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\* Inch-Pound \*  
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A-A-50552  
May 31, 1995  
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SUPERSEDING  
W-F-406E  
March 26, 1993

COMMERCIAL ITEM DESCRIPTION

FITTINGS FOR CABLE, POWER, ELECTRICAL AND CONDUIT, METAL, FLEXIBLE

The General Services Administration has authorized the use of this Commercial Item Description for all federal agencies.

1. SCOPE. This description covers box connectors for flexible conduit, armored cable, and nonmetallic sheathed cable, bushings for armored cable, couplings for flexible conduit, adapters for connecting flexible conduit to rigid conduit, and electrical metallic tubing, and clamps for grounding armored cable and ground wire.

2. CLASSIFICATION. Fittings furnished under this specification shall be of the following types, classes, styles, and kinds as specified. Sizes shall conform to standard commercial sizes.

Type I - Box connector, electrical

Class 1 - Flexible steel conduit and round armored cable

- Style A - Straight connector, single attachment
- Style B - Straight connector, duplex attachment
- Style C - 45 degrees (o) angle connector
- Style D - 90o angle connector

- Kind a - Screw-in internal
- Kind b - Screw-in external
- Kind c - Clamp 2-screw
- Kind d - Saddle clamp 1-screw
- Kind e - Set-screw
- Kind f - Squeeze

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\*Beneficial comments (recommendations, additions, deletions) and any pertinent\*  
\*data which may be of use in improving this document should be addressed to: \*  
\*Commanding Officer (Code 156), Naval Construction Battalion Center, \*  
\*1000 23rd Avenue, Port Hueneme, CA 93043-4301, by using the Standardization \*  
\*Document Improvement Proposal (DD Form 1426) appearing at the end of this \*  
\*document or by letter. \*  
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AMSC N/A

FSC 5975

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

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Class 2 - Oval (flat) armored cable

Style E - Straight connector, single attachment  
Style F - Straight connector, duplex attachment  
Style G - 45 deg. angle connector  
Style H - 90 deg. angle connector

Kind g - Screw-in external  
Kind h - Clamp 2-screw  
Kind i - Saddle clamp 1-screw  
Kind j - Set-screw  
Kind k - Squeeze

Class 3 - Liquid-tight flexible metallic conduit connectors

Style I - Straight connector  
Style J - 45 deg. angle connector  
Style K - 90 deg. angle connector  
Style L - Straight connector, male bushing style

Kind l - Screw-in external

Class 4 - Nonmetallic sheathed cable and service entrance cable connectors

Style M - Straight connector, single cable  
Style N - Straight connector, duplex cable  
Style O - 90o angle connector

Kind m - Oval cable  
Kind n - Round cable

Type II - Bushing, electrical conductor, antishort, armored cable

Type III - Coupling, electrical conduit, flexible steel

Type IV - Adapter, electrical conduit

Class 5 - Flexible steel conduit or armored cable to rigid conduit

Style P - With internal threaded connection to rigid conduit  
Style Q - With threadless connection to rigid conduit

Class 6 - Flexible steel conduit or armored cable to electrical metallic tubing

Type V - Clamp, electrical grounding

Class 7 - With clamping jaws to fit standard iron pipe size (IPS) pipe

Style R - For bare armored cable  
Style S - For bare or insulated wires

Class 8 - Armored cable hub for bare armored cable, with one bolt hole tongue

### 3. SALIENT CHARACTERISTICS.

3.1 Description. Fittings covered by this description shall be made of metal and conform to the applicable requirements of NEMA FB 1, UL 467 and UL 514B.

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3.2 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly.

3.2.1 Steel fabrication. The steel used in fabrication shall be free from kinks, sharp bends, and other conditions which would be deleterious to the finished product. Manufacturing processes shall not reduce the strength of the steel to a value less than intended by the design. Manufacturing processes shall be done neatly and accurately. All bends shall be made by controlled means to ensure uniformity of size and shape.

3.3 Finish. Fittings shall have surfaces which are not chipped, warped, cracked, or blistered. Surfaces which are normally in contact with conductor insulation shall be rounded to prevent abrasion or cutting of insulating material.

3.4 Threads. External and internal pipe threads shall be of the American Standard straight or taper type.

3.5 Box connectors. Box connectors shall be provided with a clamp or means for connecting to the conduit or cable and a hub and locknut arrangement, or a UL or CSA approved equivalent, for connecting to outlet boxes through standard conduit knockouts. Connectors without locknuts shall be limited to circuits under 250 volts unless tested and UL listed for the purpose. Connectors that have tapered threads for threaded hubs need not have locknuts. Clamps shall neither pierce the armor, damage the insulation of cables, nor distort or damage the conduit when accomplishing its normal function. Attachment means shall provide an effective electrical bond between joined metallic parts. Minimum hub size on connectors shall fit standard 1/2-inch conduit knockouts. All other connectors shall fit standard conduit knockouts. Screws shall be of the fillister head type, except where required by fitting design; roundhead or washer head type screws may be used. The clamps or clamping means for attaching flexible conduit, armored cable, and nonmetallic sheathed cable to the connector shall provide adequate opening and clamping range to fulfill holding and bending requirements as specified in UL 514B and NEMA FB 1. Connectors without lookouts shall be limited to circuits under 250 volts.

