

Rail Coach Factory, Kapurthala

MD35131

Dated: as signed

Sub: Issue of amendment-1 to corrigendum-1 of specification no. MDTS-116 Rev 6 of TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

Following is amendment-1 to MDTS-116 Rev- 6 of TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM for information and necessary action at your end:

SN	Para	Earlier	Modified
1	Para 6.1	<p>All testing must be performed by a laboratory accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL) for the specific test, regardless of whether the test falls within the NABL scope, with the exception of the tests like Dimensional check, thickness, colour, surface finish, which may be carried out in house. Fire retardant tests in accordance with EN 45545-2 must be conducted by either an NABL-accredited laboratory for these specific tests or a testing laboratory accredited according to ISO/IEC-17025 for the performance and conduct of fire tests in compliance with EN 45545-2. Proof of accreditation and test results for all tests conducted must be submitted.</p> <p><i>(All test certificates shall be submitted and uploaded together with the Bid for evaluation purposes).</i></p>	<p>All testing must be by laboratory accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL) for the specific test with the exception of the tests like Dimensional check, thickness, colour, surface finish, if any test not fall under NABL scope then test may be conducted from Government lab or lab accredited for NABL test for any other test(s) mentioned in Specification . The fire retardant tests as per EN 45545 -2 shall be conducted by either NABL accredited Lab for these testes or Testing lab accredited as per ISO/IEC-17025 to perform/conduct fire test as per EN45545-2 (Proof of same shall be submitted).</p> <p>NOTE- If any Vendor opts for test(s) from Government Lab instead of NABL accredited laboratory in that case firm must submit the declaration that the test(s) are not covered under NABL accreditation at the time of bid. Later, if the claim made by the firm is found incorrect/false, the bid of the firm shall be summarily rejected and the firm shall be disqualified from participation in the tender.</p> <p><i>(All test certificates shall be submitted and uploaded together with the Bid for evaluation purposes)</i></p>

This has approval of Competent Authority

Jugal Kishor
Dy. CME/DF

SSE (LIB. Design) SSE (Records) SSE/FUR-III

Dy. CMM/Fur/LHB Dy CMM/G Dy.CPLE-III

CDE CQM CPL CWE (Fur) CWE/Shell CMM/HSQ CMM/TKJ CMT

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रेल कोच फैक्ट्री, कपूरथला

पत्र संख्या- MD35131

तिथि - 13/07/2023

विषय: विशिष्टता प्रकाशन संख्या MDTS-116 Rev.- 6

कृपया जानकारी और अन्य आवश्यक कार्रवाई के लिए निम्नलिखित विशिष्टताओं की संलग्न प्रति प्राप्त करें

S. No	Description	Specification No.
1.	TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM	MDTS-116 Rev -6

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स्थापित: 1986



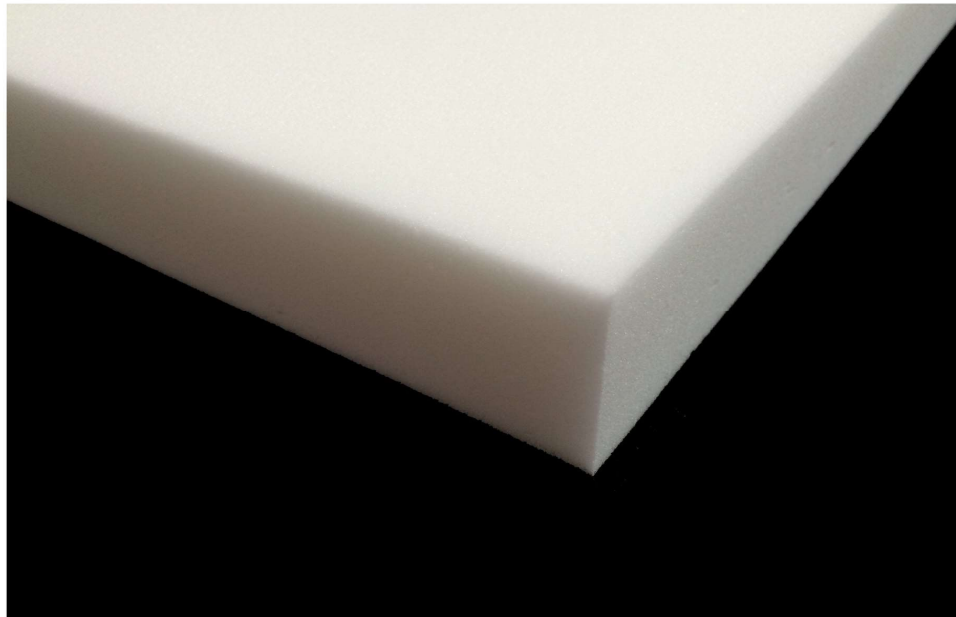
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Government of India
Ministry of Railways
Rail Coach Factory
Kapurthala
Punjab 144602
ESTT: 1986

