SAE Aerospace
An SAE International Group

# AEROSPACE MATERIAL SPECIFICATION

SAE AMS3588 REV. E

Issued 1969-11
Revised 1993-01
Stabilized 2011-09

Superseding AMS3588D

## Plastic Tubing, Electrical Insulation
## Irradiated Polyolefin, Clear, Very Flexible, 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. Design authorities may determine that this document is no longer to be used for new design. This determination should be made by each design authority.

STABILIZED NOTICE

This document has been declared "Stabilized" by SAE AE-8D, Wire and Cable Committee, and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.



**TO PLACE A DOCUMENT ORDER:** **Tel: 877-606-7323 (inside USA and Canada)**
**Tel: +1 724-776-4970 (outside USA)**
**Fax: 724-776-0790**
**Email: CustomerService@sae.org**
**SAE WEB ADDRESS:** **http://www.sae.org**

**SAE values your input. To provide feedback on this Technical Report, please visit**
**http://www.sae.org/technical/standards/AMS3588E**

1. SCOPE:

1.1 Form:

This specification covers an irradiated, thermally-stabilized, modified polyolefin plastic in the form of thin-wall, heat-shrinkable tubing with a low recovery temperature.

1.2 Application:

This tubing has been used typically as a very flexible, electrical insulation tubing whose diameter can be reduced to a predetermined size by heating to 100 °C (212 °F) or higher, but usage is not limited to such applications. This tubing is stable for continuous exposure from -55 to +135 °C (-67 to +275 °F).

1.2.1 For flame-retardant, opaque tubing, refer to AMS 3587.

1.3 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 following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 3587 Plastic Tubing, Electrical Insulation, Irradiated Polyolefin, Pigmented, Very Flexible, Heat Shrinkable, Low Recovery Temperature, 2 to 1 Shrink Ratio

2.2 ASTM Publications:

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

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

2.3 U.S. Government Publications:

Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

MIL-H-5606 Hydraulic Fluid, Petroleum Base, Aircraft, Missile, and Ordnance
MIL-T-5624 Turbine Fuel, Aviation, Grades JP-4 and JP-5
MIL-STD-2073-1 DOD Materiel, Procedures for Development and Application of Packaging Requirements

3. TECHNICAL REQUIREMENTS:

3.1 Material:

Shall be an irradiated, thermally-stabilized, modified polyolefin plastic.

3.2 Color and Transparency:

Shall be colorless and sufficiently transparent to allow relatively undistorted visibility through one wall thickness. Typewritten letters shall be legible when viewed through one wall thickness pressed onto the typewritten paper. Transparency shall apply to tubing in the expanded form (as supplied) and after tubing has been shrunk as specified in 3.3.1.

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.

3.3.1 Recovered Tubing: The requirements shown in Table 1 apply to tubing after being shrunk by heating to 125 °C ± 3 (257 °F ± 5) in a convection-current air oven with an air velocity of 100 to 200 feet/minute (0.5 to 1.0 m/second) past the tubing, holding at heat for not less than three minutes, removing from the oven, and conditioning for not less than four hours at 23 °C ± 2 (73 °F ± 4) and 45 to 55% relative humidity: