Rail Coach Factory Kapurthala

MD35131 **Date 23/06/2022**

Sub: Issue of specification No MDTS177 Rev-Nil.

Please find enclosed a copy of following specification for information and necessary action at your end.

S. No	Description	Specification No.
1.	SCHEDULE OF INFRASTRUCTURAL REQUIREMENTS FOR MANUFACTURING & TESTING FOR SLIDING DOOR OF LUGGAGE ROOM	MDST177 Rev-Nil

(Abhey Priya Dogra)
Dy. CME/D-II

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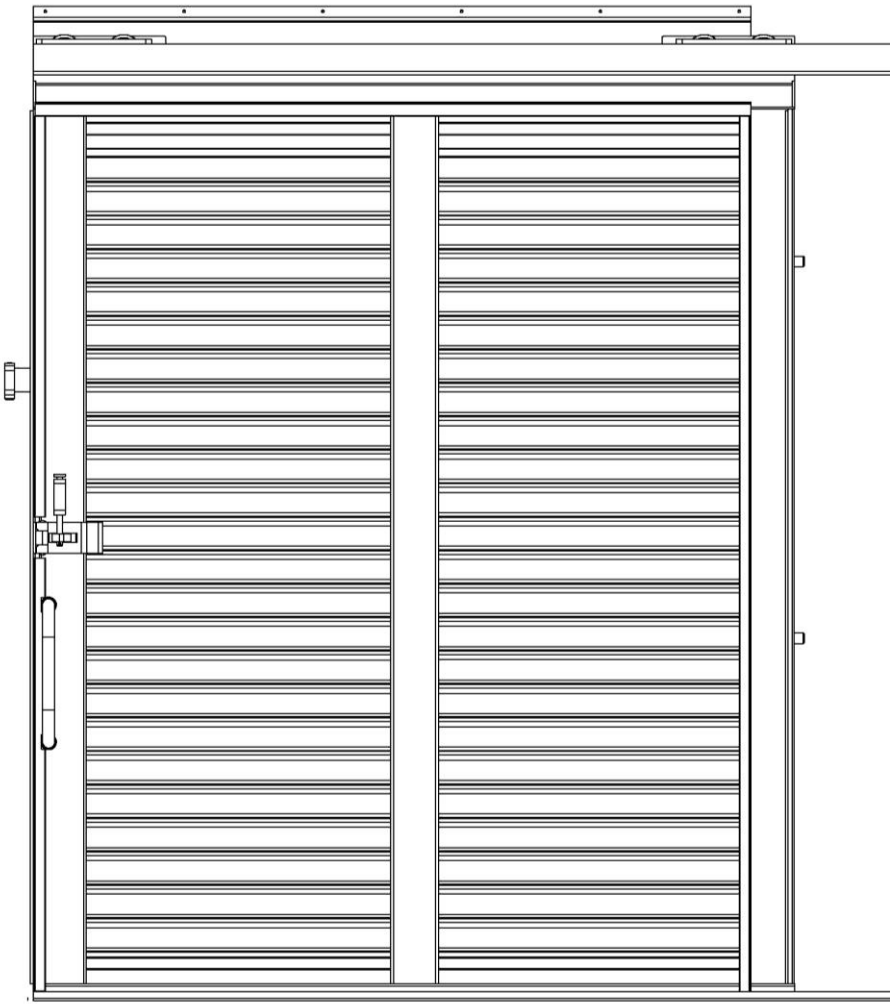
स्थापित:१९८६

RCF
KAPURTHALA

Government of India
Ministry of Railways
Rail Coach Factory
Kapurthala
Punjab 144602
Estt: 1986

SCHEDULE OF INFRASTRUCTURAL REQUIREMENTS FOR MANUFACTURING & TESTING FOR SLIDING DOOR OF LUGGAGE ROOM



Specification Number	MDST177		
Revision Number	NIL	Date of Issue	23/06/2022

FOREWORD:

This schedule is applicable for sliding door of luggage room for different variant types of power car, parcel van or coaches having area similar to luggage compartment. The vendors seeking approval shall comply with all the requirements mentioned in this specification.

