

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS P-9564
		Former Designation: TMS-9564
TITLE: Truck Instrument Panel Material and Testing Requirements		CURRENT REV No.: 1610
		DATE: Oct. 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 covers material, performance testing, and durability testing requirements for the complete instrument panel assembly, including the cross car beam.

2.0 SCOPE

This specification covers the material, durability, performance, quality, qualification, shipping and identification, and KCC requirements to meet the commercially reasonable Instrument Panel performance needs for truck and bus instrument panel assemblies. Service categories that are covered include: heavy/line haul, regional haul, severe service, medium duty and bus.

2.1 Restricted Chemical Substances

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	AWS D1.1
CFR Title 29, Part 1910	AWS D1.2
NAVISTAR Supplier Packing and Shipping Std. D-13	AWS D1.3
NAVISTAR Engineering Design Std A-16	AWS G1.2/M
NAVISTAR MPAPS B-50	AWS B2.4
NAVISTAR MPAPS D-28	NAVISTAR MPAPS DT-18
NAVISTAR MPAPS G-9009	NAVISTAR MPAPS DT-19
NAVISTAR MPAPS L-6505	NDR 004
NAVISTAR MPAPS P-9516	
NAVISTAR MPAPS D-7028	

4.0 MATERIAL REQUIREMENTS

4.1 Material

4.1.1 Molded Plastics – The most common Instrument Panel (IP) material requirement is listed below. Plastic IP trim resins should meet the following material spec as a minimum. Exceptions require

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approval from Navistar Materials and Engineering groups. Color, grain, and finish to be specified on the drawing by Navistar Design.

4.1.1.1: Plastic IP trim: PP, TEO, or TPO, A2 BE120 C10 K23 M20 R240 SA120 U YA3600 AC1, per NAVISTAR MPAPS D-28.

4.1.2 Painted Metallic Parts - Unless otherwise specified, metallic components shall be painted NAV0004 Black, Class IIIA, per MPAPS G-9009.

4.1.3 Acoustic Foam – All acoustic insulation shall meet MPAPS L-6505, TYPE II, Grade B.

4.2 Adhesion and Joining Requirements

4.2.1 Welds

4.2.1.1 Spot welds shall comply with MPAPS P-9516.

4.2.1.2 Non-resistance welds will comply with the applicable American Welding Society (AWS) standard: AWS D1.3 or D1.1 for steel and AWS D1.2 for aluminum.

4.2.1.3 Plastic welds including but not limited to: sonic welds, ultrasonic welds, heats staking, etc. shall comply with AWS G1.2M/G1.2:1999 (R2010) or AWS B2.4:2012

4.2.2 Adhesives – All adhesive bonded trim must meet MPAPS D-7028.

4.3 Component Level Material Requirements

4.3.1 Interior Part Performance Requirements (MPAPS DT-19): All materials in the IP shall be tested to the procedures and requirements called out in NAVISTAR MPAPS DT-19. Navistar Engineering shall be contacted prior to testing to confirm testing locations and data requirements. (MPAPS DT-19 includes testing procedures and requirements for: flammability, colorfastness to artificial light, scratch and mar resistance, colorfastness to cleaning and chemicals, fogging, odor emissions, impact, environmental cycling and dimensional stability, environmental stress cracking, and oxidative stability.)

4.3.2 Mildew Odor Requirements

4.3.2.1 Procedure

Place a 50 mm X 50 mm sample of each proposed material in a container. Add enough distilled water to saturate the bottom 10 mm of sample. Close the container tightly. Expose the container to 38 +/-2 deg C for 14 days.

4.3.2.2 Required

The specimen shall be inspected for mildew growth and related odor. No mildew growth or related odor is permitted.

5.0 PERFORMANCE AND DURABILITY REQUIREMENTS

5.1 Automatic Shifter Duty Cycle

5.1.1 Procedure: a) Apply a load of 6.0N to the shifter push button, at the shifter area, perpendicular to the surface for 100,000 cycles. b) Apply a fore/aft push/pull load 44N (10 lbs) for 100,000 cycles to the automatic T handle shifter.

