



सत्यमेव जयते

**GOVERNMENT OF INDIA**

**CENTRAL PUBLIC WORKS DEPARTMENT**

**DELHI SCHEDULE OF RATES**

**(E & M)**

**2018**



**CPWD**

**DIRECTORATE GENERAL, CPWD, NIRMAN BHAWAN, NEW DELHI-110011**



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**PRABHAKAR SINGH**  
Director General



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भारत सरकार  
Government of India



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## FOREWORD

CPWD is the benchmarking organisation in the building construction sector and therefore, its documents are useful to other Government Departments, Undertakings and Autonomous Bodies also for their works. This Delhi Schedule of Rates (E&M) is a comprehensive document which is widely followed by these organisations.

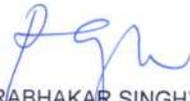
The first compilation of Schedule of Rates for Electrical Works took place as far back as in 1935 and thereafter number of revisions followed from time to time to bring it at par with the prevailing market rates and up gradation of technology. Till 2007, Schedule of Rates for Electrical Works was used to be published in two parts i.e. Part-I Internal & Part-II External. However in 2012, both parts were combined into one for the sake of user's convenience. Since 2013 it was renamed as Delhi Schedule of Rates (E&M) as it incorporated items related to HVAC works also.

The Delhi Schedule of Rates (E&M) 2018 is a revision of Delhi Schedule of Rates (E&M) 2016 and takes into account the increased cost of labour on account of revision of labour rates, the changes in Material cost and the effect of GST on Works Contracts. This DSR has been further enriched by inclusion of new Chapter of Fire Detection and Alarm System.

I acknowledge the hard work put in by Sh. D. K. Tulani, SE (E) TAS, Sh. Pramod Kumar Srivastava, EE (E) TAS, Sh. Rajiv Gupta, EE(E) TLQA, Sh. M. C. Sharma, AE(E) TAS, Sh. H. P. S. Tyagi, AE(E), Sh. Ram Karan and Sh. A. M. Tewari under the guidance of Sh. Prabhakar Singh, the then SDG(DR), Sh. A. S. Arora, ADG(TD) and Sh. C. K. Varma, CE(E) CSQ without which the revision would not have been possible. I also acknowledge the contribution of Sh. Vikas Gupta, CE(PEWZ), Sh. Vimal Kumar, CE(NDZ-II), Sh. N. K. Bansal, SE(E) DCEC-VI, Sh. Ramesh Garg, SE(E) PEWC, Sh. S. S. Garg, SE(E) Vigilance Cell and Sh. Gaurav Yadav, EE(E) PHED in preparing the Chapter of Fire Detection and Alarm System and valuable suggestions of other members of Specification Committee as well as all those involved in the process of preparation of Delhi Schedule of Rates (E&M) 2018. I also thank Sh. J. K. Choudhury, Retd. CE(E) who volunteered to give his inputs and extended his help for the Chapter of Fire Detection and Alarm System.

I am sure that this Schedule of Rates (E&M) will be useful to all concerned Engineers of CPWD and also to many other engineering organizations of Central/State Governments as well as practicing Architects and E&M Consultants.

Place: New Delhi  
Date: July' 2018

  
(PRABHAKAR SINGH)  
Director General, CPWD





सत्यमेव जयते

अवतार सिंह अरोड़ा  
AVTAR SINGH ARORA

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## PREFACE

The DSR (E&M) 2018 is the revised edition of DSR (E&M) 2016 and combines Schedule of Rates for Electrical Works Part-I Internal, Part-II External, few items of Plumbing, Ducting, AHUs of HVAC Works and Fire Detection and Alarm System. This Schedule of Rates is based on the current market rates of materials (without any taxes etc.) at Delhi collected during May-June 2018 and minimum wages rates issued by Govt. of India for Delhi w.e.f. 01-04-2018.

I acknowledge the contributions of following Officers for the review of Delhi Schedule of Rates (E&M) 2016 and bringing it to the updated Delhi Schedule of Rates (E&M) 2018:

- A. Sh. S. P. Chaudhary, CE(NDZ-1)  
Sh. Awadhesh Kumar, SE(E), DCEC-1
- B. Sh. Vimal Kumar, CE(NDZ-2)  
Sh. Y. K. Tomar, EE(E)P
- C. Sh. Ujjwal Mitra, CE(NDZ-3)  
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- D. Sh. S. C. Bharadwaj, CE(NDZ-5)  
Sh. B. S. Bharti, EE(E)P, NDZ-5
- E. Sh. Vikas Gupta, CE(PEWZ)  
Sh. Ramesh Garg, SE(E), PEWC
- F. Sh. B. B. Makkar, CPM, SCPZ  
Sh. Vishesh Swamiwal, EE(E)

This Schedule of Rates will be read along with relevant CPWD Specifications of Electrical Works. The Delhi Schedule of Rates (E&M) 2018 now replaces the Delhi Schedule of Rates (E&M) 2016.

The Salient Notes of DSR (E&M) 2018 are:

1. The Items of Works contained herein are to be executed as per CPWD General Specifications for Electrical Works Part-I Internal, Part-II External, Part- IV Sub- Station, CPWD General Specification for HVAC Works 2017 and CPWD General Specification for Fire Detection and Alarm System 2018, with up to date amendments/correction slips.
2. The rates in this DSR (E&M) are for working height up to 4.5 meter from floor level wherever height not specified. The rates of materials are for reputed brands, factory fabricated and tested wherever available from manufacturers as submitted by field units.
3. A new Chapter for Fire Detection and Alarm System has been added in this DSR.
4. The rates of AHUs have been incorporated only for four and six rows deep cooling coils. For any change in the parameter, the rates have to be analyzed by the NIT approving authority.

...Continued



5. For Electrical Panels, CPWD General Specifications for Electrical Works Part-IV shall be applicable.
6. The effect of GST on Works Contract has been incorporated in all the items.

Errors, Omissions and /or suggestions for improvements if any may be brought to the notice of Superintending Engineer (E) TAS in the office of Chief Engineer, CSQ (E), CPWD, Nirman Bhawan, New Delhi-110011 (Telephone No. 011-23061418).

Place: New Delhi  
Date: July' 2018

  
(Avtar Singh Arora)  
Addl. Director General (TD),  
CPWD



## MEMBERS OF SPECIFICATION COMMITTEE FOR E&M WORKS, JUNE 2018

1.	Sh. Prabhakar Singh, Director General, CPWD	Chairman
2.	Sh. A.S. Arora, ADG (TD), CPWD	Member
3.	Sh. S.K. Chawla, ADG (ER), CPWD	Spl. Invitee
4.	Sh. K. V. Singh, ADG (Training), CPWD	Member
5.	JS & CVO or his representative (Sh. S. S. Garg)	Member
6.	Sh. Satish Chandra Bhardwaj, CE (NDZ-V)	Member
7.	Sh. C.K. Varma, CE(E) CSQ, CPWD	Member
8.	Sh. A. K. Ahuja, CE, PWD	Member
9.	Sh. Sandeep Mehta, CE(E) DDA	Spl. Invitee
10.	Chief Technical Examiner or his representative	Member
11.	Sh. Shahabuddin Ahmad, CE(E), BFLZ	Member
12.	Sh. Ujjwal Mitra, CE(NDZ)-III	Member
13.	Sh. Harish Kumar, DDG(W), CPWD	Member
14.	Sh. Rajesh Jain, CE(E) Trg, National CPWD Academy	Member
15.	Sh. Vikas Gupta, CE(E) PEWZ	Member
16.	Sh. Vimal Kumar, CE(NDZ-II)	Member
17.	Sh. Vikas Rana, CE(NDZ-VII)	Member
18.	Sh. Saurabh Chopra, DDG(Coord.) NR	Member
19.	Sh. J.K. Choudhary, CE(E), Retd.	Spl. Invitee
20.	Sh. C.S. Mittal, Retd. CPM (PNB PZ)	Spl. Invitee
21.	Ms. Sonia Mehta, CA(NDR), CPWD	Member
22.	Sh. G.C. Kabi, CE CSQ (C), CPWD	Member
23.	Sh. Ashish Singh, Director Finance	Member
24.	Sh. Ramesh Kumar Garg, SE(E) PEWC, CPWD	Spl. Invitee
25.	Sh. Ujjawal Kumar, SE(E) DCEC-VII	Spl. Invitee
26.	Sh. Awadhesh Kumar, SE(E) DCEC-I	Spl. Invitee
27.	Sh. Ram Janm Ram, EE(E)P, DCEC-VII	Spl. Invitee
28.	Sh. B. S. Bharti, EE(E)P, DCEC-VI	Spl. Invitee
29.	Sh. D.K. Tulani, SE (E) TAS, CPWD	Member Secretary



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## CHAPTER-1 - W I R I N G

Item No.	Description	Unit	Rate
<b>WIRING IN STEEL AND PVC CONDUIT</b>			
1.1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, with piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.		
1.1.1	Group A	Point	821
1.1.2	Group B	Point	937
1.1.3	Group C	Point	1189
1.2	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, 2 way piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.	Point	1198
1.3	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.		
1.3.1	Group A	Point	845
1.3.2	Group B	Point	961
1.3.3	Group C	Point	1213
1.4	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc. as required.	Point	1290
1.5	Wiring for light/ power plug with 2X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit alongwith 1 No. 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	Metre	265
1.6	Wiring for light/ power plug with 4X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit alongwith 2 Nos. 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	Metre	392

Item No.	Description	Unit	Rate
1.7	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required.		
1.7.1	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	Metre	208
1.7.2	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	Metre	229
1.7.3	2 X 4 sq. mm + 1 X 4 sq. mm earth wire	Metre	263
1.7.4	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	Metre	356
1.7.5	2 X 10 sq. mm + 1 X 6 sq. mm earth wire	Metre	426
1.7.6	2 X 16 sq. mm + 1 X 6 sq. mm earth wire	Metre	555
1.7.7	4 X 2.5 sq. mm + 2 X 2.5 sq. mm earth wire	Metre	339
1.7.8	4 X 4 sq. mm + 2 X 4 sq. mm earth wire	Metre	406
1.7.9	4 X 6 sq. mm + 2 X 6 sq. mm earth wire	Metre	529
1.7.10	4 X 10 sq. mm + 2 X 6 sq. mm earth wire	Metre	670
1.7.11	4 X 16 sq. mm + 2 X 6 sq. mm earth wire	Metre	946
1.8	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with piano type switch, phenolic laminated sheet, suitable size M.S. box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc. as required.		
1.8.1	Group A	Point	694
1.8.2	Group B	Point	759
1.8.3	Group C	Point	966
1.9	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, 2 way piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc. as required.	Point	975
1.10	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.		
1.10.1	Group A	Point	717
1.10.2	Group B	Point	783
1.10.3	Group C	Point	990

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
1.11	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.	Point	1057
1.12	Wiring for light/ power plug with 2X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit alongwith 1 No. 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	Metre	200
1.13	Wiring for light/ power plug with 4X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit alongwith 2 Nos. 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	Metre	308
1.14	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required.		
1.14.1	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	Metre	146
1.14.2	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	Metre	167
1.14.3	2 X 4 sq. mm + 1 X 4 sq. mm earth wire	Metre	200
1.14.4	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	Metre	249
1.14.5	2 X 10 sq. mm + 1 X 6 sq. mm earth wire	Metre	328
1.14.6	2 X 16 sq. mm + 1 X 6 sq. mm earth wire	Metre	419
1.14.7	4 X 2.5 sq. mm + 2 X 2.5 sq. mm earth wire	Metre	233
1.14.8	4 X 4 sq. mm + 2 X 4 sq. mm earth wire	Metre	308
1.14.9	4 X 6 sq. mm + 2 X 6 sq. mm earth wire	Metre	394
1.14.10	4 X 10 sq. mm + 2 X 6 sq. mm earth wire	Metre	543
1.14.11	4 X 16 sq. mm + 2 X 6 sq. mm earth wire	Metre	752
1.15	Rewiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable and 1.5 sq.mm FRLS PVC insulated copper conductor single core cable as earth wire in existing surface/ recessed steel/PVC conduit including dismantling as required.		
1.15.1	Group A	Point	416
1.15.2	Group B	Point	447
1.15.3	Group C	Point	640

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
1.16	Rewiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable and 1.5 sq.mm FRLS PVC insulated copper conductor single core cable as earth wire in existing surface/ recessed steel/PVC conduit including dismantling as required.	Point	640
1.17	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.		
1.17.1	1 x 1.5 sq. mm	Metre	29
1.17.2	2 x 1.5 sq. mm	Metre	41
1.17.3	3 x 1.5 sq. mm	Metre	54
1.17.4	4 x 1.5 sq. mm	Metre	67
1.17.5	5 x 1.5 sq. mm	Metre	87
1.17.6	6 x 1.5 sq. mm	Metre	100
1.17.7	7 x 1.5 sq. mm	Metre	121
1.17.8	8 x 1.5 sq. mm	Metre	133
1.17.9	9 x 1.5 sq. mm	Metre	162
1.17.10	10 x 1.5 sq. mm	Metre	175
1.17.11	2 x 2.5 sq. mm	Metre	55
1.17.12	3 x 2.5 sq. mm	Metre	75
1.17.13	4 x 2.5 sq. mm	Metre	95
1.17.14	5 x 2.5 sq. mm	Metre	122
1.17.15	6 x 2.5 sq. mm	Metre	142
1.17.16	7 x 2.5 sq. mm	Metre	170
1.17.17	8 x 2.5 sq. mm	Metre	190
1.17.18	9 x 2.5 sq. mm	Metre	225
1.17.19	10 x 2.5 sq. mm	Metre	245
1.17.20	2 x 4 sq. mm	Metre	86
1.17.21	3 x 4 sq. mm	Metre	117
1.17.22	4 x 4 sq. mm	Metre	156
1.17.23	5 x 4 sq. mm	Metre	190
1.17.24	6 x 4 sq. mm	Metre	221
1.17.25	7 x 4 sq. mm	Metre	253
1.17.26	8 x 4 sq. mm	Metre	284
1.17.27	9 x 4 sq. mm	Metre	318
1.17.28	10 x 4 sq. mm	Metre	357
1.17.29	2 x 6 sq. mm	Metre	122
1.17.30	3 x 6 sq. mm	Metre	167
1.17.31	4 x 6 sq. mm	Metre	220
1.17.32	5 x 6 sq. mm	Metre	265
1.17.33	6 x 6 sq. mm	Metre	326
1.17.34	7 x 6 sq. mm	Metre	371

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
1.17.35	8 x 6 sq. mm	Metre	424
1.17.36	9 x 6 sq. mm	Metre	469
1.17.37	10 x 6 sq. mm	Metre	518
1.18	Supplying and drawing following pair 0.5 mm dia FRLS PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required.		
1.18.1	1 Pair	Metre	19
1.18.2	2 Pair	Metre	20
1.18.3	4 Pair	Metre	29
1.19	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Metre	33
1.20	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.		
1.20.1	20 mm	Metre	146
1.20.2	25 mm	Metre	165
1.20.3	32 mm	Metre	203
1.20.4	40 mm	Metre	292
1.20.5	50 mm	Metre	368
1.21	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.		
1.21.1	20 mm	Metre	84
1.21.2	25 mm	Metre	90
1.21.3	32 mm	Metre	92
1.21.4	40 mm	Metre	130
1.21.5	50 mm	Metre	158
1.22	Supplying and fixing metal box of following sizes (nominal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including painting etc. as required.		
1.22.1	75 mm X 75 mm X 60 mm deep	Each	140
1.22.2	100 mm X 100 mm X 60 mm deep	Each	160
1.22.3	150 mm X 75 mm X 60 mm deep	Each	165
1.22.4	150 mm X 150 mm X 60 mm deep	Each	232
1.22.5	180 mm X 100 mm X 60 mm deep	Each	183
1.22.6	200 mm X 125 mm X 60 mm deep	Each	239

Item No.	Description	Unit	Rate
1.22.7	200 mm X 150 mm X 60 mm deep	Each	261
1.22.8	200 mm X 150 mm X 75 mm deep	Each	268
1.22.9	200 mm X 250 mm X 60 mm deep	Each	335
1.22.10	200 mm X 250 mm X 75 mm deep	Each	351
1.22.11	200 mm X 150 mm X 100 mm deep	Each	308
1.22.12	200 mm X 250 mm X 100 mm deep	Each	366
1.22.13	200 mm X 300 mm X 60 mm deep	Each	387
1.22.14	200 mm X 300 mm X 100 mm deep	Each	403
1.22.15	250 mm X 300 mm X 60 mm deep	Each	426
1.22.16	250 mm X 300 mm X 100 mm deep	Each	465
1.23	Supplying and fixing following piano type switch/ socket on the existing switch box/ cover including connections etc. as required.		
1.23.1	5/6 amps switch	Each	45
1.23.2	2 way 5/6 A switch	Each	54
1.23.3	15/16 A switch	Each	110
1.23.4	3 pin 5/6 A socket outlet	Each	58
1.23.5	6 pin 15/16 A socket outlet	Each	128
1.23.6	Telephone socket outlet	Each	75
1.23.7	TV antenna socket outlet	Each	76
1.23.8	Bell push	Each	64
1.24	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.		
1.24.1	5/6 A switch	Each	85
1.24.2	2 way 5/6 A switch	Each	123
1.24.3	15/16 A switch	Each	132
1.24.4	3 pin 5/6 A socket outlet	Each	111
1.24.5	6 pin 15/16 A socket outlet	Each	175
1.24.6	Telephone socket outlet	Each	119
1.24.7	TV antenna socket outlet	Each	119
1.24.8	Bell push	Each	126
1.25	Supplying and fixing <b>two module</b> stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	Each	342
1.26	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	32
1.27	Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular switches in recess etc. as required.		
1.27.1	1 or 2 Module (75mmX75mm)	Each	243
1.27.2	3 Module (100mmX75mm)	Each	267

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
1.27.3	4 Module (125mmX75mm)	Each	287
1.27.4	6 Module (200mmX75mm)	Each	333
1.27.5	8 Module (125mmX125mm)	Each	383
1.27.6	12 Module (200mmX150mm)	Each	434
1.28	Supplying and fixing following Modular base & cover plate on existing modular metal boxes etc. as required.		
1.28.1	1 or 2 Module	Each	114
1.28.2	3 Module	Each	128
1.28.3	4 Module	Each	138
1.28.4	6 Module	Each	167
1.28.5	8 Module	Each	196
1.28.6	12 Module	Each	227
1.29	Supplying and fixing metal box of 150mm X 75mm X 60mm deep (nominal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including providing and fixing 3 pin 5/6 A socket outlet and 5/6 A piano type switch, connections, painting etc. as required.	Each	285
1.30	Supplying and fixing metal box of 180mm X 100mm X 60mm deep (nominal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including providing and fixing 6 pin 5/6 & 15/16 A socket outlet and 15/16 A piano type switch, connections, painting etc. as required.	Each	406
1.31	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 A modular socket outlet and 5/6 A modular switch, connections etc. as required.	Each	401
1.32	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 A modular socket outlet and 15/16 A modular switch, connections etc. as required.	Each	495
1.33	Supplying and fixing 3 pin, 5 A ceiling rose on the existing junction box/ wooden block including connections etc. as required.	Each	65
1.34	Supplying and fixing brass batten/ angle holder including connection etc. as required.	Each	117
1.35	Installation ,Testing, Commissioning of wall bracket /ceiling fittings of all sizes and shapes containing upto two GLS/CFL/LED lamps per fitting, complete with all accessories including connections etc. as required.	Each	98
1.36	Supplying and fixing stiff pendent with 300 mm long, 20 mm dia X 1.6 mm thick steel conduit, aluminium cast back plate and brass holder complete, including wiring the down rod with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and painting etc. as required.	Each	243

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
1.37	<b>DELETED</b>		
1.38	Supplying and fixing call bell/ buzzer suitable for single phase, 230 V, complete as required.	Each	92
1.39	Providing and fixing plain 16/0.20mm (0.50sqmm) twin flat flexible, FRLS PVC insulated, copper conductor cable, in PVC sleeve of suitable size on the floor/ wall, or side of the table/ door etc. as required.	Metre	26
1.40	Providing and fixing plain 16/0.20mm (0.50sqmm) twin circular flexible FRLS PVC insulated, PVC sheathed copper conductor cable direct on the wall with PVC clips etc. as required.	Metre	21
1.41	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube/lamp etc. directly on ceiling/ wall, including connections with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	Each	168
1.42	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube/lamp etc., including supplying and fixing ball and socket arrangement, 2 Nos. down rods of 20 mm dia X 1.6 mm thick steel conduit upto 30 cm length, painting and wiring the down rods and connections with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	Each	358
1.43	Providing and fixing extra conduit down rod of 20 mm dia, 2 X 10 cm length, wiring with 2 X 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable including painting etc. as required. (Note : More than 5 cm length shall be rounded to the nearest 10 cm and 5 cm or less shall be ignored)	Each	40
1.44	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (upto 30 cm) with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable etc. as required.	Each	171
1.45	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (upto 30 cm) with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable, including providing and fixing phenolic laminated sheet cover on the fan box etc. as required.	Each	203
1.46	<b>DELETED</b>		

Item No.	Description	Unit	Rate
1.47	Supplying and fixing extra down rod of 10 cm length G.I. pipe, 15 mm dia, heavy gauge including painting etc. as required. (Note : More than 5 cm length shall be rounded to the nearest 10 cm and 5 cm or less shall be ignored)	Each	33
1.48	Supplying and fixing extra conduit down rod of 20 cm length G.I. pipe 15 mm dia, heavy gauge including painting etc. as required. (Note : More than 5 cm length shall be rounded to the nearest 10 cm and 5 cm or less shall be ignored)	Each	37
1.49	Numbering of ceiling fan/ exhaust fan/ fluorescent fittings as required.	Each	48
1.50	Installation of exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required.		
1.50.1	Upto 450 mm sweep	Each	363
1.50.2	510 mm sweep	Each	523
1.51	Extra for fixing the louvers/ shutters complete with frame for a exhaust fan of all sizes.	Each	168
1.52	Painting of ceiling fan in installed position with one or more coats of spray painting with synthetic enamel paint of approved brand and manufacture to give an even shade, including cleaning of surface with detergent etc. as required.	Each	135
1.53	Supplying and drawing of UTP 4 pair CAT 6 LAN Cable in the existing surface/ recessed Steel/ PVC conduit as required.		
1.53.1	1 run of cable	Metre	49
1.53.2	2 run of cable	Metre	82
1.53.3	3 run of cable	Metre	114
1.54	Wiring for group controlled (looped) light point/fan point/exhaust fan point/ call bell point (without independent switch etc.) with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit, and earthing the point with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable etc. as required.		
1.54.1	Group A	Point	547
1.54.2	Group B	Point	628
1.54.3	Group C	Point	707
1.55	Wiring for group controlled (looped) light point/fan point/exhaust fan point/ call bell point ( without independent switch etc.) with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed PVC conduit, and earthing the point with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable etc. as required.		
1.55.1	Group A	Point	463
1.55.2	Group B	Point	508
1.55.3	Group C	Point	555

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
1.56	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 2 nos. 3 pin 5/6 A modular socket outlet and 2 nos. 5/6 A modular switch, connections etc. as required. (For light plugs to be used in non residential buildings).	Each	582
1.57	Supplying & fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 25 A modular socket outlet and 25 A modular SP MCB, "C" curve including connections, painting etc. as required.	Each	639
1.58	Supplying and fixing PVC batten/ angle holder including connections etc. as required.	Each	90
1.59	Dismantling of ceiling fan and painting the same with with one or more coats of spray painting with synthetic enamel paint of approved brand and manufacture to give an even shade, including cleaning of surface with detergent and replacing the damaged rubber reel, nuts and bolts with washers and safety pins, reinstalling the same as required.	Each	221

## CHAPTER-2-MCCB, MCB & DB'S

Item No.	Description	Unit	Rate
2.1	Providing and fixing following capacity TP&N disconnecter fuse switch unit inside the existing panel board with ISI marked HRC fuses including drilling holes in cubicle panel, making connections, etc. as required.		
2.1.1	32 A TP&N	Each	2075
2.1.2	63 A TP&N	Each	2923
2.1.3	100 A TP&N	Each	6024
2.1.4	125 A TP&N	Each	6696
2.1.5	160 A TP&N	Each	7955
2.1.6	200 A TP&N	Each	9106
2.1.7	315 A TP&N	Each	14484
2.1.8	400 A TP&N	Each	17714
2.2	Providing and fixing following rating and breaking capacity and pole MCCB with thermomagnetic release and terminal spreaders in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required.		
2.2.1	100 A, 16 KA,TPMCCB	Each	3726
2.2.2	125 A, 16 KA,TPMCCB	Each	4145
2.2.3	150 A, 16 KA,TPMCCB	Each	4688
2.2.4	200 A, 16 KA,TPMCCB	Each	7628
2.2.5	200 A, 25 KA,TPMCCB	Each	10953
2.2.6	250 A, 25 KA,TPMCCB	Each	12917
2.2.7	250 A, 35 KA,TPMCCB	Each	11140
2.2.8	315 A, 35 KA,TPMCCB	Each	21512
2.2.9	400 A, 35 KA,TPMCCB	Each	21512
2.2.10	500 A, 35 KA,TPMCCB	Each	24938
2.2.11	630 A, 50 KA,TPMCCB	Each	27771
2.2.12	800 A, 50 KA,TPMCCB	Each	33855
2.2.13	100 A,30KA,FPMCCB	Each	7377
2.2.14	125 A,36KA,FPMCCB	Each	7504
2.2.15	200 A,36KA,FPMCCB	Each	15149
2.2.16	250 A,36KA,FPMCCB	Each	17272
2.2.17	250 A,50KA,FPMCCB	Each	14947
2.2.18	400 A,50KA,FPMCCB	Each	26182
2.2.19	630 A,50KA,FPMCCB	Each	32506
2.3	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)		
2.3.1	6 way , Double door	Each	1661

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
2.3.2	8 way , Double door	Each	1760
2.3.3	12 way , Double door	Each	2053
2.3.4	16 way, Double door	Each	2453
2.4	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)		
2.4.1	4 way (4 + 12), Double door	Each	3068
2.4.2	6 way (4 + 18), Double door	Each	3693
2.4.3	8 way (4 + 24), Double door	Each	4601
2.5	Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCBs (but without MCBs and incomer ) as required . (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)		
2.5.1	4 way (4 + 12), Double door	Each	5651
2.5.2	8 way (4 + 24), Double door	Each	7744
2.5.3	12 way (4 + 36), Double door	Each	9828
2.6	<b>DELETED</b>		
2.7	<b>DELETED</b>		
2.8	<b>DELETED</b>		
2.9	<b>DELETED</b>		
2.10	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.		
2.10.1	Single pole	Each	199
2.10.2	Single pole and neutral	Each	544
2.10.3	Double pole	Each	556
2.10.4	Triple pole	Each	826
2.10.5	Triple pole and neutral	Each	1092
2.11	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	Each	8
2.12	Supplying and fixing following rating, double pole, 240 V, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.		
2.12.1	40 A	Each	339
2.12.2	63 A	Each	385

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
2.13	Supplying and fixing following rating, four pole, 415 V, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.		
2.13.1	40 A	Each	832
2.13.2	63 A	Each	839
2.13.3	100 A	Each	1047
2.14	Supplying and fixing following rating, double pole, (single phase and neutral), 240 V, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required.		
2.14.1	25 A	Each	1927
2.14.2	40 A	Each	2095
2.14.3	63 A	Each	2640
2.15	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required.		
2.15.1	25 A	Each	2526
2.15.2	40 A	Each	2626
2.15.3	63 A	Each	2777
2.16	Supplying and fixing DP sheet steel enclosure on surface/ recess along with 25/32 A 240 V "C" curve DP MCB complete with connections, testing and commissioning etc. as required.	each	848
2.17	Supplying and fixing TP sheet steel enclosure on surface/ recess along with 16/25/32 A 415 V "C" curve TP MCB complete with connections, testing and commissioning etc. as required.	each	1146
2.18	Supplying and fixing 20 A, 240 V, SPN Industrial type socket outlet, with 2 pole and earth, metal enclosed plug top alongwith 20 A "C" curve, SP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	Each	1232
2.19	Supplying and fixing 20 A, 415 V, TPN Industrial type socket outlet, with 4 pole and earth, metal enclosed plug top alongwith 20 A "C" curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	Each	1690

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
2.20	Supplying and fixing 30 A, 415 V, TPN Industrial type socket outlet, with 4 pole and earth, metal enclosed plug top alongwith 30 A "C" curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket outlet and complete with connections, testing and commissioning etc. as required.	Each	3048
2.21	Providing and fixing M.V. danger notice plate of 200 mm X 150 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	Each	226
2.22	Providing and fixing H.T. danger notice plate of 250 mm X 200 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	Each	244
2.23	Supplying and fixing Cable End Box (Loose Wire Box) suitable for following single pole and neutral, sheet steel, MCB distribution board, 240 Volts, on surface/ recess, complete with testing and commissioning etc. as required.		
2.23.1	For 6 way, Double door SPN MCBDB	Each	629
2.23.2	For 8 way, Double door SPN MCBDB	Each	731
2.23.3	For 10 way, Double door SPN MCBDB	Each	746
2.23.4	For 14 way, Double door SPN MCBDB	Each	864
2.24	Supplying and fixing Cable End Box (Loose Wire Box) suitable for following triple pole and neutral, sheet steel, MCB distribution board, 415 Volts, on surface/ recess, complete with testing and commissioning etc.as required.		
2.24.1	For 4 way, Double door TPN MCBDB	Each	904
2.24.2	For 6 way, Double door TPN MCBDB	Each	1062
2.24.3	For 8 way, Double door TPN MCBDB	Each	1239
2.25	Supplying and fixing Cable End Box (Loose Wire Box) suitable for triple pole and neutral, sheet steel, Vertical MCB distribution board, 415 Volts, on surface/ recess, complete with testing and commissioning etc. as required.	Each	764

### CHAPTER-3-RISING MAINS & BUS TRUNKING

Item No.	Description	Unit	Rate
3.1	Supplying, installing on wall, testing and commissioning of following capacity rising mains made of 1.6mm thick <b>IP 42</b> sheet steel enclosure duly painted with powder coating, wall straps, fully PVC insulated 4 Nos aluminium bus bars <b>having current density of 130 A/ sq cm at nominal current rating</b> in convenient sections and suitable for 415 V, 3 phase, 4 wire, 50 Hz, A.C. supply with extension joints, fire proof barriers, expansion joints, thrust pads including jointing and earthing with 2 runs of galvanised iron strips etc. as required. (Rising mains confirming to IS 8623, TEC 439)		
3.1.1	200 A (S.C. rating for 1 sec - 15 kA)	Metre	6088
3.1.2	300 A (S.C. rating for 1 sec - 20 kA)	Metre	6342
3.1.3	400 A (S.C. rating for 1 sec - 25 kA)	Metre	7778
3.1.4	600 A (S.C. rating for 1 sec - 45 kA)	Metre	8672
3.1.5	800 A (S.C. rating for 1 sec - 50 kA)	Metre	10425
3.2	Supplying, installing, testing and commissioning of following capacity TPN tap off box made of 1.6mm thick sheet steel enclosure duly painted with powder coating on existing rising mains complete with TPN disconnecter FSU and HRC fuses, connections, earthing etc. as required.		
3.2.1	16 A TPN	Each	8134
3.2.2	32 A TPN	Each	8570
3.2.3	63 A TPN	Each	9633
3.2.4	100 A TPN	Each	11082
3.2.5	200 A TPN	Each	17382
3.2.6	315 A TPN	Each	18396
3.2.7	400 A TPN	Each	19121
3.3	Supplying, installing, testing and commissioning of following capacity TPN distribution tap off box made of 1.6mm thick sheet steel enclosure duly painted with powder coating on existing rising mains complete with HRC fuses, interconnections, earthing etc. as required.		
3.3.1	16 A TPN, 2 way	Each	10176
3.3.2	16 A TPN, 4 way	Each	22681
3.3.3	16 A TPN, 6 way	Each	32137
3.3.4	16 A TPN, 8 way	Each	44493
3.3.5	32 A TPN, 2 way	Each	12533
3.3.6	32 A TPN, 4 way	Each	25581
3.3.7	32 A TPN, 6 way	Each	33586
3.3.8	32 A TPN, 8 way	Each	46667
3.3.9	63 A TPN, 2 way	Each	14272

Item No.	Description	Unit	Rate
3.3.10	63 A TPN, 4 way	Each	24130
3.3.11	63 A TPN, 6 way	Each	26047
3.3.12	63 A TPN, 8 way	Each	44783
3.4	Supplying, installing, testing and commissioning of following capacity End Feed Unit made of 1.6mm thick sheet steel enclosure duly painted with powder coating to existing rising mains complete with TPN disconnecter FSU and HRC fuses, mounting stands, cable end box, brass compression gland, connections, earthing etc. as required.		
3.4.1	200 A TPN	Each	20366
3.4.2	300 A TPN	Each	22348
3.4.3	400 A TPN	Each	24746
3.4.4	600 A TPN	Each	26734
3.4.5	800 A TPN	Each	30098
3.5	Supplying, installation, including suspension, testing and commissioning of following capacity bus trunking with aluminium bus bars <b>having current density of 130 A/ sq cm at nominal current rating</b> in 1.6mm thick <b>IP 42</b> sheet steel enclosure 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.		
3.5.1	800 A	Metre	11652
3.5.2	1000 A	Metre	13755
3.5.3	1250 A	Metre	17695
3.5.4	1400 A	Metre	22044
3.5.5	1600 A	Metre	22119
3.6	Supplying, installation, testing and commissioning of following capacity overhead distribution bus trunking with aluminium bus bars <b>having current density of 130 A/ sq cm at nominal current rating</b> in 1.6mm thick <b>IP 42</b> sheet steel enclosure in convenient sections with provision of tapping points for use on, 3 phase, 4 wire, 415 volts, 50 Hz, A.C. supply including jointing of sections, bends, earthing with 2 runs of galvanised iron strips, all installation accessories etc. as required.		
3.6.1	200 A	Metre	6796
3.6.2	400 A	Metre	8680
3.7	Supplying, installing, testing and commissioning of following capacity TPN tap off box / plug-in box made of 1.6mm thick sheet steel enclosure duly painted with powder coating on existing overhead bus bar system complete with TPN disconnecter FSU and HRC fuses, connections, earthing etc. as required.		

