

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS D-7116
		Former Designation: TMS-7116
Injection Molded Interior Trim Materials		CURRENT REV No.: 1602
		DATE: Feb 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>		
Change Notice: Added to type 1-A approved list		

1.0 APPLICATION

This specification covers injection molded thermoplastics used for interior trim applications. Low temperature impact resistance varies among the eight types of material covered by this specification. Materials Engineering should be consulted to insure that the proper type is specified. Typical applications include: instrument panel covers, cab trim panels and sleeper trim panels. Parts are molded in color, and may also be painted.

2.0 SCOPE

This specification covers the requirements for basic material constituents, physical and mechanical properties, finished part surface finish, paint, and quality control. Qualification and Source Approval procedures are described.

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 TMS-9008	ASTM D256
CFR Title 29, Part 1910	NAVISTAR MPAPS P-9543	ASTM D638
NAVISTAR Manufacturing Std. MS-D-13	NAVISTAR TMS-9544	ASTM D696
NAVISTAR Engineering Design Std A-16	NAVISTAR MPAPS GT-31	ASTM D790
NAVISTAR MPAPS B-50	FMVSS 302	ASTM D302
NAVISTAR CEMS Test Method DT-4	ASTM D 792	
NAVISTAR MPAPS D-28	ASTM D 955	

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4.0 GENERAL REQUIREMENTS

4.1 Material Type

The specified material type shall meet the basic requirements shown in Table 1.

Table 1 - Basic Material Types Base				
<i>Type</i>	<i>Material</i>	<i>Filler</i>	<i>Pigmented</i>	<i>Painted</i>
1	ABS	NO	YES	YES
1-A	ABS	NO	YES	NO
2	PPE	YES	YES	YES
2-A	PPE	YES	YES	NO
2-B	PP	YES	YES	YES
2-C	PP	YES	YES	NO
2-D	PP	YES	YES	NO
2-E	PP	NO	YES	NO
2-F	PP	YES	YES	NO
2-G	PP	YES	YES	NO
2-H	TPO	YES	YES	NO
3	PA	YES	YES	NO

4.2 Molding Compound

4.2.1 Infrared spectrographic and rheometric analysis of molding compound and material taken from molded production parts must match standards developed during initial qualification.

4.2.2 Elemental analysis of pigments in molding compound and molded parts must correspond in type and amount to standards developed during initial qualification.

4.2.3 Filler type and amount in molding compound and material taken from molded parts must correspond (+ 1.0%) to standards developed during initial qualification.

4.2.4 Material and parts supplied to this specification shall be certified by the supplier to meet the requirements of the latest issue of the Federal Motor Vehicle Safety Standard #302-Flammability of Interior Components and the requirements of TMS-9544.

4.3 Mechanical Properties

Test plaques measuring 4 x 6 x .125", prepared using virgin compound, shall meet minimum requirements shown in Table 2. Impact requirements and UV resistance, when specified, must be determined on each specific color being qualified.

4.4 Finished Part Requirements

4.4.1 Surface Finish

Surface finish of un-textured molded parts shall be such that, after painting, the finish is equivalent to that of painted sheet metal. Textured finish, when required, shall be specified separately on the part drawing. There shall be no visible waviness, gate blush, flow lines, flash, knit lines, sink, warpage, or other cosmetic defects.

4.4.2 Resin Pigmentation

Parts are to be manufactured in pigmented material, and pigmentation shall be uniform throughout the molded part. Color shall be specified separately on the part drawing. Color of parts supplied must match NAVISTAR Paint Chip Color Standards, available from Materials Engineering, Truck Development and Technology Center.

4.4.3 Paint Requirements Where painting is required, color of parts to be painted shall be specified separately on the part drawing. Painted parts shall meet interior paint requirements as described in TMS-9008 (Finished Painting-Plastic, Interior and Exterior).

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5.0 QUALITY

Parts shall maintain pattern, color, and finish as approved on preproduction samples. No voids in the material, surface defects, flash or flow patterns are permissible.

5.1 Qualification Procedure

Prior to use in production parts, materials and/or finished parts must be formally approved by NAVISTAR Materials Engineering. The general qualification procedure is outlined below. Any changes or modifications in the qualification procedure must be approved by Materials Engineering.

5.1.1 Initial submission of test plaques shall be in natural colored compound (no pigment). These samples shall be accompanied by a detailed test report, as per MPAPS P-9543, indicating conformance to all property requirements shown in Table 2 with the exception of UV resistance. Thirty untextured plaques measuring 4 x 6 x .125" and ten un-textured plaques measuring 8.5 x 11 x .100" are required for NAVISTAR tests.

5.1.2 Following notification of successful confirmation testing, ten plaques in each color of interest shall be submitted to the NAVISTAR Styling Department for color approval. Panel size and surface texture are to be established prior to submission.

5.1.3 Following color match approval, ten un-textured plaques measuring 4 x 6 x .125" shall be submitted in each color under consideration for final impact and UV resistance qualification testing.

5.1.4 In applications where painting of the parts is required, Step 3 of the above procedure shall be followed by qualification testing as outlined in TMS-9008. Panels and parts supplied at this stage are to reflect material/paint color combinations planned for production.

5.1.5 Following the successful completion of the laboratory evaluation, a molding trial may be required by engineering prior to granting final material approval.

6.0 SOURCE APPROVAL AND QUALITY CONTROL

6.1 Supplier Requirements

All suppliers to NAVISTAR Truck and Engine are required to be registered to QS-9000 Quality System Requirements. NAVISTAR will also accept ISO 9000 or TS-16949 registration as long as the supplier can also fulfill all AIAG PPAP (Production Part Approval Process) documentation and approval requirements. Suppliers must maintain their certification with an accredited registrar and must furnish copies of registration certificates to the NAVISTAR Corporate Buyer upon request.

6.2 Approval

Parts supplied against contracts or purchase orders citing this specification shall be equivalent in all respects to those samples which were approved by the purchaser. No changes in formulation or processing practices are permitted without approval. In the event that changes in material, properties, processing practices, construction, color, or labeling of the product are required, the supplier shall notify NAVISTAR Materials Engineering and Purchasing & Supplier Development of the proposed change(s). Test data indicating conformance to all requirements of this specification, test samples, and new or amended or updated Material Safety Data Sheet(s) (MSDS), in accordance with CFR Title 29, Part 1910 shall be submitted with the request for change.

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