



POLYURETHANE (PUR) FOAM, FLEXIBLE, RESTRICTED FLOW

ESA-M4D200-B

1. SCOPE

The material defined by this specification is flexible polyether polyurethane foam. When uncompressed it allows no air flow due to a high percentage of closed cells and lack of interconnection between any remaining open cells.

2. APPLICATION

This specification was released originally for material used as gasketing and seals for heater and air conditioning units.

3. REQUIREMENTS

3.1 RAW MATERIAL

All tests to be performed on, or from 200 x 200 x 25 mm slabs of new uncompressed material, unless otherwise specified.

3.1.1	Color		Charcoal
3.1.2	Density (ASTM D 3574)	Cored Uncored	27 - 40 kg/m3 40 - 56 kg/m3
3.1.3	Tensile Strength, min (ASTM D 3574)		69 kPa
	Elongation, min	125 %	
3.1.4	Tear Resistance, min (ASTM D 3574)		175 N/m
3.1.5	Compression Set, max (ASTM D 3574, Method "B", 50 % at 70 C, 22 h)		15 %
3.1.6	Resistance to Deterioration (FLT M BO 12-1, steps 2, 3, 4, degradation 6, 7 and 8)	No visible	
3.1.7	Odor		

No offensive odor as received and during and after the deterioration test (para 3.1.6).

Date	Action	Revisions
2010 01 19	Re-Activated	Still being used in North/South America Y. Bankowski, NA
2009 07 28	N-STATUS	No Replacement Named Y. Bankowski, NA
1966 12 22		Released AV2-298

Printed copies are uncontrolled

Copyright © 2010 Ford Global Technologies, LLC



Documents

Page 1 of 5 Document Sharing Hub



ESA-M4D200-B

3.1.8 Cold Flexibility at - 40 C No cracking

Test Method: Condition 3 specimens, 25 x 50 x 200 mm for a minimum of 5 h in a cold chamber maintained at - 40 C. Without removing from chamber, bend the specimen 180 degrees around a temperature conditioned mandrel equivalent in diameter to the thickness of the foam.

3.1.9 Compression Force Deflection, max 6.5 kPa
(ASTM D 3574, Test C, except 65 % compression, 20 - 50 mm thick specimen compressed at 254 mm/minute)

Specimens are not to be preflexed prior to test. Reading to be taken immediately upon reaching the 65 % deflection level. There must be no audible cracking or snapping indicating rupture of closed cells when foam is compressed to 65 % deflection.

3.1.10 Ozone Rating Rating 1
(FLTM BP 101-01)

3.1.11 Flammability Self-extinguishing
(FLTM BN 24-2, without the lot sampling plan) (Se/NBR)

3.1.12 Cell Structure, min 10 cells/10 mm

The material shall have a homogenous fine cell structure free from large voids or solid spots.

3.1.13 Restriction to Air Flow

No sudden decrease in pressure, but rather a gradual one. After 30 minutes the pressure shall be 10 kPa min.

Test apparatus shall consist of a 7.6 L paint pressure tank with a 6.4 mm pipe at least 150 mm long extending from the top outlet. Atop the 6.4 mm pipe shall be a standard 25 mm pipe flange (29 mm diameter opening). The tank must be equipped with an air pressure gage having 69 kPa total scale graduated in 0.7 kPa units.

Place a test piece of foam 150 x 150 x 25 mm over the 25 mm pipe flange. Place a piece of 1.6 mm screening on top of the test piece. Bolt another 25 mm pipe flange to the one attached to the pressure pot, with the test piece and screening in between. Tighten the bolts until each is secure, but avoid tightening any one more than the other.

Introduce a pressure of 35 kPa into the pressure pot, allow the pressure to build up slowly. Turn off the air supply. Observe the pressure drop over a 30 minute time period. At the end of this period, residual pressure in the pot must be a minimum of 10 kPa.