

SPECIFICATION	Technical Specifications for Composite Components for ALSTOM-LHB design Coaches	MDTS:090Rev:N/L PAGE 1.. OF 4
		DATED 25.12.2000

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

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1. Scope:

This specification covers the general and technical requirements and method of testing of interior composite components panel part assemblies to be used in the interior of ALSTOM-LHB Design Coaches.

2. Applicability :

These composite components are to be fitted in passenger coaches of ALSTOM-LHB design coaches. The composite components arrangements shall be supplied as per the as per the following drawings:

Quantity per coach and color scheme shall be described by RCF at the time of placement of order depending upon feasibility of the component on the type of coach used.

1. Blind	2.10113.0.21.310.134 ✓
2. Table plate 2nd class (Big)	3.10113.0.25.095.003 ✓
3. Table plate 2nd class (Small)	3.10113.0.25.095.004 ✓
4. Blank panel, 1 cpl.	2.10113.0.21.310.100 ✓
5. Blank panel 2 cpl.	2.10113.0.21.310.101 ✓
6. Blank panel 3 cpl.	2.10113.0.21.310.102 ✓
7. Blank panel 4 cpl.	2.10113.0.21.310.103 ✓
8. Blank panel 5 cpl.	2.10113.0.21.310.104 ✓
9. Blank panel 6 cpl.	2.10113.0.21.310.105 ✓
10. Blank panel 7 cpl.	2.10113.0.21.310.106 ✓
11. Blank panel 8 cpl.	2.10113.0.21.310.107 ✓
12. Blank panel 9 cpl.	2.10113.0.21.310.108 ✓
13. Blank panel 10 cpl.	2.10113.0.21.310.109 ✓
14. Composite components element	2.10113.0.21.530.100 ✓
15. Composite components element	2.10113.0.21.530.109 ✓
16. Wash basin plate 1 cbl (with wash basin)	1.10113.0.30.095.157 ✓
17. Wash basin plate 2 cbl (with wash basin)	1.10113.0.30.095.158 ✓
18. Casing tubes lower parts	2.10113.0.30.095.161 ✓
19. Casing tubes upper part 1 cbl.	2.10113.0.30.095.159 ✓
20. Casing tubes upper part 2 cbl.	2.10113.0.30.095.160 ✓
21. Circulating air lid leftside WE1 cbl.	2.10113.0.29.400.020 ✓
22. Circulating air lid rightside WE1 cbl.	2.10113.0.29.400.021 ✓
23. Circulating air lid centre WE1 cbl.	2.10113.0.29.400.022 ✓
24. Circulating air lid leftside WE1 cbl.	2.10113.0.29.400.023 ✓
25. Circulating air lid rightside WE1 cbl.	2.10113.0.29.400.024 ✓
26. Circulating air lid centre WE1 cbl.	2.10113.0.29.400.025 ✓

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3. Functional Requirements :

The composite components shall have a pleasant and good looking appearance as these components shall be the major part of the interior of the coach looking .

The color of the various components shall be approved at the time of approval of prototype sample of the composite components .

4.0 TECHNICAL REQUIREMENTS:

The composite components shall be made a form a sandwich construction consisting of a wooden core in the flat portion and PU/PVC Foam at the

Fire retardance: The fire characteristics of the material shall be as under:

- The material conform to following fire classification when tested as per DIN-5510 (Pt-2)
 - Flammability class S4
 - Smoke density class SR2
 - Dropping class ST2
- Toxicity index shall be less than 1 when the material is tested as NCD-1409

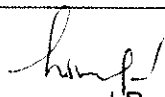
5. Mechanical strength requirements

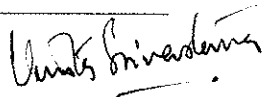
1. The passenger coaches running on Indian Railways are designed for a service life of 30 years. The composite components are to be developed and assembled accordingly.

1. Resistance to vermin : Selection of the materials (insulation, sealant, rubber, etc.), should be done with due consideration to their resistance to vermin (e.g. termites).

6 Warranty :

The supplier shall give warranty for the complete or part of composite components, for failing or proving unsatisfactory in service due to defective design, material or workmanship within 36 months from the date of regular


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supply and shall replace the same at his own cost and risk. The supplier shall fix metallic stickers on each seat mentioning name of the supplier and month of supply of seats to RCF. These stickers shall not be visible to the passengers easily.

7 Documents to be submitted by supplier for prototype approval:

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

1. A set of drawings consisting of drawings and parts lists
2. Clearly organised instructions for mounting and adjusting the composite components, changing the composite components and wearing parts
3. Maintenance and repair instructions.
4. Technical description of the composite components.

8 Testing of prototype & regular production assemblies:

The supplier shall supply one prototype of composite components alongwith the documents indicated above for approval before commencing bulk supply. The prototypes and drawings shall be examined from all view points and these shall be fitted on the coach/mock-up for checking proper fittment/functioning of the composite components. Color scheme shall be decided alongwith the approval of prototype. Supplier shall incorporate changes suggested by RCF in the prototype as well as bulk supply. The bulk manufacture shall be undertaken only after the approval of prototype.

Fire Test: The composite components shall be tested for fire retardance as per clause 4 of this specification. The supplier shall get the composite components tested from a reputed firm/laboratory and shall supply a certificate in this regard.

This clause is applicable for first supply of a supplier. However, RCF shall have the right to repeat prototype approval process in subsequent order also. In this regard RCF decision shall be final

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