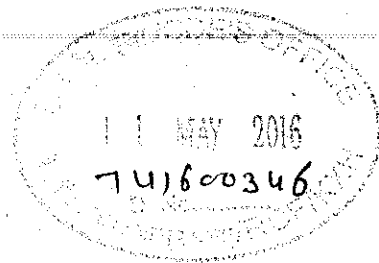


**RAIL COACH FACTORY, KAPURTHALA**



MD46111

Date: 11.05.2016

**Sub:** Schedule of Technical Requirements for water connector to MDTS-42284 Rev-00 for IR Passenger coaches.

Please find enclosed a copy of Schedule of Technical Requirements for water connector to MDTS-42284 Rev-00 for IR Passenger coaches.

**Encl. MDTS-42284 Rev-00.**

A handwritten signature in black ink, followed by the date "11/5/16".

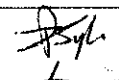
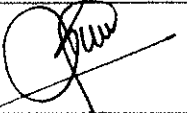
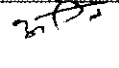
Dy CME/D-1


Dy CPLE-III  
Dy CPLE-II

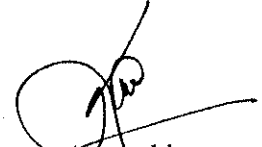
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CQM, CPLE, CWE/Fur, CMM/RCF, CMT, CMM/TKJ  
SSE/Record  
SSE/Lib/Design  
SE/Design/RCF/TKJ

SPECIFICATION No. MDTS 42284 Rev-00	Schedule of Technical Requirements for Water Connector for IR passenger coaches	Dated-06.05.2016 PAGE 1 OF 6
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Designation	Name	Signature	Date	Level
SSE/Fur-II	T P Singh		06/5/16	Prepared
Dy.CME/D-1	Suraj Prakash		6/5/16	Agreed & Reviewed
CDE	A. K. Kathpal		7/5/16	Approved

  
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Agreed by

**SECTION - A**

**1.0 SCOPE**

This section covers the technical requirements/provisions relating to material, manufacture, tests, sampling and method of tests of Water Connector for BG Coaches.

**2.0 REQUIREMENTS**

2.1 The material used in the manufacture of Water Connector along with the strainer shall be 50% glass-fiber reinforced, **Polyarylamide (PARA)** compound conforming to the requirement of this specification. Use of regenerated/ reconstituted raw material is not permitted.

2.2 The PARA compound for this item should be sources from any of the following grades of Primary Manufacturers:

- a. Ixef 1022 from M/s Solvay, USA
- b. RENE 1022H of M/s Mitsubshi Engg. Plastic Corporation, Japan
- c. RTP 209K from M/s RTP Company, Minnestoa, USA

2.3 The manufacturer shall have a valid tie-up in the form of a written Memorandum of Understanding (MOU)/contract with Primary Manufacturer of "50% glass-fiber reinforced, Polyarylamide compound" as mentioned in para 2.2 above for manufacture of Para Side Linkage, covering raw material supplies and technical support including quality control. Any certificate/MoU with any dealer or distributor is not valid. Also, the MoU with the manufacturer should have at least one year validity from the date of opening of the tender.


2.4 The Water Connector shall be supplied in natural colour of compound and use of any external coloring agents is not permitted.

2.5 The raw material (50% glass-fiber reinforced, Polyarylamide compound) shall be well suited for use in cold water & food contact category and shall be approved by atleast one such regulatory body in India or abroad for the same. A certificate from the primary manufacturer of raw material will be required for compliance of this requirement.

2.6 The Gasket shall be manufactured based on EPDM Rubber Compound as per requirement of Table -II.

2.7 The Metallic Insert (threaded) shall be made from Stainless Steel SS 304.

  
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2.8 The manufacturer shall produce documentary evidence to the inspection authority with respect to procurement of specified raw material from primary supplier and shall keep a record of its utilization against supplies made to Railways/ Production Units.

### 3.0 DRAWING, DIMENSIONS AND TOLERANCES

The Water Connector shall be strictly manufactured as per the RCF drawing number MI006608 with latest alteration.

### 4.0 CONSTRUCTION, WORKMANSHIP AND FINISH

4.1 The surface of the Water Connector shall be smooth, free from moulding defects such as bubbles, surface streaks, splash marks, voids, surface sinking, crazing, cracks blistering of the surface. All edges shall be neatly finished and free from flash.

### 5.0 PROPERTIES

The raw materials used for manufacture of Water Connector and strainer shall conform to the requirement given in the following tables:

Table – I.

