

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS K-6917
		Former Designation: <i>TMS-6917</i>
Sealant Tape, Extruded		CURRENT REV No.: 1606
		DATE: June 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 outlines the requirements for two types of hand applied extruded sealant tape.

Type I is a non-staining butyl rubber material and Type II is an asphaltic material, which is limited to uses where the non-staining property is not required. Both types are very tacky, fibrous mastics with excellent elongation properties and may be used in extruded shapes to bridge and seal openings in cab construction or provide sound deadening in cab doors.

2.0 SCOPE

This specification covers the general requirements, property and performance requirements, quality, source approval and quality control.

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
CFR Title 29, Part 1910
NAVISTAR Manufacturing Std. MS-D-13
NAVISTAR Engineering Design Std A-16
NAVISTAR MPAPS B-50
NAVISTAR MPAPS G-5

NAVISTAR MPAPS GT-24
NAVISTAR MPAPS B-6815
NAVISTAR MPAPS P-9543
SAE J243
SAE J369
SAE J1918
ASTM B117
ASTM D5
ASTM D217
ASTM G154

4.0 REQUIREMENTS

4.1 Description

Materials meeting the requirements of this specification shall produce a tough, rubbery seal that will retain both adhesion and flexibility indefinitely. They may be extruded on a suitable polyethylene film for ease of application, and can be supplied with or without a suitable release paper. The bonded adhesive shall exceed the cohesive strength of the sealant. Type I materials, except for IC, shall be considered interchangeable unless otherwise indicated on the engineering drawing.

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4.2 Composition

4.2.1 Type I, IA, IB and IC: Shall be compounded of polymerized butyl elastomers, resins, inert pigment and fibers, and shall be free of asbestos.

4.2.2 Type II and IIA: Shall be compounded of polymerized butyl elastomers, resins, inert pigments, asphaltic material and fibers, and shall be free of asbestos.

4.3 Property and Performance Requirements

The following material requirements and property and performance requirements shall be applicable to both Types I and II unless otherwise specified:

4.3.1 Solids

4.3.1.1 Method: SAE J243 Procedure ADS-7

4.3.1.2 Required: 99% minimum.

4.3.2 Density

4.3.2.1 Method: Water displacement or equivalent.

4.3.2.2 Required: Types I = 1.20-1.32 kg/l (10-11 lbm/gal);

Type IA, IC, II and IIA = 1.67-1.80 kg/l (14.0-15.0 lbm/gal)

4.3.3 Penetration

4.3.3.1 Method: Types I = ASTM D 5 Penetration Method, 100 g T.M.L., 5 Seconds, 25 ± 1°C

Type IA, IB, II = ASTM D 217 Penetration Method, 300g T.M.L.

Type IIA = ASTM D 5 Penetration Method, 150g T.M.L.

4.3.3.2 Required:

Types I	9.5 - 12.5 mm	Type II	10.5 - 11.5 mm
Type IA	8.5 - 10.5 mm	Type II w/ Plio	10.5 - 11.5 mm
Type IB	7.0 - 9.0 mm	Type II w/String	9.5 - 11.5 mm
		Type IIA	12.5 - 13.5 mm

4.3.4 Odor

It is the supplier's responsibility to insure that the finished product meets all safety standards and that its odor is deemed to be non-objectionable.

4.3.5 Application

The product shall adhere to metal, paint, glass, wood or plastic surfaces at temperatures between 16-32°C (60-90°F).

4.3.6. High Temperature Adhesion

4.3.6.1 Method: Mount a 20 cm (8 in) long strip of tape on a 10 x 30 cm (4 x 12 in) steel or aluminum panel, and roll to insure total contact. After one hour, place in a recirculating air oven, in a vertical position, and heat for one hour at 204° C (400° F).

4.3.6.2 Required: No visible loss of adhesion or slumping or running of the sample.

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4.3.7 Low Temperature Adhesion

4.3.7.1 Method: Apply to typical steel or aluminum test panel a strip of the subject material and roll to assure total contact. Subject test specimen to a temperature of $-29 \pm 1^\circ \text{C}$ ($-20 \pm 2^\circ \text{F}$) for two hours and while in this test atmosphere, bend 180 degrees over a 75 mm (3 in) diameter mandrel.

4.3.7.2 Required: Shall exhibit no cracking nor visible loss of adhesion to the base panel.

4.3.8 Heat Aged

4.3.8.1 Method: Condition sample seven days at 70°C (158°F). Perform viscosity test.

4.3.8.2 Required: Shall be $\pm 15\%$ of initial.

4.3.9 Flexibility/Stability

4.3.9.1 Method: Apply a 40 x 170 x 3 mm sample on a 75 x 25 mm sheet of aluminum foil using light pressure. Condition assembly at $-30 \pm 1^\circ \text{C}$ ($-22 \pm 2^\circ \text{F}$) for 16 hours, then bend 180 degrees over a 25 mm (1 in) diameter mandrel. Repeat on a sample aged for 24 hours at $100 \pm 2^\circ \text{C}$ ($212 \pm 3^\circ \text{F}$).

4.3.9.2 Required: Sealant shall show no visible signs of cracking.

4.3.10 Staining: Type I, Type IA and IC Only

4.3.10.1 Method A: Apply sealant on a typical steel or aluminum test panel and spray paint per MPAPS G-5, Grade-19 (white) and cure paint for 30 minutes at 121°C (250°F). Subject panel to 250 hours of simulated weathering per ASTM G154, using the following repetitive cycle:

8 hours UV (UVB-FS40 at 60°C (140°F))

4 hours condensing humidity at 50°C (122°F)

4.3.10.2 Required: Sealant shall cause no discoloration to the painted surface and shall compare favorably with the painted adjoining metal surface where no sealant has been applied.

4.3.11 Sag Resistance

4.3.11.1 Method: Apply a 50 x 8 mm sample along the centerline of three panels. Scribe panels to mark the initial material location. Condition the panels with the material in the below orientations for 1 hour at 23°C (73°F). Determine the sag by measuring the material movement below the scribe mark.

4.3.11.2 Required:

Horizontal	=	3mm max
Vertical	=	3mm max
Inverted	=	No loss of material

4.3.12 Corrosion Resistance

4.3.12.1 Method: Expose prepared panels per ASTM B117 for a minimum of 500 hours. Condition panels at 23°C (73°F) for 24 hours after exposure.

4.3.12.2 Required: No loss of adhesion or blistering of the material and no evidence of corrosion on the metal surface when subjected to salt spray.

4.3.13 Water Absorption

4.3.13.1 Method: SAE J1918, Method 1, 24-hour soak-time

4.3.13.2 Required: 5% maximum absorption