AERONAUTICAL MATERIAL SPECIFICATION

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

AMS 3301

Issued 10-1-50
Revised

SILICONE RUBBER
General Purpose
(35-45)

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

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

3. APPLICATION: Primarily for soft rubber-like parts required to operate or seal at temperatures from -65 to +400 F. Silicone rubber 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 fuels 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 or other deleterious 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 listed ASTM Methods, insofar as practicable:

	Property	Value	Test Method
4.2.1	As Received:		
	Hardness, Durometer "A" or equiv.	40 ± 5	
	Tensile Strength, psi, min	500	ASTM D412-49T, Die B
	Elongation, %, min	250	ASTM D412-49T, Die B
	Tear Resistance, lb per in., min	55	ASTM D624-48, Die B
4.2.2	Lubricating Oil Resistance:		
	(Immediate Deteriorated Properties)		ASTM D471-49T
	Hardness Change, Durometer "A" or equiv.	-15 to +5	
	Tensile Strength Reduction, %, max (Based on area before immersion)	50	Medium: ASTM Oil No. 1
	Elongation Reduction, %, max	50	Temperature: 350 F ± 2
	Volume Change (Method A), %	0 to +10	Time: 70 hr
	Decomposition	None	
	Surface Tackiness	None	

Property	Value	Test Method
4.2.3 Dry Heat Resistance:		ASTM D573-48
Hardness Change, Durometer "A" or equiv.	0 to +10	
Tensile Strength Reduction, %, max	5	Temperature: 450 F ± 2
Elongation Reduction, %, max	25	Time: 24 hr
Surface Hardening	None	
Bend (flat)	No cracking or checking	
4.2.4 Compression Set:		ASTM D395-49T, Method B
Per cent of Original Deflection, max	72	Temperature: 350 F ± 2
Per cent of Original Thickness, max	18	Time: 22 hr
		Compressed to 60% of Original Thickness
4.2.5 Low Temperature Brittleness:	Pass	ASTM D797-46
		Temperature: -100 F ± 2
		Time: 5 hr

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

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

6.1 Sheet:

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

6.2 Extrusions: Extrusion tolerances shall be as shown on the drawing.

6.3 Tubing:

6.3.1 Nominal OD or ID * Inch	Tolerance, Inch Plus and Minus	Ovality (Note)
1/2 and under	0.020	10%
Over 1/2 to 1, incl	0.030	15%
Over 1	4%	15%

* Not both

Note 1. Ovality applies to tubing with wall thickness of 1/16 inch 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.