



ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

POLYURETHANE (PUR) FOAM, BACTERIA/FUNGUS
RESISTANT

WSH-M2D410-A

1. SCOPE

The material defined by this specification is a flexible polyether polyurethane foam.

2. APPLICATION

This specification was released originally for material used in the plenum to evaporator seal.

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 cracks which may impair the serviceability of the part.

Date	Release No.	Release/Revision
1991 10 10	CE00E10109215011	Released C.F. Carter

WP 3948-a

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3.5 TEST SPECIMEN

The following material properties shall be determined on specimens taken from the core, 6 - 10 mm from the surface skin, unless otherwise specified. These specimens shall be free of voids, hard spots and densification lines.

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| 3.5.1 | Density, Core, min
(ISO 845/ASTM D 3574, Test A) | 24 kg/m ³ |
| 3.5.2 | Tensile Strength, min
(ISO 1798/ASTM D 3574, Test E,
50 mm bench marks, 5 specimens min) | 83 kPa |
| 3.5.2.1 | Elongation at Break, min
(Test acc. to para 3.5.2) | 100 % |
| 3.5.3 | Tear Strength, min
(ISO 8067/ASTM D 3574, Test F,
50 mm/min test speed) | 175 N/m |
| 3.5.4 | Compression Set, max
(ISO 1856, Method A/ASTM D 3574,
Test D, 22 h at 70 C, 50 % deflection,
3 specimens min) | 40 % |
| 3.5.5 | Compression Deflection Stress, max
(ISO 3386-1, 40 % compression,
100 x 100 x 50 mm specimen) | 7.0 kPa |
| 3.5.6 | Heat Aging
(ISO 2440/ASTM D 3574, Test K,
22 h at 140 +/- 2 C) | |
| 3.5.6.1 | Compression Deflection
Stress Change, max
(Test acc. to para 3.5.5) | 5.0 kPa |
| 3.5.6.2 | Low Temperature | No cracking or
crumbling |
| <p>Test Method: After heat aging in a convection oven for 22 h at 140 +/- 2 C, expose 100 x 100 x 50 mm specimen for 16 h at - 40 +/- 1 C. Bend 180 deg over temperature conditioned 25 mm diameter mandrel.</p> | | |
| 3.5.7 | Humidity Aging (AUTOCLAVE)
(ISO 2440/ASTM 3574, Test J,
100 x 100 x 50 mm specimen,
5 h at 120 C) | |
| 3.5.7.1 | Compression Deflection Stress
Change, max
(Test according to para 3.5.5) | 20 % |