स्वयं चिपकने वाली फिल्म के साथ इन्सुलेट
सामग्री

INSULATING MATERIAL WITH SELF-ADHESIVE FILM



Specification Number	MDTS-116		
Revision Number	06	Date of Issue	04-07-23

Brief Description: INSULATING MATERIAL WITH SELF-ADHESIVE FILM

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FOREWORD

This technical requirements laid down general / technical, testing requirements of insulation material with self adhesive film in passenger coaches of Indian Railways.

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Document No: MDTS-116	Revision No:6	Date Issued: 04.07.2023
TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM		

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LIST OF AMENDMENTS

SN	Amendment Date	Revision	Details
1.	30/11/2004	1	1.0 Specification modified
2.	05/07/2010	2	1.0 Para's 4.2 & 8.0 added 2.0 Para's 4.1 & 7.0 modified
3.	22/07/2010	3	<ul style="list-style-type: none"> Para 8.0 "Following is known indigenous approved source for adhesive tape :M/s PRS Permacel Private Limited, 215,Suneja Tower-1 Plot No.7, District Centre , Janak Puri, New Delhi – 110 058 “ , deleted.
4.	17-06-2011	4	1 In para 3.2, color ' Grey' added, in para 3.3, "embossed" deleted and in para 4.2, " without releasing paper" added 2 Para's 2.2 , 8 & 9 added
5.	18-02-2015	5	<ul style="list-style-type: none"> Tensile strength, elongation at break and tear strength added. Para 4.2, fire retardant characteristic of adhesive insulation tape deleted.
6.	04-07-2023	6	<ul style="list-style-type: none"> Specification format updated. Para 3, 4, 6 & 8 added. Fire characteristics requirements updated as per EN-45545-2 and UL-94. Para 5.11 (Shelf life) added. Testing specifications specified. Para 2.2 modified. Clause-wise comment, deviation statements and submission of sample at the time of offer omitted.

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM**CONTENTS**

1	Introduction:	3
2	Foreword & Scope:	3
3	List of standards Referred:	3
4	Abbreviation/Terminology:	4
5	Requirements:	4
6	Quality Assurance, Tests & Documents:	5
7	Marking & packing:	7
8	Information to be provided by bidder / supplier:	8

LIST OF TABLE

Table 1: List of referred standards.....	4
Table 2: Abbreviations & Terminology.....	4
Table 3 –Technical Properties	5
Table 4: Quality Assurance, Tests & Documents	7
Table 5: Information to be provided with the bid	8
Table 6: Information to be provided upon release of letter of acceptance / purchase order	9
Table 7: Information to be provided with material consignment.....	9

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM**1 Introduction:**

This specification covers the general and technical requirements of insulating material with self-adhesive film to be used in of all types of Indian Railway passenger coaches.

2 Foreword & Scope:

2.1 This schedule is intended to cover the technical requirements/provisions relating to materials, constructions and tests and does not include all the necessary provisions of the contracts. This schedule draws references to some of the relevant ASTM, UIC and other Indian Standard specifications. Unless otherwise specified, the latest version of the relevant specifications shall be taken as reference.

2.2 The material shall be used for cladding air conditioning ducts in order to impart acoustic and thermal insulation to the duct thereby maximizing output efficiency of air conditioning equipment's and operate between temperature of -40°C to 150°C. These are required to meet the following objectives:

- Excellent Fire retardant characteristics
- Light weight material
- Excellent acoustic insulations
- Performs well in continuous higher temperature

3 List of standards Referred:

SN	Standard	Title
1	ASTM-D-3330	Peel Adhesion Pressure Sensitive Adhesive Tapes
2	DIN-52215	Determination of sound absorption coefficient and impedance in a tube
3	ISO-1798	Flexible cellular polymeric materials
4	IS:15061	Flammability Burning
5	EN45545-2	European Railway standard for fire safety
6	ISO-8067	Flexible cellular polymeric materials — Determination of tear strength
7	ASTM D 3574	Testing of Flexible Cellular Urethane Foams
8	IS-7888	Method of test for PU foam

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

9	ISO:16000-9	Determination of the emission of volatile organic compounds from building products and furnishing
10	IS:3346	Method of the determination of thermal conductivity of thermal insulation materials
11	DIN 53571	Testing of Flexible Cellular Materials

Table 1: List of referred standards**4 Abbreviation/Terminology:**

S.No.	Abbreviation /Terminology	Expansion/Explanation
1	QAP	Quality Assurance Plan
2	FAI	First Article Inspection
3	RCF	Rail Coach Factory
4	KXH	Indian Railways station code for Kapurthala
5	LHB	Linke-Hofmann-Busch the transfer of technology partner for RCF/KXH.

