

[METRIC]
A-A-52540
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SUPERSEDING
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COMMERCIAL ITEM DESCRIPTION

FITTINGS, WIRE ROPE

The General Services Administration has authorized the use of this commercial item description (CID) for all federal agencies.

1. **SCOPE.** This CID covers swaging-type sleeves and ferrules and a ferrule connector. The sleeves and ferrules are for wire rope. The fittings are intended for use in rigging of wire rope for the installation of the submarine pipelines and tanker mooring systems and for other applications where eyes or ferrules are required on the ends of wire rope. The sleeves and ferrules are intended to be cold-swaged onto wire rope with a swaging machine of 4448 kiloNewton (kN) force (500 ton (short (st) force) and equipped with the proper dies.

Beneficial comments, recommendations, additions, deletions clarifications, etc. and any other data which may improve this document should be sent to: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/BLUE, Warren, MI 48397-5000.
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FSC 4030

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

2. Classification. The fittings shall be of the following types and sizes, as specified (see 7.2):

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Type I - Sleeve

Sizes	6 millimeters (mm) (.25 inch (in))
	8 mm (.313 in)
	10 mm (.375 in)
	13 mm (.5 in)
	16 mm (.625 in)
	19 mm (.75 in)
	22 mm (.875 in)
	25 mm (1 in)
	29 mm (1.125 in)
	32 mm (1.25 in)
	35 mm (1.375 in)
	38 mm (1.5 in)

Type II - Ferrules

Sizes	25 mm (1 in)
	29 mm (1.125 in)
	32 mm (1.25 in)
	35 mm (1.375 in)
	38 mm (1.5 in)

Type III - Ferrule connector

3. SALIENT CHARACTERISTICS

3.1 Materials. Unless otherwise specified herein, the materials used shall be in accordance with the manufacturer's material specifications. The fittings shall be carbon steel conforming to American Iron and Steel Institute (AISI) steel products manual designations 1010 through 1020. The use of recovered material made in compliance with regulatory requirements is acceptable providing that all other requirements of this CID are met (see 4.1).

3.1.1 Material deterioration prevention and control. The fittings shall be fabricated from compatible materials, inherently corrosion resistant or treated to provide protection against the various forms of corrosion and deterioration that may be encountered in any of the applicable operating and storage environments to which the fittings may be exposed.

3.1.1.1 Dissimilar metals. Dissimilar metals shall not be used in intimate contact with each other unless protected against galvanic corrosion.

3.2 Sleeves and ferrules. The sleeves and ferrules shall be designed to be swaged to the applicable size wire rope when using a swaging machine and using dies that are compatible with both the machine and fittings. After swaging with a force of not more than 4448 kN (500 st) the sleeves and ferrules shall withstand the pulls specified in table I without separation, slipping, or cracking.

TABLE I. Strength of sleeves, ferrules, and ferrule connectors.

Wire rope size diameter mm (in)	Minimum breaking strength of test	
	Newton (N)	(pounds (lb))
6 (0.25)	26154	(5880)
8 (0.313)	40744	(9160)
10 (0.375)	58358	(13,120)
13 (0.5)	102304	(23,000)
16 (0.625)	159238	(35,800)
19 (0.75)	227738	(51,200)
22 (0.875)	307802	(69,200)
25 (1)	399430	(89,800)
29 (1.125)	502624	(113,000)
32 (1.25)	617382	(138,800)
35 (1.375)	742816	(167,000)
38 (1.5)	879814	(197,800)

3.3 Type I - sleeves. The sleeves shall be as shown on figure 1 and as specified herein.

3.4 Type II - ferrules. The ferrules shall be as shown on figure 2 and as specified herein. The bore shall be smooth or have spiral flukes or grooves to fill the space between the wire rope strands before swaging. The ferrules, before swaging, shall provide the close fit with the wire rope but shall not require more than light blows with a hammer to drive them onto the end of the wire rope.

