



AEROSPACE STANDARD	AS8796™	REV. A
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Hose, Air Duct, Flexible, Aircraft		

RATIONALE

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Documents

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NOTICE

This document has been taken directly from U.S. Military Specification MIL-H-8796C, Amendment 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-8796C, Amendment 1. Any part numbers established by the original specification remain unchanged.

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1. SCOPE:

1.1 Scope:

This specification covers lightweight, circular cross-sectional flexible airduct hose, fabricated from laminated fabric reinforced plastics, or laminated fabric reinforced synthetic rubbers, to be used in aircraft air-conditioning and anti-icing systems.

1.2 Classification:

Air duct hose furnished under this specification shall be of the following types and classes, as specified (see 6.2):

Type I - 8 PSI Rated Operating Pressure
Type II - 16 PSI Rated Operating Pressure
Type III - 35 PSI Rated Operating Pressure
Type IV - 50 PSI Rated Operating Pressure
Type V - 100 PSI Rated Operating Pressure

Class 1 -65° to 160°F. Operating Temperature Range
Class 2 -65° to 300°F. Operating Temperature Range
Class 3 -65° to 500°F. Operating Temperature Range
Class 4 -75° to 600°F. Operating Temperature Range

2. APPLICABLE DOCUMENTS:

- 2.1 The following documents, of the issue in effect on date of invitation for bids, form a part of this specification to the extent specified herein:

SPECIFICATIONS

Federal

P-D-680	Dry-cleaning Solvent
QQ-A-250/4	Aluminum Alloy 2024, Plate and Sheet
QQ-W-423	Wire, Steel, Corrosion-Resisting
QQ-B-613	Brass, leaded and nonleaded, Flat Products (Plate, Bar, Sheet and Strip)
FED-STD-191	Textile Test Methods

2.1 (Continued):

Military

MIL-P-116	Preservation, Methods of
TT-S-735	Standard Test Fluids Hydrocarbon
MIL-STD-810	Environmental Test Methods
MIL-P-5425	Plastic, Sheet, Acrylic, Heat Resistant
TT-I-735A	Fluid; Anti-Icing (Isopropyl Alcohol).
MIL-L-5606	Hydraulic Fluid, Petroleum Base, Aircraft, Missile and Ordnance
MIL-J-5624	Turbine Fuel, Aviation Grades JP-4 and JP-5
MIL-L-6082	Lubricating Oil, Aircraft Reciprocating Engine (Piston)
MIL-L-6085	Lubricating Oil, Instrument, Aircraft, Low Volatility
MIL-L-7808	Lubricating Oil, Aircraft Turbine Engine, Synthetic Base
MIL-STD-794	Parts and Equipment, Aeronautical, Preparation for Delivery
MIL-STD-831	Test Reports; Preparation of
MIL-T-23699	Lubricating Oil, Aircraft Turbine Engines, Synthetic Base
MIL-D-1000	Drawings, Engineering and Associated Lists

2.1 (Continued):

STANDARDS

Federal

Fed. Test Method Metals; Test Methods
Std. No. 151

Military

MIL-STD-105 Sampling Procedures and Tables for Inspection by Attributes

MIL-STD-130 Identification Marking of U.S. Military Property

MS33660 Tubing End, Hose Connection, Standard Dimensions for

Publications

Air Force - Navy Age Controls of Age Sensitive Elastomeric Items
Aeronautical
Bulletin No. 438

(Copies of specifications, standards, drawings, and publications required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3. REQUIREMENTS:

3.1 Preproduction:

The flexible airduct hose furnished under this specification shall be a product which has been inspected and has passed the preproduction tests specified herein.

- 3.1.1 Waiver: Preproduction testing will not be required for airduct hose identical in type, class, material, construction, and diameter to hose which previously has been subjected to preproduction testing of this specification and accepted. A copy of the certified test report on the previous preproduction testing and evidence of acceptance will be acceptable in lieu of rerunning preproduction tests. This waiver may be cancelled or revoked at any time by the procuring activity.

3.2 Materials:

The materials shall consist of a suitable fabric, such as cotton, linen, fortisan, and glass fibers suitably impregnated with a thermosetting-type resin or synthetic rubber, properly cured to produce a product adequate in all respects to conform to this specification. Plastic resins, which are not resistant to the growth of fungus, shall not be used. Materials shall contain no substance which is injurious to the skin or which emits toxic or unpleasant odors when in use throughout the specified operating temperature range of the hose. Reinforcing wire shall be corrosion resisting steel, hard drawn wire in accordance with QQ-W-423, Composition 302, Condition 3, Form I.

3.3 Design and construction:

The hose shall be constructed in one of the following forms as necessary to conform to the applicable type and class specified in 1.2:

- (a) Fully or partially circumferentially convoluted, no wire reinforcement.
- (b) Helical convoluted, no wire reinforcement.
- (c) Helical or circumferential convoluted, wire reinforced.

The hose shall have a smooth internal surface to minimize flow losses. Hose shall be axially retractable to at least 75% of its normal free length.

3.3.1 Reinforcement: Wire reinforcement, conforming to 3.2, shall be helically wound spring, secured to the hose in a partially contracted condition so as to hold the hose normally in an extended position. The free length diameter of the spring coil shall be such that when the coil is stretched to the length of the fully extended hose the diameter of the coil will be the same as the hose diameter. The end of the spring shall be secured by means of a permanently bonded insert that covers two flights of the spring and the interior of the end coupling in a manner that will conform to 3.3.2.

3.3.2 End Couplings: Unless otherwise specified, each length of hose shall be provided with a coupling at each end. The coupling shall be of the soft end type. Soft ends shall consist of an added sleeve or cuff of essentially the same material as the body of the hose. The wire shall be removed from that portion of the hose covered by the cuff, and the tension relieved on the end of the wire helix to prevent tearing or distortion of the hose at the wire terminus. The inner lining of the hose shall be extended to serve as a reinforcement for the entire length of the coupling. The soft ends shall have sufficient resilience to allow a snug fit over a tubing end hose connection conforming to type A of MS33660 having an outside diameter (OD) equal to the nominal inside hose diameter.

3.4 Hose Lengths:

The increment of length for hose shall be 1/2 inch. Hose length shall be measured exclusive of the end couplings when the hose is in the normal free length position. Tolerance on length is $\pm 1/8$ inch or 1%, whichever is greater.