3.6 Sleeves and bushings. Antishort sleeves and insulating bushings shall be unaffected by ordinary atmospheric conditions and be so formed that they shall not be distorted or dislodged by ordinary handling when secured in place.

3.7 Couplings and adapters. Couplings and adapters shall have a positive attachment means at each end and shall provide an effective electrical bond between joined metallic parts. Coupling and adapter sizes indicated by a single dimension are for use with the same size conduit on each end.

3.8 Grounding clamps. Ground clamps shall meet construction and test requirements of UL 467.

#### 4. REGULATORY REQUIREMENTS.

4.1 Materials. 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). Unless otherwise specified herein, all

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equipment, material, and articles incorporated in the work covered by this description are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin, raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products are allowed under this description unless otherwise specified.

4.2 Metric products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they fall within specified tolerances using conversion tables contained in the latest version of Federal Standard No. 376, and all other requirements of this Commercial Item Description including form, fit, and function are met. If a product is manufactured to metric dimensions and those dimensions exceed the tolerances specified in the inch/pound units, a request should be made to the contracting officer to determine if the product is acceptable. The contracting officer has the option of accepting or rejecting the product.

## 5. QUALITY ASSURANCE PROVISIONS.

5.1 Contractor certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of the Commercial Item Description, and that the product conforms to the producer's own drawings, specifications, standards, and quality assurance practices, and is the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance prior to first delivery and thereafter as may be otherwise provided for under the provisions of the contract. Contractor certifications shall include satisfactory evidence that the product meets requirements of NEMA FB 1 and UL 467 or UL 514B as applicable.

5.1.1 Underwriter Laboratories Inc. certification. Recommended acceptable evidence of meeting the requirements of UL 467 or UL 514B shall be the UL certification symbol or label, listing in the UL electrical construction materials directory, or a certified test report from a recognized independent testing laboratory indicating the box connectors, bushings, couplings, adapters and clamps have been tested and conform to UL 467 or UL 514B.

6. PRESERVATION, PACKAGING, PACKING AND MARKING. Preservation, packaging, packing and marking for shipment shall be in accordance with American Society for Testing and Materials (ASTM) D 3951 or as specified in the contract or order.

## 7. NOTES.

7.1 Part Identification Number (PIN). The following part identification numbering procedure is for government purposes and does not constitute a requirement for the contractor. The PINs to be used for items acquired to this description are created as follows:

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AA50552 - XXX - X - X - X
*       *   *   *   *--- Kind
*       *   *   *
*       *   *   *----- Style
*       *   *
*       *   *----- Class
*       *
*       *----- Type
*
*----- Commercial Item Description Number

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7.1.1 Types, classes, styles and kinds. The types, classes, styles, and kinds of box connectors, bushings, couplings, adapters and clamps are identified by numeric and alpha characters as identified in paragraph 2. The following is an example of the PIN for a Type I electrical box connector, class 2, style H, kind g:

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AA50552 - 00I - 2 - H - g
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The following is an example of the PIN for a Type V clamp, class 7, style S:

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AA50552 - 00V - 7- S
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## 7.2 Source of documents.

7.2.1 NEMA Standards are available from the National Electrical Manufacturers Association (NEMA), 2101 L Street, N.W., Washington D.C. 20037.

7.2.2 UL Standards are available from Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

7.2.3 ASTM Standards are available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

## 7.3 Ordering data.

- a) Title, number, and date of this description.
- b) Type, class, style, kind and size required.
- b) Specify special packaging requirements.
- c) Contracting officer may request proof of certification of commercial item and UL certification prior to first contract delivery.

7.4 Intended use. The fittings covered by this description are intended for use as follows:

- Type I - For attaching cable or flexible conduit to an outlet box.
- Type II - To provide protection for the cable insulation at the point on an armored cable where the armor terminates.
- Type III - To couple two sections of the same size flexible conduit.
- Type IV - For connecting armored cable or flexible conduit to rigid conduit or electrical metallic tubing.
- Type V - To provide means for connecting a ground wire, bare armored or insulated, to a grounded piping system.

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7.5 Key word listing.

Adaptor  
Antishort conductor bushing  
Box connector  
Grounding clamp  
Steel coupling

MILITARY INTEREST:

Custodians  
Army - ER  
Navy - YD1  
Air Force - 85

CIVIL AGENCY COORDINATING ACTIVITY:

GSA-FSS  
Preparing Activity:  
Navy - YD1  
(Project 5975-1142)