3.5 Type III - ferrule connectors. The ferrule connectors shall be for 35 mm (1.375 in) and 38 mm (1.5 in) wire rope sizes and shall be as shown on figure 3 and as specified herein. The connector shall accept the wire rope ferrules in 35 mm (1.375 in) and 38 mm (1.5 in) sizes. The connector shall not require the use of bolts, pins, or similar devices for attaching the connector to the wire rope ferrules and shall not require more than 15 seconds for installation or removal of

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the connector when sufficient slack is provided in the wire rope. When connected to the wire rope ferrules, the connector shall withstand the pulls specified in table I without separation, cracking, or permanent deformation.

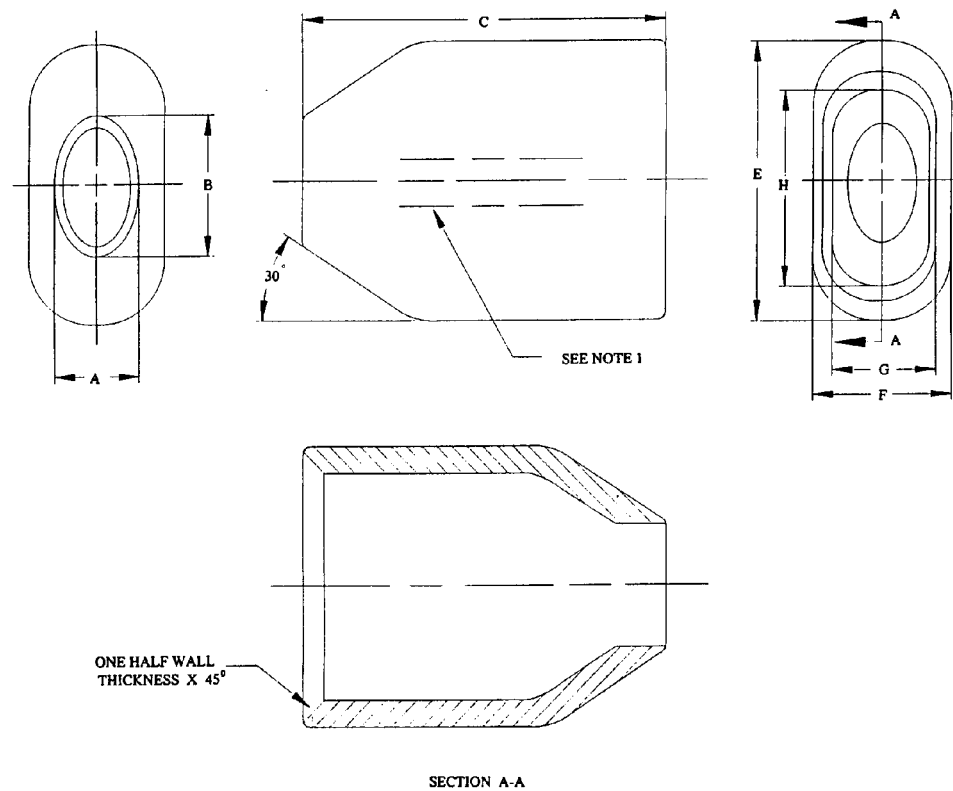


FIGURE 1. Sleeve, wire rope.

