



POLYURETHANE FOAM, ACOUSTICAL, OPEN FINE CELL

ESB-M2D304-A

1. SCOPE

The material defined by this specification is an open, fine celled polyurethane foam.

2. APPLICATION

This specification was released originally for material used as a sound absorber in the spare tire well of the 1982 Escort/Lynx Sporty Coupe.

3. REQUIREMENTS

Material specification requirements are to be used for initial qualification of materials.

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.2 APPEARANCE

The color, pattern, and finish shall match the approved Design Center master sample, or shall be specified on the engineering drawing.

3.3 DENSITY, range

(ASTM D 1564, Suffix "W", sample size

1.3 - 2.2 lb/ft³ (20.8 - 35.2 kg/m³)

12 x 12 x 1 in

(300 x 300 x 25 mm)

3.4 CELL STRUCTURE

40 cells/linear in min.

(16 cells/10 mm)

Shall have a homogeneous, open, fine cell structure, with no large voids or solid spots. It shall be free from internal defects such as cold shuts, folds, laps, and tears.

3.5 TENSILE STRENGTH

(ASTM D 1564, Suffix "T")

12 psi (83 kPa) min

Elongation

125% min

3.6 HEAT AGED TENSILE

STRENGTH, Retention of original

(ASTM D 1564, Suffix "A")

75% min

Date	Action	Revisions
2013 05 10	ReActivated	Short term solution for NVH foam usage on IP ducts Y. Bankowski, NA
2006 09 06	Revised	Removed ESB-M2D304-B was made Inactive 8/16/2006, replaced by WSS-M99P32-B; Del 3.15 R. Lord
2006 05 02	Revised	ESB-M2D304-A made N-STATUS; Rep by WSS-M99P32-B A. Reume
1981 01 26	Released	B1T-4551/CEK1-DR-586632-3



ENGINEERING MATERIAL SPECIFICATION

ESB-M2D304-A

- 3.7 TEAR STRENGTH**
(ASTM D 1564) 1.5 lb/in (262 N/m) min
- 3.8 COMPRESSION SET**
(ASTM D 1564, Method "B", 22 h at 70 +/- 1 °C, 50% constant deflection) 20% max
- 3.9 25% COMPRESSION - DEFLECTION**
(ASTM D 1564, 4 x 4 in (100 x 100 mm) samples, direct load reading) 7 lb (31 N) min
or as specified
on engineering
drawing
- 3.10 AIR PERMEABILITY**
(ASTM D 737, 0.5 in (12.5 mm) thick sample, sample should not be compressed) 10 - 115 ft³/ft²/min
(3.0 - 35.0 m³/m²/min)
- 3.11 SOUND ABSORPTION, % min, Initial Source Approval Only**
(ASTM C 384)
- | | 0.5 in (12.5 mm) | 1.0 in (25.0 mm) |
|---------|------------------|------------------|
| 250 Hz | 3 | 5 |
| 500 Hz | 6 | 20 |
| 1000 Hz | 16 | 45 |
| 2000 Hz | 35 | 70 |
- 3.12 DETERIORATION**
(FLTM BO 012-01)
- No evidence of cracking, loss of cellular structure, tackiness or crumbling.
- Test Method: A specimen 2 x 8 in (50 mm x 200 mm), x part thickness, shall be subjected to steam autoclave aging for 3 h at 100 – 110 °C, then dried for 3 h at the above temperature in a convection oven, followed by 2 h conditioning at 23 +/- 2 °C. The sample shall be subsequently bent 180° around a 0.25 in (6.4 mm) diameter mandrel, at 23 +/- 2 °C.
- 3.13 WICKING**
(SAE J 913, using water) 0.5 in (13 mm) max
- 3.14 FLAMMABILITY**
(FLTM BN 024-02, without the lot sampling plan) 4 in (101 mm)/min max

In addition, the test specimen shall not exhibit any flashing or sudden flaming on either surface in excess of the above maximum value.