



AEROSPACE STANDARD

AS1472™**REV. B**

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Revised 2020-04

Superseding AS1472A

Hose Assembly, Low Pressure, Potable Water

RATIONALE

Add Parts Standards Listings and removed/replaced cancelled publications.

1. SCOPE

This specification covers three types of lightweight, low pressure, wire, or fabric reinforced hose assemblies primarily for use in aircraft potable water systems.

1.1 Types

Hose assemblies furnished under this specification shall be of the following types:

Type I Flexible, flame retardant, operating temperature -65 to +275 °F (-54 to +135 °C).

Type II Semi-rigid, self-extinguishing, operating temperature -65 to +275 °F (-54 to +135 °C).

Type III Semi-rigid, flame retardant, operating temperature -40 to +160 °F (-40 to +71 °C).

2. REFERENCES

The following publications form a part of this document 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. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 Applicable Documents

2.1.1 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.

AMS2700 Passivation of Corrosion Resistant Steels

AMS4112 Aluminum Alloy Bars, Rods, and Wire, 4.4Cu - 11.5Mg - 0.6Mn (2024-T6), Rolled, Drawn, or Cold Finished

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SAE WEB ADDRESS:

Full document details: SAE AS1472B

For more information on this standard, visit
<https://www.sae.org/standards/content/AS1472B/>

Documents
Document Sharing Hub

AMS4117	Aluminum Alloy, Rolled or Cold Finished Bars, Rods, and Wire and Flash Welded Rings, 1.0Mg - 0.60Si - 0.28Cu - 0.20Cr (6061; -T6, -T651), Solution and Precipitation Heat Treated
AMS4120	Aluminum Alloy, Rolled or Cold Finished Bars, Rods, and Wire, 4.4Cu - 1.5Mg - 0.60Mn (2024), Solution Heat Treated and Naturally Aged (T4), Solution Heat Treated, Cold Worked, and Naturally Aged (T351)
AMS4772	Silver Alloy, Brazing Filler Metal, 54Ag - 40Cu - 5.0Zn - 1.0Ni, 1325 to 1575 °F (718 to 857 °C) Solidus-Liquidus Range
AMS4778	Nickel Alloy, Brazing Filler Metal, 92Ni - 4.5Si - 3.1B, 1800 to 1900 °F Solidus-Liquidus Range
AMS5556	Steel, Corrosion and Heat-Resistant, Seamless or Welded Hydraulic Tubing, 18Cr - 11Ni - 0.70Cb (SAE 30347) Solution Heat Treated
AMS5557	Steel, Corrosion and Heat-Resistant, Seamless or Welded Hydraulic Tubing, 18.5Cr - 10.5Ni - 0.40Ti (SAE 30321) Solution Heat Treated
AMS5567	Steel, Corrosion Resistant, Seamless or Welded Hydraulic Tubing, 19Cr - 10Ni (SAE 30304) Solution Heat Treated
AMS5570	Steel, Corrosion and Heat-Resistant, Seamless Tubing, 18Cr - 11Ni - 0.40Ti (321) Solution Heat Treated
AMS5571	Steel, Corrosion and Heat-Resistant, Seamless Tubing, 18Cr - 10.5Ni - 0.70Cb (Nb) (347) Solution Heat Treated
AMS5575	Steel, Corrosion and Heat-Resistant, Welded Tubing, 18Cr - 10.5Ni - 0.70Cb (Nb) (347) Solution Heat Treated
AMS5636	Steel, Corrosion-Resistant, Bars and Wire, 18Cr - 9.0Ni (SAE 30302), Solution Heat Treated and Cold Drawn, 100 ksi (689 MPa) Tensile Strength
AMS5637	Steel, Corrosion Resistant, Bars and Wire, 18Cr - 9.0Ni (SAE 30302), Solution Heat Treated, Cold Drawn and Stress Relieved, 125 ksi (862 MPa) Tensile Strength
AMS5639	Steel, Corrosion-Resistant, Bars, Wire, Forgings, Tubing, and Rings, 19Cr - 10Ni, Solution Heat Treated
AMS5645	Steel, Corrosion and Heat Resistant, Bars, Wire, Forgings, Tubing, and Rings, 18Cr - 10Ni - 0.40Ti (321) Solution Heat Treated
AMS5646	Steel, Corrosion and Heat-Resistant, Bars, Wire, Forgings, Tubing, and Rings, 18Cr - 11Ni - 0.60Cb (Nb) (347) Solution Heat Treated
AMS5648	Steel, Corrosion and Heat-Resistant, Bars, Wire, Forgings, Tubing, and Rings, 17Cr - 12Ni - 2.5Mo (316) Solution Heat Treated
AMS5685	Steel, Corrosion Resistant, Safety Wire, 18Cr - 11.5Ni (SAE 30305) Solution Heat Treated, Cold Finished
AMS5688	Steel, Corrosion-Resistant, Wire, 18Cr - 9.0Ni (SAE 30302) Spring Temper
AMS5689	Steel, Corrosion and Heat Resistant, Wire, 18Cr - 10.5Ni - 0.40Ti (SAE 30321) Solution Heat Treated
AMS5690	Steel, Corrosion and Heat Resistant, Wire, 17Cr - 12Ni - 2.5 Mo(SAE 30316) Solution Heat Treated
AMS5697	Steel, Corrosion-Resistant, Wire, 19Cr - 9.5Ni (SAE 30304) Solution Heat Treated
AMS-QQ-S-763	Steel, Corrosion Resistant, Bars, Wire, Shapes, and Forgings



