# AEROSPACE
# MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

**AMS 3202F**

Issued 4-1-43
Revised 2-15-65


## SYNTHETIC RUBBER
Dry Heat Resistant
55 - 65

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, tubing, 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 the issue of specified ASTM methods listed in the latest issue of AMS 2350, insofar as practicable. When the product supplied is an extrusion of such shape that suitable Ø 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. ± 1/16 OD by 0.075 in. ± 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:

| | | |
|---|---|---|
| Ø 4.2.1.1 Hardness, Durometer "A" or equiv. | 60 ± 5 | ASTM D676 |
| 4.2.1.2 Tensile Strength, psi, min | 1500 | ASTM D412, Die B or C |
| 4.2.1.3 Elongation, %, min | 250 | ASTM D412, Die B or C |
| 4.2.2 Processing Oil Resistance: (Immediate Deteriorated Properties) | | ASTM D471<br>Medium: ASTM Oil No. 3<br>Temperature: 100 C ± 1 (212 F ± 1.8)<br>Time: 70 hr |
| 4.2.2.1 Hardness Change, Durometer "A" or equiv. | -15 to +10 | |
| 4.2.2.2 Tensile Strength Change, %, max (based on area before immersion) | -50 | |
| 4.2.2.3 Elongation Change, %, max | -40 | |
| 4.2.2.4 Volume Change, % | -10 to +50 | |

| | | |
|---|---|---|
| 4.2.2.5 Decomposition | None | |
| 4.2.2.6 Surface Tackiness | None | |
| Ø 4.2.3 Dry Heat Resistance: | | ASTM D865<br>Temperature: 150 C ± 3 (302 F ± 5.4)<br>Time: 70 hr |
| 4.2.3.1 Hardness Change, Durometer "A" or equiv. | 0 to +20 | |
| 4.2.3.2 Tensile Strength Change, %, max | | |
| 4.2.3.2.1 For parts other than extrusions | -60 | |
| 4.2.3.2.2 For extruded parts | -70 | |
| 4.2.3.3 Elongation Change, %, max | | |
| 4.2.3.3.1 For parts other than extrusions | -70 | |
| 4.2.3.3.2 For extruded parts | -85 | |
| 4.2.3.4 Surface Hardening | None | |
| 4.2.3.5 Bend (flat) | No cracking or checking | |
| Ø 4.2.4 Compression Set: | | ASTM D395, Method B<br>Temperature: 100 C ± 1 (212 F ± 1.8)<br>Time: 70 hr |
| 4.2.4.1 Per cent of original deflection, max | 50 | |
| Ø 4.2.4.2 Per cent of original thickness, max | 13 | |
| 4.2.5 Low Temperature Brittleness: | Pass | ASTM D736 (See Note 1)<br>Temperature: -40 C ± 1 (-40 F ± 1.8)<br>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 imperfections detrimental to fabrication, appearance, or performance of parts.

6. TOLERANCES: Unless otherwise specified, the following tolerances apply:

6.1 Sheet and Strip:

| Nominal Thickness Inches | Tolerance, Inch Plus and Minus |
|---|---|
| Up to 1/8, incl | 1/64 |
| Over 1/8 to 1/2, incl | 1/32 |
| Over 1/2 | 3/64 |