

RAIL COACH FACTORY, KAPURTHALA

MD46111




Date: 22.12.2011

Sub: Specification no. MDTs-221 Rev-01 for Pre-assembled Stainless Steel Drop- down Modular Toilet for High Speed Stainless Steel Air-Conditioned Coaches.

Please find enclosed a copy of spec. no MDTs-221 Rev-01 for Pre-assembled Stainless Steel Drop- down Modular Toilet for High Speed Stainless Steel Air-Conditioned Coaches.

Following condition of the specification should be indicated in the tender.

"Firm shall submit clause-wise comments to this specification in their offers. RCF reserves the right to summarily reject the offers, received without submitting clause wise comments on this schedule of requirements"

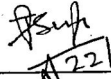


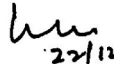

(Suraj Prakash)
Dy CME/D-1

Dy CPLE-III

Copy to: -

CPLÉ, CQM, CWE/Fur, CMM/RCF, CMT, CMM/TKJ
SE/Record ✓
SE/Lib/Design
SE/Design/RCF/TKJ

RAIL COACH FACTORY KAPURTHALA	SCHEDULE OF TECHNICAL REQUIREMENTS FOR PRE ASSEMBLED STAINLESS STEEL DROP DOWN MODULAR TOILET FOR HIGH SPEED SS COACHES.	MDTS- 221 REV - 01 Page 1 of 11 Date 21 12. 11
--	---	---

Name	Designation	Signature	Date	Level
T.P.Singh	SSE/D/Fur-2	 22/12/2011	22-12-2011	Prepared
Pradeep Sharma	SME/DEV-1	 22/12/11	22.12.2011	Agreed
Suraj Prakash	Dy. CME/D-1	 22/12/11	22.12.2011	Reviewed
Parmanand Singh	CDE	 22/12/11	22.12.2011	Approved

Rev. No	Details of Changes	Date
01	<ol style="list-style-type: none"> 1. Clause 2.5 of Part 'A' modified to specify the equivalent model no (to Jaquar) for different makes i.e. M/s Marc, M/s Dorset, M/s ESS ESS and M/s Agemeco of BIB Cock of Wash Basin. 2. In Clause 2.9 of Part 'A' specification MDTS-229 indicated instead of 3-M Nomad -9100 for Scraper Matting. 3. Clause 1.16 of Part 'B' modified to include hand held metal analyzer (XRF analyzer) for inspection and Electrode for Tig welding deleted as Electrode is not required for Tig Welding. 4. Clause 2 of Part 'B' modified to include Quality Assurance Plan. 	21. 12 .2011

Prepared By

Agreed By

RAIL COACH FACTORY KAPURTHALA	SCHEDULE OF TECHNICAL REQUIREMENTS FOR PRE ASSEMBLED STAINLESS STEEL DROP DOWN MODULAR TOILET FOR HIGH SPEED SS COACHES.	MDTS- 221 REV - 01 Page 2 of 11 Date 21.12.11
--	---	--

This specification is in two parts. Part-A covers the technical requirements of the pre-assembled stainless steel drop down modular toilet. Part-B covers schedule of infrastructural requirements eligibility criterion and Quality assurance plan (QAP) for the bidders intending to supply this toilet to the purchaser.

Firm shall submit clause-wise comments to this specification in their offers. RCF reserves the right to summarily reject the offers, received without submitting clause wise comments on this schedule of requirements.

Part-A

1. Technical Specification

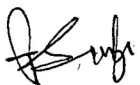
- I. **SCOPE:** Pre Assembled Stainless Steel Drop Down Modular Toilet hereafter referred to as PASSDMT will be applicable to all types of SS AC coaches indicated in clause no 2. PASSDMT has been developed to fit on coaches by dropping them through coach roof top. These toilets will come pre-fitted with accessories as per details given ahead in the specification. Mounting of PASSDMT shall conform to following drawings for Mounting of FRP modular toilets on SS AC coaches:

- a) 1 10113.0.30.000.003
- b) 1 10113.0.30.000.005
- c) LE63101
- d) 1 10112.0.30.000.004

Since mountings are same, No modifications shall be required in the coach shell for fitment of PASSDMT in lieu of FRP modular toilet being fitted presently.

