

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS D-7125
		<i>Former Designation: TMS-7125</i>
TITLE: Composite Trim Panels		CURRENT REV No.: 1801
		DATE: Jan. 2018
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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 requirements for seven types of composite trim panels used in interior applications in NAVISTAR trucks.

2.0 SCOPE

This specification covers the general, durability, performance, design, quality, qualification, shipping and identification, and source approval requirements for composite trim panels.

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

NAVISTAR NV-2C1

CFR Title 29, Part 1910

NAVISTAR MPAPS D-7028: Bonded Trim Composites, Interior

NAVISTAR MPAPS D-7113: Woven or Knit Fabric, Interior Trim- Parts 1 & 2

NAVISTAR MPAPS D-7121: Soft Interior Trim and Seating Materials

NAVISTAR MPAPS D-7126: Carpet Trim Materials

NAVISTAR MPAPS L-6505: Urethane Foam, Cut Slab

NAVISTAR MPAPS P-9543: Engineering Test Report Requirements

NAVISTAR MPAPS P-9544: Flammability Certification of Interior Trim Materials and Components

NAVISTAR MPAPS GT-31: Accelerated Weathering of Non-Metallic Materials

NAVISTAR MPAPS B-50: Restricted Chemical Substances

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AATCC Method 30: Antifungal Activity, Assessment on Textile Materials: Mildew and Rot Resistance of Textile Materials

ASTM D 638: Standard Test Method for Tensile Properties of Plastics

ASTM D 751: Standard Test Methods for Coated Fabrics

ASTM D 790: Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

ASTM D 1037: Standard Test Methods for Evaluating Properties of Wood- Base Fiber and Particle Panel Materials

ASTM D 2240: Standard Test Method for Rubber Property- Durometer Hardness

ASTM D 5420: Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight

ASTM D 5587: Standard Test Method for Tearing Strength of Fabrics by Trapezoid Procedure

SAE J315: Fiberboard Test Procedure

SAE J2527: Performance Based Standard for Accelerated Exposure of Automotive Exterior Materials Using a Controlled Irradiance Xenon-Arc Apparatus

ASTM C 384: Standard Test Method for Impedance and Absorption of Acoustical Materials by Impedance Tube Method

4.0 GENERAL REQUIREMENTS

Individual components of the trim composite/assembly will meet all requirements of the material specification(s) indicated on the engineering drawing for that component and/or subassembly, in addition to meeting all requirements of this specification. Foam used in the internal construction will comply with MPAPS L-6505 Type I, density 24 kg/m³ minimum. Facing materials shall be specified on the engineering print but are usually covered by sections of MPAPS D-7113 for fabrics; MPAPS D-7121 for vinyl's; and MPAPS D-7126 for carpets and non-woven materials. The minimum physical properties of the base supporting material are listed in Table 1.

4.1 Composition

A description of the composition of each of the types of composite panel is provided herein.

4.1.1 Type I: is a rigid cellulosic molded base.

4.1.2 Type II: is a rigid, molded wood fiber based product that uses polypropylene as a binder. This type is suitable for use as side and back panels.

4.1.3 Type III: is a semi-rigid molded material that is a combination of natural fibers and thermoplastic binders mixed into needled mats.

4.1.4 Type IV: is a molded material that is a combination of urethane foam and fiberglass scrim with a backing that may be rigid if required. This type is suitable for use as a headliner. Formerly TMS-7117. The composite may consist of the following layers:

4.1.4.1 Backing Material

4.1.4.2 Fiberglass mat (in designated areas)

4.1.4.3 "Firm" foam

4.1.4.4 Fiberglass mat (in designated areas)

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4.1.4.5 Backing material

4.1.4.6 "Soft" foam

4.1.5 Type V: A molded laminate that is a combination of urethane resin, fiberglass reinforcement, polyester batting, and scrim. This type is suitable for use as a headliner. Formerly TMS-7117. The composite may consist of the following layers:

4.1.5.1 Cover Material

4.1.5.2 Fiberglass Reinforcement

4.1.5.3 Resonated Polyester Batting

4.1.5.4 Fiberglass Reinforcement

4.1.5.5 Scrim

4.1.6 Type VI: A rigid urethane foam molded in conjunction with a continuous strand glass mat. This type is suitable for use in door trim and B-pillars.

4.1.7 Type VII: A polyurethane elastomeric molded soft skin that consists of either an aliphatic urethane in mold coating followed by an aromatic solid urethane skin or a solid aliphatic skin with urethane foam injected between the skin and a plastic substrate. This type is suitable for use as an instrument panel trim cover.

4.1.8 Type VIII: A thermoplastic composite of polypropylene and long glass chopped fibers. Substrate is sandwiched between outer layers of scrim and adhesive film. Composite is adhered to a foam-backed vinyl through compression molding. This type is suitable for use as headliner, back panels and B-pillars.

4.2 Performance Requirements

4.2.1 Impact Resistance

Test panels mounted in an appropriate fixture shall withstand a minimum impact of 3.9 J (3.0 ft/lbs) without significant damage or cracking. The sample(s) exposed in the dimensional stability test should be returned to the cold chamber at $-30 \pm 2^{\circ}\text{C}$ ($-22 \pm 5^{\circ}\text{F}$) for 4 hours and tested immediately upon removal.

4.2.2 Dimensional Stability

Test panels mounted in/on an appropriate test fixture shall withstand 2 complete cycles of the environmental test indicated below, without exhibiting objectionable distortion, color or gloss change, odor, warping, sag, staining, or delamination. Dimensional changes shall not be greater than tolerances indicated on the part/assembly drawings. Test panels shall be examined after completion of the environmental test and again after a two-hour recovery period.

4.2.3 Environmental Test Cycle:

4.2.3.1 16 hours at $95 \pm 5\%$ R.H. at $38 \pm 2^{\circ}\text{C}$ ($100 \pm 5^{\circ}\text{F}$)

4.2.3.2 2 hours at ambient condition

4.2.3.3 16 hours at $85 \pm 2^{\circ}\text{C}$ ($185 \pm 5^{\circ}\text{F}$)

4.2.3.4 2 hours at ambient condition

4.2.3.5 4 hours at $-30 \pm 2^{\circ}\text{C}$ ($-22 \pm 5^{\circ}\text{F}$)

4.2.3.6 2 hours at ambient condition

4.2.4 Flammability

The finished composite must conform to and be certified to meet all requirements of FMVSS-302 and all requirements of MPAPS P-9544. Components of the assembly/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

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