

**AEROSPACE
MATERIAL
SPECIFICATION**



AMS3632

REV. F

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Superseding AMS3632E

Tubing, Plastic, Electrical Insulation
Irradiated Polyvinylidene Fluoride, Semi-Rigid, Heat-Shrinkable
2 to 1 Shrink Ratio

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature.

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1. SCOPE:

1.1 FORM: This specification covers an irradiated, thermally-stabilized, flame-resistant, modified-polyvinylidene-fluoride plastic in the form of extra-thin-wall tubing.

1.2 Applications: Primarily for use as a semi-rigid, electrical insulation tubing whose diameter can be reduced to a predetermined size by heating to 175°C (347°F) or higher. This tubing is stable under the following conditions:

-55" to +175°C (-67° to +347°F)	Continuous
-55" to +200°C (-67° to +392°F)	15,000 hours
-55" to +240°C (-67° to +464°F)	1,000 hours
-55" to +280°C (-67° to +536°F)	110 hours
-55" to +315°C (-67° to +599°F)	24 hours
-55" to +350°C (-67° to +662°F)	5 hours

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 ASTM Publications: Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM D 471 - Rubber Property - Effect of Liquids
ASTM D 910 - Aviation Gasolines
ASTM D 2671 - Testing Heat-Shrinkable Tubing for Electrical Use
ASTM G 21 - Determining Resistance of Synthetic Polymeric Materials to Fungi

2.2 U.S. Government Publications: Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

2.2.1 Military Specifications:

MIL-H-5606 - Hydraulic Fluid, Petroleum Base, Aircraft, Missile, and Ordnance
MIL-T-5624 - Turbine Fuel, Aviation, Grades JP-4 and JP-5
MIL-A-8243 - Anti-icing and Deicing-Defrosting Fluid

2.2.2 Military Standards:

MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

3.1 Materials: Shall be an irradiated, thermally-stabilized, flame-resistant, modified-polyvinylidene fluoride plastic.

3.2 Color: Shall be in a standard unpigmented state, transparent to translucent, light tan in color.

3.3 Properties: Tubing shall conform to the following requirements; reported values shall be the average of all specimens tested for each requirement. Except as otherwise specified, herein, tests shall be performed in accordance with ASTM D 2671 insofar as practicable.

3.3.1 Recovered Tubing: The following requirements apply to tubing after being shrunk by heating to $200^{\circ}\text{C} \pm 5$ ($392^{\circ}\text{F} \pm 9$) in a convection-current air oven with an air velocity of 100 - 200 feet per minute (0.5 - 1.0 m/second) past the tubing, holding at heat for not less than 3 minutes, removing from the oven, and conditioning for not less than 4 hours at $23^{\circ}\text{C} \pm 2$ ($73^{\circ}\text{F} \pm 4$) and 45 - 55% relative humidity.

3.3.1.1 Tensile Strength, minimum
Jaw separation rate 2.0 inches per minute (0.85 mm/second) 5000 psi (34.5 MPa)

3.3.1.2 Elongation, minimum 150%

3.3.1.3 Dielectric Strength (short time test), minimum 600 volts/mil (23,622 V/mm)