Table 2: Abbreviations & Terminology**5 REQUIREMENTS :**

- 5.1. **Material:** The material shall be duroplastic elastified foam made from melamine and shall not contain any glass mineral fibers and shall be physiologically safe.
- 5.2. Colour: White or Grey.
- 5.3. Surface finish: Air permeable, slightly densified.
- 5.4. Thickness: 10mm, 20 mm or as specified.
- 5.5. Standard Dimensions: 1250x1250 mm or as specified.
- 5.6. Temperature range : -40°C to 150°C longtime working exposure and short time exposure up to +200 ° C
- 5.7. Material shall be easily cut with an ordinary knife.
- 5.8. The self adhesive insulation material shall meets following parameters:

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

Sn	Properties	Specified Parameters Value	Evaluation Standard
1	Density	12 Kg/m ³ (Max)	IS:7888-2003
2	Thermal Conductivity	0.035 W/m ^o K at 10°C (Max)	IS:3346
3	Noise Reduction coefficient	As per Annexure-A	DIN -52215
4	Tensile strength	90 kPa (Min)	ISO-1798/DIN-53571
5	Elongation at break	10% (Min)	ISO-1798/DIN-53571
6	Tear strength	0.09kg kg/cm (Min)	ASTM D -3574/ ISO-8067
7	Fire Retardant characteristics	R1 HL-3	EN45545-2
8	Fire characteristics	V0	UL-94

Table 3 –Technical Properties**5.9. Additional Practical testing of product:**

A test specimen of the material measuring about 150x150 mm shall be subjected to the luminous flame from a Bunsen burner of 10-mm ID. The specimen shall be held with the longitudinal axis at an angle of 45 ° to the horizontal. The flame height shall be 40 mm and the bottom edge of the specimen shall be in the middle of the flame. The flame shall be applied to the specimen at the lower end for 120 sec.

- Should the specimen get ignited, it shall not continue to burn for more than 5 seconds in the damaged area after the flame have been removed. There shall be no after burn in the un-damaged area.
- There should be no drippings

5.10. Requirement of Adhesive tapes: The adhesive power of tape must be at least 25N/sq. cm as per ASTM D 3330 on the surfaces as required on the coaches.

5.11. Shelf Life: Minimum 18 Months.

6 Quality Assurance, Tests & Documents:

The following table provides the overview of the system for quality assurance.

Requirement Description	Requirement Detail	Remarks
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TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

Quality Assurance plan	<p>The manufacturer shall have the detailed quality assurance plan. The Plan shall be submitted for the approval by RCF/KXH. The QAP document shall clearly document the following and control the test record formats.</p> <ol style="list-style-type: none"> 1. Control over outsourced products and processes 2. Testing of raw material and establishing its traceability 3. Sampling Plan 4. Type Tests 5. Routine Tests 6. Acceptance tests 7. Raw Materials 	The QAP shall be submitted in PDF soft copy digitally signed by the head of Quality department of the manufacturer for approval.
Type Tests	<p>These tests shall be done on a sampled lot of prototype. Such Tests are required only on initial approval, change of design and change of manufacturing process or raw material.</p> <p>These tests are to be repeated after every 36 months or as specified.</p> <ul style="list-style-type: none"> • Fire retardant characteristics as EN45545-2 	<p>The records of the type tests shall be maintained by the manufacturer and shall be made available upon demand. These records shall be traceable and verifiable.</p>
Routine Tests	<p>These tests are required to verify the functional working of the system. These may require simulated in-puts for testing the operation under full range of inputs. These tests shall be done by the manufacturer during manufacturing and record maintained for inspection.</p> <p>These tests are to be repeated after every 12 months or as specified.</p> <ul style="list-style-type: none"> • Thermal Conductivity • Noise Reduction coefficient 	<p>The records of the type tests shall be maintained by the manufacturer and shall be made available upon demand. These records shall be traceable and verifiable.</p>