5.1.2 Requirement: The automatic shifter bezel or instrument panel bezel shall not exhibit any loss of function, excessive wear, or fracture over the simulated life test of the vehicle. At the end of the cycle, deflection shall not exceed 3mm, measured at the rearward most edge of the shifter.

5.2 Automatic Shifter Ultimate Load Cycle

5.2.1 Procedure: Apply a load of 444N (100lbs) at the shifter area perpendicular to the surface of the automatic shifter push button. Load locations shall be specified by Navistar Engineering.

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5.2.2 Required: The automatic shifter bezel or instrument panel bezel shall not exhibit any loss of function, excessive wear, fracture or permanent deformation. Permanent deflection shall not exceed 3mm.

5.3 Cigar Lighter Duty Cycle

5.3.1 Procedure: Apply an insertion force of 27N and an extraction force of 36N for 20,000 cycles to the cigar lighter. Each cycle shall consist of both an insertion and extraction. Load locations shall be specified by Navistar Engineering.

5.3.2 Required: The panel housing for the cigar lighter and IP shall not exhibit any loss of function, excessive wear, or fracture over the simulated life test of the vehicle.

5.4 Cigar Lighter Ultimate Load

5.4.1 Procedure: Apply a 260 N pull force along the central axis of the housing panel for the cigar lighter. Load locations shall be specified by Navistar Engineering.

5.4.2 Required: The panel housing for the cigar lighter and IP shall not exhibit any loss of function, excessive wear, or fracture over. The device shall not unseat from the panel.

5.5 Durability System Level Instrument Panel Shaker Test

5.5.1 Procedure: Perform the Navistar specified shake duty cycle with the IP assembly sub-system. The IP shall contain a 'fully loaded' option content including 5lbs weight in the cup holder and representative steering weights attached. The test shall be run prior to a full vehicle shaker test. MAST shaker profile will be provided by Navistar Engineering.

5.5.2 Required: The instrument panel assembly must sustain vibration and cycling without structural collapse and must not exhibit any weld or component cracks or failures. The IP assembly shall not exhibit any loss of function, excessive wear, or fracture over the test. The instrument panel will not exhibit any buzz, squeaks & rattles (BSR) during any life cycle or non-destructive tests. BSR, functional attachments, and DSAOs shall be evaluated at before and after the completion of the test in locations specified by Navistar Engineering. The sound pressure level shall remain less than 60dB at beginning of test and less than or equal to 65dB at conclusion of test. There shall be no loss of functional attachments (i.e. clips and fasteners) evaluated via torque markings at beginning and conclusion of test. The DSAOs may not change more than 15 %.

5.6 Durability Vehicle Level Shaker Test

5.6.1 Procedure: Perform the Navistar specified vehicle level shake duty cycle. The IP shall contain a 'fully loaded' option content including 5lbs weight in the cup holder and representative steering weights attached.

5.6.2 Required: The instrument panel assembly must sustain vibration and cycling without structural collapse and must not exhibit any weld or component cracks or failures. The IP assembly shall not exhibit any loss of function, excessive wear, or fracture over the test. BSR, functional attachments, and DSAOs shall be evaluated at before and after the completion of the test in locations specified by Navistar Engineering. The sound pressure level shall remain less than 60dB at beginning of test and less than or equal to 65dB at conclusion of test. There shall be no loss of functional attachments (i.e. clips and fasteners) evaluated via torque markings at beginning and conclusion of test. The DSAOs may not change more than 15 %.

5.7 Instrument Panel Bezel Retention

5.7.1 Procedure: Condition bezels at -30°C and 90 °C and 95% R.H for two hours prior to testing. Apply a retention pull force of 50 N to the bezel. Additionally, apply a push force of 129 N at specified retention locations on the bezel. Push and pull locations to be specified by Navistar Engineering. Finally, measure the force required to remove the bezel in 2 seconds.