



## POLYURETHANE (PUR) FOAM, PRESSURE SENSITIVE ADHESIVE, LOW PERMEABILITY

WSD-M99D57-B

### 1. SCOPE

The material defined by this specification is a flexible polyester polyurethane (PUR) foam with a pressure sensitive adhesive offering restricted air flow properties.

### 2. APPLICATION

This material was originally released as gasketing for heaters and air conditioning units in transit.

### 3. REQUIREMENTS

#### 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).

#### 3.4 COLOR

Grey or as  
specified on  
Engineering Drawing

#### 3.5 CELL COUNT, min

50 cells/25 mm

#### 3.6 DENSITY, min

(ISO 845/ASTM D 3574, Test A)

35 - 50 kg/m<sup>3</sup>

#### 3.7 ADHESION STRENGTH, min

(ASTM D 1000, Method A, except use an  
enamelled panel according to FLTM BI 103-02)

3.7.1 Original  
(20 minutes after bonding)

15 N/25 mm width

3.7.2 After Ageing  
(14 Days at 70 +/- 2 °C)

15 N/25 mm width

3.7.3 After Humidity Ageing, Change, max  
(24 h at 38 +/- 2 °C and 98 +/- 2%  
Relative Humidity)

-10%

#### 3.8 TENSILE STRENGTH, min

(ISO 1798/ASTM D 3574, Test E, 50 mm  
bench marks, 5 specimens minimum)

150 kPa

#### 3.9 ELONGATION AT BREAK, min

(Test according to para 3.8)

150%

| Date       | Action   | Revisions                                     |
|------------|----------|-----------------------------------------------|
| 2006 11 27 | Revised  | Inserted 3.0; Deleted 3.1, 3.2, 3.3, 3.15 & 4 |
| 1992 01 28 | Released | C10188961                                     |



Documents

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**3.10 TEAR STRENGTH, min** 175 N/m  
(ISO DIS 8067/ASTM D 3574, Test F,  
50 mm/minute test speed)

**3.11 COMPRESSION SET, max** 15%  
(ISO 1856, Method A/ASTM D 3574, Test D,  
Ct calculation, 22 h at 70 °C, 3 specimens  
minimum, at 40% deflection)

**3.12 COMPRESSION LOAD DEFLECTION** 3 - 5 kPa  
(ISO 3386/1 at 40% compression, 100 x 100  
x 50 mm specimen size, 100 +/- 20 mm/minute  
test speed, 3 specimens minimum)

**3.13 RESTRICTION TO AIR FLOW RESIDUAL PRESSURE, min** 10 kPa

Test apparatus shall consist of a 7.6 L pressure reservoir with a 6.4 mm I.D. pipe at least 150 mm long extending from the top outlet. Atop the 6.4 mm I.D. pipe shall be a standard 25 mm pipe flange with a 29 mm diameter opening and a recess of at least 15 mm. The pressure reservoir must be equipped with an air pressure gauge having a 70 kPa total scale graduated in 0.7 kPa units.

Test Method: Place a test piece of new uncompressed foam 150 x 150 x 25 mm over the 25 mm pipe flange. Place a piece of 1.6 mm mesh screening on top of the test piece, bolt another 25 mm pipe flange to the one attached to the pressure reservoir, 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 reservoir, allow the pressure to build up slowly. Turn off the air supply. Observe the pressure drop over a 60 second period. At the end of this period, residual pressure in the reservoir must be a minimum of 10 kPa.

**3.14 WATER ABSORPTION, max** 280%  
(At 75% compression, by weight)

Test Method: 25 x 25 x 150 mm samples to be weighed and then compressed to 25% of their original thickness. The samples are then submerged in a 300 x 300 x 250 mm tank under 125 mm of water at 23 +/- 2 °C using 6.4 mm pitch mesh screening to keep samples positioned. At the completion of 24 hours immersion remove the samples and allow to drain horizontally for 5 +/- 0.5 minutes on 6.4 mm pitch mesh screening.

Re-weigh and calculate average absorption for 3 samples:

$$\% \text{ Water Absorption} = ((B - A)/A) \times 100$$

A = Original weight

B = Weight after immersion