Item No.	Description	Unit	Rate
3.7.1	32 A	Each	7368
3.7.2	63 A	Each	8287
3.7.3	100 A	Each	9530
3.8	Supplying, installing on wall, testing and commissioning of following capacity Air Insulated Compact Type Rising Mains for use on 3 phase 4 wire 415 volts, 50Hz A.C. supply with enclosure <b>having IP-54 rating after fixing the tap off boxes and all accessories</b> , made of 1.6mm thick steel sheet duly powder coated in convenient sections complete with 4 Nos aluminium bus bars <b>having current density of 130 A/ sq cm at nominal current rating</b> , 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 etc. as required.		
3.8.1	200 A lsc = 15kA for 1 second	Metre	7451
3.8.2	315 A lsc = 25kA for 1 second	Metre	8031
3.8.3	400 A lsc = 30kA for 1 second	Metre	8915
3.8.4	500 A lsc = 35kA for 1 second	Metre	10229
3.8.5	630 A lsc = 50kA for 1 second	Metre	12172
3.8.6	800 A lsc = 50kA for 1 second	Metre	16674
3.8.7	1000 A lsc = 50kA for 1 second	Metre	19273
3.8.8	1250 A lsc = 50kA for 1 second	Metre	22874
3.9	Supplying, installing on wall <b>or suspension on ceiling</b> , testing and commissioning of following capacity Air Insulated Compact Type Bus Trunking for use on 3 phase 4 wire 415 volts, 50Hz A.C. supply with metal clad enclosure <b>having IP-54 rating after fixing the tap off boxes and all accessories</b> , made of 1.6mm thick steel sheet duly powder coated in convenient sections complete with 4 Nos aluminium bus bars <b>having current density of 130 A/ sq cm at nominal current rating</b> , necessary joints, elbow joints & expansion joints, fire barrier at each floor, continuous earthing with 2 Nos aluminium strip of suitable size (one on each side) including, G.I. clamping brackets, <b>suspenders</b> , angle iron bracket, steel fasteners, connecting to earthing system etc. as required.		
3.9.1	200 A lsc = 15kA for 1 second	Metre	7566
3.9.2	315 A lsc = 25kA for 1 second	Metre	8050
3.9.3	400 A lsc = 30kA for 1 second	Metre	8933
3.9.4	500 A lsc = 35kA for 1 second	Metre	10301
3.9.5	630 A lsc = 50kA for 1 second	Metre	12152
3.9.6	800 A lsc = 50kA for 1 second	Metre	15653
3.9.7	1000 A lsc = 50kA for 1 second	Metre	18066
3.9.8	1250 A lsc = 50kA for 1 second	Metre	21084

Item No.	Description	Unit	Rate
3.10	<b>DELETED</b>		
3.11	Supplying, installation, testing & commissioning of following capacity End Feed Unit for the existing Air Insulated Compact Type bus trunking/ rising mains for use on 3 phase 4 wire 415 volts, 50Hz A.C. supply made with 1.6mm thick steel sheet enclosure (IP54) duly powder coated with provision of MCCB/ACB (but without MCCB/ACB) complete with necessary joints including clamping brackets, angle iron bracket, steel fasteners, connecting to earthing system etc. as required		
3.11.1	200 A 15kA SC for 1 sec	Each	5513
3.11.2	315 A 25kA SC for 1 sec	Each	5738
3.11.3	400 A 30kA SC for 1 sec	Each	7307
3.11.4	500 A 35kA SC for 1 sec	Each	7645
3.11.5	630 A 50kA SC for 1 sec	Each	9344
3.11.6	800 A 50kA SC for 1 sec	Each	11017
3.11.7	1000 A 50kA SC for 1 sec	Each	12328
3.11.8	1250 A 50kA SC for 1 sec	Each	13005
3.12	Supplying, installation, testing & commissioning of following capacity Plug In/ tap off box on the existing Air Insulated Compact Type bus trunking/ rising mains for use on 3 phase 4 wire 415 volts, 50Hz A.C. supply made with 1.6mm thick sheet steel enclosure (IP54) duly powder coated with provision of MCCB/ACB (but without MCCB/ACB) complete etc. as required		
3.12.1	125 A 15kA SC for 1 sec	Each	6358
3.12.2	200 A 25kA SC for 1 sec	Each	8048
3.12.3	250 A 30kA SC for 1 sec	Each	10350
3.12.4	400 A 35kA SC for 1 sec	Each	10350
3.12.5	500 A 50kA SC for 1 sec	Each	14919
3.12.6	630 A 50kA SC for 1 sec	Each	14919
3.13	Supplying, installing by suspension on ceiling, testing and commissioning of following capacity Sandwich Type Rising Mains for use on 3 phase 4 wire 415 volts, 50Hz A.C. supply with metal clad enclosure <b>having IP-54 rating after fixing the tap off boxes and all accessories</b> , made of 1.6mm thick steel sheet duly powder coated in convenient sections complete with 4 Nos aluminium bus bars <b>having current density of 130 A/ sq cm at nominal current rating</b> , necessary joints, elbow joints & expansion joints and bends, fire barrier at each floor, provision of tapping at every metre, adopter box and copper flexible for joints, continuous earthing with 2 Nos aluminium strip of suitable size (one on each side) including, G.I. clamping brackets, suspenders, angle iron bracket, steel fasteners, connecting to earthing system etc. as required		

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
3.13.1	400 A 25kA SC for 1 sec	Metre	12022
3.13.2	500 A 30kA SC for 1 sec	Metre	12837
3.13.3	630 A 50kA SC for 1 sec	Metre	13833
3.13.4	800 A 50kA SC for 1 sec	Metre	15554
3.13.5	1000 A 50kA SC for 1 sec	Metre	17374
3.13.6	1250 A 50kA SC for 1 sec	Metre	19356
3.13.7	1600 A 50kA SC for 1 sec	Metre	23430
3.13.8	2000 A 50kA SC for 1 sec	Metre	27775
3.13.9	2500 A 50kA SC for 1 sec	Metre	35688
3.13.10	3200 A 50kA SC for 1 sec	Metre	39364
3.13.11	4000 A 50kA SC for 1 sec	Metre	68210

**Note:- This item of sandwich type rising mains & rates can be used by field units for sandwich type bus trunking also by making suitable modifications in nomenclature & rates etc.**

## CHAPTER-4-CABLE TRAYS

Item No.	Description	Unit	Rate
4.1	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.		
4.1.1	100 mm width X 50 mm depth X 1.6 mm thickness	Metre	476
4.1.2	150 mm width X 50 mm depth X 1.6 mm thickness	Metre	531
4.1.3	200 mm width X 50 mm depth X 1.6 mm thickness	Metre	597
4.1.4	300 mm width X 50 mm depth X 1.6 mm thickness	Metre	621
4.1.5	375 mm width X 50 mm depth X 2.0 mm thickness	Metre	660
4.1.6	450 mm width X 50 mm depth X 2.0 mm thickness	Metre	700
4.1.7	600 mm width X 50 mm depth X 2.0 mm thickness	Metre	765
4.1.8	300 mm width X 62.5 mm depth X 2.0 mm thickness	Metre	599
4.1.9	375 mm width X 62.5 mm depth X 2.0 mm thickness	Metre	669
4.1.10	450 mm width X 62.5 mm depth X 2.0 mm thickness	Metre	778
4.1.11	600 mm width X 62.5 mm depth X 2.0 mm thickness	Metre	911
4.1.12	750 mm width X 62.5 mm depth X 2.0 mm thickness	Metre	1048
4.1.13	900 mm width X 62.5 mm depth X 2.0 mm thickness	Metre	1204
4.1.14	600 mm width X 75 mm depth X 2.0 mm thickness	Metre	1000
4.1.15	750 mm width X 75 mm depth X 2.0 mm thickness	Metre	1078
4.1.16	900 mm width X 75 mm depth X 2.0 mm thickness	Metre	1184
4.2	Supplying and installing following size of perforated painted with powder coating M.S. cable trays bends with perforation not more than 17.5%,, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.		
4.2.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	808
4.2.2	150 mm width X 50 mm depth X 1.6 mm thickness	Each	947
4.2.3	200 mm width X 50 mm depth X 1.6 mm thickness	Each	1143
4.2.4	300 mm width X 50 mm depth X 1.6 mm thickness	Each	1340
4.2.5	375 mm width X 50 mm depth X 2.0 mm thickness	Each	1827
4.2.6	450 mm width X 50 mm depth X 2.0 mm thickness	Each	2089
4.2.7	600 mm width X 50 mm depth X 2.0 mm thickness	Each	2582
4.2.8	300 mm width X 62.5 mm depth X 2.0 mm thickness	Each	1650
4.2.9	375 mm width X 62.5 mm depth X 2.0 mm thickness	Each	1914
4.2.10	450 mm width X 62.5 mm depth X 2.0 mm thickness	Each	2248
4.2.11	600 mm width X 62.5 mm depth X 2.0 mm thickness	Each	2763
4.2.12	750 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3327
4.2.13	900 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3843
4.2.14	600 mm width X 75 mm depth X 2.0 mm thickness	Each	2830

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
4.2.15	750 mm width X 75 mm depth X 2.0 mm thickness	Each	3410
4.2.16	900 mm width X 75 mm depth X 2.0 mm thickness	Each	3927
4.3	Supplying and installing following size of perforated painted with powder coating M.S. cable trays Tee with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.		
4.3.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	909
4.3.2	150 mm width X 50 mm depth X 1.6 mm thickness	Each	1072
4.3.3	225 mm width X 50 mm depth X 1.6 mm thickness	Each	1310
4.3.4	300 mm width X 50 mm depth X 1.6 mm thickness	Each	1549
4.3.5	375 mm width X 50 mm depth X 2.0 mm thickness	Each	2118
4.3.6	450 mm width X 50 mm depth X 2.0 mm thickness	Each	2431
4.3.7	600 mm width X 50 mm depth X 2.0 mm thickness	Each	3016
4.3.8	300 mm width X 62.5 mm depth X 2.0 mm thickness	Each	1918
4.3.9	375 mm width X 62.5 mm depth X 2.0 mm thickness	Each	2224
4.3.10	450 mm width X 62.5 mm depth X 2.0 mm thickness	Each	2607
4.3.11	600 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3215
4.3.12	750 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3887
4.3.13	900 mm width X 62.5 mm depth X 2.0 mm thickness	Each	4502
4.3.14	600 mm width X 75 mm depth X 2.0 mm thickness	Each	3305
4.3.15	750 mm width X 75 mm depth X 2.0 mm thickness	Each	3945
4.3.16	900 mm width X 75 mm depth X 2.0 mm thickness	Each	4596
4.4	Supplying and installing following size of perforated painted with powder coating M.S. cable trays Cross Member with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.		
4.4.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	909
4.4.2	150 mm width X 50 mm depth X 1.6 mm thickness	Each	1072
4.4.3	225 mm width X 50 mm depth X 1.6 mm thickness	Each	1310
4.4.4	300 mm width X 50 mm depth X 1.6 mm thickness	Each	1549
4.4.5	375 mm width X 50 mm depth X 2.0 mm thickness	Each	2118
4.4.6	450 mm width X 50 mm depth X 2.0 mm thickness	Each	2431
4.4.7	600 mm width X 50 mm depth X 2.0 mm thickness	Each	3016
4.4.8	300 mm width X 62.5 mm depth X 2.0 mm thickness	Each	1918
4.4.9	375 mm width X 62.5 mm depth X 2.0 mm thickness	Each	2224
4.4.10	450 mm width X 62.5 mm depth X 2.0 mm thickness	Each	2607
4.4.11	600 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3214
4.4.12	750 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3887
4.4.13	900 mm width X 62.5 mm depth X 2.0 mm thickness	Each	4502
4.4.14	600 mm width X 75 mm depth X 2.0 mm thickness	Each	3305
4.4.15	750 mm width X 75 mm depth X 2.0 mm thickness	Each	3945

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
4.4.16	900 mm width X 75 mm depth X 2.0 mm thickness	Each	4596
4.5	Supplying and installing following size of perforated painted with powder coating M.S. cable trays Reducer with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.		
4.5.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	880
4.5.2	150 mm width X 50 mm depth X 1.6 mm thickness	Each	1023
4.5.3	225 mm width X 50 mm depth X 1.6 mm thickness	Each	1268
4.5.4	300 mm width X 50 mm depth X 1.6 mm thickness	Each	1505
4.5.5	375 mm width X 50 mm depth X 2.0 mm thickness	Each	1858
4.5.6	450 mm width X 50 mm depth X 2.0 mm thickness	Each	2144
4.5.7	600 mm width X 50 mm depth X 2.0 mm thickness	Each	2600
4.5.8	300 mm width X 62.5 mm depth X 2.0 mm thickness	Each	1677
4.5.9	375 mm width X 62.5 mm depth X 2.0 mm thickness	Each	1948
4.5.10	450 mm width X 62.5 mm depth X 2.0 mm thickness	Each	2291
4.5.11	600 mm width X 62.5 mm depth X 2.0 mm thickness	Each	2819
4.5.12	750 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3279
4.5.13	900 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3855
4.5.14	600 mm width X 75 mm depth X 2.0 mm thickness	Each	2898
4.5.15	750 mm width X 75 mm depth X 2.0 mm thickness	Each	3348
4.5.16	900 mm width X 75 mm depth X 2.0 mm thickness	Each	3935
<b>Hot Dipped Galvanized Iron Cable Tray</b>			
4.6	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required.		
4.6.1	100 mm width X 50 mm depth X 1.6 mm thickness	Metre	599
4.6.2	150 mm width X 50 mm depth X 1.6 mm thickness	Metre	644
4.6.3	225 mm width X 50 mm depth X 1.6 mm thickness	Metre	811
4.6.4	300 mm width X 50 mm depth X 1.6 mm thickness	Metre	875
4.6.5	375 mm width X 50 mm depth X 2.0 mm thickness	Metre	1108
4.6.6	450 mm width X 50 mm depth X 2.0 mm thickness	Metre	1213
4.6.7	600 mm width X 50 mm depth X 2.0 mm thickness	Metre	1646
4.6.8	300 mm width X 62.5 mm depth X 2.0 mm thickness	Metre	1085
4.6.9	375 mm width X 62.5 mm depth X 2.0 mm thickness	Metre	1245
4.6.10	450 mm width X 62.5 mm depth X 2.0 mm thickness	Metre	1440
4.6.11	600 mm width X 62.5 mm depth X 2.0 mm thickness	Metre	1752
4.6.12	750 mm width X 62.5 mm depth X 2.0 mm thickness	Metre	2079
4.6.13	900 mm width X 62.5 mm depth X 2.0 mm thickness	Metre	2405
4.6.14	600 mm width X 75 mm depth X 2.0 mm thickness	Metre	1795

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
4.6.15	750 mm width X 75 mm depth X 2.0 mm thickness	Metre	2090
4.6.16	900 mm width X 75 mm depth X 2.0 mm thickness	Metre	2411
4.7	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray "bends" (galvanisation not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required.		
4.7.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	1063
4.7.2	150 mm width X 50 mm depth X 1.6 mm thickness	Each	1168
4.7.3	225 mm width X 50 mm depth X 1.6 mm thickness	Each	1565
4.7.4	300 mm width X 50 mm depth X 1.6 mm thickness	Each	1713
4.7.5	375 mm width X 50 mm depth X 2.0 mm thickness	Each	2254
4.7.6	450 mm width X 50 mm depth X 2.0 mm thickness	Each	2490
4.7.7	600 mm width X 50 mm depth X 2.0 mm thickness	Each	3509
4.7.8	300 mm width X 62.5 mm depth X 2.0 mm thickness	Each	2211
4.7.9	375 mm width X 62.5 mm depth X 2.0 mm thickness	Each	2578
4.7.10	450 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3009
4.7.11	600 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3459
4.7.12	750 mm width X 62.5 mm depth X 2.0 mm thickness	Each	4494
4.7.13	900 mm width X 62.5 mm depth X 2.0 mm thickness	Each	5221
4.7.14	600 mm width X 75 mm depth X 2.0 mm thickness	Each	3832
4.7.15	750 mm width X 75 mm depth X 2.0 mm thickness	Each	4525
4.7.16	900 mm width X 75 mm depth X 2.0 mm thickness	Each	5243
4.8	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray "Tee" (galvanisation not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required.		
4.8.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	1220
4.8.2	150 mm width X 50 mm depth X 1.6 mm thickness	Each	1274
4.8.3	225 mm width X 50 mm depth X 1.6 mm thickness	Each	1820
4.8.4	300 mm width X 50 mm depth X 1.6 mm thickness	Each	1997
4.8.5	375 mm width X 50 mm depth X 2.0 mm thickness	Each	2641
4.8.6	450 mm width X 50 mm depth X 2.0 mm thickness	Each	2920
4.8.7	600 mm width X 50 mm depth X 2.0 mm thickness	Each	4138
4.8.8	300 mm width X 62.5 mm depth X 2.0 mm thickness	Each	2594
4.8.9	375 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3078
4.8.10	450 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3527
4.8.11	600 mm width X 62.5 mm depth X 2.0 mm thickness	Each	4460
4.8.12	750 mm width X 62.5 mm depth X 2.0 mm thickness	Each	5294
4.8.13	900 mm width X 62.5 mm depth X 2.0 mm thickness	Each	6164
4.8.14	600 mm width X 75 mm depth X 2.0 mm thickness	Each	4508

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
4.8.15	750 mm width X 75 mm depth X 2.0 mm thickness	Each	5335
4.8.16	900 mm width X 75 mm depth X 2.0 mm thickness	Each	6189
4.9	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray "Cross member"(galvanisation not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc as required.		
4.9.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	1220
4.9.2	150 mm width X 50 mm depth X 1.6 mm thickness	Each	1274
4.9.3	225 mm width X 50 mm depth X 1.6 mm thickness	Each	1838
4.9.4	300 mm width X 50 mm depth X 1.6 mm thickness	Each	2194
4.9.5	375 mm width X 50 mm depth X 2.0 mm thickness	Each	2889
4.9.6	450 mm width X 50 mm depth X 2.0 mm thickness	Each	3320
4.9.7	600 mm width X 50 mm depth X 2.0 mm thickness	Each	4151
4.9.8	300 mm width X 62.5 mm depth X 2.0 mm thickness	Each	2600
4.9.9	375 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3028
4.9.10	450 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3532
4.9.11	600 mm width X 62.5 mm depth X 2.0 mm thickness	Each	4385
4.9.12	750 mm width X 62.5 mm depth X 2 mm thickness	Each	5294
4.9.13	900 mm width X 62.5 mm depth X 2.0 mm thickness	Each	6164
4.9.14	600 mm width X 75 mm depth X 2.0 mm thickness	Each	4510
4.9.15	750 mm width X 75 mm depth X 2.0 mm thickness	Each	3942
4.9.16	900 mm width X 75 mm depth X 2.0 mm thickness	Each	4562
4.10	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray "Reducer" (galvanisation not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc as required.		
4.10.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	1528
4.10.2	150 mm width X 50 mm depth X 1.6 mm thickness	Each	1778
4.10.3	225 mm width X 50 mm depth X 1.6 mm thickness	Each	2242
4.10.4	300 mm width X 50 mm depth X 1.6 mm thickness	Each	2618
4.10.5	375 mm width X 50 mm depth X 2.0 mm thickness	Each	3184
4.10.6	450 mm width X 50 mm depth X 2.0 mm thickness	Each	3459
4.10.7	600 mm width X 50 mm depth X 2.0 mm thickness	Each	4792
4.10.8	300 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3149
4.10.9	375 mm width X 62.5 mm depth X 2.0 mm thickness	Each	3681

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
4.10.10	450 mm width X 62.5 mm depth X 2.0 mm thickness	Each	4389
4.10.11	600 mm width X 62.5 mm depth X 2.0 mm thickness	Each	5542
4.10.12	750 mm width X 62.5 mm depth X 2 mm thickness	Each	5961
4.10.13	900 mm width X 62.5 mm depth X 2.0 mm thickness	Each	6918
4.10.14	600 mm width X 75 mm depth X 2.0 mm thickness	Each	4893
4.10.15	750 mm width X 75 mm depth X 2.0 mm thickness	Each	6036
4.10.16	900 mm width X 75 mm depth X 2.0 mm thickness	Each	6996

## CHAPTER - 5 - E A R T H I N G

Item No.	Description	Unit	Rate
5.1	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal/ coke and salt ) as required.	Set	4033
5.2	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	Each	5308
5.3	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. (but without charcoal/ coke and salt ) as required.	Set	5146
5.4	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Set	6216
5.5	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. (but without charcoal/ coke and salt ) as required.	Set	10724
5.6	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Set	11794
5.7	Supplying and laying 6 SWG G.I. wire at 0.50 metre below ground level for conductor earth electrode, including connection/ termination with GI thimble etc. as required.	Metre	44
5.8	Supplying and laying 25 mm X 5 mm copper strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced at 50mm)	Metre	853
5.9	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm)	Metre	131
5.10	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.	Metre	1224

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
5.11	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	Metre	483
5.12	Providing and laying earth connection from earth electrode with 6 SWG dia G.I. Wire in 15 mm dia G.I. pipe from earth electrode including connection with G.I. thimble excavation and re-filling as required.	Metre	188
5.13	Providing and laying earth connection from earth electrode with 4.00 mm dia copper wire in 15 mm dia G.I. pipe from earth electrode including connection with copper thimble excavation and re-filling as required.	Metre	257
5.14	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	Metre	1009
5.15	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	Metre	206
5.16	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Metre	57
5.17	Providing and fixing 4.00 mm dia copper wire on surface or in recess for loop earthing as required.	Metre	128
5.18	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ submain wiring/ cable as required.	Metre	37
5.19	Providing and fixing 4.00 mm dia copper wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ submain wiring/ cable as required.	Metre	108
5.20	Providing and fixing earth bus of 50 mm X 5 mm copper strip on surface for connections etc. as required.	Metre	1844

## CHAPTER 6-LIGHTNING CONDUCTOR

Item No.	Description	Unit	Rate
6.1	<b>DELETED</b>		
6.2	Providing and fixing of lightning conductor finial, made of 25 mm dia 300 mm long, G.I. tube, having single prong at top, with 85 mm dia 6 mm thick G.I. base plate including holes etc. complete as required.	Each	448
6.3	Fixing of lightning conductor finial (single prong) with base plate including holes etc. complete as required.	Each	280
6.4	Jointing copper / G.I. tape (with another copper/ G I tape, base of the finial or any other metallic object) by riveting / nut bolting/ sweating and soldering etc as required.	Each	93
6.5	<b>DELETED</b>		
6.6	<b>DELETED</b>		
6.7	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For horizontal run)	Metre	104
6.8	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For vertical run)	Metre	163
6.9	Fixing of copper/ G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For horizontal run)	Metre	65
6.10	Fixing of copper/ G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For vertical run)	Metre	131
6.11	<b>DELETED</b>		
6.12	Providing and fixing testing joint, made of 20 mm X 3 mm thick G.I. strip, 125 mm long, with 4 nos. of G.I. bolts, nuts, chuck nuts and spring washers etc. complete as required.	Each	102
6.13	<b>DELETED</b>		
6.14	Providing and laying G.I. tape 32 mm X 6 mm from earth electrode directly in ground as required.	Metre	176
6.15	Laying copper/ G.I. tape 32 mm X 6 mm from earth electrode directly in ground as required.	Metre	63

## CHAPTER 7-MV CABLE LAYING

Item No.	Description	Unit	Rate
7.1	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.		
7.1.1	Upto 35 sq. mm	Metre	323
7.1.2	Above 35 sq. mm and upto 95 sq. mm	Metre	338
7.1.3	Above 95 sq. mm and upto 185 sq. mm	Metre	352
7.1.4	Above 185 sq. mm and upto 400 sq. mm	Metre	396
7.2	Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.		
7.2.1	Upto 35 sq. mm	Metre	222
7.2.2	Above 35 sq. mm and upto 95 sq. mm	Metre	236
7.2.3	Above 95 sq. mm and upto 185 sq. mm	Metre	251
7.2.4	Above 185 sq. mm and upto 400 sq. mm	Metre	294
7.3	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation and refilling the trench etc as required, but excluding sand cushioning and protective covering.		
7.3.1	Upto 35 sq. mm	Metre	167
7.3.2	Above 35 sq. mm and upto 95 sq. mm	Metre	181
7.3.3	Above 95 sq. mm and upto 185 sq. mm	Metre	196
7.3.4	Above 185 sq. mm and upto 400 sq. mm	Metre	239
7.4	Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground in the same trench in one tier horizontal formation including excavation and refilling the trench etc as required, but excluding sand cushioning and protective covering.		
7.4.1	Upto 35 sq. mm	Metre	105
7.4.2	Above 35 sq. mm and upto 95 sq. mm	Metre	120
7.4.3	Above 95 sq. mm and upto 185 sq. mm	Metre	134
7.4.4	Above 185 sq. mm and upto 400 sq. mm	Metre	178
7.5	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.		
7.5.1	Upto 35 sq. mm	Metre	31
7.5.2	Above 35 sq. mm and upto 95 sq. mm	Metre	47
7.5.3	Above 95 sq. mm and upto 185 sq. mm	Metre	64

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
7.5.4	Above 185 sq. mm and upto 400 sq. mm	Metre	112
7.6	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required.		
7.6.1	Upto 35 sq. mm	Metre	23
7.6.2	Above 35 sq. mm and upto 95 sq. mm	Metre	38
7.6.3	Above 95 sq. mm and upto 185 sq. mm	Metre	52
7.6.4	Above 185 sq. mm and upto 400 sq. mm	Metre	96
7.7	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.		
7.7.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	Metre	39
7.7.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	Metre	104
7.7.3	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	Metre	122
7.7.4	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	Metre	182
7.8	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required.		
7.8.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	Metre	33
7.8.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	Metre	74
7.8.3	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	Metre	93
7.8.4	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	Metre	150
7.9	Supplying and making cable route marker with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size ) of size 60 cm X 60 cm at the bottom and 50 cm X 50 cm at the top with a thickness of 10cm including inscription duly engraved as required.	each	530
7.10	Supplying and fixing cable route marker with 10 cm X 10 cm X 5 mm thick G.I. plate with inscription there on, bolted /welded to 35 mm X 35 mm X 6 mm angle iron, 60 cm long and fixing the same in ground as required.	each	383

## CHAPTER 8-HT CABLE LAYING

Item No.	Description	Unit	Rate
8.1	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.		
8.1.1	Upto 120 sq. mm	Metre	438
8.1.2	Above 120 sq. mm and upto 400 sq. mm	Metre	482
8.2	Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of following size direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.		
8.2.1	Upto 120 sq. mm	Metre	300
8.2.2	Above 120 sq. mm and upto 400 sq. mm	Metre	343
8.3	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.		
8.3.1	Upto 120 sq. mm	Metre	64
8.3.2	Above 120 sq. mm and upto 400 sq. mm	Metre	112
8.4	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of following size in the existing masonry open duct as required.		
8.4.1	Upto 120 sq. mm	Metre	52
8.4.2	Above 120 sq. mm and upto 400 sq. mm	Metre	96
8.5	Laying of one number XLPE power cable of 33 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.		
8.5.1	Upto 120 sq. mm	Metre	443
8.5.2	Above 120 sq. mm and upto 400 sq. mm	Metre	486
8.6	Laying of one number additional XLPE power cable of 33 KV grade of following size direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.		
8.6.1	Upto 120 sq. mm	Metre	304
8.6.2	Above 120 sq. mm and upto 400 sq. mm	Metre	348
8.7	Laying of one number XLPE power cable of 33 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.		
8.7.1	Upto 120 sq. mm	Metre	69
8.7.2	Above 120 sq. mm and upto 400 sq. mm	Metre	116