Properties for Raw Material (PARA)

S.No.	Type of Test	Guiding Specification	Acceptance Value	Sample Type
1	Density	ISO 1183	1.60 – 1.68	Finished Part
2	Water Absorption (@23 °C for 24 Hrs)	ISO 62	0.4% (Max)	Finished Part
3.	Tensile Stress (Break)	ISO 527	200 MPa (Min)	Prepared Test Specimen dry as molded (dam) condition
4	Flexural Strength	ISO 178	330 MPa (Min)	Prepared Test Specimen dry as molded (d a m) condition
5	Flexural Modulus	ISO 178	15000 MPa (Min)	Prepared Test Specimen dry as molded (d a m) condition
6	Izod Impact (un notched)	ASTM D 256	600 J/m (Min)	Prepared Test Specimen dry as molded (d a m) condition
7	Ash Content	ISO 345	49 % (Min)	Finished Part

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**Table- II**  
**Properties for Raw material (EPDM) FOR GASKET**

S.No.	Property	Unit	Test Method	Parameters
1.	Ash Content, Min.	%	ASTM D 5360	3 -5%
2.	Hardness	Shore A	ASTM D 2240	80±5
3.	Tensile Stress at Break, Min	MPa	ASTM D 412	2.
4.	Elongation at break, <u>Min.</u>	%	ASTM D 412	300
5.	Compression Set (for 24 Hrs at 100 °C) Max	%	ASTM D 395	25
6.	Density, Min.	gms/cc	ASTM D 792	1.20
7.	Water Absorption (7 days at 70 deg C), Change in Vol. Max.	%	ASTM D 570	5

Unless otherwise specified, all tests mentioned above shall be carried out at a temperature of 27±2 °C and relative humidity 50 ± 5%.

#### 6.0 SAMPLING CRITERIA FOR CONFORMITY

The sampling plan for acceptance tests for Water Connector shall be as under:

6.1 The inspection lot shall consist of 2000 Nos or part thereof.

6.1 The following test (as applicable from each type of raw material used for manufacturing of the Connector) shall be carried for Acceptance Test as per the Table-III below. Test specimens (as applicable) shall be provided by the supplier at the time of inspection as required.

**Table – III**

S.No.	Test Details	No of Samples	Sample Type
1	Visual Examination	5% (Subject to 10 Nos. minimum)	Finished Product
2	Dimensional Check	5% (Subject to 10 Nos. minimum)	Finished Product
3	Specific Gravity	1% (Subject to 3 Nos. minimum)	Finished Product

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4	Ash Content	1% (Subject to 3 Nos. minimum)	Finished Product
5	Water Absorption	1% (Subject to 3 Nos. minimum)	Finished Product
6	Flexural Modulus	1% (Subject to 3 Nos. minimum)	Prepared test piece as per standard
7	Tensile Stress (at Break)	1% (Subject to 3 Nos. minimum)	Prepared test piece as per standard
8	Hardness	1% (Subject to 3 Nos. minimum)	Prepared test piece as per standard

6.3 Sample selected for Acceptance Test shall conform to the requirements as laid down. Should any one of the test samples fail to meet the requirements of Acceptance Test, double the number of samples from the same lot shall be drawn for re-testing. Should any of these samples fail, the entire lot shall be rejected.

6.4 In case of non-compliance in regard to dimensional check, the manufacturer may be given one chance to segregate the lot for dimensional conformity.

6.5 In the event of rejection of the lot, all the Water Connector constituting the lot shall be made un-usable in the presence of the Inspecting Authority.

## 7.0 MARKING

Each Water Connector shall be suitably marked on the upper face with the following legend as per size and location indicated in the drawing by screen printing.

- i. Manufacturer's name/ initial/ trade mark
- ii. Month and year of manufacture
- iii. Drawing Number

The markings should be clearly visible and readable.

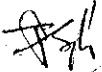
## 8.0 PACKING

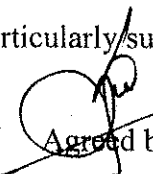
The Water Connector shall be securely packed in Carton Boxes as to permit convenient handling and to protect against loss or damage during transit and storage.

## 9.0 STORAGE

9.1 The Water Connector shall be stored in a cool and dry place, free from constraints, in the original packing.

9.2 The y shall be kept covered and free from exposure to bright light, particularly sunlight.

  
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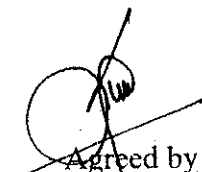
  
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9.3 The Connector shall be stocked and arranged in such order as to ensure use of old stock first.

#### 10.0 WARRANTY

The Water Connector supplied against an order shall bear a warranty of the contractor against defective material/workmanship and performance for a minimum period of 24 months from the date of supply or 18 months from the date of fitment whichever is earlier. In case, any Connector cracks/breaks within 18 months of service, it shall be replaced by new one free of cost within one month of receipt of information.

  
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