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RAIL COACH FACTORY KAPURTHALA (MECHANICAL DESIGN DEPARTMENT)		
SCHEDULE	**SCHEDULE OF INFRASTRUCTURAL REQUIREMENTS FOR MANUFACTURING & TESTING FOR SLIDING DOOR OF LUGGAGE ROOM**	**MDST177 REV-Nil PAGE 1 OF 6 DT: 23/06/2022**

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Akhilesh Mishra	CDE			Approved

REV NO	DETAIL OF CHANGES	DATE

1. SCOPE

This schedule is applicable for sliding door of luggage room for different variant types of power car, parcel van or coaches having area similar to luggage compartment. The vendors seeking approval shall comply with all the requirements mentioned below:

2. FIRST ARTICLE INSPECTION(FAI):

2.1. First article inspection will be done by CDE/RCF or its authorized agency. Successful tenderer would be required to submit quality assurance plan (QAP) and all relevant documents required for FAI including special processes. First article inspection exclusively to be performed for special processes i.e. welding, surface treatment (Painting/anodizing) and riveting as per applicable drawings.

2.2. First article inspection of complete door system to be carried out after passing above special processes.

2.3. Bulk supply will be made only after First article approved by CDE/RCF.

2.4. External provider shall carryout FAI as per ISO/TS22163:2017 requirement prior to submission of documents to RCF, Kapurthala.

2.5. Validation of all Special process (including outsourced Special Process) shall be carried out as per requirement of ISO/TS22163:2017.

2.6. Firm has to fulfill all the requirements of IRIS to ISO/TS22163:2017.

3. REQUIREMENTS

All vendors seeking *approval/registration* with PUs shall comply all the requirements mentioned below:

3.1. **Key infrastructure requirements for regular and developmental order:**

S. No.	Machines for regular order	Machines for developmental order
1.	Availability of pickling and passivation facility is must for "approved vendors".	Developmental order can be placed on a firm having valid tie-up in form of MOU with the agency having pickling and passivation facility
2.	There shall be separate paint booth for painting of stainless steel / metal components. The firm shall have adequate facilities for painting, polishing, and buffing of stainless steel components.	Firm having valid tie-up in form of MOU with the agency having paint booth for painting of stainless steel / metal components. A copy of MOU is to be submitted along with the tender.
3.	The firm should have at least one mock-up to simulate the actual working condition of the doors.	Not required for development orders.

3.2. One shearing machine of shearing capacity for minimum 2.5 mm thickness, 1000 mm length for stainless steel grade material.

3.3. One brake/power press of minimum thickness 3mm thickens 1500 mm length for stainless steel grade material.
3.4. Milling machine must be required for V groove machining operation in Top rail.
3.5. DC TIG welding in pulsing mode with digital TIG welding machine or MIG welding shall be used only with Tri- Mixture gas (90% Argon +5% O2 +5% CO2 gas). No Stick electrode welding shall be done.

4. MANUFACTURING FACILITIES

4.1. There should be a provision of covered area with adequate space underneath for storage of applicable raw material like as stainless steel components, door fittings, sealing rubber, testing and measuring fixtures, etc. The covered area should have display board showing different material grade's color shades/codes nominated to different grades of steel/material to avoid mix up of materials. Evidence for the above shall be submitted along with tender document.
4.2. Fabrication should be confined to an area where only one/same grade of material is being worked.
4.3. Procurement of raw material should be done only from the authorized distributors Proof of procurement of raw material from OEM or from his authorized distributor is to be enclosed with the supply. Necessary test certificate for raw material conforming to specified grade of steel shall be submitted from OEM along with supply.
4.4. The raw materials e.g. electrodes, hardware, rubber gaskets should be procured from the authorized distributor of original manufacturer and firm should procure material with test certificate.
4.5. At least one-hand grinder for removal of fins & burrs shall be available. Grinding wheels shall be free from iron, iron oxide, zinc or other undesirable materials that may cause contamination on the surface.
4.6. Adequate machining facilities comprising of machine drilling and tapping, lathe facility etc. of should be available for operation on door components.
4.7. The Tenderer shall comply with IS: 822 regarding, storage of consumables, calibration of welding equipment, training of welder, testing of welding and remedies for welding defects.
4.8. The contractor 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 main assembly & sub-assembly work.

5. TESTING FACILITIES AND MEASURING INSTRUMENTS:

The firm should have the following testing facilities measuring instruments at their works:

5.1. **Chemical Lab:** The firm shall have its own in-house arrangement for spectro analysis or Tie-up with NABL certified Lab or a reputed steel making company for arranging the spectrum analysis of the material.

5.2. **Physical Testing Lab:** The tenderer should have physical lab at firm premises with following facilities or should have permanent arrangement with NABL certified Lab:

5.2.1. 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.