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
8.8	Laying of one number XLPE power cable of 33 KV grade of following size in the existing masonry open duct as required.		
8.8.1	Upto 120 sq. mm	Metre	57
8.8.2	Above 120 sq. mm and upto 400 sq. mm	Metre	100

## CHAPTER 9-MV CABLE JOINTING & END TERMINATION

Item No.	Description	Unit	Rate
9.1	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.		
9.1.1	2 X 6 sq. mm (19mm)	Each	198
9.1.2	2 X 10 sq. mm (19mm)	Each	198
9.1.3	2 X 16 sq. mm (22mm)	Each	212
9.1.4	2 X 25 sq. mm (22mm)	Each	212
9.1.5	2 X 35 sq. mm (25mm)	Each	254
9.1.6	2 X 50 sq. mm (28mm)	Each	282
9.1.7	3 X 10 sq. mm (22mm)	Each	211
9.1.8	3 X 16 sq. mm (25mm)	Each	222
9.1.9	3 X 25 sq. mm (25mm)	Each	222
9.1.10	3 X 35 sq. mm (28mm)	Each	283
9.1.11	3 X 50 sq. mm (32mm)	Each	302
9.1.12	3 X 70 sq. mm (35mm)	Each	339
9.1.13	3 X 95 sq. mm (38mm)	Each	432
9.1.14	3 X 120 sq. mm (45mm)	Each	480
9.1.15	3 X 150 sq. mm (50mm)	Each	545
9.1.16	3 X 185 sq. mm (57mm)	Each	691
9.1.17	3 X 225 sq. mm (62mm)	Each	779
9.1.18	3 X 240 sq. mm (62mm)	Each	795
9.1.19	3 X 300 sq. mm (70mm)	Each	916
9.1.20	3½ X 25 sq. mm (28mm)	Each	250
9.1.21	3½ X 35 sq. mm (32mm)	Each	300
9.1.22	3½ X 50 sq. mm (35mm)	Each	329
9.1.23	3½ X 70 sq. mm (38mm)	Each	368
9.1.24	3½ X 95 sq. mm (45mm)	Each	473
9.1.25	3½ X 120 sq. mm (45mm)	Each	489
9.1.26	3½ X 150 sq. mm (50mm)	Each	555
9.1.27	3½ X 185 sq. mm (57mm)	Each	702
9.1.28	3½ X 225 sq. mm (62mm)	Each	793
9.1.29	3½ X 240 sq. mm (62mm)	Each	809
9.1.30	3½ X 300 sq. mm (70mm)	Each	936
9.1.31	3½ X 400 sq. mm (82mm)	Each	1209
9.1.32	4 X 10 sq. mm (25mm)	Each	219
9.1.33	4 X 16 sq. mm (28mm)	Each	250
9.1.34	4 X 25 sq. mm (28mm)	Each	250
9.1.35	4 X 35 sq. mm (32mm)	Each	302
9.1.36	4 X 50 sq. mm (35mm)	Each	332

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
9.2	Supplying and making outdoor end termination with cast resin compound including aluminium lugs and other jointing materials for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.		
9.2.1	2 X 16 sq. mm	Each	1230
9.2.2	2 X 25 sq. mm	Each	1331
9.2.3	2 X 35 sq. mm	Each	1331
9.2.4	2 X 50 sq. mm	Each	1331
9.2.5	3 X 16 sq. mm	Each	1331
9.2.6	3 X 25 sq. mm	Each	1331
9.2.7	3 X 35 sq. mm	Each	1331
9.2.8	3 X 50 sq. mm	Each	1423
9.2.9	3 X 70 sq. mm	Each	1423
9.2.10	3 X 95 sq. mm	Each	1694
9.2.11	3 X 120 sq. mm	Each	1694
9.2.12	3 X 150 sq. mm	Each	1694
9.2.13	3 X 185 sq. mm	Each	2287
9.2.14	3 X 225 sq. mm	Each	2287
9.2.15	3 X 240 sq. mm	Each	2655
9.2.16	3 X 300 sq. mm	Each	2655
9.2.17	3½ X 25 sq. mm	Each	1331
9.2.18	3½ X 35 sq. mm	Each	1423
9.2.19	3½ X 50 sq. mm	Each	1423
9.2.20	3½ X 70 sq. mm	Each	1565
9.2.21	3½ X 95 sq. mm	Each	1694
9.2.22	3½ X 120 sq. mm	Each	1694
9.2.23	3½ X 150 sq. mm	Each	2287
9.2.24	3½ X 185 sq. mm	Each	1784
9.2.25	3½ X 225 sq. mm	Each	2655
9.2.26	3½ X 240 sq. mm	Each	2655
9.2.27	3½ X 300 sq. mm	Each	2929
9.2.28	3½ X 400 sq. mm	Each	3362
9.2.29	4 X 16 sq. mm	Each	1331
9.2.30	4 X 25 sq. mm	Each	1331
9.2.31	4 X 35 sq. mm	Each	1423
9.2.32	4 X 50 sq. mm	Each	1423
9.3	Supplying and making straight through joint with cast resin compound including ferrules and other jointing materials for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.		
9.3.1	2 X 16 sq. mm	Each	2593
9.3.2	2 X 25 sq. mm	Each	2593

Item No.	Description	Unit	Rate
9.3.3	2 X 35 sq. mm	Each	2593
9.3.4	2 X 50 sq. mm	Each	2960
9.3.5	3 X 16 sq. mm	Each	2960
9.3.6	3 X 25 sq. mm	Each	2593
9.3.7	3 X 35 sq. mm	Each	2593
9.3.8	3 X 50 sq. mm	Each	2960
9.3.9	3 X 70 sq. mm	Each	3462
9.3.10	3 X 95 sq. mm	Each	3674
9.3.11	3 X 120 sq. mm	Each	4126
9.3.12	3 X 150 sq. mm	Each	4126
9.3.13	3 X 185 sq. mm	Each	4911
9.3.14	3 X 225 sq. mm	Each	5563
9.3.15	3 X 240 sq. mm	Each	5563
9.3.16	3 X 300 sq. mm	Each	7140
9.3.17	3½ X 25 sq. mm	Each	2960
9.3.18	3½ X 35 sq. mm	Each	2960
9.3.19	3½ X 50 sq. mm	Each	3462
9.3.20	3½ X 70 sq. mm	Each	3492
9.3.21	3½ X 95 sq. mm	Each	4126
9.3.22	3½ X 120 sq. mm	Each	4911
9.3.23	3½ X 150 sq. mm	Each	4911
9.3.24	3½ X 185 sq. mm	Each	5563
9.3.25	3½ X 225 sq. mm	Each	5664
9.3.26	3½ X 240 sq. mm	Each	6867
9.3.27	3½ X 300 sq. mm	Each	8394
9.3.28	3½ X 400 sq. mm	Each	4879
9.3.29	4 X 16 sq. mm	Each	2593
9.3.30	4 X 25 sq. mm	Each	2960
9.3.31	4 X 35 sq. mm	Each	2960
9.3.32	4 X 50 sq. mm	Each	3462
9.4	Supplying and making straight through joint with heat shrinkable kit including ferrules and other jointing materials for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.		
9.4.1	2 X 16 sq. mm	Each	1760
9.4.2	2 X 25 sq. mm	Each	1760
9.4.3	2 X 35 sq. mm	Each	1760
9.4.4	2 X 50 sq. mm	Each	1988
9.4.5	3 X 16 sq. mm	Each	1760
9.4.6	3 X 25 sq. mm	Each	1760
9.4.7	3 X 35 sq. mm	Each	1988
9.4.8	3 X 50 sq. mm	Each	1988

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
9.4.9	3 X 70 sq. mm	Each	2298
9.4.10	3 X 95 sq. mm	Each	2478
9.4.11	3 X 120 sq. mm	Each	2759
9.4.12	3 X 150 sq. mm	Each	2759
9.4.13	3 X 185 sq. mm	Each	3245
9.4.14	3 X 225 sq. mm	Each	3649
9.4.15	3 X 240 sq. mm	Each	3711
9.4.16	3 X 300 sq. mm	Each	4729
9.4.17	3½ X 25 sq. mm	Each	1988
9.4.18	3½ X 35 sq. mm	Each	1988
9.4.19	3½ X 50 sq. mm	Each	2298
9.4.20	3½ X 70 sq. mm	Each	2349
9.4.21	3½ X 95 sq. mm	Each	2478
9.4.22	3½ X 120 sq. mm	Each	3245
9.4.23	3½ X 150 sq. mm	Each	3245
9.4.24	3½ X 185 sq. mm	Each	3683
9.4.25	3½ X 225 sq. mm	Each	3711
9.4.26	3½ X 240 sq. mm	Each	4456
9.4.27	3½ X 300 sq. mm	Each	5507
9.4.28	3½ X 400 sq. mm	Each	6603
9.4.29	4 X 16 sq. mm	Each	1760
9.4.30	4 X 25 sq. mm	Each	1988
9.4.31	4 X 35 sq. mm	Each	1988
9.4.32	4 X 50 sq. mm	Each	2298

## CHAPTER 10-HV CABLE JOINTING & END TERMINATION

Item No.	Description	Unit	Rate
10.1	Supplying and making indoor cable end jointing with cast resin compound, including lugs and other jointing materials, for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required :		
10.1.1	70 sq. mm	Each	1915
10.1.2	120 sq. mm	Each	2398
10.1.3	240 sq. mm	Each	3231
10.1.4	300 sq. mm	Each	3290
10.2	Supplying and making outdoor cable end jointing with cast resin compound, including lugs and other jointing materials, for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required :		
10.2.1	70 sq. mm	Each	4610
10.2.2	120 sq. mm	Each	5143
10.2.3	240 sq. mm	Each	5974
10.2.4	300 sq. mm	Each	5974
10.3	Supplying and making straight through cable jointing with cast resin compound, including ferrule and other jointing materials, for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required :		
10.3.1	70 sq. mm	Each	4271
10.3.2	120 sq. mm	Each	4882
10.3.3	240 sq. mm	Each	7296
10.3.4	300 sq. mm	Each	8348
10.4	supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required :		
10.4.1	70 sq. mm	Each	8465
10.4.2	120 sq. mm	Each	8947
10.4.3	240 sq. mm	Each	11681
10.4.4	300 sq. mm	Each	11681
10.5	Supplying and making outdoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required :		
10.5.1	70 sq. mm	Each	14519
10.5.2	120 sq. mm	Each	15001
10.5.3	240 sq. mm	Each	17166
10.5.4	300 sq. mm	Each	17166

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
10.6	Supplying and making straight through cable jointing with heat shrinkable jointing kit complete with all accessories including ferrules suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required :		
10.6.1	70 sq. mm	Each	16799
10.6.2	120 sq. mm	Each	18085
10.6.3	240 sq. mm	Each	19314
10.6.4	300 sq. mm	Each	19314
10.7	Supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required :		
10.7.1	70 sq. mm	Each	18869
10.7.2	120 sq. mm	Each	25983
10.7.3	240 sq. mm	Each	28214
10.8	Supplying and making outdoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required :		
10.8.1	70 sq. mm	Each	28195
10.8.2	120 sq. mm	Each	34182
10.8.3	240 sq. mm	Each	38628
10.9	Supplying and making straight through cable jointing with heat shrinkable jointing kit complete with all accessories including ferrules suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required :		
10.9.1	70 sq. mm	Each	44312
10.9.2	120 sq. mm	Each	56325
10.9.3	240 sq. mm	Each	78693

## CHAPTER 11-POLE ERECTION

Item No.	Description	Unit	Rate
11.1	Erection of RCC/ PCC pole of following length in brick ballast and ramming the foundation, finishing with 150mm thick cement concrete (1:3:6) layer on top with including excavation and refilling etc as required.		
11.1.1	Above 4.5 metre and upto 6.5 metre	Each	4758
11.1.2	Above 6.5 metre and upto 8.0 metre	Each	5280
11.1.3	Above 8.0 metre and upto 11.0 metre	Each	6324
11.1.4	Above 11.00 metre and upto 13.00 metre	Each	6943
11.2	Erection of RCC/ PCC pole strut in brick ballast and ramming the foundation including excavation and refilling and secured with holding clamps, bolts, nuts, etc. as required.	Each	8139
11.3	Erection of metallic pole of following length in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required.		
11.3.1	Above 4.5 metre and upto 6.5 metre	Each	4492
11.3.2	Above 6.5 metre and upto 8.0 metre	Each	5365
11.3.3	Above 8.0 metre and upto 10.0 metre	Each	6303
11.3.4	Above 10.00 metre and upto 12.00 metre	Each	7326
11.4	Erection of steel tubular or rail pole strut in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size ) foundation including excavation and refilling and secured with holding clamps, bolts, nuts, etc. as required.	Each	7611
11.5	Providing and making steel pole collar with cement concrete (1 cement : 3 coarse sand : 6 stone aggregate 20mm) of specified size and shape including form work, plastering if required, curing etc as required. (volume of pole/ pipe not to be deducted)	cum	6839
11.6	Supplying and embedding following dia G.I. pipe (medium class) in pole collar/ foundation (during casting) for cable entry including bending the pipe to the required shape complete as required.		
11.6.1	32 mm dia	metre	324
11.6.2	40 mm dia	metre	368

## CHAPTER 12-MV OVER HEAD LINE WORK

Item No.	Description	Unit	Rate
12.1	Supplying and erection of stay set complete (galvanised) with 19/20 mm dia X 1.8 metres long stay rod, anchor plate of size 45 cm X 45 cm X 7.5 mm, thimble, stay clamps, turn buckle ( 20 mm X 60 cm ), 7/ 4.00 mm dia G.I. stay wire and strain insulator etc in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size ) foundation including excavation and refilling etc. as required.	Each	5025
12.2	Supplying and erection of stay set complete (galvanised) with 19/20 mm dia X 1.8 metres long stay rod, anchor plate of size 45 cm X 45 cm X 7.5 mm, thimble, stay clamps, turn buckle ( 20 mm X 60 cm ), 7/ 3.15 mm dia G.I. stay wire and strain insulator etc in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size ) foundation including excavation and refilling etc. as required.	Each	4894
12.3	Supplying and erection of stay set complete (galvanised) with 19/20 mm dia X 1.8 metres long stay rod, anchor plate of size 45 cm X 45 cm X 7.5 mm, thimble, stay clamps, bow tightener, 7/ 4.00 mm dia G.I. stay wire and strain insulator etc in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size ) foundation including excavation and refilling etc. as required.	Each	4837
12.4	Supplying and erection of stay set complete (galvanised) with 19/20 mm dia X 1.8 metres long stay rod, anchor plate of size 45 cm X 45 cm X 7.5 mm, thimble, stay clamps, bow tightener, 7/ 3.15 mm dia G.I. stay wire and strain insulator etc in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size ) foundation including excavation and refilling etc. as required.	Each	4701
12.5	Supplying and erection of bow stay set complete (galvanised) with 19/20 mm dia X 1.8 metres long stay rod, anchor plate of size 45 cm X 45 cm X 7.5 mm, thimble, stay clamps, turn buckle ( 20 mm X 60 cm ), 7/ 4.00 mm dia G.I. stay wire and strain insulator etc in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size ) foundation including excavation and refilling and also with 0.6 m long brace of size 50 mm X 50 mm X 6 mm angle iron with 50 mm dia pulley fixed at one end of the brace as required.	Each	5380

Item No.	Description	Unit	Rate
12.6	Supplying and erection of bow stay set complete (galvanised) with 19/20 mm dia X 1.8 metres long stay rod, anchor plate of size 45 cm X 45 cm X 7.5 mm, thimble, stay clamps, turn buckle ( 20 mm X 60 cm ), 7/ 3.15 mm dia G.I. stay wire and strain insulator etc in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size ) foundation including excavation and refilling and also with 0.6 m long brace of size 50 mm X 50 mm X 6 mm angle iron with 50 mm dia pulley fixed at one end of the brace as required.	Each	5244
12.7	Supplying and erection of bow stay set complete (galvanised) with 19/20 mm dia X 1.8 metres long stay rod, anchor plate of size 45 cm X 45 cm X 7.5 mm, thimble, stay clamps, bow tightener), 7/ 4.00 mm dia G.I. stay wire and strain insulator etc in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size ) foundation including excavation and refilling and also with 0.6 m long brace of size 50 mm X 50 mm X 6 mm angle iron with 50 mm dia pulley fixed at one end of the brace as required.	Each	5192
12.8	Supplying and erection of bow stay set complete (galvanised) with 19/20 mm dia X 1.8 metres long stay rod, anchor plate of size 45 cm X 45 cm X 7.5 mm, thimble, stay clamps, bow tightener), 7/ 3.15mm dia G.I. stay wire and strain insulator etc in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size ) foundation including excavation and refilling and also with 0.6 m long brace of size 50 mm X 50 mm X 6 mm angle iron with 50 mm dia pulley fixed at one end of the brace as required.	Each	5056
12.9	Erection of stay set complete (galvanised) in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size ) foundation including excavation and refilling etc. as required.	Each	3763
12.10	Supplying of channel iron 75 mm X 40 mm X 6 mm (7.14 kg per metre) cross arm for 2 wire over head line complete with clamps, bolts, nuts and washer etc including drilling of holes for insulator pins etc (as per drawing) and painting with primer and finished paint as required .	Set	561
12.11	Supplying of channel iron 75 mm X 40 mm X 6 mm (7.14 kg per metre) cross arm for 4 wire over head line complete with clamps, bolts, nuts and washer etc including drilling of holes for insulator pins etc (as per drawing) and painting with primer and finished paint as required .	Set	906
12.12	Erection of angle iron/ channel iron cross arm on wood/ RCC/ PCC/ steel tubular/ rail pole etc. as required.	set	257

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
12.13	Supplying and erection of galvanised 'D' iron clamps complete with shackle insulator (75 mm X 90 mm), G. I. bolts, nuts and washers, coach screws etc. as required.	Set	245
12.14	Supplying and erection of galvanised 'D' iron clamps complete with shackle insulator (100 mm X 110 mm), G.I. bolts, nuts and washers, coach screws etc. as required.	Set	273
12.15	Erection of galvanised 'D' iron clamps and insulator on pole as required.	Set	64
12.16	Supplying and erection of 75 mm X 90 mm shackle insulator with G. I. Bolt, nuts and straps etc. as required .	Set	166
12.17	Supplying and erection of 100 mm X 110 mm shackle insulator with G. I. Bolt, nuts and straps etc. as required .	Set	193
12.18	Supplying and erection of 100 mm X 65 mm pin insulator complete with G. I. Spindle and nuts etc. as required .	Set	106
12.19	Supplying and erection of 100 mm X 80 mm pin insulator complete with G. I. Spindle and nuts etc. as required .	Set	108
12.20	Erection of LV/MV shackle/pin insulator etc. as required.	Set	70
12.21	Erection of ACSR conductor of 7/2.11 mm to 7/3.00 mm diameter including binding etc. as required.	Kg	170
12.22	Erection of ACSR conductor of 7/3.35 mm to 7/4.00 diameter and above including binding etc. as required.	Kg	223
12.23	Erection of all aluminium conductor of 7/1.96 mm to 7/3.10 mm diameter including binding etc. as required.	Kg	223
12.24	Erection of all aluminium conductor of 7/3.40 mm to 7/4.00 mm diameter and above including binding etc. as required.	Kg	171
12.25	Erection of G.I. Wire No. 8 SWG including binding etc. as required.	Kg	34
12.26	Erection of hexagonal type guard as required.	Each	184
12.27	Erection of ring type guard as required.	Each	61
12.28	Erection of cradle guard as required.	Each	122
12.29	Supplying and erection of 15 A aerial fuse complete as required.	Each	111
12.30	Supplying and erection of 30 A aerial fuse complete as required.	Each	120
12.31	Erection of aerial fuse as required.	Each	93
12.32	Supplying and fixing MV horn gap lightening arrester as required.	Each	245
12.33	Fixing of MV lightning arrester as required.	Each	140
12.34	Supplying and fixing of 32 mm dia X 2.00 metres long G.I. pipe (medium class) bracket for mounting of fluorescent / HPMV / HPSV street light fitting on pole including bending the pipe to the required shape, 2 nos 40 mm X 3 mm flat iron clamps with nuts, bolts and washer, painting the flat iron with primer and finish paint etc. as required.	Each	1012

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
12.35	Providing and fixing 50 mm dia X 3.2 metres G.I. pipe (including accessories) complete with 50 mm X 50 mm X 6 mm angle iron bracket on wall and 75 mm X 90 mm shackle insulator with straps for house service connection including painting the angle and flat iron with primer and finish paint etc. as required.	Each	2323
12.36	Providing and fixing 50 mm dia X 5.6 metres G.I. pipe (including accessories) complete with 50 mm X 50 mm X 6 mm angle iron cross arm and 40 mm X 3mm M.S. flat iron clamps bends for guard wire, 75 mm X 90 mm shackle insulator and straps, 7/3.15 mm G.I. wire stay set for house service connection including painting the angle and flat iron with primer and finish paint etc. as required.	Each	3420
12.37	Supplying and fixing of light class G.I. pipe of 50 mm dia. (nominal) 3 metres length along the pole for protection of under ground cable as required.	Each	1647
12.38	Supplying and fixing of light class G.I. pipe of 80 mm dia. (nominal) 3 metres length along the pole for protection of under ground cable as required.	Each	2304
12.39	Supplying and fixing of light class G.I. pipe of 100 mm dia. (nominal) 3 metres length along the pole for protection of under ground cable as required.	Each	3009
12.40	Dismantling of over head lines comprising of copper/ aluminium over head conductor, G.I. wire, cross arms, insulators etc. as required.	Kg	73
12.41	Dismantling of pole/ street light standard/ strut embedded in brick ballast foundation etc. as required.	Each	1671
12.42	Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required.	Each	2221

## CHAPTER 13-HV OVER HEAD LINE WORK

Item No.	Description	Unit	Rate
13.1	Supplying and erection of galvanised stay set for 11 KV over head lines complete with 19/ 20 mm dia X 1.8 metres long stay rod, anchor plate of size 45 cm X 45 cm X 7.5 mm thick, thimble, stay clamps, turn buckle ( 20 mm X 600 mm ), 7/ 4.00 mm dia G.I. stay wire and 11 KV strain insulator etc in cement concrete 1:3:6 ( 1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size ) foundation including excavation and refilling etc. as required.	Set	5060
13.2	Supplying of channel iron 75 mm X 40 mm X 6 mm (7.14 kg per metre) pole top bracket/ cross arm for single 11 KV over head line conductor complete with 50 mm X 6mm flat iron clamp, bolts, nuts and washers including drilling holes for insulator pins, bolts and nuts etc and painting with primer and finish paint as required.	Each	446
13.3	Supplying of 50 mm X 8 mm M.S. flat iron pole top bracket/ cross arm for single 11/22/33 KV over head line conductor complete with fixing clamps, bolts, nuts and washers drilling holes for insulator pins, bolts and nuts etc and painting with primer and finish paint as required.	Each	505
13.4	Supplying of channel iron 75 mm X 40 mm X 6 mm (7.14 kg per metre) cross arm for two 11 KV over head line conductors complete with 50 mm X 50 mm X 6 mm (angle iron bracket welded to the channel iron and complete with 50 mm X 6mm M.S. flat iron clamps, bolts and nuts including drilling holes for insulator pins, bolts, nuts and washers etc (as per drawing) and painting with primer and finish paint as required.	Each	1640
13.5	Supplying of channel iron 75 mm X 40 mm X 6 mm (7.14 kg per metre) V shape cross arm for two 11 KV over head line conductors complete with 50 mm X 6mm M.S. flat iron clamps, bolts and nuts including drilling holes for insulator pins, bolts, nuts and washers etc (as per drawing) and painting with primer and finish paint as required.	Each	1513
13.6	Erection of pole top/ straight two wire/ V shape two wire, angle iron/ channel iron, cross arm on steel tubular/ rail/ PCC pole for 11/22/33 KV as required.	Set	467

Item No.	Description	Unit	Rate
13.7	Supplying of two lengths of channel iron 75 mm X 40 mm X 6 mm (7.14 kg per metre) double pole cross arm for three wire 11KV over head line conductors complete with through bolts and nuts for clamping to the poles, 50 mm X 6 mm M.S. flats welded on one side to the channel iron and with bolts and nuts on the other side for tying the cross arms together, including drilling holes for insulator pins/ fittings, bolts, nuts and washers etc (as per drawing) and painting with primer and finish paint as required.	Set	3654
13.8	Supplying and erection of a set of cross bracing FRLSame work for 11 KV over head line double pole structure having four members fabricated out of 50 mm X 50 mm X 6 mm angle iron to form a rectangle of minimum size 1400 mm width X 2500 mm height, complete with 50 mm X 6mm M.S. flat iron clamps, bolts and nuts including drilling holes for insulator pins, bolts and nuts etc (as per drawing) and painting with primer and finish paint as required.	Set	5677
13.9	Erection of double pole 3 wire cross arm for 11KV/ 22KV/ 33 KV over head lines as required.	Each	1071
13.10	Supplying and erection of 11 KV pin insulator complete with large steel head G.I. pin, nuts, washers etc. as required.	Set	281
13.11	Supplying and erection of 11 KV disc insulator for 11 KV over head lines with galvanised insulator fittings, ball and socket type and complete with galvanised strain clamps, bolts, nuts, washers etc. as required.	Set	931
13.12	Erection of disc/ pin insulator for 11 KV over head lines as required.	Set	140
13.13	Supplying and erection of three piece nonlinear resistor type lightning arrester suitable for 3 wire, 11 KV overhead lines with rated voltage 9 KV (rms) with a nominal discharge current rating of 5 KA and complete with galvanised clamping arrangement, G.I. bolts, nuts, washers etc. as required.	Set	2548
13.14	Supplying and erection of galvanised stay set for 33 KV over head lines complete with 19/ 20 mm dia X 1.8 metres long stay rod, anchor plate of size 45 cm X 45 cm X 7.5 mm thick, thimble, stay clamps, turn buckle ( 20 mm X 600 mm ), 7/ 4.00 mm dia G.I. stay wire and 33 KV strain insulator etc in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size ) foundation including excavation and refilling etc. as required.	Set	5071
13.15	Supplying of channel iron 75 mm X 40 mm X 6 mm (7.14 kg per metre) pole top bracket/ cross arm for single 33 KV over head line conductor complete with 50 mm X 6mm flat iron clamps, bolts and nuts including drilling holes for insulator pins, bolts, nuts, washers etc and painting with primer and finish paint as required.	Each	462

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
13.16	Supplying of channel iron 75 mm X 40 mm X 6 mm (7.14 kg per metre) cross arm for two 33 KV over head line conductors complete with 50 mm X 50 mm X 6 mm angle iron bracket welded to the channel iron and complete with 50 mm X 6mm M.S. flat iron clamps, bolts and nuts including drilling holes for insulator pins, bolts, nuts, washers etc and painting with primer and finish paint as required.	Each	1951
13.17	Supplying of channel iron 75 mm X 40 mm X 6 mm (7.14 kg per metre) V shape cross arm for two 33 KV over head line conductors complete with 50 mm X 6mm M.S. flat iron clamps, bolts and nuts including drilling holes for insulator pins, bolts and nuts etc and painting with primer and finish paint as required.	Each	1657
13.18	Supplying of channel iron 100 mm X 50 mm X 6 mm (9.56 kg per metre), pole top bracket/ cross arm for single 33 KV over head line conductor complete with 50 mm X 6 mm M.S. flat iron clamps, bolts and nuts including drilling holes for insulator pins, bolts and nuts etc and painting with primer and finish paint as required.	Each	563
13.19	Supplying of channel iron 100 mm X 50 mm X 6 mm (9.56 kg per metre) cross arm for two wire 33 KV over head line conductors complete with 50 mm X 50 mm X 6 mm angle iron bracket welded to the channel iron and complete with 50 mm X 6mm M.S. flat iron clamps, bolts and nuts including drilling holes for insulator pins/ fittings, bolts, nuts, washers etc and painting with primer and finish paint as required .	Each	2403
13.20	Supplying of channel iron 100 mm X 50 mm X 6 mm (9.56 kg per metre) V shape cross arm for two 33 KV over head line conductors complete with 50 mm X 6mm M.S. flat iron clamps, bolts and nuts including drilling holes for insulator pins, bolts, nuts, washers etc and painting with primer and finish paint as required .	Each	1975
13.21	Supplying of two lengths of channel iron 100 mm X 50 mm X 6 mm (9.56 kg per metre) double pole cross arm for three wire 33 KV over head line conductors complete with through bolts and nuts for clamping to the poles, 50 mm X 6 mm M.S. flats welded on one side to the channel iron and with bolts and nuts on the other side for tying the cross arms together, including drilling holes for insulator pins/ fittings, bolts, nuts, washers etc and painting with primer and finish paint as required .	Set	5137

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
13.22	Supplying and erection of a set of cross bracing FRLSame work for 33 KV over head line double pole structure having four members fabricated out of 65 mm X 65 mm X 6 mm angle iron to form a rectangle of minimum size 2400 mm width X 2800 mm height complete with 50 mm X 6mm M.S. flat iron clamps, bolts and nuts including drilling holes for insulator pins, bolts, nuts, washers etc and painting with primer and finish paint as required .	Set	7626
13.23	Supplying and erection of 33 KV pin insulator complete with large steel head G.I. pin, nuts, washers etc. as required.	Set	777
13.24	Supplying and erection of a set of three 11 KV disc insulator for 33 KV over head lines with galvanised insulator fittings, ball and socket type and complete with galvanised strain clamps, bolts, nuts, washers etc. as required.	Set	2700
13.25	Supplying and erection of single piece nonlinear resistor type lightning arrestor suitable for 3 wire, 33 KV overhead lines with rated voltage 30 KV (rms) with a nominal discharge current rating of 10 KA (station class) and complete with galvanised clamping arrangement, G.I. bolts, nuts, washers etc. as required.	Set	17174

