

**GOVERNMENT OF INDIA****MINISTRY OF RAILWAYS**

**SCHEDULE OF TECHNICAL REQUIREMENTS  
FOR MANUFACTURE AND SUPPLY OF  
ROTOR BARS FOR 3 PHASE TM  
OF ELECTRIC LOCOMOTIVES**

**APRIL'2023****ISSUED BY**

**TRACTION MOTOR DEPARTMENTS  
CHITTARANJAN LOCOMOTIVE WORKS  
CHITTARANAJAN-713331  
WEST BENGAL**

Recommended by	Approved by
<b>RAJIV KUMAR BARNWAL</b> <small>Digitally signed by RAJIV KUMAR BARNWAL Date: 2023.04.18 18:27:48 +05'30'</small>  CEE/TM	<b>R YADAV</b> <small>Digitally signed by R YADAV Date: 2023.04.19 10:31:48 +05'30'</small>  PCEE

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16:25:45 IST  
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Location: New Delhi

**ALTERATION REVISION SHEET FOR MANUFACTURER AND SUPPLY OF ROTOR  
BARS FOR 3 PHASE TM**

Sl .No.	Alt. No./Rev.No.	Authority	Description	Initial	Date

Prepared & Checked by		Reviewed by	
SSE/TMDO	<b>PANKAJ KUMAR</b> Digitally signed by PANKAJ KUMAR Date: 2023.04.12 12:01:54 +05'30'	DY.CEE/TMD	<b>RANJAN KUMAR PRAMANIK</b> Digitally signed by RANJAN KUMAR PRAMANIK Date: 2023.04.18 12:25:22 +05'30'

1. **Scope:-**This schedule of technical requirement (STR) is being issued to serve as a guideline to manufacturers/firms for manufacturing ROTOR BARS, format of quality assurance plan to be followed, minimum machinery and plant, testing facilities and measurement facilities required. This STR should be read in conjunction with the relevant CLW specification No. 4TMS.096.060 Rev.1 or latest version and RDSO specification No. RDSO/2008/EL/Spec/0063 Rev.4 or latest version the firm should satisfy themselves having complied with the requirements of the specification and STR.
2. **Reference:** - Drawing No.4TWD.096.110, Alt.7, 4TWD.096.162 Alt.4 , 4TWD.097.022 Alt-4 or latest or latest version of drawing to be followed.
3. **Requirement:** -The firm should be certified to ISO 9001 by an agency accredited by NABCB.
4. **Production capacity:** -Annual production capacity calculation for the full production range must be given on the basis of time required for each process.
5. **Desired aspect in QAP:** - As per RDSO's QAP Format No.QM-RF-8.1-3 version 1 or latest instruction issued by competent authority.QAP has to be approved by CLW/BLW.
6. **M&P testing and measuring instrument:** - List of typical M&P required for manufacture, testing and measuring instruments furnished in page 4 of 5 & 5 of 5 for general guidance only and actual manufacturing operation specific testing and measuring instruments shall be submitted and get approved by the firm as a part of QAP.
7. **Internal quality control system:-**
  - 7.1 The manufacturer shall procure all the raw materials from RDSO/CLW approved sources along with test certificates and sources should be available as and when asked for.
  - 7.2 Quality assurance process of incoming materials, manufacturing process used for the subject items including type test, supply criteria covering specification acceptance norms, agency if tested from outside lab, format of records etc.
  - 7.3 Detailed process flow chart indicating process of manufacture and individual product.
  - 7.4 The testing and measuring equipment and validity of calibration should be current and Calibration certificate issued by the calibration agency should be maintained.
  - 7.5 Relevant Standards like IS/BS/IEC/ASTM etc. shall be available with the firm.

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SSE/TMDO	<b>PANKAJ KUMAR</b> Digitally signed by PANKAJ KUMAR Date: 2023.04.12 12:03:55 +05'30'	DY.CEE/TMD	<b>RANJAN KUMAR PRAMANIK</b> Digitally signed by RANJAN KUMAR PRAMANIK Date: 2023.04.18 12:25:33 +05'30'