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INCH-POUND

A-A-59452A
14 March 2005
SUPERSEDING
A-A-59452
25 June 1999

COMMERCIAL ITEM DESCRIPTION

HOSE, METAL

The General Services Administration has authorized the use of this commercial item description (CID) as a replacement for WW-H-1053A for all federal agencies.

1. SCOPE

1.1 Scope. This commercial item description covers flexible metal hose. Class 1 metal hose is intended for use as air ducts or speaking tubes and other applications requiring flexible hose but not for the conveyance of liquids. Class 2 metal hose is intended for use with carburetor preheating systems, exhaust connections, and other applications requiring flexible metal hose with heat-resistant properties up to 1200º F.

1.2 Classification. The metal hose shall be of the following classes, types and composition.

Class 1 – Aluminum Alloy
Type I – Unpacked

Class 2 – Corrosion-Resistant and Heat-Resistant Steel
Type I – Unpacked
Type II – Copper-Wire Packed

Composition A – Austenitic, corrosion-resistant steel, heat-treatable

Composition B – Martensitic, corrosion-resistant steel, heat-treatable

Composition C – Ferritic, corrosion-resistant steel

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-AMR-SE-TD-ST. Redstone Arsenal, AL 35898-5000.

AMSC N/A FSC 4720

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2. SALIENT CHARACTERISTICS

2.1 Materials.

2.1.1 Class 1. The aluminum metal hose shall be made from material conforming to SAE AMS-QQ-A-250 and ASTM B 209.

2.1.2 Class 2. The steel used in the fabrication of composition A metal hose shall conform to Aerospace Material Specification (AMS) 5510 and 5512. Steel used in the fabrication of composition B and composition C metal shall conform to ASTM A240, ASTM A666, and ASTM A693.

2.1.3 Packing materials. The copper wire packing used in the construction of type II shall be of a proper size to fill the packing groove and to permit the bending diameter specified.

2.2 Design. The hose shall be of the four-wall interlocking design made by helically coiling a continuously formed strip of the specified material. The width of the strip and the pitch of the helix shall be such as to allow the completed hose to meet the bending requirements specified herein. The hose shall not freely unravel or show loose ends when cut.

2.2.1 Thickness of strip metal. The thickness of strip metal shall be 0.012-inch minimum for all sizes of metal hose that are 1-inch inside diameter and larger. The thickness of strip metal shall be 0.010-inch minimum for all sizes of metal hose under 1-inch inside diameter.

2.3 Construction.

2.3.1 Type I hose. Type I hose shall be constructed as shown in Figure 1.

2.3.2 Type II hose. Type II hose in sizes over ½-inch diameter shall be so formed as to create a definite packing groove in the profile to hold the packing in its proper place. The hose construction shall be as shown in Figure 2. For hose ½-inch or less inside diameter, packing may be inserted without forming a definite packing groove.

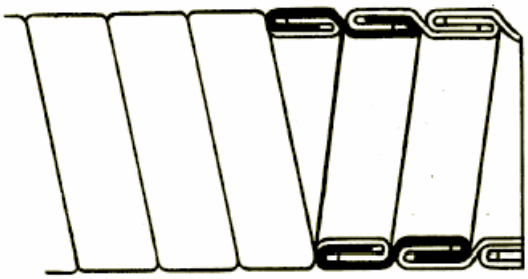

Figure 1. Type I Hose Construction

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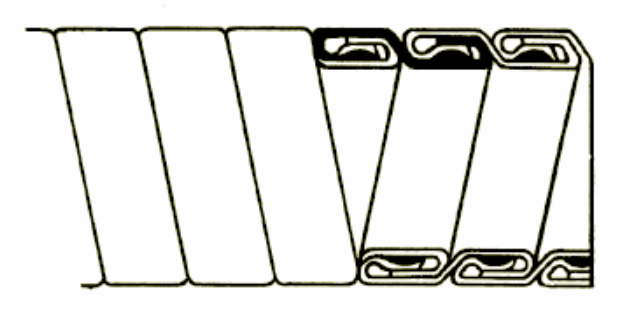

