/Financial sanction (including/excluding the prorate charges).

Reference and Abstract details of Forecast estimate (if any).

Reference of Technical sanction of work if any issued earlier.

### **3. LOCATION AND LAND**

Location

Area

Possession taken over/not taken over.

**4. REFERENCES OF APPROVED DRAWING**

<b>S. No.</b>	<b>Details</b>	<b>Drawing No.</b>	<b>Authority</b>
1.	Site Plan		
2.	Plans		
3.	Sections		
4.	Elevations		
5.	Details of components.		
6.	Sanitary, Water Supply and Drawing		
7.	Electrifications		
8.	Other drawings.		

**5. DISCUSS THE PLANS SECTION & ELEVATIONS GENERAL****6. ESTIMATED COST**

Estimated cost of portion shown in 'Red' Drawing No... ..including/exclusive of prorate charges has been worked out as Rs.....

**7. SOURCE OF MATERIAL****8. TYPE OF SOIL/S.B.C.****9. BRIEF SPECIFICATION (Incase of A/A specification of existing may also be indicated)**

Foundation concrete.

Masonry in Foundation and plinth.

Damp proof course.

Super structure (Type and specifications)

Lintels, Sun-shades etc.

Roofing

Interior finish

Exterior finish

Flooring (a) Base (b) Finish

Skirting and Dados

Windows (Frame, Panels, Wire gauging, Safety bars)

Doors (Frame and Shutters)

White/Colour/Cement lime/Decorative finish

Painting of Doors, Windows and Walls

Electrification (Type of Wiring, Fittings and Fixtures)

Sanitary & Water Supply

Compound wall and it's gate

Other specifications.

10. **SPECIAL FITTINGS AND FIXTURES (Fans, Tube-lights, Exhaust, Pumps, Elevators etc.)**
11. **AGENCY FOR EXECUTION**
12. **PRESENT STAGE OF EXECUTION**
13. **COST ANALYSIS**

B.S.R. adopted and premium approved by Superintending Engineer.

Tender Premium (Received/expected).

Total plinth area.

Break up of cost.

S. No.	Component	Total Cost	Cost/Sqft.	% age of total cost
(a)	Foundation & plinth			
(b)	Super structure work			
(c)	Roofing.			
(d)	Doors, Windows & Frames.			
(e)	Flooring.			
(f)	Finishing.			
(g)	Sanitary & water supply.			
(h)	Electrification.			
(i)	Development.			
(j)	Other items.			

**Total-**

Total plinth area cost of Rs...../Sft. is higher/lower than the plinth area rate Rs... adopted in fore cast estimate.

- 14 **OTHER SALIENT FEATURE THAT NEEDS SPECIFIC MENTION**

Project Engineer (Sr.)

Resident Engineer



Name of Work : Forecast Estimate for \_\_\_\_\_



S. No	Component	Cost of Construction					Land		Special Fixtures Fan etc.	Other Expenses	Total (G) To (K)	Contingencies & Supervision Charges 1.5% Of (L)	Quality Control 1% of (L-H)	Total (M+N)	Prorata Charges 13% of (L)	Grand Total (I+ O+ P)	Remarks
		Plinth Area	Plinth Area Rate	Cost	Internal Service 21%	Total (E+F)	Cost	Development Cost 10% of Const. Cost									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)

Junior Engineer

Assistant Engineer

Executive Engineer

## **BUILDING DIGEST**

### **CENTRAL BUILDING RESEARCH INSTITUTE, INDIA**

#### **CHECK - LIST FOR TAKING - OVER NEWLY CONSTRUCTED BUILDING**

##### **INTRODUCTION**

A large number of construction activities are being carried out by various organizations such as CPWD, MES, State PWD, Housing Boards, Development Authorities, Improvement Trust and Private Sector. There is a greater demand for the construction of houses on outright sale basis. It has been observed that a number of complaints about the newly constructed buildings are received by the authorities from the buyers/user at the time of taking over the houses. Since there is mass construction going on, it has been observed that before taking over the building from the builder/contractor, the departmental authorities are not able to examine the buildings carefully. There are no proper guidelines laid down for the inspection of buildings at the time of taking over, except the general conditions as laid down in the specifications for the construction. There are several items involved in building and unless these are clearly defined and listed, it is not feasible to check them. To meet the demand, a check-list has been prepared to enable the authorities to examine/inspect the salient features before taking over the buildings. Such lists should be prepared for every building and in case of large buildings, the same may be divided into convenient parts and separate check – list prepared for each part.

##### **APPROACH**

An endeavor has, therefore, been made to give a check-list covering the different items so that the inspecting authorities, before taking over the buildings, can examine/inspect the building in systematic way. The list has been made in two parts. The Part-I gives the main building items and points to be observed just after the completion of the buildings and before taking over. In case there are any defects observed in the first taking-over inspection, the action for rectification is to be incorporated and a second inspection is to be made before actually taking over building. The Part-II gives the items and points that should be examined/inspected after about 3-4 months and specially during the monsoon period keeping the time well before the expiry of the maintenance guarantee period. This will provide the performance of the water supply and sanitary installation in use and also the leakage and dampness in the building, which may not be possible to be examined fully at the first stage of taking-over. For each building these check-list performas will be filled in, separately, at the time of inspection.

These Performas will also give useful information about the performance of various specifications and construction techniques in use, at the initial stage, in different parts of the country, so that a judicious election for proper type in the region can be achieved.

**CHECK-LIST FOR INSPECTION OF NEW BUILDINGS**

Name &amp; number of the building.....

Date of completion of the building.....Date of inspection .....

Date of taking over the building.....Date of handing over .....

From the builder/contractor.....to user.....

Item of Inspection	Type of Details		Follow up Action	Remarks
	Location	Nature		
<b>PART- I</b>				
(Inspection to be carried out be fore taking over newly constructed building)				
<b>A-Inside Building</b>				
<b>1. Walls</b>				
(i)	Are Walls to plumb? (If no, indicate the location, nature and action to be taken)	Yes/No		
(ii)	Are Walls in proper alignment? (If no, indicate the location, nature and action to be taken)	Yes/No		
(iii)	Are there any cracks in Walls?(If yes, indicate the location, nature i.e. vertical/horizontal/inclined and action to be taken)	Yes/No		
(iv)	Are there any signs of dampness/leakage on Walls? (If yes, indicate the location, magnitude and action to betaken)	Yes/No		
(v)	Are all Walls examined?	Yes/No		
<b>2. Floors</b>				
(i)	Are there any cracks in floor ? (If yes, indicate location and action to be taken)	Yes/No		

Item of Inspection	Type of Details		Follow up Action	Remarks
	Location	Nature		
(ii) Is there any settlement in floor? (If yes, indicate location and action to be taken)				Yes/No
(iii) Is the floor laid to proper slope? (If no, indicate location and action to be taken)				Yes/No
(iv) Is the floor properly finished/polished? (If no, indicate location, nature and action to be taken)				Yes/No
(v) Are there any cracks in skirting/dado? (If yes, indicate location, nature and action to be taken)				Yes/No
(vi) Are all floors/dado examined?				Yes/No
<b>3. Roofs.</b>				
<b>(a) Flat Roofs</b>				
(i) Are there any cracks in bottom/top? (If yes, indicate location, nature and action to be taken)				Yes/No
(ii) Are there any leaks in roof? (If yes, indicate location, nature and action to be taken)				Yes/No
(iii) Has the water-proofing, treatment been laid properly and to slope ? (If no, indicate location, nature and action to be taken)				Yes/No
(iv) Are rain water pipes properly fitted and free of choking? (If no, indicate location, nature and action to be taken)				Yes/No

Item of Inspection	Type of Details		Follow Up Action	Remarks
	Location	Nature		
<b>(b) Sloping roofs</b>				
(i) Is the roof laid to proper pitch/slope?		Yes/No		
(ii) Are there any break ages in tiles/sheet?		Yes/No		
(iii) Is the gutter laid to slope with proper joints? (If no, indicate location, nature and action to be taken)		Yes/No		
(iv) Has proper preservative treatment been given to the steel/timber truss? (If no, indicate action to be taken)		Yes/No		
(v) Is there any sagging/cracking in ceiling? (If yes, indicate location, nature and action to be taken)		Yes/No		
(vi) Is there sign of dampness in ceiling? (If yes, indicate location, nature and action to be taken)		Yes/No		
(vii) Are all roofs and ceilings examined?		Yes/No		
<b>4. Doors, Windows and Ventilators</b>				
(i) Are all doors, windows and ventilators opening and closing smoothly? (If no, indicate location, nature and action to be taken)		Yes/No		
(ii) Are all doors windows and ventilators properly painted/ polished? (If no, indicate location, and number to be done)		Yes/No		

Item of Inspection	Type of Details		Follow Up Action	Remarks
	Location	Nature		
(iii) Are all fittings viz. locking arrangement, tower bolts, doors toppers, hook and hinges etc. working smoothly? (If no, indicate location, number to be set right)			Yes/No	
(iv) Are all glass panes properly fitted cleaned & crack-free ? (If no, indicate location, number to be attend)			Yes/No	
<b>5. Finishing</b>				
(i) Are all rooms properly white washed, colour washed or distempered. (If no, indicate location, number to be attended)			Yes/No	
<b>6. Fixtures</b>				
<b>(a) Cupboards/shelves</b>				
(i) Are doors of cupboards opening and closing smoothly? (If no, indicate location and number to be set right)			Yes/No	
(ii) Are all fittings viz. hinges, locking arrangement, tower bolts etc. working smoothly?			Yes/No	
(iii) Are all cup-boards/shelves examined?			Yes/No	
<b>(b) Chimney</b>				
(i) Is the hood and slope provided to, have proper function?			Yes/No	

Item of Inspection	Type of Details		Follow up Action	Remarks
	Location	Nature		
7. Water Supply and Sanitation				
(i) Are pipes properly fixed to wall at required spacing and are not loose ? (If no, indicate location and number to be set right)			Yes/No	
(ii) Are there any leak ages in the pipe joints? (If yes, indicate location, number and action to be taken)			Yes/No	
(iii) Are all taps, valves, showers, wash basins, sinks working properly and there are no chocking/leakage ?			Yes/No	
(iv) Are flushing cisterns correctly fitted and work properly? (If no, indicate location number and action to set right)			Yes/No	
(v) Are water seals in water closets and floor taps properly working? (If no, indicate location, number and action to be taken)			Yes/No	
(vi) Are W.C. Pans, wash basins and sinks free of crack/breakage? (If no indicate location & number to be replaced)			Yes/No	
8. Electrical Fittings				
(i) Are the following working properly?				
(a) Switches			Yes/No	

	Item of Inspection	Type of Details		Follow Up Action	Remarks
		Location	Nature		
(b)	Plug points			Yes/No	
(c)	Fans			Yes/No	
(d)	Regulators			Yes/No	
(e)	Meter (If no, indicate location & number to be Set right)			Yes/No	
(ii)	Are all the fuses wired properly? (If no, indicate location and number to be set right)			Yes/No	
(iii)	Is the earth-wire connected properly? (If no, indicate action to be taken)			Yes/No	
<b>B-Outside Building</b>					
(i)	Is the surrounding free of Debris cleaned and Leveled. (If no, indicate action to be taken)			Yes/No	
(ii)	Is the compound wall and Gate provided ?			Yes/No	
(iii)	Is the approach road properly laid? (If no, indicate action to be taken)			Yes/No	
(iv)	Are the outside drains Provided & clear?			Yes/No	
(v)	Are the steps & staircase provided & to proper slope?			Yes/No	
(vi)	Is the outside building Finishing complete?			Yes/No	

**HANDED OVER**

.....  
Signature of the  
Builder/Contractor.

**TAKEN OVER**

.....  
Signature of the  
Engineering-in-charge RHB



(Inspection to be carried out during/after monsoon and well before expiry of maintenance-guarantee period )

**1. Building:**

Are there any leakages/dampness in the following?

- |       |   |        |
|-------|---|--------|
| (i)   | Walls   | Yes/No |
| (ii)  | Floors  | Yes/No |
| (iii) | Roofs   | Yes/No |
| (iv)  | Ceiling   | Yes/No |
| (v)   | Parapet   | Yes/No |
| (vi)  | Sunshades   | Yes/No |
|       | Yes/No(If yes, indicate location, nature number & action) |        |

**2. Service:**

A. Are there any leakage in the following?

- |       |                 |        |
|-------|-----------------|--------|
| (i)   | Rain Water Pipe | Yes/No |
| (ii)  | Sewer Pipe      | Yes/No |
| (iii) | Water Pipe.     | Yes/No |

B. Is the whole system working leak proof? Yes/No

C. Are the following working satisfactorily?

- |       |               |        |
|-------|---------------|--------|
| (i)   | Septic Tank   | Yes/No |
| (ii)  | Soak Pit      | Yes/No |
| (iii) | Outside drain | Yes/No |

**Assistant Engineer,  
PWD, Sub Dn.....**

Copy forwarded to the Executive Engineer, PWD ..... for reference and necessary action.

Copy forwarded to the Engg. Subordinate, PWD.....for early action.

**Assistant Engineer,  
PWD, Sub Dn.....**

**OFFICE OF THE CHIEF ENGINEER (B & R), PWD, RAJASTHAN,  
JAIPUR STANDING ORDER No. 138**

**PURCHASE OF BUILDINGS**

This department is charged with the duty of expressing opinion in connection with the purchase of the buildings with a view to deal with such cases in a uniform and a correct way be followed:-

- (i) No building may be purchased for public purpose without the order of the Government.
- (ii) The valuation of buildings and of buildings should be made in accordance with the following procedure:-

**Valuation of Buildings:**

The buildings may be divided in four categories:

- 1. Permanent (with life 80 to 100 years).
- 2. Permanent (with inferior specification 60 to 80 years)
- 3. Semi-permanent (with life 50 to 60 years)
- 4. Temporary (with life 10 years or less)

The cost of building should first be worked out on the present day rates by preparation of detailed sample estimates for representative portion of the building and then calculating the building or portion thereof with similar characters, the estimates will be exclusive of services viz. electric, water and sanitary fittings and cost of land.

After valuating the present day cost of the building the depreciated cost should be calculated with the formula:-

$$D = P \left\{ 1 - \frac{rd}{100} \right\}^n$$

Where D is the depreciated  
value. P is the cost of present  
market rate.

rd is the fixed percentage of depreciation.

n is number of years of the building has been constructed.

The following may be assumed as life span of the various type of buildings:

- (1) Buildings built of stone in lime masonry walls or bricks in lime masonry. Stone slabs or RCC roof cement concrete of flag stone flooring and teak wood joinery work. Life 80 to 100 years,

- (2) Building of slightly inferior specification such to as stone partly in lime mortar partly in mud or bricks in lime, masonry plastered walls, stone slabs roofing or terraced roofing on flag stone with ordinary cement or lime terrace and rough flag stone flooring and second class teak wood or other good quality timber joinery. Life 60 to 80 years,
- (3) Building of semi permanent nature such as built partly of brick in lime mortar and partly built in mud mortar, wooden or A.C. or C.G.I sheet roofing, country wood joinery. Life 50 to 60 years
- (4) Temporary building such as buildings in mud mortar, inferior specifications or structure with thatches. Life 10 year or less

The Executive Engineer should exercise his judgment carefully to decide as to which category the building in question belongs and to estimate the actual life with in the category. The rate of depreciation maybe taken as—

100/life span of each category.

The amount of depreciation shall in no case be less than 10% of the present cost of the buildings, irrespective of the age.

The valuation arrived at will be exclusive of the cost of land water supply, electric and sanitary and other permanent fitting etc. and will apply to those buildings only which have been properly maintained.

If the repairs have been neglected in the past and the present conditions is bad or dilapidated suitable deductions should be made from the value as deducted above, for the neglected repairs not for ordinary repairs).

The present value of land and water supply, sanitary and electric fittings etc. should be added to the valuation of the buildings so arrived at the total valuation of the property the present value of land will be determined in consultation with the local revenue authorities.

A lump-sum amount may further be deducted representing such damages as may exist but which do not effect the life of the building.

If necessary, a further lump-sum representing the value of such features which exist and which have been included in the plinth area valuation but which represent no value to the Govt.(i.e. exceptionally thick wall unnecessary decoration and the like) may be deducted.

In case of sub-standard work, suitable reduction to account for inferior specification may be made by the Executive Engineer.

#### **Valuation on plinth area basis:**

Cases may also exist where it is not possible to estimate correctly the quality of different class of work under the above noted sub-heads for want of estimate of the works and its drawing according to which the work has actually executed. In such case, it would be possible to work out the valuation on the basis of plinth area rate of buildings. In doing so, the plinth area of a building should be ascertained & the present day cost construction of building of similar size & specification estimated at plinth area, rates, from the figure so arrived at the deduction due to depreciation, related repairs & other items, may be made.

### VALUATION ON MONTHLY RENTAL OR MARKET VALUE BASIS

It some time happens that valuation worked out on either of the above two methods is apparently neither that of market value nor of the buildings in the locality. In such cases there fore the valuation has to be assessed depending on.

- (i) Present monthly rent of the buildings.
- (ii) If buildings is not rented one, then on its face market value that can be ascertained.

The valuation on the basis of rent would be 200 items the rent per month of the building exclusive of houses tax, if any.

For the second alternative of market off ace value no hard and fast rules can be laid down as it will depend on the locality in which the building has been constructed, the purpose for which it was built and the purpose for which it could be utilized in the locality.

The market value may be defined as the price which will be received by a willing seller from the willing buyer in the open market for the particular property in its present condition with its particular advantage and its particular draw backs. It is not the same as the cost; nor marketed value be compared with the cost of rent statement. It cannot be determined by the extreme prices in a rising or falling market in all cases, the volume of transactions and the general trend of price should be considered.

Before any building is purchased, the total present and future liabilities to Govt. should be determined and the probable cost in the following items be clearly shown:

- (1) Any necessary dismantling of existing structure, and cleaning of site.
- (2) The special repairs of additional new work required to make the building suitable for its future use and.
- (3) Future annual maintenance.

The cost of (1) and (2) added to the proposed purchase price of the building, gives the total cost of acquisition while (3) given there curing liability.

### Sale Deed

When the approval of the Govt. to the proposed purchase has been accorded the Executive Engineer, will prepare a site plan in triplicate and draft sale deed in proper form in consultation with the Collector and send it through the Superintending Engineer to the Chief Engineer. The Chief Engineer, will forward it to the Administrative Department in the Secretariat to have it approved from the legal remembrance, after this, the draft Sale Deed with plan will be returned, the signature of the vendor on the deed and on one copy of the site plan obtained and have the deed registered after signing it on behalf of the Govt.

The Collector will have registered title deed with the site plan recorded in safe custody with the Treasury Officer, inform the Executive Engineer accordingly and send him a copy of the deed and plan. The third copy of the deed and plan will be sent by the Collectorate to the Administrative Department concerned in the secretariat.

The Executive Engineer will maintain the register of such purchase of building in division in the form vide Appendix 'A'.

Sd/-

CHIEF ENGINEER, PWD,  
Rajasthan, Jaipur.

**STANDING ORDER No. 144****ASSESSMENT OF FAIR RENT OF BUILDINGS TAKEN ON****RENT BY VARIOUS DEPARTMENTS**

It has been brought to the notice of the undersigned that the officers of the Department while issuing FRC in respect of Building do not assess the reasonable area of the built up space taken on Rent in accordance with the criteria laid down in the Govt. orders No.D.6274/F.(15)GA/A/59 dated 18.05.59 (Copy enclosed for ready reference).

It may, therefore please be ensured before issuing such certificate in future that the space being taken on rent by various Deptt. is not in excess of space prescribed by the Govt.D.2674/F.5(15)FA/A/59 dt. Jaipur 18.05.1959.

In order to ensure uniformity in the construction of new Govt. Building for office purpose and for addition and alteration to the present Building and for taking private Building for office purpose, the Governor is pleased to lay down the following scale for the same:

160 Sq. ft.      Each for Gazetteer officers.

50 Sq. ft.      Each for Technical Staff (such as Draftsmen & Estimators).

40 Sq. ft      Each for ministerial staff, Staff, Sup dt. Head Clerk etc.

In addition 10% of accommodation allowed for ministerial staff will be admissible for records.

## GOVERNMENT OF RAJASTHAN

## PUBLIC WORKS DEPARTMENT

## STANDING ORDER No. X-3/2011

1. For determining the present day value of the buildings with a view to assess the Fair Rent of the residential/other ordinary buildings required to be hired by the Govt. Department and the standard rent of Govt. buildings rented to Central Govt./State Govt./other officers and Private parties, the following rules shall henceforth be observed. These rules are meant for use by the PWD, Rajasthan.
2. This order supersedes, the Standing Order No. 151, 160, X-3/1973, X-3/1979, X-3/1981, X-3/1984, X-3/1987, X-3/1990, X-3/1993, X-3/1995, X-3/1997 & A-3/2006 issued earlier. The market value of building for the purpose of the sale or purchase of property shall be determined as per instructions contained in Standing Order No. 138.
3. The circular may be adopted for valuation of properties except for the purpose of sale and purchase of buildings by Govt. of Rajasthan for which, Standing Order No. 138 shall continue to be applied.

## 1 For masonry Structures:-

S.NO.	Building Portion-description	Plinth area rate (In Rs.)
a.	Basement floor upto 2.5 m. height	4050/- per Sqm.
b.	Ground floor over basement	4700/- per Sqm.
c.	Ground floor without basement	5625/- per Sqm.
d.	First floor	4950/- per Sqm.
e.	Second floor	5125/- per Sqm.
f.	Add for third & fourth floor	325/- each floor
g.	Mezzanine floor	1225/- per Sqm.
h.	Compound wall one meter high above ground level including ordinary gates	1050/- Rmt.
i.	CGI/AC sheet closed on 3 sides with pucca floor	2975/- per Sqm.
j.	Pucca Out Houses and garage with shutters	3875/- per Sqm.
k.	Plat-form	650/- per Sqm.

4. For RCC framed multistoried structures the following rates shall be applicable in place of rates at 3(a) to 3(f):

a	Basement floor (3 mtr. ceiling height)	4950/- per sqm.
b	Ground floor (3 mtr. height) over basement.	5450/- per sqm.
c.	Ground floor in buildings without basement (3 mtr. height)	6625/- per sqm.
d	First floor (3 mtr. height)	5625/- per sqm.
e.	Add extra for second & every subsequent floors (3 mtr. ht.) over rate of item 4 (d)	300/- per sqm.



5

For other specifications the following percentage shall be added/reduced in item 3(a) to 3(j) and 4(a) to 4(e) stated above :

S. No.	Building Portion/ Description	For masonry structures	RCC framed structures
a	Increase/Decrease by every 30cms. in height above or below	1.5%	1%
b	Add for mosaic flooring with gray cement or that of unpolished rough dressed stone flooring in place of C.C. floor.	5%	3%
c	Add for mosaic flooring with white cement.	7.5%	5%
d	Add for fine polished stone flooring/ marble flooring.	(As per difference in prevailing B.S.R.) (Actual area to be measured)	
e	Add for high-class finish with rich specifications and good condition off maintenance	Upto 15%	Upto 10% (Analysis to be worked out)
f	Add extra for first class/selected grade teak wood frame with teak facing ply flush door polished.	10%	7%
g	Add for wire gauge doors & windows & safety bars.	3%	2%
h	Less for poor finish.	5 to 10%	5 to 10% (Analysis to be worked out)
i	Add for items e.g. hot & cold water system expensive fixtures and fittings, glazed tiles, built in furniture, marble slabs and any other item or facilities not covered in the item specified above.	(As per actual estimate)	(As per actual estimate)
j	Add also for lawns hedges etc. maintained.	Rs. 40/- per Sqm.	Rs. 40/- per Sqm.
k	Electrical installation without ceiling fans.	10%	8.5%
(a)	Add extra for conduit wiring	2%	1.5%
(b)	Add extra for Cost of ceiling fans to be added extra as per number of fans.		
l	Sanitary fittings (except item 3(h) & 3 (k)	10%	7%
m	Water supply (except item 3(h) & 3(k)	4%	3%
n	External cladding	(As per actual Estimate)	(As per actual)
o	Fire fighting system.	(As per actual Estimate)	(As per actual)
p	External Glazing work, ACP, Aluminium work (Anodised / Powder Coated), Pressed Steel Door frame work, Fibre / Acrylic/ Polycarbonate Sheet, Wall Panelling, False Ceiling work etc.	(As per actual Estimate)	(As per actual)

Note : For superior fittings such as bath tubs, water heaters etc. as per actual.

6. Roads Work at Current B.S.R.

7. The above rates apply to the building having :

- A ceiling height of 3.20 m. (wall bearing structures/ 3.00 M framed structures)
- Wall plastered on both sides and pointed externally.
- Ordinary cement floor.

- (iv) Walls and pillar masonry in lime or cement.
  - (v) Second class teak-wood of solid core/flush door and window shutters with ordinary iron fittings and ordinary paint.
  - (vi) Ordinary electric wiring with light & ordinary power circuits and with moderate fittings.
  - (vii) Good and adequate sanitary fittings such as Indian or English type W.C. with flushing cistern, wash basin, towel rail, etc. in each bath room as per norms fixed by P.W.D. for type design including septic tank, soak pit and sewer lines with in the campus.
  - (viii) Stone slab roofing/RCC slab roofing with Beams or joists.
8. If there are any variations in the above specifications then percentage to be added or reduced, should be worked out proportionately.
9. After valuation of the present day cost of the building as though it is now, the depreciated cost should be calculated by the formula given below :
- Where -  
 $D = P (1 - rd/100)^n$   
 $D$  = Depreciated Value  
 $rd$  = The fixed percentage for depreciation.  
 $P$  = The cost at the present market rate.  
 $n$  = The number of years the building had been constructed.
10. The following may be assumed as the life span of the various type of buildings :
- a. RCC framed buildings, building built of stone in lime masonry walls or brick in lime masonry, stone slab or RCC roof, cement concrete or stone flag flooring and teak wood joinery.  
Life 80 to 100 Years
  - b. Buildings of slightly inferior specifications such as stone in mud or bricks in mud masonry, lime plastered walls, stone slab roofing or terraced roofing or stone flags with ordinary or lime terrace and 2nd class teak wood or other equivalent quality, and timber joinery.  
Life 60 to 80 years
  - c. Building of semi-permanent nature such as built partly of brick in lime mortar and partly of brick in mud mortar, wooden joints or AC or CGI sheet roofing and country wood joinery.  
Life 50 to 60 years
  - d. Temporary building such as buildings in mud mortar and inferior specifications or structures with country tiles roof and thatch etc.  
Life 10 years or less.
11. (i) If the age of the building is known or can be ascertained through local enquiry etc., the actual age of the building shall be taken subject to the maximum life span according to the type of construction.
- (ii) If the exact age of the building can not be ascertained but the approximate age can be found out, then that age shall be adopted. If the age can not be found out by any means, the same shall be assumed as 50 years.
- (iii) The Executive Engineers should exercise their judgment carefully to decide as to which category the building in question belongs and to estimate the actual life within the category.
12. The rate of depreciation be taken as : 100/Life span for each category.



13. The cost of land should be worked out by a committee consisting of the concerning S.E., T.A. to SE and Executive Engineer(s) after considering the rates obtained from UIT/ Municipality/Registration Deptt./any other authority having jurisdiction or the administration of land in that area. The committee should exercise its discretion carefully, taking all the facts like importance of the place etc. into consideration. Land in excess of four times the built-up area of the building should not be counted for determining the total cost of land and building, unless the entire land is specifically required.
14. For buildings more than one storey the distribution of cost of land shall be made as under :
  - a. The cost of built-up land area shall be distributed in proportion to the built-up area on individual floors.
  - b. The cost of open land shall be distributed in proportion to the actual use of land by different tenants on individual floors.
  - c. The area under commercial use shall be given double weight-age of the area under residential use.
15. Any taxes such as House tax, Land & Building tax etc., is to be borne by the owner.
16. This order shall come in force with immediate effect from 24.4.2006 and will not effect the cases assessed in the past.
17. The rate applicable for determining the Fair Rent Certificate (FRC), for Government/ Private Buildings shall be in accordance with the Circular No. CE/SE (DB)/D-1932 dated 20-01-2007.
18. Any taxes such as Property Tax, Development Tax, Sewerage Tax etc. is to be borne by the owner.
19. The order shall come into force with immediate effect and will not affect the cases assessed in the past.

