MIL-C-21609A(WP)
6 October 1965
SUPERSEDING
MIL-C-21609 (NOrd)
17 November 1958

MILITARY SPECIFICATION

CABLE, ELECTRICAL, SHIELDED, 600-VOLT (FOR NONFLEXING SERVICE)

This specification has been approved by the Bureau of Naval Weapons, Department of the Navy.

1. SCOPE

1.1 Scope - This specification covers shielded, 600-volt, multiconductor electrical cable for nonflexing service.

1.2 Classification - Cables shall be of the following types, as specified (see 6.2):

Type DOHOS - Double ordnance heat oil shielded
Type TOHOS - Triple ordnance heat oil shielded
Type FOHOS - Four ordnance heat oil shielded
Type 7OHOS - Seven ordnance heat oil shielded
Type MOHOS - Multiple ordnance heat oil shielded

2. APPLICABLE DOCUMENTS

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

SPECIFICATIONS

Military

MIL-C-17	Cables, Radio Frequency, Coaxial, Dual Coaxial, Twin Conductor, and Twin Lead
MIL-C-915	Cable, Cord and Wire, Electrical (Shipboard Use)
MIL-W-5086	Wire, Electrical, 600-Volt, Copper, Aircraft
MIL-M-19098	Molding Plastic, Polyamide (Nylon), and Molded and Extruded Polyamide Plastic Parts - Weather Resistant

FSC 6145

Military (Cont'd)

MIL-P-20693	Plastic Molding Material, Polyamide (Nylon), Rigid

Navy Department

General Specifications for Inspection of Material

STANDARDS

Federal

FED-STD-406	Plastics, Methods of Testing

Military

MIL-STD-104	Limits for Electrical Insulation Color
MIL-STD-129	Marking for Shipment and Storage

(When requesting applicable documents refer to both title and number. Copies of this specification and applicable documents may be obtained upon application to the Commanding Officer, Naval Supply Depot (Code 1051), 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120.)

2.2 Other publications - The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply:

Commercial

ASTM B-152	Copper Sheet, Strip, Plate and Rolled Bar
ASTM D-1047	Thermoplastic Vinyl Polymer Sheath Compound for Electrical Insulated Cords and Cables

(Applications for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia 3, Pennsylvania.)

IPCEA Standard	General Specification for Wire and Cable with Rubber, Rubber-like or Thermoplastic Insulations

(Applications for copies should be addressed to the Insulated Power Cable Engineers' Association, 283 Valley Road, Montclair, New Jersey.)

3. REQUIREMENTS

3.1 Definitions - The following definitions shall apply throughout this specification:

3.1.1 General - The definitions of technical terms contained in MIL-C-915 shall apply wherever such terms are employed herein.

3.1.2 Wire - The conductor plus its primary insulation and clear polyamide jacket.

3.1.3 Cable - A finished assembly of wires, fillers, and surrounding shielding and jackets.

3.1.4 Manufactured length - A manufactured length shall consist of any one single length of cable to which the impervious sheath was applied in one continuous operation.

3.2 Cable materials -

3.2.1 Filler and inner jacket - Filler and inner jacket material shall be polyvinyl chloride in accordance with MIL-C-915 as modified herein.

3.2.2 Bedding tape - Bedding tape shall be a suitably plasticized polyvinyl chloride that complies with the material Type IIa (synthetic resin) of MIL-C-17. The tape which is to serve as a bedding for an adjoining outer layer of shielding tape shall be 0.005 ±0.001 inch thick.

3.2.3 Shielding tape - Shielding tape shall be a commercial soft annealed continuous tape that is fabricated of electrolytic tough pitch copper in accordance with ASTM B-152. The copper tape shall be tinned with the finished tape being 0.002 ±0.0002 inch thick. The edges of the tape shall be free of burrs.

3.2.4 Outer jacket - The outer jacket shall be black polyamide having a melting point of 210 to 265 degrees C.

3.3 Construction -

3.3.1 Makeup of the cable shall be as follows:

Types DOHOS, TOHOS, and FOHOS

First - Stranded tinned copper conductor
Second - White polyvinyl chloride primary insulation
Third - Clear polyamide wire jacket
Fourth - Polyvinyl chloride filler
Fifth - Tinned copper shielding tape
Sixth - Black polyvinyl chloride cable inner jacket
Seventh - Black polyamide cable outer jacket

