



<b>AEROSPACE MATERIAL SPECIFICATION</b>	<b>AMS3196™</b>	<b>REV. H</b>
	Issued 1957-07 Reaffirmed 2008-06 Revised 2023-05	
Superseding AMS3196G		
Sponge, Silicone Rubber Closed Cell, Firm		

## RATIONALE

SAE Five-Year Review and to update alignment with other silicone sponge specifications.

### 1. SCOPE

#### 1.1 Form

This specification covers a closed cell 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, firm sponge rubber that will be flexible from -103 to +401 °F (-75 to +205 °C) but usage is not limited to such applications. Compression set may be high at the higher temperatures in that range. It is the responsibility of the user to determine that this specification is appropriate for the environments (temperature range, fluids exposure, etc.) in which it is sought to be used.

#### 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 issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

### 2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), [www.sae.org](http://www.sae.org).

AMS2810 Identification and Packaging, Elastomeric Products

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SAE WEB ADDRESS:

**For more information on this standard, visit**  
<https://www.sae.org/standards/content/AMS3196H/>

## 2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, [www.astm.org](http://www.astm.org).

ASTM D746 Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact

ASTM D1056 Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber

## 3. TECHNICAL REQUIREMENTS

### 3.1 Material

Shall be prepared from ingredients as shall be necessary to achieve the requirements detailed in this standard and shall be a compound, based on the polymer specified in 1.1, suitably cured to produce product meeting the requirements of 3.2 and 3.3. Reprocessed vulcanized material is not acceptable.

### 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; tests shall be performed on the product supplied and in accordance with ASTM D1056 for Type 2 sponge, except as otherwise specified herein.

The following testing shall be performed every 5 years and test reports shall be made available upon request:

**Table 1 - Physical property requirements**

Paragraph	Property	Test Sample	Requirements	Test Method
3.3.1	As Received			
3.3.1.1	Compression-Deflection	Test Slab	12-20 psi (83-138 kPa)	ASTM D1056 Temperature: 77 °F ± 9 °F (25 °C ± 5 °C) 25% deflection Discs may be plied to meet thickness for test
3.3.1.2	Density, Maximum	Test Slab or Disc		ASTM D1056
3.3.1.2.1	Under 0.25 Inch (6.35 mm)		0.030 lb/in <sup>3</sup> (830 kg/m <sup>3</sup> )	
3.3.1.2.2	0.25 Inch (6.35 mm) and Over		0.025 lb/in <sup>3</sup> (692 kg/m <sup>3</sup> )	
3.3.2	Brittleness Temperature, Maximum	Test Slab	-67 °F (-55 °C)	ASTM D746
3.3.3	Compression Set Percent of Original Deflection, Maximum	Test Slab or Disc	60%	ASTM D1056 Temperature: 212 °F ± 2 °F (100 °C ± 1 °C) Time: 22 hours ± 0.5 hour Test slabs or discs may not be plied

### 3.4 Quality

The product, as received by the purchaser, shall conform to dimensional requirements, 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 Tables 2A and 3A or 2B and 3B; measurements shall be made in accordance with ASTM D1056.

## 3.5.1 Sheet and Strip

## 3.5.1.1 Thickness

**Table 2A - Thickness tolerances, inch/pound units**

Nominal Thickness Inches	Tolerance	
	Inches Plus	Inches 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 - Thickness 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 - Length and width tolerances, inch/pound units**

Nominal Length and Width Inches	Tolerance	
	Inches Plus and Minus	
Up to 6, incl	0.125	
Over 6 to 18, incl	0.250	
Over 18	0.375	

**Table 3B - Length and width 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

The supplier of the product shall be responsible for performance of all required tests. The purchaser reserves the right to sample and perform any testing deemed necessary to ensure that the product conforms to the AMS requirements.

### 4.2 Classification of Tests

Tests for all technical requirements in Table 1 are applicable to both lot acceptance tests and preproduction tests. Testing per Table 1 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 the 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

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.

4.3.1.1 A lot shall be all sponge produced from the same batch of compound processed in one continuous production run and presented for the vendor's inspection at one time. A lot shall not exceed 500 pounds (227 kg) and may be packaged in smaller quantities and delivered under the basic lot approval provided lot identification is maintained.

4.3.1.2 A batch shall be the quantity of compound run through a mill or mixer at one time.

4.3.1.3 When a statistical sampling plan has been agreed upon by the purchaser and vendor, sampling shall be in accordance with such plan in lieu of sampling as in 4.3.1 and the report of 4.5 shall state that such plan was used.

#### 4.3.2 For Preproduction Tests

As agreed upon by the purchaser and vendor.

### 4.4 Approval

4.4.1 If required by the purchaser, sample sponge shall be approved by the purchaser before sponge for production use is supplied, unless such approval be waived by the purchaser. Results of tests on production sponge shall be essentially equivalent to those on the approved sample.

4.4.2 The vendor shall use ingredients, manufacturing procedures, processes, and methods of inspection on production sponge which are essentially the same as those used on the approved sample sponge. If necessary to make any change in ingredients, in type of equipment for processing, or in manufacturing procedures, the vendor shall submit for reapproval a statement of the proposed changes in ingredients and/or processing and, when requested, sample sponge. Production sponge made by the revised procedure shall not be shipped prior to receipt of reapproval.

### 4.5 Reports

The vendor of sponge shall furnish with each shipment a report showing the results of tests to determine conformance to the technical requirements. This report shall include the purchase order number, the vendor's compound number, lot number, AMS3196H, form or part number, and quantity.