

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS D-7028
		Former Designation: TMS-7028
Bonded Trim Composites, Interior		CURRENT REV No.: 1610
		DATE: Oct. 2016
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<i>This specification may involve hazardous materials, equipment, and procedures. This specification does not purport to address all of the safety issues associated with its use. The user is responsible to consult appropriate safety and health practices and to determine the applicability of regulatory limits prior to use.</i>		

1.0 APPLICATION

This specification covers interior trim composites, typically consisting of a facing fabric or material, padding, and a backing. These components are chemically, thermally, and/or dielectrically bonded or laminated parts suitable for interior uses such as wall panels, head liners, sun visors, cabinets, seat inserts, floor mats, and door trim panels.

2.0 SCOPE

This specification covers the general requirements for the individual components of the composite (i.e. fabric, padding, and backing) and property and performance requirements of the bonded or molded, finished composite. Requirements for quality, qualification, shipping and identification, and source approval and quality control are included.

2.1 Restricted Chemical Substances

Effective January 1, 2007, all product supplied to the requirements of this specification must comply with the requirements of the MPAPS B-50 specification.

3.0 REFERENCE DOCUMENTS

Unless otherwise specified the latest issue of all referenced standards shall apply. The following Specifications, Standards, and Regulations are referenced in this specification.

Quality System Standard *ISO 9001 or TS-16949*
NAVISTAR Supplier Packing and Shipping Std. D-13
CFR Title 29, Part 1910
FMVSS-302
NAVISTAR MPAPS D-22
NAVISTAR MPAPS D-28
NAVISTAR MPAPS L-6505
NAVISTAR MPAPS L-6606
NAVISTAR MPAPS P-9544
NAVISTAR MPAPS P-9543

NAVISTAR MPAPS L-6608
NAVISTAR MPAPS D-7113
NAVISTAR MPAPS D-7121
NAVISTAR MPAPS D-7066
NAVISTAR MPAPS D-7116
NAVISTAR MPAPS D-7124
NAVISTAR MPAPS B-50
CFR 49, Part 571.302
SAE J1323
ASTM D 903

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4.0 GENERAL REQUIREMENTS

Unless otherwise specified on the engineering drawing and/or purchase order, the manufacturing practice and bonding methods are optional. The supplier is responsible to select individual components of the composite appropriate for the bonding method selected and so fabricate these as to insure that the finished composite is suitable for its intended use and meets all property and performance requirements specified herein. The following components of the composite may be considered typical. Specific materials may be indicated on the engineering print.

4.1 Padding

Shall be bondable urethane foam or non-woven padding (Fiberbond). The urethane foam shall meet the requirements of MPAPS L-6505. The non-woven padding (suitable for dielectric bonding only) shall meet the requirements of MPAPS D-7067. MPAPS L-6606 may be appropriate for some parts, but is not considered a bonded composite and would not be covered by this specification. Some parts may be specified without padding.

4.2 Face Materials

Shall meet the requirements designated on the engineering drawing and/or purchase order. Color and pattern shall match approved standards on file in the NAVISTAR Industrial Design Department. The following materials are considered suitable:

Fabric:	MPAPS D-7113
Carpet and carpet-like trim:	MPAPS D-7126
Vinyl coated fabrics and leather:	MPAPS D-7121
Rubber Mats:	MPAPS L-6608

4.3 Backing Fabrics

Any fabric or backing which provides a composite meeting all requirements of this specification shall be acceptable but may or may not be required on different types of composites. The following backings have provided satisfactory performance in the past. Values shown are typical values unless otherwise indicated. (Tests performed per ASTM D 751)

4.3.1 Nylon Tricot

Denier:	40
Tensile Strength:	435 N (98 lbf)
Tear Strength:	50 N (12 lbf)

4.3.2 Cotton Sheeting

Count:	32 x 26
Weight:	73 g/m ² (2.16 oz/yd ²)
Tensile:	Warp/Fill: 265/265 N (60/60 lbf)
Tear:	Warp/Fill: 66/44 N (15/10 lbf)

4.3.3 Spunbonded Nylon (Cerex)

Weight:	20 g/m ² (0.6 oz/yd ²)
Tensile:	Machine/Transverse: 70/44 N (16/10 lbf)
Tear:	Machine/Transverse: 22/17 N (5/4 lbf)
Burst (Mullen):	150 kPa (22 psi)

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4.3.4 Polypropylene Sheeting

Denier: 1.9
 Weight: 34 g/m² (1.0 oz/yd²)
 Tensile: Warp/Fill: 85.5/49.4 N (20/12 lbf)
 Elongation: Warp/Fill: 87.3/74.4 N (20/17 lbf)

4.3.5 Rigid Backing

For those trim products requiring a rigid backing, such as door trim panels, the following materials are considered suitable:

Pressed Wood Hardboard per SAE J1323
 Laminated Fiberboard (Head Board) per MPAPS D-7066
 Structural RIM per MPAPS D-7124
 Molded Fiberglass per TMS-7109 (withdrawn)
 Injection Molded Plastic per MPAPS D-7116
 Molded Cellulosic per MPAPS D-7125
 Fiberglass Reinforced Polyester per MPAPS D-22
 Other Plastic per MPAPS D-28

4.4 Property and Performance Requirements

4.4.1 Flammability Requirements

The finished composite must conform to and be certified to meet all requirements of FMVSS-302, Flammability of Interior Materials (CFR 49, Part 571.302). Components of the composite which are not 100% bonded together shall be tested separately and each component must demonstrate required flammability resistance. Components of the composite which are 100% bonded together are not specifically required to demonstrate flammability resistance when tested as individual parts, however the bonded (finished) composite must demonstrate required flammability resistance.

4.4.2 Seat Inserts - Specimen Preparation for Flammability Requirement

The specimen shall be completely saturated with wet steam at 77-93° C (170-200° F) followed by hand drying in a convection oven for 16 hours at 82° C (180° F) followed by conditioning as per FMVSS- 302.

4.4.3 Low Temperature Resistance (Seat Inserts Only)

4.4.3.1 Method: Samples prepared as indicated under Cyclic Aging - Sample Prep 2 shall be exposed for four hours at a temperature of -29° C (-20° F) and then bent around a mandrel of size indicated below.

<u>Foam Thickness</u>		<u>Mandrel Diameter</u>	
<u>mm</u>	<u>in</u>	<u>mm</u>	<u>in</u>
3.2	1/8	6.4	1/4
4.8	3/16	12.7	1/2
6.4	1/4	19.0	3/4
7.9 & Up	5/16 & Up	25.4	1

4.4.3.2 Required: Shall show no evidence of breaking, cracking, checking or loss of adhesion. After 24 hours at room temperature, shall show no evidence of shrinking, wrinkling, distortion, or discoloration.

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