

INTERNATIONAL TRUCK AND ENGINE CORPORATION		
(TMS) TRUCK MATERIAL SPECIFICATION		NUMBER: TMS-6509
TITLE: Treated Urethane Foam, Acoustical		REVISION: B-1
WRITTEN/EDITED BY: Materials Engineering	APPROVED BY: Materials Engineering	DATE ISSUED: August 2001
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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: Reformatted and Editorial Changes		
Reference: File 30-10	Keywords: Urethane Foam; Acoustical Foam	

1.0 APPLICATION

This specification covers expanded or cellular polyurethane foams which are produced in slab and may be slit, die cut, molded or skived. This material is suitable for cab interior acoustical applications and shall meet all the property and performance requirements and be approved by the Truck Development and Technology Center, Vehicle Dynamics Department, for the intended use.

2.0 SCOPE

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

3.0 REFERENCE DOCUMENTS

Unless otherwise specified, the latest issue of all referenced standards shall apply. The following standards, specifications and regulations are referenced in this specification.

Quality System Standard QS-9000 (ISO 9001)	ASTM D 1564
INTERNATIONAL IQR Quality Standard	INTERNATIONAL TMS-9544
INTERNATIONAL Manufacturing Standard D-13	FMVSS-302
CFR Title 29, Part 1910	

4.0 GENERAL REQUIREMENTS

4.1 Material

Shall be a polyurethane which has been chemically treated to increase density to meet requirements.

4.2 Surface Condition

The material shall have a homogeneous cell structure, and shall be free from any surface crust which will be in contact with any trim covering material.

4.3 Dimensional Tolerances

Height, width, length and curvature tolerance shall be stated on the part drawing.

4.4 Property And Performance Requirements

All tests shall be performed in accordance with ASTM D-1564, Testing Slab Flexible Urethane Foam, unless otherwise specified.

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4.4.1 Compression Load Deflection (ILD), Suffix D Test Method

Shall be 13.8 ± 1.4 kPa (2 ± 0.2 psi). An optional method of control shall be density as determined by the Suffix W Test Method: Required; 48 ± 1.6 kg/m³ (3 ± 0.1 lbm/ft³).

4.4.2 Tensile Strength

Shall be 69 kPa (10 psi) minimum from an average of three test specimens.

4.4.3 Elongation

Shall be 65% minimum.

4.4.4 Tear Strength

Shall be 0.18 N/cm (1.0 lbf/in) thickness minimum.

4.4.5 Compression Set

90% compression. Shall be 20% maximum set.

4.4.6 Air Flow

Shall be 2.36×10^{-4} m³/sec (0.5 ft³/min) minimum.

4.4.7 Solvent Resistance: One hour immersion in petroleum naphtha.

Shall show no signs of deterioration or surface stickiness.

4.4.8 Odor

Shall be inoffensive both wet or dry.

4.4.9 Staining Method

RS sunlamp at a distance of 30 cm (12 in) for 96 hours in contact with light colored or vinyl coated fabrics.

4.4.9.1 Required

Shall not stain.

4.4.10 Sound Absorption Properties

Material furnished to this specification shall pass certain additional tests stipulated by the Vehicle Dynamics Department, depending upon the particular application.

4.4.11 Flammability Resistance

Material and parts supplied to this specification shall conform to and be certified by the supplier to meet the requirements of the latest issue of the Federal Motor Vehicle Safety Standard #302 - Flammability of Interior Materials, and all requirements of TMS-9544.

5.0 QUALITY

Parts supplied to this specification shall be uniform throughout in texture, finish, and properties. Finished parts shall not exhibit solid spots, cracks, or craters larger than 6.4 mm (1/4 in) in diameter by 6.4 mm (1/4 in) deep, and no surface shredding or crumbling shall be evident, during or after assembly. Defects which affect the appearance or performance of the finished product shall be cause for rejection.

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