

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS D-7130
		Former Designation: <i>TMS-7130</i>
TITLE: Material, Process And Quality Control Requirements For Non-SMC Compression Molded Parts		CURRENT REV No.: 1408
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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: Changed to new MPAPS format; editorial changes.		

1.0 APPLICATION

This specification describes engineering quality requirements for the selection of those materials specified in MPAPS D-22 and for the production processes used to fabricate those non-SMC, fiber reinforced, composite parts which are produced by a closed molding process.

2.0 SCOPE

This specification covers general, materials, and process requirements, tooling requirements, surface appearance, and pre-paint requirements, PPAP, quality, quality control, source approval, shipping and identification requirements, and designation on drawings, for non-SMC closed molded parts.

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 MPAPS G-9005
ASTM D 2583	
NAVISTAR Manufacturing Std. MS-D-13	SAE J 1344
CFR 29, Part 1910	Owens-Corning Test Method C-25-4A
NAVISTAR MPAPS B-50	Owens-Corning Test Method M-09-2
NAVISTAR CEMS GT-5A	
NAVISTAR MPAPS D-22	

4.0 GENERAL REQUIREMENTS

Individual parts of the composite/assembly must meet all requirements of the material specification(s) shown on the engineering drawing for the part and/or subassembly in addition to meeting all requirements of this specification.

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4.1 Tooling

Selection of tooling materials, construction methods, and maintenance procedures shall be such that a minimum of 6000 parts can be produced without deterioration of the surface finish. After the initial production (6000 pcs), repair of molds is restricted to a maximum of 25% of the mold surface and such repair shall not result in degradation of the surface quality of the part.

4.2 Materials

4.2.1 Reinforcement Fiber

Type and amount of reinforcing fiber shall be such that the laminate complies with the mechanical property requirements specified in MPAPS D-22.

4.2.2 Resin

Unless otherwise specified, the resin system is to be a prepromoted, unsaturated polyester. Resins included are: orthophthalic, isophthalic, and dicyclopentadiene resins, among others. Minimum quality control tests to be performed on each batch or lot of resin are as follows:

1. SPI gel test, per Owens-Corning Test Method C-25-4A
2. Barcol hardness at full cure, per ASTM D 2583
3. Monomer content, per Owens-Corning Test Method M-09-2

4.3 Part Marking

As an aid to recovery and recycling of plastic parts, each part shall be marked to identify the type of polymeric material the part is made from. Part marking shall be in accordance with SAE J 1344. Each part shall be identified in a manner such as to provide traceability to resin lot/batch, molding date, operator, and mold number.

4.4 Surface Appearance

This requirement is applicable to parts which include the A1 or A4 suffix within the D-22 specification for the part. These parts should be considered "best surface" parts. The surface is to be uniform, i.e., no areas of discontinuity are allowed, e.g., blisters, cracks, chips, etc. Small defects, such as pinholes, pits, and small dirt particles must be minimized. No more than 12 incidents of these small defects per part, or 6 within a 3-square inch (1935 square mm) are permitted.

4.5 Pre-Paint Finish

For parts which require a pre-paint finish, the pre-paint treatment will meet requirements of MPAPS G-9005. Surface appearance requirements for the appropriate zone as described in MPAPS G-9005 shall apply to the primed surface. The pre-paint finish shall be adherent to the plastic surface such that it will pass the Adhesion of Paint Test in accordance with CEMS GT-5A.

4.6 Molding Process

The molder shall submit to NAVISTAR the following information relating to the production process, where applicable. Information provided by the vendor to NAVISTAR per this specification shall be considered confidential. Information will be restricted to the appropriate NAVISTAR personnel.