



HOSE, SILICONE (VMQ), HIGH TEMPERATURE, SOUND ABSORBING

WSS-M96D39-A2

1. SCOPE

The material defined by this specification is a long life, high temperature, sound absorbing, oil resistant, ozone resistant, moderate to low pressure silicone rubber hose with ability to service high temperature up to 200 °C.

2. APPLICATION

The specification was released originally for material used as components of the exhaust air supply hose where sound damping is required.

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 CONSTRUCTION

The hose shall consist of a silicone elastomeric tube and cover, reinforced with one or more plies of braided, knitted, spiral, or woven para aramid fabric or yarn.

3.5 MATERIAL TESTING

3.5.1 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 state of 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

3.6 ORIGINAL PROPERTIES

3.6.1 Hardness, Durometer A
(ISO 868/ASTM D 2240
instantaneous, plied-up specimen
Hand held durometers shall not be
used)

Tube

Cover

70 +/- 5

70 +/- 5

3.6.2 Tensile Strength, MPa, min
(ISO 37/ASTM D 412, Die C)

4.0

4.0

3.6.3 Elongation at Break, min
(Test Method according to
para 3.6.2)

150

150

Date	Action	Revisions
2006 09 13	Revised	Inserted 3.0; Deleted 3.1, 3.2, 3.3, 3.17, 3.18 & 4
1995 09 08	Activated	



Documents

E. Duda
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	Tube	Cover
3.6.4 Modulus at 100% Elongation (Test Method according to para 3.6.2) Elongation, MPa, min (ASTM D 412, Die C)	1.5 - 4.0	1.5 - 4.0
3.6.5 Silicone Volatiles, max (FLTM AV 102-01, as received at Ford Motor Company)	0.50%	

3.7 HEAT AGED

(ISO 188/ASTM D 573, 150 +/- 50 air
changes/h, 168 h at 200 +/- 2 °C)

3.7.1 Hardness Change, max	+15	+18
3.7.2 Tensile Strength Change, % max	-45	-45
3.7.3 Elongation Change, % max	-60	-60
3.7.4 Visual Evaluation		

No surface tackiness or cracks when folded flat against itself.

3.8 HEAT AGED

(ISO 188/ASTM D 573, 150 +/- 50 air
changes/h, 1000 h at 175 +/- 2 °C)

	Tube	Cover
3.8.1 Hardness Change, max	+20	+20
3.8.2 Tensile Strength Change, % max	-35	-40
3.8.3 Elongation Change, % max	-65	-72
3.8.4 Visual Evaluation		

No surface tackiness or cracks when folded flat against itself.

3.9 IMMERSION IN CURRENTLY RELEASED**ASTM IRM 902 Oil, TUBE ONLY**

(ISO 1817/ASTM D 471, 168 h at
150 +/- 2 °C)

3.9.1 Hardness Change, max	-12
3.9.2 Tensile Strength Change, max	-35%
3.9.3 Elongation Change, max	-20%
3.9.4 Volume Change, max	+16%

No surface tackiness or cracks when folded flat against itself.

