

MILITARY SPECIFICATION

CABLE, ELECTRIC, AEROSPACE VEHICLE,
GENERAL SPECIFICATION FOR

This interim amendment is issued for use by the Naval Air Systems Command, Department of the Navy, with Military Specification MIL-C-7078C dated 9 August 1971.

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1.2 Delete the descriptions of the "shielded" and the "shielded and jacketed" cable types (lines 7 through 12 of the paragraph) and substitute the following:

"Shielded: A single wire or two or more spirally laid coded wires with one or two overall shields but with no jacket over the shield or shields.

Shielded and jacketed: A single wire or two or more spirally laid coded wires with one or two overall shields and a jacket over the outer shield."

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2.2 Change the issue dates of the referenced ASTM documents in this paragraph and throughout the specification to read as follows:

"B33-74
B298-74a
B355-74"

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Insert the following new paragraphs before paragraph 3.4.2.2

"3.4.2.1.2 Optional identification. (When the cable is to be used in an end item for the Government, this optional identification method shall be permitted only when so stated in the Government contract for the end item.) The insulation of all wires in the cable shall be of the same solid color. The color shall denote wire size in accordance with 3.4.2.1.3. The respective wires in the cable shall be identified by groups of circumferential bands imprinted on the wires, with the

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number of bands per group corresponding to the number of the wire in the cable (e.g., 2 bands per group for the number 2 wire, 3 bands for the number 3 wire, etc.), except that no band marking shall be imprinted on the number 1 wire. The color of the circumferential bands shall be a contrasting color to the solid color of the basic insulation. The bands shall be 0.03 to 0.12 inch wide and shall be spaced 0.03 inch to 0.12 inch apart within the individual group. The separation between the end of one group and the beginning of the next group shall be 0.38 inch to 1.50 inches. The distance between the beginning of one group and the end of the next group shall be 3.0 inches maximum.

3.4.2.1.3 Insulation color for wire size identification. When insulation color is used for identification of conductor size in this specification (3.4.2.1.2), the following color code shall be used:

| <u>Conductor Size</u> | <u>Insulation Color</u> |
|-----------------------|-------------------------|
| 30 | Red |
| 28 | White |
| 26 | Black |
| 24 | Blue |
| 22 | Green |
| 20 | Red |
| 18 | White |
| 16 | Blue |
| 14 | Green |
| 12 | Yellow |
| 10 | Brown |
| 8 | Red |

3.4.2.2 Delete and substitute:

"3.4.2.2 Cable layup. The required quantity of wires, as determined by the applicable military specification sheet, shall be cabled with left hand lay. The lay of the individual wires shall be not less than 8 nor more than 16 times the major diameter of the unshielded, unjacketed cable. Unless otherwise specified in the applicable specification sheet, fillers shall not be used. There shall be no splicing of basic wires."

Insert the following new paragraph after 3.4.2.3.2

"3.4.2.3.3 Polyimide tape. When a polyimide tape is specified as an underlying tape, it shall be not less than 0.0005 inch in thickness and shall be spirally applied with not less than one-third lap."

3.4.2.4 Delete and substitute:

"3.4.2.4 Shield. When the military specification sheet specifies that a shield is to be incorporated in a cable construction, a closely woven braid of the type specified shall be applied over the single basic wire, the spirally laid basic wires, or a previously applied shield and underlying tape."

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3.4.2.4.1 Delete and substitute:

"3.4.2.4.1 Strand size, coated copper shield. Unless otherwise specified in the applicable military specification sheet, the coated copper strands (3.3.2.1) used in the braided shield over a single wire, spirally laid wires, or a previously applied shield and underlying tape shall be of the gages indicated for Group A basic wires in the following table, except that the shield strand gages for cables with MIL-W-81044 or MIL-W-81381 basic wires shall be as indicated for Group B. The "effective diameter under shield" in the table is equal to $1/\sqrt{2}$ times the cable perimeter under the innermost shield."

| <u>Effective diameter under shield (ins.)</u> | | <u>Shield Strand Gage (AWG)</u> |
|---|----------------------------|---------------------------------|
| <u>Group A basic wires</u> | <u>Group B basic wires</u> | |
| .060 or less | .250 or less | 38 |
| .061 thru .310 | .251 thru .400 | 36 |
| .311 thru .750 | Over .400 | 34 |
| Over .750 | | 32 |

3.4.2.4.3 Delete and substitute:

"3.4.2.4.3 Braid angle. The shield braid shall be a push-back type. The angle of the carriers of the braid to the axis of the cable shall be not less than 18 degrees nor more than 40 degrees except that, when the effective diameter of the cable under the shield (3.4.2.4.1) is greater than 0.31 inch, the shield shall be suitably applied to provide a push-back characteristic."

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3.4.2.5.9 Delete and substitute:

"3.4.2.5.9 Fluorinated ethylene propylene-polyimide tape jackets. Jackets shall be made of natural color polyimide tapes coated on one or both sides with fluorinated ethylene propylene resin."

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Jackets shall consist of two or more tapes spirally applied in alternating directions of spiral and heat sealed. The innermost tape shall be a one side coated tape applied with not less than 20 percent overlap and with the uncoated side of the tape facing inward. The succeeding tape or tapes shall be applied with not less than 30 percent overlap. The tapes shall be so selected and applied as to provide the jacket thickness specified in the specification sheet."

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3.6 Delete sentence 4 concerning identification of product on shielded or shielded-and-jacketed cable and substitute the following:

"For jacketed or shielded-and-jacketed cable, the marking shall be on the outer surface or visible through the outer surface of the cable, or shall be on one basic wire otherwise free of product identification, as specified for unshielded-unjacketed cable, or shall be on a continuous tape under the shield or jacket."

Preparing activity:
Navy - AS
(Project 6145-N270)