ARP908	Torque Requirements, Installation and Qualification Test, Hose and Tube Fitting
AS4370	Nut, Fitting, Retained
AS4375	Fitting End, Flareless, Design Standard
AS4395	Fitting End, Flared, Tube Connection, Design Standard
AS8879	Screw Threads - UNJ Profile, Inch Controlled Radius Root with Increased Minor Diameter
AS21921	Nut, Sleeve Coupling, Flareless

2.1.2 ASME Publications

Available from ASME, P.O. Box 2900, 22 Law Drive, Fairfield, NJ 07007-2900, Tel: 800-843-2763 (U.S./Canada), 001-800-843-2763 (Mexico), 973-882-1170 (outside North America), www.asme.org.

ASME Y14.100 Engineering Drawing Practices

2.1.3 NAS Publications

Available from Aerospace Industries Association, 1000 Wilson Boulevard, Suite 1700, Arlington, VA 22209-3928, Tel: 703-358-1000, www.aia-aerospace.org.

NAS847	Caps and Plugs, Protective, Dust and Moisture Seal - Rev. 1
NAS1367	Fittings - Coated Lubricant and Sealant
NAS1760	Fitting End, Flareless Acorn, Standard Dimension for

2.1.4 U.S. Government Publications

Copies of these documents are available online at <https://quicksearch.dla.mil>.

2.1.4.1 Federal

FAR 25.853	Federal Aviation Regulation, Volume III, Part 25
308	Public Health Publication

2.1.4.2 Military

(Copies of documents required by suppliers in connection with specific procurement functions shall be obtained from the procuring activity or as directed by the Contracting Officer.)

MIL-A-8625	Anodic Coating for Aluminum and Aluminum Alloys
MIL-B-7883	Brazing of Steels, Copper, Copper Alloys, Nickel Alloys, Aluminum and Aluminum Alloys
MIL-STD-129	Marking for Shipment and Storage
MIL-STD-810	Environmental Test Methods

2.1.5 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 A580/A580M	Standard Specification for Stainless Steel Wire
ASTM A967	Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts
ASTM B209	Aluminum 1100, Plate and Sheet – UNS A91100
ASTM B210	Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes
ASTM B211	Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire
ASTM A313/A313M	Standard Specification for Stainless Steel Spring Wire
ASTM D570	Standard Method of Test for Water Absorption of Plastics
ASTM E1417/E1417M	Standard Practice for Liquid Penetrant Testing
ASTM Y14.100	Engineering Drawing Practices

2.1.6 AWS Publications

Available from American Welding Society, 8669 NW 36 Street, #130, Miami, FL 33166-6672, Tel: 1-800-443-9353 or 305-443-9353, www.aws.org.

AWS A5.14/A5.14M	Specification for Nickel and Nickel-Alloy Bare Welding Electrodes and Rods
AWS D17.1	Specification for Fusion Welding for Aerospace Applications

2.2 Related Publications

2.2.1 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.

The hose assembly parts standards applicable to this procurement standard include:

AS1473	Hose Assembly, Flexible, Low Pressure, Flareless, Potable Water, Straight to Straight
AS1474	Hose Assembly, Flexible, Low Pressure, Flareless, Potable Water, Straight to 45°
AS1475	Hose Assembly, Flexible, Low Pressure, Flareless, Potable Water, Straight to 90°
AS1476	Hose Assembly, Flexible, Low Pressure, Flareless, Potable Water, 45° to 45°
AS1477	Hose Assembly, Flexible, Low Pressure, Flareless, Potable Water, 45° to 90°
AS1478	Hose Assembly, Flexible, Low Pressure, Flareless, Potable Water, 90° to 90°
AS1483	Hose Assembly, Semi-Rigid, Low Pressure, Flareless, Potable Water, Straight to Straight
AS1484	Hose Assembly, Semi-Rigid, Low Pressure, Flareless, Potable Water, Straight to 45°
AS1485	Hose Assembly, Semi-Rigid, Low Pressure, Flareless, Potable Water, Straight to 90°

AS1486 Hose Assembly, Semi-Rigid, Low Pressure, Flareless, Potable Water, 45° to 45°

AS1487 Hose Assembly, Semi-Rigid, Low Pressure, Flareless, Potable Water, 45° to 90°

AS1488 Hose Assembly, Semi-Rigid, Low Pressure, Flareless, Potable Water, 90° to 90°

3. REQUIREMENTS

3.1 Qualification

Any hose assembly furnished under this specification shall be a product identical in hose construction and end fitting attachment method to specimens which have been tested and passed the qualification test specified herein.