## CHAPTER 14-MISC.CIVIL ITEMS

Item No.	Description	Unit	Rate
14.1	Excavation for foundation in soft soil 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, within a lead of 50 metres.	cum	330
14.2	Excavation for cable trenches of depth upto 1.2 m in soft soil including getting out the excavated soil and disposal of surplus excavated soil as directed within a lead of 50 metres.	cum	333
14.3	Filling available excavated earth (excluding rock) in trenches, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 metres.	cum	212
14.4	Excavation for cable trenches in soft soil, depth upto 1.2 m including dressing of sides lift upto 1.5 m, including getting out the excavated soil, refilling with sand and or good soil after laying of cable/ pipe etc in layers of 20 cm, ramming, watering and disposal of surplus excavated soil as directed, within a lead of 50 metres.	cum	546
14.5	Deduct for not consolidation by ramming and watering while re-filling with sand and or good soil in cable/ pipe laying.	cum	121
14.6	Excavation of the cable trenches in hard rock not exceeding 1.5 metres in width, and lift upto 1.5 metres, including getting out the excavated soil and disposal of excavated soil as directed within a lead of 50 metres.	cum	1013
14.7	Providing and laying in position cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) in foundation of pump, DG set etc including form work etc as required.	cum	7549
14.8	Providing and laying in position cement concrete 1:3:6 (1 cement : 2 coarse sand : 6 graded stone aggregate 20 mm nominal size) in foundation of pump, DG set etc including form work etc as required.	cum	6839
14.9	Providing and laying in position cement concrete 1:3:6 (1 cement : 2 coarse sand : 6 graded stone aggregate 40 mm nominal size) in foundation of pump, DG set etc including form work etc as required.	cum	6614
14.10	Providing and laying in position reinforced cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) in foundation of pump, DG set etc including form work etc as required (excluding reinforcement).	cum	8029

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
14.11	Providing brick work (in width 225 mm or more) with F.P.S. bricks of class designation 7.5 in cement mortar 1:4 (1 cement : 4 coarse sand) at all levels.	cum	6362
14.12	Providing 15mm thick cement plaster of mix 1:4 (1 cement : 4 fine sand) at all levels.	sq m	306
14.13	Providing, laying and fixing following dia G.I. pipe (medium class) in ground complete with G.I. fittings including trenching (75 cm deep)and re-filling etc as required		
14.13.1	50 mm dia	metre	536
14.13.2	80 mm dia	metre	803
14.13.3	100 mm dia	metre	1113
14.13.4	150 mm dia	metre	1687
14.14	Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refilling etc as required.		
14.14.1	100 mm dia	metre	525
14.14.2	150 mm dia	metre	598
14.14.3	250 mm dia	metre	701
14.14.4	300 mm dia	metre	854
14.15	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc. in the existing trench, complete as required.		
14.15.1	63 mm dia (OD-63 mm & ID-51 mm nominal)	Metre	109
14.15.2	90 mm dia (OD-90 mm & ID-76 mm nominal)	Metre	149
14.15.3	120 mm dia (OD-120 mm & ID-103 mm nominal)	Metre	240
14.15.4	160 mm dia (OD-160 mm & ID-135 mm nominal)	Metre	358
14.15.5	200 mm dia (OD-200 mm & ID-175 mm nominal)	Metre	498
14.16	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc.direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc., complete as required.		
14.16.1	63 mm dia (OD-63 mm & ID-51 mm nominal)	Metre	209
14.16.2	90 mm dia (OD-90 mm & ID-76 mm nominal)	Metre	249
14.16.3	120 mm dia (OD-120 mm & ID-103 mm nominal)	Metre	341
14.16.4	160 mm dia (OD-160 mm & ID-135 mm nominal)	Metre	458
14.16.5	200 mm dia (OD-200 mm & ID-175 mm nominal)	Metre	598

Item No.	Description	Unit	Rate
<b><u>ADDITIONAL CIVIL ITEMS INTRODUCED</u></b>			
<b>Note:-</b>	<b>There are few items which are contained in Civil DSR which are required to be used in exclusive electrical works. Field units should use these items for such purposes.</b>		
i)	PROVIDING AND FIXING M.S. FAN CLAMP OF 16 mm dia M.S. BAR, BENT TO SHAPE WITH HOOKED ENDS IN R.C.C. SLABS OR BEAMS DURING LAYING, INCLUDING PAINTING THE EXPOSED PORTION OF LOOP, ALL AS PER STANDARD DESIGN COMPLETE. (DSR Civil-2014 item no. 10.17)	Rate to be taken from Civil DSR	
ii)	PROVIDING AND FIXING CIRCULAR/ HEXAGONAL G.I. BOX FOR CEILING FAN CLAMP, OF INTERNAL DIA 140 MM, 73 MM HEIGHT, TOP LID OF 1.5 MM THICK G.I. SHEET WITH ITS TOP SURFACE HACKED FOR PROPER BONDING, TOP LID SHALL BE SCREWED INTO THE G.I. BOX BY MEANS OF 3.3 MM DIA ROUND HEADED SCREWS, ONE LOCK AT THE CORNERS. CLAMP SHALL BE MADE OF 12 MM DIA M.S. BAR BENT TO SHAPE AS PER STANDARD DRAWING. (DSR Civil-2014 item no. 10.18)	Rate to be taken from Civil DSR	
iii)	MAKING HOLE FOR INSTALLATION OF EXHAUST FAN OF SIZE UPTO 450MM SWEEP BY DEMOLISHING BRICK WORK MANUALLY/BY MACHNICAL MEANS INCLUDING DISPOSAL OF MALBA WITHIN 50 METRES LEAD AND MAKING GOOD THE WALL BY PLASTERING ETC. AS REQUIRED. (DSR Civil-2014 item no. 15.7.4 and 13.1.2)	Rate to be taken from Civil DSR	
iv)	PAINTING WITH ONE OR MORE COAT OF SYNTHETIC ENAMEL PAINT OF APPROVED BRAND AND MANUFACTURER OF REQUIRED COLOUR TO GIVE AN EVEN SHADE. (DSR Civil-2014 item no. 14.54)	Rate to be taken from Civil DSR	
v)	PAINTING WITH ONE OR MORE COAT OF ALUMINIUM PAINT OF APPROVED BRAND AND MANUFACTURER TO GIVE AN EVEN SHADE. (DSR Civil-2014 item no. 14.55)	Rate to be taken from Civil DSR	
vi)	Painting with one or more coat of black anticorrosive bituminous paint of approved brand & manufacturer to give an even shade (DSR civil 2014- Item no. 14.56)	Rate to be taken from Civil DSR	
vii)	Re-lettering with black Japan paint of approved brand and manufacture. (DSR Civil-2014 item no. 14.60)	Rate to be taken from Civil DSR	

## CHAPTER 15-LIGHTING CONTROLS

Item No.	Description	Unit	Rate
15.1	Supplying, installation, testing and commissioning of Passive Infrared (PIR) technology based occupancy sensor having high performance, non regulating programmable type, suitable for connected load upto 10Amp, for mounting height up to 2.8 mtr and for 5 m diameter coverage area along with necessary fixing arrangements i/c programming at site etc. complete as required.	Each	4538
15.2	Supplying, installation, testing and commissioning of Passive Infrared (PIR) technology based occupancy sensor with day light dimming (lighting level shall be regulated as per availability of natural day light in an area along with occupancy detection.) having high performance, regulating programmable type, suitable for connected load upto 10Amp, for mounting height up to 2.8 mtr and for 5 m diameter coverage area along with necessary fixing arrangements i/c programming at site etc. complete as required.	Each	6325
15.3	Supplying, installation, testing and commissioning of Microwave technology based occupancy sensor having high performance, non regulating programmable type, suitable for connected load upto 10Amp, for mounting height up to 2.6 mtr and for 5m X 20m coverage area along with necessary fixing arrangements i/c programming at site etc. complete as required.	Each	8615
15.4	Supplying, installation, testing and commissioning of Astronomical time switch of following configuration to be mounted in feeder pillars / Lighting DBs for automatic switching On & OFF of street lights at sun set & sun rise or twilight (Auto ON, Auto OFF, Auto modes) with manual override facility with 12/24 hour display format with suitable battery and indication for relay status i/c programming at site complete as required.		
15.4.1	1 output per phase and suitable for single phase supply	Each	3657
15.4.2	2 output per phase and suitable for single phase supply	Each	7535
15.4.3	3 output (1 output per phase) and suitable for three phase supply	Each	8831

## CHAPTER 16-HVAC(ONLY PLUMBING,DUCTING & AHUs)

Item No.	Description	Unit	Rate
<b>PLUMBING</b>			
<b>INSULATED CHILLED WATER PIPING (resin bonded fiber glass glass INSULATION)</b>			
16.1	<p>Supplying, laying/ fixing, testing and commissioning of following nominal sizes of chilled water piping inside the building (with necessary clamps, vibration isolators and fittings but excluding valves, strainers, gauges etc.) duly insulated with 80 kg/cum density resin bonded fiber glass <b>or 144 Kg/ cu m density mineral wool (non Combustible)</b> pipe section insulation covered with a layer of 120 gm/sqm polythene sheet (vapour barrier) and finally applying 0.63mm aluminium sheet cladding complete with type3 , grade 1 roofing feltstrip(as per IS:1322 as amended up to date ) at joints and repairing of damage to building etc. as per specifications and as required.</p> <p><b>Note:</b> The Pipes of sizes 150mm &amp; below shall be M.S. 'C' class as per IS : 1239 and pipes size above 150mm shall be welded black steel pipe heavy class as per IS: 3589, from minimum 6.35mm thick M.S. Sheet for pipes upto 350 mm dia. and from minimum 7mm thick MS sheet for pipes of 400 mm dia and above.</p>		
16.1.1	400mm dia.(75 mm thick insulation)	Metre	14234
16.1.2	350 mm dia.(75 mm thick insulation)	Metre	9617
16.1.3	300 mm dia.(75 mm thick insulation)	Metre	8240
16.1.4	250mm dia.(75 mm thick insulation)	Metre	6920
16.1.5	200mm dia.(75 mm thick insulation)	Metre	5837
16.1.6	150mm dia. (50mm thick insulation)	Metre	3706
16.1.7	125mm dia.(50mm thick insulation)	Metre	3168
16.1.8	100mm dia. (50mm thick insulation)	Metre	2545
16.1.9	80mm dia. (50mm thick insulation)	Metre	2151
16.1.10	65mm dia.(50mm thick insulation)	Metre	1837
16.1.11	50mm dia.(50mm thick insulation)	Metre	1546
16.1.12	40mm dia. (50mm thick insulation)	Metre	1349
16.1.13	32 mm dia (50mm thick insulation)	Metre	1185
16.1.14	25 mm dia (50mm thick insulation)	Metre	1075

Item No.	Description	Unit	Rate
<b>INSULATED CHILLED WATER PIPING (Nitrile rubber insulation)</b>			
16.2	Supplying, laying/ fixing, testing and commissioning of following nominal sizes of chilled water piping inside the building (with necessary clamps, vibration isolators and fittings but excluding valves, strainers, gauges etc.) duly insulated with following closed cell elastometric nitrile rubber of <b>minimum 45 Kg / cu m density, thermal conductivity 0.037 W/MK or better</b> at 20 deg mean temperature class 'O' insulation applied by suitable adhesive complete including repairing of damage to building etc. as per specifications and as required complete in all respect. <b>Note:-</b> The Pipes of sizes 150mm & below shall be M.S. 'C' class as per IS : 1239 and pipes size above 150mm shall be welded black steel pipe heavy class as per IS: 3589, from minimum 6.35mm thick M.S. Sheet for pipes upto 350 mm dia. and from minimum 7mm thick MS sheet for pipes of 400 mm dia and above.		
16.2.1	400mm dia.(32 mm thick insulation)	Metre	11743
16.2.2	350mm dia.(32 mm thick insulation)	Metre	7332
16.2.3	300mm dia. (32 mm thick insulation)	Metre	6276
16.2.4	250mm dia.(32 mm thick insulation)	Metre	5388
16.2.5	200mm dia.(32 mm thick insulation)	Metre	4367
16.2.6	150mm dia. (32 mm thick insulation)	Metre	2915
16.2.7	125mm dia.(32 mm thick insulation)	Metre	2590
16.2.8	100mm dia. (32 mm thick insulation)	Metre	2061
16.2.9	80mm dia.(32 mm thick insulation)	Metre	1554
16.2.10	65mm dia(32 mm thick insulation)	Metre	1247
16.2.11	50mm dia(32 mm thick insulation)	Metre	1111
16.2.12	40mm dia. (32 mm thick insulation)	Metre	919
16.2.13	32 mm dia(19 mm thick insulation)	Metre	751
16.2.14	25 mm dia(19 mm thick insulation)	Metre	625
<b>INSULATED CHILLED WATER PIPING (expanded polystyrene insulation)</b>			
16.3	Supplying, laying/ fixing, testing and commissioning of following nominal sizes of chilled water piping plumbing inside the building (with necessary clamps, vibration isolators and fittings but excluding valves, strainers, gauges etc.) duly insulated with fire retardant quality expanded polystyrene moulded pipe section of density 20 kg/cu.m after a thick coat of cold setting adhesive (CPRX compound) wrapping with 500g polythene faced hessain and finally applying 0.63mm aluminium sheet cladding complete with type3 , grade 1 roofing feltstrip(as per IS:1322 as amended up to date ) at joints repairing of damage to building etc. as per specifications and as required complete in all respect.		

Item No.	Description	Unit	Rate
	<b>Note:-</b> The Pipes of sizes 150mm & below shall be M.S. 'C' class as per IS : 1239 and pipes size above 150mm shall be welded black steel pipe heavy class as per IS: 3589, from minimum 6.35mm thick M.S. Sheet for pipes upto 350 mm dia. and from minimum 7mm thick MS sheet for pipes of 400 mm dia and above.		
16.3.1	400mm dia.(75 mm thick insulation)	Metre	13020
16.3.2	350 mm dia.(75 mm thick insulation)	Metre	8614
16.3.3	300 mm dia.(75 mm thick insulation)	Metre	7475
16.3.4	250mm dia.(75 mm thick insulation)	Metre	6248
16.3.5	200mm dia (75 mm thick insulation)	Metre	5301
16.3.6	150mm dia. (75 mm thick insulation)	Metre	3452
16.3.7	125mm dia.(50mm thick insulation)	Metre	2904
16.3.8	100mm dia.(50mm thick insulation)	Metre	2517
16.3.9	80mm dia. (50mm thick insulation)	Metre	2010
16.3.10	65mm dia.(50mm thick insulation)	Metre	1717
16.3.11	50mm dia.(50mm thick insulation)	Metre	1455
16.3.12	40mm dia. (50mm thick insulation)	Metre	1273
16.3.13	32 mm dia (50mm thick insulation)	Metre	1117
16.3.14	25 mm dia (50mm thick insulation)	Metre	1022
	<b>INSULATION ON EXISTING PIPE</b>		
16.4	Supplying, laying/ fixing, testing and commissioning of following thickness resin bonded fiber glass pipe section insulation having density 80 kg/cum <b>or mineral wool (non combustible) having density of 144 Kg/ cu m</b> duly covered with a layer of 120 gm/sqm polythene sheet (vapour barrier) on existing pipe and finally applying 0.63mm aluminium sheet cladding complete with type3 , grade 1 roofing feltstrip(as per IS:1322 as amended up to date ) at joints etc. as per specifications and as required.		
16.4.1	75mm	sq m	2790
16.4.2	65 MM	sq m	2248
16.4.3	50mm	sq m	2455
16.4.4	40mm	sq m	2252
16.4.5	25mm	sq m	1802
16.5	Supplying, laying, fixing, testing and commissioning of following thickness closed cell elastometric nitrile rubber of class 'O' applied by suitable adhesive, as per specifications and as required complete in all respect.		
16.5.1	32mm	sq m	1034
16.5.2	19mm	sq m	610

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
16.6	Supplying, laying/ fixing of following thickness insulation with fire retardant quality expanded polystyrene moulded pipe section of density 20 kg/cu.m after a thick coat of cold setting adhesive (CPRX compound) wrapping with 500g polythene faced hessain and finally applying 0.63mm aluminium sheet cladding complete with type3 , grade 1 roofing feltstrip(as per IS:1322 as amended up to date ) at joints repairing etc. as per specifications and as required complete in all respect..		
16.6.1	75mm	sq m	1233
16.6.2	50mm	sq m	1112
<b>INSULATED VALVES</b>			
16.7	Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the chilled water plumbing duly insulated to the same specifications as the connected piping and adequately supported as per specifications.		
16.7.1	BUTTERFLY VALVE (MANUAL) with C I body SS Disc, Nitrile Rubber Seal & O- Ring PN 16 pressure rating for chilled water/hot eater circulation as specified		
16.7.1.1	200 mm dia	Each	12838
16.7.1.2	150mm dia.	Each	6556
16.7.1.3	125mm dia.	Each	5861
16.7.1.4	100mm dia.	Each	5169
16.7.1.5	80mm dia.	Each	3691
16.7.1.6	65mm dia.	Each	3436
16.7.1.7	50mm dia.	Each	3167
16.7.1.8	40mm dia.	Each	2925
16.7.2	BALANCING VALVE WITH BUILT IN MEASURING FACILITY with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & PN 16 pressure rating for chilled / hot water circulation as specified.		
16.7.2.1	200 mm dia	Each	52635
16.7.2.2	150mm dia.	Each	26600
16.7.2.3	125mm dia.	Each	19996
16.7.2.4	100mm dia.	Each	15223
16.7.2.5	80mm dia.	Each	10360
16.7.2.6	65 mm dia	Each	9058
16.7.2.7	50mm dia.	Each	7379
16.7.2.8	40 mm dia	Each	4522
16.7.3	NON - RETURN VALVE with duel plate of C I body SS plates vulcanized NBR seal flanged end & PN 16 pressure rating for chilled / hot water circulation including insulation as specified.		
16.7.3.1	200 mm dia	Each	13504
16.7.3.2	150mm dia.	Each	8296

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
16.7.3.3	125mm dia.	Each	7122
16.7.3.4	100 mm dia	Each	5494
16.7.3.5	80mm dia.	Each	3818
16.7.3.6	65 mm dia	Each	3507
16.7.4	Y - STRAINER of Ductile CI Body flanged ends with stainless steel strainer for chilled / hot water circulation including insulation as specified.		
16.7.4.1	200mm dia	Each	28872
16.7.4.2	150mm dia.	Each	14758
16.7.4.3	125mm dia.	Each	13912
16.7.4.4	100 mm dia	Each	9821
16.7.4.5	80 mm dia	Each	7123
16.7.4.6	65mm dia.	Each	6207
16.7.4.7	50mm dia.	Each	5033
16.7.4.8	40mm dia.	Each	3565
16.8	Providing and fixing in position the industrial type pressure gauges with gun metal / brass valves complete as required	Each	1094
16.9	Providing & fixing in position the mercury in glass industrial type thermometers.	Each	957
<b>CONDENSER WATER PIPE</b>			
16.10	Supplying, fixing, testing and commissioning of condenser water pipes of following sizes of MS 'C' class along with necessary clamps, vibration isolators and fittings such as bends,tees etc.but excluding valves, strainers, gauges etc. adequately supported on rigid supports duly painted/buried in ground excavation and refilling etc. as per specification and as required complete in all respect. Note:-The Pipes size 150mm & below shall be M.S. 'C' class as per IS : 1239 and pipes size above 150mm shall be welded black steel pipe heavy class as per IS: 3589, from minimum 6.35mm thick M.S. Sheet for pipes upto 350 mm dia. And from minimum 7mm thick MS sheet for pipes of 400 mm dia and above.		
16.10.1	300mm dia.	Metre	5270
16.10.2	250 mm dia	Metre	4401
16.10.3	200mm dia.	Metre	3705
16.10.4	150mm dia.	Metre	2385
16.10.5	125mm dia.	Metre	2087
16.10.6	100mm dia.	Metre	1784
<b>VALVES WITHOUT INSULATION</b>			
16.11	Supplying, fixing, testing and commissioning of following valves, gauges and strainers for condenser water circulation as per specifications.		

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
16.11.1	BUTTERFLY VALVE (MANUAL) with C I body SS disc nitrile sheet & O - ring & PN 16 pressure rating as specified.		
16.11.1.1	200mm dia.	Each	11531
16.11.1.2	150mm dia.	Each	5442
16.11.1.3	125mm dia.	Each	4797
16.11.1.4	100mm dia.	Each	4120
16.11.1.5	80mm dia.	Each	3015
16.11.1.6	65mm dia.	Each	2837
16.11.1.7	50mm dia.	Each	2544
16.11.1.8	40mm dia.	Each	2385
16.11.2	NON - RETURN VALVE with dual plate of C I body SS plates vulcanized NBR seal flanged end & PN 16 pressure rating as specified.		
16.11.2.1	200mm dia.	Each	12181
16.11.2.2	150mm dia.	Each	7171
16.11.2.3	125mm dia.	Each	6147
16.11.2.4	100mm dia.	Each	4581
16.11.2.5	80mm dia.	Each	3139
16.11.2.6	65mm dia.	Each	2878
16.11.3	Supplying, fixing, testing and commissioning of following sizes Motorized Butter fly Valve with CI Body, SS Disc,O - ring and minimum PN-16 pressure rating , conforming to BS 5155, IS 13095, with IP-55 actuator, capable of accepting upto 10V DC , and upto 20mA electric signal and providing similar transduced feedback output to control system as required.		
16.11.3.1	350mm dia.	Each	104962
16.11.3.2	300mm dia.	Each	94059
16.11.3.3	250mm dia.	Each	67718
16.11.3.4	200mm dia.	Each	51795
16.11.3.5	150mm dia.	Each	40154
16.11.3.6	125mm dia.	Each	39809
16.11.3.7	100mm dia.	Each	39070
16.11.3.8	80mm dia.	Each	16705
16.11.3.9	65mm dia.	Each	16544
16.11.3.10	50mm dia.	Each	16206
16.11.4	Supply, Installation, Testing and Commissioning of following sizes electronic, self-balancing, pressure independent type dynamic balancing valve with integrated 2 way modulating control valve in a single body. The actuator shall be capable of accepting upto 10V DC and upto 20mA electric signal and shall provide similar transduced feedback output to control system. Maximum close off pressure shall not be less than 6 Bar for upto 50 mm valves and 7 Bar for 65 mm & above. Valves should have pressure rating of 25 Bar minimum.		

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
16.11.4.1	150mm dia.	Each	151383
16.11.4.2	125mm dia.	Each	137826
16.11.4.3	100mm dia.	Each	108454
16.11.4.4	80mm dia.	Each	64151
16.11.4.5	65mm dia.	Each	50405
16.11.4.6	50mm dia.	Each	32649
16.11.4.7	40mm dia.	Each	29785
16.11.4.8	32mm dia.	Each	16038
16.11.4.9	25mm dia.	Each	15084
16.11.4.10	20mm dia.	Each	10997
<b>DUCTING, GRILLS, DIFFUSER AND INSULATION</b>			
16.12.1	Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.		
16.12.1.1	Thickness 0.63 mm sheet	sq m	983
16.12.1.2	Thickness 0.80 mm sheet	sq m	1154
16.12.1.3	Thickness 1.00 mm sheet	sq m	1273
16.12.1.4	Thickness 1.25 mm sheet	sq m	1677
16.12.2	Supply, installation, balancing and commissioning of fabricated at site GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.		
16.12.2.1	Thickness 0.63 mm sheet	sq m	942
16.12.2.2	Thickness 0.80 mm sheet	sq m	1104
16.12.2.3	Thickness 1.00 mm sheet	sq m	1458
16.12.2.4	Thickness 1.25 mm sheet	sq m	1615
16.13	Supply, installation, testing and commissioning of GI volume control duct damper complete with neoprene rubber gaskets, nuts, bolts, screws linkages, flanges etc, as per specifications.	sq m	6500
16.14	Supply, installation, testing and commissioning of Motorized (ON-OFF Type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minimum 1.5 sqmm) for integration within AHU room		
16.14.1	Damper	sq m	7951
16.14.2	Actuator	Each	7960
16.15	Supplying & fixing of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers as per specifications.	sq m	8480

Item No.	Description	Unit	Rate
16.16	Supplying & fixing of powder coated extruded aluminium Return Air Grills with louvers but without volume control dampers complete as required.	sq m	5507
16.17	Supplying, fixing testing commissioning of supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removable core.	sq m	11363
16.18	Supplying, fixing testing commissioning of Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring & removable core.	sq m	7559
16.19	Supply, installation, testing & commissioning of thermal insulated flexible duct of following sizes duly supported at regular interval as per site requirement etc. complete as required as per specifications.		
16.19.1	200 mm dia.	Metre	538
16.20	Supplying, Fixing,testing and commissioning of fire dampers in supply air duct/main branch and return air path as and where required of required sizes i/c control wiring,the damper shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be inbuilt mechanism and not externally mounted. The damper shall also be closed in the event of fire signal complete as required and as per specifications.		
16.20.1	Fire damper	sq m	9883
16.20.2	Actuator	Each	9212
16.21	Supply and fixing of acoustic lining of supply air duct and plenum with 25 mm thick resin bonded glass wool having density of 32 kg/m <sup>3</sup> , with 25 mm X 25 mm GI section of 1.25 mm thick, at 600 mm centre to centre covered with Reinforced Plastic tissue paper and 0.5 mm thick perforated aluminum sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, CPRX compound etc. complete as required and as per specifications.	sq m	647
16.22	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 and as per specifications.	sq m	1139
16.23	Supplying and fixing of following thickness duly laminated aluminum foil of mat finish closed cell Nitrile rubber (Class "O") insulation on existing duct after applying <b>suitable adhesive for Nitrile rubber</b> . The joints shall be sealed with 50 mm wide and 3 mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required.		

Item No.	Description	Unit	Rate
16.23.1	19mm	sq m	697
16.23.2	25mm	sq m	896
16.24	Supplying and fixing 50 mm thick aluminium foil faced resin bonded fibre glass insulation (on duct ) of density 24 kg/cu.m <b>or mineral wool insulation(non combustible) of density 44 kg/cu m</b> after applying two coats of cold setting adhesive (CPRX compound) sealing all joints with self adhesive aluminium tape & covering with 0.63mmx19mm GI wire mesh netting butting all joints and laced with GI wire complete as per specifications and as required. (for indoor applications).	sq m	432
16.25	Supplying and fixing 50mm thick aluminium foil faced resin bonded fibre glass insulation (on duct) of density 24 kg/cu.m <b>or mineral wool insulation(non combustible) of density 44 kg/cum</b> after applying two coats of cold setting adhesive (CPRX compound) sealing all joints with self adhesive aluminium tape & covering with 0.63mmx19mm GI wire mesh netting & butting all joints and laced with GI wire complete and finally covered with one layer of tar felt stuck with hot bitumen as per specifications and as required. (for outdoor applications)	sq m	510
	<b>AIR HANDLING UNITS</b>		
16.26	Supply, Installation, Testing and commissioning of factory built floor mounted chilled water double skin type horizontal/vertical air handling units made of 25mm thick panels consisting of pre plasticized G.I. casing of thickness 0.8mm outside layer and 0.8 mm inside layer with polyurethane foam (PUF) insulation factory injected between them by injection moulding machine, complete with blower section with blower suitable for static pressure as required, minimum 2 bend GSS/PVC eliminators, cooling coil section with aluminium finned copper tubes (tubes thickness not less than 0.5mm) cooling coil of 6 row deep, filter section with 50mm thick metal viscous/ washable synthetic type air prefilters, belt drive package with TEFC drive motor <b>of efficiency class IE3</b> suitable for 415 ± 10% volts, 50Hz, 3 Phase AC supply <b>suitably designed for variable frequency drive applications</b> , drain connections, stainless steel (18G) drain pan with PUF insulation, 150 mm dia. dial type pressure gauges (2 nos.)and industrial type thermometers (2 nos.) at the inlet and outlet of coil, auto purge valve wherever required, necessary vibration isolation arrangement etc. complete as per specification and of following capacities.		
16.26.1	4300 CMH	Set	98906
16.26.2	5100 CMH	Set	116360
16.26.3	6800 CMH	Set	130757
16.26.4	8500 CMH	Set	161985

Item No.	Description	Unit	Rate
16.26.5	10200 CMH	Set	186811
16.26.6	11900 CMH	Set	212311
16.26.7	13600 CMH	Set	228038
16.26.8	15300 CMH	Set	258480
16.26.9	17000 CMH	Set	273533
16.26.10	18700 CMH	Set	302290
16.26.11	20400 CMH	Set	324757
16.26.12	23800 CMH	Set	356111
16.26.13	28900 CMH	Set	376079
16.26.14	34000 CMH	Set	416824
16.26.15	39100 CMH	Set	477673
16.27	Supply, Installation, Testing and commissioning of factory built floor mounted chilled water double skin type horizontal/vertical air handling units made of 25mm thick panels consisting of pre plasticized G.I. casing of thickness 0.8mm outside layer and 0.8 mm inside layer with polyurethane foam (PUF) insulation factory injected between them by injection moulding machine, complete with blower section with blower suitable for static pressure as required, minimum 2 bend GSS/PVC eliminators, cooling coil section with aluminium finned copper tubes (tubes thickness not less than 0.5mm) cooling coil of 4 row deep, filter section with 50mm thick metal viscous/ washable synthetic type air prefilters, belt drive package with TEFC drive motor <b>of efficiency class IE3</b> suitable for $415 \pm 10\%$ volts, 50Hz, 3 Phase AC supply <b>suitably designed for variable frequency drive applications</b> , drain connections, stainless steel (18G) drain pan with PUF insulation, 150 mm dia. dial type pressure gauges (2 nos.) and industrial type thermometers (2 nos.) at the inlet and outlet of coil, auto purge valve wherever required, necessary vibration isolation arrangement etc. complete as per specification and of following capacities.		
16.27.1	4300 CMH*	Set	87157
16.27.2	5100 CMH*	Set	102301
16.27.3	6800 CMH*	Set	114149
16.27.4	8500 CMH*	Set	141244
16.27.5	10200 CMH*	Set	165243
16.27.6	11900 CMH*	Set	184977
16.27.7	13600 CMH*	Set	199954
16.27.8	15300 CMH*	Set	227251
16.27.9	17000 CMH*	Set	239159
16.27.10	18700 CMH*	Set	261677
16.27.11	20400 CMH*	Set	283755
16.27.12	23800 CMH*	Set	269798
16.27.13	28900 CMH*	Set	344316

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
16.27.14	34000 CMH*	Set	381575
16.27.15	39100 CMH*	Set	437196

**NOTE : THE ITEM OF 4 ROW COOLING COIL AHUs SHOULD BE USED ONLY FOR REPLACEMENT OF EXISTING AHUs WHERE HOT WATER GENERATOR AND HOT WATER LINES ARE NOT FEASIBLE TO BE PROVIDED BECAUSE OF THE SITE CONSTRAINTS.**

