AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AMS 3320 A

Issued 11-1-49
Revised 11-1-52

SILICONE RUBBER SHEET, GLASS FABRIC REINFORCED
Heat and Weather Resistant (60-80)

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

2. FORM: Molded sheet, or as ordered.

3. APPLICATION: Primarily for gaskets or seals requiring a resilient, nonporous sheet material suitable for operating at temperatures from -65 to +400 F. The material is resistant to deterioration by weathering and engine oil and remains flexible over the temperature range 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. MATERIAL AND FABRICATION: Sheet shall consist of a single ply of woven glass fabric (Types 162, 164 or 184) impregnated and bonded between two layers of silicone rubber of essentially equal thickness, molded to an overall thickness of 0.062 to 0.125 in. as ordered.

5. TECHNICAL REQUIREMENTS:

5.1 General:

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

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

5.1.3 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.

5.2 Properties: The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with listed ASTM Methods, insofar as practicable:

Property	Value	Test Method
5.2.1 As Received:		
5.2.1.1 Hardness, Durometer "A" or equiv.	70 ± 10	Note 1
5.2.1.2 Breaking Strength, lb per in., min	300	ASTM D39-39 Cut Strip Method
5.2.1.3 Edge Leakage at 10 psi	None	Note 2

Property	Value	Test Method
5.2.2 Lubrication Oil Resistance: (Immediate Deteriorated Properties)		ASTM D471-46T Medium: ASTM Oil No. 1 Temperature: 350 F ± 2 Time: 70 hr
5.2.2.1 Hardness Change, Durometer "A" or equiv.	-15 to +5	
5.2.2.2 Volume Change (Method A), %	0 to -10	
5.2.2.3 Decomposition	None	
5.2.2.4 Surface Tackiness	None	
5.2.3 Dry Heat Resistance:		
5.2.3.1 Gasket Test		
5.2.3.1.1 Decomposition or Softening	None	Note 3
5.2.3.1.2 Surface Tackiness	None	Temperature: 450 F ± 2 Time: 2 hr
5.2.3.2 Hardness Change, Durometer "A" or equiv.	-5 to +10	ASTM D573-48 Temperature: 450 F ± 2 Time: 24 hr
5.2.3.3 Bend	No cracking	Bend 180 deg over rod whose diameter is equal to thickness of material.
5.2.4 Compression Set:		ASTM D395-47T Method B
5.2.4.1 Percent of Original Deflection, max	72	Temperature: 350 F ± 2 Time: 22 hr
5.2.4.2 Percent of Original Thickness, max	18	Compressed to 75% of original thickness.
5.2.5 Low Temperature Brittleness:		ASTM D736-46T (See Note 4)
5.2.5.1 Flex	Pass	Temperature: -70 F ± 2 Time: 5 hr
5.2.5.2 Delamination	None	

Note 1. Hardness requirement applies to sheet specimens stacked to 1/4 in. thick.

Note 2. A circular gasket specimen shall be prepared, having ID not less than 2 in. and 1-in. wide faces. The gasket shall be clamped between suitable flanges, using #10-32 bolts (0.189 in. dia) spaced approximately 1 in. on centers for clamping; nuts shall be tightened to 40 in-lb torque. Air at an edge pressure of 10 psi shall be applied to the ID of the gasket with the assembly immersed in, or coated with, soap solution, for not less than 1 min. at room temperature. There shall be no leakage through the fabric layer.

Note 3. A gasket specimen at least 1 sq in. in surface area shall be clamped finger tight between aluminum plates and conditioned at the temperature and time specified. Examination shall be immediately upon removal from the oven and cooling to room temperature.

Note 4. To be used only until satisfactory replacement test and values are established.

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

7. TOLERANCES: Unless otherwise specified, the following tolerances apply to molded sheet:

Nominal Thickness Inch	Tolerance, Inch Plus and Minus
0.062 to 0.125, incl	0.015

8. REPORTS:

8.1 Unless otherwise specified, the vendor 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, form or part number, and quantity.

8.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.

9. IDENTIFICATION: Unless otherwise specified, all material shall be identified and marked in accordance with the latest issue of AMS 2810.