Date :- 26-04-2011

-Sd-  
(Chiranji Lal)  
CHIEF ENGINEER  
PWD Raj. Jaipur

**GOVERNMENT OF RAJASTHAN  
PUBLIC WORKS DEPARTMENT  
STANDING ORDER No. X-3/2015**

1. For determining the present day value of the buildings with a view to assess the Fair Rent of the residential/other ordinary buildings required to be hired by the Govt. Department and the standard rent of Govt. buildings rented to Central Govt./State Govt./other officers and Private parties, the following rules shall henceforth be observed. These rules are meant for use by the PWD, Rajasthan.
2. This order supersedes the Standing Order No. 151, 160, X-3/1973, X-3/1979, X-3/1981, X-3/1984, X-3/1987, X-3/1990, X-3/1993, X-3/1995, X-3/1997, X-3/2006 & X-3/2011 issued earlier. The market value of building for the purpose of the sale or purchase of property shall be determined as per instructions contained in Standing Order no. 138.
3. The circular may be adopted for valuation of properties except for the purpose of sale and purchase of buildings by Govt. of Rajasthan for which, Standing Order No. 138 shall continue to be applied.

<b>For masonry Structures:-</b>		
<b>S.No.</b>	<b>Building Portion-description</b>	<b>Plinth area rate per sqmt. (in Rs.)</b>
a.	Basement floor upto 2.5 m. height	5830
b.	Ground floor over basement	6770
c.	Ground floor without basement	8100
d.	First floor	7130
e.	Second floor	7380
f.	Add for third & fourth floor	470
g.	Mezzanine floor	1760
h.	Compound wall one meter high above ground level including ordinary gates	1510
i.	CGL/AC sheet closed on 3 sides with pucca floor	4250
j.	Pucca Out House, and Garage with shutters	5580
k.	Platform	940

am

*Paul*  
Copy to AEn Subon Gandhi Nagar - I / II / III / IV / Jamdoli / RPA /  
Police Bldg East / Education North / Education South for  
information & n/s please

*SL*  
24/11/15  
TA

4. For RCC framed multistoried structures the following rates shall be applicable in place of rates at 3(a) to 3(f):

S.No.	Building Portion-description	Plinth area rate per sqmt. (in Rs.)
a	Basement floor (3 mtr. ceiling height)	7130
b	Ground floor (3 mtr. height) over basement.	7850
c	Ground floor in buildings without basement (3 mtr. height)	9540
d	First floor (3 mtr. height)	8100
e	Add extra for second & every subsequent floors (3 mtr. ht.) over rate of item 4 (d)	430

5. For other specifications the following percentage shall be added/reduced in item 3(a) to 3(j) and 4(a) to 4(e) as stated above :

S. No.	Building Portion/ Description	For masonry structures	RCC framed structures
a	Increase/Decrease by every 30cms. in height above or below	1.5%	1%
b	Add for mosaic flooring with gray cement or that of unpolished rough dressed stone flooring in place of C.C. floor.	5%	3%
c	Add for mosaic flooring with white cement.	7.5%	5%
d	Add for fine polished stone flooring/ marble flooring.	(As per difference in prevailing B.S.R.) (Actual area to be measured)	
e	Add for high-class finish with rich specifications and good condition of maintenance	Upto 15% (Analysis to be worked out)	Upto 10% (Analysis to be worked out)

*Handwritten signatures*



S. No.	Building Portion/ Description	For masonry structures	RCC framed structures
f.	Add extra for first class/selected grade teak wood frame with teak facing ply flush door polished.	10%	7%
g.	Add for wire gauge doors & windows & safety bars.	3%	2%
h.	Less for poor finish.	5 to 10% (Analysis to be worked out)	5 to 10% (Analysis to be worked out)
i.	Add for items e.g. hot & cold water system expensive fixtures and fittings, glazed tiles, built in furniture, marble slabs and any other item or facilities not covered in the item specified above.	(As per actual estimate)	(As per actual estimate)
j.	Add also for lawns hedges etc. maintained.	Rs. 40/- per Sqm.	Rs. 40/- per Sqm.
k.	Electrical installation without ceiling fans.	5%	3.5%
(a)	Add extra for conduit wiring	2%	1.5%
(b)	Cost of ceiling fans to be added extra as per number of fans.		
l.	Sanitary fittings (except item 3(h) & 3(k))	10%	7%
m.	Water supply (except item 3(h) & 3(k))	4%	3%
n.	External cladding	(As per actual Estimate)	(As per actual)
o.	Fire fighting system.	(As per actual Estimate)	(As per actual)
p.	Extra glazing work, ACP, Aluminium work (Anodised/ Powder coated), Pressed steel doors framework, Fibre/Acrylic/Polycarbonate steel sheds, Wall paneling, False Ceiling work etc.	(As per actual Estimate)	(As per actual)

Note : For superior fittings such as bath tubs, water heaters etc. as per actual.

*Paul*

*amg*

6. **Read works at Current B.S.R.**

7. The above rates apply to the building having :

- (i) A ceiling height of 3.20m. ( load bearing wall structures) and 3.00m ceiling height for framed structures.
- (ii) Wall plastered on both sides and pointed externally.
- (iii) Ordinary cement floor.
- (iv) Walls and pillar masonry in lime or cement.
- (v) Second class teak-wood of solid core/flush door and window shutters with ordinary iron fittings and ordinary paint.
- (vi) Ordinary electric wiring with light & ordinary power circuits and with moderate fittings.
- (vii) Good and adequate sanitary fittings such as Indian or English type W.C. with flushing cistern, wash basin, towel rail, etc. in each bath room as per norms fixed by P.W.D. for type design including septic tank, soak pit and sewer lines within the campus.
- (viii) Stone slab roofing/RCC slab roofing with Beams or joists.

8. If there are any variations in the above specifications then percentage to be added or reduced, should be worked out proportionately.

9. After valuation of the present day cost of the building, the depreciated cost should be calculated by the formula given below :

$$D = P (1 - rd/100)^n$$

Where

D - Depreciated Value

rd - The fixed percentage for depreciation.

P - The cost at the present market rate.

n - The number of years the building had been constructed.

10. The following may be assumed as the life span of the various type of buildings :

- a. RCC framed buildings, building built of stone in lime masonry walls or brick in lime masonry, stone slab or RCC roof, cement concrete or stone flag flooring and teak wood joinery. Life 80 to 100-Years
- b. Buildings of slightly inferior specifications such as stone in mud or bricks in mud masonry, lime plastered walls, stone slab roofing or terraced roofing or stone flags with ordinary or lime terrace and 2nd class teak wood or other equivalent quality, and timber joinery. Life 60 to 80 years

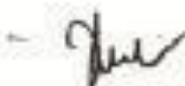






(5)

- c Building of semi-permanent nature such as built partly of brick in lime mortar and partly of brick in mud mortar, wooden joints or AC or CGI sheet roofing and country wood joinery. Life 50 to 60 years
  - d Temporary building such as buildings in mud mortar and inferior specifications or structures with country tiles roof and thatch etc. Life 10 years or less.
11. (i) If the age of the building is known or can be ascertained through local enquiry etc., the actual age of the building shall be taken subject to the maximum life span according to the type of construction.
- (ii) If the exact age of the building can not be ascertained but the approximate age can be found out, then that age shall be adopted. If the age can not be found out by any means, the same shall be assumed as 50 years.
- (iii) The Executive Engineers should exercise their judgment carefully to decide as to which category the building in question belongs and to estimate the actual life within the category.
12. The rate of depreciation be taken as : 100/Life span for each category.
13. The cost of land should be worked out by a committee consisting of the concerning S.E., T.A. to SE and Executive Engineer(s) after considering the rates obtained from UIT/ Municipality/Registration Deptt./any other authority having jurisdiction or the administration of land in that area. The committee should exercise its discretion carefully, taking all the facts like importance of the place etc. into consideration. Land in excess of four times the built-up area of the building should not be counted for determining the total cost of land and building, unless the entire land is specifically required.
14. For buildings more than one storey the distribution of cost of land shall be made as under :
- a The cost of built-up land area shall be distributed in proportion to the built-up area on individual floors.
  - b The cost of open land shall be distributed in proportion to the actual use of land by different tenants on individual floors.
  - c The area under commercial use shall be given double weight-age of the area under residential use.
15. For issuing Fair Rent Certificate (FRC), the space being taken on rent by various departments should be in accordance with the Standing Order No. 144.







**GOVERNMENT OF RAJASTHAN**  
**PUBLIC WORKS DEPARTMENT**  
**STANDING ORDER No. X-3/2021**

1. For determining the present day value of the buildings with a view to assess the Fair Rent of the residential/other ordinary buildings required to be hired by the Govt. Department and the standard rent of Govt. buildings rented to Central Govt./State Govt./other officers and Private parties, the following rules shall henceforth be observed. These rules are meant for use by the PWD, Rajasthan.
2. This order supersedes, the Standing Order No. 151, 160, X-3/1973, X-3/1979, X-3/1981, X-3/1984, X-3/1987, X-3/1990, X-3/1993, X-3/1995, X-3/1997, X-3/2006, X-3/2011 & X-3/2015 issued earlier.
3. The circular may be adopted for valuation of properties except for the purpose of sale and purchase of buildings by Govt. of Rajasthan for which, Standing Order No. 138 shall continue to be applied.

For masonry Structures:-

S.NO.	Building Portion-description	Plinth area rate (in Rs.)
a.	Basement floor upto 2.5 m. height	7000/- per Sqm.
b.	Ground floor over basement	8120/- per Sqm.
c.	Ground floor without basement	9720/- per Sqm.
d.	First floor	8560/- per Sqm.
e.	Second floor	8860/- per Sqm.
f.	Add for third & subsequent floors	560/- each floor
g.	Mezzanine floor	2110/- per Sqm.
h.	Compound wall one meter high above ground level including ordinary gates	1810/- Rmt.
i.	CGI/AC sheet closed on 3 sides with pucca floor	5140/- per Sqm.
j.	Pucca Out Houses and garage with shutters	6700/- per Sqm.
k.	Plat-form	1130/- per Sqm.

4. For RCC framed multistoried structures the following rates shall be applicable in place of rates at 3(a) to 3(f):

S.NO.	Building Portion-description	Plinth area rate (in Rs.)
a.	Basement floor (3 mtr. ceiling height)	8560/- per sqm.
b.	Ground floor (3 mtr. height) over basement.	9420/- per sqm.
c.	Ground floor in buildings without basement (3 mtr. height)	11450/- per sqm.
d.	First floor (3 mtr. height)	9720/- per sqm.
e.	Add extra for second & every subsequent floors (3 mtr. ht.) over rate of item 4 (d)	520/- per sqm.

5. For other specifications the following percentage shall be added/reduced in item 3(a) to 3(j) and 4(a) to 4(e) stated above:

S. No.	Building Portion/ Description	For masonry structures	RCC framed structures
a.	Increase/Decrease by every 30cms. in height above or below	1.5%	1%

Page No - 1



S. No.	Building Portion/ Description	For masonry structures	RCC framed structures
b	Add for mosaic flooring with gray cement or that of unpolished rough dressed stone flooring in place of C.C. floor.	5%	3%
c	Add for mosaic flooring with white cement.	7.5%	5%
d	Add for fine polished stone flooring/ marble flooring / Granite flooring / tile flooring.	(As per difference in prevailing B.S.R.) (Actual area to be measured)	
e	Add for high-class finish with rich specifications and good condition off maintenance	Upto 15% (Analysis to be worked out)	Upto 10% (Analysis to be worked out)
f	Add extra for first class/selected grade teak wood frame with teak facing ply flush door polished.	10%	7%
g	Add for wire gauge doors & windows & safety bars.	3%	2%
h	Less for poor finish.	5 to 10% (Analysis to be worked out)	5 to 10% (Analysis to be worked out)
i	Add for items e.g. hot & cold water system expensive fixtures and fittings, glazed tiles, built in furniture, marble slabs and any other item or facilities not covered in the item specified above.	(As per actual estimate)	(As per actual estimate)
j	Add also for lawns hedges etc. maintained.	Rs. 40/- per Sqm.	Rs. 40/- per Sqm.
k	Electrical installation without ceiling fans.	10%	8.5%
(a)	Add extra for conduit wiring	2.5%	1.5%
(b)	Add extra for Cost of ceiling fans to be added extra as per number of fans.		
l	Sanitary fittings (except item 3(h) & 3 (k)	10%	7%
m	Water supply (except item 3(h) & 3(k)	4%	3%
n	External cladding	(As per actual Estimate)	(As per actualEstimate)
o	Fire fighting system.	(As per actual Estimate)	(As per actualEstimate)
p	External Glazing work, ACP, Aluminium work (Anodised / Powder Coated), Pressed Steel Door frame work, Fibre / Acrylic/ Polycarbonate Sheet, Wall Panelling, False Ceiling work etc.	(As per actual Estimate)	(As per actualEstimate)

Note : For superior fittings such as bath tubs, water heaters etc. as per actual.

6. Road Works at Current B.S.R.

7. The above rates apply to the building having :

- A ceiling height of 3.20 m. (load bearing wall structures/ 3.00 M framed structures)
- Wall plastered on both sides and pointed externally.
- Ordinary cement floor.
- Walls and pillar masonry in lime or cement.
- Second class teak-wood of solid core/flush door and window shutters with ordinary iron fittings and ordinary paint.
- Ordinary electric wiring with light & ordinary power circuits and with moderate fittings.

Page No - 2

- (vii) Good and adequate sanitary fittings such as Indian or English type W.C. with flushing cistern, wash basin, towel rail, etc. in each bath room as per norms fixed by P.W.D. for type design including septic tank, soak pit and sewer lines with in the campus.
- (viii) Stone slab roofing/RCC slab roofing with Beams or joists.
8. If there are any variations in the above specifications then percentage to be added or reduced, should be worked out proportionately.
9. After valuation of the present day cost of the building as though it is now, the depreciated cost should be calculated by the formula given below :
- $$D = P (1 - rd/100)^n$$
- Where -  
 D = Depreciated Value  
 rd = The fixed percentage for depreciation.  
 P = The cost at the present market rate.  
 n = The number of years the building had been constructed.
10. The following may be assumed as the life span of the various type of buildings :
- a. RCC framed buildings, building built of stone in lime masonry walls or brick in lime masonry, stone slab or RCC roof, cement concrete or stone flag flooring and teak wood joinery.  
 Life 80 to 100Years
- b. Buildings of slightly inferior specifications such as stone in mud or bricks in mud masonry, lime plastered walls, stone slab roofing or terraced roofing or stone flags with ordinary or lime terrace and 2nd class teak wood or other equivalent quality, and timber joinery.  
 Life 60 to 80 years
- c. Building of semi-permanent nature such as built partly of brick in lime mortar and partly of brick in mud mortar, wooden joints or AC or CGI sheet roofing and country wood joinery.  
 Life 50 to 60 years
- d. Temporary building such as buildings in mud mortar and inferior specifications or structures with country tiles roof and thatch etc.  
 Life 10 years or less.
11. (i) If the age of the building is known or can be ascertained through local enquiry etc., the actual age of the building shall be taken subject to the maximum life span according to the type of construction.
- (ii) If the exact age of the building can not be ascertained but the approximate age can be found out, then that age shall be adopted. If the age can not be found out by any means, the same shall be assumed as 50 years.
- (iii) The Executive Engineers should exercise their judgment carefully to decide as to which category the building in question belongs and to estimate the actual life within the category.
12. The rate of depreciation be taken as : 100/Life span for each category.
13. The cost of land should be worked out by a committee consisting of the concerning S.E., T.A. to SE and Executive Engineer(s) after considering the rates obtained from UIT/



Municipality/Registration Deptt./any other authority having jurisdiction or the administration of land in that area. The committee should exercise its discretion carefully, taking all the facts like importance of the place etc. into consideration, Land in excess of four times the built-up area of the building should not be counted for determining the total cost of land and building, unless the entire land is specifically required.

14. For buildings more than one storey the distribution of cost of land shall be made as under :
  - a The cost of built-up land area shall be distributed in proportion to the built-up area on individual floors.
  - b The cost of open land shall be distributed in proportion to the actual use of land by different tenants on individual floors.
  - c The area under commercial use shall be given double weight-age of the area under residential use.
15. For issuing Fair Rent Certificate (FRC), the space being taken on rent by various departments should be in accordance with the Standing Order No.144
16. Revision of rent shall be issued as per Provision For Certain Kinds of Contingent Expenditure of GF & AR.
17. The rate applicable for determining the Fair Rent Certificate (FRC), for Government/ Private Buildings shall be in accordance with the Circular No. CE/SE (DB)/D-1932 dated 20-01-2007.
18. Any taxes such as Property Tax, Development Tax, Sewerage Tax, House tax, Land & Building tax etc., is to be borne by the owner.
19. The order shall come into force with immediate effect and will not affect the cases assessed in the past.

Date 17.08.2021

  
( SANJIV MATHUR )  
Chief Engineer & Addl. Secy.  
Public Works Department  
Rajasthan, Jaipur

No. CE/SE(B)/D- 806

Date 17/8/2021

Copy submitted / forwarded to the following for information and necessary action:-

1. The Accountant General, Rajasthan, Jaipur.
2. The Principal Secretary, PWD, Govt. of Rajasthan, Jaipur
3. The Secretary, PWD, Govt. of Rajasthan, Jaipur
4. The Chief Engineer & Addl. Secretary, PWD, Govt. of Rajasthan, Jaipur
5. The Chief Engineer (Building) /NH/Roads/PMGSY/SS, PWD, Rajasthan, Jaipur
6. The Addl. Chief Engineer, PWD, Zone-.....(All)
7. The Superintending Engineer, PWD, Circle-.....(All)
8. The Executive Engineer, PWD, Division-.....(All)

  
( L.K. Gupta ) 17.08.2021  
Superintending Engineer (Bldg.-I)  
Public Works Department  
Rajasthan, Jaipur

## TABLE OF DEPRECIATED COST OF BUILDINGS

$$D = P \left( 1 - \frac{rd}{100} \right)^n$$

$$D = P \times C$$

rd = RATE OF DEPRICATION

(a) Take rd 1% for lime and cement masonry.

(b) rd 2% for mud

masonry. n= Number of

Years

P= Present Day

Cost

D=Depreciated

Cost.

Number of Years	Value of C		Number of Year	Value of C	
	rd 1%	rd 2%		rd 1%	rd 2%
1	2	3	4	5	6
1.	0.9900	0.9800	51.	0.5965	0.3558
2.	0.9800	0.9603	52.	0.5905	0.3487
3.	0.9700	0.9410	53.	0.5845	0.3417
4.	0.9603	0.9221	54.	0.5786	0.3348
5.	0.9506	0.9036	55.	0.5720	0.3281
6.	0.9410	0.8855	56.	0.5670	0.3215
7.	0.9315	0.8678	57.	0.5613	0.3151
8.	0.9221	0.8502	58.	0.5556	0.3087
9.	0.9128	0.8333	59.	0.5500	0.3026
10.	0.9036	0.8166	60.	0.5445	0.2965
11.	0.8945	0.8002	61.	0.5391	0.2905
12.	0.8855	0.7841	62.	0.5335	0.2847
13.	0.8766	0.7624	63.	0.5282	0.2790
14.	0.8678	0.7520	64.	0.5229	0.2734
15.	0.8590	0.7379	65.	0.5176	0.2680
16.	0.8502	0.7237	66.	0.5124	0.2626
17.	0.8418	0.7086	67.	0.5072	0.2572

Number of Years	Value of C		Number of Year	Value of C	
	rd 1%	rd 2%		rd 1%	rd 2%
18.	0.8333	0.6944	68.	0.5021	0.2522
19.	0.8250	0.6805	69.	0.4971	0.2471
20.	0.8166	0.6668	70.	0.4920	0.2421
21.	0.8082	0.6534	71.	0.4871	0.2372
22.	0.8002	0.6403	72.	0.4821	0.2325
23.	0.7921	0.6275	73.	0.4773	0.2278
24.	0.7841	0.6149	74.	0.4725	0.2232
25.	0.7762	0.6026	75.	0.467	0.2288
26.	0.7674	0.5905	76.	0.4630	0.2144
27.	0.7607	0.5786	77.	0.4583	0.2101
28.	0.7520	0.560	78.	0.4537	0.2059
29.	0.7454	0.5556	79.	0.4491	0.2018
30.	0.7379	0.5445	80.	0.4446	0.1977
31.	0.7305	0.5335	81.	0.4401	0.1937
32.	0.7231	0.5229	82.	0.4357	0.1899
33.	0.7158	0.5124	83.	0.4313	0.1861
34.	0.7086	0.5021	84.	0.4270	0.1823
35.	0.015	0.4920	85.	0.4227	0.1786
36.	0.6944	0.4821	86.	0.4184	0.1751
37.	0.6874	0.4725	87.	0.4142	0.1716
38.	0.6805	0.4630	88.	0.4101	0.1681
39.	0.6736	0.4537	89.	0.059	0.1647
40.	0.6668	0.4446	90.	0.4018	0.1614
41.	0.6601	0.4357	91.	0.3977	0.1582
42.	0.6534	0.4270	92.	0.3938	0.1550
43.	0.6468	0.4184	93.	0.3897	0.1519
44.	0.6403	0.4101	94.	0.3859	0.1489
45.	0.6339	0.4018	95.	0.4819	0.1459
46.	0.6275	0.3938	96.	0.3781	0.1430
47.	0.6212	0.3859	97.	0.3743	0.1401
48.	0.6149	0.3781	98.	0.3704	0.1373
49.	0.6067	0.3705	99.	0.3667	0.1345
50.	0.6026	0.3631	100.	0.3631	0.1318

**SAFE PERMISSIBLE LOAD****ON MASONRY AND CONCRETE TABLE – 1**

<b>S.No.</b>	<b>Masonry/ Concrete</b>	<b>Safe permissible load in MT /Sqm.</b>
1.	Brick Masonry in CM 1:3	100
2.	Brick Masonry in CM 1:4	88
3.	Brick Masonry in CM 1:6	50
4.	Brick Masonry in Lime Mortar 1: 2	44
5.	Ashlar stone Masonry in Lime Mortar 1:3	99 to 110
6.	Rubble Masonry in Lime Mortar	30 to 50
7.	Cement concrete 1 : 1½ : 3	510
8.	Cement concrete 1 : 2 : 4	440
9.	Cement concrete 1 : 3 : 6	280
10.	Lime Concrete	50 to 75

**COMPRESSIVE STRENGTH OF MORTAR AND CONCRETE****TABLE– 2**

<b>S.No.</b>	<b>Mix</b>	<b>Compressive Strength in Kg/Cm<sup>2</sup></b>	
		<b>After 7 days curing</b>	<b>After 28 days curing</b>
1.	Cement Sand Mortar 1:3	38	75 to 100
2.	Cement Sand Mortar 1:4	25	50 to 75
3.	Cement Sand Mortar 1:6	15	30 to 50
4.	Lime Sand Mortar 1:2	2.5	5 to 7
5.	Lime Surkhi Mortar 1:2	7.5	15 to 20
6.	Cement Concrete 1:4:8	38	75
7.	Cement Concrete 1:3:6	70	100
8.	Cement Concrete 1:2:4	105	150
9.	Cement Concrete 1:1½:3	140	200
10.	Cement Concrete 1:1:2	175	250

# **PROPERTIES OF MILD STEEL SQUARE AND ROUND**

## **BARS TABLE-3**

**(0.7843KG./CM2/METRES)**

Diameter or width mm	Weight per Meter		Sectional Area		Perimeter	
	Square Kg.	Round Kg.	Square Cm <sup>2</sup>	Round Cm <sup>2</sup>	Square Cm <sup>2</sup>	Round Cm <sup>2</sup>
05.0	0.20	0.15	0.25	0.20	2.0	1.57
05.5	0.24	0.19	0.30	0.24	2.2	1.77
06.0	0.28	0.22	0.36	0.28	2.4	1.88
07.0	0.38	0.30	0.49	0.38	2.8	2.20
08.0	0.50	0.39	0.64	0.50	3.2	2.51
09.0	0.64	0.50	0.81	0.64	3.6	2.83
10.0	0.78	0.62	1.00	0.79	4.0	3.14
11.0	0.95	0.75	1.21	0.95	4.4	3.46
12.0	1.13	0.89	1.44	1.13	4.8	3.77
13.0	1.54	1.21	1.96	1.54	5.6	4.40
16.0	2.01	1.58	2.56	2.01	6.4	5.03
18.0	2.54	2.00	3.24	2.54	7.2	5.65
20.0	3.14	2.47	4.00	3.14	8.0	6.28
22.0	3.80	2.98	4.84	3.80	8.8	6.91
25.0	4.91	3.85	6.25	4.91	10.0	7.85
28.0	6.15	4.82	7.84	6.16	11.2	8.80
32.0	8.04	6.31	10.24	8.04	12.8	10.05
36.0	10.17	7.99	12.96	10.18	14.40	11.31
40.0	12.56	9.86	16.00	12.67	16.00	12.57
45.0	15.90	12.49	20.25	15.90	18.00	14.14
50.0	19.62	15.41	25.00	19.64	20.0	15.71
56.0	24.62	19.34	31.36	24.63	22.4	17.59
63.0	31.16	24.47	39.69	31.17	25.2	19.78
71.0	39.47	31.08	50.41	39.49	28.4	22.31
80.0	50.24	39.36	64.0	50.27	32.0	25.13

## PROPERTIES OF RIBBED OR STEEL

### TABLE- 4

Size (mm)	Area (Cm <sup>2</sup> )	Weight per Metre (Kg.)	Perimeter (Cm)	Length per MT (Metre)	Minimum Bend Radius
06	0.283	0.222	1.89	4510	
08	0.503	0.395	2.51	2532	
10	0.785	0.617	3.14	1631	
12	1.131	0.888	3.77	1125	
14	1.539	1.208	4.40	829	4d
16	2.011	1.578	5.03	633	
18	2.545	2.000	5.65	500	
20	3.142	2.466	6.28	405	
22	3.801	2.980	6.91	336	
25	4.909	3.854	7.85	260	
28	6.157	4.830	8.80	207	
32	8.042	6.313	10.05	159	
36	10.179	7.990	11.31	125	
40	12.566	9.864	12.57	101	6d
50	19.635	15.410	15.71	65	

## SUBSTITUTION AS TENSION REINFORCEMENT

### TABLE- 5

Mild Steel (mm)	8	10	12	16	20	22	25	28	32	36	40	50
Ribbed or TOR Steel(mm)	6	8	10	12	16	18	20	22	25	28	32	36

## SUBSTITUTION AS TENSION REINFORCEMENT

### TABLE- 6

Mild Steel (mm)	12	16	20	22	25	28	32	36	40	50
Ribbed or TOR Steel (mm)	10	14	2x12	18	20	22	2x18	2x20	32	40



## WEIGHTS OF CONSTRUCTION MATERIALS

### TABLE-7

S. No.	Materials	Weight inKg.	Per	Remarks
<b>Earth Soil Clay etc.</b>				
1.	Earth alluvial undisturbed	1600	Cum.	
2.	Earth dry	1413 – 1850	Cum.	
3.	Earth Moist	1600 – 2000	Cum.	
4.	Clay wet compact	2080	Cum.	
5.	Clay Moist compact	1760	Cum.	
6.	Clay Dry compact	1440	Cum.	
7.	Clay Dry lumps	1040	Cum.	
8.	Gravel loose	1600	Cum.	
9.	Gravel rammed	1920 – 2160	Cum.	
10.	Shingle 3mm to 30mm	1460	Cum.	
11.	Sand dry clean	1540 – 1600	Cum.	
12.	Sand dry River	1840	Cum.	
13.	Sand wet	1760 – 2000	Cum.	
14.	Peat dry	580 – 640	Cum.	
15.	Sand dry compact	800	Cum.	
16.	Sand wet compact	1360	Cum.	
17.	Lime unslaked	870 – 1050		
<b>Liquids</b>				
1.	Alcohol	780	Cum.	
2.	Creosote	1070	Cum.	
3.	Diesel oil	960	Cum.	
4.	Oil in seed	930	Cum.	
5.	Oil Turpentine	860	Cum.	
6.	Petrol	690	Cum.	
7.	Varnish	960	Cum.	
8.	Water Fresh	1000	Cum.	
9.	Water Salty	1025	Cum.	

