

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 3246

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SYNTHETIC RUBBER Buna S Type (45-55)

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1. **ACKNOWLEDGMENT:** Vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **FORM:** Sheet, strip, tubing, extrusions, molded shapes, or as ordered.
3. **APPLICATION:** The compound shall be suitable for window channels, bumper pads, seals and chafing strips not exposed to oils or excessive weathering.
4. **QUALITY:** (a) It shall be uniform in quality, free from foreign materials or imperfections, tough and not easily torn by hand. It shall resist the embrittling action of low temperatures and oxidation.
(b) Parts shall be smooth and free from flash.
(c) If products have a vulcanized joint, the joint section shall have the same strength and size as the solid section.
5. **REQUIREMENTS:** (a) Physical Properties.- This material shall possess the following physical properties as received:

Shore Durometer "A" hardness	50 $\pm$ 5
Tensile Strength, psi	900 min
Elongation, %	350 min

All tensile tests required by this and succeeding paragraphs shall conform to ASTM D412-41, except that tensile strengths after all aging tests shall be based on the original unaged cross-sectional area.

(b) Oven Aging.- Tests shall be conducted in accordance with ASTM D573-42 for 70 hours at $212^{\circ} \pm 2^{\circ}\text{F}$. After aging, the surface shall be neither hard nor brittle, and specimens shall withstand bending 180° flat. The Shore Durometer "A" hardness change shall be within the limits of 0 to +15 points. The tensile strength shall have decreased by not more than 25% and the elongation by not more than 50% from the values found for the material as received.

(c) Compression Set.- Tests shall be conducted in accordance with ASTM D395-40T, Method B, under the following conditions:

Time	70 hours
Temperature	$212^{\circ} \pm 2^{\circ}\text{F}$
Compression, To	70% of original thickness

- (1) The maximum compression set shall be 70% when expressed as a percentage of the original deflection.
- (2) The maximum compression set shall be 21% when expressed as a percentage of the original thickness.



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5. REQUIREMENTS: (continued)

(d) **Low Temperature Brittleness.**- Tests shall be conducted in accordance with ASTM D736-43T for 5 hours at -40°F. The compound shall pass the brittleness test.

(e) **Resistance to Sunlight.**- The material shall carry additional agents, if necessary, to give reasonable resistance to cracking or exposure to sunlight and, when desired, may be compared as agreed between vendor and purchaser on actual exposure tests to material known to given satisfactory service.

6. SAMPLING: (a) Sampling procedures shall conform to ASTM D15-41. The vendor shall furnish sufficient material for such specimens from production run materials which he guarantees to be of equal quality to the material supplied, except where the purchaser desires specimens from production run parts, in which case the procedure in paragraph (b) shall be followed.

(b) When the form in which the material is furnished is unsuitable for the proper preparation of the required test specimens, the size of the test specimens shall be modified for adaptation to the finished part. This modification of the sampling procedure shall be agreed upon by both the vendor and purchaser. If the requirements of the specification cannot be met using the modified test specimens, the modified test requirements shall be agreed upon by both the vendor and the purchaser.

7. TOLERANCES: Unless otherwise specified on the drawing or purchase order, the following tolerances apply; all dimensions are in inches:

(a) **Sheet and Strip.-**

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

(b) **Tubing and Molded Hose.-**

Nominal Wall Thickness	Tolerance Plus and Minus
Less than 1/16	0.005
1/16 and over	10%

(c) **Extrusions and Molded Parts.**- Sections may be as much as plus or minus 0.005 inch outside of drawing limits provided the cross-sectional area is within the limits given by the drawing dimensions.

8. REPORTS: Unless otherwise specified, the vendor shall furnish three copies of a notarized report of the results of tests to determine conformance to this specification. This report shall include the purchase order number, material specification number, vendor's compound number, percentages and specific type of synthetic or synthetics used, part number and quantity.