3.2 Materials

The hose assembly materials shall be uniform in quality, free from defects, suitable for the intended use, consistent with good manufacturing practices and shall conform to the applicable specifications and the requirements specified herein. Materials used in these hose assemblies shall be selected from those listed in Table 1.

3.3 Design and Construction

The hose assembly shall consist of a smooth inner tube with suitable reinforcement braid or covering to meet system requirements. End fittings shall be permanently attached to the hose by crimping or swaging. Standard end fittings shall be designed to mate with AS4375 or AS4395 fitting end, as applicable. Splices shall not be used in any hose assembly less than 120 inches in length and shall be used only for economical construction of long assemblies. Splice design and attachment method shall be the same construction as the hose end fitting.

3.3.1 End Fittings

3.3.1.1 Insert Fitting (Nipple and Elbow)

All end fitting inserts shall be made of Table 1 materials. The end fitting inserts (nipple and elbow) shall be constructed as a single piece unit or the nipple and the elbow shall be constructed of parts fusion welded or lap joint brazed together. Standard hose assemblies shall have flared fittings to mate with AS4395 or flareless fittings according to NAS1760 to mate with AS4375 in accordance with applicable SAE Standards (see 2.2.2). The insert shall have a minimum hardness of Rockwell B80.

3.3.1.2 Coupling Nuts

Coupling nuts shall be dimensionally equivalent to AS21921 or AS4370. Wire retained coupling nuts shall have the retaining wire inserted in a clockwise direction when viewed from the open end of the nut. Nuts shall be made of Table 1 materials. Aluminum nuts shall be used where practical to facilitate light weight construction. Threads and internal surfaces of aluminum nuts shall be dry film lubricated per NAS1367. Lubricant on external surfaces of the nut shall not be reason for rejection. Thread tolerances shall be maintained after application of lubricant.

3.3.1.3 Screw Threads

All fitting threads shall be Class 3B in accordance with AS8879. A thread tolerance increase of 10% during assembly or testing shall not be cause for rejection.

Table 1 - Assembly materials

Component	Material Description	Specification	Finish
Nut (Coupling) MS21921, AS4730 or Equivalent	2024-T6 or T851 Aluminum Alloy	AMS-QQ-A-225/6 (AMS4112, AMS4120)	Anodize per MIL-A-8625 and dry film lubricate per NAS1367
	AISI 300 Series Corrosion-Resistant Steel	AMS-QQ-S-763 (AMS5636, AMS5637, AMS5639, AMS5645, AMS5646)	Passivate per AMS2700 and dry film lubricate per NAS1367
Hose (inner tube)	Type I (Elastomer or thermoplastic)		As manufactured
	Type II (Elastomer or thermoplastic)		
	Type III (Elastomer or thermoplastic)		
Wire Braid	AISI 300 Series Corrosion-Resistant Steel	ASTM A580/A313 (AMS5688, AMS5689, AMS5690, AMS5697)	Passivate per AMS2700
Nonmetallic Braid	Nylon (Nomex ® or equivalent) or Fiberglass		Dark
Insert Fitting (nipple or elbow)	AISI Type 304, 316, or (321 or 347 *)	MIL-T-8504 (AMS5567) MIL-T-8808 (AMS5556, AMS5557, AMS5570, AMS5571, AMS5575, AMS-QQ-S-763 (AMS5648)	Passivate per AMS2700
Socket	6061-T6 or 2024-T6 Aluminum Alloy	AMS-QQ-A-225/6 (AMS4112, AMS4117)	Anodize per MIL-A-8625 (color-optional)
	AISI Type 304, 304L, 321 or 347 Corrosion-Resistant Steel	AMS-QQ-S-763 (AMS5639), AMS5645, AMS5646 or AMS5647)	Passivate per AMS2700
Band (identification)	2024, 5052, 6061 Aluminum Alloy	AMS-QQ-A-250 or AMS-WW-T-700	Anodize per MIL-A-8625 (color-black)
Nut Retaining Wire	2024-T6 Aluminum Alloy	AMS-QQ-A-225/6 (AMS4120)	Anodize per MIL-A-8625 (color-optional)
	AISI Type 302, 304, or 305 Corrosion-Resistant Steel	ASTM A580/A313 (AMS5685, AMS5688, AMS5697)	Passivate per AMS2700

* Required for welded assemblies