- II. **Material :** Generally following material grades and thicknesses shall be used for different major components of PASSDMT:

- (i) For panels/ceiling panels on partition members: Stainless steel to Grade AISI 304 S1 as per IS 6911:1992 in Scotch brite finish.
- (ii) All interior surfaces of the panels shall be applied with anti-graffiti coating to RDSO specification no. RDSO M & C /PCN/127/2009. For Anti graffiti coating, WTC as well as applicable Invoice from O.E.M shall be submitted with each lot of PASSDMT. Supplier shall also arrange to carry out tests from independent NABL accredited lab for all the parameters contained in the specification. These test results shall also be checked by inspection agency for conformity with respect to WTC of OEM.
- (iii) Structural members/supporting members and partition frames shall be of stainless steel to AISI 304 S1 as per IS 6911:1992.


Prepared By


Agreed By

RAIL COACH FACTORY KAPURTHALA	SCHEDULE OF TECHNICAL REQUIREMENTS FOR PRE ASSEMBLED STAINLESS STEEL DROP DOWN MODULAR TOILET FOR HIGH SPEED SS COACHES.	MDTS- 221 REV - 01 Page 3 of 11 Date 21 12. 11
--	---	---

(iv) Material for attachment wall, lavatory floor, commode shroud, inside wash basin, outside wash basin with dust bin and out side waste bin shall also be stainless steel to Grade AISI 304 S1 as per IS 6911:1992.

(v) SS material for the module shall be in the following thickness as :

- a. Panels on the partition frames : 1.2 mm
- b. Ceiling panels of lavatory : : 1.2 mm
- c. Sheet thickness of attachment wall (Cover of CDTs and plumbing in doorway) : 1.6 mm
- d. Lavatory floor sheet (Top and bottom) : 1.6 mm.
- e. Sheet of shroud for commode arrgt in western toilet : 1.6 mm
- f. Square tube partition between panels : 2x20x20.
- g. Structural member for ceiling frame : 2.5 mm
- h. Sheet thickness of wash basin sink : 1.6 mm
- i. Sheet thickness for outside dust bin (below wash basin) and inside dust bin (below wash basin) : 1.2 mm
- j. Sheet thickness for outside dust bin (Fixed type) : 1.6 mm

For items not covered above and for which no drgs/specs are referred in this specification, firm may use material of suitable thicknesses.

2. Scope of Supply:

2.1 Following scope of supply for PASSDMT and amenity fittings shall be applicable for different types of coaches: (Details of items supplied in loose have been given in Annex-A)


S.no.	Description	General Dimensions conforming to Drg. no.	Qty. per coach	Type of coach
i)	A.1) Lavatory module orient-1 with	1 10113.0.30.000.013	02	AC/chair car
	A.2) Attachment wall in SS Grade 304 AISI S1.	LW64143	02	
	B.1) Lavatory module Euro-2 with	1 10113.0.30.000.015	01	
	B.2) Attachment wall in SS Grade AISI 304S1.	LW64144	01	
	C.1) Waste bin Arrangement	LE63100	01	


Prepared By


Agreed By

RAIL COACH FACTORY KAPURTHALA	SCHEDULE OF TECHNICAL REQUIREMENTS FOR PRE ASSEMBLED STAINLESS STEEL DROP DOWN MODULAR TOILET FOR HIGH SPEED SS COACHES.	MDTS- 221 REV - 01 Page 4 of 11 Date 21 12. 11
--	---	---

ii)	A.1)	Lavatory module orient-1 with	1 10113.0.30.000.013	01	AC/Executive chair car
	A.2)	Attachment wall in SS Grade AISI 304S1.	LW64143	01	
	B.1)	Lavatory module Euro-2 with	1 10113.0.30.000.015	01	
	B.2)	Attachment wall in SS Grade 304 in SS Grade AISI 304S1.	LW64144	01	
	B.1)	Lavatory module Euro-1 with	1 10112.0.30.000.014	01	
	B.2)	Attachment wall in SS Grade AISI 304S1.	LW64143	01	
	C)	Waste bin Arrangement in SS Grade AISI 304S1.	LE63100	01	
iii)	A.1)	Lavatory module orient-1 with	1 10113.0.30.000.013	01	First class AC
	A.2)	Attachment wall in SS Grade AISI 304S1.	LW64143	01	
	B.1)	Lavatory module Euro-2 with	1 10113.0.30.000.015	02	
	B.2)	Attachment wall in SS Grade AISI 304S1.	LW64144	02	
	C.1)	Shower Room Arrgt (corresponding to Lavatory Module 1 10112.0.30.000.014 without cutout of pan) with	MI004371	01	
	C.2)	Attachment wall in SS in SS Grade AISI 304S1.	LW64143	01	
	D)	Waste bin Arrangement in SS Grade AISI 304S1.	LE63100	01	
iv)	A.1)	Lavatory module orient-1 with	1 10113.0.30.000.013	02	AC 2-Tier &
	A.2)	Attachment wall in SS Grade AISI 304S1.	LW64143	02	