S. No.	Materials	Weight inKg.	Per	Remarks
<b>Building Stones</b>				
1.	Basalt	2600	Cum.	
2.	Ginesis	2400 – 2690	Cum.	
3.	Graphic	2690 – 2800	Cum.	
4.	Laterite	2080 – 2400	Cum.	
5.	Limestone	2400 – 2640	Cum.	
6.	Marble	7220	Cum.	
7.	Pumice	800 – 1200	Cum.	
8.	Quartzite	2640	Cum.	
9.	Sand stone	2240 – 2400	Cum.	
10.	Slate	2800	Cum.	
11.	Chalk	1600 – 1920	Cum.	
<b>Metal sand Alloys</b>				
1.	Iron pig	7200	Cum.	
2.	Grey cast iron	7030 – 7130	Cum.	
3.	Iron wrought	7700	Cum.	
4.	Steel cast	7850	Cum.	
5.	Steel wrought mild	7800	Cum.	
6.	Copper cast	8790 – 8940	Cum.	
7.	Copper wrought	8840 – 8940	Cum.	
8.	Lead cast	11340	Cum.	
9.	Lead wrought	11360	Cum.	
10.	Manganese	7400	Cum.	
11.	Mercury	13600	Cum.	
12.	Nickel	8280 – 8810	Cum.	
13.	Aluminum	2580 – 2710	Cum.	
14.	Aluminum wrought	2640 – 2800	Cum.	
15.	Steel black plates	7.9	Sqm. per mm thickness	
16.	Copper plates	8.69	Sqm.per mm thickness	
17.	Lead plates	11.0	Sqm.per mm thickness	
18.	Aluminum plates	2.8	Sqm.per mm thickness	
19.	Brasses (Red &White)	8190 – 8220	Cum.	
20.	Brasses Yellow	8440 – 8680	Cum.	

S. No.	Materials	Weight inKg.	Per	Remarks
<b>Timber</b>				
1	Hard wood such as axle Wood babool etc.	640-690	Cum	
2	Light wood such as fir, senal	400-480	Cum	
3	Medium wood such as Pine, Deodar, Chir. Mango	480-640	Cum	
4	Teak	625	Cum	
<b>Bricks</b>				
1	Common brunt clay Bricks	1600-1920	Cum	
2	Engineering bricks	2160	Cum	
3	Brick blast	1200	Cum	
4	Brick dust (Surkhi)	1000	Cum	
<b>Cement</b>				
1	Ordinary and alumina	1440	Cum	
2	Repaid hardening	1050-1280	Cum	
<b>Cement concrete Plain</b>				
1	Aerated	260	Cum	
2.	Brick Aggregate	1760-2160	Cum	
3.	Stone ballast	2240-2400	Cum	
<b>Reinforcement Cement Concrete</b>				
1	With1%Steel	2310-2470	Cum	
2	With2%Steel	2370-2530	Cum	
3	With3%Steel	2560-2720	Cum	
4	Concrete with brick agg. and lime mortar	1920	Cum	
<b>Masonry</b>				
1	Brick masonry with Common burnt clay bricks	1920	Cum	
2	Brick masonry with 7 Mounted bricks	2400	Cum	
3	Stone masonry dry rubble	2000	Cum	
4	Stone masonry in mortar of lime, sand stone, granite etc.	2240-2640	Cum	

S. No.	Materials	Weight inKg.	Per	Remarks
<b>Roofing</b>				
1	Country tiled (Double) Including battens	120	Sqm	
2	Country tiled (Single)	70	Sqm	
3	Manglore tiled with Battons	65	Sqm	
4	C.G.I. Sheet	10-13	Sqm	
5	A.C. Sheet	34	Sqm	
<b>Mortar</b>				
1	Cement	2030	Cum	
2	Lime	1600-1840	Cum	

## USEFUL CONVERSION TABLES

TABLE 8

S.No	To Convert	Into	Multiply By	Divide By
1	Meters	Yards	1.09361	0.9144
2	Meters	Feet	3.28084	0.3048
3	Meters	Inches	39.3701	0.0254
4	Kilometer	Mile	0.62137	1.60934
5	Square Kilometer	Square Mile	0.386101	2.58999
6	Square Meter	Sq. Yards	1.19599	0.83613
7	Square Yards	Sq. Ft.	10.7659	0.092903
8	Square Meter	Sq. Inches	1550.00	0.00064516
9	Square Centimeters	Sq. Inches	0.1550	6.4516
10	Hectare(1000Sq. M.)	Acres	247105	0.404686
11	Cubic Meters	Cubic Ft.	35.3147	0.028317
12	Cubic Meters	Gallons (IMP)	2.19969	0.00454609
13	Cubic Centimeters	Cubic Inches	0.061024	16.3871
14	Liter	Gallon	0.219975	4.54506
15	Kilograms	Pounds	2.2046	0.4535924
16	Quintal (100Kg.)	Mounds	2.67923	0.373242
17	Quintal (100Kg.)	Hundred Weight	1.96840	0.50802
18	Tones (Metric Ton)	Tons(British)	0.9892	1.01605
19	Tonnes (Metric Ton)	Maunds	26.7923	0.0373242
20	Kilometers per hour	Miles Per hour	0.62173	1.60934
21	Kilometers per hour	Ft. per Sec.	0.91134	1.09728
22	Gramme per Cub.Cm.	Pound Per Cu.Inch	0.0361273	26.6799
23	Kilometers per Cum	Pound Per cu. Ft.	0.0624	16.018
24	Kilometers per litre	Pound Per cu. Ft.	62.426	0.0160189
25	Kilometers per Sqm	Pound Per Sq. Inch	14.2233	0.07.0307
26	Tone/ Per Sqm	Ton per Sq. foot	0.09143	10.937
27	Kilometers per Sqm	Pound Per Sq.Ft.	0.20428	4.8924
28	Kilometers per metre	Pound Per Ft.	0.61797	1.48816
29	Kilometers metre	Ft Pound	7.231	0.1382

**MATERIAL CONSUMPTION STATEMENT QUANTITY OF  
MATERIALS REQUIRED FOR VARIOUS TYPE OF MASONRY  
FOR ONE CUM.**

S. No.	Type of Masonry	Qty. of Stone /Bricks	Qty. of Mortar Cum
1.	R.R. Stone masonry for foundation/ Superstructure wall in mortars.	1.14 Cum	0.33
2.	Dry Stone R.R. retaining wall masonry	1.14 Cum	--
3.	Dry Stone C.R. retaining wall masonry	1.24 Cum	--
4.	R.R. Dry Stone Pitching	1.14 Cum	--
5.	C.R. Dry Stone Pitching	1.24 Cum	--
6.	R.R. Stone Pillar masonry in mortar	1.20 Cum	0.33
7.	Arch masonry in mortar	1.25 Cum	0.25
8.	Cut Stone Arch masonry in mortar	1.25 Cum	0.25
9.	Relieving Arch masonry in mortar	1.25 Cum	0.25
10.	Brick masonry for foundation/ super structure in mortars size 22.9x11.1x7.0cm. with 1cm. thick mortar joint.	473 Nos	0.237

**QUANTITY OF MATERIALS FOR VARIOUS NOMINAL MIX**

**(ONE CUM OF CONCRETE)**

S. No.	Mix	Requirement of Cement			Sand	Coarse Aggregate
		Cum	Tones	Bags		
1	Cement Concrete M-20 (1:1.5:3)	0.283	0.400	8.00	0.425	0.85
2	Cement Concrete M-15 (1:2:4)	0.222	0.322	6.44	0.445	0.90
3	Cement Concrete (1:3:6)	0.156	0.220	4.40	0.470	0.94
4	Cement Concrete (1:4:8)	0.120	0.170	3.40	0.48	0.96
5	Cement Concrete (1:5:10)	0.098	0.140	2.80	0.49	0.98

**MATERIAL CONSUMPTION STATEMENT FOR VARIOUS TYPE  
OF MORTARS FOR ONE CUM**

S. No.	Mix	Requirement of Cement			Lime Cum	Sand / Marble Powder
		Cum	Tones	Bags		
1	Lime Sand Mortar (1:2)	--	--	--	0.475	0.95
2	Lime Sand Mortar (1:3)	--	--	--	0.367	1.07
3	Cement Mortar (1:3)	0.357	0.510	10.20	--	1.07
4	Cement Mortar(1:4)	0.258	0.386	7.72	--	1.07
5	Cement Mortar (1:5)	0.214	0.308	6.16	--	1.07
6	Cement Mortar (1:6)	0.179	0.256	5.12	--	1.07
7	Cement Mortar (1:7)	0.153	0.220	4.40	--	1.07
8	Cement Mortar (1:8)	0.134	0.193	3.86	--	1.07
9	Composite Mortar (Cement: Lime : Sand)1:1:6	0.178	0.256	5.12	0.178	1.07
10	Composite Mortar (Cement: Lime : Sand) 1:2:9	0.190	0.173	3.46	0.24	1.07

S. No.	Description of Item	Unit	Requirement of Cement Cum	Bags of 50 Kg.
<b>RCC/BR Work:</b>				
1.	R.B.work in cement mortar 1 : 2	Cum		3.00
2.	R.C.C. door and window frames :			
	(a) 100x 75 mm size	Mtr.		0.06
	(b) 125 x 75mm size	Mtr.	-	0.07
3.	R.C.C. shelves in 1: 2: 4 mix :			
	(a) 20mm thick	Sqm	-	0.13
	(b) 25mm thick	Sqm	-	0.16
	(c) 30 mm thick	Sqm	-	0.19
4.	Precast cement concrete jali in 1 : 2: 4 for fixing of :			
	(a) 50mm thick	Sqm	-	0.03
	(b) 40mm thick	Sqm	-	0.03
	(c) 30mm thick	Sqm	-	0.03
	(d) 20mm thick	Sqm	-	0.03
<b>Masonry :</b>				
5.	R.R. stone masonry in:			
	(a) Cement mortar 1: 3	Cum	-	3.40
	(b) Cement mortar 1: 4	Cum	-	2.50
	(c) Cement mortar 1: 6	Cum	-	1.60
	(d) Cement mortar 1: 8	Cum	-	1.25
	(e) Cement lime sand mortar 1: 2 : 9	Cum	-	1.10
	(f) Cement limes and mortar 1 : 3 : 12	Cum	-	0.85
6.	Ashlar veneer facing in cement mortar 1 : 4 including Cement pointing in 1: 3 cement mortar.	Cum	-	0.25
7.	Brick masonry in :			
	(a) Cement mortar 1: 3	Cum	-	2.40
	(b) Cement mortar 1: 4	Cum	-	1.80
	(c) Cement mortar 1: 6	Cum	-	1.20
	(d) Cement mortar 1: 8	Cum	-	0.90
	(e) Cement limes and mortar 1: 2 : 9	Cum	-	0.80
	(f) Cement limes and mortar 1 : 3: 12	Cum	-	0.60
8.	75mm thick brick pardiwall in:			
	(a) Cement mortar 1: 4	Sqm	-	0.15
	(b) Cement mortar 1: 6	Sqm	-	0.09
	(c) Cement mortar 1: 8	Sqm	-	0.07



S. No.	Description of Item	Unit	Requirement of Cement Cum	Bags of 50Kg.
9.	112mm thick brick pardiwall in:			
	(a) Cement mortar 1: 4	Sqm	-	0.21
	(b) Cement mortar 1: 6	Sqm	-	0.15
	(c) Cement mortar 1: 8	Sqm	-	0.10
	Damp Proof Course :			
10.	Laying damp proof coarse 25mm thick in C.M. 1:3.	Sqm	-	0.255
11.	Laying cement concrete M.15 (1 :2:4) for damp proof or coping:			
	(a) 30mm thick	Sqm	-	0.192
	(b) 50mm thick	Sqm	-	0.320
	(c) 75mm thick	Sqm	-	0.480
	(d) 100mm thick	Sqm	-	0.640
	Stone Work			
12.	Fixings tone sills and coping in cement mortar1:3	Sqm	-	0.10
13.	Fixings tone sills and coping in cement mortar1:4	Sqm	-	0.08
14.	Fixings tone shelves in cement mortar 1 :3	Sqm	-	0.02
15	Fixing Karauli stone steps in cement mortar1:4	Sqm	-	0.08
	<b>Roofing:</b>			
16.	Stones lab roofing.	Sqm	-	0.01
17.	Brick kharanja in cement sand mortar 1 :4 on edge.	Sqm	-	0.09
18.	Providing flat brick kharanja in cement mortar1:6.	Sqm	-	0.07
19.	Providing stone slab covering over drain including filling of joints in cement sand mortar 1 : 3 with 35 mm thick cement concrete flooring 1:2 :4.	Sqm	-	0.43
20.	Making khurras 45 x 45 C.M.with minimum 5 cm.thick cement concrete 1 : 2 : 4 over PVC sheet, finished with 12mm cement plaster 1 : 3 and a floating coat of cement.	Each	-	0.12

S. No.	Description of Item	Unit	Requirement of Cement Cum	Bags of 50Kg.
	<b>Flooring :</b>			
21.	Coarse stone paving 125 mm to 150mm with pointing in cement mortar 1 :3.	Sqm	-	0.25
22.	Coarse stone paving 200 mm to 225 mm with pointing in cement mortar 1 :3.	Sqm	-	0.20
23.	Brick on edge flooring laid on 12 mm thick mortar including filling joints with slurry etc. in :	Sqm		
	(a) Cement sand mortar 1:6	Sqm	-	0.26
	(b) Cement sand mortar 1: 4	Sqm	-	0.37
25.	Providing and laying cement Concrete flooring in M 10 grade:			
	(a) 25mm thick.	Sqm	-	0.11
	(b) 30 mm thick.	Sqm	-	0.13
	(c) 38mm thick.	Sqm	-	0.17
	(d) 50mm thick.	Sqm	-	0.22
	(e) 75mm thick.	Sqm	-	0.33
26.	40 mm thick red oxide flooring under layer of 30 mm thick cement concrete 1 : 2 : 4 and to player of 10 mm thick plaster of cement red oxide mix and sand mortar 2 : 3 finished with a coat of neat cement red oxide mix etc.	Sqm	-	0.35
27.	40 mm thick polished cement concrete flooring under layer of 30mm 1 : 2 : 4 concrete and to player 10 mm thick of mix 1 : 2 cement stone dust etc.	Sqm	-	0.40

S. No.	Description of Item	Unit	Requirement of Cement Cum	Bags of 50 Kg.
28.	52 mm thick cement concrete flooring with metallic concrete hardener topping under layer of 40 mm thick 1 : 2 : 4 concrete and top layer of 12mm thick metallic concrete hardener consisting of mix 1:2 cement metallic hardening compound mixed in ratio 4 : 1 (4 cement 1 : part of metallic hardening compound by wt.) including slurry etc. complete.	Sqm	-	0.46
29.	Cement plaster skirting with cement mortar 1:3 finished with A floating coat of neat cement:			
	(a) 18mm thick.	Sqm	-	0.21
	(b) 25mm thick.	Sqm	-	0.28
30.	Red oxide plaster skirting with to player of 6mm thick cement red oxide mix in mortar 1:3 (cement red oxide 1: sand 3) Finished with a floating coat of cement red oxide mix:			
	(a) 18mm thick.	Sqm	-	0.20
	(b) 25mm thick.	Sqm	-	0.26

S. No.	Description of Item	Unit	Requirement of Cement Cum	Bags of 50Kg. (OPC)	Bags of 50 Kg. (White)
31.	40 mm thick marble chips flooring under layer 34mm thick cement concrete 1 : 2 :4 and top layer of 6mm thick marble chips laid in cement marble powder mix 3 : 1 by weight in proportion of 4 : 7(4 marble cement powder : marble chips) including cement slurry:				
	(a)With ordinary cement.	Sqm	-	0.34	-
	(b)With dark shade pigment With ordinary cement.	Sqm	-	0.33	-
	(c)Light shad pigment with White cement or without pigment in white cement.	Sqm	-	0.26	0.068
	(d)Medium shade pigment with approximately 50% white cement and50% Ordinary cement.	Sqm	-	0.30	0.034
32.	40mm thick marble chips flooring under layer 31mm thick cement concrete 1 : 2 :4 and top layer of 9mm thick marble chips laid in cement marble powder mix 3 :1 by weight in proportion of (4 marble cement powder : 6 Marble chips) including cement slurry:				
	(a)With ordinary cement.	Sqm	-	0.37	-
	(b)With dark shade pigment With ordinary cement.	Sqm	-	0.36	-
	(c)Light shad pigment with White cement or without pigment in white cement.	Sqm	-	0.24	0.102
	(d)Medium shad pigment with approximately 50% white cement and 50% Ordinary cement.	Sqm	-	0.30	0.051

**M-50**

<b>S. No.</b>	<b>Description of Item</b>	<b>Unit</b>	<b>Requirement of Cement Cum</b>	<b>Bags of 50Kg. (OPC)</b>	<b>Bags of 50Kg. (White)</b>
33.	40 mm thick marble chips				
	Flooring under layer 28 mm thick cement concrete 1:2:4 and to player of 12mm thick in cement marble powder mix 3 : 1 by weight in proportion of (4 cement marble powder mix : 5 Marble chips) including cement slurry etc :				
	(a)With ordinary cement.	Sqm	-	0.39	-
	(b)Dark shade pigment in ordinary cement.	Sqm	-	0.38	-
	(c)Light shade pigment in white cement or without Pigment in white cement.	Sqm	-	0.21	0.136
	(d)Medium shade pigment with 50% white cement and 50% ordinary cement.	Sqm	-	0.30	0.068
34.	40mm thick marble chips flooring under layer 25mm thick cement concrete1:2:4 and to player of 15mm thick cement marble powder mix3:1by weight in proportion of cement marble powder mix marble chips by volume including cement Slurry etc. complete :				
	(a)With ordinary cement.	Sqm	-	0.40	-
	(b)Dark shade pigment in Ordinary cement.	Sqm	-	0.39	-
	(c)Light shade pigment in White cement or with out pigment in white cement.	Sqm	-	0.22	0.170
	(d)Medium shade pigment with approximately 50% white cement and50% Ordinary cement.	Sqm	-	0.30	0.085
35.	Marble chips skirting 26mm thick under layer 20mm				
	Thick cement plaster1:3 and to player of 6mm thick Marble chips:				
	(a)With ordinary cement.	Sqm	-	0.28	-
	(b)Dark shade pigment in Ordinary cement.	Sqm	-	0.27	-
	(c)Light shade pigment in white cement or without Pigment in white cement.	Sqm	-	0.20	0.052
	(d)Medium shade pigment With 50%white cement and 50% ordinary cement.	Sqm	-	0.24	0.026

S.No.	Description of Item	Unit	Requirement of Cement Cum	Bags of 50 Kg.
36.	Crazy marble stone flooring including filling the gaps with cement marble chips mixture 3:1 by weight in the proportion of 4 : 7 (4 cement marble powder mix : 7 marble chips) by volume and under layer of 25mm thick cement concrete 1:2 and slurry etc. complete:			
	(a)With Irregular shaped crazy.	Sqm	-	0.24
	(b)With rectangular fine edged crazy.	Sqm	-	0.20
37.	Providing & fixing of pre-cast terrazzo chequered or embossed/ ironite toppings tiles over 20 mm thick bed of :			
	(a)Cement mortar 1: 6	Sqm	-	0.12
	(b)Cement mortar 1: 4	Sqm	-	0.17
38.	Providing & fixing of Kota, Modak flooring over 20mm thick base of lime mortar Jointing with cement mortar1:3.	Sqm	-	0.18
39.	Providing & fixing of Kota, polished stone laid on12mm thick cement mortar 1 : 3 and jointing with neat cement slurry.	Sqm	-	0.15
40.	Marble stone flooring over 20mmthickbasejointedwithwhite cement slurry etc. Complete on(All marbles labs):			
	(a)Base lime mortar	Sqm	-	W0.02
	(b) Base cement mortar1: 4	Sqm	-	0.15
41.	Marbles labs in risers steps skirting dado wall of pillars on 12mm thick cement mortar1:3jointed with white cement.	Sqm	-	0.13

S.No.	Description of Item	Unit	Requirement of Cement Cum	Bags of 50 Kg.
<b>Plaster:</b>				
42.	Cement plaster 12mm thick:			
	(a) Cement sand 1 : 3	Sqm	-	0.15
	(b) Cement sand 1 : 4	Sqm	-	0.11
	(c) Cement sand 1 : 6	Sqm	-	0.07
	(d) Cement sand 1 : 8	Sqm	-	0.05
43.	20mm thick cement plaster:			
	(a) Cement sand 1:3 ratio.	Sqm	-	0.23
	(b) Cement sand 1:4 ratio.	Sqm	-	0.17
	(c) Cement sand 1 : 6 ratio.	Sqm	-	0.11
	(d) Cement sand 1:8 ratio.	Sqm	-	0.08
44.	25mm thick cement plaster:			
	(a) Cement sand 1:3 ratio.	Sqm	-	0.28
	(b) Cement sand 1:4 ratio.	Sqm	-	0.21
	(c) Cement sand 1:6 ratio.	Sqm	-	0.14
	(d) Cement sand 1:8 ratio.	Sqm	-	0.10
45.	Cement lime plaster 1:1:6 ratio:			
	(a) 25 mm thick	Sqm	-	0.14
	(b) 20 mm thick	Sqm	-	0.12
	(c) 12 mm thick	Sqm	-	0.07
46.	Cement lime plaster 1:2:9 ratio:			
	(a) 25 mm thick	Sqm	-	0.10
	(b) 20 mm thick	Sqm	-	0.08
	(c) 12 mm thick	Sqm	-	0.05

S. No.	Description of Item	Unit	Requirement of Cement Cum	Bags of 50 Kg.
47.	6 mm cement plaster to ceiling:			
	(a) Cement sand 1:3 ratio.	Sqm	-	0.08
	(b) Cement sand 1:4 ratio.	Sqm	-	0.06
	(c) Cement sand 1:6 ratio.	Sqm	-	0.04
48.	Neat cement punning.	Sqm	-	0.04
49.	Fine finishing coat of cement sandla	Sqm	-	0.04
50.	Providing on stone masonry in cement mortar 1:3:			
	(a) Flush or ruled or sunk of weather proof pointing.	Sqm	-	0.024
	(b) Raised and cut pointing	Sqm	-	0.04
51.	Pointing on brick or tile work In cement mortar 1:3:			
	(b) Raised and cut pointing	Sqm	-	0.033
52.	Coursed Rubble masonry in cement mortar 1 : 6 in super structure.	Cum	-	1.50
53.	Plain Ashlar masonry in super structure in cement mortar 1 : 6 including pointing with cement mortar 1 : 2.	Cum	-	1.08
54.	Providing & fixing horizontal chhajja of stone in cement mortar 1:4 including pointing in cement mortar 1:2.	Sqm	-	0.10
55.	Providing & fixing EZ-7 frame embedded in cement concrete block 15x10x10cm. size of 1 : 3 : 6.	Quintal	-	0.22



S.No.	Description of Item	Unit	Requirement of Cement Cum	Bags of 50 Kg.
56.	Providing and fixing M.S. ring For fastening ropes of chick.	100 Nos.	-	0.10
57.	Fixing chowkhats in opening including embedding chowkhats in floor, cutting masonry for hold fasts embedded in C.C. 1:3:6 and making good the wall:			
	(a)Door chowkhats.	Each	-	0.24
	(b)Window chowkhats.	Each	-	0.12
	(c)Clear storey window.	Each	-	0.66
58.	Providing and fixing M.S. fan clamp in existing R.C.C. slab including cutting and making good.	Each	-	0.03
59.	Replacings and stones labs in roof laid in cement mortar 1:4 including necessary repair sand cement pointing.	Sqm	-	0.01
<b>SANITARY:</b>				
60.	Fixing of water closets (alltype) along with flushing cisterns and brackets, telescopic flush pipe of bend with fittings and clamps, over flow pipes complete including cutting making walls and floors good.	Each	-	0.10
61.	Urinal basin with automatic Flushing cistern.	Each	-	0.05
62.	Range of two urinals with one Automatic flushing cistern.	Each	-	0.08
63.	Range of three urinals with one Automatic flushing cistern.	Each	-	0.13
64.	Range off our urinals with one Automatic flushing cistern.	Each	-	0.19

M-55

S.No.	Description of Item	Unit	Requirement of Cement Cum	Bags of 50 Kg.
65.	Fixing long Pan pattern or Orissa pattern W.C. pan.	Each	-	0.05
66.	Fixing a pair of white glazed earth enware or vitreous china foot rest.	Each	-	0.10
67.	Fixing flat back or wall corner Tube lipped front urinal basin.	Each	-	0.02
68.	Fixing laboratory basin with brackets, pillar taps etc., cutting and making wall good.	Each	-	0.05
69.	Fixing sink with brackets including cutting and making Good the wall.	Each	-	0.05
70.	Fixing wash basin.	Each	-	0.03
71.	Fixing M.S. holder bat clamps or M.S. stays and clamps.	Each	-	0.005
72.	Fixings and cast iron trap.	Each	-	0.025
73.	Providing and fixing wall face C.I.pipes including filling the jointing with spun yarn soaked Neat cement slurry and cement mortar 1 :2.	100 Mtr.	-	0.17
74.	Providing and fixing on wall face C.I. accessories for rain water pipe fittings, the joints with spun yarn soaked in neat cement slurry and cement mortar 1 : 2 :			
	(a)75 mm dia.	Each	-	0.005
	(b) 100 mm dia.	Each	-	0.006
	(c)150 mm dia.	Each	-	0.01

## ANNEXURE - A

The following fittings shall be provided in Door's and Window's shutters :

S. No.	Particulars	Number of Fittings
<b>(A) Single Leaf Door Shutters</b>		
(i)	Hinges of Size 100mm	3 Nos.
(ii)	Sliding Bolt one No. of length of 300mm of 12mm dia upto 35mm thick shutters and 16mm dia and 300mm. length for above 35mm thick shutters	1 No.
(iii)	Handles 150mm	2 Nos.
(iv)	Tower Bolts 300mm	1 No.
(v)	Tower Bolts 150mm	1 No.
(vi)	Door Stopper	1 No.
(vii)	Back Stopper	1 No.
<b>(B) Double Leaf Door Shutters</b>		
(i)	Hinges of Size 100mm	6 Nos.
(ii)	Sliding Bolt one No. of 350mm long 16mm dia	1 No.
(iii)	Handles 150mm	3 Nos.
(iv)	Tower Bolts 300mm	2 Nos.
(v)	Tower Bolts 150mm	2 Nos.
(vi)	Door Stopper	2 Nos.
(vii)	Back Stopper	2 Nos.
<b>(C) Window shutters in each leaf</b>		
(i)	Hinges of Size 100mm	2 Nos.
(ii)	Handles 125mm	1 No.
(iii)	Tower Bolts 150mm	2 Nos.
(iv)	Door Stopper	1 No.

