

# GOVERNMENT OF INDIA MINISTRY OF RAILWAY

## Schedule of Technical Requirements

For Manufacturing, Testing facilities and Quality Control Requirements

For  
Section Insulator Assembly (Conventional Type) [Without Section Insulator]

Prototype Specification No.ETI/OHE/27 (8/84) (Latest)

ISSUED BY

RESEARCH DESIGNS & STANDARDS ORGANISATION

TRACTION INSTALLATION DIRECTORATE

MANAK NAGAR, LUCKNOW-226011

	Prepared By	Checked By	Approved By
Signature			
Designation	JE/OHE(TI)	DTI-2	EDTI

- 1.0 **SCOPE:** This schedule covers the technical requirement for manufacture and supply of Section Insulator Assembly (without section insulator) for 25 kV AC single phase traction overhead equipment.
- 2.0 Following General infrastructure, manufacturing facilities, Testing facility and quality control requirements should be available to ensure that the product conforms to the requirements of RDSO's specification No. ETI/OHE/27 (8/84) (latest).

**A. GENERAL INFRASTRUCTURE & MANUFACTURING FACILITIES:**

SN	Description	SN	Description
1	Adequate covered accommodation for storing raw material and finished items awaiting dispatch and arranging inspection	2	Foundry for Manufacturing copper based Alloys complete with temperature controller/Electrical Induction/Oil fired/Gas Fired Furnace.
3	Lathe machine	4	Tapping Machine
5	Cutting and Grinding Machine	6	Power Press or Hydraulic Press
7	Drilling Machine	8	Drawing facility preferably with Auto CAD software
9	Radius Bending Machine(this may not be separately required if manufacturer can certify that this machine operation can be done by Power press or hydraulic press mentioned at S.N.6)		

**B. TESTING FACILITIES:**

SN	Description
1	Chemical laboratory with adequate facilities and staff strength to test the raw materials and testing the finished products. In addition to the availability of above mentioned chemical laboratory, if firm desires, Testing of finished product may be carried out from NABL accredited lab.
2	Vertical Tensile Testing Machine.
3	Horizontal Tensile Testing Machine upto 5 tonnes capacity suitable for Handling Equipments having approximate 2.5 metre length OR Suitable Test Rig along with dynamometer may be used. NOTE: S.N. 2 above and this tensile testing machine may be same also if both the requirements can be fulfilled.
4	Resistivity Tester, Hardness Testers, Thread Gauges.
5	Coating Thickness Gauge or meter (Zinc Coating Thickness Gauge or meter).
6	Dye Penetration Examination Facility.
7	Torque Wrench, Vernier Calliper, and Micro OHM meter.

**C. QUALITY CONTROL REQUIREMENTS:**

1	The firm should ensure compliance of RDSO ISO procedure 'QM-RF-8.1-3 Version No: 1.0 (latest)' & it covers Quality Assurance Plan (QAP). This document may be referred from RDSO website. The QAP shall be submitted to RDSO and got approved.
2	Quality manual of the firm for <b>ISO 9001</b> should clearly indicate at any stage the control over manufacturing and testing of the said product.
3	Each section shall be headed by a qualified staff with experience in the relevant field.
4	System and Documentation should exist for documentation of the following:
i	Easy traceability of the product from raw material stage to finished product stage
ii	Incoming raw material with Test Certificate, reference of supplier, Internal test and audit checking from outside agency, wherever required.
iii	Stage inspection and test result.
iv	System for calibration of testing & measuring equipment and record.
v	Rejection at customer end and remedial action implemented.
vi	Products conformance to the requirements of above referred RDSO's specifications.

	Prepared By	Checked By	Approved By
Signature			
Designation	JE/OHE(TI)	DTI-2	EDTI