

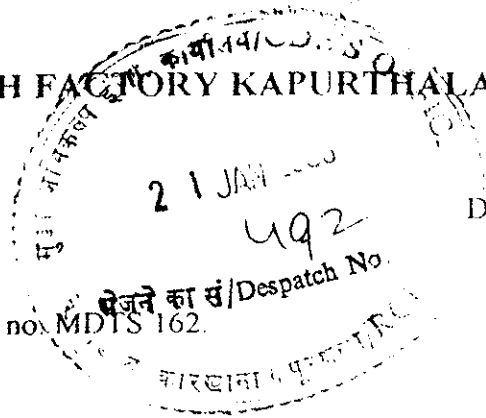
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RAIL COACH FACTORY KAPURTHALA

MD35131

DATE 19.01.2006

Sub: Issue of specification no. MDTS 162.
वेजने का सं/Despatch No.



Please find enclosed a copy of specification or it's related information as dealt point-wise below, for information and necessary action at your end.

Specification no. MDTS 162 Rev. NIL Dated: 19.01.2006

SCHEDULE OF TECHNICAL REQUIREMENTS FOR SEATS FOR
2nd CLASS DAY COACH


ADE/DI

CQM, CPLE, CWE, CMM, CMT, CME/MP

- ✓ SSE / LIB. DESIGN
- SSE / RECORD (With original specification)
- JE-1 / DESIGN / RCF / TKJ

Copy for kind information to:

DY CME / TOT, DY CME / D, DY CME / IT / D
CDE

Copy in: MD21876
MD22201

RAIL COACH FACTORY, KAPURTHALA




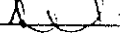
(MECHANICAL DESIGN DEPARTMENT)

SCHEDULE OF TECHNICAL REQUIREMENTS FOR SEATS FOR 2nd CLASS DAY COACH

MDTS 162

REV.-NIL

DATED : 19.01.2006

NAME	DESIGNATION	SIGNATURE	DATE	LEVEL
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Issue/Rev	Details of Changes	Date


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1. Scope:

- 1.1 This specification covers the general and technical requirements of single seater for 2nd class day coach.
- 1.2 The general arrangement and mounting of the seats shall be as per fixing arrgt. drawings indicated in the purchase order.
- 1.3 The scope of supply of the supplier are different types of seats LH/RH as appearing in the bill of materials of arrgt. drawings.
- 1.4 Along with each coach set of seats, the supplier will supply 5 meter length of upholstery cloth, exactly the same as used on the chairs.
- 1.5 While quoting, the supplier shall give clause wise comments and shall also submit a deviation statements if there are any deviations in the offer with respect to these specifications.

2. Functional Requirements:

- 2.1 All fasteners and metal parts shall be suitably concealed. Where ever fasteners are visible to the passengers, only flushed stainless steel star headed counter sunk fasteners should be used. The seats shall have no sharp edges or corners anywhere.
- 2.2 Moulded cushion for seat and back rest shall be moulded from polyurethane foam. Contours of the moulded seat and back rest generally conforming to drg., and same should be ergonomically perfect and generally as per the dimensions indicated in the drawing.
- 2.3 Seat cushions and back rest contours shall provide adequate comfort and will be approved on submission of prototype seat. The rear side of backrest shall be covered with stainless steel cover sheet having thickness of 0.8 mm. This cover sheet should be screwed with star headed counter sunk stainless steel screws. This cover sheet should be brushed finish to finish no.-4 of M/s Salem Steel.
- 2.4 Backrest shall be preferably integral part of seat.
- 2.5 Corners and edges towards aisle side shall have robustness against usual wear.



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- 2.6 No disturbing noises or vibration shall be emitted by the seat or any component.
- 2.7 The concept of mounting the seats on the floor & side wall shall be identical for all seats to ensure interchangeability.
- 2.8 Seat shall have an in-built handle at the top of the back rest. However, no screws should be visible, if a screwed handle is used.