## परिशिष्ट - 8

कार्यालय मुख्य सार्वजनिक निर्माण विभाग, राजस्थान, जयपुर  
क्रमांक सीई/एस ई (डी सी)/टी-335 दिनांक: 4-06-05

## परिपत्र

विषय :- राजकीय भवनों में वर्षा जल पुनर्चरण संयोजना ।

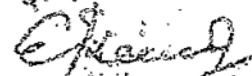
वर्षा के पानी द्वारा भू-गर्भ जलस्तर बढ़ाने के उद्देश्य से निर्देशित किया जाता है कि इस विभाग के अन्तर्गत 500 वर्ग मीटर अथवा इससे बड़े मुख्यण्डों पर निर्माण कराये जा रहे प्रस्तावित या वर्तमान भवनों में वर्षा के पानी द्वारा भू-गर्भ का जलस्तर बढ़ाने हेतु निम्न प्रावधान किया जाये।

- (1) वर्तमान में प्रस्तावित/निर्माणाधीन 500 वर्ग मीटर से 1000 वर्ग मीटर तक के मुख्यण्डों में वर्षा के पानी को इकट्ठा करने के लिए 1मी. x 1मी. x 1मी. के दो पक्के गड्ढों का निर्माण किया जायेगा। पहले गड्ढे को सीलिंग टाइल बलस्ट से भर दिया जायेगा और दूसरे गड्ढे को छोड़ी जायेगी। पहले गड्ढे को दूसरे गड्ढे से जोड़ा जायेगा, जिसे बार में 15 मीटर गहरे 6" व्यास वाले बोर्ड-वेल्ड से जोड़ा जायेगा जिसमें छिद्रों द्वारा लेसिंग पाइप लगा होगा। ऐसे दो बोर्डवेल्ड आपस में 2 मीटर की दूरी पर खोद जायेंगे। इसी प्रकार से 1000 वर्ग मीटर से बड़े प्लोट्स पर उपरोक्तानुसार प्रति 500 वर्ग मीटर क्षेत्रफल के अनुपात में विशेष प्रदूषण किये जायेंगे ताकि छत्ती का ज्यादातर पानी इन बोर्ड वेल्ड में पहुँचा कर जल विभाग की व्यवस्था की जा सके।

एक गड्ढे में से बड़े मुख्यण्ड में सक्षम अधिकारी द्वारा तय किये अनुसार वर्षा के पानी को इकट्ठा करने के लिए भूमिगत एक या एक से अधिक रीक लगाये जाये तथा जल रिहाय हेतु बोर्डवेल्डनुसार अथवा लोक मिट जैसी अन्य व्यवस्था की जाये।

- (2) वर्तमान भवनों में जो कि 600 वर्ग मीटर से बड़े मुख्यण्डों पर स्थित है, पुनर्चरण की व्यवस्था एक भूमिगत कार्यक्रम बना कर की जाये। सबसे पहले बड़े क्षेत्र पर स्थित बड़े बवनों को इस कार्य हेतु चुना जाये।

विभाग के सभी अतिरिक्त मुख्य अभियंता/अधीक्षण अभियंता/अविभागी अभियंता यह सुनिश्चित करेंगे कि इस व्यवस्था के लिए उचित प्रावधान करते हुए इसकी निर्धारित गवनों में पालना की जाये।


  
(रिच.एल. जीना) 4/6/2005  
मुख्य अभियंता,  
सार्वजनिक निर्माण विभाग,  
राजस्थान, जयपुर।

दिनांक: 4-06-05

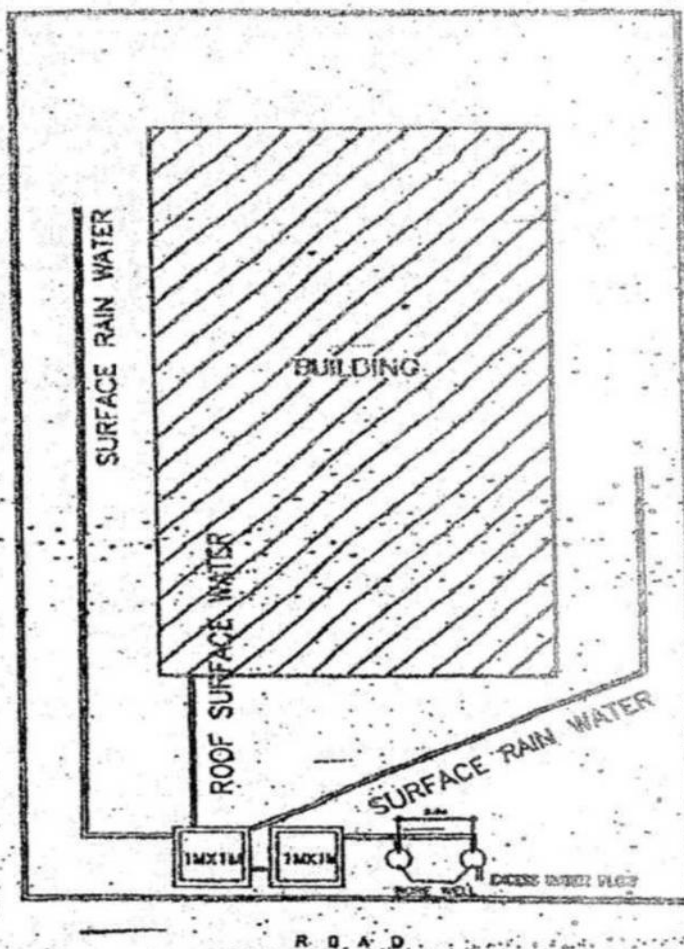
क्रमांक सीई/एस ई (डी सी)/टी-335

प्रतिनिधि निम्न जो, सुसमर्पण हेतु आपसमक्ष अवगतारी हेतु प्रेषित है :-

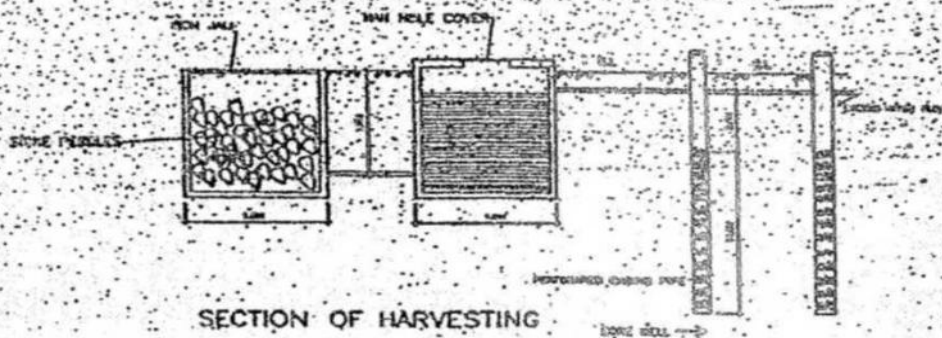
1. निर्माण अधिकारी, राजकीय भवनों महोदय, सा.नि.वि. राज., जयपुर।
2. प्रमुख सारजन सचिव सा.नि.वि. राज., जयपुर।
3. अतिरिक्त मुख्य अभियंता, सा.नि.वि. राज. [समस्त]
4. अधीक्षण अभियंता, सा.नि.वि. राज. [क्षेत्रगत]
5. अविभागी अभियंता, सा.नि.वि. राज. [समस्त]
6. निजी अधिकारी, मुख्य अभियंता (सह)/राजकीय राजमार्ग/समस्त अतिरिक्त अभियंता व अविभागी अभियंता (मुख्य अभियंता कार्यालय)।

  
(रिच.एल. जीना) 4/6/2005  
मुख्य अभियंता,  
सार्वजनिक निर्माण विभाग,  
राजस्थान, जयपुर।

ARRANGEMENT FOR RAIN WATER HARVESTING IN PUBLIC BUILDING



PLAN



SECTION OF HARVESTING

SKETCH IS NOT TO THE SCALE

EXECUTIVE ENGINEER (BUILDING CELL)  
PUBLIC WORKS DEPARTMENT

परिशिष्ट-7

*Most Important - (15)*

**OFFICE OF THE CHIEF ENGINEER, P.W.D. RAJASTHAN, JAIPUR**

No. CE/PWD/SE(P&amp;M)/Circular/D- 170

Dated:- 29.5.2006

**CIRCULAR NO. 1/2006****Safety in Excavation work in Buildings**

It has been observed that proper precautionary measures are not being adopted for safety at the time of excavation of foundation for the buildings which results in loss of lives and money.

For proper safety, the work should be got executed keeping in view, the provisions contained in National Building Code of India 2005 and relevant IS codes to avoid any mishappening. Specific care should be given on the following points as given in the various Codes as under:-

**1. National Building Code of India 2005**

- (i) **Type of Strata:** Adequate precautions depending on the type of strata met with during excavation (like quick sand, loose fills and loose boulder) shall be taken to protect the workmen during excavation.
- (ii) **Overhang and Slopes:** During any excavation, sufficient slopes to excavated sides by way of provision of steps or gradual slopes shall be provided to ensure the safety of men and machine working in the area.
- (iii) **Fencing and Warning Signals:** Where excavation is going on, for the safety of public and the workmen, fencing shall be erected, if there is likelihood of the public including cattle frequenting the area. Sufficient number of notice boards and danger sign lights shall be provided in the area to avoid any member of public from inadvertently falling into the excavation.
- (iv) **Vibrations from nearby sources:** Vibration due to adjacent machinery, vehicles, rail-roads, blasting, piling and other sources require additional precautions to be taken.

**2. Handbook on Construction Safety Practices (SP 70 : 2003)**

- (i) **Minimum check and clear edge of trench:** There is a tendency to dump the excavated material just on the edge of the trench where excavation is done manually. The material may slide back into the trench or apply additional load on shoring. A provision of clear berm of a width not less than one-third of the final depth of excavation is recommended. In areas where this width of the berm is not feasible, the reduced berm width of not less than 1 m. should be provided.
- (ii) **Plant and Machinery:** The excavating equipment should be parked at a distance of not less than the depth of the trench, or atleast 6 m. away from excavated sides for trenches deeper than 6 m.

**3. Excavation work-Code of Safety (IS 3764 : 1992)**

- (i) **Shoring and Timbering:** All trenches in soil more than 1.5 meter deep shall be securely shored and timbered.

These instructions should be followed strictly, otherwise concerned officer will be responsible for the consequences.

*(Signature)*  
Chief Engineer cum Addl. Secretary  
PWD, Rajasthan, Jaipur.

Dated:- 29.5.06

No. CE/PWD/SE(P&amp;M)/Circular/D- 170

Copy forwarded to the following for information and necessary action Please:-

1. P.S. to Hon'ble PWD Minister, Govt. of Rajasthan, Jaipur.
2. The Principal Secretary to Govt. PWD Rajasthan, Jaipur.
3. Addl. Chief Engineer PWD Zone.....(All).
4. Superintending Engineer, PWD Circle.....(All)
5. Executive Engineer, PWD Dn.....(All)
6. Sr. P.A. to CE/CE(R)/CE(NH)/All SE's & EE's in CE's Office, PWD, Jaipur.



GOVT. OF RAJASTHAN,  
PUBLIC WORKS DEPARTMENT

No. C.E./S.E.(P.W.)/D-1932.

Dated 20.1.97  
7.2.97.

CIRCLULAR

Chief Engineer, PWD had issued circular No. CE/Sec.XI/D-2077 dated 01-03-1995 with respect to the amendment issued in GF&AR Part-III item No. 5 (Part-II- Contingent & Misc. expenditure) wherein fair rent was revised up to 9% of the cost of building (including land) as reasonable rent. Previously fair rent was up to 7.5% of the cost of building (including land) for private building hired by Govt. and 10% for Govt. Buildings given on hire to private parties as per para 24-1-7 (6) of PWD Manual. The matter regarding fixing of rent / assessment in respect of Govt. building hired to private parties was discussed at length in the Public Accounts Committee Meeting and it was decided to refer the matter to Finance Department.

The Finance Department considered the whole case and opined "PWD is competent to decide on Govt. buildings rented out to private persons and the rent revision circular did not apply to Govt. buildings rented out to private persons. If it has been revised, the PWD needs to review at its own level."

In view of the opinion given by the Finance Department, it is hereby clarified that the fair rent for the Govt. buildings rented out to private persons, autonomous bodies, other local bodies and other non Rajasthan Government Departments shall remain as 10% of the cost of building (including land). However for the private buildings hired by Govt. fair rent shall be 9% of the cost of building (including land).

This is being issued in supersession of previous orders issued in this behalf.

(C.S. Rajan)

PRINCIPAL SECRETARY (C.E.)  
PWD, RAJASTHAN

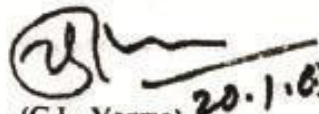
No. CE/SC (P.W.) / 1932,

Dated 20.1.67,

27  
8/2

Copy forwarded to the following for information and necessary action:

1. P.S. to Hon'ble Minister, PWD, Rajasthan, Jaipur
2. Secy. Finance - I, Govt. of Rajasthan, Jaipur.
3. Chief Engineer, PWD, Rajasthan, Jaipur.
4. Chief Engineer (NH), PWD, Rajasthan, Jaipur
5. Chief Engineer (Roads), PWD, Rajasthan, Jaipur
6. Addl. Chief Engineer, PWD, Zone - I, Jaipur/ II, Jaipur/ Ajmer/  
Bikaner/ Kota/ Jodhpur/ Udaipur.

  
(C.L. Verma) 20.1.67  
DY. SECY. (WORKS)  
PWD, RAJASTHAN



कार्यालय मुख्य अभियन्ता, सार्वजनिक निर्माण विभाग, राजस्थान, जयपुर  
क्रमांक : 45/SE/2012/PW-1/2-1435 दिनांक 16.5.07.2012

अतिरिक्त मुख्य अभियन्ता,  
सार्वजनिक निर्माण विभाग  
सम्मान-1 जयपुर (संयुक्त)।  
अधीक्षक अभियन्ता,  
सार्वजनिक निर्माण विभाग  
पूर- (संयुक्त)।

विषय:- मकान निर्माण कार्यों के अनुमानित तलवाजी में फायर फाईटिंग सिस्टम का प्रावधान करने बाकी।

महोदय

आपको विदित होगा कि नेशनल बिल्डिंग कोड 2005 में विभिन्न फ्लैट्स के मकानों में फायर फाईटिंग सिस्टम का प्रावधान किये जाने का अनुरोध प्रावधान है। इसके बावजूद भी राज्य में निर्मित होने वाले राजकीय भवनों में फायर फाईटिंग सिस्टम लागू करने का अनुरोध पाया गया है जो कि एक गंभीर मुद्दा है जिससे आग लगने की स्थिति में जान माल का नुकसान होगा या राजकीय सम्पत्ति को भी नुकसान होगा। वर्तमान समय में ऐसी ही "आग" लगने की घटनाएँ घटित हुई हैं जिससे भारी खान भाल की क्षति हुई है। भविष्य में इस प्रकार की घटनाओं को पुनरावृत्ति न हो तथा प्रयोग स्थल इस प्रकार की आपदाओं से मुक्ति प्राप्त रहे, इस भावना राज्य स्तर पर मुख्य सचिव, राजस्थान, जयपुर के स्तर पर उच्च स्तरीय समीक्षा की गयी एवं यह निर्णित हुआ कि भविष्य में राज्य में निर्मित होने वाले राजकीय भवनों के अनुमानित तलवाजी में इसी प्रकार हेतु सम्बन्धित विभाग को प्रेषित करने से पूर्व पुराने नेशनल बिल्डिंग कोड 2005 के राजकीय भवन की कोटेगरी अनुसार फायर फाईटिंग सिस्टम/फायर एलार्म सिस्टम/स्मॉकरोर इत्यादि का प्रावधान किया जाना आवश्यक है।

अतः आप सभी को निर्दिष्ट किया जाता है कि कि किसी भी विभाग द्वारा भवन निर्माण कार्यों हेतु बाधित अनुमानित तलवाजी में नेशनल बिल्डिंग कोड 2005 के प्रावधान प्रावधान अनुसार फायर फाईटिंग सिस्टम की अनुमानित लागत का प्रावधान अवश्य जोड़ते हुए ही प्रस्तुत करें। यदि किसी स्तर पर इसमें धूँक रहती है तो उस हेतु सम्बन्धित अधिकारी व्यक्तिगत उत्तरदायी रहेंगे।

भवदीय

5/7/12  
(हजारी लाल मीणा)  
मुख्य अभियन्ता एवं अतिरिक्त सचिव,  
सार्वजनिक निर्माण विभाग, राजस्थान, जयपुर।

2581-33  
17/7/12  
362  
18-7-12  
Copy forwarded to E.D. & C. III,  
Deptt. & District, J.P. for info.

15/7/12  
13/7/12  
सविभाग अभियन्ता एवं  
सहायक अभियन्ता, जयपुर  
शहर एवं जयपुर

प्रतिलिपि अधीक्षक अभियन्ता वृत्त शहर जयपुर / श्रीकांठ /  
संयुक्त वी. ठावरभाक कार्यावाही हेतु प्रेषित है।

अधीक्षक

अतः 2005, जयपुर

OFFICE OF CHIEF ENGINEER & ADDITIONAL SECRETARY PWD RAJASTHAN, JAIPUR

No. F. (184) SE (Seigs) Circulars/D-208

Date: 04-06-13

CIRCULAR

Sub:-Adoption of green building measures in new buildings under construction.

In the above cited subject it is worthwhile here to mention that demand of electricity and water is increasing exponentially especially in building sector. Our natural resources are depleting day by day and a huge gap between demand and supply has been created. It has become the need of the hour to conserve our natural resources. Since public works department is responsible for construction of government residential and non residential buildings, it is essential to adopt green building measures by architects, civil and electrical engineers and hence pave the way to sustainable development.

It is enjoined upon the departmental architects to design building having least requirement of artificial lighting and orient them to minimize entrance of solar heat inside. Design of openings and shading of windows etc is to be given special attention to make the building green. Wall thickness in south-west side be taken to increase thermal resistance and landscaping/fountain/ponds be included in a direction to pre-cool the air entering the building. Double glazed glass windows of superior quality be suggested as per requirement of the buildings.

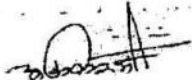
Responsibility of civil engineers in this field starts right from the beginning while planning and estimation. Civil engineers are supposed to assist in selection of site keeping in view availability of natural resources like water, material in construction should be taken which requires least transportation; trees and greenery must be saved as far as possible. Harm to local ecosystem should be minimized. Wastage shall be kept to a minimum and must be re-used. Provision in the building estimate for energy efficient fixtures must be taken in consultation with electrical engineers.

66 12

Recycle of waste water for gardening etc be designed and it is a must to provide water harvesting structures and plantation in new buildings.

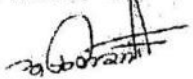
As per present scenario, role of electrical engineers to make the building green is very important. Energy efficient CFL/LED fixtures star rated fans, air-conditioners, refrigerators, pumps and transformers shall be taken in the estimate. High COP chillers, primary and secondary pumping for central air conditioning, VFD in AHU should be selected and VRV system for air-conditioning should be preferred. Provision for solar water heating system and solar lights for campus lighting, solar electric panels and Earth Air Tunnel (EAT) cooling system shall be essentially incorporated in forecast estimates for new buildings proposed for construction in future.

It is hereby directed all concerned to adopt green building measures in buildings to be constructed by the department and follow Energy Conservation Building Directives-2011 issued by state government.

  
Chief Engineer & Addl. Secretary  
PWD, Rajasthan, Jaipur

No. F. (84) SE (Beds) / Circular / D-208 Date: 04-06-13  
Copy to the followings for information and necessary action:-

1. P.S. to Pr. Secretary, PWD Rajasthan, Jaipur
2. P.S. to Secretary, PWD Rajasthan, Jaipur.
3. PS to Chief Engineer NH/SS/Roads/PMGSY, PWD, Rajasthan, Jaipur.
4. Chief Architect PWD Rajasthan, Jaipur
5. Addl. Chief Engineer PWD Zone (All) .....
6. Superintending Engineer PWD Circle (All) .....
7. Executive Engineer PWD Division (All) .....

  
Chief Engineer & Addl. Secretary  
PWD, Rajasthan, Jaipur

Government of Rajasthan  
Public Works Department

No. F14(47)PW/2013

Jaipur, Dated :

ORDER

2013

Clarifications are being sought from time to time regarding demolition/removal of buildings declared un-safe. In this regard provisions already exist under Central Government Act section 133-142 in the code of criminal procedure of 1973 and also in the Disaster Management Act, 2005 section-34 (K). As per these provisions District Magistrate can order for removal/demolition of unsafe buildings.

Further as per provision in PWD manual Chapter 24.3 and item No. 79 of SOP the Chief Engineer PWD is competent to issue permission for demolition of unsafe building up to book value of Rs. 50,000/-.

In view of the above provisions it is clarified that District Collector is authorized to order to demolition of unsafe Government buildings after obtaining report from the Superintending Engineer PWD of the District.

A committee is hereby constituted to execute the order of the Collector of the district:-

- 1- Representative of the concerned District Collector
- 2- Concerned SE/EE PWD
- 3- District level officer of the concerned Department.

Expenditure for demolition will be born by the concerned department.

By order.

(Sanwal Mal Verma)  
Joint Secretary to Govt.

Copy to the following for information and necessary action-

1. SA to Hon'ble Public Works Minister, Raj. Jaipur.
2. SA to Hon'ble State Minister, Public Works Department, Raj. Jaipur.
3. PS to Pr. Secretary to Govt. PWD
4. PS to Secretary to Govt. PWD
5. District Collector.... (All)
6. Chief Engineer, PWD ... (All)
- SE PWD Circle.....(All)

Joint Secretary to Govt.



## कार्यालय मुख्य अभियन्ता, सार्वजनिक निर्माण विभाग, राजस्थान, जयपुर

क्रमांक:- एस.ई.(भवन)/अ.अ.-III/सीएमपीटीशन/16-17/डी-248 दिनांक:- 28.06.16

### -: परिपत्र :-

सामाजिक न्याय और अधिकारिता मंत्रालय, विकलांग जन सशक्तिकरण विभाग, भारत सरकार के सुगम्य भारत अभियान के तहत महत्वपूर्ण सार्वजनिक भवनों को सुगम्य बनाने हेतु राज्य सरकार से अनुरोध किया है।

एक सुगम्य सरकारी भवन वह होता है, जहाँ एक विशेष योग्य व्यक्ति बिना किसी बाधा के इसमें प्रवेश कर सकें एवं इसमें उपलब्ध सुविधाओं का इस्तेमाल कर सकें। इसमें निम्नलिखित निर्मित वातावरण शामिल हैं - सेवाएँ, सीढ़ियाँ तथा रैम्पस, प्रवेश, आकस्मिक निकास, पार्किंग के साथ साथ लाईटिंग, साईनेज, अलार्म सिस्टम तथा प्रसाधन जैसी आंतरिक तथा बाह्य सुविधाएँ।

सुगम्यता के मानक, आई.एस.ओ. की तरह, स्थानीय परिप्रेक्ष्य को देखते हुए अन्तराष्ट्रीय मानकों के अनुरूप होने चाहिए। निर्मित वातावरण के संबंध में आई.एस.ओ. 21542:2011 भवन निर्माण-सुगम्यता और निर्मित वातावरण का प्रयोग, आवश्यकताओं की एकरूपरेखा प्रस्तुत करना और निर्माण, बनाने, घटकों तथा फिटिंग्स के बारे में सिफारिशें।

अतः भविष्य में बनने वाले महत्वपूर्ण सरकारी भवनों को सुगम्य बनाने के प्रावधान तकमीने में आवश्यक रूप से जोड़े तथा निर्माण करवायें जिससे भवन को सुगम्य बनाया जा सके एवं विशेष योग्य जन इन भवनों का इस्तेमाल कर सकें।

(जी. एल. राव)

मुख्य अभियन्ता एवं अतिरिक्त सचिव,  
सा.नि.वि., राजस्थान, जयपुर

क्रमांक:- एस.ई.(भवन)/अ.अ.-III/सीएमपीटीशन/16-17/डी-248 दिनांक:- 28.06.16

प्रतिलिपि निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :-

1. निजी सचिव, अतिरिक्त मुख्य सचिव, सार्वजनिक निर्माण विभाग, राजस्थान, जयपुर।
2. निजी सचिव, शासन सचिव, सार्वजनिक निर्माण विभाग, राजस्थान, जयपुर।
3. निदेशक, विशेष योग्य जन विभाग, राजस्थान, जयपुर।
4. मुख्य अभियन्ता, सार्वजनिक निर्माण विभाग, ..... (समस्त)।
5. मुख्य वास्तुविद्, सार्वजनिक निर्माण विभाग, ..... (समस्त)।
6. अतिरिक्त मुख्य अभियन्ता, सा.नि.वि., संभाग ..... (समस्त)।
7. अधीक्षण अभियन्ता, सा.नि.वि., वृत्त ..... (समस्त)।
8. अधीक्षापी अभियन्ता, सा.नि.वि., खण्ड ..... (समस्त)।
9. सिस्टम एनालिस्ट वेबसाईट पर अपलोड करने हेतु

(मुकेश चन्द्र भाटी)

अधीक्षण अभियन्ता(भवन),  
सा.नि.वि., राजस्थान, जयपुर

Government of Rajasthan  
**Public Works Department**

No. CE&AS/TA-I/D&T/2017/139

Date: 09.11.2017

**Circular**

(Building Safety Certificate)

Building Safety Certificate required for private buildings of public or semi public nature, shall henceforth be issued by PWD Rajasthan by complying the procedure and fees structure as described below.

**A. Fee Structure**

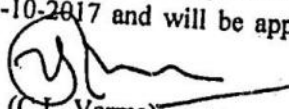
- |   |              |
|---|--------------|
| i. Primary & Secondary School Buildings         | : Rs. 3000/- |
| ii. Senior Secondary School & College Buildings | : Rs. 6000/- |
| iii. Other Non Government Buildings             | : Rs. 5000/- |

**B. Procedure**

- For educational institutes ( all type schools), Building Safety Certificate will be issued by Engineers of Education Department (RMSA & DPEP) in general. In case requisite RMSA & DPEP set up for issuance of Building Safety Certificate for school buildings is not available at some locations ( to be certified by concerned District Education Officer), then Executive Engineer, PWD concerned division shall issue safety certificate on recommendation of D.E.O., concerned adopting the procedure and accepting prescribed fee.
- Applicant (owner of building) for school building shall submit application (Format 'A') and affidavit on Rs.50 stamp paper (Format 'B') along with two sets of documents ( key plan, plan, elevation etc. drawings of building) to District Education Officer concerned, who after its scrutiny, will submit these to Executive Engineer, with recommendation of issuing safety certificate.
- The applicant will be required to submit the prescribed fees in the form of demand draft in favour of concerned Executive Engineer along with application
- Building shall be inspected by Assistant Engineer within 10 days from receipt of application in PWD Division Office and submit report/recommendation alongwith check list (Format 'C')
- Executive Engineer, PWD concerned division shall then issue the Building Safety Certificate for Educational Institute within 15 days in prescribed format 'D' to District Education Officer.

For other non government buildings, similar procedure of processing the application through concerned department's district level officer, shall be adopted for issuing Safety Certificate for that Building.

This bears the approval of Admn. Deptt., Public Works Department, Govt. of Rajasthan vide ID no. 6711/M/PWD/17 dated 31-10-2017 and will be applicable with immediate effect.

  
 (C.L. Verma)  
 Chief Engineer & Addl. Secretary  
 PWD, Rajasthan Jaipur

श्रीमान जिला शिक्षा अधिकारी  
जिला.....

प्रपत्र-अ

विषय :- स्कूल भवन के सुरक्षा प्रमाण पत्र हेतु आवेदन।

- 1 नाम शिक्षण संस्था (email id सहित) :- .....
  - 2 भवन मालिक का नाम :- .....
  - 3 वर्ग (अनुदानित/निजी/ट्रस्ट) :- .....
  - 4 स्थिति (पता) :- .....
  - 5 स्तर (महाविद्यालय/सी.उ.मा. /उ.मा./उ.प्रा./प्राथ. /शिशु/प्रशिक्षण संस्था) :- .....
  - 6 विद्यार्थियों की अधिकतम संख्या (पिछले सत्र में) :- .....
  - 7 भवन का निर्माण वर्ष :- .....
  - 8 टॉयलेट की सैनेट्री व्यवस्था :- शिक्षा विभाग के नियमानुसार हैं/नहीं
  - 9 पीने के पानी की व्यवस्था :- शिक्षा विभाग के नियमानुसार हैं/नहीं
  - 10 खेल का मैदान इत्यादि :- शिक्षा विभाग के नियमानुसार हैं/नहीं, खेल मैदान का क्षेत्रफल.....वर्ग मीटर हैं/नहीं हैं
  - 11 20 मीटर दायरे में हाईटेंशन लाईन की स्थिति :-
  - 12 उक्त सभी वर्णित विशिष्टियों का मैं वर्ष पर्यन्त संधारण करता रहूंगा तथा भवन को शिक्षण कार्य के अलावा किसी अन्य गतिविधि के लिए उपयोग में नहीं लूंगा और ना ही ऐसा कोई कृत्य करूंगा जिससे भवन की संरचना को किसी भी प्रकार की क्षति हो।
  - 13 विद्यालय भवन की समस्त विद्युत फिटिंग में आईएसआई मार्का सामग्री का प्रयोग किया गया है।
- संलग्न :- रु. 50 के नॉन ज्यूडिशियल स्टाम्प पर शपथ पत्र

हस्ताक्षर भवन मालिक  
(नाम एवं मोबाइल नं.)