Figure 2. Type II Hose Construction

2.4 Size and dimension.

2.4.1 Inside diameter. The inside diameter shall be within the tolerances specified in TABLE I.

TABLE I. Tolerances

	Tolerance			
Size (inches)	Inside diameter (inches)		Outside diameter (if specified) (inches)	
	Plus	Minus	Plus	Minus
≤ 2	0.015	0.000	0.000	0.0020
< 2	0.0020	0.000	0.000	0.0030

2.4.2 Outside diameter. Unless otherwise specified, the outside diameter shall be the minimum at which conformance is possible with the other requirements of this CID.

2.4.3 Length. The hose shall be furnished in lengths as specified in the contract or purchase order.

2.5 Bending. Hoses shall be sufficiently flexible as show in TABLE II.

TABLE II. Bending requirements

INSIDE DIAMETER SIZE	CLASS I TYPE I	CLASS 2 TYPE I	CLASS 2 TYPE II
> ½ in	A	A	A
≤ ½ in	A	A	B

A - Shall be able to be bent at an angle of 180º over a diameter of 9 times the specified inside hose diameter without straining or permanently damaging the hose walls.
B – Shall be able to be bent at an angle of 180º over a diameter of 12 times the specified inside hose diameter without straining or permanently damaging the hose walls.

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2.6 Workmanship. Workmanship shall be of the quality necessary to produce metal hose that is free from all defects and functions properly in service.

3. REGULATORY REQUIREMENTS

3.1 The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with 23.403 of the Federal Acquisition Regulation (FAR).

4. PRODUCT CONFORMANCE PROVISIONS

4.1 Product conformance. The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

4.2 Market Acceptability (MA). The following market acceptability criteria are necessary to document the quality of the product to be provided under this CID.

4.2.1 The company producing the item must have been producing a similar product meeting or exceeding the requirements contained within this CID for at least two years.

4.2.2 The company must have sold 1000 units which met or exceeded the requirements contained within this CID through the commercial market within the past two years.

4.3 Inspection requirements. Bid samples may be required for CID items when necessary to ensure product quality.

4.3.1 Sampling for visual examination. Sampling for fill, color, workmanship, packaging, packing, and marking may be performed on one unit package.

4.3.2 Sampling for testing. Unless otherwise specified, the sample shall consist of one sample approximately equal in weight and volume to a unit package drawn from a single homogenous mixture.

5. PACKAGING

Preservation, packing, and marking shall be as specified in the contractor or order.

6. NOTES

6.1 Part Identification Number (PIN). The following part identification number procedure is for Government purposes and does not constitute a requirement for the contractor.

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The PIN used for flexible, metal hoses acquired to the CID is created as follows:

AA 59452 X X X XXX

- XXX — Length designator in inches. Last character represents eighths of an inch.
- X — Composition (A- Austenitic, corrosion-resistant steel, nonheat-treatable, B- Martensitic, corrosion-resistant steel, heat-treatable, C – Ferritic, corrosion-resistant steel)
- X — Type (I – Type I, II – Type II)
- X — Class (1 – Aluminum Alloy, 2 – Corrosion-Resistant and Heat-Resistant Steel)
- 59452 — CID Number
- AA — Designates a CID

6.2 Source of documents. The Code of Federal Regulations (CFR) may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

ASTM documents may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428-2959.

AMS documents may be obtained from SAE International, 400 Commonwealth Drive, Warrendale, Pennsylvania 15096-0001.

6.3 Subject term (keyword) listing.

Hose, Aluminum Alloy, Flexible
Hose, Aluminum Alloy, Corrosion-Resistant
Wire Packed
Wire Packed, Copper

Custodian:
Army – MI

Preparing Activity:
Army – MI

Review Activity:
DLA-CC

Project Number:
4720-0440