## CHAPTER-17- FIRE DETECTION AND ALARM SYSTEM

Item No.	Description	Unit	Rate
17.1	<b>FIRE DETECTION AND ALARM SYSTEM (CONVENTIONAL)</b>		
17.1.1	Supplying, installation, testing & commissioning of heat detector operating at 54°C/57°C with rate of rise cum fixed temperature (dual thermistor) type with mounting base complete with all connection etc. as required.	Each	1058.00
17.1.2	Supplying, installation, testing & commissioning of smoke detector with builtin LED and mounting base complete with all connections etc. as required.	Each	1141.00
17.1.3	Supplying, installation, testing & commissioning of manual call boxes of MS construction in surface/recess with stainless steel chain & hammer assembly complete with glass and push button etc. as required.	Each	462.00
17.1.4	Supplying, installation, testing & commissioning of manual call box of ABS type in surface/recess with stainless steel chain & hammer assembly complete with glass and push button etc. as required.	Each	395.00
17.1.5	Supplying, installation, testing & commissioning response indicator on surface/recess MS box having two LEDs metallic cover complete with all connections etc. as required.	Each	184.00
17.1.6	Supplying, installation, testing & commissioning fire alarm sounder with facility to make announcement, mounted in M.S. box (16 SWG) with hinged cover plate & suitable for operation with amplifier i/c line matching transformer etc. complete as required.	Each	545.00
17.1.7	Supplying, installation, testing & commissioning fire alarm sounder with facility to make announcement, mounted in A.B.S. box with hinged cover plate & suitable for operation with amplifier i/c line matching transformer etc. complete as required.	Each	478.00
17.1.8	Supplying, installation, testing & commissioning talk back slave station in surface/recess suitable for operation on simplex mode complete with P.T.T. knob & speaker/microphone enclosed in a M.S.(16 SWG)/ ABS box with break glass in front etc. complete as required.	Each	892.00
17.1.9	Supplying, installation, testing & commissioning sector panel suitable for following zones, complete with visual indications for short circuit fault, open circuit fault, fire condition and all other standard facilities as per IS:2189 with mimic diagram for all area/zone covered, complete with all connections, interconnections as required.		
17.1.9.1	4 Zone	Each	8468.00
17.1.9.2	6 Zone	Each	11780.00

Item No.	Description	Unit	Rate
17.1.9.3	10 Zone	Each	15730.00
17.1.10	<p>Supplying, installation, testing &amp; commissioning of main control and indicating panel made out of 16 SWG MS sheet to accommodate the following items duly powder coated in approved colour with louvers for ventilation, locking arrangement, audio and visual indication for fire alarm and public address system, monitoring system including connections, interconnections etc complete as required.</p> <p>10 Zone panel for fire alarm system</p> <p>250 Watt amplifier racks suitable for operation on 230V AC/24V DC supply conforming to IEC-268-3 complete with all accessories as required - 2 Nos.(one to act as standby)</p> <p>Talk back master station with LED PTT (press to talk) push button for operation on 230V AC/24 V DC supply conforming to IEC-268 for simplex mode of operation/communication suitable for 20 Nos.talk back unit -1 set.</p> <p>Annoucement control desk suitable for selection of different zones selectively and ON ALL CALL switch with visual indication etc. complete as required -1 set.</p> <p>Amplifier change over switch for inter changing amplifier -1 No.</p> <p>Monitor panel for loudspeaker complete with output selector, ON/OFF switch, fuse, visual indications etc. complete as required- 1 No.</p> <p>Gooseneck microphone with stand and ON/OFF switch- 1 No.</p> <p>Main ON/OFF switch, fuse indication lamps, DC and AC voltmeters &amp; ammeters, terminal blocks etc. complete as required -1 set.</p> <p>Battery charger trickle cum boost to take complete load of fire alarm &amp; PA system complete with all accessories including providing &amp; fixing of 2 nos.12 volt, 60 AH each sealed maintenance free batteries -1 set.</p>	Each	69084.00
17.1.11	<p>Supplying, installation, testing &amp; commissioning of main control and indicating panel made out of 16 SWG MS sheet to accommodate the following items duly powder coated in approved colour with louvers for ventilation, locking arrangement, audio and visual indication for fire alarm and public address system, monitoring system including connections, interconnections etc complete as required.</p> <p>6 zone panel for fire alarm system</p> <p>100 watt amplifier racks suitable for operation on 230V AC/24V DC supply conforming to IEC-268-3 complete with all</p>		

accessories as required- 2 Nos.(one to act as standby)

Item No.	Description	Unit	Rate
	<p>Talk back master station with LED PTT (press to talk) push button for operation on 230V AC/24 V DC supply conforming to IEC-268 for simplex mode of operation/communication suitable for 20 Nos.talk back unit -1 set.</p> <p>Announcement control desk suitable for selection of different zones selectively and ON ALL CALL switch with visual indication etc., complete as required- 1 set.</p> <p>Amplifier change over switch for inter changing amplifier- 1 No.</p> <p>Monitor panel for loudspeaker complete output selector ON/OFF switch, fuse visual indications etc. complete as required- 1 No.</p> <p>Gooseneck microphone with stand and ON/OFF switch -1 No.</p> <p>Mains ON/OFF switch, fuse indication lamps, DC and AC voltmeters &amp; ammeters terminal blocks etc. complete as required -1 set.</p> <p>Battery charger trickle cum boost to take complete load of fire alarm &amp; PA system complete with all accessories including providing &amp; fixing of 2 nos. 12 volt,30 AH each sealed maintenance free batteries -1 set.</p>	Each	47732.00
17.2	<b>INTELLIGENT FIRE ALARM SYSTEM</b>		
17.2.1	<p>Supplying, installation, testing and commissioning of micro processor based intelligent addressable main fire alarm panel, central processing unit with the following loop modules and capable of supporting not less than 240 devices (including detectors) and minimum 120 detectors per loop and loop length up to 2 km, network communication card, minimum 320 character graphics/ LCD display with touch screen or other keypad and minimum 4000 events history log in the non volatile memory (EPROM), power supply unit (230 ± 5% V, 50 hz), 48 hrs back-up with 24 volt sealed maintenance free batteries with automatic charger. The panel shall have facility to connect printer to printout log and facility to have seamless integration with analog/digital voice evacuation system (which is part of the schedule of work under SH: PA System) and shall be complete with all accessories . The panel shall be compatible for IBMS system with open protocol BACnet/ Modbus over IP complete as per specifications.</p>		
17.2.1.1	Ten Loop Panel.	Each	454896.00
17.2.1.2	Two Loop Panel.	Each	238907.00

17.2.2	Supplying, installation, testing & commissioning of central graphical fire alarm management system to centrally monitor and operate the fire alarm system complete as required.	Each	200148.00
<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
17.2.3	Supplying, installation, testing & commissioning of repeater panel with 320 character/ Touch screen LCD display with inbuilt reset, acknowledge and silence switches complete as required.	Each	108572.00
17.2.4	Supplying, installation, testing & commissioning of intelligent analog addressable photothermal detector complete with mounting base complete as required.	Each	2846.00
17.2.5	Supplying, installation, testing & commissioning of response indicator on surface/recessed MS Box having two LED, metallic cover complete with all connections etc as required.	Each	263.00
17.2.6	Supplying, installation, testing & commissioning of intelligent addressable programmable sounder complete as required.	Each	2638.00
17.2.7	Supplying, installation, testing & commissioning of fault isolator complete with base as required.	Each	3257.00
17.2.8	Supplying, installation, testing & commissioning of intelligent aspiration detector for area coverage of minimum 5000 sq. ft. complete as required.	Each	295007.00
17.2.9	Supplying, installation, testing & commissioning of intelligent addressable thermal detector with rate of rise cum fixed temperature thermistor complete with base as required.	Each	2713.00
17.2.10	Supplying, installation, testing & commissioning of addressable fire control module complete as required.	Each	2990.00
17.2.11	Supplying, installation, testing & commissioning of addressable phone control module complete as required.	Each	3255.00
17.2.12	Supplying, installation, testing & commissioning of addressable beam detector with short circuit isolator (inbuilt or separate) complete with emitter and receiver including connections with remote test features etc complete as required.	Each	74778.00
17.2.13	Supplying, installation, testing & commissioning of intelligent addressable duct detector including suitable Photo detector complete with base as required.	Each	7801.00
17.2.14	Supplying, installation, testing & commissioning of addressable manual call point complete as required.	Each	3859.00
17.2.15	Supplying, installation, testing & commissioning of addressable horn cum strobe complete as required.	Each	3494.00

17.2.16	Supplying, installation, testing & commissioning of addressable strobe complete as required.	Each	3354.00
17.2.17	Supplying, installation, testing & commissioning of fire fighter telephone handset complete as required.	Each	5727.00
<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
17.2.18	Supplying, installation, testing & commissioning of intelligent interface unit BACnet/ Modbus protocol i.e. supplying communication links between building management system and fire alarm control panel complete as required.	Each	187732.00
17.2.19	Supplying, installation, testing & commissioning of fire fighter phone jack complete as required.	Each	1587.00
17.3	<b>PUBLIC ADDRESS SYSTEM</b>		
17.3.1	Supplying, installation, testing & commissioning of 6 zone, voice alarm controller with USB, MP3 player (including 6 zone button paging station) with seamless integration facility with main fire alarm panel for voice evacuation complete as required.	Each	126399.00
17.3.2	Supplying, installation, testing & commissioning of 1.5/3/6W ceiling speaker complete as required.	Each	952.00
17.3.3	Supplying, installation, testing & commissioning of 1.5/3/6W metal box ceiling/wall speakers complete as required.	Each	1780.00
17.3.4	Supplying, installation, testing & commissioning of ceiling/wall mounted loud speaker, 3/1.5 Watt in ABS enclosure complete as required.	Each	2416.00
17.3.5	Supplying, installation, testing & commissioning of 6 inches dia, 2 watts, 70/100 volts ceiling speaker complete as required.	Each	1826.00
17.3.6	Supplying, installation, testing & commissioning of digital audio amplifier 50 Watt, 25V rms operating at 240 volt AC supply complete as required.	Each	96767.00
17.3.7	Supplying, installation, testing & commissioning of digital audio amplifier 75 Watt, 25V rms operating at 240 Volt AC Supply complete as required.	Each	145780.00
17.3.8	Supplying, installation, testing & commissioning of exit point directional sound speaker with voice and integral audio amplifier with selectable sound pulse patterns complete as required.	Each	10132.00
17.3.9	Supplying, installation, testing & commissioning of Voice command keypad 6 zone, with microphone assembly complete as required.	Each	81743.00
17.4	<b>ASPIRATION DETECTOR ACCESSORIES</b>		

17.4.1	Supply, installation, testing and commissioning of 25 mm Outer dia CPVC PIPE with end caps including making air sampling opening of appropriate dia on appropriate interval and all accessories as required,(rate for area protected in sqm).	per sq m	50.00
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Item No.	Description	Unit	Rate
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17.5	<b>CABLING &amp; WIRING</b>		
17.5.1	Supplying & laying of 2x1.5 sqmm fire survival armoured cable, 600/1000V rated with annealed copper conductor having glass mica fire barrier tape covered by an extruded layer of Cross Linkable Ethylene Propylene Rubber (EPR) insulation and LSZH inner bedding, steel wire armouring & LSZH outer sheath complete as required.	Metre	328.00
17.5.2	Supplying & laying of 2x1.5 sqmm fire alarm armoured cable, 600/1000V rated with annealed copper conductor having XLPE insulation, steel wire armouring & FRLS outer sheath complete as required.	Metre	141.00
17.5.3	Supplying and drawing of cable Fire Retardant PVC insulated copper conductor cable in the existing surface / recessed steel conduit of following pairs, cores and size including connections and interconnections etc. as required.		
17.5.3.1	speaker cable Single pair, 2-core, 1.5 sqmm	Metre	51.00
17.5.3.2	speaker cable Two pair, 2-core, 1.5 sqmm	Metre	85.00
17.5.3.3	speaker cable Three pair, 2-core, 1.5 sqmm	Metre	120.00
17.5.3.4	speaker cable Four pair, 2-core, 1.5 sqmm	Metre	155.00
17.5.4	Supplying and fixing 25 mm dia MS flexible pipe with PVC coating along with all ancillaries and accessories like coupler etc. as required.	Metre	50.00

#### **CONDUITING AND WIRING**

Please refer to CPWD Specification for internal electrical works

**APPENDIX-I**  
**BASIC RATES OF LABOUR & HIRE CHARGES**

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1001	Wireman	day	673
1002	Cable jointer	day	673
1003	Lineman	day	673
1004	Fitter, Grade 1	day	673
1005	Fitter, Grade 2	day	612
1006	Painter	day	612
1007	Khallasi	day	553
1008	Carpenter, Grade 1	day	673
1009	Blacksmith, Grade 2	day	612
1010	Mason, Grade 2	day	612
1011	Stone Chiseler	day	612
1012	Beldar/ coolie	day	553
1013	Bhisti	day	553
1014	Excavator	day	553
1015	Stone Breaker	day	612
1016	Mate	day	553
1017	Engineer	day	1500
1018	Highly Skilled	day	732
1019	Electrician	day	673
1020	Electronic Technician	day	673
1021	Technician	day	673
1022	Software Engineer	day	2100
1081	Hire charges for 5 ton truck	day	4000
1082	Hire charges for compressor and spray gun	day	350
1083	Drilling of 46 Nos 12 mm dia holes on G.I. pipe	L.S.	300
1084	Drilling holes	each	6
1085	Solder jointing	each	12
1086	Welding charges	mm	0.5
1087	Welder	day	673

**Note:-**

1. Labour rates are exclusive of contractor's profit and overheads and are inclusive of days for weekly day of rest.
2. Hire charges:- These basic charges include cost of services of operating staff and supply of lubricating oil and diesel also etc.

**APPENDIX - II**  
**BASIC RATE OF MATERIALS**

**Note:- These rates are exclusive of contractor's profit, overheads and carriage and any taxes etc.**

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1101	1.5 sq. mm ISI marked, FRLS PVC insulated, single core copper conductor cable	Metre	9.00
1102	2.5 sq. mm ISI marked, FRLS PVC insulated, single core copper conductor cable	Metre	14.00
1103	4.0 sq. mm ISI marked, FRLS PVC insulated, single core copper conductor cable	Metre	22.00
1104	6.0 sq. mm ISI marked, FRLS PVC insulated, single core copper conductor cable	Metre	32.00
1105	10 sq. mm ISI marked, FRLS PVC insulated, single core copper conductor cable	Metre	57.00
1106	16 sq. mm ISI marked, FRLS PVC insulated, single core copper conductor cable	Metre	89.00
1108	16/0.20 mm (0.5 sqmm) twin core FRLS PVC sheathed, flat flexible copper cable	Metre	9.00
1109	16/0.20 mm (0.5 sqmm) twin circular, FRLS PVC sheathed, workshop flexible copper cable	Metre	8.86
1110	32/0.20 mm (1.0 sqmm) twin circular, FRLS PVC sheathed, workshop flexible copper cable	Metre	7.00
1111	1 pair, 0.5 mm dia annealed copper conductor, FRLS PVC insulated, unarmoured, telephone cable	Metre	2.00
1112	2 pair, 0.5 mm dia annealed copper conductor, FRLS PVC insulated, unarmoured, telephone cable	Metre	3.00
1113	4 pair, 0.5 mm dia annealed copper conductor, FRLS PVC insulated, unarmoured, telephone cable	Metre	9.00
1114	Co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid protected with PVC sheath	Metre	12.32
<b>CONDUIT (STEEL &amp; PVC ) AND ACCESSORIES</b>			
1201	20 mm dia. ISI marked, steel conduit	Metre	43.00
1202	25 mm dia. ISI marked, steel conduit	Metre	55.00
1203	32 mm dia. ISI marked, steel conduit	Metre	80.00
1204	40 mm dia. ISI marked, steel conduit	Metre	135.00
1205	50 mm dia. ISI marked, steel conduit	Metre	185.00
1206	20 mm inspection/ solid bends	each	7.20
1207	25 mm inspection/ solid bends	each	12.70
1208	32 mm inspection/ solid bends	each	23.90

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1209	40 mm inspection/ solid bends	each	32.40
1210	50 mm inspection/ solid bends	each	47.40
1211	20 mm sockets	each	5.00
1212	25 mm sockets	each	5.00
1213	32 mm sockets	each	6.00
1214	40 mm sockets	each	9.00
1215	50 mm sockets	each	13.15
1216	20 mm junction box, one way	each	15.00
1217	20 mm junction box, two way	each	15.00
1218	20 mm iron staples/ saddles/ screws	each	1.50
1219	25 mm iron staples/ saddles/ screws	each	2.10
1220	32 mm iron staples/ saddles/ screws	each	3.15
1221	40 mm iron staples/ saddles/ screws	each	4.10
1222	50 mm iron staples/ saddles/ screws	each	5.40
1224	20 mm dia. ISI marked, PVC conduit	Metre	10.44
1225	25 mm dia. ISI marked, PVC conduit	Metre	14.00
1226	32 mm dia. ISI marked, PVC conduit	Metre	12.79
1227	40 mm dia. ISI marked, PVC conduit	Metre	32.12
1228	50 mm dia. ISI marked, PVC conduit	Metre	48.55
1229	20 mm PVC bends	each	4.71
1230	25 mm PVC bends	each	6.40
1231	32 mm PVC bends	each	9.00
1232	40 mm PVC bends	each	14.00
1233	50 mm PVC bends	each	24.00
1234	20 mm PVC couplers	each	3.00
1235	25 mm PVC couplers	each	4.00
1236	32 mm PVC couplers	each	6.00
1237	40 mm PVC couplers	each	7.00
1238	50 mm PVC couplers	each	9.00
1239	20 mm PVC junction box, one way	each	10.00
1240	20 mm PVC junction box, two way	each	11.00
1241	75 mm X 75 mm X 50 mm PVC box	each	18.00
<b>Metal Boxes</b>			
1300	Modular GI box for 2 module	each	22.50
1301	Modular GI box for 3 module	each	30.50
1302	Modular GI box for 4 module	each	37.50

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1303	Modular GI box for 6 module	each	50.50
1304	Modular GI box for 8 module	each	65.50
1305	Modular GI box for 12 module	each	80.50
1306	75 mm X 75 mm X 60 mm deep metal box	each	19.00
1307	100 mm X 100 mm X 60 mm deep metal box	each	29.00
1308	150 mm X 75 mm X 60 mm deep metal box	each	30.90
1309	150 mm X 150 mm X 60 mm deep metal box	each	44.35
1310	180 mm X 100 mm X 60 mm deep metal box	each	37.30
1311	200 mm X 125 mm X 60 mm deep metal box	each	46.50
1312	200 mm X 150 mm X 60 mm deep metal box	each	58.00
1313	200 mm X 250 mm X 60 mm deep metal box	each	75.00
1314	200 mm X 300 mm X 60 mm deep metal box	each	104.00
1315	250 mm X 300 mm X 60 mm deep metal box	each	116.00
1316	200 mm X 150 mm X 75 mm deep metal box	each	63.50
1317	200 mm X 250 mm X 75 mm deep metal box	each	87.50
1318	200 mm X 150 mm X 100 mm deep metal box	each	77.00
1319	200 mm X 250 mm X 100 mm deep metal box	each	98.80
1320	200 mm X 300 mm X 100 mm deep metal box	each	116.00
1321	250 mm X 300 mm X 100 mm deep metal box	each	145.30
<b>WIRING SWITCHES AND ACCESSORIES</b>			
1322	3 mm thick phenolic laminated sheet	sqcm	0.10
1401	Ceiling rose, 3 pin, 5 amps ISI marked	each	12.00
1402	S.P. 5/6 amps, one way modular switch, ISI marked	each	28.00
1403	S.P. 5/6 amps, two way modular switch, ISI marked	each	56.50
1404	S.P. 15/16 amps, one way modular switch, ISI marked	each	63.00
1405	3 pin 5/6 amps modular socket outlet, ISI marked	each	59.50
1406	6 pin 15/16 amps modular socket outlet, ISI marked	each	95.50
1407	Modular bell push, ISI marked	each	58.50
1408	Stepped type Modular Fan regulator (2 module)	each	209.50
1409	Telephone Socket outlet modular type	each	53.50
1410	T.V. Socket outlet modular type	each	53.50
1411	Modular blanking plate	each	12.00
1412	6 pin 25 amp modular type socket ISI Marked	Each	106.50
1420	Modular base & cover plate for 1 module	each	37.50
1421	Modular base & cover plate for 2 module	each	37.50
1422	Modular base & cover plate for 3 module	each	48.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1423	Modular base & cover plate for 4 module	each	55.50
1424	Modular base & cover plate for 6 module	each	77.50
1425	Modular base & cover plate for 8 module	each	99.50
1426	Modular base & cover plate for 12 module	each	123.00
1431	S.P. 5/6 amps, one way switch, piano type ISI marked	each	10.00
1432	S.P. 5/6 amps, two way switch, piano type ISI marked	each	16.80
1433	S.P. 15/16 amps, one way switch, piano type ISI marked	each	46.80
1434	3 pin 5/6 amps socket outlet, piano type ISI marked	each	19.20
1435	6 pin 15/16 & 5/6 amps socket outlet, piano type ISI marked	each	60.00
1436	Bell push, piano type	each	12.00
1437	Telephone Socket outlet piano type	each	20.00
1438	T.V. Socket outlet piano type	each	21.00
1441	Brass pendant holder	each	34.00
1442	Brass batten/ angle holder	each	38.00
1443	Brass bracket holder 16 mm	each	47.00
1444	Call bell/ buzzer, single phase	each	44.00
1445	PIR Occupancy sensor	each	3183.00
1446	PIR Occupancy sensor With Day light dimming	each	4532.00
1447	Microwave occupancy Sensor	each	6261.00
1448	Astronomical time switch suitable for 1 output per phase and suitable for single phase supply	each	2518.00
1449	Astronomical time switch suitable for 2 output per phase and suitable for single phase supply	each	5445.00
1450	Astronomical time switch suitable for 3 output (1 output per phase) and suitable for three phase supply	each	6424.00
1451	UTP 4 Pair CAT 6 LAN Cable	Metre	24.00
1452	PVC Batten/ Angle Holder	each	18.00
<b>RISING MAINS BUS TRUNKING AND OVER HEAD BUS-BAR</b>			
1501	200 amps. TPN, rising mains in metal enclosure with aluminium busbar including fixing clamp	Metre	4213.64
1502	300 amps. TPN, rising mains in metal enclosure with aluminium busbar including fixing clamp	Metre	4405.17
1503	400 amps. TPN, rising mains in metal enclosure with aluminium busbar including fixing clamp	Metre	5458.57
1504	600 amps. TPN, rising mains in metal enclosure with aluminium busbar including fixing clamp	Metre	6128.92

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1505	800 amps. TPN, rising mains in metal enclosure with aluminium busbar including fixing clamp	Metre	7421.75
1511	16 amps. TPN, 2 way, distribution tap off box with ISI marked HRC fuses for rising mains	each	7524.35
1512	16 amps. TPN, 4 way, distribution tap off box with ISI marked HRC fuses for rising mains	each	16964.00
1513	16 amps. TPN, 6 way, distribution tap off box with ISI marked HRC fuses for rising mains	each	24078.00
1514	16 amps. TPN, 8 way, distribution tap off box with ISI marked HRC fuses for rising mains	each	33381.00
1515	32 amps. TPN, 2 way, distribution tap off box with ISI marked HRC fuses for rising mains	each	9303.00
1516	32 amps. TPN, 4 way, distribution tap off box with ISI marked HRC fuses for rising mains	each	19153.00
1517	32 amps. TPN, 6 way, distribution tap off box with ISI marked HRC fuses for rising mains	each	25172.00
1518	32 amps. TPN, 8 way, distribution tap off box with ISI marked HRC fuses for rising mains	each	35022.00
1519	63 amps. TPN, 2 way, distribution tap off box with ISI marked HRC fuses for rising mains	each	10616.00
1520	63 amps. TPN, 4 way, distribution tap off box with ISI marked HRC fuses for rising mains	each	18058.00
1521	63 amps. TPN, 6 way, distribution tap off box with ISI marked HRC fuses for rising mains	each	19481.00
1522	63 amps. TPN, 8 way, distribution tap off box with ISI marked HRC fuses for rising mains	each	33600.00
1526	200 amps. TPN, adaptor box with cable end box, with TPN disconnecter FSU, ISI marked HRC fuses and brass compression gland for rising mains	each	15103.00
1527	300 amps. TPN, adaptor box with cable end box, with TPN disconnecter FSU, ISI marked HRC fuses and brass compression gland for rising mains	each	16417.00
1528	400 amps. TPN, adaptor box with cable end box, with TPN disconnecter FSU, ISI marked HRC fuses and brass compression gland for rising mains	each	18058.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1529	600 amps. TPN, adaptor box with cable end box, with TPN disconnecter FSU, ISI marked HRC fuses and brass compression gland for rising mains	each	19481.00
1530	800 amps. TPN, adaptor box with cable end box, with TPN disconnecter FSU, ISI marked HRC fuses and brass compression gland for rising mains	each	21670.00
1531	800 amps. TPN, bus trunking with aluminium busbars	Metre	8482.00
1532	1000 amps. TPN, bus trunking with aluminium busbars	Metre	10069.00
1533	1250 amps. TPN, bus trunking with aluminium busbars	Metre	12915.00
1534	1400 amps. TPN, bus trunking with aluminium busbars	Metre	16198.00
1535	1600 amps. TPN, bus trunking with aluminium busbars	Metre	16198.00
1536	200 amps. TPN, overhead busbars with aluminium busbars	Metre	4816.00
1537	400 amps. TPN, overhead busbars with aluminium busbars	Metre	6238.00
1538	32 amps. TPN, plug-in-box with TPN disconnecter FSU and ISI marked HRC fuses for overhead busbars	each	5441.00
1539	63 amps. TPN, plug-in-box with TPN disconnecter FSU and ISI marked HRC fuses for overhead busbars	each	6098.00
1540	100 amps. TPN, plug-in-box with TPN disconnecter FSU and ISI marked HRC fuses for overhead busbars	each	7036.00
1541	16 amps. TPN, one way, tap off box with TPN disconnecter FSU and ISI marked HRC fuses for rising mains	each	6019.00
1542	32 amps. TPN, one way, tap off box with TPN disconnecter FSU and ISI marked HRC fuses for rising mains	each	6348.00
1543	63 amps. TPN, one way, tap off box with TPN disconnecter FSU and ISI marked HRC fuses for rising mains	each	7114.00
1544	100 amps. TPN, one way, tap off box with TPN disconnecter FSU and ISI marked HRC fuses for rising mains	each	8208.00
1545	200 amps. TPN, one way, tap off box with TPN disconnecter FSU and ISI marked HRC fuses for rising mains	each	12915.00
1546	315 amps. TPN, one way, tap off box with TPN disconnecter FSU and ISI marked HRC fuses for rising mains	each	13681.00
1547	400 amps. TPN, one way, tap off box with TPN disconnecter FSU and ISI marked HRC fuses for rising mains	each	14228.00
1551	200 amps. TPN, compact type rising mains with aluminium busbar including all accessories	Metre	5289.00
1552	315 amps. TPN, compact type rising mains with aluminium busbar including all accessories	Metre	5727.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1553	400 amps. TPN, compact type rising mains with aluminium busbar including all accessories	Metre	6365.00
1554	500 amps. TPN, compact type rising mains with aluminium busbar including all accessories	Metre	7327.00
1555	630 amps. TPN, compact type rising mains with aluminium busbar including all accessories	Metre	8763.00
1556	800 amps. TPN, compact type rising mains with aluminium busbar including all accessories	Metre	12162.00
1557	1000 amps. TPN, compact type rising mains with aluminium busbar including all accessories	Metre	14124.00
1558	1250 amps. TPN, compact type rising mains with aluminium busbar including all accessories	Metre	16842.00
1559	200 amps. TPN, compact type bus trunking with aluminium busbar including elbows and other all accessories	Metre	5376.00
1560	315 amps. TPN, compact type bus trunking with aluminium busbar including elbows and other all accessories	Metre	5741.00
1561	400 amps. TPN, compact type bus trunking with aluminium busbar including elbows and other all accessories	Metre	6379.00
1562	500 amps. TPN, compact type bus trunking with aluminium busbar including elbows and other all accessories	Metre	7381.00
1563	630 amps. TPN, compact type bus trunking with aluminium busbar including elbows and other all accessories	Metre	8748.00
1564	800 amps. TPN, compact type bus trunking with aluminium busbar including elbows and other all accessories	Metre	11391.00
1565	1000 amps. TPN, compact type bus trunking with aluminium busbar including elbows and other all accessories	Metre	13213.00
1566	1250 amps. TPN, compact type bus trunking with aluminium busbar including elbows and other all accessories	Metre	15491.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1567	200 amps. TPN, End Feed Unit for compact rising mains including all accessories	each	4040.00
1568	315 amps. TPN, End Feed Unit for compact rising mains including all accessories	each	4210.00
1569	400 amps. TPN, End Feed Unit for compact rising mains including all accessories	each	5358.00
1570	500 amps. TPN, End Feed Unit for compact rising mains including all accessories	each	5613.00
1571	630 amps. TPN, End Feed Unit for compact rising mains including all accessories	each	6847.00
1572	800 amps. TPN, End Feed Unit for compact rising mains including all accessories	each	8110.00
1573	1000 amps. TPN, End Feed Unit for compact rising mains including all accessories	each	9100.00
1574	1250 amps. TPN, End Feed Unit for compact rising mains including all accessories	each	9611.00
1575	125 amps. TPN, TAP OFF Box for compact rising mains including all accessories	each	4678.00
1576	200 amps. TPN, TAP OFF Box for compact rising mains including all accessories	each	5954.00
1577	315 amps. TPN, TAP OFF Box for compact rising mains including all accessories	each	7655.00
1578	400 amps. TPN, TAP OFF Box for compact rising mains including all accessories	each	7655.00
1579	500 amps. TPN, TAP OFF Box for compact rising mains including all accessories	each	11057.00
1580	630 amps. TPN, TAP OFF Box for compact rising mains including all accessories	each	11056.00
<b>Sandwich Rising Mains with Aluminium bus bar</b>			
1581	400 amps 25KA Isc for 1 sec	Metre	8611.00
1582	500 amps 30KA Isc for 1 sec	Metre	9226.00
1583	630 amps 50KA Isc for 1 sec	Metre	9978.00
1584	800 amps 50KA Isc for 1 sec	Metre	11277.00
1585	1000 amps 50KA Isc for 1 sec	Metre	12651.00
1586	1250 amps 50KA Isc for 1 sec	Metre	14147.00
1587	1600 amps 50KA Isc for 1 sec	Metre	17223.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1588	2000 amps 50KA Isc for 1 sec	Metre	20503.00
1589	2500 amps 50KA Isc for 1 sec	Metre	26476.00
1590	3200 amps 50KA Isc for 1 sec	Metre	29251.00
1591	4000 amps 50KA Isc for 1 sec	Metre	51027.00
<b>SWITCH DISCONNECTOR SFU AND MCCB</b>			
1601	32 amps. TPN, switch disconnecter fuse unit (Panel mounted type) with ISI marked HRC fuses	each	1421.00
1602	63 amps. TPN, switch disconnecter fuse unit (Panel mounted type) with ISI marked HRC fuses	each	2005.00
1603	100 amps. TPN, switch disconnecter fuse unit (Panel mounted type) with ISI marked HRC fuses	each	4346.00
1604	125 amps. TPN, switch disconnecter fuse unit (Panel mounted type) with ISI marked HRC fuses	each	4829.00
1605	160 amps. TPN, switch disconnecter fuse unit (Panel mounted type) with ISI marked HRC fuses	each	5779.00
1606	200 amps. TPN switch fuse unit with ISI marked HRC fuses	each	6624.00
1607	315 amps. TPN switch fuse unit with ISI marked HRC fuses	each	10647.00
1608	400 amps. TPN switch fuse unit with ISI marked HRC fuses	each	13025.00
1610	3 pole MCCB, 100A, 16KA	each	2644.00
1611	3 pole MCCB, 125A, 16KA	each	2936.00
1612	3 pole MCCB, 150A, 16KA	each	3346.00
1613	3 pole MCCB, 200A, 16KA	each	5541.00
1614	3 pole MCCB, 200A, 25KA	each	8051.00
1615	3 pole MCCB, 250A, 25KA	each	9522.00
1616	3 pole MCCB, 250A, 35KA	each	8180.00
1617	3 pole MCCB, 315A, 35KA	each	15986.00
1618	3 pole MCCB, 400A, 35KA	each	15986.00
1619	3 pole MCCB, 500A, 35KA	each	18511.00
1620	3 pole MCCB, 630A, 50KA	each	20650.00
1621	3 pole MCCB, 800A, 50KA	each	25243.00
1622	4 pole MCCB, 100A, 30KA	each	5400.00
1623	4 pole MCCB, 125A, 36KA	each	5472.00
1624	4 pole MCCB, 200A, 36KA	each	11243.00
1625	4 pole MCCB, 250A, 36KA	each	12821.00
1626	4 pole MCCB, 250A, 50KA	each	11066.00
1627	4 pole MCCB, 400A, 50KA	each	19535.00