क्रमांक :-

दिनांक :-

मूल प्रार्थना पत्र अधिशाषी अभियन्ता, सा.नि.वि., खण्ड.....को प्रेषित कर लेख है कि उक्त स्कूल "..... (स्कूल का नाम)" के भवन का निरीक्षण शिक्षा विभाग के प्रतिनिधि द्वारा कर लिया गया है, तथा प्रमाणित किया जाता है कि उपरोक्त भवन राज्य सरकार द्वारा स्कूल संचालन के लिए निर्धारित मापदण्डों के अनुरूप निर्मित है, तथा..... (विद्यार्थियों की अधिकतम संख्या) विद्यार्थियों के संचालन के लिए उपयुक्त है। अतः उक्त भवन का सुरक्षा प्रमाण पत्र जारी करने हेतु अनुशांषा की जाती है।

जिला शिक्षा अधिकारी  
(नाम एवं रबड़ स्टाम्प)

**शपथ पत्र (50 रुपये के नॉन ज्युडिशियल स्टाप पर देना है प्रपत्र-ब)**  
(प्रपत्र-अ के साथ संलग्न किया जावे)

मैं ..... पुत्र श्री ..... आयु ..... निवासी .....  
बयान करता हूँ कि :- ..... शपथ पूर्वक

- 1 स्कूल का नाम व पता..... सत्र ..... में बनाया गया है।
- 2 स्कूल भवन की भूमि का खुले क्षेत्र सहित कुल क्षेत्रफल..... वर्ग मीटर है, एवं इस पर भवन निर्माण जयपुर विकास प्राधिकरण/नगर परिषद/नगर पालिका..... से अनुमोदित मानचित्र के अनुरूप है।
- 3 यह कि भवन पक्का बना हुआ है, जिसकी नींव की गहराई..... फुट एवं चौड़ाई..... फुट है, भवन में आरसीसी/पट्टी की छत है।
- 4 यह कि भवन बनाने में 1:6/1:4 की सीमेंट मसाला, पत्थर व ईंट की चुनाई में काम में ली है।
- 5 सीढ़ियों की चौड़ाई..... फुट है, तथा रेलिंग लगी हुई है। भवन निर्माण में प्रयोग में ली गई सामग्री की गुणवत्ता अनुपात मानक अनुसार हैं।
- 6 भवन निर्माण अनुभवी व प्रशिक्षित व्यक्तियों द्वारा संरचनात्मक विशिष्टियों के अनुसार करवाया गया है।
- 7 भवन संरचनात्मक रूप से पूर्णतः सुरक्षित है एवं किसी भी प्रकार के संरचनात्मक दोष के कारण हुई दुर्घटना के लिये मैं पूर्ण रूप से जिम्मेदार हूँ।
- 8 स्कूल परिसर के दायरे में..... मीटर की दूरी में किसी भी प्रकार की विद्युत हाई टेंशन लाईन नहीं है।
- 9 स्कूल / कॉलेज परिसर में कहीं भी मोबाईल टावर नहीं लगा हुआ है।
- 10 इस भवन के प्रांगण में बिना सार्वजनिक निर्माण विभाग की पूर्वानुमति के किसी भी प्रकार का निर्माण/परिवर्तन/परिवर्धन कार्य नहीं करूंगा।
- 11 किसी भी स्थिति में स्कूल भवन व प्रांगण का उपयोग स्कूल की नियमित गतिविधियों के अलावा नहीं करूंगा।
- 12 स्कूल भवन शिक्षा विभाग द्वारा जारी दिशा निर्देशों के अनुरूप निर्मित किया गया है, तथा यह निर्धारित मानकों की आपूर्ति करता है।
- 13 स्कूल भवन में कोई भी कक्षा अस्थायी कक्षा (टिनशैड) में संचालित नहीं है।
- 14 मकान मालिक द्वारा हस्ताक्षरित नक्शा संलग्न है।
- 15 भवन स्कूल संचालन के लिए नियमानुसार पूर्णतः निर्मित है।

जयपुर

दिनांक

शपथग्रहिता

सत्यापन

मैं उपरोक्त शपथग्रहिता सत्यापित करता हूँ कि उपरोक्त शपथपत्र में वर्णित तथ्य सही है, कोई भी तथ्य छिपाया नहीं है, ईश्वर साक्षी है।

जयपुर

दिनांक

सत्यापनकर्ता





चैक लिस्ट :- स्कूल भवन के सुरक्षा प्रमाण पत्र हेतु कनिष्ठ अभियन्ता/सहायक अभियन्ता द्वारा प्रपत्र-स

- 1 भवन का प्रकार :- आर.सी.सी. पिलर पर निर्मित/भार वाहक दीवारों पर निर्मित
- 2 छत की प्रकार /स्थिति :- आर.सी.सी. की छत/पट्टियों की छत, सुदृढ़/सामान्य/कमजोर
- 3 दीवारों का प्रकार/स्थिति :- पत्थर की चिनाई/ईंट की चिनाई, सुदृढ़/सामान्य/कमजोर
- 4 फर्श का प्रकार/ स्थिति :- सीमेंट का/विट्रीफाईड टाइल का/सी.सी. टाइल का/कच्चा/..... सुदृढ़/सामान्य/कमजोर
- 5 दरवाजों का प्रकार / स्थिति :- लकड़ी के/लोहे के/..... सुदृढ़/सामान्य/कमजोर
- 6 खिड़कियों का प्रकार / स्थिति :- लकड़ी के/लोहे के/..... सुदृढ़/सामान्य/कमजोर
- 7 प्लास्टर का प्रकार/स्थिति :- सीमेंट का/चूने का/..... सुदृढ़/सामान्य/कमजोर
- 8 विद्युत व्यवस्था का प्रकार/ स्थिति :- कन्ड्यूट वायरिंग/प्लास्टर में दबी हुई वायरिंग/सतह पर की हुई वायरिंग/..... सुदृढ़/सामान्य/कमजोर
- 9 20 मीटर दायरे में हाईटेशन लाईन की स्थिति :- हैं/नहीं हैं
- 10 अन्य विशेष तथ्य :-

नाम मय हस्ताक्षर  
कनिष्ठ अभियन्ता/सहायक अभियन्ता

चैक लिस्ट अधिशासी अभियन्ता, सा.नि.वि., खण्ड.....को अग्रिम कार्यवाही हेतु प्रेषित है। अतः उक्त भवन का सुरक्षा प्रमाण पत्र जारी करने हेतु अनुशंसा की जाती है।

नाम मय हस्ताक्षर  
कनिष्ठ अभियन्ता/सहायक अभियन्ता  
(कार्यालय मोहर)

*the*

प्रपत्र-D

OFFICE OF THE EXECUTIVE ENGINEER, PWD DN.....

No:-.....

Date :-.....

The District Education Officer  
.....  
.....Subject:- Regarding Safety Certificate of Educational Institute  
.....Ref.:- 1. Your office letter no.....dated.....  
2. Ref. of depositing fee : No. ....dated.....for Rs.....

Sir,

It is to inform that above building has been inspected by Assistant Engineer PWD Sub ..... on dated..... . On the basis of formal recommended by you & affidavit furnished by owner, it is to certify that this Building is safe for school activities.

This Certificate is valid for a period 1 (one) Year i.e. only up to.....(date) subject to regular upkeep and satisfactory Annual maintenance by school owner.

Note: This certificate will stand void automatically, if the building is used for any other purpose other than the school activities at any time during the year.

Your's faithfully

Executive Engineer,  
PWD Dn.....

No: -

Date: -

Copy to the Assistant Engineer PWD Sub Div..... with reference to your letter No. ....dated .....

Executive Engineer,  
PWD Dn.....


Government of Rajasthan  
**Public Works Department**

No. CE&amp;AS/TA-1/D&amp;T/2017/171

Date: 31/01/18

**Circular**

(Forecast Estimate for Govt. Buildings)

Forecast Estimates for various building works required by government departments shall henceforth be submitted by PWD Rajasthan by complying the facts and competencies of Engineer (Civil & Electrical) as described below.

S.N	Competent Authority ( Civil/ Electrical)	New Building		Addition/Alteration/Repair Works to Buildings			
		(Residential/Non Resi.) ( Rs. in lakhs)		Residential (Rs. in lakhs)		Non-Residential (Rs. in lakhs)	
		Existing	Revised	Existing	Revised	Existing	Revised
1	Executive Engineer	20.00	30.00	1.00	2.50	5.00	10.00
2	Supdt. Engineer	30.00	150.00	2.00	10.00	7.00	25.00
3	Addl. Chief Engineer	50.00	300.00	3.00	15.00	10.00	50.00
4	Chief Engineer	100.00	1000.00	5.00	25.00	20.00	100.00
5	Admn.Deptt.,PWD	> 100.00	> 1000.00	>5.00	> 25.00	>20.00	> 100.00

*However, as per GAD(Gr.-IV) Order No. F25(3)G.A./4/2015 dated 21-7-17 for Repair/Addition& alteration of residential Quarters of G.A.D., all the forecast estimates are to be submitted through Chief Engineer (Building) despite revised competency.*

- i. Letter of the concerned department by which demand for forecast estimate is made must be enclosed along with conceptual drawing used.
- ii. Plinth area rates for forecast estimate must be declared by Superintending Engineer in the circle which shall invariably be revised annually under information to concerned zonal office Addl. CE & Chief Engineer, PWD, Jaipur. Forecast estimate shall also be signed by PWD's Electrical Engineers as per requirement for electrical specific items.
- iii. Provisions for Rain water harvesting system and for accessibility to specially-able persons shall be included; Estimated amounts for boundary wall, approach road, development works etc. may also be included separately if necessarily required.
- iv. Provisions @14% for water supply & sanitary work & @12.50% for internal electrical work except Hospital & Hostel Buildings [ @14.5% for Hospital & Hostel electrical internal services ] shall be taken.
- v. Solar panel system, firefighting air cooling/AC system, Security system DG sets etc. and green building measures for energy efficiency may also be included by the Executive Engineer (Electrical) as per PWD circular issued vide No. 207, 208 date 04.06.2013.
- vi. Provision of 1% quality control charges, 1.50% for contingency and 13% percentage charges for PWD shall be taken; For large, specific building works, estimated amounts for consultancy service and escalation @ 7% p.a. may be added in estimate, if necessary.

This bears the approval of Admn. Deptt., Public Works Department, Govt. of Rajasthan vide ID no 204/87, dated 31/1/18 and will be applicable with immediate effect.

(C.L. Verma)

Chief Engineer & Addl. Secretary  
PWD, Rajasthan Jaipur

कार्यालय मुख्य अभियंता सार्वजनिक निर्माण विभाग, राजस्थान जयपुर  
क्रमांक एसई (आर)/ईई जीजीपी-11/डीएलपी/20-21/डी-136 दिनांक 30/12/20

### कार्यालय आदेश

विभाग के आदेश क्रमांक CE(Bldg.)DLP.(Bldg.Works)/D-268 दिनांक 07.10.2009 एवं क्रमांक SE(SS)/DLP/2011-12/D-624 दिनांक 12.10.2012 को अधिक्रमण (Supersede) करते हुए राज्य योजनाओं में लागत राशि रु० 10.00 लाख से अधिक के कार्यों की दोष निवारण की अवधि निम्नानुसार निर्धारित की जाती है:-

क्र. स.	कार्य का प्रकार	दोष निवारण अवधि
1	सड़क नवीनीकरण एवं विशेष मरम्मत कार्य	5 वर्ष
2	नवीन सड़क/भवन/पुल/सीडी कार्य	5 वर्ष
3	सड़क चौड़ाईकरण, सुदृढीकरण एवं उन्नयन कार्य	5 वर्ष

यह आदेश जारी करने की दिनांक से प्रभावी है तथा प्रगतिरत एवं आगामी समस्त निविदाओं में शामिल किया जाना है।

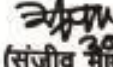
उक्त आदेश वित्त (जीएण्डटी) विभाग आईडी संख्या 102005419 दिनांक 7.12.2020 द्वारा दी गयी टिप्पणी अनुसार प्रशासनिक विभाग की आईडी संख्या सीएमओ/एफ 20004363 दिनांक 22.12.2020 द्वारा अनुमोदित है।

  
30/12/2020  
(संजीव मिश्र)

मुख्य अभियंता एवं अतिरिक्त सचिव  
सा०नि०वि, राज० जयपुर

प्रतिलिपि निम्नांकित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :-

1. श्रीमान प्रमुख शासन सचिव, माननीय मुख्यमंत्री कार्यालय, राजस्थान जयपुर।
2. निजी सचिव, श्रीमान प्रमुख शासन सचिव, सा.नि.वि., राजस्थान जयपुर।
3. निजी सचिव, श्रीमान शासन सचिव, सा.नि.वि., राजस्थान जयपुर।
4. मुख्य अभियंता, पीएमजीएसवाई/एन०एच०/भवन/गुण नियंत्रण, सा.नि.वि. राजस्थान जयपुर।
5. अतिरिक्त मुख्य अभियंता, सा.नि.वि. संभाग:- .....(समस्त)।
6. अधीक्षण अभियंता, सा.नि.वि. वृत्त:- .....(समस्त)।
7. अधिशाही अभियंता, सा.नि.वि. खण्ड:- .....(समस्त)।

  
30/12/2020  
(संजीव मिश्र)

मुख्य अभियंता एवं अतिरिक्त सचिव  
सा०नि०वि, राज० जयपुर

Circular  
file**OFFICE OF THE CHIEF ENGINEER P.W.D RAJASTHAN, JAIPUR**

No.: CE(B)/SE(B-I)/EE(B-I)/2021-22/D- 287

Dated: 26.08.2021

**Office Order**

It has been observed that many a times conflixtions arise between client department and PWD with respect to some issues like quality of work, construction activity of different parts of building with in allotted space for construction, construction taken/not taken up as per approved plans by client department etc, some times which are observed at that stage where the building work is almost completed and in turn it leads delay in taking over the completed building for pretty long times.

It is, therefore, directed to all field officer incharge that there shall be at least three joint inspections of competent field officers of PWD & concerned department, **firstly** one when the building is at plinth level, **secondly** after casting of roof and **third one** before final finishing of construction, so that it could be ensured that construction of building fulfil its functional requirements of client department. The inspection note of each joint inspection shall be issued with joint signature of officials of PWD & Client department and to be sent to head of departments.

The compliance to this order shall be strictly ensured by all officers.

This order shall be considered as in force with immediate effect,

(Sandeep Mathur)  
Chief Engineer (Bldg.),  
PWD, Rajasthan Jaipur.

No.: CE(B)/SE(B-I)/EE(B-I)/2021-22/D- 287

Dated: 26.08.2021

Copy to following for information please:-

1. PS to Principal Secretary, Public Works Department, Rajasthan, Jaipur.
2. PS to Secretary, Public Works Department, Rajasthan, Jaipur.
3. PS to Chief Engineer & Addl. Secy., Public Works Department, Rajasthan, Jaipur
4. Additional Chief Engineer, Public Works Department, Zone - ..... (All).
5. Superintending Engineer, Public Works Department, Circle - ..... (All).
6. Executive Engineer, Public Works Department, Division - ..... (All).

(Sandeep Mathur)  
Chief Engineer (Bldg.),  
PWD, Rajasthan Jaipur.



**OFFICE OF THE CHIEF ENGINEER P.W.D. RAJASTHAN JAIPUR**

No. ACE(P)/EE(SS&amp;C)/2021-22/D- 17

Dated: 08/10/2021

**Circular**

Circular No.CE& AS/ TA-1/EE (D&T)/2016-17/D-126 dated 08.08.2016 issued earlier vide this office regarding use of steel for PWD works is hereby withdrawn.

For all building, road and bridge works executed by PWD, henceforth, as per Ministry and Road Transport & Highway S&R (B) section New Delhi letter no. RW/NH-34066/09/2017-S&R (B) dated 12.02.2021, it has been decided to allow steel produced from ore/billets/pellet/melting of scrap subject to fulfillment of conditions mentioned below. Accordingly, clause 1009.3.1 of Ministry's specification for Road and bridge works has been amended as under:

For plain and reinforced cement concrete (PCC and RCC) or pre-stressed concrete (PSC) works, the reinforcement/ unmentioned steel as the case may be, shall consist of the following grades of reinforcing bars:

Mild steel (MS): Grade-1 (conforming to IS 432)

High strength deformed Steel (HSD): Fe415, Fe415D, Fe415S, Fe500, Fe500D, Fe500S, Fe550, Fe550D & Fe600 (conforming to IS 1786)

If any grade of steel given above is not available steel of next higher grade may be used.

For seismic zones III, IV and V, HSD steel bars having minimum elongation of 14.5% shall be used.

For seismic zones III, IV and V, HSD steel bars shall possess following properties:

- The actual 0.2% proof strength of steel bars based on tensile test must not exceed their characteristic 0.2% proof strength by more than 20%
- The ratio of the actual ultimate strength to the actual 0.2% proof strength/yield strength shall be at least 1.15.

All the manufacturers/ suppliers, as the case may be, shall supply the purchaser or his authorized representative with the certificate stating the process of manufacture and also the test sheet signed by the manufacturer giving the result of each mechanical test applicable for each lot of the material supplied and chemical composition. Sample shall be got tested in the NABL accredited laboratories only, by Executive Engineer concerned. It shall be ensured that all the test results conform to IS 432 (MS) or IS 1786 (HSD).

*2/11*

Only new steel shall be delivered to the site. Every bar shall be inspected before assembling on the work and defective, brittle or burnt bars shall be discarded. Bar with cracked ends shall be discarded.

This shall be applicable for all Building, Road, Bridge and other works executed by Public Works Department of Rajasthan. This circular will be implemented from the date of its issuance.

*Sanjiv Mathur*  
(Sanjiv Mathur)

CE (Road) & AS PWD  
Rajasthan Jaipur

No. ACE(P)/EE(SS&C)/2021-22/D- 17

Dated: 06/10/2021

Copy to following for information and necessary action please:

1. PS to Pr. Secretary, PWD, Govt. of Rajasthan.
2. PS to Secretary, PWD, Govt. of Rajasthan.
3. Chief Engineer cum Addl. Secretary, PWD, Rajasthan
4. Chief Engineer NH/Road/Build/SS/PMGSY/QC PWD Rajasthan
5. MD, RSRDCC Ltd. JhalanaDungari, Jaipur.
6. Financial Advisor, PWD, Rajasthan.
7. Addl. Chief Engineer, PWD, Zone ..... All
8. Superintending Engineer PWD Circle .....All
9. Executive Engineer PWD Division .....All

*TC*  
2324 29/10/21  
*Gen. Secy*

*Sanjiv Mathur*  
(Sanjiv Mathur)  
CE (Road) & AS PWD  
Rajasthan Jaipur

OFFICE OF THE CHIEF ENGINEER PWD RAJASTHAN JAIPUR  
No. SE(R)/EEGGP-II/D-709

Date: 30/03/2022

### OFFICE ORDER

The time schedule for completion of works as specified in order No SE/NI/08/E&I/D-990 dated 03.09.2008/ PWD Manual Clause 30.7.2 is revised as under:-

#### C. Road Works:-

S.No	Work Cost	Maintenance/ Renewal/ Strengthening by BT	New Road/ Widening/ Strengthening by WBM	New CD works (Involving foundation work)
1	Upto Rs 50 Lacs	1 to 2 Months	2 to 3 Months	2 to 3 Months
2	Above Rs 50 lacs & upto Rs 300 Lacs	2 to 4 Months	3 to 5 Months	3 to 6 Months
3	Above Rs 300 lacs & upto Rs 500 Lacs	4 to 6 Months	5 to 8 Months	6 to 9 Months
4	Above Rs 500 lacs & upto Rs 1500 Lacs	6 to 8 Months	8 to 10 Months	9 to 12 Months
5	Above 1500 Lacs & upto Rs 5000 Lacs	8 to 10 Months	10 to 12 Months	12 to 15 Months
6	Above 5000 Lacs	10 to 12 Months	12 to 15 Months	15 to 18 Months

#### D. Building Works:-

S.No	Work Cost	Maintenance work	Original Work
1	Upto Rs 10 Lacs	1 to 2 Months	3 to 4 Months
2	Above Rs 10 lacs & upto Rs 50 Lacs	2 to 4 Months	4 to 6 Months
3	Above Rs 50 lacs & upto Rs 200 Lacs	-	6 to 8 Months
4	Above Rs 200 lacs & upto Rs 1000 Lacs	-	8 to 12 Months
5	Above 1000 Lacs & upto Rs 5000 Lacs	-	12 to 15 Months
6	Above 5000 Lacs	-	15 to 18 Months

This bear approval of the A.D. vide ID No 412/PWM dated 30.03.2022. Relaxation, if any for specific job shall be provided by Chief Engineer & Addl. Secy PWD.

*(Sanjiv Mathur)*  
30/3/2022

CHIEF ENGINEER & ADDL. SECY.  
PWD, RAJASTHAN, JAIPUR



**TABLE 400-1****GRADING FOR CLOSE-GRADED GRANULAR SUB-BASE MATERIALS**

IS sieve Designation	Per cent by weight passing the IS sieve		
	Grading I	Grading II	Grading III
75.0mm	100	-	-
53.0mm	80-100	100	-
26.5mm	55-90	70-100	100
9.50mm	35-65	50-80	65-95
4.75mm	25-55	40-65	50-80
2.36mm	20-40	30-50	40-65
0.425mm	10-25	15-25	20-35
0.075mm	3-10	3-10	3-10
CBR Value (Minimum)	30	25	20

**TABLE 400-2****GRADING FOR COARSE-GRADED GRANULAR SUB-BASE MATERIALS**

IS sieve Designation	Per cent by weight passing the IS sieve		
	Grading I	Grading II	Grading III
75.0mm	100	-	-
53.0mm	-	100	-
26.5mm	55-75	50-80	100
9.50mm	-	-	-
4.75mm	10-30	15-35	25-45
2.36mm	-	-	-
0.425mm	-	-	-
0.075mm	<10	<10	<10
CBR Value (Minimum)	30	25	20

*Note :- The material passing 425 micron (0.425 mm) sieve for all three grading when tested according to IS : 2720 (part 5) shall have liquid limit and plasticity index not more than 25 and 6 percent respectively.*

TABLE 400-7

## GRADING REQUIREMENTS OF COARS AGGREGATES

Grading No.	Size Range	IS Sieve Designation	Percent by weight passing
1.	90 mm to 45mm	125 mm	100
		90 mm	90-100
		63 mm	25-60
		45 mm	0-15
		22.4 mm	0-5
2.	63 mm to 45mm	90 mm	100
		63 mm	90-100
		53 mm	25-75
		45 mm	0-15
		22.4 mm	0-5
3	53mm to 22.4 mm	63 mm	100
		53mm	95-100
		45 mm	65-90
		22.4 mm	0-10
		11.2 mm	0-5

*Note :- The compacted thickness for a layer with grading one shall be 100 mm while for layer with other grading i.e. 2 & 3 it shall be 75 mm.*

TABLE 400-8

## GRADING FOR SCREENINGS

Grading Classification	Size of Screenings	IS Sieve Designation	Percent by weight passing's the IS Sieve
A	13.2 mm	13.2 mm	100
		11.2 mm	95-100
		5.6 mm	15-35
		180 micron	0-10
B	11.2 mm	11.2mm	100
		5.6mm	40-100
		180 micron	15-35

TABLE 400-9

**APPROXIMATE QUANTITIES OF COARSE AGGREGATES AND  
SCREENINGS REQUIRED FOR 100/75 MM COMPACTED THICKNESS OF  
WATER BOUND MACADAM (WBM) SUB BASE COURES FOR 10 SQM AREA**

Classification	Size Range	Compacted thickness	Loose Qty.	Screenings			
				Stone screenings		Crushable Type such as Moorum or Gravel	
				Grading classification s & size	For WBM sub / base / base course (loose Qty)	Grading classifications & size	Loose Qty.
Grading I	90mm to 45mm	100 mm	1.21 to 1.49 m <sup>2</sup>	Type A 13.2 mm	0.27 to 0.30 m <sup>3</sup>	Not uniform	0.30 to 0.32m <sup>3</sup>
Grading II	63 mm to 45mm	75 mm	0.91 to 1.07 m <sup>3</sup>	Type A 13.2 mm	0.12 to 0.15 m <sup>3</sup>	-do-	0.22 to 0.24 m <sup>3</sup>
-do-	-do-	-do-	-do-	Type B 11.2 mm	0.20 to 0.22 m <sup>3</sup>	-do-	-do-
Grading III	53 mm to 22.4 mm	75 mm	-do-	-do-	0.18 to 0.21 m <sup>3</sup>	-do-	-do-

TABLE 400-11

**GRADING REQUIREMENTS OF AGGREGATES FOR WET MIX MACADAM**

IS Sieve Designation	Percent by weight passing the IS sieve
53.0 mm	100
45.0 mm	95-100
26.50 mm	
22.40 mm	60-80
11.20 mm	40-60
4.75 mm	25-40
2.36 mm	15-30
600.00 micron	8-22
25.00 micron	0-8

TABLE 500-4

## COMPOSITION OF BITUMINOUS MACADAM

Mix designation Nominal aggregate size layer thickness IS Sieve (mm)	Grading-I 40 mm 80-100 mm	Grading 2 19 mm 50-75
	Cumulative % by weight of total aggregate passing	
45	100	
37.5	90-100	
26.5	75-100	100
19		90-100
13.2	35-61	56-88
4.75	13-22	16-36
2.36	4-9	4-19
0.3	2-10	2-10
0.075	0-8	0-8

Notes :- Appropriate bitumen contents for conditions in cooler area of India may be up to 0.5% higher subject to the approval of the Engineer.

TABLE 500-6

## COMPOSITION OF PENETRATION MACADAM

IS Sieve Designation (mm)	Cumulative percent by weight of total aggregate passing			
	For 50 mm compacted thickness		For 75 mm compacted	
	Coarse aggregates	Key aggregate	Coarse Aggregate	Key Aggregate
63	-	-	100	-
45	100	-	58-82	-
26.5	37-72	-	-	100
22.4	-	100	5.27	50-75
13.2	2.20	50-75	-	-
11.2	-	-	-	5.25
5.6	-	525	-	-
2.8	0.5	0.5	0.5	0.5
Approx Loose aggregate quantities cum/ M2	0.06	0.015	0.09	0.018
Binder quantity (penetration grade) 1 (kg/ m2)	5		6.8	

Note :- If cutback bitumen is used adjust binder quantity such that the residual bitumen is equal to the values in this table

**TABLE 500-7****GRADING REQUIREMENT FOR COARSE AND KEY AGGREGATES FOR  
BUILT UP SPRAY GROUT**

<b>IS SIEVE Designation</b>	<b>Cumulative percent by weight of total aggregate passing</b>	
	Coarse Aggregate	Key Aggregate
53	100	
26.5	40-75	
22.4		100
13.2	0-20	40-75
5.6		0-20
2.8	0-5	0-5

**TABLE 500-11****REQUIREMENTS FOR DENSE GRADED BITUMINOUS MACADAM**

Minimum stability (kN at 60 d C)	9.0
Minimum flow (mm)	2
Maximum flow (mm)	4
Compaction level (Number of Blows)	75 blows on each of the two faces of the specimen
Per cent air voids	3-6
Per cent voids in mineral aggregate (VMA)	Sec Table 500-12
Percent voids filled with bitumen (VFB)	65-75

TABLE 500-15

**COMPOSITION OF SEMI DENSE BITUMINOUS CONCRETE  
PAVEMENT LAYERS**

Grading	1	2
Nominal aggregate size	13 mm	10 mm
Layer Thickness	35-40 mm	25-30 mm
IS Sieve 1 (mm)	Cumulative % by weight of total aggregate passing	
45		
37.5		
26.5		
19	100	
13.2	90-100	100
9.5	70-90	90-100
4.75	35-51	35-51
2.36	24-39	24-39
1.18	15-30	15-30
0.6	-	-
0.3	9-19	9-19
0.15	-	-
0.075	3-8	3-8
Bitumen content % by mass of total mix <sup>2</sup>	Min-4.5	Min 5.0
Bitumen grade (pen)	65*	65*

*Note :- The combined aggregate grading shall not vary from the low limit on one sieve to the high limit on the adjacent sieve.*

*Determined by the hall method.*

*Only in exceptional circumstances 80/100 penetration grade may be used, as approved by the Engineer.*

TABLE 500-16

**REQUIREMENTS FOR SEMI DENSE BITUMINOUS PAVEMENT LAYERS**

Minimum stability (kN at 60 d C)	8.2
Minimum flow (mm)	2
Maximum flow (mm)	4
Compaction level (Number of Blows)	75 blows on each of the two faces of the specimen
Per cent air voids	3-5
Per cent voids in mineral aggregate (VMA)	Sec Table 500-12
Percent voids filled with bitumen (VFB)	65-78

TABLE 500-17

**PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS  
CONCRETE PAVEMENT LAYERS**

Property	Test	Specification
Cleanliness (dust)	Grain size analysis	Max 5% passing 0.075 mm sieve
Particle shape	Flakiness and Elongation index	Max 30% (combined) <sup>2</sup>
Strength*	Los Angeles Abrasion Value <sup>3</sup> Aggregate Impact Value <sup>4</sup>	Max 30% Max 24%
Polishing	Polished Stone Value <sup>5</sup>	Min 55
Durability	Soundness : <sup>6</sup> Sodium Sulphate Magnesium Sulphate	Max 12% Max 18%
Water Absorption	Water absorption <sup>2</sup>	Max 2%
Stripping	Coating and stripping of Bitumen Aggregate Mixtures	Minimum retained coating 95%
Water sensitivity **	Retained Tensile Strength	Min 80%

Notes:-

1. IS 2386 Part I

2. IS : 2386 Part I

(the elongation test to be done only on non flaky aggregates in the sample)

3. IS : 2386 Part 4\*

4. IS : 2386 Part 4\*

5. BS 812 Part 114

6. IS : 2386 Part 5

7. IS : 2386 Part 3

8. AASHTO T283\*

9. IS : 6241

\* Aggregate may satisfy requirements of either of these two tests.

