

Rail Coach Factory, Kapurthala


MD35131

Date: 28.03.2018

Sub: Issue of Specification no. MDTS-213, Rev.- 03, MDST 153, Rev.- 01 and MDTS-241, Rev.- 02.

Please find enclosed copy of the following revised specifications for information and necessary action at your end:

1. MDTS-213, Rev. - 03 for supply of fabricated and machined FIAT type bogie frame.
2. MDST 153, Rev.- 01 for Schedule of Infrastructural Requirements for Brake Support and Centering Disc of Secondary Suspension for FIAT type bogie.
3. MDTS-241, Rev.- 02 for Schedule of Infrastructural Requirements for SGCI Casting and Machining of Control Arm Top and Control Arm Lower LH & RH for FIAT type bogie.


(Jitesh kumar)
28/3/18
ADE/Shell & Bogie

CQM, CPLE, CWE (Shell), CMM/HSQ, CMM/TKJ,

Dy. CMM/LHB/Shell, Dy. CMM/G, CMT, Dy. CPLE-III, Dy. CME/Bogie

SSE/Filing Section


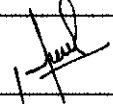

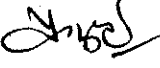
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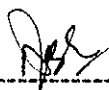
Copy for kind information to:

Dy. CME/D1
CDE

Specification No. MDST 153 Rev: 01	Schedule of Infrastructural Requirements for Brake Support and Centering Disc of Secondary Suspension for FIAT type bogie	Date: 23.03.2018 Page 1 of 4
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Name	Designation	Signature	Date	Level
Aman Bhardwaj	SSE/BD		23.03.18	Prepared
Jitesh Kumar	ADE/Shell & Bogie		23.03.18	Agreed
Kamal Kumar	Dy CME/D-1		23.03.18	Reviewed
P.C. Gupta	CDE		23.03.18	Approved

Issue/Rev.	Detail of changes	Date
Rev. 01	Clause 2.2 modified. Some clauses renumbered.	23.03.18


Prepared by


Agreed by

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1. General:

This specification covers the infrastructure requirements to be complied by the tenderer for steel casting and machining of brake support/centering disc for secondary suspension for FIAT bogie and their testing and quality control.

2. Eligibility Criteria:


- 2.1. The tenderer must submit clause-wise comments on the specification. In absence of clause-wise comments, offers shall be deemed as incomplete and may not be considered.
- 2.2. The vendor preferably should have following in-house infrastructure for casting and machining of brake support/centering disc. In case firm possesses complete infrastructure for only casting or machining it should submit tie-up for remaining infrastructure (machining or casting).

2.2.1. Casting facilities:

- 2.2.1.1. The Manufacturer should be a "Class-A" foundry as per IS: 12117.
- 2.2.1.2. The manufacturer should be an ISO-9001-2008 certified company.
- 2.2.1.3. The Manufacturer should have sufficient Covered area for manufacturing, raw material storage i.e. Sand and Scrap etc.
- 2.2.1.4. At least one number tilting type electric arc or electric induction furnace having Ladle-treatment facility.
- 2.2.1.5. Weighing machine of 500 kg capacity for Ferro alloys charge and finished casting weighment.
- 2.2.1.6. The firm should have a compressor.

Sand Preparation and testing:

- 2.2.1.7. Moulds and cores can be prepared using resin sand or green sand.
- 2.2.1.8. Green sand mould and core preparation:
- 2.2.1.9. Automatic sand mixer machine for making 'Mould' and 'Core' should be available, the mixer should be intensive type or sand mixing Muller with arrangement of ensuring correct mixing of ingredients.
- 2.2.1.10. For testing incoming virgin sand, moulding sand, core sand following equipment at least one number each should be available.


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- i. Permeability tester
- ii. Sand Rammer
- iii. Quick Moisture teller
- iv. Chemical balance
- v. Sand sieve shaker
- vi. Sand Muller for preparing test samples
- vii. Shatter Index tester
- viii. Dry compression strength tester
- ix. Sand mouldability / Compatibility tester
- x. Sand flowability tester
- xi. Mould/Core hardness tester
- xii. Portable hardness tester

2.2.1.11. Resin sand Mould and core preparation:

2.2.1.12. Continuous sand mixer with calibration facility should available to manufacture resin sand moulds and cores.

2.2.1.13. Facilities to check:

- i. Sieve shaker
- ii. Clay content stirrer
- iii. Scratch hardness tester
- iv. Tensile strength Permeability meter
- v. Gas evolution tester

Heat Treatment:

2.2.1.14. Heat treatment furnace should be oil fired, LPG fired or electric type.

2.2.1.15. Heat treatment furnace should be provided with digital indicators & cut offs for each point (one point at every five feet length)

Shot Blasting Machine:

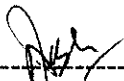
2.2.1.16. Shot blasting machine conveyor monorail type or Twin table type.

Chemical Laboratory:

2.2.1.17. Computerized emission spectrometer with automatic printer should be available for analysis and recording of chemical composition at different stages of manufacturing.

2.2.1.18. Metallographic polishing equipment, Belt polisher etc. should be available.

Physical Laboratory:

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- 2.2.1.19. Universal testing machine of minimum 20t capacity with graphical recording facilities for conducting tensile test.
- 2.2.1.20. Brinell Hardness testing machine.
- 2.2.1.21. Impact testing machine for conducting impact test at room temperature and sub zero temperature should be available. Liquid Nitrogen container and stainless steel bath or Acetone container with temperature indicator for sub zero test arrangement must be available.
- 2.2.1.22. Liquid penetrate test facilities for checking surface welding cracks.
- 2.2.1.23. Magnetic particle inspection facilities for cracks detection should be available.
- 2.2.1.24. Metallurgical microscope with magnification up to 400x should be available.
- 2.2.1.25. Hot air oven, Hot plate, Electrical oven and other accessories and chemical agents necessary for wet analysis should be available including platinum crucibles.
- 2.2.1.26. The firm should have in-house ultrasonic test facility and tie-up for radiographic testing facility.

Other Testing Facilities:

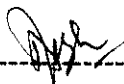
- 2.2.1.27. The firm shall have adequate facilities for preparation of test sample. Facilities like machining, grinding, polishing etc. should be available in house.

2.2.2. Machining Facilities:

- 2.2.2.1. Firm should have Machining Center for machining of centering disc and brake support.
- 2.2.2.2. Level surface table of min. size 700X700 mm.
- 2.2.2.3. Gauges, Fixtures and templates.

- 3. Identification Marking:** Each brake support / centering disc shall be stamped with an easily visible identification indicating the serial number, year of manufacture and manufacturer's name to facilitate identification/correlation with the inspection/ test results.

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