



ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

POLYETHYLENE (PE) FOAM,
CROSSLINKED, CLOSED CELL

WSK-M4D819-A

1. SCOPE

The material defined by this specification is a closed cell, crosslinked polyethylene foam with a nominal density of 30 kg/m³.

2. APPLICATION

This specification was released originally for material used as mirror windnoise gasket.

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.

3.4 APPEARANCE

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

Date	Release No.	Release/Revision
1991-06-03	EP00E01089485000	Released K. Gerhards

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3.5 TEST SPECIMEN

The following material properties are based on foam material with surface skin removed.

3.5.1	Density (ISO 845/ASTM D 3574, Test A)	33 +/- 5 kg/m ³
3.5.2	Tensile Strength, min (ISO 1798/ASTM D 3574, Test E, 50 mm bench marks, 5 specimen minimum)	160 kPa
3.5.2.1	Elongation at Break, min (Test acc. to 3.5.2)	60 %
3.5.3	Compression Set, max (ISO 1856, Method A/ASTM D 3574, Test D, ct calculation, 22 h at 23 C, 50 % deflection, 3 specimens, minimum)	31 %
3.5.4	Compression Deflection Stress (ISO 3386/1 at 40 % compression, specimen size 100 x 100 x 50 mm, test speed 100 +/- 20 mm/min)	75 +/- 15 kPa
3.5.5	Water Absorption, max (ASTM D 1056, subject specimen to a vacuum of 84 kPa)	1 %
3.5.6	Dimensional Stability, max	
	WMD	- 7 %
	AMD	- 5 %

Test Method: A specimen approx. 300 x 300 mm in size shall be placed in a mechanical convection oven maintained at 100 +/- 2 C for 3 h. Dimensional changes shall be measured after cooling down to room temperature.

3.5.7	Cold Flexibility at - 40 C (FLTM BN 102-01, diameter of mandrel shall be 2 times of specimen thickness)	No cracks
3.5.8	Fogging (FLTM BO 116-03)	
	Fog Number, min	80
	Formation of droplets or coalescence into a clear film is cause for rejection.	
3.5.9	Odor, max (FLTM BO 131-01/SAE J1351)	Rating 2