\*\* The water sensitivity test is only required if the minimum retained coating in the stripping test is less than 95 %

TABLE 500-19

**REQUIREMENTS FOR BITUMINOUS PAVEMENT LAYERS**

Minimum stability (kN at 60 d C)	9
Minimum flow (mm)	2
Maximum flow (mm)	4
Compaction level (Number of Blows)	75 blows on each of the two faces of the specimen
Per cent air voids	3-6
Per cent voids in mineral aggregate (VMA)	Sec Table 500-12
Percent voids filled with bitumen (VFB)	65-75
Loss of stability on immersion in water at 60 d C (ASTM D 1075)	Min 75 percent retained strength

**TABLE 500-23**

**QUANTITIES OF MATERIALS REQUIRED FOR 10M<sup>2</sup> OF ROAD SURFACE  
FOR 20 MM THICK OPEN GRADED PREMIX SURFACING USING  
PENETRATION BITUMEN OR CUTBACK AGGREGATES**

(a) Nominal Stone size 13.2 mm (passing 22.4 mm sieve and retained on 11.2 sieve)	0.18 m <sup>3</sup>
(b) Nominal Stone size 11.2 mm (Passing 13.2 mm sieve and retained on 5.6 mm sieve)	0.09 m <sup>3</sup>
Binder (quantities in terms of straight run bitumen)	
(a) For 0.18 m <sup>3</sup> of 13.2 mm nominal size stone at 52 kg bitumen per m <sup>3</sup>	9.5 kg
(b) For 0.09 m <sup>3</sup> of 11.2 mm nominal size stone at 56 kg bitumen per m <sup>3</sup>	5.1 kg
Total	14.6 kg

**TABLE 500-20**

**REQUIREMENTS FOR PHYSICAL PROPERTIES OF BINDER**

Property	Test method	Requirement
Penetrational 25° C	IS 1203	15 +5*
Softening point, ° C	IS 1205	65+- 10
Losso on heating for 5h at 163°C, % by mass MAX	IS 1212	2.0
Solubility in trichloroethylene, % by mas Min	IS 1216	95
Ash (mineral matter), % by mas MAX	IS 1217	1.0

\*- In cold climatic regions (temperature <10°C), a softer penetration grade of 30/40 may be used.

**TABLE 500-30**

**GRADE AND THICKNESS OF MASTIC ASHALT PAVING AND  
GRADING OF COARSE AGGREGATE**

Application	Thickness range (mm)	Nominal size of coarse aggregate (mm)	Coarse aggregate content, % by mass of total mix
Roads and carriage ways	25-30	13	40+-10
Heavily stressed areas i.e. junctions and toll plazas	40-50	13	45+-10
Nominal size of coarse aggregate IS sieve (mm)	13 mm		
	Cumulative % passing by weight		
19	100		
13.2	88-96		
2.36	0-5		



TABLE 4

**REQUIRMENTS OF POLYMER MODIFIED BINDERS TREATED WITH  
MODIFIED CRUMB RUBBER**

Designation	Grade			Method of Tes
	CRMB 50	CRMB 55	CRMB 60	
Penetration at 25°C, 0.1mm 100g, 5sec	<70	<60	<50	IS: 1203-1978
Softening point, (R&B) °C, Minimum	546	55	60	IS : 1205-1978
Elastics recovery of half thread in ductile meter at 15° C, % minimum	40	35	30	ASTM D5976-1996 Appendix-II
Test on Thin Film Oven Test Residue (IS : 9382 -1992				
Penetration at 25°C, 01 mm 100g, 5 sec, minimum % of original	60	60	60	IS : 1203-1978
Increase in softening point, (R&B) °C, Maximum	5	5	5	IS : 1205-1978
Elastic recovery residue of half thread in ductile meter at 15° C, % minimum	25	20	15	ASTM D5976-1996 Appendix-II

CRMB Crumb Rubber modified bitumen

TABLE 5

**SELECTIONS CRITERIA FOR PMB AND CRMB BASED ON  
ATMOSPHERIC TEMPERATURE**

Minimum Atmospheric Temperature, °C	Minimum Atmospheric Temperature, °C			
		<30	30-40	>40
	<-15	PMB-120	PMB-70	PMB-70
		CRMB 50	CRMB 55	CRMB 60
	15 to -15	PMB-120	PMB-70	PMB-40
		CRMB 50	CRMB 55	CRMB 60
	>15	PMB-70	PMB-40	PMB-40
		CRMB 55	CRMB 60	CRMB 60

PMB Polymer Modified Bitumen

CRMB Crumb Rubber Modified Bitumen

**TABLE 1800.1**  
**TOLERANCES IN SURFACE LEVELS SPECIFICATIONS FOR**  
**RURAL ROADS**

1	Sub grade	+20mm
		-25mm
2	Sub-base	
	(a) Flexible pavement	+10 mm
		-20mm
	(b) Concrete pavement	+ 6mm
		-10 mm
	(Dry lean concrete or rolled Concrete)	
3	Base course for flexible pavement	
	(a) Bituminous Course	+6 mm
		-6 mm
	(b) Other than bituminous	
	(i) Machine laid	+10 mm
		-10 mm
	(ii) Manually laid	+15 mm
	(iii)	-15 mm
4	Wearing course for flexible pavement	
	(a) Machine laid	+6 mm
		-6 mm
	(b) Maunally laid	+10 mm
		-10 mm
5	Cement concrete pavement	+5 mm
		-6 mm*

This may not exceed 8mm at 0-300 mm from the edges.

TABLE 1800.2

**FREQUENCY OF TESTS FOR EARTH WORK, SUBGRADE, GRANULAR  
SUB BASE/ BASE/ WEARING COURSES (SPECIFICATIONS FOR RURAL ROADS)**

S.No.	Type of Test		Frequency
(1)	Earth work		
	(a)	Placement moisture content (IS : 2270 part 2)	1 in 250 cum for each layer, subject to a maximum of 4 tests per day
	(b)	Degree of compaction (IS : 2720 part 28)	One set of the tests per 2000 m area comprising 5 to 6 measurements
	(c)	CBR of sub grate on remolded samples IS : 2720 part 16)	As required
(2)	Granular Sub-base/ base/ wearing course (other than WBM)		
	(a)	Gradation (IS 2720 part 4)	2 tests pr 500 cum subject to a minimum of 2 tests per day
	(b)	Attrberg's limits (IS : 2720 part 5)	2 tests pr 500 cum subject to a minimum of 2 tests per day
	(C)	Placement moisture content (IS 2720 part 2)	2 tests pr 500 cum subject to a minimum of 2 tests per day
	(d)	Degree of compaction (IS : 2720 part 28)	One set of the tests per 2000 m area comprising 5 to 6 measurements
	(e)	CBR ( IS 2720 part 16	1 in 1000 cum
(3)	Lime / Cement Lime GBFS/ Lime Flyash stabilised sub base		
	(a)	Pulversation of soil	Regularly
	(b)	Purity of lime (IS : 1514)	1 in 5 tonnes of lime or for each lot
	(c)	Placement moisture content (IS 2720 part2)	2 tests pr 500 cum subject to a minimum of 2 tests per day
	(d)	Degree of compaction (IS : 2720 part 28)	One set of the tests per 2000 m area comprising 5 to 6 measurements subject to minimum one test per day
	(e)	CBR or unconfined Compresie strength test on a set of 3 specimens (IS:2720 part 16) IS : 4332 part 5)	1 in 100 cum subject to a minimum one test per day
(4)	WBM Course		
	(a)	Aggregate impact value of stone aggregate (IS : 2386 part 4)	1 in 250 cum or source
	(b)	Grading of aggregates and screenings (IS : 2386 part II)	2 test per 250 cum or pr day
	(c)	Flakiness index (IS : 2386 part I)	1 in 250 cum per day
	(d)	Attrbrg's limits of binding material (IS : 2720 part 5)	1 to 50 cum per day
	(e)	Water absorption (IS 2386 part 3)	1 test per source
(5)	Wet mix Macadam		
	(a)	Aggregate impact value (IS 2386 part 4)	1 in 200 cum of aggregate
	(b)	Grading (IS : 2386 part I)	1 in 100 cum of aggregate
	(c)	Flakiness index (IS 2386 part I)	1 in 200 cum of aggregate
	(d)	Atterbeg's limits of portion of aggregate passing 425 micron sieve (IS 2720 part 5)	1 in 100 cum of aggregate
	(e)	Density of copacted layer	1 test per day sqm

**TABLE 1800.3**

**FREQUENCY OF TESTS FOR PRIME COAT AND TACK COAT  
SPECIFICATION FOR RURAL ROADS**

S.No.	Test	Test Method	Frequency
1	Quality of binder	Viscosity, Residue on 600 micron sieve and storage stability tests for emulsions (IS 8887) viscosity and flash point tests for culbacks (IS : 217)	One test per lot or per 10 tonnes
2	Temperature of binder for cutback when used	Appendix 10.6 of IRC : SP 20	Regularly
3	Rate of spread of binder	Appendix -10.7 of IRC: SP 20	One test per 500 sqm not less than 2 tests per day

**TABLE 1800.4**

**FREQUENCY OF TESTS FOR BITUMINOUS MACADAM SPECIFICATIONS  
FOR RURAL ROADS**

S.No.	Test	Test Method	Frequency
1	Quality of binder	Penetration, Softening point & ductility test for paving bitumen (IS: 73) penetration softening point and elastic recovery tests of modified bitumen (IRC SP 53)	One test per lot or per 10 tones
2	Temperature of binder	Appendix 10.6 of IRC : SP 20	Regularly IRC:SP 20
3	Aggregate impact value	IS : 2386 part 4	1 test per 250 cum per source
4	Flakiness index	IS : 2386 part I	1 test per 250 cum per source
5	Stripping of aggregate	IS : 6241-1971	1 set of 3 representative specimets per source
6	Water absorption	IS : 2386 part I	1 set of 3 representative specimets per source
7	Grading of aggregates	IS : 2386 part I	1 test per 100 cum or per day
8	Binder content	Appendix 10.8 of IRC : SP : 20	2 tests per day per plant
9	Thickness		Regularly IRC:SP:20
10	Density of compacted layer	Appendix 10.9 of IRC : SP 20	1 test per 1000 sqm or per day

**TABLE 1800.5**

**FREQUENCY OF TESTS FOR BUILT UP SPRAY GROUT/ MODIFIED PENETRATION  
MACADAM (SPECIFICATION FOR RURAL ROADS)**

S.No.	Test	Test Method	Frequency
1	Quality of binder	Penetration, Softening point & ductility test for paving bitumen (IS: 73) penetration softening point and elastic recovery tests of modified bitumen (IRC SP 53)	One test per lot or per 10 tonnes
2	Temperature of binder	Appendix 10.6 of IRC : SP 20	Regularly
3	Aggregate impact value	IS : 2386 part 4	1 test per 250 cum per source
4	Flakiness index	IS : 2386 part I	1 test per 250 cum per source
5	Stripping of aggregate	IS : 6241-1971	1 set of 3 representative specimets per source
6	Aggregate grading	IS : 2386 part I	1 set of 3 representative specimets per source
7	Water absorption	IS : 2386 part 3	1 test per 100 cum or per day
8	Soundness of aggregate	IS : 2386 Part 5	2 tests per day per plant
9	Rate of spread of binder	Appendix 10.7 of IRC :SP: 20	Regularly IRC:SP:20
10	Rate of spread of aggregate	Appendix 10.10 of IRC : SP 20	1 test per 1000 sqm or per day

**TABLE 1800.6**

**FREQUENCY OF TESTS FOR SURFACE DRESSING/ SEAL COAT  
(SPECIFICATION FOR RURAL ROADS)**

S.No.	Test	Test Method	Frequency
1	Quality of binder	Penetration, Softening point & ductility test for paving bitumen (IS: 73) penetration softening point and elastic recovery tests of modified bitumen (IRC SP 53) Viscosity residue on 600 micron sieve and storate stability test for emulsion (IS 8887)	One test per lot or per 10 tonnes
2	Temperature of binder	Appendix 10.6 of IRC : SP 20	Regularly
3	Aggregate impact value	IS : 2386 part 4	1 test per 250 cum per source
4	Flakiness index	IS : 2386 part I	1 test per 250 cum per source
5	Grading of aggregate	IS : 2386 part I	1 test per 50 cum per source
6	Stripping of aggregate	IS : 6241-1971	1 set of 3 representative specimets per source
7	Water absorption	IS : 2386 part 3	1 set of 3 representative specimets per source
8	Soundness of aggregate	IS : 2386 Part 5	1 test per source
9	Rate of spread of binder	Appendix 10.7 of IRC :SP: 20	1 test per 1000 sqm and not less than 2 test per day
10	Rate of spread of aggregate	Appendix 10.10 of IRC : SP 20	1 test per 1000 sqm and not less than 2 test per day

TABLE 1800.7

**FREQUENCY OF TESTS FOR OPEN GRADED PREMIX SURFACING/ MIX  
SEAL SURFACING (SPECIFICATION FOR RURAL ROADS)**

S.No.	Test	Test Method	Frequency
1	Quality of binder	Penetration, Softening point & ductility test for paving bitumen (IS: 73) penetration softening point and elastic recovery tests of modified bitumen (IRC SP 53) Viscosity residue on 600 micron sieve and storage stability test for emulsion (IS 8887)	One test per lot or per 10 tonnes
2	Aggregate impact value	IS : 2386 part 4	1 test per 250 cum per source
3	Flakiness index	IS : 2386 part I	1 test per 250 cum per source
4	Stripping of aggregate	IS : 6241-1971	1 set of 3 representative specimens per source
5	Water absorption	IS : 2386 part 3	1 set of 3 representative specimens per source
6	Grading of aggregate	IS : 2386 part I	1 test per 50 cum per source
7	Soundness of aggregate	IS : 2386 Part 5	1 test per source
8	Temperature of binder at application	Appendix 10.6 of IRC:SP:20	Regularly
9	Binder content	Appendix 10.8 of IRC :SP: 20	1 test per 500 cum or per day
10	Thickness	-	Regularly

TABLE 1800.8

**FREQUENCY OF QUALITY TESTS FOR PAVING QUALITY CEMENT  
CONCRETE PAVEMENT (SPECIFICATIONS FOR RURAL ROADS)**

(1)	Levels and Alignment		
	(i) Level tolerance		Clause 1802.3: to be checked for each days work regularly
	(ii) Surface regularly (transverse and Longitudinal)		
	(iii) Width of pavement and position of paving edges		Clause 1802.2 to be checked for each days work
	(iv) Pavement thickness		Regularly at grid points
	(v) Alignment of joints		To be checked for each days work
	(vi) Depth of Dowse Bars		To be checked for each days work
(2)	Quality for Materials and Concrete		
	Control tests for materials and concrete shall be as under :		
	(a) Cement		
	Physical and chemical tests	IS:269 IS : 455 IS: 1489 IS : 8112 IS : 12269	Once for each source of supply and occasionally when called for in case of lone / improper storage. Besides the contractor also shall submit daily test data on cement released by the manufacture
	(b) Coarse and fine aggregates		
	(i) Gradation	IS : 2386 Part I	One test for each days work.
	(ii) Deleterious constituents	IS: 2386 Part 2	One test for each days work
	(iii) Water absorption / content	IS : 2386 Part 3	Regularly as required subject to a minimum of one test a day for coarse aggregate & two test a day for fine aggregate. This data all be used for correcting the water demand of the mix on daily basis.
	(c) Coarse aggregate		
	(i) Aggregate impact test	IS: 2386 Part 4	One test per source
	(ii) Soundness	IS : 2386 part 5	One test per source
	(iii) Alkali aggregate reactivity	IS : 2386 part 7	One test per source
	(d) Water Chemical tests	IS : 456	Once for approval of source of supply subsequently only in case of doubi.
	(i) Strength of concrete	IS : 516	Minimum 6 cubes and 6 beams per days work (3 each for 7 day and 28 day strength)
	(ii) Workability of fresh concrete slump test	IS : 1199	One test per 3 cubm of concrete at paving site or one test for each dumper laid at plant site

**TABLE –E I****RESISTANCE CORRECTION FACTOR AT DIFFERENT TEMPERATURES**

Temperature C	Temperature Correction Factor	
	<b>COPPER</b>	<b>ALUMINIUM</b>
5	0.9411	0.9396
10	0.9607	0.9597
15	0.9804	0.9798
20	1.0000	1.0000
25	1.0197	1.0202
30	1.0392	1.0403
35	1.0589	1.0604
40	1.0786	1.0806
45	1.0982	1.1008
50	1.1179	1.1209
55	1.1375	1.1410
60	1.1572	1.1612
65	1.1768	1.1814
70	1.1965	1.2015
75	1.2161	1.2216
80	1.2358	1.2418
85	1.2555	1.2620

**TABLE E2****GUIDE LINES FOR CALCULATING ELECTRICAL LOAD ON  
PLINTH AREA BASIS****(Clause 4.2.3 (b) of National Building Code)**

Type of Load	Load Requirement / plinth area (watt /M2)
Normal lighting	20
Lighting with lifts, pumps but without central air conditioning	30
Additional capacity for technical buildings like laboratories, hospitals etc.	11



**TABLE E3****DIMENSION OF VARIOUS TYPES OF LIFTS (as per National Building code)**

S.No.	Type	Persons	Kg	Inside dimension of car		Dimensions of lift well		Width of Entrance (mm)	Machine Room size (mm)
				Width (mm)	Depth (mm)	Width (mm)	Depth (mm)		
1	Passenger Lifts	4	272	1100	700	1900	1300	800	3400X3800
		6	408	1100	1000	1900	1600	800	3400X4100
		8	544	1300	1100	1900	1900	800	3400X4400
		10	680	1350	1300	1900	2100	800	3400X4600
		13	884	2000	1100	2500	1900	900	4000X4400
2	Goods Lifts		500	1100	1200	1900	1500	1100	2500X4000
			1000	1400	1800	2300	2100	1400	2500X4600
			1500	1700	2000	2600	2300	1700	2500X4800
			2000	1700	2500	2600	2800	1700	2500X5300
			2500	2000	2500	2600	2800	2000	2500X5300
3	Hospital Lifts		1020	950	2400	1700	3000	800	3700X5500
			1360	1300	2400	2200	3000	1200	4200X5500
			1768	1600	2400	2350	3000	1200	4350X5500
4	Service Lifts		100		700	1200	900	700	1200X1150
			150		800	1300	1000	800	1300X1150
			200		900	1400	1100	900	1400X1150
			250		1000	1500	1200	1000	1500X1150

**TABLE E4**

**AREA REQUIRED FOR TRANSFORMER ROOM AND SUB STATION  
FOR DIFFERENT CAPACITY**

**(Clause 4.2.4 (v) of National Building Code)**

<b>S.No.</b>	<b>Transformer capacity (KVA)</b>	<b>Total Transformer Room Area (m<sup>2</sup>)</b>	<b>Total substation area (with HT LT Panels)</b>	<b>Suggested minimum face width (m)</b>
1	1 x 60	14	90	9
2	2 x 160	28	118	13.5
3	1 x 250	15	91	9
4	2 x 250	30	121	13.5
5	1 x 400/500	16.5	93	9
6	2 x 400/500	33	125	13.5
7	2 x 630	36	132	14.5
8	2 x 1000	39	149	14.5

**TABLE E-5**

**RECOMMENDED VALUE FOR AIR CHANGES FOR VENTILATION**

**(Clause 5.2.21 of National Building Code)**

<b>SPACE TO BE VENTILATED</b>	<b>AIR CHANGES PER HOUR</b>
Assembly / Auditoria	3-6
Bed room / living room	3-6
Bath room / toilets	6-12
Cafes / Restaurants	12-15
Cinema / theatres	6-9
Class rooms	3-6
Factories	3-6
Garages	12-15
Hospital wards	3-6
Kitchen (Common)	6-9
Kitchen (Domestic)	3-6
Laboratories	3-6
Offices	3-6

**TABLE E6**  
**(IIE TABLE 9 K 3)**  
**CURRENT CARRYING CAPACITIES ASSOCIATED VOLTAGE DROPS FOR TWIN AND MULTI CORE**  
**ARMOURED P.V.C. INSULATED CABLES**  
**(ALUMINIUM CONDUCTORS) BS 6346**  
**CONDUCTOR OPEARATING TEMPERATURE 70.C**

Cross sectional area of conductor	Installation methods E F and G of table 9A ("clipped direct")					Installation methods K of table 9A ("Defined conditions")				
	One twin cable, single phase A.C. or D.C.			One three or four core cable three phase		One twin cable, single phase A.C. or D.C.			One three or four core cable three phase	
	Current carrying capacity	Volt drop per ampere per metre		Current carrying capacity	Volt drop per ampere per meter	Current carrying capacity	Volt drop per ampere per meter		Current carrying capacity	Volt drop per ampere per meter
		A.C	D.C				A.C	D.C		
mm2	A	mV	mV	A	mV	A	mV	mV	A	mV
1	2	3	4	5	6	7	8	9	10	11
16	63	4.5	4.5	55	3.9	66	4.5	4.3	58	3.9
25	83	2.9	2.9	67	2.5	87	2.9	2.9	71	2.5
35	100	2.1	2.0	88	1.8	105	2.1	2.0	93	1.8
50	124	1.6	1.5	105	1.3	130	1.6	1.5	110	1.3
70	157	1.1	1.0	138	0.93	165	1.1	1.0	145	0.93
95	185	0.79	0.77	166	0.68	195	0.79	0.77	175	0.68
120				195	0.54				205	0.54
150				219	0.45				230	0.45
185				257	0.37				270	0.37
240				304	0.30				320	0.3
300				347	0.25				365	0.25

**CORRECTION FACTORS**  
**FOR AMBIENT TEMPERATURE**

Ambient Temperature	25.C	35.C	40.C	45.C	50.C	55.C	60.C	65.C
Correction factors	1.06	0.94	0.87	0.79	0.71	0.61	0.5	0.35

**TABLE E7**  
**CURRENT CARRYING CAPACITIES ASSOCIATED VOLTAGE DROPS FOR TWIN AND MULTI CORE UNARMoured P.V.C.**  
**INSULATED CABLES NON ARMoured (ALUMINIUM CONDUCTORS) BS 6346**  
**CONDUCTOR OPEARATING TEMPERATURE 70.C**

Cross sectional area of conductor	Installation methods E F and G of table 9A ("clipped direct")					Installation methods K of table 9A ("Defined conditions")				
	Onetwin cable, single phase A.C. or D.C.			One three or four core cable three phase		One twin cable, single phase A.C. or D.C.			One three or four core cable three phase	
	Current carrying capacity	Volt drop per ampere per metre		Current carrying capacity	Volt drop per ampere per metre	Current carrying capacity	Volt drop per ampere per metre		Current carrying capacity	Volt drop per ampere per metre
		A.C	D.C				A.C	D.C		
mm2	A	mV	mV	A	mV	A	mV	mV	A	mV
1	2	3	4	5	6	7	8	9	10	11
16	63	4.5	4.5	55	3.9	66	4.5	4.3	58	3.9
25	83	2.9	2.9	67	2.5	87	2.9	2.9	71	2.5
35	100	2.1	2.0	88	1.8	105	2.1	2.0	93	1.8
50	124	1.6	1.5	105	1.3	130	1.6	1.5	110	1.3
70	157	1.1	1.0	138	0.93	165	1.1	1.0	145	0.93
95	185	0.79	0.77	166	0.68	195	0.79	0.77	175	0.68
120				195	0.54				205	0.54
150				219	0.45				230	0.45
185				257	0.37				270	0.37
240				304	0.30				320	0.3
300				347	0.25				365	0.25

**CORRECTION FACTORS  
FOR AMBIENT TEMPERATURE**

Ambient Temperature	25.C	35.C	40.C	45.C	50.C	55.C	60.C	65.C
Correction factors	1.06	0.94	0.87	0.79	0.71	0.61	0.5	0.35

TABLE E8

## COPPER AND ALUMINUM CONDUCTORES

Cross sectional area Sq. mm	Cross sectional area sq. in	Approximate swag. No.	Copper		Aluminum	
			Weight kg/km	Resistance at 20.C ohm/km	Weight kg/km	Resistance at 20.C ohm/km
1	0.00155	18	8.89	17.860	2.70	30.30
1.5	0.0023	17	13.34	11.91	4.04	20.20
2.5	0.0038	15	22.33	7.144	6.74	12.12
4	0.0062	13	35.56	4.46	10.80	7.575
6	0.0093	11	53.34	2.977	16.20	0.05
10	0.0155	9	88.90	1.786	27.00	3.03
16	0.0248	7	142.20	1.116	43.20	1.894
25	0.0388	4	222.30	0.714	67.40	1.212
35	0.0543	1	311.20	0.51	94.40	0.866
60	0.0780	3	444.50	0.3570	135.00	0.6060
70	0.1080	5	622.30	0.2550	189.00	0.433
95	0.1470	7	844.60	0.1880	256.00	0.3190
120	0.1860		1067.00	0.1488	323.00	0.2525
150	0.2330		1334.00	0.1191	404.00	0.2020
185	0.2860		1645.00	0.0965	498.00	0.1638
240	0.3720		2134.00	0.0744	646.00	0.1263
300	0.4650		2677.00	0.0595	808.00	0.1010
400	0.6200		3556.00	0.0447	1016.00	0.0758
500	0.7800		4445.00	0.0357	1356.00	0.0606
625	0.9560		5556.00	0.0286	1688.00	0.0485

**M-99****Table E – 09****Swaged Tubular pole as per IS : 2713 P - I, II 1980**

S.No.	Pole Designation	Over all Length (Mtr.)	Base Plate Size	Planting Depth (Mtr.)	Length of sections			Outside dia. & thickness of sections			Approx. wt. of Pole (Including Base Plate)
					Bottom	Middle	Top				
					h1	h2	h3				
1	410 SP - 5	7.5	300 X 300 X 5 mm	1.25	4	1.5	1.5	114.3 X 4.5	88.9 X 4.05	76.1 X 3.25	3.52 Kg + 79 Kg
2	410 SP - 17	8.5	300 X 300 X 5 mm	1.5	5	1.75	1.75	114.3 X 4.5	88.9 X 4.05	76.1 X 3.25	3.52 Kg + 89 Kg
3	410 SP - 28	9	300 X 300 X 5 mm	1.5	5	2	2	139.7 X 4.5	114.3 X 3.65	88.9 X 3.25	3.52 Kg + 113 Kg
4	410 SP - 42	10	400 X 400 X 7 mm	1.8	5.2	2.4	2.4	139.7 X 5.4	114.3 X 4.5	88.9 X 3.25	8.8 Kg + 144 Kg
5	410 SP - 51	11	400 X 400 X 7 mm	1.8	5.6	2.7	2.7	139.7 X 5.4	114.3 X 5.4	88.9 X 3.25	8.8 Kg + 164 Kg
6	410 SP - 60	12	400 X 400 X 7 mm	2	5.8	3.1	3.1	165.1 X 5.4	139.7 X 4.5	114.3 X 3.65	8.8 Kg + 2.8 Kg

**M-100****Table E – 10****GI Octagonal pole Standard Dimensions**

<b>S. No.</b>	<b>Height (Mtr.)</b>	<b>Top Dia. (in mm)</b>	<b>Bottom Dia (in mm)</b>	<b>Sheet Thickness (in mm)</b>	<b>Base Plate</b>	<b>Foundati on Bolt Size no. x Dia. (in mm)</b>	<b>PCD (in mm)</b>	<b>Bolt Length ( in mm)</b>	<b>Foundation Size (in mm)</b>
1	3	70	130	3	200 x 200 x 12	4 x 16	200	450	450 x 450 x 600
2	7	70	130	3	220 x 220 x 12	4 x 20	205	700	450 x 450 x 1400
3	8	70	135	3	225 x 225 x 16	4 x 20	210	750	450 x 450 x 1550
4	9	70	155	3	260 x 260 x 16	4 x 24	250	750	450 x 450 x 1700
5	10	70	175	3	275 x 275 x 16	4 x 24	270	750	450 x 450 x 1900
6	11	90	210	3	300 x 300 x 20	4 x 24	300	750	450 x 450 x 2000
7	12	90	240	3	320 x 320 x 20	4 x 24	325	850	450 x 450 x 2100

Table E – 11

## GI Conical pole Standard Dimensions

S.No.	Height (Mtr.)	Top Dia. (in mm)	Bottom Dia (in mm)	Sheet Thickness (in mm)	Base Plate	Foundation Bolt Size no. x Dia. (in mm)	PCD (in mm)	Bolt Length (in mm)	Foundation Size (in mm)
1	3	75	107	3	200 x 200 x 12	4 x 16	200	450	450 x 450 x 600
2	7	75	151	3	240 x 240 x 16	4 x 20	235	700	450 x 450 x 1400
3	8	75	162	3	240 x 240 x 16	4 x 20	235	750	450 x 450 x 1550
4	9	75	173	3	275 x 275 x 16	4 x 24	270	750	450 x 450 x 1700
5	10	75	184	3	275 x 275 x 16	4 x 24	270	750	450 x 450 x 1900
6	11	85	206	3	300 x 300 x 20	4 x 24	300	750	450 x 450 x 2000
7	12	96	228	3	320 x 320 x 20	4 x 24	320	850	450 x 450 x 2100



Table E 12

## Conical Reinforced polymer composite pole Standard Dimensions

S. No.	Height (Mtr.)	Top Dia. (in mm)	Bottom Dia. (in mm)	Planting Depth	Above Ground
1	3	76	127	750	2250
2	4	76	143	750	3250
3	5	76	160	850	4150
4	6	76	176	850	5150
5	7	76	193	1000	6000
6	8	76	210	1000	7000
7	9	76	227	1000	8000
8	10	76	243	1200	8800
9	11	76	260	1600	9400
10	12	76	277	1600	10400

## RAJASTHAN HOUSING BOARD, JAIPUR

### CHECK SLIP FOR A&F CASES

[To be filled by Divisional Officer]

**Division:-**

**Circle Jaipur**

**A.C.E.**

1	Name of Project / Work:			
2.	Scheme & City			
3.	Project Cost:	Rs.		
4.	Work wise bifurcation of Project cost: I] Land ii] Construction cost iii] Development cost a] Water Supply----- b] Sewerage..... c] External Electrification..... d] WBM Roads e] Drains..... f] Parks & Arboriculture ..... g] Others <b>Rs.</b> h] soil investigation & designs Total Development Cost iv) officeBuilding& casting yard v) AshokUdhyan & TechnologyPark vi) Deposit Work vii) ASC Work a) SchoolBuilding b) DispensaryBuilding c) Community Centre d) . e) . Vii] O.D.C. <b>Total Project Cost Rs.</b>	<b>Rs.</b>		
5.	Is it original A&F ease of revision of A&F earlier issued [if revision then enclose copy of A&F]			
6.	Whether Land is available for construction development. If Yes, then enclose site plan.			
7.	Whether Project report has been submitted.			
8.	Whether Project has been cleared by Project committee of Board – Enclose layout plan.			
9.	Status of pending registration & surplus house in the city.	Category	No. of Pending registration	No. of unallotted houses
		EWS		
		LIG		
		MIG-A		
		MIG-B		
		HIG		
		TOTAL		

10.	Detail for S.F.S. :- [i] Whether sanction of competent authority has been obtained to float the scheme. [ii] No. of Registered Applicants <ul style="list-style-type: none"> <li>• MIG-A</li> <li>• MIG-B</li> <li>• HIG</li> </ul>			
1.	In case of work under ASC give details:- Anticipated total amount to Be collected from Allottees under ASC	N/A		
12.	For deposit work give details:-			
	Agency Project cost agency charges [%][Enclosed letter of intent issued by the department / agency page. No			
13.	Source of financial Institutions / Board fund / Deposit for works/ .....ASC fund / CER/SFS			
14.	Budget head under which work is Proposed .....			
15.	<u>Year wise Budget requirement [Rs. In Lacs</u>	Year	Budget Required	Budget Provision
16.	<u>Mode of recovery of expenditure on Project</u> <ol style="list-style-type: none"> <li>1) Through revision of land rate</li> <li>2) Through costing of houses</li> <li>3) From allottees for ASC works</li> <li>4) SFS installments from allottees</li> <li>5) Deposit for works through agency</li> </ol>			
17.	<u>Whether the Scheme has been handed over to local authority</u>			
18.	<u>Competency to sanction A&amp;F, State Government / Board/ Chairman/ H.C</u>			

**Subject :-** A&F sanction for .....

1 .The proposal for sanction of A&F for.....

