

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 3203

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Revised

SYNTHETIC RUBBER
Low Temperature Resistant (45-55)
(Polysulfide)

CANCELLED

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1. **ACKNOWLEDGMENT:** A vendor must 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 sleeves, fairings, grommets, and window channels, and other applications where low permanent set is not required.
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 hardening and embrittling action of low temperatures.

(b) Parts must be smooth and free from flash.

(c) If rings have a vulcanized joint, the joint section must 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, lb per sq in.	600 min
Elongation, %	500 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) Oil Aging - Tests shall be conducted in accordance with ASTM D471-40T, except that physical properties after aging shall be determined immediately after removal from the oil. Test conditions shall be as follows:

Medium	SAE-ASTM Rubber Processing Oil
	Viscosity 150 $\pm$ 10 secs. at 100°F
	Aniline Point 159° $\pm$ 3°F
Temperature	75° - 85°F
Time	70 hours

After aging, the surface shall neither be tacky nor show signs of decomposition. The Shore Durometer "A" hardness change shall be within the limits of 0 to -5 points. The tensile strength shall have decreased by not more than 10% and the elongation by not more than 10% from the values found for the material as received. The volume change shall be within the limits of -3 to +3%.

(c) Cold Aging: The cold resistance of the material shall be determined by the SAE-ASTM Bent Loop Method, which is as follows:

The specimen, a strip 4" X $\frac{1}{4}$ " X .075", is placed in a loop position between jaws 2" wide and $2\frac{1}{4}$ " apart. Each end of the specimen shall not extend more than $\frac{1}{4}$ " into each jaw clamp. After exposure to cold dry air for the specified time and temperature, the jaws are rapidly brought together until they are 1" apart.

Medium	Dry Air
Time	5 hours
Temperature	-70°F

After this test the specimen shall show no signs of cracking.

6. **SAMPLES:** Sampling procedures shall conform to ASTM D15-41. When the form in which the material is furnished is unsuitable for the proper preparation of the test specimens required, the vendor shall furnish sufficient material for such specimens from production run materials which he guarantess to be of equal quality to the material supplied.
7. **TOLERANCES:** Unless otherwise specified on the drawing or purchase order, the following tolerances apply; all dimensions are in inches:

(a) Sheet and Strip:

<u>Nominal Thickness</u>	<u>Tolerance plus or minus</u>
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:

<u>Nominal Wall Thickness</u>	<u>Tolerance plus or minus</u>
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.
9. **IDENTIFICATION:** (a) Sheets: Unless otherwise specified, each sheet shall be marked to show the manufacturer's identification, AMS 3203, and the thickness in inches. The characters shall be not less than 3/8 inch in height and shall be applied in rows of constantly recurring symbols from one edge of the sheet to the opposite edge with rows spaced approximately 5 inches apart. The characters shall be clearly legible, and shall be applied to the material by suitable means and suitable marking fluid, and shall not be obliterated by normal handling.