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

Acceptance tests	<p>These tests shall be done on all or samples of lot for bulk supply. Sampling shall be done as per IS:2500</p> <p>These tests shall normally consist of routine tests and additionally specified in the contract.</p> <p>These tests are to be carried out on each lot or as specified:</p> <ul style="list-style-type: none"> • Fire characteristics as per UL-94 • Dimensional check • Thickness • Color • Density • Surface • Tensile Strength • Elongation at break • Tear Strength • Additional Practical testing of product as per para 5.9 • Adhesive power of tape 	<p>The records of the acceptance tests shall be enclosed along with the supply consignment. These records shall be traceable and verifiable.</p>
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Table 4: Quality Assurance, Tests & Documents

- 6.1 All the testing shall be conducted by NABL accredited Lab for that particular test. The fire retardant tests as per EN 45545 -2 shall be conducted by either NABL accredited Lab for these testes or Testing lab accredited as per ISO/IEC-17025 to perform/conduct fire test as per EN45545-2 (Proof of same shall be submitted).

7 Marking & packing:

Before dispatch, each packing shall bear following information:

- Nomenclature of the store
- Quantity packed. (total metrage).
- Lot and serial number.
- Month and year of packing.
- Name and trade mark of the manufacturer.
- Name and address of the consignee.

In order to prevent damage and deterioration in quality during storage, handling and transportation, the supplier should supply material with suitable packing.

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM**8 Information to be provided by bidder / supplier:**

The following information shall be provided by the bidder / supplier.

8.1 Information to be provided at the time of the bid:

The following information shall be included with the bid. These documents shall be used to determine suitability for placement of purchase orders.

S. No.	Information to be provided	Important Note
1.	The document indicating details of registration of the company on the MCA portal.	The document shall be verifiable from the MCA Portal.
2.	Tender Specific authorisation letter of MOU with manufacturer of the self adhesive insulation material. The document must have unambiguous authorization and address the warranty requirements specified in this specification.	This document is required in case the manufacturer is authorizing another entity to bid on their behalf.
3.	Previous supply credentials / testimonials containing the list of supplies made in the last 4 (four) years of self adhesive insulation material.	The document shall contain the contact details (phone number / email-ID) of the purchasers. These may be contacted by RCF for performance feedback.
4.	Technical data-sheet and safety data-sheet of self adhesive foam & tape.	
5.	Test certificates for parameters mentioned in para 6.0	
6.	ISO9001 / IRIS Certification as available.	

Table 5: Information to be provided with the bid

8.2 Information to be supplied upon release of letter of acceptance / purchase order:

The following information shall be supplied prior to the supply of the ordered material:

S. No.	Information to be provided	Important Note
1.	Copy of the detailed QAP for the self adhesive insulation material ordered.	The document must contain the details as specified in the clause on quality assurance in this specification.
2.	Test Certificates and technical data	The test certificates shall be traceable

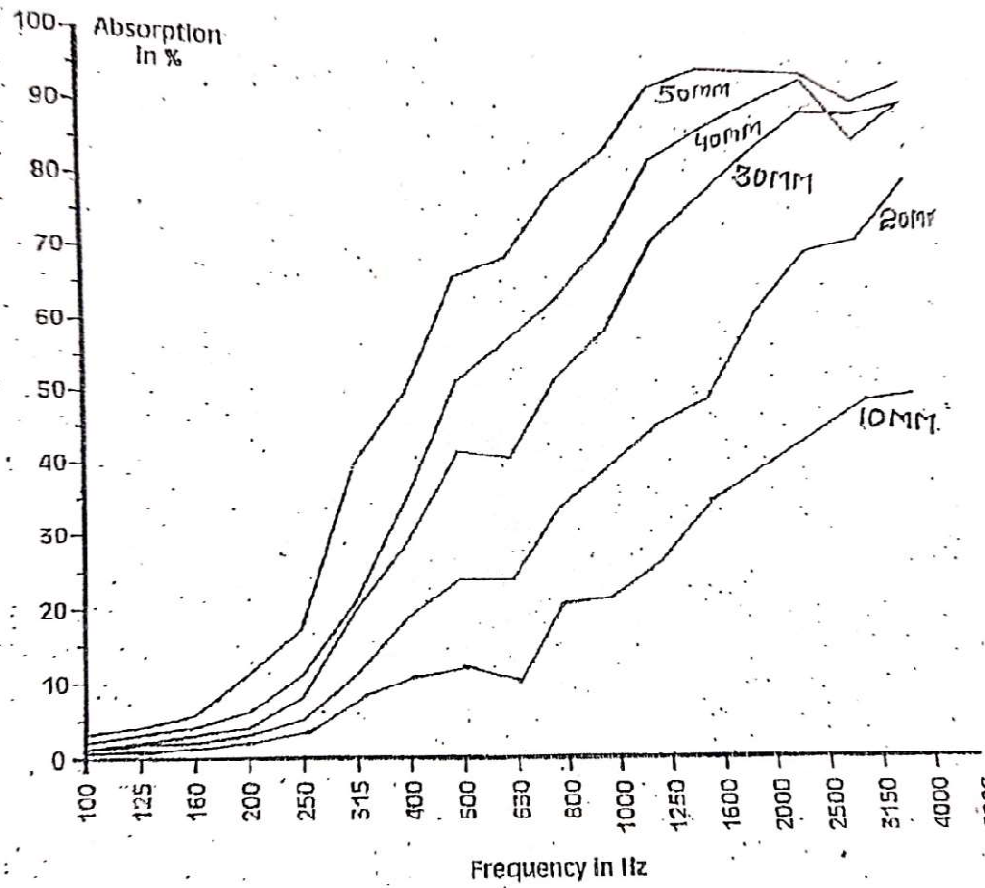
TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