The detail of the same is as under.

- (i) Name of project/work :-  
 (ii) Scheme and City :-  
 (iii) Project cost (Rs. in Lacs) :-  
 (iv) Work wise bifurcation of Project cost. (Rs. in Lacs) :-

Total

- (v) It is original A&F case or revision of A&F earlier (If revision then original sanction file of A&F may be Enclosed). :-  
 (vi) Land is available for const./Dev. work. :-  
 (vii) Whether the technical report has been submitted. :-  
 (viii) Whether the project has been cleared by project committee (Layout plan may be enclosed). :-  
 (ix) Status of pending registrations available. :-  
 Please specified registrations is under GRS/SRS-/SFS.

Category	No. of houses	No. of surplus house available)
Ghoronda		
EWS		
LIG		
MIG-A		
MIG-B		
HIG(SRS-2006)		-
Total		-

- (x) If registration is under SFS then submit the detail of approval of booklet costing. :- No. .... Date..... Amt.....  
 N.A.  
 (Photo copy should be enclosed)  
 (xi) Source of finance. :- .

- (xii) Year wise budget requirement and budged approved. (Amount in lacs) :-

Year	Budged Required	Budget provision made
TOTAL		

- (xiii) Mode of recovery of expenditure of project (If development then give detail of amount included in land and development cost (Please mention the year in which the same have been included) :-  
 (xiv) Whether the scheme has been handed over to local authority. :-  
 (xv) Competency to sanction A&F. :-

**Submitted for kind consideration please.**

**RAJASTHAN HOUSING BOARD DIV:**  
**TECHNICAL REPORT**

1		General	
	1.1	Name of Work :	
	1.2	Circle :	
	1.3	Division	
2		Necessity	
3		Authority	
	3.1	References of Sanction:	
	3.2	Amount of Administrative / Financial Sanction (including / excluding the prorated charges)	
	3.3	Reference and Abstract details of estimate	
	3.4	Reference of Technical Sanction of work if any issued earlier.	
4		Location and Land	
	4.1	Location:	
	4.2	Possession taken over / not taken over	
5		Reference of approved	
		Drawing	
	S.No.	Details	
	1	Site Plan	
	2	Plans	
6		Estimated Cost	
7		Source of Material	
8		Type of Soil / S.B.C.	
9		Brief Specification	
	[i]	Foundation concrete	
	[ii]	Foundation plinth Masonry	
	[iii]	Roofing	
	[iv]	Reinforced DPC	
	[v]	Super structure brick masonry	
	[vi]	Lintel, sun shade and roofing	
	[vii]	Plaster	
	[viii]	Finishing	
	[ix]	Flooring	
	[x]	Roof top finishing	
	[xi]	Door frame	
	[xii]	Door shutters	
	[xiii]	Windows	
	[xiv]	Water supply	
	[xv]	Waste drain	
	[xvi]	Electrification	
	[xvii]	Compound wall and Gate	
	[xviii]	Painting of Door and windows	
10		Agency for Execution	
11		Present State of Execution	
12		Cost Analysis	
	12.1	BSR adopted	
	12.2	Tender Premium expected	

## Rajasthan Housing Board

### Check Slip of Tenders (T-23)

1.1 Name of work &amp; Scheme

1.2 Name of Div/Circle

1.3 Addl. Chief engineer concerned

2 FINANCIAL TIE UP

2.1 Pattern of financing HUDCO/ Non- HUDCO/ HDFC/Deposit work/ SFS  
Other

2.2 HUDCO Scheme No.

2.3 Details of house in Scheme EWS LIG MI MII HIG

TOTAL

	EWS	LIG	MI	MII	HIG	TOTAL
2.4 a) Details of houses as per NIT	EWS	LIG	MI	MII	HIG	TOTAL

2.4 b) Details of houses as per tender

2.5 Date of commencement &amp; completion of scheme.

2.6 T P Proposed in the Scheme ..... % above/ below.

3 A&amp;F SANCTION

3.1 Yes/No if yes No.----- Date-----

3.2 No. of houses as per A&amp;F EWS LIG MI MII HIG

TOTAL

3.3 Amount as per A&amp;F Rs. \_\_\_\_\_

3.4 Amount as per tender Rs. \_\_\_\_\_

3.5 Reason for excess in tender amount :

4 Splitting of work (approved(Copy enclosed) : No.-----Date-----5  
Technical Sanction5.1 T.S. issued by : -----Vide No. ----- Date:-----  
-----

5.2 No. of houses as per T.S. EWS LIG MI MII HIG TOTAL

5.3 Amount as per T.S. : -----

5.4 Amount as per A&amp;F Sanction Rs.: -----

5.5 Amount as per Tender Rs.:-----5.6 Reasons for  
excess a tender amount W.R.T. T.S.

6 Approval of Layout/ Building plan by Head Office Yes/No

7 SCOPE OF WORK for which the tenders have been Yes/No  
called as per T.S. or not Reason if tender is not as per T.S.-----  
-----  
-----  
-----

7(a) This tender is for : Complete work/skeleton/SFS/ Deposit/ Other work

(b) T.S. is for : Complete work/skeleton/SFS/ Deposit/ Other work

- 8 Reference of N.I.T.
- 8.1 NIT No.----- Date -----
- 8.2 Original work on chargeable work to contractor -----  
-----
- 8.3 Copy of NIT enclosed Yes/No
- 8.4 a. Date of issue of NIT -----
- 8.4 b. Period of sale of Tender :: From ----- to -----
- 8.5 Stipulated date of receipt of tender -----  
-----
- 8.6 Approval for postponing the NIT ----- Yes/No By-----  
-----
- 8.7 Postponed date and time if any :-----
- 8.8 Reasons for postponement-----  
-----
- 8.9 Actual date of receipt of tender & time -----  
-----
- 8.10 Reference of corrigendum issued/published No.-----Date-----  
-----

( If any copy may be enclosed )

- 9 Reference of publicity
- |                                     | Paper   | Date of publication |
|-------------------------------------|---------|---------------------|
| 9.1 Name of newspapers with date of | 1 ----- | -----               |
|                                     | 2 ----- | -----               |
|                                     | 3 ----- | -----               |
|                                     | 4 ----- | -----               |

- 9.2 Date on which NIT was placed on Notice Board of division/ Circle / H.O. Contractor.

Association -----

- 9.3 Minimum period prescribed for publicity-----
- 9.4 Period actually allowed for publication -----9.5 Reasons for  
inadequate publicity -----

#### 10 DETAILS OF PARTICIPATING CONTRACTOR

- 10.1 No. of tender sold --  
-----

- 10.2 No. of  
tender received ----  
-----

#### 10.3 Details

S.No.	Name of firm	Enlisting RHB		Enlistment		E.M. Deposit ed	Permission to issue tender copy was accorded by
		Class	Upto applied for	Class	Upto		
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

## 11 REFERENCE OR OPENING OF TENDERS

11.1 Opening of tender  
by RE Div. office/  
C.O./ACE

Date : ----- Time -----

Name & Designation who actually opened the tender as per the committees constituted.

1 Name designation

2 Name designation

3 Name designation

11.2 Name of contractors who were present at the time of  
opening of tenders 1 ----- 2 ----  
-----

3 ----- 4 -----

## 12 POSITION OF TENDER AFTER OPENING

12.1 Comparative statement annexed Yes/ No

12.2 Whether participating tenders are enlisted in appropriate class , if no  
whether earnest Yes/ No 12.3 Whether Contractor RE or DHC has  
signed the sheets of tender documents especially Yes/ No

12.4 Whether any correction over writing have been attested under the signature of  
Yes/ No

12.5 Certify that G-Schedule is based on sanctioned estimate and rates are accordance  
with Yes/ No

12.6 Paging has been done

12.7 Whether negotiation have been done with due permission from competent authority  
Yes/ No

12.8 Results of negotiation

a) Any condition having financial/technical implication

## 13.1 STATUS OF THE LOWEST

Ist Lowest ----- @ TP -----  
%Above/Below

IIInd Lowest ----- @ TP -----  
%Above/Below

IIIrd Lowest ----- @ TP ----- %Above/Below

13.2 Enlistment status of Ist Lowest -----

IIInd Lowest -----

IIIrd Lowest -----

## 13.3 Item Rates of Ist Lowest

Item Rate No.	Item Details	Qty. & Units	Rate	Amount
1.				
2.				
3.				
4.				
	Net Amount			

FINANCIAL IMPACT OF CONDITION , IF ANY

-----  
-----  
-----  
-----



-----Net Amount : Rs.-----

If works are not similar DHCs Will separately write details :

-----  
-----

-----Overall tender premium of Ist Lowest : -----

Overall tender premium of IInd Lowest : -----

13.4 Lowest rates of item rates in tender

S.No.	Item No.	Item rate	Name of contractor

14 a) RATES APPROVED FOR SIMILAR WORKS In past three to six months by

Div/ Circle	Name of work	TP	BSR	No. & Date
DHC				
ACE				

Details of work

If works are not similar, RE /DHC Will separately write details of justification

14 b) Lowest Rates approved/ received in same NIT

S.No.	G. Schedule Item	BSR/Year	Lowest rates recd. but not	Lowest rates approved
			DHC/ACE	DHC/ACE

15 Validity of Tenders Expires

Ist Lowest      IInd Lowest      IIInd Lowest

certification after checking and confirming the tender document with comments and

Accountant :-----

-----R.E.-----  
-----

Accountant      R.E.

( Signature with date )

( Notes : Sino. 1 to 16 is to be filled up by R.C. Division office ).

17 Deputy Housing Commissioner Office

Certification after checking and confirming the tender document with comments and

17 a ) recommendations on rates received of lowest tenderer including their financial and technical

i) status of lowest tenderer , T.P. -----% below/ above -----BSR  
impact of condition --

ii) Position of negotiation from lowest contractor/ all parties negotiation

Approved by ----- No.----- Date-----

-----

Opened on ----- Validity up to -----

-----

iii) Name of lowest contractor :

Part of G Schedule	Original Ist Lowest Rate	Negotiated Rates	Impact of Condition	Total Amt.	RTP	Rates Appd. by DHC/A CE for similar work	Lowest rates rece. by DHC/ACE in same NIT
Bidg.							
Sanitary							
Joinery							
Steel							
Elect.							
Item Rate							
Impact of condition							
Total							
Overall TP							

Comments of AAO of DHC -----

-----

Comments of TA to DHC -----

Comments of DHC -----

-----

-----

-----

-----

-----

-----

-----

-----

AAO

(Sign. with date)

TA to DHC

(Sign. with date)

DHC

( Sign. with date )

Note : S.No. 17 is to be filled up by DHC Office

18 Additional Chief Engineer Office

18. a) Certification after checking and confirming the tender document with comments  
and

i) status of lowest tenderer , T.P. -----% below/ above -----BSR  
impact of condition --

ii) Position of negotiation from lowest contractor/ all parties negotiation

Approved by ----- No.----- Date-----

Opened on ----- Validity up to -----

iii) Name of lowest contractor :

Part of GSchedule	Original Rate	Ist	Lowest	Negotiated Rates	Impact of Condition	Total Amt.	RTP	Rates Appd. by DHC/A CE for similar work	Lowest rates rece. by DHC/ACE in same NIT
Bidg.									
Sanitary									
Joinery									
Steel									
Elect.									
Item Rate									
Impact of condition									
Total									
Overall TP									

Comments of AAO of DHC -----

-----

Comments of TA to DHC -----

-----

Comments of DHC -----

-----

-----

-----

-----

AO  
(Signature with date)

TA to ACE  
(Signature with date)

ACE  
( Signature with date )

Note : S.No. 18 is to be filled up by ACE Office

## ABBREVIATIONS

A	Ampere
ACB	Air circuit breker
ACSR	Steel reinforced aluminium conductor
AH	Ampere hour
APFC	Automatic power factor correction
AVM	Anti vibration mounting
AWG	American wire guage
BHP/HP	Break horse power
CFL	Compact fluorescent lamp
CFM	Cubic feet per minute
CI	Cast iron
CP	Chorme plated
CPRI	Central power research institute
CRT	Cast resin type
CT	Curent transformer
DB	Distribution board
DG	Diesel generator
DISCOMs	Distribution companies
DMC	Dough moulded compound
DO	Drop out
DP	Double pole
EB	Electronic ballast
EDO	Electrically draw out
ETDC	Electronic test and development centre
FIA	Fire insurance approval
FR	Fire / flame relardant
FRLS	Fire / flame retardant and low smoke
FTL	Flluorescent tubelight linear
GLS	General lighting service
GO	Gang operating
GSS	Galanised sheet steel
HBC	High breaking capacity
HDPE	High density poly ethylene
HPMV	High pressure mercury vapour lamp
HPSV	High pressure sodium vapour lamp
HR	Heat resistant

HT/HV	High tension / voltage
I/O	Information outlet
IDU / ODU	Indoor / outdoor unit
IEC	International Electro technical commission
IP	Ingress protection
IS	Indian standard
ISI	Indian standard institute
ITC	Installation testing and commissioning
ITD	Indian telecom department
KVAR	Reactive kilo volt ampere
KW	Kilo watt
LA	Lightning arrester
LAN	Local area networking
LCD	Liquid crystal display
LED	Light emitting diode
LPM	Litre per minute
LT/ LV	Low tension / voltage
LTC	Load tap changer
MA	Milli ampere
MCB	Miniature circuit breaker
MCCB	Moulded case circuit breaker
MDO	Manually draw out
MH	Metal halide
MM	Milli metre
MPP/MP	Metalized poly propylene paper
MS	Mild steel
MVA	Mega volt ampere
NO/NC	Normally open closed
NRV	Non return valve
O/L	Over load
OCCB	Open construction copper ballast
OD/ID	Outer inner diameter
P POINT	Per point
PA	Public address
PC	Poly ethylene
PE	Poly ethylene
PF	Power factor
PF/P&F/S&F/SF	Providing and fixing/ supplying and fixing

PIJF	Polypropylene insulated jelly filled
PRV	Pressure release value
PU	Poly urethane
PUF	Poly uterine florid foam
PVC	Poly vinyl chloride
R.MTR	Running meter
RCBO	Residual circuit breaker with over load protection
RCC	Reinforced cement concrete
RCCB	Residual current circuit breaker
REC	Rural electrification commission
RPM	Revolution per minute
RRL	Reinforced rubberized line
S/C	Short circuit
SF6	Sulfur hexa floride
SITC	Supply installation testing and commissioning
SMF	Seales maintenance free
SQ MM	Square millimeter
SWG	Standard wire gauge
SWH	Storage water heater
TAC	Tarrif advisory committee
TEFC	Totally enclosed flame proof container
THD	Total harmonic disortion
TP	Triple pole
TPN	Tirple pole and neutral
UL	Underwriters laboratories
UPS	Untrrupted power supply
UV	Ultra violet
UVR	Under voltage release
V/KV	Volts / kilo volts
VA/ Kva	Volt ampere / kilo volt ampere
VCB	Vaccume circuit breaker
VPIT	Vacume pressurized impregnated
XLPE	Cross linked poly ethylene
ZHFR / HFFR	Zero halogen / halogen free flame retardant



# RAJASTHAN HOUSING BOARD, JAIPUR

No. CEHQ/RHB/2022-23/ 462

Date:- 30/11/2022

## OFFICE ORDER

### Specifications to be adopted in Upcoming Building Construction works of Rajasthan Housing Board.

Enclosed herewith is a statement containing nomenclature of items/specifications as per prevalent building construction practices to be adopted for Building Construction Work of Different Categories of Single Storey / Duplex Houses and Flats (Frame Structure) in all upcoming building construction works of Rajasthan Housing Board.

All concerned are instructed to ensure that these specification are adopted in the Upcoming Building Construction works of Rajasthan Housing Board with immediate effect.

(Pawan Arora)  
Housing Commissioner

Enclosure: As above.

Copy for information:-

1. PS to Chairman/Housing Commissioner, RHB, Jaipur.
2. FA, RHB, Jaipur.
3. Chief Engineer, I/II/HQ, RHB, Jaipur.
4. Addl. Chief Engineer I/II/III, Director Project, RHB, Jaipur /Jodhpur.
5. Dy. Housing Commissioner, (All)....., RHB.
6. Resident Engineer, Q.C.-I/II/Jodhpur, RHB, Jaipur/Jodhpur.
7. Asstt. Director (PR), RHB, Jaipur.
8. Resident Engineer Div. (All).....RHB.....
9. Office Copy.
10. Master file.

Chief Engineer (HQ)



## RAJASTHAN HOUSING BOARD, JAIPUR

### Specifications for Building Construction Works

### for Different Category of Houses (Single Storey/ Duplex Houses)



## RAJASTHAN HOUSING BOARD, JAIPUR

No. CEHQ/RHB/2022-23/462

Date: 30/11/2022

## Specifications for Building Construction Works for Different Category of Houses (Single Storey/ Duplex Houses)

S. No	Item	Specifications	Location	GRS/SRS Single/Duplex				SFS Single/Duplex				Remark
				EWS	LIG	MIG-A	MIG-B	HIG	MIG-A	MIG-B	HIG	
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Base concrete	Cement concrete 1:5:10 200mm thick	All					All				
2	Foundation	a) Stone masonry CSM (1 : 6) b) RCC (as per design)	All					a/b as per design				
3	Plinth beam/DPC	a) 150 mm thick with M 20 mix	All					All				
4	Super Structure Masonry	a) Brick Masonry in CSM 1:6 b) Block Masonry in CSM 1:6 c) Autoclaved Aerated Concrete (AAC) Block with adhesive	All					a/b/c - as per drawings & local requirements.				
5	Partitions/ walls	a) In brick in CSM (1 : 4) with hoop reinforcement b) Autoclaved Aerated Concrete (AAC) Block with adhesive & hoop reinforcement	All					a/b- as per drawings & local requirements.				
6	Stair case	a) Stair case with Mummy	All	-	-	a	a	a	a	a	a	
7	Covered Shaft for Ventilation	MS Frame with Fiber Sheet Canopy. Side Ventilation with Wire mesh complete covered at top	All					All				
8	Lintel Band	RCC (as per design)	All					As per design if required				
9	Shuttering	Steel/Shuttering Ply	All					Steel /Plywood Shuttering with steel props				
10	Door Frame	a) EZ-7/Steel Section b) Stone Chokhat c) Pressed steel (1.25 mm thick) d) Wooden (For single rebate (125 mm), For double rebate (150 mm))	All	a/b	a/b	c/d	c/d	c/d	c/d	c/d	c/d	
11	Windows/Ventilators	a) Steel section with wire mesh & Safety Bars b) Rectangular hollow pipe section with wire mesh & Safety Bars c) Wooden	All	a	a	b/c	b/c	b/c	b/c	b/c	b/c	

Specifications for Building Construction Works for Different Category of Houses (Single Storey/ Duplex Houses)

S. No	Item	Specifications	Location	GRS/SRS Single/Duplex				SFS Single/Duplex				Remark
				EWS	LIG	MIG-A	MIG-B	HIG	MIG-A	MIG-B	HIG	
1	2	3	4	5	6	7	8	9	10	11	12	13
12	Doors	a) 30 mm Solid core flush doors with external lipping b) 30 mm Solid core flush doors with external lipping with 0.8mm Mica both faces	All	a	a	a	a/b	a/b	a/b	a/b	a/b	
13	Toilet & WC Doors	a) PVC Door for Toilet b) 30mm Solid core flush doors with external lipping with 0.8mm Mica both faces c) 30mm Solid core flush doors with external lipping	All	a	a	a	a/b/c	a/b/c	a/b/c	a/b/c	a/b/c	
14	Door for Shaft	a) Sheet metal door	All					All				
15	Plaster	a) CSM 1:6 i) External 20mm ii) Internal 12 mm b) CSM 1:4 On Ceiling (12mm)	All					All				
16	Anti Termite Treatment		All					All				
17	Under floor concrete on ground floor only.	PCC 1:5:10 150 mm	Under floor					All				
18	Main Flooring	a) Vitrified Tiles 600X600mm and above b) Double Charged Vitrified Tiles 600X600mm and above c) Glazed Vitrified Tiles 600X600 and above d) Polished Glazed Vitrified Tiles with Digital Printing 600X600mm and above Tiles as per IS : 15622, Water Absorption 0.08 <E (Group B1b) < or =3	All	a	a	a	a/b	a/b/c	a/b/c	a/b/c/d	a/b/c/d	
19	Toilet Flooring	a) Anti skid MAT finish Ceramic tiles 300X300mm and above	All					All				
20	Stair case Flooring	a) Kota Stone b) Rajasthan Granite c) South Granite	All	a	a	a	b	b	b	c	c	

150



Specifications for Building Construction Works for Different Category of Houses (Single Storey/ Duplex Houses)

S. No	Item	Specifications	Location	GRS/SRS Single/Duplex				SFS Single/Duplex				Remark
				EWS	LIG	MIG-A	MIG-B	HIG	MIG-A	MIG-B	HIG	
1	2	3	4	5	6	7	8	9	10	11	12	13
21	Wall Tiles in Toilet/Kitchen	a) Glazed Ceramic Tiles Size 300X450mm b) Glazed Ceramic Tiles 400X600 mm	Kitchen & Toilets	a	a	a	a/b	a/b	a/b	a/b	a/b	
22	Kitchen Top	a) Rajasthan Granite with nosing 1" projected with moulding and Granite Sink b) Rajasthan Granite with nosing 1" projected with moulding and Steel Sink c) South / Alaska / Premium Granite with nosing 1" projected with moulding and Steel Sink	All	a	a	a	b	b/c	b/c	b/c	c	
23	Item over roof for water proofing	Cement Concrete water proof treatment	All					All				
24	Drive Way/Open Space/Parking	a) CC Flooring b) Kota Stone Flooring (Mandana Stone Flooring for Kota only)	All	a/b	a/b	a/b	a/b	a/b	a/b	a/b	a/b	
25	POP	On ceiling & walls internal surface	All					All				
26	Inner finish Paint	a) Oil bound distemper b) Plastic emulsion paint to be done	All	a	a	a	a	a/b	a/b	b	b	
27	White cement Putty	On external Surface to be done	All					All				
28	Exterior finish Paint	a) Acrylic Smooth Finish Paint for outer surface b) Textured Exterior Paint 400 to 500 micron c) Textured Exterior Paint 1000 to 1200 micron (Putty not required if texture paint is proposed.)	All	a	a	a	a	b	b	b/c	b/c	
29	Stair case Railing	a) Mild steel railing with "D" Pipe top b) Stainless Steel	All	-	-	a	a	a	a	b	b	
30	Parapet Coping	a) 50 mm thick in M-15	All					All				
31	Compound wall with Gate	a) Superstructure masonry upto 4 feet or as per design	All					1.2m or as per design				

Specifications for Building Construction Works for Different Category of Houses (Single Storey/ Duplex Houses)

S. No	Item	Specifications	Location	GRS/SRS Single/Duplex				SFS Single/Duplex				Remark
				EWS	LIG	MIG-A	MIG-B	HIG	MIG-A	MIG-B	HIG	
1	2	3	4	5	6	7	8	9	10	11	12	13
32	Parapet Wall	Brick masonry or as per super structure masonry	Terrace	-	-	1.00 m	1.00 m	1.00 m	1.00 m	1.00 m	1.00 m	
33	Glazing Glass of approved make & specified thickness	Plain Glass	All					All				
34	Glazing Glass of approved make & specified thickness for toilets.	Ventilators in Toilets (a) Pin headed b) Frosted Glass	Toilets	a	a	a	a	a/b	a	b	b	
35	W C	a) Orissa pan b) European Regular c) European Premium wall mounted with concealed cistern	All	a	a	a/b	b	b	b/c	b/c	b/c	
36	Provision of jet for EWC	With European WC	All					All				
37	Wash basin	a) Regular b) Premium	All	a	a	a	b	b	b	b	b	
38	CP Fittings	a) Regular b) Premium	All	a	a	a	a/b	a/b	a/b	b	b	
39	Water supply Pipe/pipe fitting	CPVC SDR 11	All					All				
40	Pipe/pipe fitting for sanitation	UPVC Type "B" (IS : 13512)	All					All				
41	Anti cockroach grating		All	-	-	-	Yes	Yes	Yes	Yes	Yes	
42	Storage tank	a) 300 ltr. (PVC) Kitchen (Double layer) b) 500 ltr. (PVC) & above Toilet (Double layer)	All	a	a	a & b	a & b	a & b	a & b	a & b	a & b	
43	PVC Conduiting	ISI marked conduit a) Group-I b) Group-II	All	b	b	b	a	a	z	a	a	