Prepared By


Agreed By

RAIL COACH FACTORY KAPURTHALA	SCHEDULE OF TECHNICAL REQUIREMENTS FOR PRE ASSEMBLED STAINLESS STEEL DROP DOWN MODULAR TOILET FOR HIGH SPEED SS COACHES.	MDTS- 221 REV - 01 Page 5 of 11 Date 21.12.11
--	---	--

	B.1) Lavatory module Euro-2 with	1 10113.0.30.000.015	01	3-Tier
	B.2) Attachment wall in SS Grade AISI 304S1.	LW64144	01	
	C.1) Lavatory module orient-2 with	LE63110	01	
	C.2) Attachment wall Grade AISI 304S1	LW64144	01	
	D.1) Waste bin Arrangement in SS Grade AISI 304S1	LE63100	01	
	E.1) Out Side Wash Basin with Dust bin arrgt below in AISI 304S1.	LW63163	02	
v)	A.1) Lavatory module orient-1 with	1 10113.0.30.000.013	01	Hot Buffet
	A.2) Attachment wall in SS Grade AISI 304S1.	LW64143	01	
	B.1) Lavatory module Euro-2 with	1 10113.0.30.000.015	01	
	B.2) Attachment wall in SS Grade AISI 304S1.	LW64144	01	
	C) Waste bin Arrangement in SS Grade AISI 304S1.	LH63102	01	

2.2 **Inside wash basins:** Inside wash basin in SS Grade AISI 304S1 -generally conforming to drg. No

1. MI004544
2. MI004545

2.3 **Bowl facing:** Bowl facing (Shroud) of SS Grade AISI 304S1 material for Western toilet:- is generally conforming to drawing nos.

- 1 10113.0.30.095. 083.
- 1 10113.0.30.095. 002.

2.4 **Health faucet:** Health faucet of M/s Jaquar/Marc or equivalent as approved by CDE/RCF. Suitable APD (Anti- pilferage) may be provided.



Prepared By


Agreed By

RAIL COACH FACTORY KAPURTHALA	SCHEDULE OF TECHNICAL REQUIREMENTS FOR PRE ASSEMBLED STAINLESS STEEL DROP DOWN MODULAR TOILET FOR HIGH SPEED SS COACHES.	MDTS- 221 REV - 01 Page 6 of 11 Date 21.12.11
--	---	--

- 2.5 **BIB Cock for Wash basin :** BIB cock to cat no. 29037 fusion range of M/s Jaquar/ MSO-2080 of M/s Marc/ FNOBCCH of M/s Dorset/ HR03 of M/s ESS ESS/ SE-00202 of AGMECO subject to compliance of firm with Clause 3 to clause 7 of section 'A' of RDSO/2008/CG-05. Suitable APD (Anti-pilferage) should be provided.
- 2.6 **Gravity cock for Lota Filler:** Gravity Cock of reputed brand generally conforming to Drawing no. CC63933
- 2.7 **Soap Dispenser with Cage :** Soap dispenser with cage shall conform to RCF specification MDTS-209
- 2.8 **Automatic Hygiene & Odour Control System:** Automatic hygiene and odour control system for toilets shall conform to RDSO specification RDSO/2008/CG-11 (except clause 3.2 and 3.3) in each toilet.
- 2.9 **Scraper Matting:** Scraper matting as per MDTS-229 shall be provided on complete lavatory floor area except pan.
- 2.10 **Toilet door:** Toilet doors shall be of SS Grade AISI 304S1. Material dimensions shall be generally conforming to latest alterations of Drawing nos.
a. LW56424
b. LW56475
Note: Necessary clearance should be provided between the toilet floor with scraper matting and lavatory door for its free movement. Toilet Door should be replaceable by opening of mounting screws.
- 2.11 **Dustbin (inside the toilet) :** Dustbin below inside wash basin in SS Grade AISI 304S1 with dimensions suiting to the space below inside wash basin of design, as approved by CDE RCF shall be provided.
- 2.12 **Coat hooks -3 pegs (Swivel type):** Coat hooks behind the door shall conform to drawing no. CC64254
- 2.13 **Toilet light:** CFL in each Toilet shall generally conform to drawing nos. LW76033
- 2.14 **Mirrors**
Mirror (Inside toilet) shall conform to drawing no. LW63182 and mirrors (outside toilet) shall conform to drawing no. MI004725