	sheet of all parameters of foam & tape mentioned in the spec.	and verifiable.
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Table 6: Information to be provided upon release of letter of acceptance / purchase order**8.3 Information to be supplied with the material consignment:**

S. No.	Information to be provided	Important Note
1.	Copy of the detailed QAP for of self adhesive insulation material ordered.	The document must contain the details as specified in the clause on quality assurance in this specification.
2.	Test Certificates for type & routine tests (as detailed in the QAP) conducted by the manufacturer or third-party agencies as specified in para 6.0.	The test certificates shall be traceable and verifiable.
3.	Test Certificates for acceptance tests (as detailed in the QAP) conducted by the manufacturer or third-party agencies as specified in para 6.0.	
4.	Technical data-sheet of all parameters mentioned in the spec. & material safety data sheet of foam & tape.	

Table 7: Information to be provided with material consignment

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

Impedance tube in accordance with DIN 52 215-63

रेल कोच फैक्ट्री, कपूरथला

पत्र संख्या- MD35131

तिथि - 13/07/2023

विषय: विशिष्टता प्रकाशन संख्या MDTS-116 Rev.- 6

कृपया जानकारी और अन्य आवश्यक कार्रवाई के लिए निम्नलिखित विशिष्टताओं की संलग्न प्रति प्राप्त करें

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स्थापित: 1986



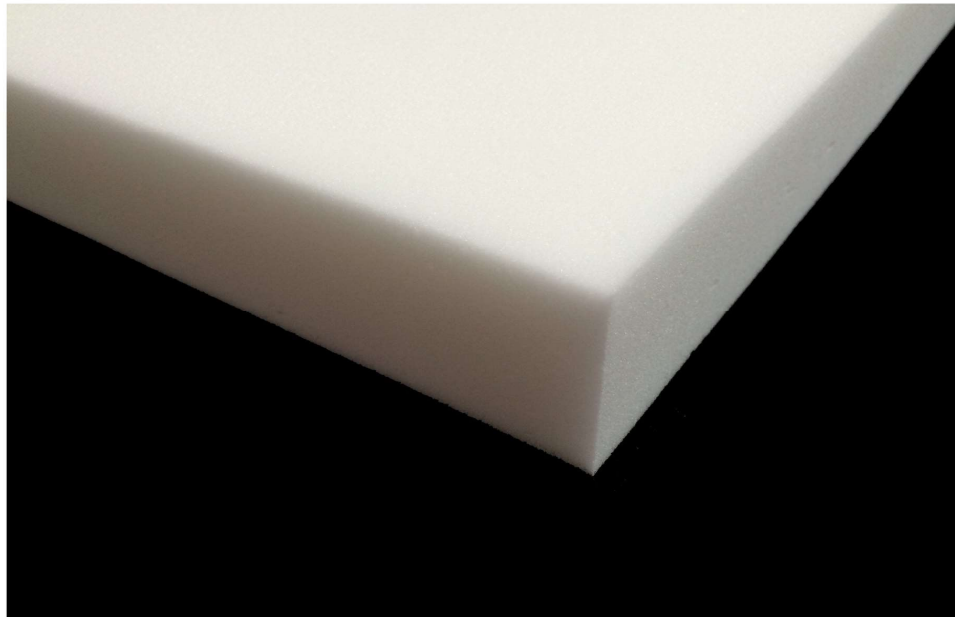
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INSULATING MATERIAL WITH SELF-ADHESIVE FILM



Specification Number	MDTS-116		
Revision Number	06	Date of Issue	04-07-23

Brief Description: INSULATING MATERIAL WITH SELF-ADHESIVE FILM

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FOREWORD

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Document No: MDTS-116	Revision No:6	Date Issued: 04.07.2023
TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM		