Code No.	DESCRIPTION	Unit	Rate
1628	4 pole MCCB,630A, 50KA	each	24309.00
<b>MCBs, ISOLATORS, RCCBs AND MCB DBs</b>			
1705	25 amp modular SPMCB, 'C' curve	each	161.00
1706	6 amps. to 32 amps. ratings , SP MCB, "C" curve, 10 KA breaking capacity	each	102.00
1707	6 amps. to 32 amps. ratings , SPN MCB, "C" curve, 10 KA breaking capacity	each	362.40
1708	6 amps. to 32 amps. ratings , DP MCB, "C" curve, 10 KA breaking capacity	each	371.00
1709	6 amps. to 32 amps. ratings , TP MCB, "C" curve, 10 KA breaking capacity	each	575.00
1710	6 amps. to 32 amps. ratings , TPN MCB, "C" curve, 10 KA breaking capacity	each	776.00
1711	Single pole, blanking plate	each	5.00
1712	40 amps., 2 pole isolator	each	207.00
1713	63 amps., 2 pole isolator	each	242.00
1714	40 amps., 4 pole isolator	each	531.00
1715	63 amps., 4 pole isolator	each	536.00
1716	100 amps., 4 pole isolator	each	693.00
1717	25 amps. rating, 2 pole RCCB, 30mA	each	1394.00
1718	40 amps. rating, 2 pole RCCB, 30mA	each	1521.00
1719	63 amps. rating, 2 pole RCCB, 30mA	each	1932.00
1720	25 amps. rating, 4 pole RCCB, 30mA	each	1810.00
1721	40 amps. rating, 4 pole RCCB, 30mA	each	1885.00
1722	63 amps. rating, 4 pole RCCB, 30mA	each	1999.00
1723	16/25 amps. rating, 2 pole RCBO 100mA/ 300mA sensitivity	each	Deleted
1724	32 amps. rating, 2 pole RCBO 100mA/ 300mA sensitivity	each	Deleted
1725	40 amps. rating, 2 pole RCBO 100mA/ 300mA sensitivity	each	Deleted
1726	16/25 amps. rating, 4 pole RCBO 100mA/ 300mA sensitivity	each	Deleted
1727	32 amps. rating, 4 pole RCBO 100mA/ 300mA sensitivity	each	Deleted
1728	40 amps. rating, 4 pole RCBO 100mA/ 300mA sensitivity	each	Deleted
1730	20 amps. SPN, industrial type socket outlet, with plug top and metal chained cover in sheet steel enclosure	each	490.00
1731	20 amps. TPN, industrial type socket outlet, with plug top and metal chained cover in sheet steel enclosure	each	490.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1732	30 amps. TPN, industrial type socket outlet, with plug top and metal chained cover in sheet steel enclosure	each	1515.00
1734	2+2 way, SPN, single door, MCB DB	each	634.00
1735	2+4 way, SPN, single door, MCB DB	each	689.00
1736	2+6 way, SPN, single door, MCB DB	each	790.00
1737	2+10 way, SPN, single door, MCB DB	each	936.00
1738	6 way, SPN, double door, MCB DB	each	991.00
1739	8 way, SPN, double door, MCB DB	each	1066.00
1740	12 way, SPN, double door, MCB DB	each	1287.00
1741	14 way, SPN, double door, MCB DB	each	1589.00
1742	Sheet steel DP MCB enclosure	each	148.00
1743	Sheet steel TP MCB enclosure	each	169.00
1751	4 way (4+12), TPN, MCB DB, single door, horizontal type	each	Deleted
1752	6 way (4+18), TPN, MCB DB, single door, horizontal type	each	Deleted
1753	8 way (4+24), TPN, MCB DB, single door, horizontal type	each	Deleted
1754	4 way (4+12), TPN, MCB DB, double door, horizontal type	each	2005.00
1755	6 way (4+18), TPN, MCB DB, double door, horizontal type	each	2477.00
1756	8 way (4+24), TPN, MCB DB, double door, horizontal type	each	3162.00
1757	4 way (4+12), TPN, vertical type, MCB DB, single door	each	Deleted
1758	8 way (4+24), TPN, vertical type, MCB DB, single door	each	Deleted
1759	12 way (4+36), TPN, vertical type, MCB DB, single door	each	Deleted
1760	4 way (4+12), TPN, vertical type, MCB DB, double door	each	3955.00
1761	8 way (4+24), TPN, vertical type, MCB DB, double door	each	5535.00
1762	12 way (4+36), TPN, vertical type, MCB DB, double door	each	7108.00
1763	4 way, TPN, vertical type, single door, MCB DB with provision to mount MCCB as incomer	each	Deleted
1764	8 way, TPN, vertical type, single door, MCB DB with provision to mount MCCB as incomer	each	Deleted
1765	12 way, TPN, vertical type, single door, MCB DB with provision to mount MCCB as incomer	each	Deleted
1771	2 + 4 way, SPN, prewired MCB DB with extended loose wire box, single door	each	Deleted
1772	2 + 8 way, SPN, prewired MCB DB with extended loose wire box, single door	each	Deleted
1773	2 + 12 way, SPN, prewired MCB DB with extended loose wire box, single door	each	Deleted

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1774	2 + 4 way, SPN, prewired MCB DB with extended loose wire box, double door	each	Deleted
1775	2 + 8 way, SPN, prewired MCB DB with extended loose wire box, double door	each	Deleted
1776	2 + 12 way, SPN, prewired MCB DB with extended loose wire box, double door	each	Deleted
1779	4 way, (4+12) TPN, prewired MCB DB with extended loose wire box, single door	each	Deleted
1780	6 way, (4+18) TPN, prewired MCB DB with extended loose wire box, single door	each	Deleted
1781	8 way, (4+24) TPN, prewired MCB DB with extended loose wire box, single door	each	Deleted
1782	12 way, (4+36) TPN, prewired MCB DB with extended loose wire box, single door	each	Deleted
1783	4 way, (4+12) TPN, prewired MCB DB with extended loose wire box, double door	each	Deleted
1784	6 way, (4+18) TPN, prewired MCB DB with extended loose wire box, double door	each	Deleted
1785	8 way, (4+24) TPN, prewired MCB DB with extended loose wire box, double door	each	Deleted
1786	12 way, (4+36) TPN, prewired MCB DB with extended loose wire box, double door	each	Deleted
1787	4 way (4+4), TPN, vertical type, prewired, MCB DB with extended loose wire box, single door	each	Deleted
1788	6 way (4+6), TPN, vertical type, prewired, MCB DB with extended loose wire box, single door	each	Deleted
1789	8 way (4+8), TPN, vertical type, prewired, MCB DB with extended loose wire box, single door	each	Deleted
1790	12 way (4+12), TPN, vertical type, prewired, MCB DB with extended loose wire box, single door	each	Deleted
1791	4 way (4+4), TPN, vertical type, prewired, MCB DB with extended loose wire box, double door	each	Deleted
1792	6 way (4+6), TPN, vertical type, prewired, MCB DB with extended loose wire box, double door	each	Deleted
1793	8 way (4+8), TPN, vertical type, prewired, MCB DB with extended loose wire box, double door	each	Deleted

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
1794	12 way (4+12), TPN, vertical type, prewired, MCB DB with extended loose wire box, double door	each	Deleted
<b>Cable End Box</b>			
1801	Cable End Boxes for 6 Way SPN DD DB	each	314.29
1802	Cable End Boxes for 8 Way SPN DD DB	each	391.74
1803	Cable End Boxes for 10 Way SPN DD DB	each	403.00
1804	Cable End Boxes for 14 Way SPN DD DB	each	492.00
1805	Cable End Boxes for 4 Way TPN DD DB	each	522.32
1806	Cable End Boxes for 6 Way TPN DD DB	each	641.29
1807	Cable End Boxes for 8 Way TPN DD DB	each	774.78
1808	Cable End Boxes for Vertical TPN DD DB	each	416.00
<b>BRASS COMPRESSION GLANDS</b>			
2101	Brass compression gland (19 mm) for 2 X 6 sq. mm 1.1 KV grade cable	set	26.00
2102	Brass compression gland (19 mm) for 2 X 10 sq. mm 1.1 KV grade cable	set	26.00
2103	Brass compression gland for (22 mm) 2 X 16 sq. mm 1.1 KV grade cable	set	35.00
2104	Brass compression gland for (22 mm) 2 X 25 sq. mm 1.1 KV grade cable	set	35.00
2105	Brass compression gland for (25 mm) 2 X 35 sq. mm 1.1 KV grade cable	set	40.00
2106	Brass compression gland for (28 mm) 2 X 50 sq. mm 1.1 KV grade cable	set	59.00
2107	Brass compression gland for (22 mm) 3 X 10 sq. mm 1.1 KV grade cable	set	35.00
2108	Brass compression gland for (25 mm) 3 X 16 sq. mm 1.1 KV grade cable	set	40.00
2109	Brass compression gland for (25 mm) 3 X 25 sq. mm 1.1 KV grade cable	set	40.00
2110	Brass compression gland for (28 mm) 3 X 35 sq. mm 1.1 KV grade cable	set	59.00
2111	Brass compression gland for (32 mm) 3 X 50 sq. mm 1.1 KV grade cable	set	70.00
2112	Brass compression gland for (35 mm) 3 X 70 sq. mm 1.1 KV grade cable	set	89.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2113	Brass compression gland for (38 mm) 3 X 95 sq. mm 1.1 KV grade cable	set	108.00
2114	Brass compression gland for (45 mm) 3 X 120 sq. mm 1.1 KV grade cable	set	135.00
2115	Brass compression gland for (50 mm) 3 X 150 sq. mm 1.1 KV grade cable	set	172.00
2116	Brass compression gland for (57 mm) 3 X 185 sq. mm 1.1 KV grade cable	set	222.00
2117	Brass compression gland for (62 mm) 3 X 225 sq. mm 1.1 KV grade cable	set	264.00
2118	Brass compression gland for (62 mm) 3 X 240 sq. mm 1.1 KV grade cable	set	264.00
2119	Brass compression gland for (70 mm) 3 X 300 sq. mm 1.1 KV grade cable	set	314.00
2120	Brass compression gland for (28 mm) 3½ X 25 sq. mm 1.1 KV grade cable	set	59.00
2121	Brass compression gland for (32 mm) 3½ X 35 sq. mm 1.1 KV grade cable	set	70.00
2122	Brass compression gland for (35 mm) 3½ X 50 sq. mm 1.1 KV grade cable	set	89.00
2123	Brass compression gland for (38 mm) 3½ X 70 sq. mm 1.1 KV grade cable	set	108.00
2124	Brass compression gland for (45 mm) 3½ X 95 sq. mm 1.1 KV grade cable	set	135.00
2125	Brass compression gland for (45 mm) 3½ X 120 sq. mm 1.1 KV grade cable	set	135.00
2126	Brass compression gland for (50 mm) 3½ X 150 sq. mm 1.1 KV grade cable	set	172.00
2127	Brass compression gland for (57 mm) 3½ X 185 sq. mm 1.1 KV grade cable	set	222.00
2128	Brass compression gland for (62 mm) 3½ X 225 sq. mm 1.1 KV grade cable	set	264.00
2129	Brass compression gland for (62 mm) 3½ X 240 sq. mm 1.1 KV grade cable	set	264.00
2130	Brass compression gland for (70 mm) 3½ X 300 sq. mm 1.1 KV grade cable	set	314.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2131	Brass compression gland for (82 mm) 3½ X 400 sq. mm 1.1 KV grade cable	set	448.00
2132	Brass compression gland for (25 mm) 4 X 10 sq. mm 1.1 KV grade cable	set	40.00
2133	Brass compression gland for (28 mm) 4 X 16 sq. mm 1.1 KV grade cable	set	59.00
2134	Brass compression gland for (28 mm) 4 X 25 sq. mm 1.1 KV grade cable	set	59.00
2135	Brass compression gland for (32 mm) 4 X 35 sq. mm 1.1 KV grade cable	set	70.00
2136	Brass compression gland for (35 mm) 4 X 50 sq. mm 1.1 KV grade cable	set	89.00
<b>ALUMINIUM LUGS</b>			
2201	Aluminium lugs for 6 sq. mm cable	each	1.00
2202	Aluminium lugs for 10 sq. mm cable	each	1.00
2203	Aluminium lugs for 16 sq. mm cable	each	2.00
2204	Aluminium lugs for 25 sq. mm cable	each	2.00
2205	Aluminium lugs for 35 sq. mm cable	each	3.00
2206	Aluminium lugs for 50 sq. mm cable	each	4.00
2207	Aluminium lugs for 70 sq. mm cable	each	7.00
2208	Aluminium lugs for 95 sq. mm cable	each	8.00
2209	Aluminium lugs for 120 sq. mm cable	each	11.00
2210	Aluminium lugs for 150 sq. mm cable	each	15.00
2211	Aluminium lugs for 185 sq. mm cable	each	19.00
2212	Aluminium lugs for 225 sq. mm cable	each	27.00
2213	Aluminium lugs for 240 sq. mm cable	each	31.00
2214	Aluminium lugs for 300 sq. mm cable	each	45.00
2215	Aluminium lugs for 400 sq. mm cable	each	65.00
<b>MV CABLE JOINTING KITS</b>			
2300	Outdoor cable jointing kit with cast resin compound with lugs for 2 X 16 sq. mm 1.1 KV grade cable	set	625.00
2301	Outdoor cable jointing kit with cast resin compound with lugs for 2 X 25 sq. mm 1.1 KV grade cable	set	701.00
2302	Outdoor cable jointing kit with cast resin compound with lugs for 2 X 35 sq. mm 1.1 KV grade cable	set	701.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2303	Outdoor cable jointing kit with cast resin compound with lugs for 2 X 50 sq. mm 1.1 KV grade cable	set	701.00
2304	Outdoor cable jointing kit with cast resin compound with lugs for 3 X 16 sq. mm 1.1 KV grade cable	set	701.00
2305	Outdoor cable jointing kit with cast resin compound with lugs for 3 X 25 sq. mm 1.1 KV grade cable	set	701.00
2306	Outdoor cable jointing kit with cast resin compound with lugs for 3 X 35 sq. mm 1.1 KV grade cable	set	701.00
2307	Outdoor cable jointing kit with cast resin compound with lugs for 3 X 50 sq. mm 1.1 KV grade cable	set	771.00
2308	Outdoor cable jointing kit with cast resin compound with lugs for 3 X 70 sq. mm 1.1 KV grade cable	set	771.00
2309	Outdoor cable jointing kit with cast resin compound with lugs for 3 X 95 sq. mm 1.1 KV grade cable	set	878.00
2310	Outdoor cable jointing kit with cast resin compound with lugs for 3 X 120 sq. mm 1.1 KV grade cable	set	878.00
2311	Outdoor cable jointing kit with cast resin compound with lugs for 3 X 150 sq. mm 1.1 KV grade cable	set	878.00
2312	Outdoor cable jointing kit with cast resin compound with lugs for 3 X 185 sq. mm 1.1 KV grade cable	set	1326.00
2313	Outdoor cable jointing kit with cast resin compound with lugs for 3 X 225 sq. mm 1.1 KV grade cable	set	1326.00
2314	Outdoor cable jointing kit with cast resin compound with lugs for 3 X 240 sq. mm 1.1 KV grade cable	set	1604.00
2315	Outdoor cable jointing kit with cast resin compound with lugs for 3 X 300 sq. mm 1.1 KV grade cable	set	1604.00
2316	Outdoor cable jointing kit with cast resin compound with lugs for 3½ X 25 sq. mm 1.1 KV grade cable	set	701.00
2217	Outdoor cable jointing kit with cast resin compound with lugs for 3½ X 35 sq. mm 1.1 KV grade cable	set	771.00
2318	Outdoor cable jointing kit with cast resin compound with lugs for 3½ X 50 sq. mm 1.1 KV grade cable	set	771.00
2319	Outdoor cable jointing kit with cast resin compound with lugs for 3½ X 70 sq. mm 1.1 KV grade cable	set	878.00
2320	Outdoor cable jointing kit with cast resin compound with lugs for 3½ X 95 sq. mm 1.1 KV grade cable	set	878.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2321	Outdoor cable jointing kit with cast resin compound with lugs for 3½ X 120 sq. mm 1.1 KV grade cable	set	878.00
2322	Outdoor cable jointing kit with cast resin compound with lugs for 3½ X 150 sq. mm 1.1 KV grade cable	set	1326.00
2323	Outdoor cable jointing kit with cast resin compound with lugs for 3½ X 185 sq. mm 1.1 KV grade cable	set	946.00
2324	Outdoor cable jointing kit with cast resin compound with lugs for 3½ X 225 sq. mm 1.1 KV grade cable	set	1604.00
2325	Outdoor cable jointing kit with cast resin compound with lugs for 3½ X 240 sq. mm 1.1 KV grade cable	set	1604.00
2326	Outdoor cable jointing kit with cast resin compound with lugs for 3½ X 300 sq. mm 1.1 KV grade cable	set	1604.00
2327	Outdoor cable jointing kit with cast resin compound with lugs for 3½ X 400 sq. mm 1.1 KV grade cable	set	1931.00
2328	Outdoor cable jointing kit with cast resin compound with lugs for 4 X 16 sq. mm 1.1 KV grade cable	set	701.00
2329	Outdoor cable jointing kit with cast resin compound with lugs for 4 X 25 sq. mm 1.1 KV grade cable	set	701.00
2330	Outdoor cable jointing kit with cast resin compound with lugs for 4 X 35 sq. mm 1.1 KV grade cable	set	771.00
2331	Outdoor cable jointing kit with cast resin compound with lugs for 4 X 50 sq. mm 1.1 KV grade cable	set	771.00
2332	Straight through cable jointing kit with cast resin compound with ferrules for 2 X 16 sq. mm 1.1 KV grade cable	set	1654.00
2333	Straight through cable jointing kit with cast resin compound with ferrules for 2 X 25 sq. mm 1.1 KV grade cable	set	1654.00
2334	Straight through cable jointing kit with cast resin compound with ferrules for 2 X 35 sq. mm 1.1 KV grade cable	set	1654.00
2335	Straight through cable jointing kit with cast resin compound with ferrules for 2 X 50 sq. mm 1.1 KV grade cable	set	1931.00
2336	Straight through cable jointing kit with cast resin compound with ferrules for 3 X 16 sq. mm 1.1 KV grade cable	set	1931.00
2337	Straight through cable jointing kit with cast resin compound with ferrules for 3 X 25 sq. mm 1.1 KV grade cable	set	1654.00
2338	Straight through cable jointing kit with cast resin compound with ferrules for 3 X 35 sq. mm 1.1 KV grade cable	set	1654.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2339	Straight through cable jointing kit with cast resin compound with ferrules for 3 X 50 sq. mm 1.1 KV grade cable	set	1931.00
2340	Straight through cable jointing kit with cast resin compound with ferrules for 3 X 70 sq. mm 1.1 KV grade cable	set	2310.00
2341	Straight through cable jointing kit with cast resin compound with ferrules for 3 X 95 sq. mm 1.1 KV grade cable	set	2373.00
2342	Straight through cable jointing kit with cast resin compound with ferrules for 3 X 120 sq. mm 1.1 KV grade cable	set	2714.00
2343	Straight through cable jointing kit with cast resin compound with ferrules for 3 X 150 sq. mm 1.1 KV grade cable	set	2714.00
2344	Straight through cable jointing kit with cast resin compound with ferrules for 3 X 185 sq. mm 1.1 KV grade cable	set	3307.00
2345	Straight through cable jointing kit with cast resin compound with ferrules for 3 X 225 sq. mm 1.1 KV grade cable	set	3799.00
2346	Straight through cable jointing kit with cast resin compound with ferrules for 3 X 240 sq. mm 1.1 KV grade cable	set	3799.00
2347	Straight through cable jointing kit with cast resin compound with ferrules for 3 X 300 sq. mm 1.1 KV grade cable	set	4783.00
2348	Straight through cable jointing kit with cast resin compound with ferrules for 3½ X 25 sq. mm 1.1 KV grade cable	set	1931.00
2349	Straight through cable jointing kit with cast resin compound with ferrules for 3½ X 35 sq. mm 1.1 KV grade cable	set	1931.00
2350	Straight through cable jointing kit with cast resin compound with ferrules for 3½ X 50 sq. mm 1.1 KV grade cable	set	2310.00
2351	Straight through cable jointing kit with cast resin compound with ferrules for 3½ X 70 sq. mm 1.1 KV grade cable	set	2333.00
2352	Straight through cable jointing kit with cast resin compound with ferrules for 3½ X 95 sq. mm 1.1 KV grade cable	set	2714.00
2353	Straight through cable jointing kit with cast resin compound with ferrules for 3½ X 120 sq. mm 1.1 KV grade cable	set	3307.00
2354	Straight through cable jointing kit with cast resin compound with ferrules for 3½ X 150 sq. mm 1.1 KV grade cable	set	3307.00
2355	Straight through cable jointing kit with cast resin compound with ferrules for 3½ X 185 sq. mm 1.1 KV grade cable	set	3799.00
2356	Straight through cable jointing kit with cast resin compound with ferrules for 3½ X 225 sq. mm 1.1 KV grade cable	set	3875.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2357	Straight through cable jointing kit with cast resin compound with ferrules for 3½ X 240 sq. mm 1.1 KV grade cable	set	4783.00
2358	Straight through cable jointing kit with cast resin compound with ferrules for 3½ X 300 sq. mm 1.1 KV grade cable	set	5730.00
2359	Straight through cable jointing kit with cast resin compound with ferrules for 3½ X 400 sq. mm 1.1 KV grade cable	set	3076.00
2360	Straight through cable jointing kit with cast resin compound with ferrules for 4 X 16 sq. mm 1.1 KV grade cable	set	1654.00
2361	Straight through cable jointing kit with cast resin compound with ferrules for 4 X 25 sq. mm 1.1 KV grade cable	set	1931.00
2362	Straight through cable jointing kit with cast resin compound with ferrules for 4 X 35 sq. mm 1.1 KV grade cable	set	1931.00
2363	Straight through cable jointing kit with cast resin compound with ferrules for 4 X 50 sq. mm 1.1 KV grade cable	set	2310.00
2364	Straight through cable jointing kit with heat shrinkable kit with ferrules for 2 X 16 sq. mm 1.1 KV grade cable	set	1025.00
2365	Straight through cable jointing kit with heat shrinkable kit with ferrules for 2 X 25 sq. mm 1.1 KV grade cable	set	1025.00
2366	Straight through cable jointing kit with heat shrinkable kit with ferrules for 2 X 35 sq. mm 1.1 KV grade cable	set	1025.00
2367	Straight through cable jointing kit with heat shrinkable kit with ferrules for 2 X 50 sq. mm 1.1 KV grade cable	set	1197.00
2368	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3 X 16 sq. mm 1.1 KV grade cable	set	1025.00
2369	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3 X 25 sq. mm 1.1 KV grade cable	set	1025.00
2370	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3 X 35 sq. mm 1.1 KV grade cable	set	1197.00
2371	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3 X 50 sq. mm 1.1 KV grade cable	set	1197.00
2372	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3 X 70 sq. mm 1.1 KV grade cable	set	1431.00
2373	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3 X 95 sq. mm 1.1 KV grade cable	set	1470.00
2374	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3 X 120 sq. mm 1.1 KV grade cable	set	1682.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2375	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3 X 150 sq. mm 1.1 KV grade cable	set	1682.00
2376	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3 X 185 sq. mm 1.1 KV grade cable	set	2049.00
2377	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3 X 225 sq. mm 1.1 KV grade cable	set	2354.00
2378	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3 X 240 sq. mm 1.1 KV grade cable	set	2401.00
2379	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3 X 300 sq. mm 1.1 KV grade cable	set	2963.00
2380	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3½ X 25 sq. mm 1.1 KV grade cable	set	1197.00
2381	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3½ X 35 sq. mm 1.1 KV grade cable	set	1197.00
2382	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3½ X 50 sq. mm 1.1 KV grade cable	set	1431.00
2383	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3½ X 70 sq. mm 1.1 KV grade cable	set	1470.00
2384	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3½ X 95 sq. mm 1.1 KV grade cable	set	1470.00
2385	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3½ X 120 sq. mm 1.1 KV grade cable	set	2049.00
2386	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3½ X 150 sq. mm 1.1 KV grade cable	set	2049.00
2387	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3½ X 185 sq. mm 1.1 KV grade cable	set	2380.00
2388	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3½ X 225 sq. mm 1.1 KV grade cable	set	2401.00
2389	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3½ X 240 sq. mm 1.1 KV grade cable	set	2963.00
2390	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3½ X 300 sq. mm 1.1 KV grade cable	set	3550.00
2391	Straight through cable jointing kit with heat shrinkable kit with ferrules for 3½ X 400 sq. mm 1.1 KV grade cable	set	4378.00
2392	Straight through cable jointing kit with heat shrinkable kit with ferrules for 4 X 16 sq. mm 1.1 KV grade cable	set	1025.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2393	Straight through cable jointing kit with heat shrinkable kit with ferrules for 4 X 25 sq. mm 1.1 KV grade cable	set	1197.00
2394	Straight through cable jointing kit with heat shrinkable kit with ferrules for 4 X 35 sq. mm 1.1 KV grade cable	set	1197.00
2395	Straight through cable jointing kit with heat shrinkable kit with ferrules for 4 X 50 sq. mm 1.1 KV grade cable	set	1431.00
<b>11 KV &amp; 33 KV CABLE JOINTING KITS</b>			
2413	Indoor cable jointing kit with cast resin compound with lugs for 11 KV grade XLPE cable for 3 core 70 sq. mm.	set	839.00
2414	Indoor cable jointing kit with cast resin compound with lugs for 11 KV grade XLPE cable for 3 core 120 sq. mm.	set	839.00
2415	Indoor cable jointing kit with cast resin compound with lugs for 11 KV grade XLPE cable for 3 core 240 sq. mm.	set	1225.00
2416	Indoor cable jointing kit with cast resin compound with lugs for 11 KV grade XLPE cable for 3 core 300 sq. mm.	set	1270.00
2417	Outdoor cable jointing kit with cast resin compound with lugs for 11 KV grade XLPE cable for 3 core 70 sq. mm.	set	2873.00
2418	Outdoor cable jointing kit with cast resin compound with lugs for 11 KV grade XLPE cable for 3 core 120 sq. mm.	set	2911.00
2419	Outdoor cable jointing kit with cast resin compound with lugs for 11 KV grade XLPE cable for 3 core 240 sq. mm.	set	3296.00
2420	Outdoor cable jointing kit with cast resin compound with lugs for 11 KV grade XLPE cable for 3 core 300 sq. mm.	set	3296.00
2421	Straight through cable jointing kit with cast resin compound with ferrules for 11 KV grade XLPE cable for 3 core 70 sq. mm.	set	2253.00
2422	Straight through cable jointing kit with cast resin compound with ferrules for 11 KV grade XLPE cable for 3 core 120 sq. mm.	set	2714.00
2423	Straight through cable jointing kit with cast resin compound with ferrules for 11 KV grade XLPE cable for 3 core 240 sq. mm.	set	4294.00
2424	Straight through cable jointing kit with cast resin compound with ferrules for 11 KV grade XLPE cable for 3 core 300 sq. mm.	set	5088.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2437	Indoor heat shrinkable cable jointing kit with lugs for 11 KV grade XLPE cable for 3 core 70 sq. mm.	set	5783.00
2438	Indoor heat shrinkable cable jointing kit with lugs for 11 KV grade XLPE cable for 3 core 120 sq. mm.	set	5783.00
2439	Indoor heat shrinkable cable jointing kit with lugs for 11 KV grade XLPE cable for 3 core 240 sq. mm.	set	7604.00
2440	Indoor heat shrinkable cable jointing kit with lugs for 11 KV grade XLPE cable for 3 core 300 sq. mm.	set	7604.00
2441	Outdoor heat shrinkable cable jointing kit with lugs for 11 KV grade XLPE cable for 3 core 70 sq. mm.	set	10353.00
2442	Outdoor heat shrinkable cable jointing kit with lugs for 11 KV grade XLPE cable for 3 core 120 sq. mm.	set	10353.00
2443	Outdoor heat shrinkable cable jointing kit with lugs for 11 KV grade XLPE cable for 3 core 240 sq. mm.	set	11745.00
2444	Outdoor heat shrinkable cable jointing kit with lugs for 11 KV grade XLPE cable for 3 core 300 sq. mm.	set	11745.00
2445	Straight through heat shrinkable cable jointing kit with ferrules for 11 KV grade XLPE cable for 3 core 70 sq. mm.	set	11710.00
2446	Straight through heat shrinkable cable jointing kit with ferrules for 11 KV grade XLPE cable for 3 core 120 sq. mm.	set	12681.00
2447	Straight through heat shrinkable cable jointing kit with ferrules for 11 KV grade XLPE cable for 3 core 240 sq. mm.	set	13366.00
2448	Straight through heat shrinkable cable jointing kit with ferrules for 11 KV grade XLPE cable for 3 core 300 sq. mm.	set	13366.00
2528	Indoor heat shrinkable cable jointing kit with lugs for 33 KV grade XLPE cable for 3 core 70 sq. mm.	set	13637.00
2529	Indoor heat shrinkable cable jointing kit with lugs for 33 KV grade XLPE cable for 3 core 120 sq. mm.	set	18643.00
2530	Indoor heat shrinkable cable jointing kit with lugs for 33 KV grade XLPE cable for 3 core 240 sq. mm.	set	20085.00
2531	Outdoor heat shrinkable cable jointing kit with lugs for 33 KV grade XLPE cable for 3 core 70 sq. mm.	set	20677.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2532	Outdoor heat shrinkable cable jointing kit with lugs for 33 KV grade XLPE cable for 3 core 120 sq. mm.	set	24833.00
2533	Outdoor heat shrinkable cable jointing kit with lugs for 33 KV grade XLPE cable for 3 core 240 sq. mm.	set	27946.00
2534	Straight through heat shrinkable cable jointing kit with ferrules for 33 KV grade XLPE cable for 3 core 70 sq. mm.	set	32844.00
2535	Straight through heat shrinkable cable jointing kit with ferrules for 33 KV grade XLPE cable for 3 core 120 sq. mm.	set	41548.00
2536	Straight through heat shrinkable cable jointing kit with ferrules for 33 KV grade XLPE cable for 3 core 240 sq. mm.	set	58191.00
<b>OVER HEAD LINE ACCESSORIES</b>			
2601	Stay rod (1.8 M long, 19/20 mm dia.) with anchor plate 45 cm X 45 cm X 7.5 mm complete with thimble etc.	set	432.00
2602	Stay wire ( 7/4.00 mm dia.)	kg	37.00
2603	Stay wire ( 7/3.15 mm dia.)	kg	37.00
2604	Turn buckle ( 20 mm X 60 cm )	each	158.00
2605	Strain insulator	each	22.00
2606	Bow tightner	each	16.00
2607	Shackle insulator ( 75 mm X 90 mm ) with G.I. bolts and nuts	set	29.00
2608	Shackle insulator ( 100 mm X 110 mm ) with G.I. bolts and nuts	set	50.00
2609	Pin insulator ( 100 mm X 65 mm ) with G.I. spindle and nuts	set	27.36
2610	Pin insulator ( 100 mm X 80 mm ) with G.I. spindle and nuts	set	28.80
2611	MV horn gap lightning arrestor with pin insulator ( 100 mm X 65 mm ), spindle and brass metal parts etc.	set	79.20
2615	15 amps aerial fuse complete with porcelain tube as required	each	13.00
2616	30 amps aerial fuse complete with porcelain tube as required	each	20.00
2618	Stay clamp	set	50.40
2619	Brace ( 50 mm X 50 mm X 6 mm angle iron )	Metre	169.00
2620	Angle iron bracket ( 50 mm X 50 mm X 6 mm ) 65 cm long	each	111.60
2623	Eye hook	each	23.75
2624	Guy clamp	each	54.00
2635	D' iron clamp (with coach screws)	each	61.20
2643	Strain insulator 11 KV	each	18.40
2644	Strain insulator 33 KV	each	27.20

