

AEROSPACE MATERIAL SPECIFICATION

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Superseding AMS 3195D

SILICONE RUBBER SPONGE Closed Cell, Medium

1. SCOPE:

1.1 Form:

This specification covers a silicone rubber sponge in the form of sheet, strip, extrusions, and molded shapes.

1.2 Application:

This product has been used typically for general applications requiring closed-cell, medium sponge rubber that will be flexible from -75 to +205 °C (-103 to +401 °F), but usage is not limited to such applications. Compression set may be high at the higher temperature.

1.3 Safety - Hazardous Materials:

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 2810 Identification and Packaging, Elastomeric Products

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2.2 ASTM Publications:

Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM D 746 Brittleness Temperature of Plastics and Elastomers by Impact
 ASTM D 1056 Flexible Cellular Materials - Sponge or Expanded Rubber

3. TECHNICAL REQUIREMENTS:

3.1 Material:

Shall be a compound, based on a silicone rubber, suitably cured to produce a product meeting the requirements of 3.2 and 3.3.

3.2 Finish:

The top and bottom surfaces of sheet and strip and the exterior surfaces of molded parts and extrusions (except ends) shall have a natural finish.

3.3 Properties:

The product shall conform to the requirements shown in Table 1, 3.3.5 and 3.3.6; tests shall be performed on the product supplied and in accordance with ASTM D 1056, except as otherwise specified herein:

TABLE 1 - Properties

Paragraph	Test	Requirement	Test Method
3.3.1	Compression-Deflection	6 - 14 psi (41 - 96 kPa)	25 °C ± 5 (77 °F ± 9)
3.3.2	Density, maximum Nominal Thickness		
3.3.2.1	Under 0.25 inch (6.35 mm)	0.025 pounds/cubic inch (0.69 mg/m ³)	
3.3.2.2	0.25 inch (6.35 mm) and over	0.020 pounds/cubic inch 0.55 mg/m ³)	
3.3.3	Compression Set:		100 °C ± 1 (212 °F ± 2)
3.3.3.1	Percent of Original Deflection, maximum	60%	22 hours + 0.2
3.3.4 (R)	Brittleness Temperature, maximum	-55 °C (-67 °F)	ASTM D 746

3.3.5 Weathering: When specified, the product shall have weather resistance acceptable to purchaser, determined by a procedure acceptable to purchaser.

3.3.6 Corrosion: The product shall not have a corrosive effect on other materials when exposed to conditions normally encountered in service, determined by a procedure acceptable to purchaser. Discoloration of metal shall not be considered objectionable. Standards for acceptance shall be as established by purchaser.

3.4 Quality:

The product, as received by purchaser, shall be uniform in quality and condition, smooth, as free from foreign materials as commercially practicable, and free from imperfections detrimental to usage of the product.

3.5 Tolerances:

Shall be as shown in Table 2 and Table 3; measurements shall be made in accordance with ASTM D 1056:

3.5.1 Sheet and Strip:

3.5.1.1 Thickness: (R)

TABLE 2A - Tolerances, Inch/Pound Units

Nominal Thickness Inch	Tolerance	
	Inch plus	Inch minus
Up to 0.063 incl	0.030	0.016
Over 0.063 to 0.188 incl	0.030	0.030
Over 0.188 to 0.313 incl	0.050	0.030
Over 0.313 to 0.500 incl	0.060	0.060
Over 0.500 to 0.750 incl	0.090	0.090
Over 0.750	0.120	0.120

TABLE 2B - Tolerances, SI Units

Nominal Thickness Millimeters	Tolerance	
	Millimeters plus	Millimeters minus
Up to 1.60 incl	0.76	0.41
Over 1.60 to 4.78 incl	0.76	0.76
Over 4.78 to 7.95 incl	1.27	0.76
Over 7.95 to 12.70 incl	1.52	1.52
Over 12.70 to 19.05 incl	2.29	2.29
Over 19.05	3.05	3.05

3.5.1.2 Length and Width:

Table 3A - Tolerances, Inch/Pound Units

Nominal Length and Width Inches			Tolerance, Inch plus and minus
Up	to	6, incl	0.125
Over	6	to 18, incl	0.250
Over	18		0.375

TABLE 3B - Tolerances, SI Units

Nominal Length and Width Millimeters			Tolerance, Millimeters plus and minus
Up	to	152, incl	3.18
Over	152	to 457, incl	6.35
Over	457		9.52

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:
(R)

The vendor of sponge shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the sponge conforms to the requirements of this specification.

4.2 Classification of Tests:

Tests for all technical requirements are acceptance tests and preproduction tests and shall be performed prior to or on the initial shipment of sponge to a purchaser, on each lot, when a change in ingredients and/or processing requires reapproval as in 4.4.2, and when purchaser deems confirmatory testing to be required.

4.2.1 For direct U.S. Military procurement, substantiating test data and, when requested, preproduction test material shall be submitted to the cognizant agency as directed by the procuring activity, contracting officer, or request for procurement.

4.3 Sampling and Testing:
(R)

Shall be as follows:

4.3.1 For Acceptance Tests: Sufficient sponge shall be taken at random from each lot to perform all required tests. The number of determinations for each requirement shall be as specified in the applicable test procedure or, if not specified therein, not less than three.