

AEROSPACE MATERIAL SPECIFICATION

SAE AMS-T-81914

REV. A

Issued 1998-07
Cancelled 2013-12

Superseded by AS81914

Tubing, Plastic, Flexible, Convuluted, Conduit,
General Specification for

RATIONALE

This specification has been transferred from the SAE AMS Committee 'P' to the SAE AE8-C1 Committee. This document was intended as a parts specification but was under the jurisdiction of a materials committee. Considering this is a parts specification this revision cancels the AMS-T-81914 material standard and superceeds with AS81914 parts standard. All part numbers will remain M81914 in accordance with SAE guidelines.

CANCELLATION NOTICE

This specification has been declared "CANCELLED" by the Aerospace Materials Division, SAE, as of June 2012 and has been superseded by AS81914. The requirements of the latest issue of AS81914 shall be fulfilled whenever reference is made to the cancelled AMS-T-81914. By this action, this document will remain listed in the Numerical Section of the Index of Aerospace Material Specifications, noting that it has been superseded by AS81914.

Cancelled specifications are available from SAE.

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NOTICE

This document has been taken directly from U.S. Military Specification MIL-T-81914(AS), Supplement 1, and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE technical standards. The initial release of this document is intended to replace MIL-H-81914(AS), Supplement 1. Any part numbers established by the original specification remain unchanged.

The original Military Specification was adopted as an SAE standard under the provisions of the SAE Technical Standards Board (TSB) Rules and Regulations (TSB 001) pertaining to accelerated adoption of government specifications and standards. TSB rules provide for (a) the publication of portions of unrevised government specifications and standards without consensus voting at the SAE Committee level, and (b) the use of the existing government specification or standard format.

Under Department of Defense policies and procedures, any qualifications requirements and associated qualified products lists are mandatory to DOD contracts. Any requirement relating to qualified products lists (QPL's) has not been adopted by SAE and is not part of this technical report.

1. SCOPE:

1.1 Scope:

This specification establishes requirements for plastic convoluted tubing that provides mechanical protection and support for electric wire bundles. The continuous operating temperatures range from -67°F (-55°C) to 500°F (260°C) (see 6.1).

1.2 Classification:

The properties of the convoluted tubings shall be as specified in the applicable specification sheet.

SPECIFICATION SHEETS

MIL-T-81914/1(AS) TUBING, PLASTIC, FLEXIBLE, CONVOLUTED,
POLYTETRAFLUOROETHYLENE, STANDARD CONVOLUTIONS
MIL-T-81914/2(AS) TUBING, PLASTIC, FLEXIBLE, CONVOLUTED,
POLYTETRAFLUOROETHYLENE, CLOSE CONVOLUTION
MIL-T-81914/3(AS) TUBING, PLASTIC, FLEXIBLE, CONVOLUTED, FLUORINATED ETHYLENE
PROPYLENE, STANDARD CONVOLUTION
MIL-T-81914/4(AS) TUBING, PLASTIC, FLEXIBLE, CONVOLUTED, FLUORINATED ETHYLENE
PROPYLENE, CLOSE CONVOLUTION

2. APPLICABLE DOCUMENTS:

The following publications, of the issue in effect on date of invitation for bids or request for proposal, form a part of the specification to the extent specified herein.

2.1 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM D 638 Test for Tensile Properties of Plastics
ASTM D 792 Tests for Specific Gravity and Density of Plastics by Displacement
ASTM D 876 Testing Nonrigid Vinyl Chloride Polymer Tubing
ASTM D 1924 Determining Resistance of Synthetic Polymeric Materials to Fungi

2.2 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue,
Philadelphia, PA 19111-5094.