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2645	11 KV pin insulator with pin washers and nuts	set	90.40
2646	11 KV disc insulator	set	404.80
2647	Galvanised insulator hardware fitting ball and socket type with strain clamps, bolts, nuts and washers	set	118.80
2648	33 KV pin insulator with pin washers and nuts	set	404.80
2649	Galvanised insulator hardware fitting ball and socket type with strain clamps, bolts, nuts and washers for 3 Nos 11 KV disk insulator	set	347.00
2650	3 piece lightning arrestor set for 11 KV O.H. lines complete with G.I. clamps bolts and nuts with washers	set	1620.00
2651	Single piece lightning arrestor set for 33 KV O.H. lines complete with G.I. clamps bolts and nuts with washers	set	12600.00
2665	G.I. strap for shackle insulator	set	43.20
<b>CABLE TRAYS PRE PAINTED WITH POWDER COATING</b>			
2701	MS perforated cable tray painted with powder coating 100 X 50 X 1.6 mm	Metre	144.00
2702	MS perforated cable tray painted with powder coating 150 X 50 X 1.6 mm	Metre	180.00
2703	MS perforated cable tray painted with powder coating 225 X 50 X 1.6 mm	Metre	226.00
2704	MS perforated cable tray painted with powder coating 300 X 50 X 1.6 mm	Metre	241.15
2705	MS perforated cable tray painted with powder coating 375 X 50 X 2 mm	Metre	257.75
2706	MS perforated cable tray painted with powder coating 450 X 50 X 2 mm	Metre	274.30
2707	MS perforated cable tray painted with powder coating 600 X 50 X 2 mm	Metre	310.70
2708	MS perforated cable tray painted with powder coating 300 X 62.5 X 2 mm	Metre	221.65
2709	MS perforated cable tray painted with powder coating 375 X 62.5 X 2 mm	Metre	260.15
2710	MS perforated cable tray painted with powder coating 450 X 62.5 X 2 mm	Metre	299.20
2711	MS perforated cable tray painted with powder coating 600 X 62.5 X 2 mm	Metre	377.85

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2712	MS perforated cable tray painted with powder coating 750 X 62.5 X 2 mm	Metre	468.05
2713	MS perforated cable tray painted with powder coating 900 X 62.5 X 2 mm	Metre	547.25
2714	MS perforated cable tray painted with powder coating 600 X 75 X 2 mm	Metre	442.00
2715	MS perforated cable tray painted with powder coating 750 X 75 X 2 mm	Metre	490.10
2716	MS perforated cable tray painted with powder coating 900 X 75 X 2 mm	Metre	533.00
2717	MS perforated cable tray Connector 100 X 50 X 1.6 mm	each	30.00
2718	MS perforated cable tray Connector 150 X 50 X 1.6 mm	each	39.00
2719	MS perforated cable tray Connector 225 X 50 X 1.6 mm	each	40.00
2720	MS perforated cable tray Connector 300 X 50 X 1.6 mm	each	40.00
2721	MS perforated cable tray Connector 375 X 50 X 2 mm	each	44.00
2722	MS perforated cable tray Connector 450 X 50 X 2 mm	each	51.00
2723	MS perforated cable tray Connector 600 X 50 X 2 mm	each	56.00
2724	MS perforated cable tray Connector 300 X 62.5 X 2 mm	each	44.00
2725	MS perforated cable tray Connector 375 X 62.5 X 2 mm	each	50.00
2726	MS perforated cable tray Connector 450 X 62.5 X 2 mm	each	55.00
2727	MS perforated cable tray Connector 600 X 62.5 X 2 mm	each	61.00
2728	MS perforated cable tray Connector 750 X 62.5 X 2 mm	each	67.00
2729	MS perforated cable tray Connector 900 X 62.5 X 2 mm	each	71.00
2733	MS perforated cable tray Bend 100 X 50 X 1.6 mm	each	397.00
2734	MS perforated cable tray Bend 150 X 50 X 1.6 mm	each	491.00
2735	MS perforated cable tray Bend 225 X 50 X 1.6 mm	each	636.00
2736	MS perforated cable tray Bend 300 X 50 X 1.6 mm	each	781.00
2737	MS perforated cable tray Bend 375 X 50 X 2 mm	each	1128.00
2738	MS perforated cable tray Bend 450 X 50 X 2 mm	each	1304.00
2739	MS perforated cable tray Bend 600 X 50 X 2 mm	each	1657.00
2740	MS perforated cable tray Bend 300 X 62.5 X 2 mm	each	1008.00
2741	MS perforated cable tray Bend 375 X 62.5 X 2 mm	each	1184.00
2742	MS perforated cable tray Bend 450 X 62.5 X 2 mm	each	1361.00
2743	MS perforated cable tray Bend 600 X 62.5 X 2 mm	each	1720.00
2744	MS perforated cable tray Bend 750 X 62.5 X 2 mm	each	2129.00
2745	MS perforated cable tray Bend 900 X 62.5 X 2 mm	each	2489.00
2746	MS perforated cable tray Bend 600 X 75 X 2 mm	each	1770.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2747	MS perforated cable tray Bend 750 X 75 X 2 mm	each	2192.00
2748	MS perforated cable tray Bend 900 X 75 X 2 mm	each	2552.00
2749	MS perforated cable tray Reducer 100 X 50 X 1.6 mm	each	451.00
2750	MS perforated cable tray Reducer 150 X 50 X 1.6 mm	each	549.00
2751	MS perforated cable tray Reducer 225 X 50 X 1.6 mm	each	727.00
2752	MS perforated cable tray Reducer 300 X 50 X 1.6 mm	each	902.00
2753	MS perforated cable tray Reducer 375 X 50 X 2 mm	each	1148.00
2754	MS perforated cable tray Reducer 450 X 50 X 2 mm	each	1342.00
2755	MS perforated cable tray Reducer 600 X 50 X 2 mm	each	1671.00
2756	MS perforated cable tray Reducer 300 X 62.5 X 2 mm	each	1028.00
2757	MS perforated cable tray Reducer 375 X 62.5 X 2 mm	each	1210.00
2758	MS perforated cable tray Reducer 450 X 62.5 X 2 mm	each	1393.00
2759	MS perforated cable tray Reducer 600 X 62.5 X 2 mm	each	1762.00
2760	MS perforated cable tray Reducer 750 X 62.5 X 2 mm	each	2093.00
2761	MS perforated cable tray Reducer 900 X 62.5 X 2 mm	each	2498.00
2762	MS perforated cable tray Reducer 600 X 75 X 2 mm	each	1822.00
2763	MS perforated cable tray Reducer 750 X 75 X 2 mm	each	2145.00
2764	MS perforated cable tray Reducer 900 X 75 X 2 mm	each	2558.00
2765	MS perforated cable tray Tee 100 X 50 X 1.6 mm	each	473.00
2766	MS perforated cable tray Tee 150 X 50 X 1.6 mm	each	586.00
2767	MS perforated cable tray Tee 225 X 50 X 1.6 mm	each	762.00
2768	MS perforated cable tray Tee 300 X 50 X 1.6 mm	each	939.00
2769	MS perforated cable tray Tee 375 X 50 X 2 mm	each	1348.00
2770	MS perforated cable tray Tee 450 X 50 X 2 mm	each	1562.00
2771	MS perforated cable tray Tee 600 X 50 X 2 mm	each	1985.00
2772	MS perforated cable tray Tee 300 X 62.5 X 2 mm	each	1210.00
2773	MS perforated cable tray Tee 375 X 62.5 X 2 mm	each	1418.00
2774	MS perforated cable tray Tee 450 X 62.5 X 2 mm	each	1632.00
2775	MS perforated cable tray Tee 600 X 62.5 X 2 mm	each	2061.00
2776	MS perforated cable tray Tee 750 X 62.5 X 2 mm	each	2552.00
2777	MS perforated cable tray Tee 900 X 62.5 X 2 mm	each	2986.00
2778	MS perforated cable tray Tee 600 X 75 X 2 mm	each	2129.00
2779	MS perforated cable tray Tee 750 X 75 X 2 mm	each	2596.00
2780	MS perforated cable tray Tee 900 X 75 X 2 mm	each	3057.00
2781	MS perforated cable tray Cross member 100 X 50 X 1.6 mm	each	473.00
2782	MS perforated cable tray Cross member 150 X 50 X 1.6 mm	each	586.00
2783	MS perforated cable tray Cross member 225 X 50 X 1.6 mm	each	762.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2784	MS perforated cable tray Cross member 300 X 50 X 1.6 mm	each	939.00
2785	MS perforated cable tray Cross member 375 X 50 X 2 mm	each	1348.00
2786	MS perforated cable tray Cross member 450 X 50 X 2 mm	each	1562.00
2787	MS perforated cable tray Cross member 600 X 50 X 2 mm	each	1985.00
2788	MS perforated cable tray Cross member 300 X 62.5 X 2 mm	each	1210.00
2789	MS perforated cable tray Cross member 375 X 62.5 X 2 mm	each	1418.00
2790	MS perforated cable tray Cross member 450 X 62.5 X 2 mm	each	1632.00
2791	MS perforated cable tray Cross member 600 X 62.5 X 2 mm	each	2060.00
2792	MS perforated cable tray Cross member 750 X 62.5 X 2 mm	each	2552.00
2793	MS perforated cable tray Cross member 900 X 62.5 X 2 mm	each	2986.00
2794	MS perforated cable tray Cross member 600 X 75 X 2 mm	each	2129.00
2795	MS perforated cable tray Cross member 750 X 75 X 2 mm	each	2596.00
2796	MS perforated cable tray Cross member 900 X 75 X 2 mm	each	3057.00
<b>ANGLE/FLAT IRON AND STEEL SHEET</b>			
2801	MS Suspender 6 mm dia 0.75m long	each	23.00
2802	MS Suspender 8 mm dia 0.75m long	each	28.00
2803	MS Suspender 10 mm dia 0.75m long	each	40.00
2804	25 mm X 25 mm X 3 mm angle iron	kg	33.00
2805	35 mm X 35 mm X 4 mm angle iron	kg	33.00
2806	35 mm X 35 mm X 5 mm angle iron	kg	33.00
2807	50 mm X 50 mm X 6 mm angle iron	kg	33.00
2808	65 mm X 65 mm X 6 mm angle iron	kg	33.00
2809	20/25 mm X 3 mm flat iron	kg	33.00
2810	25 mm X 4 mm flat iron	kg	33.00
2811	25 mm X 6 mm flat iron	kg	33.00
2812	40 mm X 3 mm flat iron	kg	33.00
2813	50 mm X 6 mm flat iron	kg	33.00
2814	50 mm X 8 mm flat iron	kg	33.00
2815	100 mm X 50 mm X 6 mm channel iron ( 9.56 kg/ mtr)	kg	33.00
2816	75 mm X 40 mm X 6 mm channel iron ( 7.14 kg/ mtr)	kg	33.00
2817	1.6 mm thick M.S. sheet	kg	48.00
2818	3 mm thick M.S. sheet	kg	48.00
<b>GI AND RCC PIPE</b>			
2819	20 mm dia G.I. Pipe (light class)	Metre	97.00
2820	32 mm dia G.I. Pipe (light class)	Metre	175.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2821	50 mm dia G.I. Pipe (light class)	Metre	275.00
2822	80 mm dia G.I. Pipe (light class)	Metre	437.00
2823	100 mm dia G.I. Pipe (light class)	Metre	611.00
2824	15 mm dia. G.I. pipe (medium class)	Metre	88.00
2825	20 mm dia. G.I. pipe (medium class)	Metre	111.00
2826	40 mm dia. G.I. pipe (medium class)	Metre	239.00
2827	15 mm dia. G.I. pipe (heavy class)	Metre	101.00
2828	20 mm dia. G.I. pipe (heavy class)	Metre	130.00
2829	Check nut 20mm	each	5.00
2831	32 mm dia. G.I. pipe (medium class)	Metre	206.00
2832	50 mm dia. G.I. pipe (medium class)	Metre	318.00
2833	80 mm dia. G.I. pipe (medium class)	Metre	520.00
2834	100 mm dia. G.I. pipe (medium class)	Metre	754.00
2835	150 mm dia. G.I. pipe (medium class)	Metre	1187.00
2836	40 mm to 20 mm reducer	each	33.00
2837	Nipple 50 mm dia	each	60.00
2838	40 mm dia. G.I. bend (medium class)	each	57.00
2839	50 mm dia. G.I. bend (medium class)	each	99.00
2841	100 mm dia RCC pipe NP2 class	Metre	156.00
2842	150 mm dia RCC pipe NP2 class	Metre	178.00
2843	250 mm dia RCC pipe NP2 class	Metre	217.00
2844	300 mm dia RCC pipe NP2 class	Metre	301.00
2845	100 mm dia RCC collar NP2 class	each	23.00
2846	150 mm dia RCC collar NP2 class	each	30.00
2847	250 mm dia RCC collar NP2 class	each	46.00
2848	300 mm dia RCC collar NP2 class	each	56.00
<b>SCREWS, NUT BOTS AND OTHER ACCESSORIES</b>			
2851	Al. Alloy/ cadmium plated iron screws, 20 mm	each	0.50
2852	Iron screws, 35 mm X 6 mm	each	1.00
2853	Iron screws, 40 mm X 6 mm	each	1.00
2854	Iron screws, 45 mm X 6 mm	each	1.10
2855	Steel fastener 6 mm X 75 mm	each	5.50
2856	Steel fastener 8 mm X 75 mm	each	7.30
2857	PVC fastener 40mm long	each	0.30
2858	PVC clip for fixing cable	each	0.15
2859	Rubber/ PVC bushes	each	0.50

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2860	6 mm dia rivet/ stud/ bolts and nuts	each	3.25
2861	25mm X 3mm bolts & nuts	each	2.20
2862	32mm X 8mm bolts & nuts	each	4.30
2863	38mm X 10mm bolts & nuts	each	7.25
2864	38 mm X 7 mm, bolts and nuts	each	5.15
2865	15 mm long X 6 mm dia G.I. bolts and nuts	each	4.20
2866	10 mm X 25 mm long G.I. bolt with nut etc	each	9.30
2867	16 mm X 50 mm bolts and nuts with washers	set	6.25
2868	16 mm X 40 mm bolts and nuts with washers	set	6.30
2869	16 mm X 125 mm bolts and nuts with washers	set	20.65
2870	16 mm X 150 mm bolts and nuts with washers	set	24.30
2871	10 mm X 25 mm long tinned brass bolt with nut etc.	each	28.00
2881	GI saddles 19mm x 0.55mm for conduit	each	1.00
2882	GI saddles 25mm x 0.90mm for conduit above 25mm	each	1.00
<b>HDPE Pipe</b>			
2891	63 mm dia	Mtr	67.00
2892	90 mm dia	Mtr	96.00
2893	120 mm dia	Mtr	156.00
2894	180 mm dia	Mtr	234.00
2895	200 mm dia	Mtr	334.00
<b>HDPE Pipe Coupler</b>			
2896	63 mm dia	each	16.00
2897	90 mm dia	each	25.00
2898	120 mm dia	each	30.00
2899	160 mm dia	each	60.00
2900	200 mm dia	each	80.00
2901	20 mm X 3 mm copper tape ( 0.533 kg/mtr)	kg	538.00
2902	25 mm X 5 mm copper tape (1.15 kg/mtr)	kg	538.00
2903	32 mm X 6 mm copper tape ( 1.705 kg/mtr)	kg	538.00
2904	8 SWG copper wire (4.0 mm dia)	kg	540.00
2905	600 mm X 600 mm X 3 mm thick copper plate (10.5 kg)	each	5649.00
2906	Copper saddle	each	30.00
2907	50 mm X 5mm copper strip (2.30 kg/mtr)	kg	538.00
2908	Brass nipple	each	8.00
2909	Lightning finial, 25 mm dia X 300 mm long, copper	each	465.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
2910	Lightning finial, 25 mm dia X 300 mm long, G.I.	each	127.00
2911	20 mm X 3 mm G.I. Tape ( 0.461 kg/mtr)	kg	61.00
2912	25 mm X 5 mm G.I. strip (1.0 kg/mtr)	kg	57.00
2913	25 mm X 6 mm G.I. strip (1.2 kg/mtr)	kg	55.00
2914	32 mm X 6 mm G.I. Tape ( 1.475 kg/mtr)	kg	55.00
2915	600 mm X 600 mm X 6 mm thick G.I. plate	each	1438.00
2916	6 SWG G.I. wire	kg	61.00
2917	GI saddle 20mm x 3mm	each	2.50
2918	Funnel	each	19.00
2919	G.I. nuts and through bolts with washer	each	26.00
2920	Washers	each	0.00
2921	G.I. Hooks made of 8 SWG GI wire/ GI clip	each	2.00
2922	CI/MS cover plate hinged to FRL Same with Locking arrangement	each	277.00
2923	Pulley of 50 mm dia	each	86.00
2924	Clamps, bolts, nuts etc.	set	112.00
2925	Flat iron clamps (50 mm X 6 mm) for G.I. pipe	each	35.00
2926	G.I. plate ( 10 cm X 10 cm X 5 mm )	kg	55.00
2927	Ball and socket	each	17.00
2928	Back plate	each	7.00
2929	Check nut 20mm	each	4.00
2930	Rubber reel, nut & bolts with washers and safety pin	Set	60.00
2931	PVC sleeve	Metre	5.00
2932	250 mm X 200 mm H.T. danger notice plate	each	62.00
2933	200 mm X 150 mm M.V. danger notice plate	each	48.00
2934	Earthing thimbles and solder	L.S.	13.00
2935	Cement, paint, sand etc.	L.S.	5.00
2936	Painting with primer and finish paint	L.S.	5.00
2937	Diesel	litre	64.00
2938	Cotton waste, cleaning cloth etc.	kg	46.00
2939	Cleaning materials like soap/ detergent	kg	52.00
2940	Tin solder etc.	L.S.	6.00
2941	Charcoal	kg	8.00
2942	Coke	kg	10.00
2943	Salt	kg	8.00
2944	Paint	litre	170.00

Code No.	DESCRIPTION	Unit	Rate
2945	Common burnt clay F.P.S. (non modular) bricks class designation 7.5	each	4.00
2946	Fine sand	cum	806.00
2947	Bricks ballast	cum	630.00
2948	Cement	ton	6300.00
2949	Stone aggregate (single size) 40mm nominal size	cum	1260.00
2950	Stone aggregate (single size) 20mm nominal size	cum	1410.00
2951	Stone aggregate (single size) 10mm nominal size	cum	1410.00
2952	Coarse sand (Zone III)	cum	1440.00
9999	Sundries/bending charges	L.S.	1.00

#### HVAC Items

The Pipes of sizes 150mm & below shall be M.S. 'C' class as per IS : 1239 and pipes size above 150mm shall be welded black steel pipe heavy class as per IS: 3589, from minimum 6.35mm thick M.S. Sheet for pipes upto 350 mm dia. and from minimum 7mm thick MS sheet for pipes of 400 mm dia and above.

3001	M.S. Pipe - 400 mm dia.	Per Mtr	6049.00
3002	M.S. Pipe - 350 mm dia.	Per Mtr	3381.30
3003	M.S. Pipe- 300 mm dia.	Per Mtr	2826.22
3004	M.S. Pipe - 250mm dia.	Per Mtr	2354.78
3005	M.S. Pipe - 200mm dia.	Per Mtr	1883.82
3006	M.S. Pipe - 150mm dia.	Per Mtr	1076.37
3007	M.S. Pipe - 125mm dia.	Per Mtr	912.33
3008	M.S. Pipe - 100mm dia.	Per Mtr	743.88
3009	M.S. Pipe - 80mm dia.	Per Mtr	502.24
3010	M.S. Pipe -65mm dia.	Per Mtr	397.95
3011	M.S. Pipe -50 mm dia.	Per Mtr	314.87
3012	M.S. Pipe - 40 mm dia.	Per Mtr	223.92
3013	M.S. Pipe - 32 mm dia	Per Mtr	191.72
3014	M.S. Pipe - 25 mm dia	Per Mtr	147.39
3023	Pipe aluminium Cladding 0.63mm	sq m	360.00
	BUTTERFLY VALVE (MANUAL) with C I body SS Disc, Nitrile Rubber Seal & O- Ring PN 16 pressure rating for chilled water/hot eater circulation as specified		

Code No.	DESCRIPTION	Unit	Rate
3024	200 mm dia	Each	7946.00
3025	150mm dia.	Each	3272.00
3026	125mm dia.	Each	2780.00
3027	100mm dia.	Each	2255.00
3028	80mm dia.	Each	1714.00
3029	65mm dia.	Each	1550.00
3030	50mm dia.	Each	1468.00
3031	40mm dia.	Each	1468.00
	BALANCING VALVE WITH BUILT IN MEASURING FACILITY with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & PN 16 pressure rating for chilled / hot water circulation as specified.		
3032	200 mm dia	Each	38142.00
3033	150mm dia.	Each	18642.00
3034	125mm dia.	Each	13650.00
3035	100mm dia.	Each	10062.00
3036	80mm dia.	Each	6811.00
3037	65 mm dia	Each	5842.00
3038	50mm dia.	Each	4672.00
3039	40 mm dia	Each	2683.00
	NON - RETURN VALVE with duel plate of C I body SS plates vulcanized NBR seal flanged end & PN 16 pressure rating for chilled / hot water circulation including insulation as specified.		
3040	200 mm dia	Each	8400.00
3041	150mm dia.	Each	4600.00
3042	125mm dia.	Each	3800.00
3043	100 mm dia	Each	2600.00
3044	80mm dia.	Each	1800.00
3045	65 mm dia	Each	1592.00
	Y - STRAINER of Ductile CI Body flanged ends with stainless steel strainer for chilled / hot water circulation including insulation as specified.		
3046	200mm dia	Each	20154.00
3047	150mm dia.	Each	9604.00
3048	125mm dia.	Each	8995.00

Code No.	DESCRIPTION	Unit	Rate
3049	100 mm dia	Each	5925.00
3050	80 mm dia	Each	4345.00
3051	65mm dia.	Each	3670.80
3052	50mm dia.	Each	2897.00
3053	40mm dia.	Each	1975.00
3054	Industrial type pressure gauges with gun metal / brass valves	Each	760.00
3055	Industrial type thermometres.	Each	600.00
	Factory fabricated GSS sheet metal rectangular/round ducting of following sheet thickness		
3056	Thickness 0.63 mm sheet	sq m	468.50
3057	Thickness 0.80 mm sheet	sq m	575.40
3058	Thickness 1.00 mm sheet	sq m	692.50
3059	Thickness 1.25 mm sheet	sq m	830.00
	GSS sheet metal of following sheet thickness		
3060	Thickness 0.63 mm sheet	sq m	373.00
3061	Thickness 0.80 mm sheet	sq m	497.00
3062	Thickness 1.00 mm sheet	sq m	622.00
3063	Thickness 1.25 mm sheet	sq m	752.00
3064	GI volume control duct damper Motorized (ON-OFF Type) duct mounted GI volume control damper with enthalpy sensor and necessary control wire (minimum 1.5 sqmm) for integration within AHU room	sq m	4300.00
3065	Actuator	sq m	4307.00
3066	Powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers	sq m	6072.00
3067	Powder coated extruded aluminium Return Air Grills with louvers but without volume control dampers	sq m	3828.00
3068	Supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removable core.	sq m	8250.00
3069	Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring & removable core.	sq m	5378.00
3070	Thermal insulated flexible duct- 200 mm dia Fire dampers in supply air duct/main branch and return air path with inbuilt mechanism of spring return action	sq m	329.00

Code No.	DESCRIPTION	Unit	Rate
3071	Fire damper	sq m	6854.00
3072	Actuator	sq m	6307.00
3073	25 mm thick resin bonded glass wool having density of 32 kg/m <sup>3</sup> ,	sq m	109.80
3074	50mm thick, density 32 kg/cu.m resin bonded glass fiber insulation Duly laminated aluminum foil of mat finish closed cell Nitrile rubber (class "O") insulation for use on existing duct	sq m	219.00
3076	19mmthickness	sq m	423.00
3077	25mmthickness	sq m	560.00

### AIR HANDLING UNITS

Factory built floor mounted chilled water double skin type horizontal/vertical air handling units made of 25mm thick panels consisting of pre plasticized G.I. casing of thickness 0.8mm outside layer and 0.8 mm inside layer with polyurethane foam (PUF) insulation factory injected between them by injection moulding machine, complete with blower section with blower suitable for static pressure as required, minimum 2 bend GSS/PVC eliminators, cooling coil section with aluminium finned copper tubes (tubes thickness not less than 0.5mm) cooling coil of 6 row deep, filter section with 50mm thick metal viscous/ washable synthetic type air prefilters, belt drive package with TEFC drive motor of efficiency class IE 3 suitable for 415 ± 10% volts, 50Hz, 3 Phase AC supply suitably designed for VFD applications, drain connections, stainless steel (18G) drain pan with PUF insulation, 150 mm dia. dial type pressure gauges (2 nos.) and industrial type thermometres (2 nos.) at the inlet and outlet of coil, auto purge valve wherever required, necessary vibration isolation arrangement etc. complete as per specification and of following capacities.