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Abhey Priya Dogra	Dy.CME/Design-2	ABHEY PRIYA DOGRA <small>Digitally signed by ABHEY PRIYA DOGRA Date: 2023.07.10 00:47:01 -07'00'</small>	Reviewed
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LIST OF AMENDMENTS

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1.	30/11/2004	1	1.0 Specification modified
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1	Introduction:	3
2	Foreword & Scope:	3
3	List of standards Referred:	3
4	Abbreviation/Terminology:	4
5	Requirements:	4
6	Quality Assurance, Tests & Documents:	5
7	Marking & packing:	7
8	Information to be provided by bidder / supplier:	8

LIST OF TABLE

Table 1: List of referred standards.....	4
Table 2: Abbreviations & Terminology.....	4
Table 3 –Technical Properties	5
Table 4: Quality Assurance, Tests & Documents	7
Table 5: Information to be provided with the bid	8
Table 6: Information to be provided upon release of letter of acceptance / purchase order	9
Table 7: Information to be provided with material consignment.....	9

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM**1 Introduction:**

This specification covers the general and technical requirements of insulating material with self-adhesive film to be used in of all types of Indian Railway passenger coaches.

2 Foreword & Scope:

2.1 This schedule is intended to cover the technical requirements/provisions relating to materials, constructions and tests and does not include all the necessary provisions of the contracts. This schedule draws references to some of the relevant ASTM, UIC and other Indian Standard specifications. Unless otherwise specified, the latest version of the relevant specifications shall be taken as reference.

2.2 The material shall be used for cladding air conditioning ducts in order to impart acoustic and thermal insulation to the duct thereby maximizing output efficiency of air conditioning equipment's and operate between temperature of -40°C to 150°C. These are required to meet the following objectives:

- Excellent Fire retardant characteristics
- Light weight material
- Excellent acoustic insulations
- Performs well in continuous higher temperature

3 List of standards Referred:

SN	Standard	Title
1	ASTM-D-3330	Peel Adhesion Pressure Sensitive Adhesive Tapes
2	DIN-52215	Determination of sound absorption coefficient and impedance in a tube
3	ISO-1798	Flexible cellular polymeric materials
4	IS:15061	Flammability Burning
5	EN45545-2	European Railway standard for fire safety
6	ISO-8067	Flexible cellular polymeric materials — Determination of tear strength
7	ASTM D 3574	Testing of Flexible Cellular Urethane Foams
8	IS-7888	Method of test for PU foam

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

9	ISO:16000-9	Determination of the emission of volatile organic compounds from building products and furnishing
10	IS:3346	Method of the determination of thermal conductivity of thermal insulation materials
11	DIN 53571	Testing of Flexible Cellular Materials

Table 1: List of referred standards**4 Abbreviation/Terminology:**

S.No.	Abbreviation /Terminology	Expansion/Explanation
1	QAP	Quality Assurance Plan
2	FAI	First Article Inspection
3	RCF	Rail Coach Factory
4	KXH	Indian Railways station code for Kapurthala
5	LHB	Linke-Hofmann-Busch the transfer of technology partner for RCF/KXH.

Table 2: Abbreviations & Terminology**5 REQUIREMENTS :**

- 5.1. **Material:** The material shall be duroplastic elastified foam made from melamine and shall not contain any glass mineral fibers and shall be physiologically safe.
- 5.2. Colour: White or Grey.
- 5.3. Surface finish: Air permeable, slightly densified.
- 5.4. Thickness: 10mm, 20 mm or as specified.
- 5.5. Standard Dimensions: 1250x1250 mm or as specified.
- 5.6. Temperature range : -40°C to 150°C longtime working exposure and short time exposure up to +200 ° C
- 5.7. Material shall be easily cut with an ordinary knife.
- 5.8. The self adhesive insulation material shall meets following parameters:

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

Sn	Properties	Specified Parameters Value	Evaluation Standard
1	Density	12 Kg/m ³ (Max)	IS:7888-2003
2	Thermal Conductivity	0.035 W/m ² K at 10°C (Max)	IS:3346
3	Noise Reduction coefficient	As per Annexure-A	DIN -52215
4	Tensile strength	90 kPa (Min)	ISO-1798/DIN-53571
5	Elongation at break	10% (Min)	ISO-1798/DIN-53571
6	Tear strength	0.09kg kg/cm (Min)	ASTM D -3574/ ISO-8067
7	Fire Retardant characteristics	R1 HL-3	EN45545-2
8	Fire characteristics	V0	UL-94

Table 3 –Technical Properties**5.9. Additional Practical testing of product:**

A test specimen of the material measuring about 150x150 mm shall be subjected to the luminous flame from a Bunsen burner of 10-mm ID. The specimen shall be held with the longitudinal axis at an angle of 45 ° to the horizontal. The flame height shall be 40 mm and the bottom edge of the specimen shall be in the middle of the flame. The flame shall be applied to the specimen at the lower end for 120 sec.