Prepared By


Agreed By

RAIL COACH FACTORY KAPURTHALA	SCHEDULE OF TECHNICAL REQUIREMENTS FOR PRE ASSEMBLED STAINLESS STEEL DROP DOWN MODULAR TOILET FOR HIGH SPEED SS COACHES.	MDTS- 221 REV - 01 Page 7 of 11 Date 21 12. 11
--	---	---

2.15 Lavatory Window panel: Lavatory Window panel in SS Grade AISI 304S1 shall generally conform to drawing nos.:

1 10113.0.30.400.057

2 10113.0.30.400.006

2.16 Following Electrical items should be procured only from the sources as per RCF's approved vendor directory.

- i) Light to drg. no. LW76033 'Alt.-'c' of quantity 01 per toilet to be provided on top of mirror inside the toilet. The supplier shall provide indelible marking of its own in addition to OEM's identification at a location which is normally not visible but can be viewed for identification in fitted condition.
- ii) Razor socket to EDML-047 Item-4 of quantity 01 per toilet.
- iii) Terminal connector to EDML-037 Rev 'a' of quantity 01 per toilet to be provided.
- iv) Polyamide flexible conduits PG-16 (in meters) to spec. EDTS-291 Table-1, Item-5 to be provided for wiring of lavatory light, razor socket and limit switch etc.
- v) Clamping arrangement of for double conduits to be provided over the lavatory area to drg. no. LP76001 Item-8.
- vi) Cable jacket system, item-8 to EDTS138 to be provided.
- vii) Cable duct A45, Standard Slot Grey to Cat. No. CDA4545SG to be provided.
- viii) Cable duct cover A45, standard slot gray to cat. No. CCA45SG.
- ix) Cable binder 3.6 x 200 cat. No. 140D etc. to be provided.
- x) E-beam copper cable of size 1.5 sq mm to be used for wiring from RCF approved sources.
- xi) Mounting arrangement for WAGO connector to be provided on wall of Module.
- xii) Limit switch in the lavatory door frame & its wiring to be provided.

2.17 The route of Electrical wiring shall be as per Sked no. 598.

2.18 Necessary cutouts and holes required for Plumbing pipes to be made in panels/sheets as per drawing no. LE63157 and LE63160. Plumbing arrangements except health faucet and water taps are in RCF scope of supply.

2.19 Supplier should submit complete drawings to CDE/RCF for approval before manufacture of Prototype.

2.20 Prototype approval of one coach set is to be taken before bulk supply.


Prepared By


Agreed By

RAIL COACH FACTORY KAPURTHALA	SCHEDULE OF TECHNICAL REQUIREMENTS FOR PRE ASSEMBLED STAINLESS STEEL DROP DOWN MODULAR TOILET FOR HIGH SPEED SS COACHES.	MDTS- 221 REV - 01 Page 8 of 11 Date 21.12.11
--	---	--

Part-B

Schedule of infrastructural Requirements and Eligibility Criterion for the Bidders

