

WW-C-00540c (GSA-FSS)

May 15, 1967

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SUPERSEDING

WW-C-00540b (GSA-FSS)

April 19, 1966 and

INTERIM REVISION OF

Fed. Spec. WW-C-540a

November 2, 1960

## INTERIM FEDERAL SPECIFICATION

CONDUIT, METAL, RIGID: AND COUPLING, ELBOW,

AND NIPPLE, ELECTRICAL CONDUIT: ALUMINUM

This Interim Federal Specification was developed by Federal Supply Service, General Services Administration, Washington, D.C. 20407, based upon currently available technical information. It is recommended that Federal agencies use it in procurement and forward recommendations for change to the preparing activity at the address shown above.

The General Services Administration has authorized Federal agencies to use this Interim Federal Specification as a valid exception to Federal Specification WW-C-540a, November 2, 1960.

### 1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers aluminum electrical conduit, couplings, elbows, and nipples and shall be of but one grade.

#### 1.2 Classification.

1.2.1 Sizes. Conduit, couplings, elbows, and nipples shall be of standard commercial trade sizes in inches, as specified (see 6.2).

### 2. APPLICABLE DOCUMENTS

2.1 Specifications and standards. The following specifications and standards, of the issues in effect on date of invitation for bids, form a part of this specification to the extent specified herein.

#### Federal Standards:

Fed. Std. No. 123 - Marking for Domestic Shipment (Civil Agencies)

Fed. Std. Method Std. No. 151 - Metals Test Methods

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

(Single copies of this specification and other product specifications required by activities outside the Federal Government for bidding purposes are available without charge at the General Services Administration Regional Offices in Boston, New York, Washington, D.C., Atlanta, Chicago, Kansas City, Mo., Dallas, Denver, San Francisco, Los Angeles, and Seattle, Wash.

(Federal Government activities may obtain copies of Federal Specifications, Standards and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Military Standards:

- MIL-STD-129 - Marking for Shipment and Storage.
- MIL-STD-649 - Aluminum and Magnesium Products - Preparation for Shipment and Storage.

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

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Underwriters' Laboratories, Inc. Standard:

UL 6 - Standard for Rigid Metallic Conduit

(Copies may be obtained from the Underwriters' Laboratories, Inc., 161 Sixth Avenue, New York 13, N.Y.; 207 East Ohio Street, Chicago, Illinois; 1655 Scott Lane, Santa Clara, California)

United States of America Standards Institute, Standard:

C80.5 - Rigid Aluminum Conduit

(Application for copies should be addressed to: USA Standards Institute, 10 East 40th Street, New York, New York).

### 3. REQUIREMENTS

3.1 General. All material shall be new, suitable for the purpose intended, and shall be free of any defects that affect the appearance or impair the serviceability of the product.

3.2 Detail. Conduit, couplings, elbows, and nipples furnished under this specification shall conform to the United States of America Standards Institute (USASI) Standard C80.5.

#### 3.3 Fire and casualty hazards.

3.3.1 Each bidder shall submit to the contracting agency proof that the items he proposes to supply under this specification conform to the applicable requirements of Underwriters' Laboratories, Inc., Standard UL-6 for Rigid Metallic Conduit. The label or listing to the Underwriters' Laboratories, Inc., may be accepted as evidence that the items conform to these requirements.

3.3.2 In lieu of the label or listing, the bidder may submit independent proof satisfactory to the contracting agency that the items conform to the published standards, including methods of test, of Standard UL-6 for Rigid Metallic Conduit.

3.3.3 Compliance with the above preliminary requirements in regard to fire and casualty hazards does not absolve the bidder from complete compliance with the requirements of this specification in order to secure acceptance of his material.

3.3.4 Military agencies. Each length of conduit, nipple and elbow or bend shall be marked in accordance with Military Standard MIL-STD-130.

### 4. SAMPLING, INSPECTION, AND TEST PROCEDURES

4.1 The supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own or any other inspection facilities and services acceptable to the Government. Inspection records of the examination and tests shall be kept complete and available to the Government as specified in the contract or order. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

#### 4.2 Sampling.

4.2.1 Lot. Unless otherwise specified an inspection lot shall consist of an identifiable quantity of conduit, coupling, elbow, and nipple subjected to inspection at one time.

#### 4.2.2 Sampling for chemical analysis.

4.2.2.1 Complete materials analysis records shall be available at the suppliers' plant to the Government to insure compliance with the chemical requirements of 3.2.