- Should the specimen get ignited, it shall not continue to burn for more than 5 seconds in the damaged area after the flame have been removed. There shall be no after burn in the un-damaged area.
- There should be no drippings

5.10. Requirement of Adhesive tapes: The adhesive power of tape must be at least 25N/sq. cm as per ASTM D 3330 on the surfaces as required on the coaches.

5.11. Shelf Life: Minimum 18 Months.

6 Quality Assurance, Tests & Documents:

The following table provides the overview of the system for quality assurance.

Requirement Description	Requirement Detail	Remarks
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TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

Quality Assurance plan	<p>The manufacturer shall have the detailed quality assurance plan. The Plan shall be submitted for the approval by RCF/KXH. The QAP document shall clearly document the following and control the test record formats.</p> <ol style="list-style-type: none"> 1. Control over outsourced products and processes 2. Testing of raw material and establishing its traceability 3. Sampling Plan 4. Type Tests 5. Routine Tests 6. Acceptance tests 7. Raw Materials 	The QAP shall be submitted in PDF soft copy digitally signed by the head of Quality department of the manufacturer for approval.
Type Tests	<p>These tests shall be done on a sampled lot of prototype. Such Tests are required only on initial approval, change of design and change of manufacturing process or raw material.</p> <p>These tests are to be repeated after every 36 months or as specified.</p> <ul style="list-style-type: none"> • Fire retardant characteristics as EN45545-2 	<p>The records of the type tests shall be maintained by the manufacturer and shall be made available upon demand. These records shall be traceable and verifiable.</p>
Routine Tests	<p>These tests are required to verify the functional working of the system. These may require simulated in-puts for testing the operation under full range of inputs. These tests shall be done by the manufacturer during manufacturing and record maintained for inspection.</p> <p>These tests are to be repeated after every 12 months or as specified.</p> <ul style="list-style-type: none"> • Thermal Conductivity • Noise Reduction coefficient 	<p>The records of the type tests shall be maintained by the manufacturer and shall be made available upon demand. These records shall be traceable and verifiable.</p>

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

Acceptance tests	<p>These tests shall be done on all or samples of lot for bulk supply. Sampling shall be done as per IS:2500</p> <p>These tests shall normally consist of routine tests and additionally specified in the contract.</p> <p>These tests are to be carried out on each lot or as specified:</p> <ul style="list-style-type: none"> • Fire characteristics as per UL-94 • Dimensional check • Thickness • Color • Density • Surface • Tensile Strength • Elongation at break • Tear Strength • Additional Practical testing of product as per para 5.9 • Adhesive power of tape 	<p>The records of the acceptance tests shall be enclosed along with the supply consignment. These records shall be traceable and verifiable.</p>
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Table 4: Quality Assurance, Tests & Documents

- 6.1 All the testing shall be conducted by NABL accredited Lab for that particular test. The fire retardant tests as per EN 45545 -2 shall be conducted by either NABL accredited Lab for these testes or Testing lab accredited as per ISO/IEC-17025 to perform/conduct fire test as per EN45545-2 (Proof of same shall be submitted).

7 Marking & packing:

Before dispatch, each packing shall bear following information:

- Nomenclature of the store
- Quantity packed. (total metrage).
- Lot and serial number.
- Month and year of packing.
- Name and trade mark of the manufacturer.
- Name and address of the consignee.

In order to prevent damage and deterioration in quality during storage, handling and transportation, the supplier should supply material with suitable packing.

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM**8 Information to be provided by bidder / supplier:**

The following information shall be provided by the bidder / supplier.

8.1 Information to be provided at the time of the bid:

The following information shall be included with the bid. These documents shall be used to determine suitability for placement of purchase orders.

S. No.	Information to be provided	Important Note
1.	The document indicating details of registration of the company on the MCA portal.	The document shall be verifiable from the MCA Portal.
2.	Tender Specific authorisation letter of MOU with manufacturer of the self adhesive insulation material. The document must have unambiguous authorization and address the warranty requirements specified in this specification.	This document is required in case the manufacturer is authorizing another entity to bid on their behalf.
3.	Previous supply credentials / testimonials containing the list of supplies made in the last 4 (four) years of self adhesive insulation material.	The document shall contain the contact details (phone number / email-ID) of the purchasers. These may be contacted by RCF for performance feedback.
4.	Technical data-sheet and safety data-sheet of self adhesive foam & tape.	
5.	Test certificates for parameters mentioned in para 6.0	
6.	ISO9001 / IRIS Certification as available.	

