AEROSPACE
MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 3338B

Issued 3-1-55
Revised 1-15-63

SILICONE RUBBER
Extreme Low Temperature Resistant
(75 - 85)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. FORM: Molded or extruded shapes, sheet, tubing, or as ordered.

3. APPLICATION: Primarily for rubber-like parts required to operate or seal at temperatures from -100 F to +250 F (-75 C to + 120 C), compounded especially for operation at extreme low temperatures. Silicone elastomer is resistant to deterioration by weather and engine oil, and remains flexible at the low temperature noted. This material is not normally suitable for use in contact with gasoline or aromatic fuels and low aniline point petroleum base fluids due to excessive swelling of the elastomer.

4. TECHNICAL REQUIREMENTS:

4.1 General:

4.1.1 Condition: Unless otherwise specified, a suitably cured product shall be furnished.

4.1.2 Weathering: When specified, the product shall have weather resistance acceptable to the purchaser as determined by a procedure agreed upon by purchaser and vendor.

4.1.3 Corrosion: The product shall not have a corrosive effect on other materials when exposed to conditions normally encountered in service. Discoloration of metal shall not be considered objectionable.

4.2 Properties: The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with the issues of listed ASTM methods listed in the latest issue of AMS 2350, insofar as practicable. When the product supplied is an extrusion of ø such shape that suitable test specimens cannot be cut from the product, a separate flat strip sample shall be supplied upon request. This strip shall be prepared from 1 in. ± 1/16 OD by 0.075 in. ± 0.008 thick wall tubing which shall be mechanically split and flattened into a strip while being extruded and then cured in the same manner as production material.

4.2.1 As Received:

	4.2.1.1 Hardness, Durometer "A" or equiv.	80 ± 5	
ø	4.2.1.2 Tensile Strength, psi, min	600	ASTM D412, Die B or C
ø	4.2.1.3 Elongation, %, min	60	ASTM D412, Die B or C
ø	4.2.1.4 Tear Resistance, lb per in., min	30	ASTM D624, Die B

ø 4.2.1.5	Specific Gravity	See Note 1	ASTM D297	
ø 4.2.2	Lubricating Oil Resistance: (Immediate Deteriorated Properties)		ASTM D471 Medium: Temperature: Time:	 ASTM Oil No. 1 212 F ± 2 (100 C ± 1.1) 70 hr
4.2.2.1	Hardness Change, Durometer "A" or equiv.	-10 to +5		
4.2.2.2	Tensile Strength Change, %, max (based on area before immersion)	-20		
4.2.2.3	Elongation Change, %, max	-10		
4.2.2.4	Volume Change (Method A), %	0 to +10		
4.2.2.5	Decomposition	None		
4.2.2.6	Surface Tackiness	None		
4.2.3	Dry Heat Resistance:		ASTM D573 Temperature: Time:	 212 F ± 2 (100 C ± 1.1) 24 hr
4.2.3.1	Hardness Change, Durometer "A" or equiv.	0 to +5		
4.2.3.2	Tensile Strength Change, %, max	-10		
4.2.3.3	Elongation Change, %, max	-15		
4.2.3.4	Bend (flat)	No cracking or checking		
ø 4.2.4	Compression Set:		ASTM D395, Temperature: Time:	Method B 212 F ± 2 (100 C ± 1.1) 22 hr
4.2.4.1	Per cent of original deflection, max	40		
4.2.4.2	Per cent of original thickness, max	10		
4.2.5	Low Temperature Resistance:			
4.2.5.1	Brittleness Temperature, deg Fahr	Pass	ASTM D746 Temperature: Time:	 -100 F ± 5 (-73.3 C ± 2.8) 10 min.
ø 4.2.5.2	Young's Modulus, psi (See Note 3)	See Note 2	ASTM D797 Temperature: Time:	 -100 F ± 5 (173.3 C ± 2.8) 5 hr

Note 1. Value to be reported. Production material shall be within ± 0.02 of the value agreed upon by purchaser and vendor.

Note 2. Value to be reported.

Note 3. This test is not normally required, but is intended to be used as a referee test in case of disagreement on the results of the brittleness test.

5. QUALITY: The product shall be uniform in quality and condition, clean, smooth, and free from chalky spots, foreign materials, and imperfections detrimental to fabrication, appearance, or performance of parts.

6. TOLERANCES: Unless otherwise specified, the following tolerances apply:

6.1 Sheet:

Nominal Thickness Inches	Tolerance, Inch Plus and Minus
1/8 and under	1/64
Over 1/8 to 1/2, incl	1/32
Over 1/2	3/64

6.2 Tubing:

6.2.1

Nominal OD or ID (not both), Inches	Tolerance Plus and Minus	Ovality, % (See Note 4)
1/2 and under	0.020 in.	10
Over 1/2 to 1, incl	0.030 in.	15
Over 1	4%	15

Note 4. Ovality applies to tubing ordered in straight lengths with wall thickness of 1/16 in. and over, and shall be computed from the difference of the minor and major axis diameter measurements, taken at the same location on the tube, expressed as a percentage of the nominal diameter.

6.2.2

Nominal Wall Thickness Inches	Tolerance Plus and Minus
Under 1/16	0.005 in.
1/16 and over	10%

7. REPORTS:

7.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product meets the requirements of this specification. This report shall include the purchase order number, material specification number, vendor's compound number, values to be reported, form or part number, and quantity.