


MD35131

Dated : 23.03.2016

Sub: Issue of specification no. MDTS-22283 Rev '01' of Single Component Water Based for Corrosion prevention and Anti Stone Chipping Spray-able Paint

Please find enclosed a copy of specification no. MDTS-22283 Rev '01' of Single Component Water Based for Corrosion prevention and Anti Stone Chipping Spray-able Paint for IR Coaches , for information and necessary action at your end.


23.3.16
(Suraj Praksah)
Dy CME/D-1

CQM, CPLE, CWE (Fur), CMM/HSQ, CMM/Tkj, Dy. CMM/Fur/LHB, CMT, DY.CPLE-III



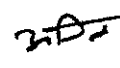
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Designation	Name	Signature	Date	Level
SSE/Dev	Harish Kumar		22/3/16	Prepared
Dy.CME/D-1	Suraj Prakash		22.03.16	Agreed & Reviewed
CDE	A. K. Kathpal		22/3/16	Approved

Issue/Rev	Details of Changes	Dated
01	1 Lab's DMT, SGS Shree Ram, ARAI & NPL added in Para 1.2.vi & 7.1.2. 2 R1 requirement added in para 4.0 (Fire properties). 3 Volume solid changed to 70±10% in para 3.9. 4 Sound loss factor changed to 0.15 (Min) in para 5.0.	22-03-2016


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1. SCOPE:

- 1.1. This specification covers the general & technical requirements for single component water based spray-able paint for corrosion prevention and with anti stone chipping and sound dampening properties. This paint can be used on the exterior of under slung equipments/parts of LHB design coach shell and bogie frame. The supplier shall supply and apply this paint at Railway premises.
- 1.2. While quoting, the supplier shall submit the following details :
- i Performance and areas of usage of the offered material in Indian Railway Passenger Coaches/ International Railways or any other Railway OEM for similar applications.
 - ii Technical data sheet of the offered product.
 - iii Clause-wise comments on the specification.
 - iv Deviation statements with respect to specification, if any.
 - v Credentials and performance of the OEM.
 - vi Test certificates from the reputed labs like LAPI, Crepim, Exova Warringtonfire, DMT, SGS Shree Ram, ARAI, NPL or any other lab of international reputation.


In absence of any of the above details for the offered product, the offer would not be considered.

2. Material Base:

- 2.1 Single component water based sound insulating coating shall be visco-elastic spray-able liquid to provide corrosion prevention, anti stone chipping and sound dampening properties in Railway coaches and shall be ready for use.
- 2.2 Structure and surface of applied paint: The dried paint's structure and surface shall be free of bubbles, foam etc.
- 2.3 Chemical Base of paint: Aqueous synthetic Resin dispersion and must be free from Isocyanate and PVC.
- 2.4 Colour: Beige/Grey, black or as per requirement

3.0 Technical Requirements

- 3.1 *Spray coating:* A coating thickness of 1.5 to 1.75 mm (DFT) is required in a single coating with Air Spray Gun/Airless equipment.
- 3.2 *Adhesion:* The paint coating shall have excellent adhesion to stainless steel surface sand-blasted to Sa 2½ of ISO:8501-1 and shall have minimum strength adhesion- 4A when tested as per ASTM D 3359 or 4 N/mm² when tested with ASTM D-4541.
- 3.4 *Chip Resistance:*
Rating 10 when tested in accordance with (ASTM D 3170/SAE J400) for 2.5 mm thickness


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3.5 *Drying time:* The drying time of paint coating shall be as per followings:

At ambient conditions	48 hrs
At 40° C convection	08 hrs
At 80° C convection	03 hrs

3.6 *Coverage:*

The paint formulation must give a minimum of 0.3 sq.m/kg for coverage of 1.5 mm (DFT) coating on a flat surface.

3.7 *Cleaning thinner:* Water, before drying.

3.8 *Specific gravity (wet):* 1.2 to 1.6 g/ml at 23°C (ASTM D-1475)

3.9 *Volume solids:* 70±10%

3.10 *In service Temperature:* - 40 ° C to 120 ° C.

3.11 *Penetration test (Viscosity Indicator):*


It should be 36mm to 40mm, when tested as per DIN 51580 (Aluminium shell, cone-150 gm, 6 seconds, at 20°C).


3.12 *pH value:* 9-10.

4.0 **Fire properties:**

The dried paint coating when subjected to fire test must conform to following parameter laid down in Table-1:

S.No	Properties	Values	Test Method
1.	In-flammability class/ Surface spread of flame	R1/R7& R8 for Irradiance of 50 kW/m ² without pilot frame as per EN 45545	EN ISO 5658-2
2.	Optical Density of Smoke	R1/R7 and R8 for Irradiance of 50 kW/m ² without pilot frame as per EN 45545	EN ISO 5659-2
3.	Spread of flame	Should meet fire protection requirements R1 /R7& R8 and Hazard level HL3 as per EN 45545.	ISO 5658-2
4.	Smoke toxicity & density		ISO 5659-2
5.	Heat release rate		ISO 5660-1


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5.0 Sound insulation:

The following sound insulation parameter shall be fulfilled when test sample is prepared as per EN ISO 6721-1 on steel panel.

Description	Test Frequency	Loss Factor (min)	Test
Dampening Loss factor at 20°C	200 Hz	0.15	DIN EN ISO 6721-3 (thickness ratio coating to steel 2:1 / ASTM E756-04

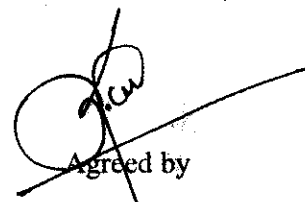
6.0 Other Parameters:

- 6.1 *Corrosion prevention:* There shall be no sign of corrosion/ deterioration for 7 days when tested as per IS: 101-88 (Part 6 Sec-1).
- 6.2 *Shelf life:* Shelf life should be 9 months from the date of manufacturing and available shelf life of the product, when supplied to Railway, shall be minimum of 6 months.

7.0 Testing & prototype approval:

- 7.1. Tenderer shall submit following for the prototype approval by CDE
- 7.1.1. Two test samples of minimum size 300x300 mm stainless steel plate coated with the paint.
- 7.1.2. Test certificates from the reputed labs like LAPI, Crepim, Exova Warringtonfire, DMT, SGS Shree Ram, ARAI, NP or any other lab of international reputation for fire properties, sound insulation, anti chip , adhesion strength, density/specific gravity and corrosion prevention properties, indicating compliance to all the test parameters.
- 7.1.3. Material safety data-sheets
- 7.2. After getting approval of above from RCF, the supplier must demonstrate conformity of the paint formulation to the application process on exterior of one coach at RCF premises using standard equipment, prior to bulk supply of the paint.
- 7.3. The regular supply shall be undertaken only after the approval of application of paint on interior of prototype coach shell.
- 7.4. The clause of prototype is applicable for the first time supply of a supplier to RCF. However, RCF shall have the right to repeat prototype approval process in subsequent order also and RCF decision shall be final in this regard.


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