

**SCHEDULE OF TECHNICAL REQUIREMENTS FOR MANUFACTURING OF  
SET OF INSULATOR FOR LOCOMOTIVES.**

SCOPE:- The Schedule of technical requirements (STR) specifies the requirements to be met by vendors who manufacture, test and supply the Set Of Insulator for locomotives, this STR should be read in conjunction with the CLW,s technical specification for this item. The firm should satisfy themselves having complied with the requirements of the specification and this STR.

**(A) M&P Requirements :-**

Sl.	Description	Capacity	Remarks
1.	Hydraulic Press Machine	150 Ton	For of mold in die in hot condition
2.	Hand Press / Ball Press M/c	18" X 18"	For fixing the metal portion on the top
3.	Lathe Machine	4 Ft.	For machining as per drawing
4.	Grinding Machine	1 HP	For smoothing, cleaning & removing extra material left after machining/oxy-cutting.
5.	Drilling / Tapping Machine	Standard	Required for drilling and tapping holes.
6.	Heat Chamber / Muffel Furnace	1 X 1 meter/ 3 M	For melting & molding purpose
7.	Mixing Machine	600 mm dia.	For Mixing of Mica, Glass & Lead powder
8.	Sand Box, Dies & Adequate Space for manufacturing.	Suitable	Sand box for slow cooling the mold, Dies for proper shape.

**(B) Measuring Equipments :-**

Sl. No.	Description	Capacity	Remarks
1.	Universal Testing Machine	10 Ton	For Tensile, Bending & Compressive strength test.
2.	Vernier Caliper	6"	Required for measurements.
3.	Dial Gauge	10 mm	Required for measurements.
4.	Go No Go Plug Gauge	M20 - M24	For accurate dimension checking
5.	Torsional Testing Machine		For Torque Testing
6.	Megger	Standard	For Insulation Resistance measuring .
7.	High Voltage Testing M/C	50 KV	For Die - electric test

**(C) Quality Requirements :-**

1. Input Raw Material - Chemical / Metallurgical Test is to be done.  
Sources of raw material to be specified.
2. Stage-wise Inspections are to be done & Check List for the same is to be made.
3. Final Inspection is to be done & Check List for the same is to be made.
4. ISO Certification.
5. NSIC/SSIC registration.

*[Handwritten Signature]*  
26/10/08  
AEE/D-III

Dy. CEE / D-I *[Handwritten Signature]*

CEE / Loco *[Handwritten Signature]*

CEE *[Handwritten Signature]*  
6.2.07

**Indian Railways**  
**Chittaranjan Locomotive Works**  
**Chittaranjan, Burdwan**  
**Fax No.0341-2525644**

No.ELDD/1720/SG  
Dated:26.10.2008.

**Sub: Approval of Schedule of Technical Requirement for manufacturing of Set Of Insulator for locomotives**

Schedule of Technical Requirements for manufacturing of Set Of Insulator for locomotives is prepared and furnished at SN- side.

Dy. CEE/D-I is requested to kindly forward.

Competent Authority may kindly approve the same.

*K. Chandra*  
26/10/08  
AEE/D-III

~~Dy. CEE/D-I~~ ✓

~~CEE/Loco~~ ✓  
30/11

~~CEE~~ ✓  
6.2.07

~~Dy. DT.~~ ✓

AREB