



AEROSPACE MATERIAL SPECIFICATION

AMS3310™**REV. A**

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Superseding AMS3310

(R) Elastomer: Silicone Rubber (MQ/VMQ)
Flame Retardant, Low Smoke Density, Low Smoke Toxicity,
High Strength, 65 - 75 Durometer Type A Hardness
For Products in Pressurized Aircraft Compartment Interiors

RATIONALE

Five-Year Review and update of this specification and to incorporate new AMS3XXX series template.

1. SCOPE

1.1 Form

This specification covers a silicone (MQ/VMQ) elastomer that can be used to manufacture product in the form of molded sheet, strips, and shapes, color coded white in accordance with ARP1527.

1.2 Application

This material type exhibits resistance to deterioration by weathering and petroleum-based lubrication oils, as well as hydraulic fluid. This material type has a typical service temperature range of -80 to +400 °F (-62 to +204 °C) and remains flexible over the temperature range noted. The service temperature range of the material is a general temperature range, but the presence of particular fluids and specific design requirements may modify this range. Each application should be considered separately. It is the responsibility of the user to determine that this specification is appropriate for the environments (temperature range, fluids exposure, etc.) in which it is sought to be used. This material has been used typically for parts in pressurized aircraft compartment interiors such as grommets, tube supports, clamp cushions, bushings and seals where flame resistance, low smoke density and non-toxic gas generation are required, but usage is not limited to such applications. These products are not normally suitable for use in contact with gasoline and aromatic fuels and low alkaline petroleum-based fluids due to excessive swelling of the elastomer.

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1.3 Order of Precedence

This specification is in addition to and in no way limiting, superseding, or abrogating any contractual obligation as required by the applicable procurement document. In the event of conflict in requirements, the order of precedence shall be:

1. Procurement Document or Contractual Agreement and all statutory and regulatory requirements (excluding this document)
2. Applicable purchaser's drawing and/or design data
3. Specifications referenced on the drawing
4. This document
5. All specifications referenced in this document

1.4 Safety - Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2279	Tolerances Rubber Products
AMS2810	Identification and Packaging, Elastomeric Products
ARP1527	Color Coding - Elastomers for Tube Clamp Cushions
AS1241	Fire Resistant Phosphate Ester Hydraulic Fluid for Aircraft

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D297	Standard Test Methods for Rubber Products - Chemical Analysis
ASTM D395	Standard Test Methods for Rubber Property - Compression Set
ASTM D412	Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension
ASTM D471	Standard Test Methods for Rubber Property - Effect of Liquids
ASTM D573	Standard Test Methods for Rubber - Deterioration in an Air Oven

- ASTM D624 Standard Test Methods for Tear Strength of Conventional Vulcanized Rubbers and Thermoplastic Elastomers
- ASTM D1329 Evaluating Rubber Property - Retraction at Low Temperature (TR Test)
- ASTM D2240 Standard Test Methods for Rubber Property - Durometer Hardness
- ASTM E162 Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source
- ASTM E662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials

2.3 FAA Publications

Available from Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591, Tel: 866-835-5322, www.faa.gov.

Federal Aviation Regulations - Part 25, Fire Protection, Section 25.853 - Compartment Interiors, Appendix F

2.4 Other Publications

Available online from the National Conference of Standards Laboratories, www.ncsli.org.

ANSI/ASQ Z1.4 Sampling Procedures and Tables for Inspection by Attributes

3. TECHNICAL REQUIREMENTS

3.1 Material

Shall be prepared from ingredients as shall be necessary to achieve the requirements detailed in this standard and shall be a compound, based on the polymer specified in 1.1, suitably cured to produce a product meeting the requirements of 3.2. Material shall be based on 100% virgin silicone (MQ/VMQ) elastomer. Reprocessed vulcanized material is not acceptable. The material shall not contain any fabric reinforcement unless otherwise specified.

3.1.1 The color of the product shall be white in accordance with ARP1527.

3.1.2 The test fluids used for soak testing shall be the two commercially available, low density phosphate ester hydraulic fluids that meet AS1241, Type IV, Class 1 requirements. Fluid resistance tests shall be performed in each fluid independently, each with its own set of specimens. Test requirements will remain the same for all test fluids.