

**TECHNICAL CLARIFICATIONS OF TENDER FOR SUPPLY AND INSTALLATION OF
FURNITURE ITEMS, ELECTRICAL AND NETWORK CABLING, ACCESSORIES AND
FURNISHINGS FOR CCC AND TPO BUILDING**

Tender No.: NITRR/CCC&TPO/2016/OT/461

Dated: 26/05/2016

TECHNICAL SPECIFICATIONS OF ITEMS LIKE ELECTRIC CABLES AND CONDUITS etc.

The materials intended to be supplied and installed under the following specifications should be in accordance with the following.

- a) Indian Electricity Act
- b) Indian Electricity Rules.
- c) IEC 364-5-54, Electrical Installations of Buildings
- d) IS 3043 / IEC 60364 - Earthing

Specifications of Electrical Cables and Conduits

The conductors should be drawn from 99.97% bright electrolytic grade copper with more than 100% conductivity, are annealed and bunched together. The conductors should be insulated with a PVC compound with high insulation resistance and dielectric strength, formulated and manufactured in-house.

In case of multi-core cables, the insulated cores should be laid up to form the core assembly. The inner cores are coded for ease of identification as per National/International coding practices. The sheathing is provided with a specially formulated PVC compound to facilitate not only ease in stripping but also to withstand mechanical abrasion while in use. These PVC compounds used for insulation and sheathing have a high oxygen and temperature index. These properties help in restricting the spread of fire even at very high temperatures.

The single core and multi-core sheathed cables are to be manufactured as per IS 694 : 1990, in sizes from 0.5 sq. mm. to 50 sq. mm. in single core, and in sizes 0.5 sq.mm. to 4.0 sq. mm. upto 5 cores. These sizes should carry the ISI mark and duly approved by FIA/TAC. The rest of the sizes should generally conform to IS 694 : 1990.

Specifications of PVC Conduits

PVC Conduit pipes of sizes 20 / 25 / 32 mm, standard 3 mtrs length, as per site requirement, should be manufactured as per IS:9537 part-III - 1983 standards. Color – Ivory / White.

Mechanical Properties

- Percentage of Compression with specified load less than 25%

- Percentage of Compression without load less than 10%
- High Impact Strength
- Tensile Strength - 390-420 Kg/cm²

Electrical Properties

- Dielectrical Strength = 36 Ky/mm
- Specific resistance=6.1 x 10¹⁴ ohm cm
- Electric Strength = No breakdown at 2 Kv x 50 Hz. For 15 minutes

Thermal Properties

- Working Temp. = 70°C
- Burning rate = Self Extinguishing
- Flammability = UL94V-0
- Flame Die out Time = Less than 30 seconds

NOTE : All conduit fittings like coupler, reducer, tee, elbow, etc. should also be from the same manufacturer.

Specifications of PVC Wall Trunking

All the electric installations require continuous protection of conductors over the whole length, especially at angles and at wiring accessory penetration points. The DLP trunking system includes accessories designed to simplify installation, from fixing the trunking to mounting Arteor / Mosaic, for a perfect finish all along the line.

DLP PVC wall trunking is expected for distributing current as close as possible to the workstations or executive tables which are installed along the wall or partitions. UPVC trunking ensure total separation of currents even where electromagnetic disturbance is present.

Snap-On trunking is used for routing cables and installing wiring accessories in work areas. It supports multiple functions from the arteor range by simply clipping directly onto the trunking.

Specification of Pop-up boxes

Sleek new ergonomically designed pop-up boxes, square or rectangular in shape, provide real ease of use and rapid connection solutions for mobile applications such as PCs, mobile phones, audio and video systems. The pop-up boxes should be either of hydraulic type or spring loaded. The top should be aesthetically matching with the furniture. The pop-up boxes should have at least 3 ports for power, 2 ports for data, audio ports (speaker and microphone) and VGA port, 1 HDMI port, 2 USB ports.

Specification of Junction boxes

Height adjustable squared junction boxes allow easy access when installing cables and for extensions. They ensure data security and performance that facilitate the addition and connection of new digital equipment, which helps reduce operating costs. The junction box sizes should be as per site requirement.

UNITS AND QUANTITIES (where required)

Please find below units and quantities of items where required. Also please note that where units have not been mentioned, numbers should be automatically assumed.

Item No. 66

Please read this item as “Curtains and Fixtures” only. Mirrors have been covered under Item No. 69.

Quantities

Length of curtain fixtures = 200 metres

Curtains = 300 square metres

Under Passive Cabling and Network Related

Item No. 4: Cable Tray Specification and Quantities

Sheet thickness = 1.2 - 1.5 mm; Height = 50-75mm

Width = 600mm (50 metres)

Width = 300mm (100 metres)

Width = 150mm (200 metres)

Item No. 5 in Metres

Item No. 6: **2000 Metres**

Item No. 8(a) in Metres

Item No. 8(f) in Metres

Item No. 8(g) in Metres

Item No. 8(i) in Square Metres

Under Electric Cabling

Item No. 1 in Metres

Item No. 5 in Metres

Under Rodent Repellant System

Item No. 5 in Metres

Under IP Surveillance System

Item No. 8.7 in Metres

Item No. 8.8 in Lot