AERONAUTICAL MATERIAL SPECIFICATION

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

AMS 3252

Issued 11-1-44
Revised

SYNTHETIC RUBBER AND CORK COMPOSITION
General Purpose (55-65)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. FORM: Sheet, strip, molded shapes or as ordered.

3. APPLICATION: The compound shall be suitable for packings, seals, grommets, line support blocks, tank trap pads, and applications where cushioning and vibration dampening are of prime importance, except where extreme conditions of vibration and temperature or solvent action are encountered.

4. QUALITY: (a) It shall be uniform in quality, tough, smooth and free from flash.

(b) Any joint shall be vulcanized and the joint section shall have the same strength and size as the solid section.

(c) The material shall be composed of granulated cork uniformly dispersed in synthetic rubber compound.

5. REQUIREMENTS: (a) Physical Properties.- This material shall possess the following physical properties as received:

Property	Value	Method
Shore Durometer "A" Hardness	60 ± 5	ASTM D676-42T
Elongation, %	75 min	ASTM D412-41
Density, gm. per cc.	.91 to 1.08	ASTM D634-41T

Note: This method of determining hardness to be used wherever size permits.

(b) Fuel Aging.- Tests shall be conducted in accordance with ASTM D471-43T, except that determination of physical properties after aging shall be completed within five minutes after removal from the fuel. Test conditions shall be as follows:

Medium	62 Octane Gasoline containing no added aromatic hydrocarbon
Time	24 hours
Temperature	75° - 85° F.

After the aging period, the volume change shall be within the limits of 0 to + 25%, and the Shore Durometer "A" hardness change shall be within the limits of 0 to -10 points of the values found for the material as received. The increase in weight after removal from the fuel shall not be more than 15% of the weight of the material as received, and after 24 hours air drying at 75° to 85° F the weight shall not be less than 92% of the weight of the material as received.

(c) Oil Aging.- Tests shall be conducted in accordance with ASTM D471-40T, except that determination of physical properties after aging shall be completed within five minutes after removal from the oil. Test conditions shall be as follows:

Medium	Aircraft Engine Lubricating Oil Viscosity 98 ± 5 secs. at 212°F. Viscosity Index 95 min. Aniline Point 255° ± 2°F.
Temperature	212° ± 2°F.
Time	24 hours

After aging, the surface shall be neither tacky nor show signs of decomposition. The Shore Durometer "A" hardness change shall be within the limits of 0 to + 10 points, and the volume change shall be within the limits of -15 to + 15% of the value found for the material as received.

(d) Water Absorption.- Tests shall be conducted in accordance with ASTM D471-43T, except that determination of physical properties after aging shall be completed within five minutes after removal from the water. Test conditions shall be as follows:

Medium	Water
Time	1 hour
Temperature	212° ± 2°F.

The change in weight shall be within the limits of 0 to + 10%, the volume change within the limits of 0 to - 10%, and the Shore Durometer "A" hardness change shall be within the limits of -10 to + 5 points of the values for the material as received.

(e) Oven Aging.- Tests shall be conducted in accordance with ASTM D573-42 for 70 hours at 212° ± 2°F. After aging, the surface shall be neither hard nor brittle, and specimens shall withstand bending 180° flat without cracking. The Shore Durometer "A" hardness change shall be within the limits of 0 to + 15 points of the values for the material as received.

(f) Brittleness.- The cold resistance of the material shall be determined in accordance with ASTM D746-43T, except that test specimens shall be 0.125 ± 0.010 inch in thickness. The temperature of failure shall not be above -40°F.

(g) Compression Set.- Tests shall be conducted in accordance with ASTM D395-40T, Method B. Test conditions shall be as follows:

Time	22 hours
Temperature	158° ± 2°F.
Compression, To	75% of original thickness

(1) The maximum compression set shall be 80% when expressed as a percentage of the original deflection.

(2) The maximum compression set shall be 20% when expressed as a percentage of the original thickness.

(h) Weathering.- Unless otherwise specified, a weathering test shall be conducted as agreed between the purchaser and the vendor.

6. SAMPLING: (a) Sampling procedures shall conform to ASTM D15-41, except that the samples shall be 0.125 ± 0.010 inch in thickness. 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 buyer 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) Molded Parts.- Sections may be as much as plus and minus 0.005 inch outside of drawing limits provided the cross-sectional area is within the limits given by the drawing dimensions.

8. REPORTS: When 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: Unless otherwise agreed between the purchaser and the vendor, all material shall be identified and marked in accordance with the latest revision of AMS 2810.

10. PACKAGING: Packaging shall be accomplished in such a manner as to insure that the materials being shipped will not be permanently distorted or compressed, or be exposed to undue weathering, or harmful materials of any kind.

11. APPROVAL: A manufacturer shall not begin to supply material to this specification until samples are approved by the purchaser and after approval, the compounds and method of manufacture shall not be changed without notification to the purchaser. Results of tests on incoming shipments shall be essentially equal to those on the approved samples.