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**PART – 7**

**Technical Specification for Overhead and  
Underground Service Connection works for  
the Year 2016-17**

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# Technical Specification for Overhead and Underground Service Connection works for the Year 2016-17

## Technical Specification for Overhead and underground Service connection works for the year 2016-17

In view of Board Notification vide No.KEB/B11/B10/2195/84-87 and amendment and Regulation-5 of KEB Electricity Supply Regulation, only specification have been furnished in respect of U.G.Cable & over head service connection work has to be got done through the license electrical contractors.

Note : The materials referred to in the specifications of various works dealt in this section shall confirm to the latest ISS as detailed below :

1. PVC insulated PVC sheathed Aluminium wires of 650/1100 V Class shall confirm to IS 604 and bear the ISI certification mark.
2. PVC insulated PVC sheathed Aluminium conductor underground cables with steel rope/steel wire armouring of 1100 V class shall confirm to IS 1544 and shall bear the ISI certification mark.
3. Brazed conduit pipes - IS 1653
4. PVC conduit pipes - IS 2509
5. Class 'A' (light) G.I. Pipe - IS 1239
6. Stoneware pipe - IS 300
7. ACC pipe - IS 1626
8. G.I. Wire - IS 1280
9. G.I.Bolts & Nuts - IS 6639
10. G.I.Heavy Washers - IS 6610
11. G.I.Plain Washers - IS 2016
12. Other materials shall confirm to the relevant Indian standard specification wherever applicable.

### **A) SPECIFICATIONS FOR OVERHEAD SERVICE MAINS**

1. Short poles

(Where clearance between messenger wire and ground is Inadequate)

- a) Supplying and fixing 40 mm 2.90 thick G.I. Pipe 1.8 m long complete with atleast 2 nos of through bolts 12 mm dia with M.S.back plate 100x100x6 mm with eye bolt fixed at the top for dead ending messenger wire with masonry patch work complete as per approved drawing (for single phase installations).

**2. Guy set for short poles as in (a)/(b)**

Supplying and fixing guy set for items(a) & (b) (wherever span exceeds 10 mtr) formed out of not less than 4 mm (8 SWG) G.I. wire with eye bolt or anchor bolt of not less than 12 mm dia with cement concreting work including one break insulator as per approved drawing. If suitable wall or R.C.C. roof is not available for anchoring guy sets, the anchoring has to be done by fixing G.I. wire to the rafter of the tile or asbestos roof.

**3. Eye bolt :**

(If building height is sufficient to string service main from pole)

Supplying and fixing M.S.EYE BOLT 16mm dia of sufficient length to cover the thickness of the wall but not less than 375 mm long with one M.S.back plate of 150x150x60 mm and M.S. washer of 3 mm thick in front, inclusive of masonry patch work etc. complete as per approved drawing.

**4. Clamp for supporting messenger wire**

Supplying and fixing on the pole support 25x6 mm clamp with bolts nuts and flat iron strap for supporting the messenger wire on the pole.

**5. Insulated wire on messenger wire :**

(Single phase and Three phase)

Using 2 single/1 Twin core wires for single phase and 4 single/2 Twin core wires for 3 phase.

Supplying and stringing PVC insulated and PVC sheathed 650/1100 V class aluminium conductor of sizes supported by 3.14 mm (10 SWG) G.I. messenger wire with two break insulator one at each end of the span and with suspenders at intervals of 0.75 mtr. Each suspender shall be porcelain reel insulator of suitable bore through which insulated wire shall pass (single core or twin core as the case may be) and this reel insulator shall be fixed to the messenger wire using 2 mm. (No.14 SWG) G.I. wire suitably bent and twisted. Separate reel insulators shall be provided for each wire. The messenger wire shall be dead-ended on the clamp provided to the departmental pole vide item No.4 above.

