

FEDERAL SPECIFICATION

CABLE, POWER, ELECTRICAL AND WIRE ELECTRICAL (WEATHER-RESISTANT)

This specification was approved by the Assistant Administrator, Office of Federal Supply and Services, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers copper and aluminum electrical conductors, solid or stranded, covered with thermoplastic or thermosetting polyolefin used as weather-resistant cable and wire.

1.2 Classification.

1.2.1 Types, classes, kinds. Cables and wires covered by this specification shall be of the following types, classes, and kinds (see 6.2).

Types:

- Type I - Low-density thermoplastic polyethylene covered.
- Type II - High-density thermoplastic polyethylene covered.
- Type III - Filled cross-linked thermosetting polyolefin covered.

Classes:

- a. Solid conductor.
- b. Stranded conductor.

Kinds:

- Kind A - Aluminum and aluminum alloy.
- Kind B - Copper and copper alloy.

2. APPLICABLE DOCUMENTS

2.1 The following documents of this issue in effect on date of invitation for bids or request for proposal form a part of this specification to the extent specified herein.

Military Specification:

MIL-C-12000 - Cable, Cord and Wire, Electric, Packaging of.

FSC 6145



Military Standard:

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

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

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or requests for proposal shall apply.

American National Standards Institute, Inc. (ANSI):

C8.35 - Specifications for Weather-Resistant Polyolefin-Covered Wire and Cable.

(Application for copies should be addressed to the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS

3.1 Description. Unless otherwise specified (see 6.2), cables and wires (see 1.2.1) covered by this specification shall conform to the applicable definitions, requirements, sizes, and manufacturing standards of ANSI C8.35.

3.2 First article. When specified (see 6.2), the contractor shall furnish cable or wire for first article inspection and approval (see 4.2.1 and 6.3).

3.3 Standard commercial product. The cables or wires shall, as a minimum, be in accordance with the requirements of this specification and shall be the manufacturer's standard commercial product. Additional or better features that are not specifically prohibited by this specification, but are a part of the manufacturer's standard commercial product, shall be included in the cables or wires being furnished. A standard commercial product is a product that has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer's catalogs or brochures and represents the latest production model.

3.4 Materials. Materials used shall be free from defects that would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this specification 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 that 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 specification unless otherwise specified.

3.5 Conductor material. Unless otherwise specified (see 6.2), the conductor material shall conform to the requirements of ANSI C8.35.

3.6 Covering material. Unless otherwise specified (see 6.2), the covering material, weight, thickness, and method to measure its thickness shall be in accordance with ANSI C8.35.

3.7 Conductor and covering tests. Unless otherwise specified (see 6.2), all the sampling and tests for conductor and covering shall be in accordance with 4.3 and 4.5 respectively.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.2.1).
- b. Quality conformance inspection (see 4.2.2).

4.2.1 First article inspection. The first article inspection shall be performed on cable or wire when a first article is required (see 3.2 and 6.2). This inspection shall include the examination of 4.4 and the tests of 4.5. The first article may be either a first production item or a standard production item from the supplier's current inventory provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.4, the tests of 4.5, and the packaging inspection of 4.6. This inspection shall be performed on the samples selected in accordance with 4.3.

#### 4.3 Sampling.

4.3.1 Sampling for examination. Sampling shall be in accordance with MIL-STD-105. Examination shall be based on inspection level II and an

Acceptable Quality Level (AQL) of 4.0 percent defective. Unless otherwise specified (see 6.2), the lot shall consist of the total number of coils or reels of the same type, class, and kind that are within a quantity offered for examination at any one time or that are within a single shipment.

4.3.2 Sampling for test. Sampling for cables and wires shall be in accordance with ANSI C8.35.

4.4 Examination. Each cable or wire shall be examined for compliance with the requirements in section 3 of this specification. This element of inspection shall encompass all visual examinations and dimensional measurements.

4.5 Tests. The first article and each of the production units shall be tested in accordance with ANSI C8.35.

4.6 Preparation of delivery inspection. The inspection of the preservation, packing, and marking shall be in accordance with the requirements of MIL-C-12000. The inspection shall consist of the quality conformance inspection.

## 5. PREPARATION FOR DELIVERY

5.1 Preservation, packing, and marking. Preservation, packing, and marking shall be in accordance with the requirements of MIL-C-12000 with the level of preservation and the level of packing as specified (see 6.2).

## 6. NOTES

6.1 Intended use. Weather-resistant cables and wires covered by this specification are used for the distribution of electrical energy under normal conditions of the overhead line service.

6.2 Ordering data. Purchasers should select the preferred options permitted herein, and include the following information in procurement documents.

- a. Title, number, and date of this specification.
- b. Type, class, kind, and size of cable or wire (see 1.2.1 and 3.1).
- c. When a first article is required for inspection and approval (see 3.2, 4.2.1, and 6.3).
- d. Conductor material requirements, if other than specified (see 3.5).
- e. Covering material requirements, if other than specified (see 3.6).
- f. Sampling requirements, if other than specified (see 3.7).
- g. Test requirements, if other than specified (see 3.7).
- h. Examination sampling lot if other than specified (see 4.3.1).
- i. Level of preservation and level of packing required (see 5.1).

6.3 First article. When a first article is required, it shall be tested and approved under the appropriate provisions of paragraph 7-104.55 of the DAR. The first article should be a first production item consisting of one complete cable or wire unit or it may be a standard production item from the contractor's current inventory as specified in 4.2.1. The contracting officer should include specific instructions in all procurement instruments regarding arrangement for examinations, tests, and approval of the first article.

6.4 Cross-reference data. Cross-reference of classification changes between this specification and the preceding issue are listed below.

<u>Classification</u>	<u>J-C-145B</u>	<u>J-C-145C</u>
Type I	Neoprene	Low-density polyethylene
Type II	Polyethylene	High-density polyethylene
Type III	Thermosetting polyethylene	Filled thermosetting polyolefin
Class 2	Concentric-lay stranded	Stranded
Kind A	Aluminum	Aluminum and aluminum alloy
Kind B	Copper	Copper and copper alloy
Size	Kind A	Deleted
Size	Kind C	Deleted

MILITARY INTERESTS:

CIVIL AGENCY COORDINATING ACTIVITY:

Custodians

GSA - FSS

Army - CR  
Navy - YD  
Air Force - 85

PREPARING ACTIVITY:

Navy - YD

Review Activity

Project No. 6145-0851

Air Force - 99

User Activities

Army - AR, GL  
Navy - MC, OS, AS

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Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein.

