



ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

LAMINATE, POLYURETHANE (PUR) FOAM
PE-EXPANDED SHEETING

WSK-M96D28-A2

1. SCOPE

The material defined by this specification is a low density slab stock polyurethane foam laminated with an expanded PE polyethylene sheeting.

2. APPLICATION

This specification was released originally for material used as door water shield.

3. REQUIREMENTS

3.1 STATISTICAL PROCESS

Suppliers must conform to the requirements of Ford Quality System Standard Q-101. A mutually acceptable Control Plan as described therein is required for material/source approval. Appropriate statistical tools must be used to analyze process/product data so that variation in the final product is continuously reduced.

3.2 INFRARED SPECTROPHOTOMETRY AND/OR THERMAL ANALYSIS

Ford Motor Company, at its option, may conduct infrared and/or thermal analysis of material/parts supplied to this specification. The IR spectra and thermograms established for initial approval shall constitute the reference standard and shall be kept on file at the designated material laboratory. All samples shall produce IR spectra and thermograms that correspond to the reference standard when tested under the same conditions.

3.3 CONDITIONING AND TEST CONDITIONS

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Tests shall be done not earlier than 96 h from time of molding.

3.4 POLYURETHANE FOAM

The foam shall have a homogeneous medium sized cell structure with no large voids or cracks which may impair the serviceability of the part.

Date	Release No.	Release/Revision
1991 05 02	EP00E0108948400	Released K. Gerhards

WP 3948-a

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3.4.1	Dimensions (ISO 1794)	As specified on Engineering Drawing
3.4.2	Density, min (ISO 845/ASTM D 3574, Test A)	22 kg/m ³
3.4.3	Tensile Strength, min (ISO 1798/ASTM D 3574, Test E, 5 specimens minimum)	140 kPa
3.4.3.1	Elongation, min (Test acc. to para 3.5.2)	160 %
3.4.4	Compression Set, max (ISO 1856, Method A/ASTM D 3574, Test D, 22 h at 70 C, 50 % deflection, 3 specimens, minimum)	15 %
3.4.5	Compression Deflection Stress (ISO 3386/1 at 40 % compression, specimen size 100 x 100 x 50 mm test speed 100 +/- 20 mm/minute)	2.8 - 4.4 kPa
3.4.6	Humidity Aging (Autoclave) (ISO 2440/ASTM D 3574, Test J, 3 h at 105 C)	
3.4.6.1	Compression Deflection Stress Change, max (Test acc. to para 3.4.5)	+/- 25 %
3.4.7	Heat Aging (ISO 2440/ASTM D 3574, Test K, 22 h at 140 +/- 2 C)	
3.4.7.1	Compression Deflection Stress Change, max (Test acc. to para 3.4.5)	+/- 10 %
3.5	POLYETHYLENE SHEETING, EXPANDED	
3.5.1	Thickness (ISO 4593)	As specified on Engineering Drawing
3.5.2	Density, max (ISO 1183, Method A/ ASTM D 792, Method A1)	32 +/- 5 kg/m ³
3.5.3	Tensile Strength, min (ISO 1184, type 2 specimens, test speed 500 mm/minute)	130 kPa
3.5.3.1	Elongation at Break, min (Test Method according to para 3.5.3)	50 %