Size of Insulated wire in Sq. mm	2.50	4.00	6.00	10.00	16.00	25.00	50.00
Single phase - use 2 nos. single core Wire/ one no. 2 core							
Three phase - use 4 nos. single core Wire/ Two no. Twin core							

**6. Insulated wire in pipe**

(Single phase and three phase)

Supply fixing and wiring service mains in pipe of the following sizes with necessary threaded water tight bends, collars hooks wooden plugs bushing and screws etc.,

- a) 16 SWG braized conduit pipe finished with black stove enamelling both inside and outside.
- b) PVC conduit pipe
- c) Class 'A' (light) G.I.Pipe
- d) PVC insulated aluminium wire of 650/1100 V grade

(single core or twin core as the case may be) with necessary length of loose wire not less than 1 meter long to be terminated inside the meter board without joints and connected to the main side of the energy meter, using bi-metallic connectors, accessories, sleeves etc., inclusive of masonry patch work. The conduit shall be connected to the earth electrode by means of G.I. wire not less than 4 mm (8 SWG) and tinned copper clamp of width 25 mm and 24 gauge with GI bolt nut and washers.

a) Single Phase Service

Sized of insulated wire in Sq. mm	2.5	4.0	6.0	10.0	16.0	25.0	50.0
Diameter of pipe in mm	19	19	19	25	40	40	40
In Braized Conduit pipe	1) Using 2 single core wires 2) Using twin core wires						
In PVC Conduit pipe	1) Using 2 single core wires 2) Using twin core wires						

b) Three phase service

Sized of insulated wire in Sq. mm	2.5	4.0	6.0	10.0	16.0	25.0	50.0
Diameter of pipe in mm	19	19	19	32	40	40	50
In Braized Conduit pipe	1) Using 4 single core wires 2) Using 2 twin core wires						
In PVC Conduit pipe	1) Using 4 single core wires 2) Using 2 twin core wires						
In G.I. Pipe	1) Using 4 single core wires 2) Using 2 twin core wires						

7. Meter Board

1. Single phase

- a) Supplying, fixing and wiring, T.W.Meter board 300x300x65 mm made out of 15 mm thick plank for the front and 12 mm thick plank for the pack with 40x20 mm batten allround using well seasoned teak wood, fixing them with screws, and smooth finishing with 2 coats of high grade varnish. The back of meter board shall be fixed to the wall by means of screws on atleast 2 Nos of wooden plugs of 40x25x100 mm long well fixed in the wall with necessary masonry patch work etc., complete. The planks for both front and back of the meter board shall be made out of not more than two pieces.

- b) -do- 375x300x65 mm.

2. Three Phase :

- do - 500 x 500 x 65 mm T.W. meter board as in item 7(a) but using atleast 4 Nos. of plugs. The planks for both front and back of the meter board shall be made out of not more than three pieces.

8. Earthing :

- a) Supplying, fixing and wiring earth electrodes for grounding conduits, IC cut outs and other equipments on the meter board using 40 mm dia, 2.90 mm thick G.I.pipe 2.5 mtr long burred in a pit. The pit should be filled in with equal proportion of salt and charcoal 150 mm allround the pipe to complete depth. The connection from the pipe to the conduit etc. is to be established through G.I. wire of size as per clause. 7.33 of S 732 using 12 mm dia bolts, nuts washers and checks nuts etc. The pipe shall have 16 through holes of 12 mm dia as per our drawing.



c) **Sealable Cutouts**

Fixing of ironclad sealable cutouts at consumer's premises  
Supply fixing and wiring of sealable cutouts with MS. Sheet cover of not less than 0.9 mm (20 SWG) thick, painted with grey enameled paint both inside and outside on the meter board including porcelain fuse cutouts 600/500 V grade of different capacities conforming to the relevant latest Indian Standard Specifications.

Capacity of cutouts complete in Amps	15	30	60	100	200	300
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**6. Average rate of Over Head Service main wire and UG Cable per meter**

a) Over Head Service main wire

Average rate in Rs. per metre

Sl. No	Insulated wire size in Sq.mm	2.5	4.0	6.0	10.0	16.0	25.0	50.0
1	Single Phase i) 2 Single Core ii) Twin core wire							
2	3 Phase 4 Single Core Wire							

b) Under Ground Cable

Average rate in Rs. per metre

Sl. No	UG Cable Size in Sq. mm	10.0	16.0	25.0	35.0	50.0	70.0	95.0
1	Single Phase							
2	Three Phase							