1. **General & Manufacturing Facilities: Firm should have infrastructural Facilities as below :**
 - 1.1 Firm should have covered area for manufacturing of Stainless steel components only, to avoid iron contaminations and also having adequate space underneath for storage of raw materials e.g. sheets, billets, round corner, squares tubes, 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.
 - 1.2 Fabrication should be confined to an area where only one grade of material is being worked.
 - 1.3 At least 1 No. Fork-lift or 1 No. Over-head crane of 2t (Min.) capacity shall be available for material handling.
 - 1.4 Minimum 1 No. of band saw /power hacksaw machine should be available.
 - 1.5 Adequate machining facilities comprising of universal milling machine, drilling, lathe etc. of suitable capacities and standard makes should be available.
 - 1.6 At least one CNC laser profile cutting machine in working order should be available with the tenderer. All the cutting work shall be undertaken on CNC laser cutting machine only.
 - 1.7 The firm shall have at least one press brake of suitable capacity along-with punch and dies for component forming.
 - 1.8 Only TIG welding with Argon shielding gas should be used for fabrication work of Modular Toilet.
 - 1.9 Adequate Nos. of hand grinders for removal of fins & burrs shall be available.
 - 1.10 Handling equipments such as slings, hooks and lift truck forks should be protected with clean wood, cloth or plastic buffers to reduce contact with the iron surface.
 - 1.11 Proof of procurement of raw material from OEM and their test certificate shall be enclosed by inspection agency along with the inspection certificate of Modular Toilet.
 - 1.12 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.


 Prepared By


 Agreed By

RAIL COACH FACTORY KAPURTHALA	SCHEDULE OF TECHNICAL REQUIREMENTS FOR PRE ASSEMBLED STAINLESS STEEL DROP DOWN MODULAR TOILET FOR HIGH SPEED SS COACHES.	MDTS- 221 REV - 01 Page 9 of 11 Date 21 12. 11
--	---	---

- 1.13 The firm shall comply with IS: 822 regarding, storage of consumables, calibration of welding equipment, testing of welding and remedies for welding defects.
- 1.14 The Welder: Firm shall employ trained and certified welders. Welder shall be trained as per EN 287-2 and shall have a minimum of 2 years experience.
- 1.15 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..
- 1.16 The firm should have at least one no. of hand held metal analyzer (XRF analyzer) in working condition. This equipment shall be used by inspecting official for in process inspection/final inspection.

2 **Quality Assurance Plan (QAP) :**

A Quality Assurance Plan which outlines the various stages and process including inspection in order to obtain a Quality product shall be prepared on the lines as indicated in the MDF00014 and submitted to RCF, Kapurthala or purchaser. QAP shall be approved by CDE/RCF, Kapurthala before undertaking manufacture of pilot sample.

References:

1. Electrical letter no. ED-2008 dated 29.06.2009.


Prepared By


Agreed By

RAIL COACH FACTORY KAPURTHALA	SCHEDULE OF TECHNICAL REQUIREMENTS FOR PRE ASSEMBLED STAINLESS STEEL DROP DOWN MODULAR TOILET FOR HIGH SPEED SS COACHES.	MDTS- 221 REV - 01 Page 10 of 11 Date 21 12. 11
--	---	--

List of items to be supplied loose

Annexure-‘A’

S. NO.	Item Description
1.	Inside Mirror
2	Outside mirror
3.	Inner attachment wall
4.	Gravity cock for Lota Filler
5.	BIB Cock for Wash basin
6	Health faucet


Prepared By

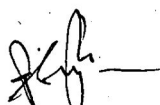

Agreed By


RAIL COACH FACTORY KAPURTHALA	SCHEDULE OF TECHNICAL REQUIREMENTS FOR PRE ASSEMBLED STAINLESS STEEL DROP DOWN MODULAR TOILET FOR HIGH SPEED SS COACHES.	MDTS- 221 REV - 01 Page 11 of 11 Date 21.12.11
--	---	---

List of drawings/specs referred:

Annexure: B

Sl. No	Drawing no/spec.
1.	1 10113.0.30.000.003
2.	1 10113.0.30.000.005
3.	LE63101
4.	1 10112.0.30.000.004
5.	1 10113.0.30.000.013
6.	1 10112.0.30.000.014
7.	1 10113.0.30.000.015
8.	MI004371
9.	LW64143
10.	LW64144
11.	LE63100
12.	LH63102
13.	MI004544
14.	MI004545
15.	LW63163
16.	MI004725
17.	MDTS-209
18.	RDSO/2008/CG-11
19.	LW56424
20.	LW56475
21.	1 10113.0.30.095. 083
22.	1 10113.0.30.095. 002
23.	CC64254
24.	CC63933
25.	2 10113.0.30.400.006
26.	1 10113.0.30.400.057
27.	LW63182
28.	LW63198
29.	LW76033
30.	EDTS138
31.	LP76001
32.	EDML-037
33.	EDTS-291
34.	EDML-047
35.	Sked no. 598


Prepared By


Agreed By