

NAVISTAR, INC.		
TMS (TRUCK MATERIAL SPECIFICATION)		NUMBER: TMS-6513
TITLE: Impact Energy Absorbing Foam		CURRENT REV No: 1012
		DATE: December 2010
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Change Notice: NEW		
Reference	Keywords: Energy absorbing foam, Impact	

1.0 APPLICATION

This specification covers requirements for a molded energy absorbing impact foam used with bumper fascia application on Navistar trucks.

1.1 Type I

This material consists of a rigid polyisocyanate (polyurethane) foam. (Additional types of energy absorbing foam may be added at a later date.)

2.0 SCOPE

This specification covers the general durability, performance, design, quality, quality control, shipping and identification and source approval requirements for energy absorbing impact foam.

2.1 Restricted Chemical Substances

Effective JANUARY 1, 2007, all product supplied to the requirements of this specification must comply with the requirements of CEMS B-50.

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 <i>ISO 9001 or TS-16949</i>	NAVISTAR CEMS GT-31
AATCC Test Method 8	NAVISTAR CEMS B-50
FMVSS 571.302	NAVISTAR CEMS DT-12
ASTM D 3575	SAE J1756
ASTM D 1621	TMS-6929
ASTM D 1056	

4.0 GENERAL REQUIREMENTS

4.1 Material

Molded polyisocyanate foam to meet the requirements of the latest issue of Federal Motor Vehicle Safety Standard No. 302.

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DECEMBER 2010

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4.2 Manufacture

The polyisocyanate foam is a polyurethane modified cellular plastic and shall be processed as a rigid foam in bulk form for fabrication into molded parts.

4.3 Description

This product is manufactured as a high performing energy/impact absorbing rigid foam to be used behind the bumper fascia application on Navistar trucks. Product may come with or without adhesive for mounting. If a release liner is used with adhesive, the paper shall release easily and cleanly from the foam.

4.4 Color

Shall be light blue unless otherwise specified.

4.5 Property And Performance Requirements

4.5.1 Density: (ASTM D 3575, Suffix W, Method B)

Type I - 0.043 g/cm³(2.7 lb/ft³) min

4.5.2 Compression Strength: Vertical (ASTM D 1621)

Type I - 248 kPa (36 PSI)

Temperature	Compression Value @ 25%	Compression Value @ 50%
23°C	248 kPa (36 PSI)	296 kPa (43 PSI)
-15°C	299 kPa (43 PSI)	365 kPa (53 PSI)
60°C	204 kPa (30 PSI)	259 kPa (38 PSI)

4.5.3 Thermal Stability: Linear Change at 80°C (ASTM D 3575, Suffix S)

Type I - < 1%

4.5.4 Fogging: (SAE J1756)

Type I - 99 Fog Number

4.6 Water Absorption

4.6.1 Method ASTM D 1056, Section 42

4.6.2 Required

Type I - < 10%

4.7 Chemical Resistance

4.7.1 Method: CEMS DT-12, Method A for Interior Parts and Method B for Exterior Parts (AATCC, Test Method 8)

4.7.2 Required: Minimum score of 3 using an AATCC Chromatic Transference Scale or Gray Scale for Staining. Specimens will not dissolve, delaminate or exhibit other objectionable characteristics.

4.8 Pressure Sensitive Adhesives

Generally, adhesives supplied to this specification only need to adhere until assembly is complete. In those cases where better, more durable performance is required, then the adhesive shall meet TMS-6929. In both cases the adhesive needs to survive the environment the impact foam is intended for without causing any detrimental effects to the performance of the impact foam. Please contact Materials Engineering if further guidance is required.

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