Table 5: Information to be provided with the bid

8.2 Information to be supplied upon release of letter of acceptance / purchase order:

The following information shall be supplied prior to the supply of the ordered material:

S. No.	Information to be provided	Important Note
1.	Copy of the detailed QAP for the self adhesive insulation material ordered.	The document must contain the details as specified in the clause on quality assurance in this specification.
2.	Test Certificates and technical data	The test certificates shall be traceable

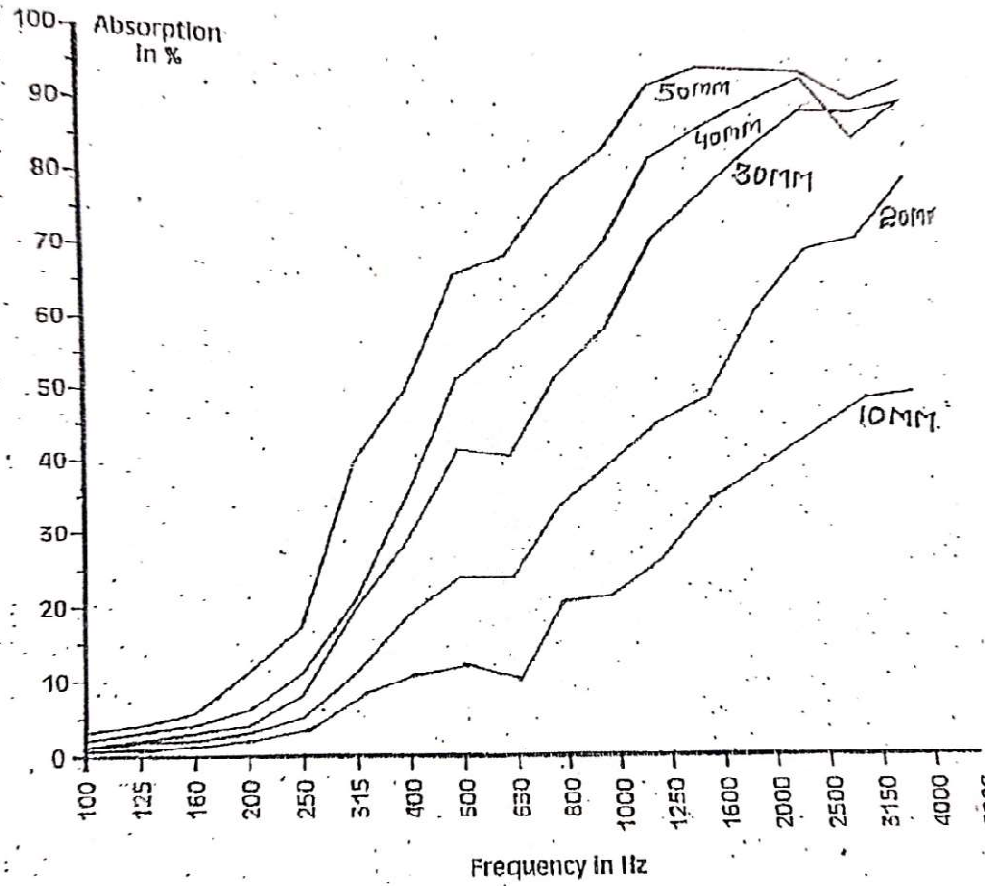
TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

	sheet of all parameters of foam & tape mentioned in the spec.	and verifiable.
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Table 6: Information to be provided upon release of letter of acceptance / purchase order**8.3 Information to be supplied with the material consignment:**

S. No.	Information to be provided	Important Note
1.	Copy of the detailed QAP for of self adhesive insulation material ordered.	The document must contain the details as specified in the clause on quality assurance in this specification.
2.	Test Certificates for type & routine tests (as detailed in the QAP) conducted by the manufacturer or third-party agencies as specified in para 6.0.	The test certificates shall be traceable and verifiable.
3.	Test Certificates for acceptance tests (as detailed in the QAP) conducted by the manufacturer or third-party agencies as specified in para 6.0.	
4.	Technical data-sheet of all parameters mentioned in the spec. & material safety data sheet of foam & tape.	

Table 7: Information to be provided with material consignment

TECHNICAL SPECIFICATION FOR INSULATING MATERIAL WITH SELF-ADHESIVE FILM

Impedance tube in accordance with DIN 52 215-63