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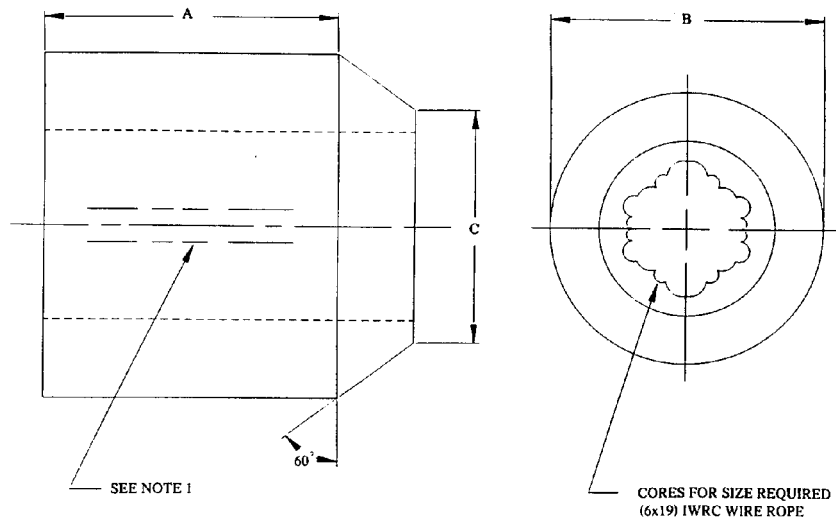
Wire rope size	A ± .80 (.03)	B ± .80 (.03)	C ± 1.5 (.06)	E ± .80 (.03)	F ± .80 (.03)	G ± .80 (.03)	H ± .80 (.03)
6 (.25)	8 (.31)	11 (.44)	26 (1.03)	20 (.78)	14 (.53)	9 (.34)	15 (.59)
8 (.312)	10 (.38)	13 (.5)	33 (1.28)	23 (.91)	15 (.59)	10 (.41)	18 (.72)
10 (.375)	11 (.44)	14 (.56)	40 (1.56)	28 (1.12)	18 (.69)	13 (.5)	22 (.88)
13 (.5)	15 (.59)	19 (.75)	52 (2.03)	40 (1.56)	25 (.97)	17 (.66)	32 (1.25)
16 (.625)	18 (.72)	22 (.88)	64 (2.53)	46 (1.81)	30 (1.19)	19 (.75)	35 (1.38)
19 (.75)	22 (.88)	26 (1.03)	78 (3.06)	57 (2.25)	37 (1.44)	22 (.88)	43 (1.69)
22 (.875)	25 (1)	30 (1.17)	91 (3.59)	66 (2.58)	39 (1.52)	26 (1.03)	50 (1.98)
25 (1)	28 (1.12)	33 (1.3)	104 (4.09)	74 (2.91)	47 (1.84)	30 (1.19)	57 (2.28)
29 (1.125)	32 (1.25)	38 (1.5)	117 (4.59)	85 (3.34)	52 (2.06)	33 (1.31)	66 (2.59)
32 (1.25)	35 (1.38)	41 (1.62)	129 (5.09)	94 (3.69)	58 (2.28)	37 (1.44)	75 (2.94)
35 (1.375)	39 (1.53)	45 (1.75)	143 (5.62)	102 (4)	64 (2.53)	41 (1.62)	79 (3.12)
38 (1.5)	43 (1.69)	48 (1.88)	155 (6.12)	115 (4.53)	71 (2.81)	44 (1.72)	87 (3.44)

NOTES:

1. Wire rope size shall be metal stamped in 6.4 mm (.250 in) high characteristics on surface indicated, location optional.
2. Break sharp edges 13 (.5) to 38 (1.5) radius.
3. Dimensions are in millimeters.
4. Dimensions in parenthesis are in inches.
5. Unspecified tolerance: Angles ± 5 degrees (5°).

FIGURE 1. Sleeve, wire rope - Continued.

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Wire rope DIA	A $\pm 1.5 (.06)$	B $\pm 1.5 (.06)$	C $\pm 1.5 (.06)$
25 (1)	95 (3.75)	70 (2.75)	45 (1.75)
29 (1.125)			
32 (1.25)			
35 (1.375)	117 (4.62)	81 (3.19)	54 (2.12)
38 (1.5)			

NOTES:

1. Wire rope size shall be metal stamped in 6 mm (.25 in) high characters on surface indicated, location optional.
2. Break sharp edges .5 (.02) to 1.5 (0.06) radius.
3. Dimensions are in millimeters.
4. Dimensions in parenthesis are in inches.
5. Unspecified tolerance: Angles $\pm 5^\circ$.