B20

**Specifications for Building Construction Works for Different Category of Houses (Single Storey/ Duplex Houses)**

S. No	Item	Specifications	Location	GRS/SRS Single/Duplex				SFS Single/Duplex				Remark
				EWS	LIG	MIG-A	MIG-B	HIG	MIG-A	MIG-B	HIG	
1	2	3	4	5	6	7	8	9	10	11	12	13
44	Wiring	Copper wire a) Group-I b) Group-II	All	b	b	b	a	a	a	a	a	
45	Switch Box	a) Recessed GI box	All					All				
46	Switches	a) Flush type b) Modular (Category-I)	All	a	a	a	a	b	b	b	b	
47	MCB/ MCB Box	a) SPN b) TPN (Category-II)	All	a	a	a	a	b	b	b	b	
48	External Earthing	Gel Earthing	All					All				
49	Wiring For a) exhaust fan in toilets and Kitchen b) Chimney in kitchen		All	a	a	a	a	a/b	a	a/b	a/b	
50	Electric Points for aqua guard / RO/ AC, Geyser in Toilets		All					All				
51	Call bell point	At main gate & Drg. Room Entry	All					All				

Dy. H.C. (Q.C.)  
RHB, Jaipur



Specifications for Building Construction Works for Different Category of Flats (For framed Structure only)

No.	Item	Specifications	Location	GRS / SRS Flats (Stilt+ upto 12storey)					SFS Flats (Stilt+ upto 12 storey)				Remark	
				EWS	LIG	MIG-A	MIG B	HIG	MIG-A	MIG B	HIG			
1	2	3	4	5	6	7	8	9	10	11	12	13		
14	Stair case Flooring	(a) Kota Stone (b) Rajasthan Granite		a	a	b	b	b	b	b	b			
15	Drive Way/Open Space/Parking	a) VDC M-30 b) CC Flooring c) Sand Stone Flooring d) Granite Flooring		a/b	a/b	a/b/c	a/b/c	a/b/c/d	a/b/c	a/b/c/d	a/b/c/d			
16	Kitchen Top	a) Rajasthan Granite with nosing 1" projected with moulding and Granite Sink b) Rajasthan Granite with nosing 1" projected with moulding and Steel Sink c) South / Alaska/ Premium Granite with nosing 1" projected with moulding and Steel Sink		a	a	a	a	b/c	b/c	b/c	b/c			
17	Glazed Wall tiles in toilets and kitchen table	(a) Size 300 X 450mm (b) 450x600mm		a	a	a	b	b/c	b	b/c	b/c			
18	On ceiling& walls with only Cornice to be provided	a) POP (On internal Plaster) b) White cement Putty( On external Surface)		a	a	a/b	a/b	a/b	a/b	a/b	a/b			
19	Interior Paint	(a) Oil Bound Distemper (b) Plastic Emulsion Paint	On walls & ceiling	a	a	a	a	a/b	a/b	b	b			
20	Parapet Coping	50 mm thick in M-15		All										
21	Terrace	(a) Cement Concrete water proof treatment (b) Brick bats	Terrace	a	a	a/b	a/b	a/b	a/b	a/b	a/b			
22	Compound wall	(a) 1.20 m high for up to G+3 (b) 1.80 m high for above G+3	All	All										
23	Height of parapets		Terrace	1.20 meter										

**Specifications for Building Construction Works for Different Category of Flats (For framed Structure only)**

S.No.	Item	Specifications	Location	GRS / SRS Flats (Sillt+ upto 12storey)					SFS Flats (Sillt+ upto 12storey)				Remark
				EWS	LIG	MIG-A	MIG B	HIG	MIG-A	MIG B	HIG		
1	2	3	4	5	6	7	8	9	10	11	12	13	
24	Exterior Paint	a) Acrylic Smooth Finish Paint for outer surface b) Textured Exterior Paint 400 to 500 micron c) Textured Exterior Paint 1000 to 1200 micron (Putty not required if texture paint is proposed.)		a	a	a	b	b/c	b	b/c	b/c		
25	Provision of expansion joints	As per provision given by designer/BIS/National Building Code.	All	All									
26	Stair case Railing	(a) Mild steel railing with "D" Pipe top (b) Stainless Steel	All	a	a	a	a	a/b	a/b	a/b	a/b		
27	Glazing, Glass of approved make & specified thickness	Plain Glass	All	All									
28	Glazing, Glass of approved make & specified thickness for toilets.	Ventilators in Toilets : (a) Pin headed glass (b) Frosted Glass	Toilets	a	a	a	a	a	a	b	b		
29	W C	(a) Orissa pan (b) European Regular (c) European Premium wall mounted	All	a	a	a	a/b	a/b	a/b	a/b	a/b		
30	Provision of jet for EWC		All	All									
31	Wash basin (Vitreous china)	(a) Regular (b) Premium	All	a	a	a	b	b	b	b	b		
32	Water supply Pipe & fitting	CPVC SDR 11	All	All									
33	Pipe/ pipe fitting for sanitation	UPVC Type B (IS 15512)	All	All									



## Specifications for Building Construction Works for Different Category of Flats (For framed Structure only)

Sl. No.	Item	Specifications	Location	GRS / SRS Flats (Still+ upto 12storey)					SFS Flats (Still+ upto12 storey)				Remark
				EWS	LIG	MIG-A	MIG B	HIG	MIG-A	MIG B	HIG		
1	2	3	4	5	6	7	8	9	10	11	12	13	
34	Storage tank	(a) 300 ltr. (PVC) for kitchen (Double Layer) (b) 500 ltr. (PVC) & above (Double Layer) (c) RCC Tank above 3 storey flats	All	a / b / c	a / b / c	a / b / c	a / b / c	a / b / c	a / b / c	a / b / c	a / b / c		
35	CP Fittings	(a) Regular (b) Premium		a	a	a	a / b	a / b	a / b	b	b		
36	Anti Cockroach Grating			All									
37	PVC conduit	ISI marked conduit a) Group-I b) Group-II	On walls & ceiling	b	b	b	a	a	a	a	a		
38	Electric Wiring	Copper wire a) Group-I b) Group-II	All	b	b	b	a	a	a	a	a		
39	T.V./Telephone & Security system Wiring	(a) Coaxial RG-6 for TV (b) 2 Pair annealed wire (c) Security System		-	-	a / b	a, b & c	a, b & c	a, b & c	a, b & c	a, b & c		
40	Switch Board	Recessed G I box	All	All									
41	Switches	(a) Flush type (b) Modular (Category-I)	All	a	a	a	b	b	b	b	b		
42	MCB/ MCB Box	(a) SPN (b) TPN (Category-II)	All	a	a	a	a	b	b	b	b		
43	Wiring for Air conditioning with drain pipe	(a) For Spilt AC	All	-	-	-	-	-	-	a	a		
44	Wiring For a) exhaust fan in toilets and Kitchen b) Chimney in kitchen		All	a	a	a	a	a / b	a	a / b	a & b		

B2V



Specifications for Building Construction Works for Different Category of Flats (For framed Structure only)

Sl. No.	Item	Specifications	Location	CRS / SRS Flats (Still+ upto 12storey)					SFS Flats (Still+ upto 12 storey)			Remark
				EWS	LIG	MIG-A	MIG B	HIG	MIG-A	MIG B	HIG	
1	2	3	4	5	6	7	8	9	10	11	12	13
45	Wiring from DB to Meter Board	Coper Wire (a) Two Core (b) Four core	All	a	a	a	a	b	b	b	b	
46	External Earthing	Gel Earthing	All									
47	Provision for lightening Arrestor	Lightening arrestor connected to earth	Terrace									
48	Electric Points for aqua guard / RO/Geyser in Kitchen/Toilets		All									
49	Fire fighting System	For Structure more than 15 meter height as per BIS	All									
50	Separate Electric lines for power Back up	Where provision for Power Back up System has been made.	In Corridors, Stairs, Campus Gate, Common Facility area									

Dy. H.C. (Q.C.)  
RHB, Jaipur

OFFICE OF THE CHIEF ENGINEER : RHB : JAIPUR

No. CE/RHB/Evaluation Criteria/2013/ 893

Date - 4/7/13

OFFICE ORDER

Uniform evaluation criteria of bid for potential assessment/post qualification method of tendering enforced, vide order No. 09 dated 07/04/2005, came to be later amended through order No. CE/Evaluation Criteria/2011-12/1849 dated 22/03/2012. In the amendment order dated 22/03/2012, the formula prescribed for determination of bid capacity for single & upto (G+3) storied buildings (i.e. upto 15.00 Mtr. height) appearing in item No. 3(v)(a) as (A<sub>x</sub>N<sub>x</sub>2-B), is hereby, replaced by (A<sub>x</sub>N<sub>x</sub>3-B). Values of 'A', 'N' & 'B' will be the same, as indicated there-in. All other items contained in the order dated 22/03/2012 shall remain unchanged. This order shall come into force with immediate effect.

This bears approval of the Hon'ble Chairman.

sd/-  
CHIEF ENGINEER  
RHB, JAIPUR

- Copy for information/necessary action -
- 1 P.S. to Hon'ble Chairman/Housing Commissioner, RHB, Jaipur
  - 2 T.A. to Chief Engineer, RHB, Jaipur.
  - 3 Financial Advisor/Secretary, RHB, Jaipur.
  - 4 Addl. Chief Engineer-I/III/MSV/P&M, RHB, Jaipur & Jodhpur
  - 5 Dy. Housing Commissioner RHB, \_\_\_\_\_ (All)
  - 6 Resident Engineer, RHB, \_\_\_\_\_ (All)
  - 7 Sr. Accounts Officer, RHB, \_\_\_\_\_ (All)
  - 7 Master file

CHIEF ENGINEER



CEI/629  
13/6/17

## राजस्थान आवासन मण्डल, जयपुर

क्रमांक :- मु.अ. (मु.)/राआम/2017-18/ 218

दिनांक :- 14.6.2017

### परिपत्र

आवासन मण्डल द्वारा सम्पादित करवाये जाने वाले विभिन्न निर्माण कार्यों हेतु संवेदक के साथ किये जाने वाले अनुबंध के क्लोज 45 के अन्तर्गत मूल्य अभिवृद्धि के धनात्मक/ ऋणात्मक प्रभाव के परिणामस्वरूप संवेदक को देय दर अभिवृद्धि के भुगतान हेतु संवेदकों द्वारा क्लेम प्रस्तुत करने तथा दर अवमूल्यन की स्थिति में मण्डल द्वारा की जाने वाली वसूली के प्रति संबंधित आवासीय अभियन्ताओं द्वारा शिथिलता व्यक्त करने की प्रवृत्ति को दृष्टिगत रखते हुए निर्माण अनुबंधों के अन्तर्गत प्रस्तुत किये जाने वाले अतिरिक्त मात्रा/मदों, अन्तिम विचलन विवरण प्रपत्र आदि की पूर्वोत्तर/ कार्योत्तर स्वीकृति हेतु प्रस्तुत प्रकरणों के साथ निर्माण सामग्रियों में हुई वृद्धि/ कमी के आधार पर धनात्मक/ ऋणात्मक एस्क्लेशन की नियमानुसार गणना कर गणना प्रपत्र सक्षम अधिकारी को आवश्यक रूप से प्रस्तुत करने हेतु परिपत्र क्रमांक मु.अ.(मु.)/राआम/2016/257 दिनांक 02.06.2016 द्वारा जारी निर्देशों की पालना को एतद् द्वारा शिथिलता प्रदान करते हुए निर्देशित किया जाता है कि संबंधित आवासीय अभियन्ताओं द्वारा संवेदकों को अन्तिम बिलों के भुगतान से पूर्व ऋणात्मक एस्क्लेशन की सक्षम स्वीकृति प्राप्त कर राशि की वसूली आवश्यक रूप से सुनिश्चित की जावे।

मुख्य अभिन्ता (मुख्यालय)

प्रतिलिपि निम्न को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :-

1. निजी सचिव-माननीय अध्यक्ष/आवासन आयुक्त, राजस्थान आवासन मण्डल, जयपुर।
2. मुख्य अभियन्ता-प्रथम/द्वितीय, राजस्थान आवासन मण्डल, जयपुर।
3. वित्तीय सलाहकार, राजस्थान आवासन मण्डल, जयपुर।
4. अतिरिक्त मुख्य अभियन्ता-प्रथम/द्वितीय/तृतीय, राजस्थान आवासन मण्डल, जयपुर/जोधपुर।
5. उप आवासन आयुक्त, राज.आवासन मण्डल, वृत्त-.....
6. आवासीय अभियन्ता, राजस्थान आवासन मण्डल, खण्ड-.....
7. रक्षित पत्रावली।

तक. सहा.-मुख्य अभिन्ता (मुख्यालय)

14/6/17



राजस्थान आवासन मण्डल : जयपुर.

क्रमांक :- 120



दिनांक :- 03-7-2019

कार्यालय आदेश

संचालक मण्डल की दिनांक 20/06/2019 को सम्पन्न हुई 237वीं बैठक के निर्णय बिन्दु संख्या 237.9 के अनुक्रम में, राजस्थान आवासन मण्डल द्वारा राजकीय विभागों के निर्माण कार्यों को डिपॉजिट कार्यों के रूप में सम्पादित करने हेतु सभी डिपॉजिट कार्यों की दरें निम्नानुसार निर्धारित की जाती हैं :-

- |  |               |
|--|---------------|
| अ. परियोजना की ड्राईंग्स एवं डिजायन आवासन मण्डल द्वारा तैयार करने की स्थिति में। | 07.50 प्रतिशत |
| ब. ड्राईंग्स एवं डिजायन सम्बन्धित विभाग द्वारा उपलब्ध करवाये जाने की स्थिति में। | 06.00 प्रतिशत |

उक्त आदेश तुरन्त प्रभावी होंगे।

ह0/-  
( पवन अरोड़ा )  
आवासन आयुक्त.

प्रतिलिपी सूचनार्थ/आवश्यक कार्यवाही हेतु :-

1. निजी सचिव-माननीय अध्यक्ष महोदय/आवासन आयुक्त, रा0आ0मं0, जयपुर।
2. मुख्य अभियन्ता-प्रथम/द्वितीय/मु0, रा0आ0मं0, जयपुर।
3. सचिव/वित्तीय सलाहकार/निदेशक विधि, रा0आ0मं0, जयपुर।
4. अतिरिक्त मुख्य अभियन्ता-प्रथम/द्वितीय/तृतीय, रा0आ0मं0, जयपुर/जोधपुर।
5. अतिरिक्त मुख्य नगर नियोजक, रा0आ0मं0, जयपुर।
6. उप आवासन आयुक्त, रा0आ0मं0, वृत्त
7. आवासीय अभियन्ता, रा0आ0मं0, खण्ड
8. रक्षित पत्रावली।

मुख्य अभियन्ता-प्रथम.





## राजस्थान आवासन मण्डल, जयपुर।

प्रमाणक : वित्त प्रत

2019-20/276

दिनांक : 18/9/19

### कार्यालय आदेश :-

राजस्थान आवासन मण्डल के संचालक बोर्ड की दिनांक 30.08.2019 को सम्पन्न हुई 238वीं बैठक के बिन्दु संख्या 205.12 में लिये गये निर्णय की पालना में, राजस्थान आवासन मण्डल में निर्माण कार्यों के लिए प्रभावी शक्तियों की संशोधित प्रत्यायोजन अनुसूची-2000 (Revised Schedule of Powers 2000) को निष्प्रभावी करते हुए, प्रशासनिक एवं वित्तीय स्वीकृति तथा निविदाओं की स्वीकृति के अलावा, राज्य सरकार के लोक निर्माण एवं वित्तीय लेखा नियमों को एवं इनमें राज्य सरकार द्वारा भविष्य में किये जाने वाले सभी संशोधनों सहित लागू किया जाता है।

प्रशासनिक एवं वित्तीय स्वीकृति तथा निविदाओं की स्वीकृति हेतु मण्डल के आदेशांक 123 दिनांक 03.11.2007 के जरिये बोर्ड, आवासन आयुक्त, कार्यसमिति एवं मण्डल अभियन्ताओं को प्रत्यायोजित नवीन शक्तियां तत्काल रूप से प्रभावी होंगी।

संदर्भ:- कार्यालय आदेश क्रमांक 123

दिनांक 03.11.2007 की प्रति।

*Sd/-*  
आवासन आयुक्त  
राजस्थान आवासन मण्डल,  
जयपुर।

प्रतिलिपि :- निम्न को सूचना एवं आवश्यक कार्यवाही हेतु प्रेषित है :-

1. प्रमुख निजी सचिव-अध्यक्ष, राजस्थान आवासन मण्डल, जयपुर।
2. निजी सचिव-आवासन आयुक्त/मुख्य अभियन्ता, राजस्थान आवासन मण्डल, जयपुर।
3. निजी सहायक-अतिरिक्त मुख्य अभियन्ता-प्रथम/द्वितीय/तृतीय, राजस्थान आवासन मण्डल, जयपुर।
4. उप आवासन आयुक्त, राजस्थान आवासन मण्डल, वृत्त .....
5. आवासीय अभियन्ता, राजस्थान आवासन मण्डल, खण्ड .....
6. वरिष्ठ निजी सहायक-संग्रह/वि.स.एवं मुख्यलेखाधिकारी/मुख्य सम्पदा प्रबन्धक, राजस्थान आवासन मण्डल, जयपुर।
7. लेखाधिकारी-(Payment), राजस्थान आवासन मण्डल, जयपुर।
8. कार्यालय प्रति।

*Sd/-*  
आवासन आयुक्त  
राजस्थान आवासन मण्डल,  
जयपुर।



## राजरथान आवासन मंडल जयपुर

क्रमांक : दनिस/सचिव/2007/123

दिनांक : 03.11.07

## कार्यालय आदेश

शासन उप सचिव-प्रथम, नगरीय विकास एवं आवासन विभाग, राजस्थान सरकार के द्वारा जारी कार्यवाही विवरण क्रमांक-7 (82) निविदा-III/07 दिनांक 15 अक्टूबर, 2007 के बिन्दु संख्या-5 एवं 6 के अनुसरण में मण्डल में निर्माण कार्य की प्रशासनिक एवं वित्तीय स्वीकृति जारी करने एवं निविदा स्वीकृति की शक्तियाँ प्रदान करने बाबत निम्नानुसार प्रशासनिक आदेश प्रसारित किए जाते हैं:-

## प्रशासनिक व वित्तीय स्वीकृति जारी करने सम्बन्धी शक्तियाँ

वर्तमान में प्रत्यायोजित शक्तियाँ	नवीन प्रत्यायोजित शक्तियाँ
बोर्ड 10.00 करोड़	20.00 करोड़
आवास 5.00 करोड़	10.00 करोड़
आवासन आयुक्त 2.00 करोड़	5.00 करोड़

## निविदा स्वीकृति सम्बन्धी शक्तियाँ

वर्तमान में प्रत्यायोजित शक्तियाँ	नवीन प्रत्यायोजित शक्तियाँ
बोर्ड 10.00 करोड़	20.00 करोड़
विकास समिती 5.00 करोड़	15.00 करोड़
मुख्य अभियन्ता 2.50 करोड़	5.00 करोड़
अतिरिक्त मुख्य अभियन्ता 1.20 करोड़	2.50 करोड़
उप आवासन आयुक्त 30.00 लाख	0.75 करोड़
आवासीय अभियन्ता 10.00 लाख	0.25 करोड़

उपरोक्त सम्बन्ध में यह भी लेख है कि उपरोक्तानुसार प्राप्त नवीन शक्तियों के क्रियान्वयन से पूर्व सम्बन्धित मुख्य अभियन्ता एवं आवासन आयुक्त सम्बन्धित पत्रावली का क्रमांक/अनुमोदन अध्यक्ष महोदय से आवश्यक रूप से करा लें।

इन आदेशों को अध्यक्ष महोदय का अनुमोदन प्राप्त है।

सचिव 31.11.07

न्याय एवं आवश्यक कार्यवाही हेतु-

सचिव, अध्यक्ष, राजस्थान आवासन मण्डल, जयपुर  
 सचिव-आवास, आयुक्त/मुख्य अभियन्ता-प्रथम/द्वितीय, राजस्थान आवासन मण्डल, जयपुर।  
 स. एवं मु. लेखाधिकारी/निदेशक विधि/मुख्य सम्पदा प्रबन्धक/उप सचिव, रा. आ. मं.।  
 अतिरिक्त मुख्य अभियन्ता/अति. मुख्य नगर नियोजक, राज. आवास मण्डल, (राजस्थान)  
 उप आवासन आयुक्त/आवासीय अभियन्ता, राजस्थान आवासन मण्डल, (राजस्थान)  
 शक्ति पत्रावली।

सचिव 31.11.07





# राजस्थान आवासन मण्डल, जयपुर।

क्रमांक : वित्त प्रकोष्ठ / 2020-21 / 257

दिनांक : 21/1/2021

## कार्यालय आदेश

कार्यालय आदेश क्रमांक 578 दिनांक 28.03.2013 के द्वारा राजस्थान लोक उपापन में पारदर्शिता अधिनियम, 2012 (Rajasthan Transparency in Public Procurement Act 2012) राजस्थान लोक उपापन में पारदर्शिता नियम, 2013 (Rajasthan Transparency in Public Procurement Act 2013) की राजस्थान आवासन मण्डल में अक्षरशः अनुपालना किये जाने के आदेश जारी किये गये हैं।

राजस्थान सरकार द्वारा राजस्थान लोक उपापन में पारदर्शिता अधिनियम, 2012 (Rajasthan Transparency in Public Procurement Act 2012) राजस्थान लोक उपापन में पारदर्शिता नियम, 2013 (Rajasthan Transparency in Public Procurement Act 2013) में समय-समय पर संशोधन किये जाते हैं। अतः उपरोक्त अधिनियम एवं नियमों में समय-समय पर होने वाले संशोधन राजस्थान आवासन मण्डल में स्वतः ही लागू माने जायेंगे।

आवासन आयुक्त

प्रतिलिपि निम्न को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :-

1. प्रमुख निजी सचिव-अध्यक्ष, राजस्थान आवासन मण्डल, जयपुर।
2. निजी सचिव-आवासन आयुक्त / मुख्य अभियन्ता-प्रथम/द्वितीय/तृतीय, राजस्थान आवासन मण्डल, जयपुर।
3. निजी सहायक-अतिरिक्त मुख्य अभियन्ता-प्रथम/द्वितीय/तृतीय, राजस्थान आवासन मण्डल, जयपुर।
4. उप आवासन आयुक्त, राजस्थान आवासन मण्डल, वृत्त/मुख्यालय .....
5. वरिष्ठ निजी सहायक-सचिव/वित्तीय सलाहकार / मुख्य सम्पदा प्रबन्धक, राजस्थान आवासन मण्डल, जयपुर।
6. निजी सहायक-वरिष्ठ कार्मिक प्रबन्धक/वरिष्ठ लेखाधिकारी-1, राजस्थान आवासन मण्डल, जयपुर।
7. लेखाधिकारी-(Payment), राजस्थान आवासन मण्डल, जयपुर।
8. समुक्त निदेशक, कम्प्यूटर प्रकोष्ठ, राजस्थान आवासन मण्डल, जयपुर।
9. आवासीय अभियन्ता, राजस्थान आवासन मण्डल, खण्ड .....
9. कार्यालय प्रति।

वित्तीय सलाहकार

RE III

1008

21/1/2021





## RAJASTHAN HOUSING BOARD, JAIPUR

No.: DHC(QC)/JPR/RHB/2021-22/ 03

Date:- 04-04-2022

### OFFICE ORDER

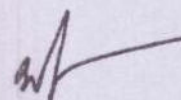
For comprehensive and effective project monitoring, the following measures should be strictly ensured during the visit and Inspection of the on-going projects by undersigned:-

1. A sample house/flat complete in all respect with fittings should be made ready at the earliest.
2. The map of the house/flat should be displayed on a soft board in the sample house with complete details in meter and feet. The curtailment in the construction should also be marked.
3. The colour print of the 3D view and furniture layout view should be available at site.
4. A sample room displaying all the material being used should be established immediately at the start of the work. The samples should be got approved by Chief Engineer to maintain uniformity across similar projects.
5. The internal and external coloring scheme should be got approved by Chief Engineer to maintain uniformity across similar projects.
6. The sizes of the rooms, kitchen, W.C. etc. should be displayed in the relevant area in meter and feet.
7. The Contractor and the Architect should be present at site throughout the visit.
8. The per sq. feet construction cost should be displayed.
9. The tentative costing should be made available.
10. The construction Activity Chart duly approved by Additional Chief Engineer showing physical & financial progress of project to ensure proper sequence of work with quality construction and to achieve timely construction should be available at site. Actual physical and financial progress should also be shown.
11. If the work is not complete and the date of completion has gone then the reason for delays and details of action taken should be kept ready.
12. The Resident Engineer-Electrical and PHE will ensure that the work of Water supply, sewerage and external electrification work gets completed before the completion of the houses. The status of Water supply, sewerage and external



electrification work should also be displayed on relevant drawings. Their contractors should also be present.

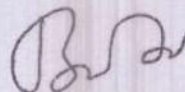
13. Resident Engineer concerned should ensure that the work of roads, plantation and other external development work gets completed before the completion of the houses. The status of roads, plantation and other external development work should also be displayed on relevant drawings. Their contractors should also be present.
14. Any pending issues should be resolved by Additional Chief Engineer before the visit.
15. All the facts and figures for any decisions required to be made at site should be brought into notice by Additional Chief Engineer.
16. The RHB SAJAG App should be fully updated as on date.
17. The Quality Control lab should be as per norms. List of materials used should be available along with the outsourced test results.
18. The Third party inspection reports, inspection book, QC test registers should be available.
19. The inspection note of the visit should be issued by Deputy Housing Commissioner latest by next day of the visit.



(Pawan Arora)  
Housing Commissioner

**Copy to following for information and necessary action:-**

1. P.S. to Chairman/Housing Commissioner, RHB, Jaipur.
2. Chief Engineer -HQ/I/II, RHB, Jaipur.
3. ACTP, RHB, Jaipur.
4. Addl. Chief Engineer-I/II/III, RHB, Jaipur.
5. Dy. Housing Commissioner (All).....,Director Project, RHB, Jaipur.
6. PRO, RHB, Jaipur.
7. Resident Engineers (All)....., RHB, Jaipur.
8. Sr. Horticulturist/STP, RHB, Jaipur.
9. Office copy/ Master file.



o/c Dy. Housing Commissioner (QC)



**OFFICE OF DEPUTY HOUSING COMMISSIONER (QC)**  
**RAJASTHAN HOUSING BOARD**

HAUDEGHATI MARG, PRATAP NAGAR, JAIPUR  
 E-MAIL: DHC.QC.RHB@RAJASTHAN.GOV.IN

NO. DHC(QC)/RHB 2022-23/309

Date: 23-11-2022

Resident Engineer (All),  
 Div.....  
 Rajasthan Housing Board  
 .....

**Sub:- Regarding Design Mix Concrete Proportioning.**

Sir,

In reference to above cited subject, Concrete of Grade M25 and above is being used in all the multi-storey building construction work and majority of other building / development works in progress.

To ensure quality, it is mandatory to get the design mix of concrete of the required grade proportioned as per the relevant Bureau of Indian Standard code IS:10262 for concrete mix proportioning. The trial mixes should be prepared and tested in the presence of Resident Engineer. This design mix should be duly approved by the Deputy Housing Commissioner concerned before the commencement of concrete work.

You are also instructed to ensure the concrete sampling and testing at the required frequency as per norms in the Divisional Laboratory. Proper record may please be ensured in Division.

Also ensure to send the Monthly test conducted by your division on time by (10<sup>th</sup> of every month) to the Resident Engineer concerned.

(Prateek Srivastava)  
 Dy. Housing Commissioner (QC)

Copy to:-

1. PS to Housing Commissioner, RHB, Jaipur.
2. Chief Engineer-I/II/HQ, RHB, Jaipur.
3. Addl. Chief Engineer-I/II/III, Director Project, RHB, Jaipur/Jodhpur.
4. Dy. Housing Commissioner Circle.....(All), RHB, Jaipur.
5. Resident Engineer QC-I/II/Jodhpur, RHB, Jaipur/Jodhpur.
6. Office Copy.

o/c Dy. Housing Commissioner (QC)





**राजस्थान आवासन मण्डल**

**Address : Awas Bhawan, Jan Path, Jyoti Nagar, Jaipur-302005, Rajasthan, India**

**Email : [info.rhb@rajasthan.gov.in](mailto:info.rhb@rajasthan.gov.in) | Phone : 0141-2740812, 2740113, 2740614**

**Fax : 0141-2740175, 2740593, 2740746**

**GSTIN : 08AAALR0046F1ZA | PAN : AAALR0046F**