

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS L-6614
		Former Designation: TMS-6614
TITLE: Exhaust Piping Insulation		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 outlines the requirements for exhaust or turbo pipe insulation, which is used as a thermal barrier to retain or exclude thermal energy

2.0 SCOPE

This specification covers the general requirements, property and performance requirements, quality, qualification, source approval, and quality control for exhaust pipe insulation.

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.

2.2 Classification

NOTE: There are currently only four types of approved piping insulation. Additional types of piping insulation are expected to be identified and added to this specification in the future.

2.2.1 Type I: Blanket Type - Ceramic blanket insulation wrapped with aluminum foil tape and secured at each end with stainless steel clamps.

2.2.2 Type II: Insulation Wrap – Ceramic blanket insulation with fiberglass fabric inner layer and laminated aluminum foil/fiberglass outer layer secured around pipe.

2.2.3 Type III: Steel Encapsulated Fiber Mat – Stainless steel outer shell with an inner layer of wrapped silicate fiber needlemat.

2.2.4 Type IV: Knitted Basalt Sleeve – Dense wall knitted basalt fiber sleeve secured at each end with stainless steel clamps.

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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	MPAPS A-37	ASTM C201
CFR Title 29, Part 1910	MPAPS C-10	ASTM C1338
NAVISTAR Supplier Packing and Shipping Std. D-13	MPAPS K-6929	ASTM D1117
NAVISTAR Engineering Design Std A-16	MPAPS P-9543	ASTM C1304
NAVISTAR MPAPS B-50	ASTM E136	ASTM B117
NAVISTAR MPAPS GT- Paint	ASTM C1617	ASTM C795

4.0 REQUIREMENTS

4.1 Material Requirements

4.1.1 Aluminum Foil

Aluminum alloy 1100 foil per MPAPS C-10.

4.1.2 Silicone PSA

Silicone PSA shall comply with MPAPS K-6929.

4.1.3 Stainless Steel

Stainless steel, Type 321 or 304, per MPAPS A-37

4.2 Material Properties (Insulation Fabric)

4.2.1 Fiber Description

4.2.1.1 Ceramic Fabric (Type I and II) - The ceramic insulation shall consist of ceramic fiber spun from high purity alumina-silica raw materials.

4.2.1.2 Fiberglass Fabric (Type II) – The fiberglass inner layer shall consist of asbestos free flexible woven fiberglass fabric.

4.2.1.3 Laminated Aluminum Foil/Fiberglass (Type II) – The outer layer shall consist of laminated aluminum foil/fiberglass material.

4.2.1.4 Stainless Steel Shell (Type III) – The outer layer shall consist of embossed stainless steel that encapsulates a fiber mat. Stainless steel shell is to be welded to the underlying pipe.

4.2.1.5 Silicate Fiber Needlemat (Type III) – The silicate fiber inner layer shall consist of a flexible woven fiber mat.

4.2.1.6 Knitted Basalt Sleeve (Type IV) – The expandable sleeve shall be of single wall knitted construction of 100% basalt yarn.