5.2.2. The firm shall have arrangement for conducting non-destructive tests for welding as per requirement of the purchaser in house.

5.3. **Other Testing Facilities:** The firm shall possess the following:

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

5.4. The firm should have the following instruments.

5.4.1. Digital Vernier Calipers - 0 mm to 300 mm.

5.4.2. Measuring scales – 2000 mm minimum

5.4.3. Inside & outside Micrometers - Ranging from 0 to 50 mm

5.4.4. Surface table of 1000 X 2000 mm minimum

5.4.5. Set of filler gauge

5.4.6. weighing machine

5.4.7. The firm should have arrangement for periodical calibration of all the apparatus & instruments.

6. QUALITY CONTROL REQUIREMENTS

6.1. ISO: 9001 certification and the product for which the approval is sought should be broadly covered in the scope of the certification for manufacture and supply.

6.2. The Quality manual of the firm for ISO: 9001-2000 should clearly indicate at any stage the control over manufacturing and testing of the said railway product.

6.3. Automated traceability of the product from raw material stage to finished product stage. The system should also facilitate to identify the raw material composition from the finish product stage.

6.4. Quality Assurance Plan for the product detailing the following various aspects:

- Organization chart
- Process flow chart
- Stage inspection details from raw materials stage to finish product stage

6.5. Various parameters to be checked and level of acceptance of such parameters indicated and method to ensure control over them.

6.6. Disposal system of rejected raw material and components.

6.7. At least one full time technologist having a minimum bachelor's degree in relevant field with experience of at least 3 years or a person with diploma in relevant field with 5 years' experience. He should be free from day to day production, testing and quality control responsibilities. He should be mainly responsible for development of a product, analysis of products, control over raw material, and corrective action in case of difficulties in achieving the parameters.

6.8. Ensure that the in-charge of the Quality Control Section is having a qualification of minimum bachelor's degree in the relevant field and has a minimum of 3 years' experience. Alternatively he should be a diploma holder with minimum of 5 years' experience. He should be actively involved in day-to-day activities of quality control/stage inspection / compliance of QAP etc.

6.9. The firm must ensure that proper analysis is being done on monthly basis to study the rejections at various internal stages and it is documented.

6.10. The firm should ensure that latest version all the relevant specifications, IS standards are available with the firm.

7. DOCUMENTATION

Firm shall maintain the following documents/records:

7.1. A well-documented Quality Plan.

7.2. The firm should ensure that all the relevant specifications, IS standards are available with them.

7.3. Incoming raw material register with Test Certificates references of suppliers and internal test results.

7.4. Stage inspection results including finished products results.

7.5. Records of internal rejection and its analysis.

7.6. Records of final products inspection by external agencies, Nonconformity reports and case analysis as well as action taken thereof.

7.7. Ensure that proper systems are available for dealing with customer complaint.

8. Practices to be followed for Handling, Storage and Transportation

8.1. Walking on the stainless steel surface should be avoided, where unavoidable, personal should wear clean shoe covers each time. Kraft paper, blotting paper, paper board or flannel or other protective material should be laid over areas where personals are required to walk. Supplier needs to make all these arrangements.

8.2. Shearing tables, press brakes, layout stand and other carbon steel work surfaces should be covered with clean kraft paper, blotting paper, paper board or flannel or other protective material to reduce the contact with carbon steel.

8.3. Hand tools, brushes, molding tools and other tools and supplies required for fabrication should be segregated from similar items used in the fabrication of carbon steel equipment and should be restricted to use on one material. Tools and supplies used with other materials should not be brought into the SS fabrication area.

8.4. Grinding wheels and sanding material should not contain iron, iron oxide, zinc or other undesirable materials that may cause contamination on the surface. Grinding wheels and sanding material and wire brushes previously used on other metals should not be used on stainless steel. Wire brushes should of stainless steel which is equal in corrosion resistance to the material being worked on.

8.5. Measures to protect the cleaned surfaces should be taken as soon as final cleaning is completed and should be maintained during all subsequent fabrication, inspection, storage and installation. The basic guidelines are as follows:

8.5.1. Do not remove wrappings and seals from incoming materials until they are at use site, ready to be used or installed.

8.5.2. Do not store the finished cleaned materials and components stored directly on the ground or floor and do not permit these to come in contact with galvanized or carbon steels, Zinc, lead Brass etc.

8.5.3. Do not use carbon or galvanized steel wire for bundling and galvanized steel identification tags.