



AEROSPACE STANDARD	AS38386™	REV. A
	Issued 1999-07 Reaffirmed 2013-01 Stabilized 2026-06 Superseding AS38386	
Duct Assembly, Ground, Conditioned Air, Insulated, Flexible		

RATIONALE

This technical report is being stabilized because it covers technology, products, or processes which are mature and not likely to change in the foreseeable future.

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Documents

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1. SCOPE:

This document covers insulated, flexible air duct assemblies for portable ground support air conditioners and heaters.

1.1 Classifications:

The duct assemblies are of any length and of the following diameters and connector configurations specified in Tables 1 and 2 (see 6.2).

TABLE 1 - Duct Size

Duct Size Inch	Code
16	A
12	B
8	C
5	D

TABLE 2 - Connector Configuration

Connector Configuration	Code
Male and Male	A
Female and Female	B
Male and Female	C
None	D

2. APPLICABLE DOCUMENTS:

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 SAE Publications:

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

AS38386/1	Connector, Air Duct Hose, Ground Cooling, Male
AS38386/2	Connector, Air Duct Hose, Ground Cooling, Female
AS38386/3	Packing, Preformed, Air Duct Hose, Ground Cooling
AS38386/4	Catch Assembly, Air Duct Hose, Ground Cooling

2.2 ASTM Publications:

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

ASTM D 430	Rubber Deterioration, Dynamic Fatigue, Test for
ASTM D 471	Rubber Property, Effects of Liquids

2.3 ASME Publications:

Available from ASME, 22 Law Drive, Box 2900, Fairfield, NJ 0707-2900.

ASME PTC-19.5:4	Power Test Code Supplement on Instrument and Apparatus
ASME Y14.1	Decimel Inch Drawing Sheet Size and Format

2.4 U.S. Government Publications:

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

FED-STD-191	Textile Test Methods
FED-STD-595	Colors Used in Government Procurement
MIL-HDBK-808	Finishes, Protective, and Codes for Finishing
MIL-STD-130	Identification of U.S. Military Property
MIL-STD-810	Environment Test Methods
MIL-STD-831	Test Reports, Preparation of
MIL-STD-889	Dissimilar Metals
MS33561	Connectors, Aircraft Ground Air Conditioning, 5 inch, Minimum Requirements For

3. REQUIREMENTS:

3.1 First Article:

When specified (see 6.2), a sample shall be subjected to first article inspection (see 6.3) in accordance with 4.4.

3.2 Materials:

The duct assembly materials shall be uniform in quality, free from defects, suitable for its intended use, consistent with good manufacturing practices, and in conformance with applicable documents and requirements specified herein.

- 3.2.1 Fabric: Fabric used in the duct construction shall be manufactured in such a manner as to meet all the requirements of this document.
- 3.2.2 Metals: Metals selected for construction of the duct assembly shall be corrosion resistant or treated to resist corrosion caused by exposure to fuels, salt spray, or atmospheric conditions as may be encountered in storage or normal service.
- 3.2.3 Dissimilar Metals: Dissimilar metals as defined by MIL-STD-889, shall not be used in intimate contact with each other unless adequately protected against galvanic corrosion.
- 3.2.4 Protective Treatment: The duct assembly shall be protected from corrosion, caused by exposure to fuels, salt spray, or atmospheric conditions likely to occur during service usage in such a manner that will in no way prevent compliance with the performance requirements of this document. The use of any protective treatment that will crack, chip, peel, or scale with age or extremes of atmospheric conditions shall be avoided.

3.3 Design and Construction:

The duct assembly shall be designed and constructed for outdoor use in all types of weather including damp and salt laden air for extended periods of time.

- 3.3.1 Duct: The duct shall be so constructed that damage made to the duct due to flexing, bending, tensile loading, or dropping shall be limited to that allowed in 4.6.9 through 4.6.12 and 4.6.14.
- 3.3.2 Stiffener: The duct assembly shall include a continuous metal helical stiffener core to prevent transverse collapsing and excessive area reduction during sharp bends and retain an approximate circular cross-sectional area. The stiffener core shall be squared off at each end.
- 3.3.3 Cuff Attachment: The duct assembly cuff on the connector shall be as narrow as practical to permit securing the connector close to the squared off stiffener core at each end of the duct. The stiffener core and attaching cuff shall not work loose under repeated normal usage.
- 3.3.4 Duct Rigidity: The duct assembly stiffener core shall not be of such rigidity as to interfere excessively with the expansion/retraction from the storage device.
- 3.3.5 Duct Stitching: When stitching is used, the materials shall be capable of meeting the requirements and tests specified herein. The stitching shall be of the lock type to prevent unraveling when a stitch is broken.
- 3.3.6 Connectors: When specified (see 6.2), connectors used as a part of the duct assemblies shall conform to those described in AS38386/1 and AS38386/2 with the preformed packing as described in AS38386/3. Duct assemblies that require 5 in duct shall use connectors specified in MS33561.
 - 3.3.6.1 Catch Assembly: Connectors described in AS38386/1 and AS38386/2 shall use catch assemblies described in AS38386/4.
- 3.3.7 Storage Devices: When specified (see 6.2), the duct assemblies shall be furnished with a built-in storage device. The built-in storage device shall be internally located in each duct assembly to act as a guide in expanding and retracting the duct assembly and to firmly retain it in the storage position. The storage device shall not damage the fabric during the expansion or retraction of the duct assembly. The carrier portion shall be firmly attached to the male connector. All welds on the storage device shall be of the fusion type. In the event that carrier cleats are riveted to the connector ends, two rivets shall be used on each end of the cleat.

3.4 Dimensions and Weights:

The hose assembly dimensions and weights shall be as specified in Tables 3, 4, 5A and 5B (see 4.6.1).

- 3.4.1 Inside Diameter (ID): The ID of the duct assembly shall not exceed those shown in Table 3 for the size specified.

TABLE 3 - Duct Inside Diameter

Nominal ID inch	Cuff ID inch	Duct Body ID inch
16	16 +0.250/-0.000	16 ± 0.500
12	12 +0.250/-0.000	12 ± 0.500
8	8 +0.250/-0.000	8 ± 0.500
5	5 +0.250/-0.000	5 ± 0.500

- 3.4.2 Retracted Outside Diameter (OD): The retracted OD of the duct assembly shall not exceed those shown in Table 4 for the size specified.

TABLE 4 - Duct Outside Diameter

Nominal OD inch	Allowable OD inch
16	20
12	16
8	12
5	9

- 3.4.3 Expanded Length: Duct assembly lengths shall not be shorter nor more than 12 in longer than the specified length, in feet (see 6.2). When connectors are incorporated the overall length shall include the connectors.
- 3.4.4 Retracted Length: Duct assembly retracted length, including connectors shall not exceed 25% of the specified length when retracted for storage (see 6.2).