FIGURE 2. Ferrule, wire rope.

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NOTES:

1. Wire rope size shall be metal stamped in 6 mm (.25 in) high characters on surface indicated, location optional.
2. Break sharp edges .5 (.02) to 1.5 (0.6) radius.
3. Dimensions are in millimeters.

FIGURE 3. Connector, ferrule, wire rope.

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3.6 Safety. Wire rope fittings shall comply with all applicable requirements of the Occupational Safety and Health Administration (OSHA) (see 7.1.1).

3.7 Identification and markings. Identification and markings shall be permanent and legible and shall include as a minimum, the manufacturer's trademark, the part or identifying number (PIN) (see 7.2 and 7.3), and the national stock number (NSN).

4. REGULATORY REQUIREMENTS

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

5. QUALITY ASSURANCE PROVISIONS

5.1 Responsibility for inspection. The contractor is responsible for the performance of all inspections (examinations and tests).

5.2 Contractor certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of this CID and that the product conforms to the producer's own drawings, specifications, workmanship standards, and quality assurance practices. Items with known defects shall not be submitted for Government acceptance. The Government reserves the right to require proof of such conformance.

5.3 Market acceptability (MA). The contractor shall provide products which have a proven market record based on the number of items sold, length of time the product has been on the market, and reliability and performance of the products as required under the contract or solicitation (see 7.2).

5.4 Inspection and test. The inspection and testing of products to be supplied under the CID shall be as specified in the contract or order.

6. PACKING

6.1 Preservation, packing, and marking. Preservation, packing, and marking shall be as specified in the contract or order (see 7.2).

7. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

7.1 Addresses for obtaining copies of referenced documents.

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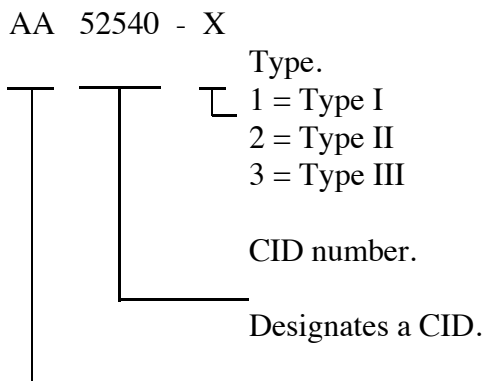
7.1.1 Government documents. Copies of OSHA are available from the Department of Labor, Assistant Secretary of Labor, Occupational Safety and Health Administration, Washington, DC 20201.

7.1.2 Non-Government publications. Copies of AISI Steel Products Manual are available from the American Iron and Steel Institute (AISI), 1000 16th Street N.W., Washington, DC 20036.

7.2 Ordering data. Acquisition documents must specify the following:

- a. Title, number, and date of this CID.
- b. Issue of DODISS to be cited in the solicitation.
- c. Type and size of fittings required (see 2).
- d. PIN, and quantity of fittings required.
- e. Applicable level of preservation, packaging, packing and marking.
- f. Market acceptability requirement must appear in the solicitation.

7.3 PIN. The PINs to be used for fittings acquired to this CID are created as follows:



7.4 Cross-reference data. Fittings, Wire Rope conforming to this CID are interchangeable/ substitutable with Fittings, Wire Rope conforming to MIL-F-52553B(ME).

7.5 Subject term (keyword) listing.

Connector, ferrule
 Ferrule, connector
 Ferrule, swage type
 Ferrule, wire rope
 Sleeve, swage type

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Wire rope ferrule

Wire rope sleeve

7.6 Information figures. Figures 1, 2, and 3 show types of fittings which have been found acceptable; however, the figures are included for illustration only and are not intended to preclude the furnishing of other fittings which conform to this CID.

MILITARY INTERESTS:

Custodians:

Army - AT

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

PREPARING ACTIVITY:

Army - AT

(Project 4030-0272)