

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 3201E

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SYNTHETIC RUBBER Dry Heat Resistant (35-45)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
- Ø 2. FORM: Sheet, strip, molded shapes, extrusions, or as ordered.
3. APPLICATION: Primarily for packings, bushings, grommets, and seals where resistance to dry heat is of prime importance.
4. TECHNICAL REQUIREMENTS:
 - 4.1 General:
 - 4.1.1 Condition: Unless otherwise specified, a suitably cured product shall be furnished.
 - 4.1.2 Weathering: When specified, the product shall have weather resistance acceptable to the purchaser as determined by a procedure agreed upon by purchaser and vendor.
 - 4.1.3 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.
 - 4.2 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. When the product supplied is an extrusion of such shape that suitable test specimens cannot be cut from the product, a separate flat strip test sample shall be supplied upon request. This strip shall be prepared from 1 in. $\pm$ 1/16 OD by 0.075 in. $\pm$ 0.008 thick wall tubing which shall be mechanically split and flattened into a strip while being extruded and then cured in the same manner as production material.
 - 4.2.1 As Received:

4.2.1.1 Hardness, Durometer "A" or equiv.	40 $\pm$ 5	
4.2.1.2 Tensile Strength, psi, min		ASTM D112-51T, Die B or C
Ø 4.2.1.2.1 For parts other than extrusions	1000	
Ø 4.2.1.2.2 For extruded parts	800	
4.2.1.3 Elongation, %, min	300	ASTM D112-51T, Die B or C

4.2.2 Processing Oil Resistance:
(Immediate Deteriorated Properties)

ASTM D471-52T

Medium: ASTM Oil No. 3

Temperature: 212 F $\pm$ 2

Time: 70 hr

4.2.2.1 Hardness Change, Durometer "A"
or equiv. -15 to +10

4.2.2.2 Tensile Strength Reduction, %, max 50
(based on area before immersion)

Ø 4.2.2.3 Elongation Reduction, %, max 40

Ø 4.2.2.4 Volume Change (Method A), % -10 to +50

4.2.2.5 Decomposition None

4.2.2.6 Surface Tackiness None

4.2.3 Dry Heat Resistance:

ASTM D865-53T

Temperature: 300 F $\pm$ 2

Time: 70 hr

4.2.3.1 Hardness Change, Durometer "A"
or equiv. 0 to +20

4.2.3.2 Tensile Strength Reduction, %, max

4.2.3.2.1 For parts other than extrusions 60

Ø 4.2.3.2.2 For extruded parts 70

4.2.3.3 Elongation Reduction, %, max

4.2.3.3.1 For parts other than extrusions 70

Ø 4.2.3.3.2 For extruded parts 85

4.2.3.4 Bend (flat) No cracking
or checking

Ø 4.2.4 Compression Set:

ASTM D395-53T, Method B

Temperature: 212 F $\pm$ 2

Time: 70 hr

Compressed to 0.300 in.
thick

4.2.4.1 Per cent of original deflection, max 75

4.2.4.2 Per cent of original thickness, max 30

4.2.5 Low Temperature Brittleness: Pass

ASTM D736-46T (See Note 1)

Temperature: -40 F $\pm$ 2

Time: 5 hr

Note 1. To be specified only until satisfactory replacement test and values
are established.

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:

6.1 Sheet and Strip:

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

6.2 Tubing:

6.2.1 Nominal OD or ID (not both), Inch	Tolerance Plus and Minus	Ovality (See Note 2)
1/2 and under	0.020 in.	10%
Over 1/2 to 1, incl	0.030 in.	15%
Over 1	4%	15%

Note 2. Ovality applies to tubing ordered in straight lengths with wall thickness of 1/16 in. and over, and shall be computed from the differences of the minor and major axis diameter measurements, taken at the same location on the tube, expressed as a percentage of the nominal diameter.

6.2.2	Nominal Wall Thickness Inch	Tolerance Plus and Minus
	Under 1/16	0.005 in.
	1/16 and over	10%

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.