

RAIL COACH FACTORY KAPURTHALA

MD35131

Dated: 27-12-2017

Sub: Issue of specification no. MDTs-086 Rev-01 Schedule of requirements of High Pressure Laminate Sheet for LHB Design Coaches

Please find enclosed a copy of specification no. MDTs-086 Rev-01 Schedule of requirements of High Pressure Laminate Sheet for LHB Design Coaches, for information and necessary action at your end.

(D K Singh)
Dy CME/D-2

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

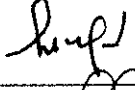

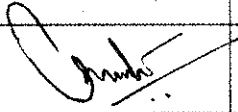
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SPECIFICATION MDTS-86 REV-01	Schedule of Requirements for High Pressure Laminated Sheets (HPL) for LHB Design Coaches	PAGE 1 of 3 DATE 12.12.2017
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NAME	DESIGNATION	SIGNATURE	DATE	LEVEL
Harish Kumar	SSE/Dev		12/12/17	Prepared
D. K. Singh	Dy.CME/D-II		13/12/17	Agreed and Reviewed
Samir Lohani	CDE		13/12/17	Approved

Issue / Rev.	Details of changes	Date
Rev01	1.0 Requirements; Deterioration of visibility due to smoke (Para 16), Toxicity (para 18) & Heat Release Rate (Para 19) added. 2.0 Requirements; Resistance to spread of flame (Para 15) & Limiting Oxygen Index (Para 17) modified. 3.0 Classification of test(para 3.0) added	12.12.2017


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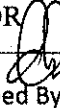
1.0 Scope:

This specification covers general requirements and method of testing of high pressure laminated (HPL) sheets. The HPL sheets are to be used for interior panels used inside the LHB design coaches. Sheet size shall generally be 1200 x2400 mm. Color shall be described by RCF at the times of approval of prototype.

2.0 Material Requirements:

SN.	Description	Value Required	Test Method
1	Appearance	No Surface Defect	EN-438
2	Flatness	60 mm/M (Max. deviation)	EN-438
3	Tolerance on flat Thickness	±0.1mm for sheet greater than 1mm thick. ±0.15mm for sheet greater than 2mm thick	EN-438
4	Straightness of edge	1.5mm/M (Max)	EN-438
5	Squareness of rectangular finished parts	1.5mm/M (Max)	EN-438
6	Resistance to dry heat at 180°C	Grade 3 to 4	EN:438
7	Dimensional Stability at 20°C	Less than 0.3%	EN:438
8	Resistance to immersion in boiling water	Grade 3 to 4	EN-438
9	Resistance to Staining	Grade 4 to 5	EN-438
10	Flexural strength	90Mpa min.	Ann. F of IS:13411-92
11	Impact strength	Grade 2 to 4	EN:438
12	Resistance to colour change	Grade 4 to 5	EN-438
13	Resistance to Steam	Grade 3 to 4	EN-438
14	Surface Finish	10-12	EN -438
15	Resistance to spread of flame	Class B	Appendix-11 of UIC 564-2 OR


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16	Deterioration of visibility due to smoke	Class A	Appendix-15 of UIC 564-2 OR
17	Limiting Oxygen Index	Min. 32	IS:13501
18	Toxicity	Less than 1	NCD:1409
19	Heat Release Rate	R1 (HL2) at 50 kW/m ²	ISO 5660-1 EN 45545-2:2013

3.0 Classification of tests:

a. Testing of following parameters as mentioned in this specification shall be treated as type tests and shall be repeated every 12 months:

- Resistance to Dry Heat.
- Resistance to Change in color in Xenon Lamp.
- Dimension Stability

However, if the consignee or inspecting agency desires to do the type tests, before 12 months, the supplier should not deny the same. There are various circumstances when type tests may be needed on next supply before one year of last supply/ last type tests e.g.:

- In case of doubt in type test certificate(previous)
- Complaint regarding type test certificates
- Failure of material attributable to any of the parameters covered in type tests, etc.

b. All other parameters shall be checked as per acceptance tests


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