



**PLANT PURCHASING
SPECIFICATION
HYDERABAD**

HY28597

REV. NO. 00

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LOW TENSION POWER CABLES (PVC INSULATED)

1.0 SCOPE:

This specification governs the quality requirements of design, manufacture, testing packing at manufacturers work and delivery at site, as per requirements complete in all respects.

2.0 APPLICABLE STANDARDS:


- IS: 1554/IEC502 - PVC insulated (Heavy duty) electric cables.
- IS: 8130 - Conductors for insulated electric cables and flexible cords.
- ASTM- D2863 - Standard for critical oxygen index and temperature index test.
- IEC-754 – 1 - Standard for acid gas generation test.
- ASTM- D2843 - Standard for smoke generation test.
- IEC-332.3 - Standard for flammability test (Part 3 Cat 'B')
- SS 424 1475 Class F3 - Standard for flammability test.
- IS:5831 - PVC insulation and sheath of electric cables
- IS: 3975 - Mild steel wires, strips and tapes for armouring of cables.
- IS:3961 (Part 2) - Recommended current ratings for cables; part 2 PVC insulated and PVC sheathed heavy duty cables
- IS:10418 - Wooden drums for electric cables.

3.0 CONSTRUCTIONAL REQUIREMENTS:

- 3.1 Voltage grade : 650/1100 V ✓
- 3.2 Conductor : Standard aluminum conductor as per IS: 8130
- 3.3 Insulation : Heat resistant PVC (Type C)

Revisions:			Issued : STANDARDS ENGINEERING DEPARTMENT		
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- 3.4 Core identification : As per IS: 1554
- 3.5 Inner sheath : Extruded PVC sheath (ST2)/ extruded FRLS PVC sheath (As per enquiry)
- 3.6 Armour : Aluminium wire for single core cables.
Galvanised round wire for diameter less than 13mm
Galvanised strip for diameter more than 13mm
- 3.7 Outer sheath : Extruded PVC sheath (ST2)/ extruded FRLS PVC sheath (As per enquiry).

4.0 TESTS:

All acceptance and routine tests shall be carried out on all cables at vendor's works in the presence of purchaser's representative. Wherever FRLS PVC sheaths are specified, cables shall be tested to demonstrate FRLS properties. Type test reports of similar cables whenever they are called for shall be furnished.

5.0 GENERAL:

- 5.1 Cables shall be delivered in maximum possible lengths of not less than 500 M neatly rolled on wooden drums (seasoned wood), with both ends sealed with moisture proof sealing.
- 5.2 Sequential marking of the length of the cable in meters shall be provided on the outer sheath at every one metre. The embossing shall be legible and indelible.
- 5.3 PVC/ Rubber end caps shall be supplied free of cost for each drum with a minimum of eight per thousand metre length. In addition, ends of the cables shall be properly sealed with caps to avoid ingress of water during transportation and storage.

6.0 CHARACTERISTICS FOR FRLS PVC:

- Oxygen index : 29% (min) at room temperature (27±2°C)
Temperature : 250°C (min)
HCL gas emission : 20% (max)
Smoke density : <60%

7.0 DOCUMENTATION:

- 7.1 2 Copies of filled in technical data sheets (in given format only). Quality scheduled & type test certificates alongwith bid.
- 7.2 2 Copies of final data sheets for our approval after releasing LOL.



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7.3 12 Copies of test certificates and technical data sheets with in one week after inspection.

7.4 QAP shall be furnished along with the offer.


8.0 GUARANTEE:

The cables shall be guaranteed for satisfactory operation of 18 months from the date of despatch or 12 months from date of commissioning whichever is earlier.

9.0 TECHNICAL DATA SHEETS:

Sl. Description
No.

1. Make
2. Type
3. Applicable standards
4. Voltage grade
5. Suitable for system with:
 - a) Service Voltage
 - b) Neutral earthed / unearthed
6. Maximum conductor temperature
 - a) Continuous Deg. C
 - b) Short time Deg. C
7. Conductor
 - a) Material
 - b) Size (sq.mm)
 - c) No. of wires & diameter of each wire (No./ mm)
8. Insulation
 - a) Material
 - b) Type
 - c) Thickness (nominal) mm
9. Inner sheath
 - a) Material
 - b) Type
 - c) Thickness (nominal) mm
 - d) Extruded Yes / No
 - e) Approx. outside dia over inner sheath mm.

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10. Armouring
 - a) Material
 - b) Size
 - c) DC Resistance at 20° C (Ohm/KM)
11. Overall sheath
 - a) Material
 - b) Type
 - c) Thickness (nominal) mm
12. Approx. overall diameter (mm)
13. Standard drum length with tolerance (M)
14. Net weight of cable (Kg/ KM)
15. Continuous current rating for standard IS condition laid direct : Amps.
 - a) In ground
 - b) In duct
 - c) In air
16. Short circuit current for 1- sec. (KA)
17. Electrical parameters at maximum operating temp. (Ohm / KM)
 - a) Resistance
 - b) Reactance at 50 Hz
 - c) Impedence
18. Recommended minimum bending radius
19. Dearating factor for following ambient temp. in air ground:
 - a) At 30° C
 - b) At 35° C
 - c) At 45° C
 - d) At 50° C
20. Cable identification code
21. List of routine and type tests certificates enclosed.