4.2.2.2 Finish product analysis. When compliance with the chemical requirements of 3.2 cannot be established under 4.2.2.1 samples for analysis shall be selected as follows: From material having a nominal weight of less than one pound per lineal foot, one sample shall be selected from each lot weighing 500 pounds or less; from lots weighing more than 500 pounds, one additional sample shall be taken for each 1,000 pounds or fraction thereof in excess of the first 500 pounds. From material having a nominal weight of one pound or more per lineal foot, one sample shall be taken from each lot consisting of 500 feet, or less; from lots consisting of more than 500 feet, one

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additional sample shall be taken for each 1,000 feet or fraction thereof in excess of the first 500 feet. Only one sample shall be taken from any one piece when more than one piece is available. Not more than one analysis shall be required per piece.

4.2.3 Sampling for ductility tests. To determine compliance with the ductility requirements of 3.2, test samples shall be selected as follows: From material having a nominal weight of less than one pound per lineal foot, one ductility-test sample shall be selected from each lot of conduit weighing 500 pounds or less; from lots weighing more than 500 pounds, one additional sample shall be taken for each 1,000 pounds or fraction thereof in excess of the first 500 pounds. From material having a nominal weight of one pound or more per lineal foot, one-ductility-test sample shall be taken from each lot consisting of 500 feet, or less; from lots consisting of more than 500 feet, one additional sample shall be taken for each 1,000 feet or fraction thereof in excess of the first 500 feet. Only one ductility-test sample shall be taken from any one piece when more than one piece is available.

4.2.4 Sampling for visual and dimensional examination Each length of conduit, coupling, elbow and nipple shall be examined to determine conformance to this specification with respect to workmanship and identification marking. Examinations for dimensions shall be made to insure conformance with this specification. On approval of the procuring activity, the supplier may use a system of statistical quality control for dimensional, marking, and workmanship examination.

#### 4.3 Examination.

4.3.1 Visual and dimensional examination. Each sample bar, rod, shape, tube, or wire selected in accordance with 4.2.4 shall be visually examined and measured to verify conformance with this specification.

#### 4.4 Test methods.

4.4.1 Chemical analysis. Chemical analysis shall be made by the wet chemical method in accordance with method 111 of Fed. Test Method Std. No. 151 or by the spectro-chemical method in accordance with method 112 of Fed. Test Method Std. No. 151. In case of dispute, the chemical analysis by the wet chemical method 111 of Fed Test Method Std. No. 151 shall be the basis for acceptance.

4.4.2 Ductility test. Ductility shall be determined by the following: Conduit shall be bent cold into a quarter of a circle around a mandrel, the radius of which is four times the nominal size of the conduit. The conduit shall conform to the requirements of 3.2.

4.5 If any specimen fails to conform to the requirements of this specification, it shall be cause for rejection of the lot represented by the specimen subject to the retest provisions of Fed. Test Method Std. No. 151, except as otherwise provided in a sampling plan approved by the procuring activity.

4.6 Inspection of preparation for delivery. The preservation, packaging, packing, and marking shall be examined to determine compliance with section 5 of this specification.

### 5. PREPARATION FOR DELIVERY

5.1 Preservation, Packing and Packaging. All conduit, couplings, elbows and nipples shall be preserved, packaged, and packed in accordance with the requirements of levels, A, B, or C of MIL-STD-649 as specified. (See 6.2d).

## 5.2 Marking.

5.2.1 Civil agencies. In addition to any special marking required by the contract or order, marking for shipment shall be in accordance with Fed. Std. No. 123.

5.2.2 Military agencies. In addition to any special marking required in the contract or order, marking for shipment shall be in accordance with MIL-STD-129.

## 6. NOTES

6.1 Intended use. The conduit, couplings, elbows, and nipples are intended for use as a raceway for the wires of cables or an electrical system.

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6.2 Ordering data. Purchasers should exercise any desired options offered herein and procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Size of conduit, couplings, elbows, and nipples (see 1.2).
- (c) Administrative provisions for inspection records (see 4.1).
- (d) Selection of applicable level of packaging and packing required (see 5.1).
- (e) Whether civil or military marking is required (see 5.1.1 and 5.1.2).

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INT. AMENDMENT - 1 (GSA-FSS)  
July 18, 1968

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INTERIM AMENDMENT

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INTERIM FEDERAL SPECIFICATION

CONDUIT, METAL, RIGID: AND COUPLING, ELBOW,  
AND NIPPLE, ELECTRICAL CONDUIT: ALUMINUM

This Interim Amendment was developed by Federal Supply Service, General Services Administration, Washington, D.C 20405, based upon currently available technical information. It is recommended that Federal agencies use it in procurement and forward recommendations for change to the preparing activity at the address shown above.

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Delete paragraph 3.3.4 Military Agencies. Each length of conduit, nipple and elbow or bend shall be marked in accordance with Military Standard MIL-STD-130.

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