3078	<b>4300 CMH</b>	Each	70437.00
3079	<b>5100 CMH</b>	Each	82867.00
3080	<b>6800 CMH</b>	Each	93120.00
3081	<b>8500 CMH</b>	Each	115360.00
3082	<b>10200 CMH</b>	Each	133040.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
3083	<b>11900 CMH</b>	Each	151200.00
3084	<b>13600 CMH</b>	Each	162400.00
3085	<b>15300 CMH</b>	Each	184080.00
3086	<b>17000 CMH</b>	Each	194800.00
3087	<b>18700 CMH</b>	Each	215280.00
3088	<b>20400 CMH</b>	Each	231280.00
	Factory built floor mounted chilled water double skin type horizontal/vertical air handling units made of 25mm thick panels consisting of pre plasticized G.I. casing of thickness 0.8mm outside layer and 0.8 mm inside layer with polyurethane foam (PUF) insulation factory injected between them by injection moulding machine, complete with blower section with blower suitable for static pressure as required, minimum 2 bend GSS/PVC eliminators, cooling coil section with aluminium finned copper tubes (tubes thickness not less than 0.5mm) cooling coil of 4 row deep, filter section with 50mm thick metal viscous/ washable synthetic type air prefilters, belt drive package with TEFC drive motor of efficiency class IE 3 suitable for 415 ± 10% volts, 50Hz, 3 Phase AC supply suitably designed for VFD applications, drain connections, stainless steel (18G) drain pan with PUF insulation, 150 mm dia. dial type pressure gauges (2 nos.) and industrial type thermometres (2 nos.) at the inlet and outlet of coil, auto purge valve wherever required, necessary vibration isolation arrangement etc. complete as per specification and of following capacities.		
3089	<b>4300 CMH</b>	Each	62070.00
3090	<b>5100 CMH</b>	Each	72855.00
3091	<b>6800 CMH</b>	Each	81293.00
3092	<b>8500 CMH</b>	Each	100589.00
3093	<b>10200 CMH</b>	Each	117680.00
3094	<b>11900 CMH</b>	Each	131734.00
3095	<b>13600 CMH</b>	Each	142400.00
3096	<b>15300 CMH</b>	Each	161840.00
3097	<b>17000 CMH</b>	Each	170320.00
3098	<b>18700 CMH</b>	Each	186357.00
3099	<b>20400 CMH</b>	Each	202080.00

Code No.	DESCRIPTION	Unit	Rate
	<b>Motorized Butter fly Valves with CI Body, SS Disc, O - ring and minimum PN-16 pressure rating , conforming to BS 5155, IS 13095, with IP-55 actuator as specified.</b>		
<b>3101</b>	350 mm	Each	74792.00
<b>3102</b>	300 mm	Each	67023.00
<b>3103</b>	250 mm	Each	48253.00
<b>3104</b>	200 mm	Each	36397.00
<b>3105</b>	150 mm	Each	28217.00
<b>3106</b>	125 mm	Each	27974.00
<b>3107</b>	100 mm	Each	27455.00
<b>3108</b>	80 mm	Each	11739.00
<b>3109</b>	65 mm	Each	11626.00
<b>3110</b>	50 mm	Each	11388.00
	<b>Electronic, self-balancing, pressure independent type dynamic balancing valve with integrated 2 way modulating control valves in a single body, alongwith actuator as specified</b>		
<b>3111</b>	150 mm	Each	107870.00
<b>3112</b>	125 mm	Each	98210.00
<b>3113</b>	100 mm	Each	77280.00
<b>3114</b>	80 mm	Each	45080.00
<b>3115</b>	65 mm	Each	35420.00
<b>3116</b>	50 mm	Each	22943.00
<b>3117</b>	40 mm	Each	20930.00
<b>3118</b>	32 mm	Each	11270.00
<b>3119</b>	25 mm	Each	10600.00
<b>3120</b>	20 mm	Each	7728.00
	<b>AIR HANDLING UNIT</b>		
	<b>Factory built floor mounted chilled water double skin type horizontal/vertical air handling units made of 25mm thick panels consisting of pre plasticized G.I. casing of thickness 0.8mm outside layer and 0.8 mm inside layer with polyurethane foam (PUF) insulation factory injected between them by injection moulding machine, complete with blower</b>		

Code No.	DESCRIPTION	Unit	Rate
	<p>section with blower suitable for static pressure as required, minimum 2 bend GSS/PVC eliminators, cooling coil section with aluminium finned copper tubes (tubes thickness not less than 0.5mm) cooling coil of 6 row deep, filter section with 50mm thick metal viscous/ washable synthetic type air prefilters, belt drive package with TEFC drive motor of Efficiency Class IE3 suitable for VFD 415 ± 10% volts, 20- 50Hz, 3 Phase AC supply, drain connections, stainless steel (18G) drain pan with PUF insulation, 150 mm dia. dial type pressure gauges (2 nos.) and industrial type thermometres (2 nos.) at the inlet and outlet of coil, auto purge valve wherever required, necessary vibration isolation arrangement etc. complete as per specification and of following capacities.</p>		
3142	23800 CMH	Each	253609.00
3143	28900 CMH	Each	267830.00
3144	34000 CMH	Each	296847.00
3145	39100 CMH	Each	340181.00
3162	23800 CMH	Each	192140.00
3163	28900 CMH	Each	245209.00
3164	34000 CMH	Each	271744.00
3165	39100 CMH	Each	311355.00
3201	Resin bonded fiber glass insulation of density 80 kg/cu m of thickness 65 mm on existing pipe	sq m	928.00
<b>HOT DIPPED GALVANIZED CABLE TRAYS</b>			
3701	MS perforated cable tray Hot Dipped Galvanized 100 X 50 X 1.6 mm	Metre	239.00
3702	MS perforated cable tray Hot Dipped Galvanized 150 X 50 X 1.6 mm	Metre	268.00
3703	MS perforated cable tray Hot Dipped Galvanized 225 X 50 X 1.6 mm	Metre	386.10
3704	MS perforated cable tray Hot Dipped Galvanized 300 X 50 X 1.6 mm	Metre	429.00
3705	MS perforated cable tray Hot Dipped Galvanized 375 X 50 X 2 mm	Metre	584.10

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
3706	MS perforated cable tray Hot Dipped Galvanized 450 X 50 X 2 mm	Metre	649.00
3707	MS perforated cable tray Hot Dipped Galvanized 600 X 50 X 2 mm	Metre	950.00
3708	MS perforated cable tray Hot Dipped Galvanized 300 X 62.5 X 2 mm	Metre	578.00
3709	MS perforated cable tray Hot Dipped Galvanized 375 X 62.5 X 2 mm	Metre	680.00
3710	MS perforated cable tray Hot Dipped Galvanized 450 X 62.5 X 2 mm	Metre	782.00
3711	MS perforated cable tray Hot Dipped Galvanized 600 X 62.5 X 2 mm	Metre	989.00
3712	MS perforated cable tray Hot Dipped Galvanized 750 X 62.5 X 2 mm	Metre	1216.00
3713	MS perforated cable tray Hot Dipped Galvanized 900 X 62.5 X 2 mm	Metre	1424.00
3714	MS perforated cable tray Hot Dipped Galvanized 600 X 75 X 2 mm	Metre	1020.00
3715	MS perforated cable tray Hot Dipped Galvanized 750 X 75 X 2 mm	Metre	1224.00
3716	MS perforated cable tray Hot Dipped Galvanized 900 X 75 X 2 mm	Metre	1428.00
3717	MS perforated Hot Dipped Galvanized cable tray Connector 100 X 50 X 1.6 mm	each	30.00
3718	MS perforated Hot Dipped Galvanized cable tray Connector 150 X 50 X 1.6 mm	each	36.00
3719	MS perforated Hot Dipped Galvanized cable tray Connector 225 X 50 X 1.6 mm	each	38.00
3720	MS perforated Hot Dipped Galvanized cable tray Connector 300 X 50 X 1.6 mm	each	38.00
3721	MS perforated Hot Dipped Galvanized cable tray Connector 375 X 50 X 2 mm	each	38.00
3722	MS perforated Hot Dipped Galvanized cable tray Connector 450 X 50 X 2 mm	each	38.00
3723	MS perforated Hot Dipped Galvanized cable tray Connector 600 X 50 X 2 mm	each	38.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
3724	MS perforated Hot Dipped Galvanized cable tray Connector 300 X 62.5 X 2 mm	each	38.00
3725	MS perforated Hot Dipped Galvanized cable tray Connector 375 X 62.5 X 2 mm	each	38.00
3726	MS perforated Hot Dipped Galvanized cable tray Connector 450 X 62.5 X 2 mm	each	38.00
3727	MS perforated Hot Dipped Galvanized cable tray Connector 600 X 62.5 X 2 mm	each	38.00
3728	MS perforated Hot Dipped Galvanized cable tray Connector 750 X 62.5 X 2 mm	each	38.00
3729	MS perforated Hot Dipped Galvanized cable tray Connector 900 X 62.5 X 2 mm	each	38.00
3733	MS perforated Hot Dipped Galvanized cable tray Bend 100 X 50 X 1.6 mm	each	599.00
3734	MS perforated Hot Dipped Galvanized cable tray Bend 150 X 50 X 1.6 mm	each	670.00
3735	MS perforated Hot Dipped Galvanized cable tray Bend 225 X 50 X 1.6 mm	each	965.25
3736	MS perforated Hot Dipped Galvanized cable tray Bend 300 X 50 X 1.6 mm	each	1072.50
3737	MS perforated Hot Dipped Galvanized cable tray Bend 375 X 50 X 2 mm	each	1460.25
3738	MS perforated Hot Dipped Galvanized cable tray Bend 450 X 50 X 2 mm	each	1622.50
3739	MS perforated Hot Dipped Galvanized cable tray Bend 600 X 50 X 2 mm	each	2375.00
3740	MS perforated Hot Dipped Galvanized cable tray Bend 300 X 62.5 X 2 mm	each	1445.00
3741	MS perforated Hot Dipped Galvanized cable tray Bend 375 X 62.5 X 2 mm	each	1701.00
3742	MS perforated Hot Dipped Galvanized cable tray Bend 450 X 62.5 X 2 mm	each	1955.00
3743	MS perforated Hot Dipped Galvanized cable tray Bend 600 X 62.5 X 2 mm	each	2268.00
3744	MS perforated Hot Dipped Galvanized cable tray Bend 750 X 62.5 X 2 mm	each	3037.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
3745	MS perforated Hot Dipped Galvanized cable tray Bend 900 X 62.5 X 2 mm	each	3553.00
3746	MS perforated Hot Dipped Galvanized cable tray Bend 600 X 75 X 2 mm	each	2550.00
3747	MS perforated Hot Dipped Galvanized cable tray Bend 750 X 75 X 2 mm	each	3060.00
3748	MS perforated Hot Dipped Galvanized cable tray Bend 900 X 75 X 2 mm	each	3570.00
3749	MS perforated Hot Dipped Galvanized cable tray Reducer 100 X 50 X 1.6 mm	each	950.00
3750	MS perforated Hot Dipped Galvanized cable tray Reducer 150 X 50 X 1.6 mm	each	1131.00
3751	MS perforated Hot Dipped Galvanized cable tray Reducer 225 X 50 X 1.6 mm	each	1473.00
3752	MS perforated Hot Dipped Galvanized cable tray Reducer 300 X 50 X 1.6 mm	each	1752.00
3753	MS perforated Hot Dipped Galvanized cable tray Reducer 375 X 50 X 2 mm	each	2159.00
3754	MS perforated Hot Dipped Galvanized cable tray Reducer 450 X 50 X 2 mm	each	2350.00
3755	MS perforated Hot Dipped Galvanized cable tray Reducer 600 X 50 X 2 mm	each	3344.00
3756	MS perforated Hot Dipped Galvanized cable tray Reducer 300 X 62.5 X 2 mm	each	2153.00
3757	MS perforated Hot Dipped Galvanized cable tray Reducer 375 X 62.5 X 2 mm	each	2534.00
3758	MS perforated Hot Dipped Galvanized cable tray Reducer 450 X 62.5 X 2 mm	each	2996.50
3759	MS perforated Hot Dipped Galvanized cable tray Reducer 600 X 62.5 X 2 mm	each	3841.00
3760	MS perforated Hot Dipped Galvanized cable tray Reducer 750 X 62.5 X 2 mm	each	4144.00
3761	MS perforated Hot Dipped Galvanized cable tray Reducer 900 X 62.5 X 2 mm	each	4834.50
3762	MS perforated Hot Dipped Galvanized cable tray Reducer 600 X 75 X 2 mm	each	3351.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
3763	MS perforated Hot Dipped Galvanized cable tray Reducer 750 X 75 X 2 mm	each	4201.00
3764	MS perforated Hot Dipped Galvanized cable tray Reducer 900 X 75 X 2 mm	each	4893.00
3765	MS perforated Hot Dipped Galvanized cable tray Tee 100 X 50 X 1.6 mm	each	718.00
3766	MS perforated Hot Dipped Galvanized cable tray Tee 150 X 50 X 1.6 mm	each	750.00
3767	MS perforated Hot Dipped Galvanized cable tray Tee 225 X 50 X 1.6 mm	each	1158.30
3768	MS perforated Hot Dipped Galvanized cable tray Tee 300 X 50 X 1.6 mm	each	1287.00
3769	MS perforated Hot Dipped Galvanized cable tray Tee 375 X 50 X 2 mm	each	1752.30
3770	MS perforated Hot Dipped Galvanized cable tray Tee 450 X 50 X 2 mm	each	1947.00
3771	MS perforated Hot Dipped Galvanized cable tray Tee 600 X 50 X 2 mm	each	2850.00
3772	MS perforated Hot Dipped Galvanized cable tray Tee 300 X 62.5 X 2 mm	each	1734.00
3773	MS perforated Hot Dipped Galvanized cable tray Tee 375 X 62.5 X 2 mm	each	2079.00
3774	MS perforated Hot Dipped Galvanized cable tray Tee 450 X 62.5 X 2 mm	each	2346.00
3775	MS perforated Hot Dipped Galvanized cable tray Tee 600 X 62.5 X 2 mm	each	3024.00
3776	MS perforated Hot Dipped Galvanized cable tray Tee 750 X 62.5 X 2 mm	each	3641.00
3777	MS perforated Hot Dipped Galvanized cable tray Tee 900 X 62.5 X 2 mm	each	4265.00
3778	MS perforated Hot Dipped Galvanized cable tray Tee 600 X 75 X 2 mm	each	3060.00
3779	MS perforated Hot Dipped Galvanized cable tray Tee 750 X 75 X 2 mm	each	3672.00
3780	MS perforated Hot Dipped Galvanized cable tray Tee 900 X 75 X 2 mm	each	4284.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
3781	MS perforated Hot Dipped Galvanized cable tray Cross member 100 X 50 X 1.6 mm	each	718.00
3782	MS perforated Hot Dipped Galvanized cable tray Cross member 150 X 50 X 1.6 mm	each	750.00
3783	MS perforated Hot Dipped Galvanized cable tray Cross member 225 X 50 X 1.6 mm	each	1172.00
3784	MS perforated Hot Dipped Galvanized cable tray Cross member 300 X 50 X 1.6 mm	each	1436.00
3785	MS perforated Hot Dipped Galvanized cable tray Cross member 375 X 50 X 2 mm	each	1940.00
3786	MS perforated Hot Dipped Galvanized cable tray Cross member 450 X 50 X 2 mm	each	2249.00
3787	MS perforated Hot Dipped Galvanized cable tray Cross member 600 X 50 X 2 mm	each	2860.00
3788	MS perforated Hot Dipped Galvanized cable tray Cross member 300 X 62.5 X 2 mm	each	1739.00
3789	MS perforated Hot Dipped Galvanized cable tray Cross member 375 X 62.5 X 2 mm	each	2041.00
3790	MS perforated Hot Dipped Galvanized cable tray Cross member 450 X 62.5 X 2 mm	each	2350.00
3791	MS perforated Hot Dipped Galvanized cable tray Cross member 600 X 62.5 X 2 mm	each	2967.00
3792	MS perforated Hot Dipped Galvanized cable tray Cross member 750 X 62.5 X 2 mm	each	3641.00
3793	MS perforated Hot Dipped Galvanized cable tray Cross member 900 X 62.5 X 2 mm	each	4265.00
3794	MS perforated Hot Dipped Galvanized cable tray Cross member 600 X 75 X 2 mm	each	3062.00
3795	MS perforated Hot Dipped Galvanized cable tray Cross member 750 X 75 X 2 mm	each	2620.00
3796	MS perforated Hot Dipped Galvanized cable tray Cross member 900 X 75 X 2 mm	each	3056.00
3801	GI Suspender 6 mm dia 0.75m long	each	20.00
3802	GI Suspender 8 mm dia 0.75m long	each	25.00
3803	GI Suspender 10 mm dia 0.75m long	each	30.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
3804	25 mm X 25 mm X 3 mm Galvannised slotted/angle iron/ channel	kg	41.00
3805	35 mm X 55 mm X 4 mm Galvannised slotted/angle iron/ channel	kg	41.00
3806	35mm X 35 mm X 5 mm Galvannised slotted/angle iron/ channel	kg	41.00
4001	Resin bonded fiber glass pipe section insulation having density 80 kg/cum-75 mm thickness for 400 mm dia pipe	Metre	1733.00
4002	Resin bonded fiber glass pipe section insulation having density 80 kg/cum-75 mm thickness for 350 mm dia pipe	Metre	1549.00
4003	Resin bonded fiber glass pipe section insulation having density 80 kg/cum-75 mm thickness for 300 mm dia pipe	Metre	1270.00
4004	Resin bonded fiber glass pipe section 250mm insulation having density 80 kg/cum-75 mm thickness for 250 mm dia pipe	Metre	1109.00
4005	Resin bonded fiber glass pipe section 200 mm insulation having density 80 kg/cum-75 mm thickness for 200 mm dia pipe	Metre	939.00
4006	Resin bonded fiber glass pipe section 150 mm insulation having density 80 kg/cum-50 mm thickness for 150 mm dia pipe	Metre	475.00
4007	Resin bonded fiber glass pipe section insulation having density 80 kg/cum-50 mm thickness for 125mm dia pipe	Metre	419.00
4008	Resin bonded fiber glass pipe section insulation having density 80 kg/cum-50 mm thickness for 100 mm dia pipe	Metre	188.16
4009	Resin bonded fiber glass pipe section insulation having density 80 kg/cum-50 mm thickness for 80 mm dia pipe	Metre	310.00
4010	Resin bonded fiber glass pipe section insulation having density 80 kg/cum-50 mm thickness for 65 mm dia pipe	Metre	281.00
4011	Resin bonded fiber glass pipe section insulation having density 80 kg/cum-50 mm thickness for 50 mm dia pipe	Metre	245.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
4012	Resin bonded fiber glass pipe section insulation having density 80 kg/cum-50mm thickness for 40 mm dia pipe	Metre	221.00
4013	Resin bonded fiber glass pipe section insulation having density 80 kg/cum-50 mm thickness for 32 mm dia pipe	Metre	208.00
4014	Resin bonded fiber glass pipe section insulation having density 80 kg/cum-50 mm thickness for 25 mm dia pipe	Metre	189.00
4015	Nitrile rubber ( closed cell elastometric nitrile rubber of class 'O' ) Insulation -32 mm thickness	sq m	627.00
4016	Nitrile rubber (closed cell elastometric nitrile rubber of class 'O' ) Insulation -19 mm thickness	sq m	347.00
4017	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -75mm thickness for 400 mm dia pipe	Metre	981.00
4018	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -75mm thickness for 350 mm dia pipe	Metre	838.25
4019	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -75mm thickness for 300mm dia pipe	Metre	722.75
4020	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -75mm thickness for 250 mm dia pipe	Metre	603.75
4021	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -75 mm thickness for 200 mm dia pipe	Metre	514.50
4022	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -50 mm thickness for 150 mm dia pipe	Metre	244.13
4023	Expanded polystrene moulded pipe section of density 20kg/cum Insulation - 50 mm thickness for 125 mm dia pipe	Metre	215.25
4024	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -50 mm thickness for 100 mm dia pipe	Metre	189.00
4025	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -50 mm thickness for 80 mm dia pipe	Metre	156.63
4026	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -50 mm thickness for 65 mm dia pipe	Metre	142.63
4027	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -50 mm thickness for 50 mm dia pipe	Metre	126.00
4028	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -50 mm thickness for 40 mm dia pipe	Metre	112.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
4029	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -50 mm thickness for 32 mm dia pipe	Metre	105.00
4030	Expanded polystrene moulded pipe section of density 20kg/cum Insulation -50 mm thickness for 25 mm dia pipe	Metre	96.25
4031	Resin bonded fiber glass insulation of thickness 75 mm on existing pipe	sq m	1279.00
4032	Resin bonded fiber glass insulation of density 80 kg/cu.mt. of thickness 50 mm on existing pipe	sq m	1049.00
4033	Resin bonded fiber glass insulation of density 80 kg/cu.mt. Of thickness 40 mm on existing pipe	sq m	909.92
4034	Resin bonded fiber glass insulation of thickness 25 mm on existing pipe	sq m	600.55
4037	Expanded polystrene insulation of thickness 75 mm on existing pipe	sq m	210.00
4038	Expanded polystrene insulation of thickness 50 mm on existing pipe	sq m	140.00
4069	Acoustic lining of supply air duct with 25mm thick resin bonded glass wool having density of 32kg/m <sup>3</sup>	sq m	109.80
4070	Reinforced fiber glass tissue and 0.08mm perforated aluminium sheet	sq m	299.00
4071	50 mm thick resin bonded glass wool having density of 32kg/m <sup>3</sup>	sq m	219.00
4072	50 mm thick resin bonded glass wool having density of 24 kg/m <sup>3</sup> with factory laminated aluminium foil	sq m	162.00
4073	Resin bonded fiber glass insulation of thickness 65 mm on existing pipe	sq m	1160.00
<b>FIRE DETECTION AND ALARM SYSTEM</b>			
4101	Heat Detectors of electronic Rate of Rise cum fixed temperature (Dual Thermistor) type with mounting base complete with all connection etc.	Each	750.00
4102	Smoke Detector with built in LED, mounting base complete with all connection etc.	Each	812.50
4103	Manual call boxes of MS Type in surface/recess with stainless steel chain & hammer assembly complete with glass and push button etc.	Each	300.00

Code No.	DESCRIPTION	Unit	Rate
4104	Manual call boxes of ABS Type in surface/recess with stainless steel chain & hammer assembly complete with glass and push button etc.	Each	250.00
4105	Response indicator on surface/recessed MS Box having two LED's metallic covers complete with all connections etc.	Each	90.00
4106	Fire alarm sounders (electronic) with facility to make announcement, mounted in M.S. Box (16 SWG) with hinged cover plate & suitable for operation with amplifier i/c line matching transformer etc.	Each	362.50
4107	Fire alarm sounders (electronic) with facility to make announcement, mounted in A.B.S. Box with hinged cover plate & suitable for operation with amplifier i/c line matching transformer etc.	Each	312.50
4108	Talk back slave station in surface/recess suitable for operation on simplex mode complete with P.T.T. Knob & speaker/microphone enclosed in a M.S (16 SWG)/ABS.Box, break glass in front etc.	Each	625.00
	<b>Sector panels suitable for following zones, complete with visual indications for short circuit fault, open circuit fault fire conditions and all other standard facilities as per IS:2189, mimic diagram for all area/zone covered complete with all connections, interconnections</b>		
4109	4 Zone fire alarm control panel as per IS: 2189 with backlit LCD Display	Each	4875.00
4110	6 Zone fire alarm control panel as per IS: 2189 with backlit LCD Display	Each	7375.00
4111	10 Zone fire alarm control panel as per IS: 2189 with backlit LCD Display	Each	9750.00
	<b>Main control and indication panel made out of 16 SGW MS sheet to accommodate the following items duly stove anameled painted in approved colour with louvers for ventilation's locking arrangement including audio and visual indication for fire alarm and public address system, monitoring system including providing and fixing the following connections, interconnections etc.</b>		

Code No.	DESCRIPTION	Unit	Rate
4112	<p>10 zone control panel for fire alarm system with following:-</p> <p>250 Watt amplifier racks suitable for operation on 230V AC/24V DC supply conforming to IEC-268-3 complete with all accessories as required 2 Nos. (one to act as standby)</p> <p>Talk back master station with LED PTT (Press to talk) push button for operation on 230V AC/24 V DC supply conforming to IEC-268 for simplex mode of operation/communication suitable for 20 Nos.talk back unit 1 set.</p> <p>Announcement control desk suitable for selection of different zones selectively and ON ALL CALL switch with visual indication etc., complete as required 1 Set.</p> <p>Amplifier change over switch for inter changing amplifier 1 No.</p> <p>Monitor panel for loudspeaker complete output selector ON/OFF switch, fuse visual indications etc. complete as required 1 No.</p> <p>Gooseneck microphone with stand and ON/OFF switch 1 No.</p> <p>Mains ON/OFF switch, fuse indication lamps, DC and AC voltMetres &amp; Ammetres terminal blocks etc. complete as required 1 Set.</p> <p>Battery charger trickle cum boost to take complete load of fire alarm &amp; PA system complete with all accessories including providing &amp; fixing of 2 nos.12 volt, 60 AH each sealed maintenance free batteries 1 Set.</p>	Each	47177.00
4113	<p>6 zone control panel for fire alarm system with following:-</p> <p>100 Watt amplifier racks suitable for operation on 230V AC/24V DC supply conforming to IEC-268-3 complete with all accessories as required 2 Nos. (one to act as standby)</p> <p>Talk back master station with LED PTT (Press to talk) push button for operation on 230V AC/24 V DC supply</p>		

Code No.	DESCRIPTION	Unit	Rate
	<p>conforming to IEC-268 for simplex mode of operation/communication suitable for 20 Nos.talk back unit 1 set.</p> <p>Annoucement control desk suitable for selection of different zones selectively and ON ALL CALL switch with visual indication etc., complete as required 1 Set.</p> <p>Amplifier change over switch for inter changing amplifier 1 No.</p> <p>Monitor panel for loudspeaker complete output selector ON/OFF switch, fuse visual indications etc. complete as required 1 No.</p> <p>Gooseneck microphone with stand and ON/OFF switch 1 No.</p> <p>Mains ON/OFF switch, fuse indication lamps, DC and AC voltmeters &amp; Ammetres terminal blocks etc. complete as required 1 Set.</p> <p>Battery charger trickle cum boost to take complete load of fire alarm &amp; PA system complete with all accessories including providing &amp; fixing of 2 nos.12 volt,30 AH each sealed maintenance free batteries 1 Set.</p>	Each	32272.00
	<p><b>Micro processor based. Intelligent Addressable Main Fire alarm panel , Central Processing Unit ,with the following loop module and with each loop capacity of 120 detector per loop with total of 240 detectors and devices with loop length up to 2 kmtr, network communication card, minimum 320 character graphics, LCD display with touch screen or other keypad and 1000 event history logs in the non volatile memory (EEPROM) power supply unit at 230+ 5 % V, 48 Hrs back-up with 24 volt sealed maintenance free batteries with automatic charger. The panel shall have facility to connect printer to printout logs and facility to have integration with analog voice evacuation system( which is part of the schedule of work under SH: PA System) and shall be complete with all accessories . The panel should be compatible for integration with IBMS system with open protocol Bacnet/IP , complete as per specs and as required for following loops.</b></p>		

Code No.	DESCRIPTION	Unit	Rate
4114	10 Loop Control Panel having CPU with 640 character display including backlite LCD display qwerty programming and operating manuals, supporting 1 to 10 signaling line circuits (upto 5 extendable cards & supporting 103 network modes) complete as required. Control and expander moudules. Dress Plate. Battery dress plate. Chassis low profile. Dress Panel blanck covers. BACnet protocol.	Each	338000.00
4115	Two Loop Control Panel having CPU with 640 character display including backlite LCD display qwerty programming and operating manuals, supporting 1 to 10 signaling line circuits (upto 5 extendable cards & supporting 103 network modes) complete as required. Control and expander moudules. Dress Plate. Battery dress plate. Chassis low profile. Dress Panel blanck covers. BACnet protocol.	Each	177650.00
4116	Central graphical fire alarm management system i/c software	Each	147250.00
4117	320 character LCD display repeater panel.	Each	81000.00
4118	Intelligent photothermal detector	Each	2099.50
4119	Response indicator on surface/recessed MS Box having two LED's metallic covers complete with all connections etc.	Each	150.00
4120	Intelligent addressable programmable sounder.	Each	1824.00
4121	Cost of fault isolator complete with base	Each	2291.40
4122	Cost of intelligent aspiration detector	Each	220000.00
4123	Cost of intelligent addressable thermal detector	Each	1881.00
4124	Cost of control module	Each	2090.00
4125	Cost of addressable fire phone control module	Each	2289.50
4126	Cost of addressable beam detector with remote test features	Each	55100.00
4127	Cost of intelligent duct detector unit with photothermal detector complete with base	Each	5721.85

Code No.	DESCRIPTION	Unit	Rate
4128	Cost of manual call point	Each	2745.50
4129	Cost of Horn cum strobe	Each	2470.00
4130	Cost of Strobe.	Each	2364.55
4131	Cost of fire fighter telephone handset	Each	4275
4132	Intelligent interface unit BACnet protocol for communication link between building management system and fire alarm control panel.	Each	141550.00
4133	Cost of fire fighter phone jack	Each	1149.50
4134	6 Zone, voice alarm controller with USB, MP3, AM/FM player (including zone button paging station).	Each	95250.00
4135	Cost of 1.5/3/6W Ceiling Speaker	Each	670.00
4136	Cost of 1.5/3/6W Metal Ceiling Speakers.	Each	1295.00
4137	Cost of wall mounted loud speaker, 3/1.5 Watt in ABS enclosure	Each	1775.00
4138	Cost of 2 watt, 70 Volts ceiling speaker.	Each	1330.00
4139	Cost of Digital audio amplifier 50 Watt 25VRMS operating of 240 Volt AC Supply.	Each	73000.00
4140	Digital audio amplifier 75 Watt 25VRMS operating of 240 Volt AC Supply.	Each	110000.00
4141	Cost of Exit point directional sound speaker with voice and integral audio amplifier with selectable sound pulse patterns	Each	7600.00
4142	Cost of Digital voice command keypad	Each	37082.50
4143	Cost of 25 mm Outer dia PVC/ABS Pipe with end caps including making air sampling opening of appropriate dia on appropriate interval.	Metre	78.00
4144	Cost of Fire Survival armoured cable, Fibre glass tape wrapped, ZH inner, outer sheath 2x1.5 Sq. mm cable.	Metre	196.20
4145	Cost of Fire alarm armoured FRLS cable 2 x 1.5 sqmm <b>Speaker cable of following pairs ,cores and size of PVC insulated FRLS copper conductor cable with LHC in the existing surface / recessed steel conduit / PVC casing and capping including connections etc.</b>	Metre	58.20
4146	Cost of single pair 2-core 48/0.2 mm, speaker cable	Metre	24.64
4147	Cost of 25 mm dia MS flexible pipe with PVC coating along with all ancillaries & accessories like coupler etc.	Metre	25.00

<b>Code No.</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Rate</b>
4148	Two pair 0.5 Sq. mm copper twisted cable for talk back system.	Metre	8.16
4149	Addressable beam detector	Each	55100.00
4150	Cost of two pair 2-core 48/0.2 mm for PA System. (wastage 5%)	Metre	49.28
4151	Cost of three pair 2-core 48/0.2 mm Speaker Cable for PA System.(wastage 5%)	Metre	73.92
4152	Cost of four pair 2-core 48/0.2 mm Speaker Cable for PA System.(wastage 5%)	Metre	98.56

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## **Central Public Works Department (CPWD)**

**In the Service of the nation since 164 Years.**

Under the Ministry of Urban Development, Government of India, CPWD provides single window services for all facets of the government built environment in India and abroad.

With its huge resource of skilled and competent engineers, architects and horticulturists, CPWD's strength is its country wide presence, with proven ability to undertake a whole range of complex constructions under difficult terrains. The department has the capacity to undertake a range of work varying from the smallest works in the remotest of places to mega projects in metro cities. These works include the construction and maintenance of government structures such as residential complexes, offices, schools, laboratories, hospitals, sport facilities, stadia, gymnasia, auditoria, storages, highways, flyovers, tunnels, bridges, jetties, airports, runways and border roads, its fencing and flood lighting, high altitude roads, Intra-campus facilities such as water and electric supply. Sewerage and treatment plants are also provided.

CPWD also discharges other functions such as the custody of estates, valuation, rent assessment, technical advice to government, consultancy services, standardization and benchmarking, State Ceremonies (Republic Day, Samadhis, etc.), processing of DPRs for development of urban infrastructure under JNNURM, North Eastern region and works of other Ministries for centrally funded works. CPWD also assists in organizing public and ceremonial functions, and upkeep of historical and important monuments.

### **Delhi Schedules of Rates (E&M) 2018**

The DSR (E&M) 2018 incorporates Schedule of Rates for Internal & External Electrical Works, rates for chilled water pipes, ducting, insulation, valves, AHUs etc. pertaining to low side of Air-conditioning Works and Fire Detection and Alarm System.



**Central Public Works Department**  
Ministry of Urban Development,  
Government of India  
[www.cpwd.gov.in](http://www.cpwd.gov.in)