

AERONAUTICAL MATERIAL SPECIFICATION

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

AMS 3199E

Issued 12-1-42

Revised 3-1-55

SYNTHETIC RUBBER SPONGE Chloroprene Type - Firm

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. FORM: Sheet, strip, molded shapes, or as ordered.
3. APPLICATION: Primarily for general applications requiring the use of open cell firm sponge rubber as pads and seals in the temperature range of -40 to +180 F.
4. TECHNICAL REQUIREMENTS:
 - 4.1 General:
 - 4.1.1 Weathering: When specified, the product shall have weather resistance acceptable to the purchaser as determined by a procedure agreed upon by purchaser and vendor.
 - 4.1.2 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.
 - 4.1.3 Finish: The top and bottom surfaces of sheet and strip, and the exterior surfaces of molded parts, shall have a natural skin finish.
 - 4.1.4 Color: Unless otherwise specified, the material shall be furnished in black only.
 - 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.
 - 4.2.1 As Received:

4.2.1.1 Compression-Deflection, psi	15 to 22	ASTM D1056-53T Temperature: 70-85 F Compressed to 75% original thickness
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4.2.1.2 Specific Volume

Unless otherwise specified, the specific volume for each nominal thickness shall be as specified below; a tolerance of $\pm 10\%$ will be allowed:

Nominal Thickness Inches	Specific Volume cu in. per lb
1/16	35
3/32	38
1/8	39
3/16	40
1/4	42
5/16	44
3/8	46
1/2	48
5/8	49
3/4	51
7/8	54
1	55
1-1/2	60

Ø 4.2.1.3 Hydrogen Ion Concentration

7.0 $\pm$ 1.0

See Note 1

4.2.2 Dry Heat Resistance:

See Note 2

4.2.2.1 Change in compression-deflection, % -5 to +30

Temperature: 212 F $\pm$ 2
Time: 22 hr

4.2.2.2 Change in specific volume, % -10 to +10

4.2.2.3 Surface Hardening

None

4.2.2.4 Bend (Flat)

No cracking
or checking4.2.3 Compression Set:

ASTM D395-53T, Method B

Ø 4.2.3.1 Per cent of original thickness, max 30

Temperature: 158 F $\pm$ 2
Time: 22 hr
Compressed to 50%
original thickness

Note 1. Dice approximately 1 cu in. of sponge to approximately 1/8 in. cubes or less and extract with continuous agitation for 1 hr with 100 ml of freshly distilled water. Determine pH of the extract.

Note 2. A sample of material 4 in. square shall be suspended in the oven by a wire attached to one corner of the sample. After heating, the sample shall be removed from the oven and trimmed to 2 in. square by removing 1 in. from each edge prior to testing. Standard compression-deflection specimens shall be cut from the sample and tested.

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

6. TOLERANCES: Unless otherwise specified, the following tolerances apply; measurements shall be made in accordance with ASTM D1056-53T:

6.1 Sheet and Strip:

6.1.1	Nominal Thickness Inch	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
6.1.2	Nominal Width Inches	
	6 and under	1/16
	Over 6 to 18, incl	1/8
	Over 18	1/4

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, form or part number, and quantity.
- 7.2 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.

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

9. PACKAGING:

- 9.1 Packaging shall be accomplished in such a manner as to ensure that the product, during shipment and storage, will not be permanently distorted, and will be protected against damage from exposure to weather or any normal hazard.
- 9.2 Each package shall be permanently and legibly marked in accordance with the latest issue of AMS 2810.

10. APPROVAL:

- 10.1 To assure adequate performance characteristics, compounds shall be approved by purchaser before material for production use is supplied, unless such approval be waived. Results of tests on production material shall be essentially equivalent to those on the approved sample.