

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS G-7138
		Former Designation: <i>NEW</i>
Protective Films, Non-Graphic		CURRENT REV No.: 1705
		DATE: May 2017
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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 describes the requirements for non-graphic pressure sensitive adhesive films. These films are typically made of a urethane material. They are intended for use on exterior surfaces with removability during service. Their primary purpose is to provide surface protection from corrosion, abrasion, and minor impact damage (stone impingement).

2.0 SCOPE

This specification covers the material requirements, physical properties, and performance requirements for these films. Unless otherwise indicated on the engineering drawing/blue print and/or purchase order, product qualification and performance evaluation will be based upon tests performed using the appropriate substrate.

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	ASTM B117	ASTM D1876
CFR Title 29, Part 1910	ASTM D882	ASTM D3807
NAVISTAR Supplier Packing and Shipping Std. D-13	ASTM D903	ASTM D3884
NAVISTAR Engineering Design Std. A-16	ASTM D1000	MPAPS GT-Paint
NAVISTAR MPAPS B-50	ASTM D1781	

4.0 REQUIREMENTS

Urethane films require surface treatments and coating for exterior UV resistance. Typical applications include stone chip protection of painted surfaces and wear protection.

4.1 Adhesion

4.1.1 Method: Prepare panels and test in accordance with ASTM D903 or ASTM D1000 or ASTM D1781 or ASTM D1876 or ASTM D3807 as appropriate for the samples. Alternate test methods may be used by agreement between the supplier and purchaser.

4.1.2 Required: The film will have a minimum average adhesion of 400 N/m (2.28 lb/in).

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4.2 Tensile Strength at Break

4.2.1 Method: Prepare panels and test in accordance with ASTM D882.

4.2.2 Required: Tensile strength at break must be significantly higher than adhesion strength (Section 4.1). Report in lb/in.

4.3 Dimensional Stability

4.3.1 Method: Apply a 165 x 165 mm (6.5 x 6.5 inch) piece of the film to a 150 x 150 mm (6 x 6 inch) panel and trim evenly at the edge of panel. Bake the assembly at 66°C (150°F) for 48 hours. Remove and allow panels to cool, examine for shrinkage.

4.3.2 Required: The film will not shrink more than 0.5 mm (0.02 inches) from any edge.

4.4 Abrasion Resistance

4.4.1 Method: ASTM D3884 (RPDH): Use CS-10 wheel, 500-gram load, 500 cycles.

4.4.2 Required: The film will not show any appreciable change in the abraded area.

4.5 Aging

4.5.1 Method: Age the applied film for 7 days at 66°C (150°F) and 24 hours at -40°C (-40°F) using a different panel for each condition. Immediately after each exposure, examine film.

4.5.2 Required: The film will not blister, peel, or lose adhesion.

4.6 Elevated Temperature Exposure (high temperature applications only)

4.6.1 Method: Prepare three panels as for DIMENSIONAL STABILITY Section 4.3. Bake three panels for 2 hours at 121°C (250°F). After cooling, examine film.

4.6.2 Required: The film will not blister, peel, or lose adhesion. The film will not shrink more than 0.8 mm (0.03 inches) from any edge.

4.7 Thermal Shock

4.7.1 Method: Apply film to three test panels of the appropriate substrate. Place panels in an oven for 16 hours at 66° C (150° F). Immediately after removal from oven place in a cold chest at -34° C (-30° F) for 8 hours. Repeat for 7 cycles and examine.

4.7.2 Required: The film will not blister, peel, or lose adhesion.

4.8 Humidity

4.8.1 Method: Apply film to three test panels of the appropriate substrate. Test per MPAPS GT-Paint test method 7E using panels prepared as per Section 4.10, Panel Preparation. Expose film for 100 hours of condensing humidity.

4.8.2 Required: The film will not blister, peel, or lose adhesion.

4.9 Salt Spray

4.9.1 Method: Apply film to three test panels of the appropriate substrate. Test as per ASTM B117. Mount panels at an angle of 15° - 30° from vertical. Test for 200 hours and examine.

4.9.2 Required: The film will not blister, peel, or lose adhesion.

4.10 Solvent and Chemical Resistance

4.10.1 Method: Immerse the film 75% of its length in the test fluid for 5 minutes. Remove the specimen, dry gently with a soft absorbent cloth, and examine 5 minutes after removal from the liquid.

4.10.2 Required: The film will not blister, peel, or lose adhesion.

4.10.3 Standard Test Fluids

- 15 Parts Xylol and 85 Parts Mineral Spirits
- Brake fluid (DOT-3)
- Reference Fuel C per ASTM D471

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