Types 7OHOS and MOHOS

First - Stranded tinned copper conductor
Second - White polyvinyl chloride primary insulation
Third - Clear polyamide wire jacket
Fourth - Polyvinyl chloride bedding tape
Fifth - Tinned copper shielding tape
Sixth - Black polyvinyl chloride cable inner jacket
Seventh - Black polyamide cable outer jacket

3.3.2 Wire - Wire shall be in accordance with MIL-W-5086, Type I, as modified herein.

3.3.3 Cable - The required number of individual wires (see Tables I, and II) shall be cabled together with a lay not exceeding 24 times the pitch diameter of the layer. Each layer shall alternate in direction of lay with the outside layer having a left-hand lay. Layers with a lay less than 12 inches shall be assembled free from twist in the individual wires. Such an assembly can be obtained with the use of a floating carriage or planetary type machine.

3.3.3.1 Filler - Filler shall be extruded into the external valleys of two, three, and four wire assemblies and cover the wires with an average thickness of .030 inch and a minimum thickness of .015 inch. A central monofilament filler shall be used in four wire assemblies and in larger assemblies using a four wire core.

3.3.3.2 Bedding tape - Assemblies of more than four wires shall be bound with a wrapping of bedding tape. The tape shall be applied spirally at an angle between 35 degrees and 70 degrees to the cable axis with a minimum lap that is 20 percent of the tape width.

3.3.3.3 Shielding tape - The shielding tape shall be applied spirally at an angle between 35 degrees and 70 degrees to the cable axis with a minimum lap that is 20 percent of the tape width.

3.3.3.4 Polyvinyl chloride inner jacket - The shielded assembly shall be enclosed in a polyvinyl chloride inner jacket with an average wall thickness that shall not be less than that specified in Tables I, and II, and a minimum wall thickness not less than 70 percent of the specified average.

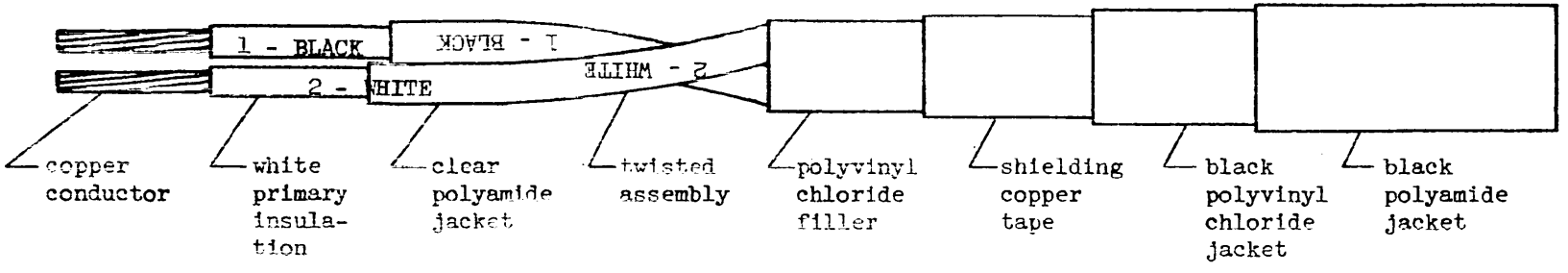
3.3.3.5 Polyamide outer jacket - The extruded continuous jacket shall be without pin holes, seams, or line grooves that would adversely affect the water tight sealing of the cable. This outer jacket shall be applied in intimate contact with the inner jacket and there shall be no gaseous pockets or other separations between the two jackets. The outer jacket should be applied under suitable vacuum to achieve the desired closeness of contact.

3.3.3.6 Watertightness - Sealants used for watertightness shall be such as to fill the voids of stranded conductors and between conductors with a heavy, flexible, free stripping filler of such mechanical strength that the wires can be readily torn loose from it by hand without undue effect or damage to the wires. Watertightness shall conform to the requirements of MIL-C-915, unless otherwise specified. (See 4.4.7.)

3.4 Performance -

3.4.1 Wire - Wire shall conform to the performance requirements of MIL-W-5086, Type I as modified herein, and the following additional requirements.

