



SILICONE (VMQ) RUBBER, IMPROVED COMPRESSION SET, 40 DUROMETER, LOW VOLATILES, LONG LIFE GASKET

WSS-M2D487-A1

1. SCOPE

The material defined by this specification is a low modulus, low durometer, silicone rubber with low silicone volatiles, good compression set and stress relaxation, suitable for high temperature service conditions.

2. APPLICATION

This specification was released originally for material used as the third generation best-in-class gasket for use as oil pan and front cover gaskets. The material can be lightly loaded to impart sound damping and still retain good compression stress relaxation. Low volatile silicone rubber is needed to prevent silica contamination of emission components.

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 MATERIAL TESTING

3.4.1 Preparation of Test Specimens

Whenever possible, all test specimens shall be die-cut from the finished parts. When not feasible, specimens cut from molded test sheets manufactured from the same material and with equivalent cure to molded parts are recommended. The test sheets shall have the following dimensions:

150 x 150 mm, min x 2.0 +/- 0.2 mm

- Tensile Strength per ISO 37/ASTM D 412, die C, full thickness. If the length between the compression limiters is not long enough to accommodate a die C, use a die exactly one-half the dimensions of the die C.
- Tear Strength per ISO 34/ASTM D 624, full thickness.
- Volume Change -25 mm x part width x part thickness.
- Compression Set -25 mm long x part width x single thickness minus any skirt. Do not buff any sample including those with a bead, except for compression set.

Date	Action	Revisions
2004 10 20	Revised	Inserted 3.0; Deleted 3.1, 3.2, 3.3, 3.9, 3.10 & 4
1995 07 07	Revised	
1995 06 30	Activated	NE01-E-10127076-161



Documents

Education Sharing Hub

**3.5 ORIGINAL PROPERTIES**

3.5.1	Density (ISO 1183, Method A/ASTM D 297)	1.15 - 1.20 g/cm ³
3.5.2	Hardness, International (ISO 48/ASTM D 1415)	35 - 47
3.5.3	Hardness, Durometer A (ISO 868/ASTM D 2240, instantaneous, plied-up specimen. Hand held durometers shall not be used)	38 - 48
3.5.4	Tensile Strength, min (ISO 37/ASTM D 412, Die C)	6.0 MPa
3.5.5	Elongation at Break, min (Test Method according to para 3.5.4)	500%
3.5.6	Modulus at 100% Elongation (Test Method according to para 3.5.4)	750 - 1450 kPa
3.5.7	Tear Strength, min (ISO 34, Method C/ASTM D 624, Die B)	24 kN/m
3.5.8	Low Temperature Retraction (RT-10) (ASTM D 1329)	-60 °C
3.5.9	Ozone Resistance, max (FLTM BP 101-01, Procedure A)	Rating 0
3.5.10	Compression Set, max (ISO 815/ASTM D 395, Method B, except 25% compression, plied-up specimens)	15%
3.5.10.1	22 h at 175 +/- 2 °C	
3.5.11	Silicone Volatiles, as received at Ford, max (FLTM AV 102-01)	0.60%
3.5.12	Compression Stress Relaxation (ISO 3384/ASTM TBD)	
	Washer sampler # 3, 25% compression 1000 h, 150 +/- 2 °C in IRM 903	
	Force Retention	2%