3. Technical Requirements:


- 3.1 Frames of seat and back rest should be sturdy enough to withstand normal misuse by Railway passengers. The frame of seat should be made of stainless steel. The frame should have a good finish at welded joints. There should be no sharp edges and structural supports should be suitably concealed.
- 3.2 Moulded cushion for seat and back rest shall be made of polyurethane to Technical specification No. RDSO/Spec. C-8914 (Rev.-nil).
- 3.3 Approved fire barrier shall be provided all around PU foam including between upholstery and cushion as a fire prevention measure.
- 3.4 Fire retardant upholstery to RDSO spec. C-9503 type-II shall be used . A sample of upholstery shall be approved from RCF for colour, specification and quality before the bulk manufacture of chairs.
- 3.5 The seats with less weight will be preferred.
- 3.6 All metal parts should have brushed finish to finish no.-4 of M/s Salem Steel.
- 3.7 Colour scheme of seats & its parts for prototype will be approved by RCF at the time of approval of the drawings submitted by the supplier.
- 3.8 Colour scheme of the seats again will be reviewed at the time of submission of pilot sample for approval and RCF reserves the right to change colour shade considering the aesthetics of seats in coach.

4. Interfaces with the car body

The seats are to be mounted in the interior of the coach with the fixing dimensions, tolerances and mounting arrangement as indicated in drawings of fixing arrgt.



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5. Mechanical strength requirements

- 5.1 The mechanical strength of the seat has to meet the requirements of UIC 566. According to this, the design and fastening of the seat is to be made such that the mounted seat can withstand static loads as per clause 8.1 of this specification.
- 5.2 The passenger coaches running on Railways are designed for a service life of 30 years. The seats should be developed and assembled keeping the same objective in view.

6. Warranty :

The supplier shall give warranty for the complete assembly or part of seats, for failing or proving unsatisfactory in service due to defective design, material or workmanship within 36 months from the date of regular supply and shall replace the same at his own cost and risk. The supplier's name plate along with month and year of supply to RCF should be provided at concealed location for traceability purpose.

7. Documents to be submitted by supplier for prototype approval

The following documentation for the assembly of the seats are to prepared by the supplier for submission along with the prototype assembly.

- 1. A set of drawings consisting of drawings and part lists
- 2. The manufacturer shall mention the material used along with specification while quoting for the supply of chairs.
- 3. The documentation of the design in form of plots on paper and as CAD data in IGES file format
- 4. Clearly organised instructions for mounting and adjusting the seats, changing the seat and wearing parts
- 5. Maintenance and repair instructions.
- 6. Technical description of the seat .



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8. Testing of prototype & regular production assemblies

The supplier shall submit one prototype of seat along with the documents indicated above for approval before commencing bulk supply. General dimensions of the seat shall be as per Clause 1.3 of this specification. The prototype and drawings shall be examined from all view points and supplier shall incorporate changes suggested by RCF on the basis of this review in the prototype and drawings as well as bulk supply. The bulk manufacture shall be undertaken **only after the approval of prototype and drawings.**

8.1 Testing of the seat shall be done in the same condition as fixed in the coaches. The following static load test shall be applied to prototype samples :

- i) 100 kgf vertical load to be applied per person at the centre of the seat cushion by using press board of hard board of circular area 615 sq. cm normal to the surface of sitting area.
- ii) 50 kgf of horizontal load to be applied to the frame at the top aisle side corner of back rest of seat sets.
- iii) 50 kgf of horizontal load to be applied at the centre of back rest by using press board of hard board of circular area 615 sq. cm normal to the surface.

The above tests shall not give rise to any deformation in any component.

9. Up-gradation of design

Supplier may offer alternate design of seats for all the above or any of the above clauses with a view to upgrade the design. Clause-wise justification shall be given by the supplier in such case. Seats having lower weight shall be preferred. Specification details may be deviated from those specified above, if sufficient technical justification is available. The firm having developed such seat, should submit sample with the offer and preference will be given to the suitable seat. However, RCF's decision on all such matters shall be final.



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