SS-S-550	Sodium Chloride, Technical for Water Softening Units
PPP-B-636	Box, Fiberboard
PPP-B-640	Box, Fiberboard, Corrugated, Triple-Wall
MIL-P-116	Preservation, Methods of
MIL-H-5606	Hydraulic Fluid, Petroleum Base, Aircraft, Missile and Ordnance
MIL-T-5624	Turbine Fuel, Aviation, Grades JP-4 and JP-5
MIL-I-7444	Insulation Sleeving, Electrical, Flexible
MIL-L-7808	Lubricating Oil, Aircraft Turbine Engine, Synthetic Base
MIL-A-8243	Anti-Icing and Deicing-Defrosting Fluid
MIL-L-23699	Lubricating Oil, Aircraft Turbine Engines, Synthetic Base
MIL-STD-104	Limits for Electrical Insulation Color
MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	Marking for Shipment and Storage
MIL-STD-147	Palletized and Containerized Unit Loads 40 Inch X 48 Inch Pallets, Skids, Runners, or Pallet Type Base

2.3 Uniform Freight Classification Publication:

Available from Uniform Freight Classification Committee, 202 Union Station, Chicago, Illinois 60606.

Uniform Freight Classification Rules and Container Specification for Rail Shipments

2.4 National Motor Freight Classification Publication:

Available from National Classification Board, Sixteenth Street, Washington, D.C. 20002.

National Motor Freight Classification Rules and Container Specifications for Truck Shipments

3. REQUIREMENTS:

3.1 Specification sheets:

The individual item requirements shall be as specified herein and in accordance with the applicable specification sheets.

3.2 First article:

When specified by the procuring activity (see 6.2), the products furnished under this specification shall have been tested and have passed the first article inspection of 4.3.

3.3 Material:

The material used to fabricate the tubing shall be of the polymer type specified in the applicable specification sheet and shall be formulated to meet the requirements of this specification.

3.4 Convolution type:

The tubing supplied under this specification shall have right hand thread helical or annular type convolutions (see Figure 1). The availability of each is noted in the applicable specification sheet.

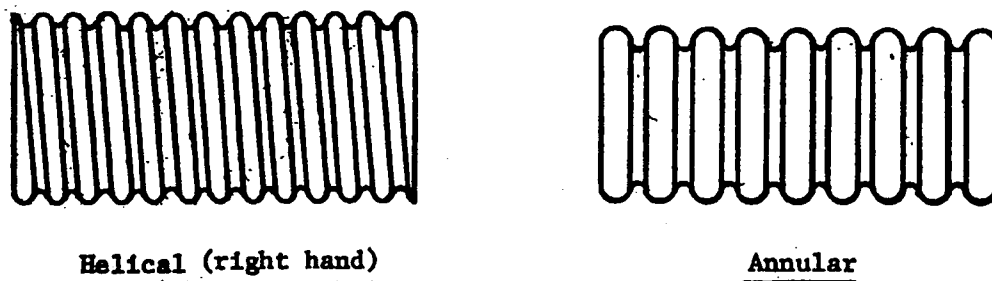


FIGURE 1. Convolution Type

3.5 Data:

Unless otherwise specified by the procuring activity, no data, other than the test reports which accompany the first article test samples (4.3.2), is required by this specification or by the documents referenced in Section 2.

3.6 Construction details:

When examined as specified in 4.6.1, all construction details - dimensions, tolerances, weights, and convolutions per inch shall be in accordance with the applicable specification sheet.

3.7 Shelf life:

After storage for two years at 65 to 95°F, the convoluted tubing shall meet the as received requirements for low temperature flexibility, tensile strength and elongation. The manufacturer shall certify to this requirement. Certification shall be forwarded by the manufacturer as part of the test report required in 4.3.2.

3.8 Physical property requirements:

Physical properties shall be as specified in Table I. The specific values shall be in accordance with the applicable specification sheet.

3.8.1 Abrasion resistance: When an abrasion resistance requirement is desired, the procuring activity shall specify the test method and the desired values (see 6.2). The supplier shall forward certification to this requirement as part of the test report required in 4.3.2.

3.9 Workmanship:

When examined visually, the convoluted tubing shall be free from internal voids, blisters, bumps, tears, pinholes, longitudinal seams, cracks, foreign matter or other defects that would be detrimental to appearance and performance.

TABLE I. Physical Property

Property	Test Method Paragraph
Stress in psi @ 10% strain	4.6.2
Specific gravity	4.6.3
Crush resistance	4.6.4
Low temperature flexibility	4.6.5
Heat shock	4.6.6
Heat resistance	4.6.7
Fluid resistance	4.6.8
Flammability	4.6.9
Fungus resistance	4.6.10
Dielectric breakdown	4.6.11