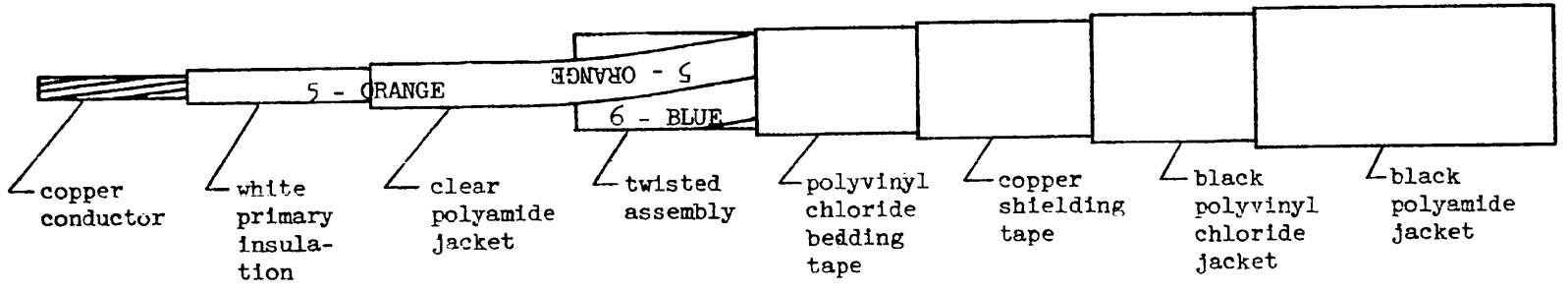
TABLE I - CONSTRUCTION OF 2, 3 AND 4 WIRE CABLE



INDIVIDUAL WIRES				CABLES			
Conductor			Diameter over Insulation	Number of Wires	Polyvinyl Chloride Jacket Nominal Thickness	Polyamide Jacket Thickness Tolerance +.002-.007	Finished Diameter Min./Max.
Size AWG (Approx.)	Number of Strands	Diameter of Strands Inches	Inches		Inches	Inches	Inches
			DOHOS - DOUBLE ORDNANCE HEAT OIL SHIELDED				
17	19	.010	0.088 ±.004	2	0.040	0.015	0.350/0.370
16	19	.0113	0.098 ±.004	2	0.040	0.015	0.370/0.390
14	19	.0142	0.117 ±.005	2	0.040	0.015	0.405/0.415
12	19	.0179	0.137 ±.005	2	0.040	0.015	0.445/0.470
10*	49	.0142	0.181 ±.005	2	0.040	0.015	0.550/0.580
			TOHOS - TRIPLE ORDNANCE HEAT OIL SHIELDED				
17	19	.010	0.088 ±.004	3	0.040	0.015	0.360/0.380
16	19	.0113	0.098 ±.004	3	0.040	0.015	0.385/0.405
14	19	.0142	0.117 ±.005	3	0.040	0.015	0.425/0.445
12	19	.0179	0.137 ±.005	3	0.040	0.015	0.485/0.510
10*	49	.0142	0.181 ±.005	3	0.040	0.015	0.580/0.610
			FOHOS - FOUR ORDNANCE HEAT OIL SHIELDED				
17	19	.010	0.088 ±.004	4	0.040	0.015	0.385/0.405
16	19	.0113	0.098 ±.004	4	0.040	0.015	0.410/0.430
14	19	.0142	0.117 ±.005	4	0.040	0.015	0.455/0.480
12	19	.0179	0.137 ±.005	4	0.040	0.015	0.530/0.560
10*	49	.0142	0.181 ±.005	4	0.040	0.015	0.625/0.660

* Number 10 AWG is not covered by MIL-W-5086 Type I

TABLE II - CONSTRUCTION OF CABLE WITH MORE THAN 4 WIRES



INDIVIDUAL WIRES				CABLES			
Conductor			Diameter over Insulation	Number of Wires	Polyvinyl Chloride Jacket Nominal Thickness	Polyamide Jacket Thickness Tolerance +.002-.007	Finished Diameter Min./Max.
Size AWG (Approx.)	Number of Strands	Diameter of Strands Inches	Inches		Inches	Inches	Inches
			MOHOS - MULTIPLE ORDNANCE HEAT OIL SHIELDED				
17	19	.010	0.088 ±.004	10	0.040	0.015	0.475/0.500
17	19	.010	0.088 ±.004	14	0.040	0.015	0.510/0.535
17	19	.010	0.088 ±.004	19	0.040	0.015	0.560/0.590
17	19	.010	0.088 ±.004	24	0.040	0.015	0.645/0.680
17	19	.010	0.088 ±.004	30	0.040	0.015	0.680/0.715
17	19	.010	0.088 ±.004	37	0.050	0.015	0.750/0.790
17	19	.010	0.088 ±.004	44	0.050	0.015	0.840/0.885
17	19	.010	0.088 ±.004	61	0.060	0.015	0.945/0.995
			7OHOS - SEVEN ORDNANCE HEAT OIL SHIELDED				
17	19	.010	0.088 ±.004	7	0.040	0.015	0.385/0.405
14	19	.0142	0.117 ±.005	7	0.040	0.015	0.475/0.500
10*	49	.0142	0.181 ±.005	7	0.050	0.015	0.680/0.715

* Number 10 AWG is not covered by MIL-W-5086 Type I.

