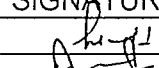
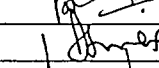


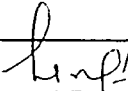


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SCHEDULE OF INFRASTRUCTURAL REQUIREMENTS FOR MANUFACTURING & TESTING FOR PARTITION FRAMES FOR GS, SLR & AC-3T COACHES

NAME	DESIGNATION	SIGNATURE	DATE	LEVEL
Harish Kumar	SSE/VD		30.12.05	Prepared
Joginder Singh	ADE/VD		2/1/06	Agreed
Amitabh Sinha	Dy.CME/TOT		4/1/06	Reviewed
S. K. Aggarwal	CDE		6/1/06	Approved

Issue/Rev	Details of Changes	Date


Prepared By


Agreed By

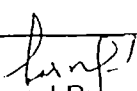
SCHEDULE	SCHEDULE OF INFRASTRUCTURAL REQUIREMENTS FOR MANUFACTURING & TESTING FOR PARTITION FRAMES FOR GS, SLR & AC-3T COACHES	MDST: 40 Rev: NIL PAGE 2 OF 4
		Dated 30.12.2005

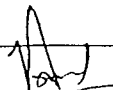
1.0 REQUIREMENTS

- 1.1 This schedule is applicable for partition frames for GS, SLR & AC-3T coaches. The vendors seeking approval shall comply with all the requirements mentioned below :

2.0 GENERAL & MANUFACTURING FACILITIES

- 2.1 Covered area with adequate space underneath for storage of raw materials e.g. tubes, billets, round corner squares, rounds etc. The covered area should have display board showing different colour shades nominated to different grades of steel to avoid mix up of materials. Arrangement of painting the billets, RCS rounds etc with particular paint shade previously nominated according to the grade of steel should be available.
- 2.2 Minimum 1 No. of band saw /power hacksaw machine should be available.
- 2.3 Atleast one shearing machine of suitable capacity and of standard make shall be available.
- 2.4 Adequate machining facilities comprising of radial drilling, grinding machine, lathe etc. of suitable capacities and standard makes should be available.
- 2.5 Atleast two numbers of MIG/MAG welding machine of suitable capacity and standard make shall be available.
- 2.6 Adequate Nos. of hand grinders for removal of fins & burrs shall be available.
- 2.7 The firm shall have atleast one press brake of suitable capacity along-with punch and dies for component forming.
- 2.8 The firm shall have atleast one power press of suitable capacity along-with set of punch and dies for blanking and forming.
- 2.9 The raw material should be procured from authorized distributor of original manufacturer of steel and firm should procure material with test certificate from primary manufacturer.
- 2.10 The raw materials e.g. electrodes, hard wares should be procured from original manufacturer and firm should procure material with test certificate.
- 2.11 The firm shall comply with IS:822 regarding selection of weld wire, storage of consumables, calibration of welding equipment , training of welder, testing of welding and remedies for welding defects.
- 2.12 The welder shall have a minimum of 2 years experience of the same type of welding.
- 2.13 The fabricator shall have adequate fabrication and process capability to obtain all the tolerances and geometrical tolerances and shall have arrangement of jig/fixture/clamping device for tack welding of main assembly & sub-assembly work.

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2.14 The firm shall have separate painting booth with suitable exhaust facilities for doing priming as per IS:2074

2.15 Firm should have suitable facilities for shot blasting.

3.0 TESTING FACILITIES

3.1 **Chemical Lab:** The firm should have permanent arrangement with NABL certified Lab or a reputed steel making company for arranging the spectro analysis of the material.

3.2 **Physical Testing Lab:** The firm must possess a well-equipped physical lab with following facilities:

- Universal testing machine of 40t capacity with load/ deflection plotting arrangement to conduct UTS, Yield strength.
- The firm shall have arrangement for conducting non- destructive test for welding as per requirement of the purchaser in house.

3.3 **Other Testing Facilities:** The firm shall possess the following:

- The firm shall have adequate facilities for preparation of test sample. Facilities like machining, grinding, polishing etc. should be available in house.
- Adequate number of fine punches for stamping marking particulars on finished components.
- Adequate numbers of measuring instruments such as:
 - Digital Vernier Calipers - 0 mm to 300 mm
 - Measuring scales – 3 meter
 - Inside & outside Micrometers - Ranging from 0 to 150 mm
 - Profile gauges
 - Surface table

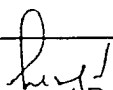
4.0. QUALITY CONTROL REQUIREMENTS

4.1 There should be a system to ensure the traceability of the product from raw material stage to finished product stage. This system should also facilitate to identify the raw material composition from the finish product stage.

4.2 Ensure that there is a QAP for the product detailing various aspects: -

- QA Organisational Chart
- Flow Process Chart
- Stage inspection details
- Various parameters and to ensure control over them

4.3 There should be at least one full time technologist having a minimum bachelor's degree in


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relevant field & 5 years experience or a person with diploma in relevant field with 12 years experience.

- 4.4 The firm should have acquired ISO: 9000 series certification and the product for which an approval is sought should be broadly covered in the scope of the certification for manufacture and supply.
- 4.5 The Quality manual of the firm for ISO: 9000 should clearly indicate at any stage the control over manufacturing and testing of the said railway product.
- 4.6 The firm shall ensure that proper analysis is being done on monthly basis to study the rejection at various internal stages and it is documented.
- 4.7 The firm shall ensure that all the relevant specifications, IS standards are available with them.

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