3.4.1.1 Spark - In addition to the spark tests specified in MIL-W-5086, the wire shall withstand a 5000 volt (rms) spark test without breakdown during respooling prior to cable assembly. (See 4.3.1.)

3.4.2 Insulation - The wire primary and secondary insulations shall conform to the performance requirements of MIL-W-5086 with the following modifications and additional requirements.

3.4.2.1 Elongation - Elongation of the primary insulation of the wire shall be a minimum of 125 percent when initial rupture occurs.

3.4.2.2 Elongation after accelerated aging - The average elongation of the primary insulation after accelerated aging shall be at least 70 percent of that of the unaged specimen of insulation for acceptance.

3.4.2.3 Tensile - The primary insulation shall have a minimum tensile strength of 2,500 pounds per square inch.

3.4.2.4 Radial strain - The primary insulation shall show no visible signs of radial strain when subjected to 100 percent elongation as in 4.3.5 and examined in this position.

3.4.3 Cable -

3.4.3.1 Polyvinyl chloride - All polyvinyl chloride used to fabricate the cable shall be suitable for the operating temperature range from plus 105 degrees C to minus 40 degrees C. (See 4.4.1.)

3.4.3.1.1 Tensile - The polyvinyl chloride material, in unaged condition, shall have a minimum tensile strength of 1,800 pounds per square inch. (See 4.4.1.1.)

3.4.3.1.2 Unaged elongation - The polyvinyl chloride material, in unaged condition, shall have a minimum elongation of 250 percent when initial rupture occurs. (See 4.4.1.2)

3.4.3.1.3 Elongation after accelerated aging - The polyvinyl chloride material, after undergoing accelerated aging by being confined within a chamber maintained at a temperature of 100 degrees C for five days, shall have a minimum elongation that is 75 percent of the value for unaged material. (See 4.4.1.3.)

3.4.3.1.4 Heat shock - The polyvinyl chloride jacket, after removal of the black polyamide jacket, shall retain an unbroken surface without any visible cracks when it is held within the specific contour and exposed to the degree of heat specified in 4.4.1.4 for a minimum period of one hour.

3.4.3.1.5 Heat distortion - The polyvinyl chloride jacket material shall retain a minimum of 50 percent of its original thickness after subjection to a compression load for one hour at a temperature of 121 degrees C as specified in 4.4.1.5.

3.4.3.1.6 Flame retardation - The polyvinyl chloride jacket, after removal of the outer polyamide jacket, shall not support combustion in excess of one minute after removal of the last flame as specified in 4.4.1.6.

3.4.3.1.7 Cold bend - After removal of the polyamide jacket, the polyvinyl chloride jacket shall retain continuity of surface without any visible cracks when the cable is bent at minus 40 degrees C as specified in 4.4.1.7.

3.4.3.2 Polyamide jacket - The polyamide cable jacket shall be stabilized against weathering and sunlight as well as heat.

3.4.3.2.1 Pre-extrusion requirements - The polyamide resin extrusion powder, prior to extrusion, shall contain 1.90 to 2.25 percent of a finely dispersed carbon black content and shall meet the solution light transmission requirements of Table I in MIL-M-19098. It shall have a maximum water absorption of 0.7 percent as determined in accordance with MIL-P-20693 and FED-STD-406. (See 4.4.2.)

3.4.3.3 Dielectric strength - In the completed cable each wire shall withstand for one minute without breakdown the application of 3000 volts (rms) between its conductor and all other conductors and the shield, as specified in 4.4.3.

3.4.3.4 Insulation resistance - In the completed cable the insulation resistance between each wire and all other wires and the shield shall be not less than 18 megohms per thousand feet, when measured in accordance with 4.4.4.

3.4.3.5 Bending - At room ambient temperature, bending the cable with an inner radius no greater than 10 times the cable diameter shall not cause degradation of the dielectric strength or visible cracks or breaks in the polyamide or polyvinyl chloride jackets. (See 4.4.5.)

3.4.3.6 Wire resistance - The d-c resistance of each conductor when measured as specified in 4.4.6 shall not exceed 102% of the maximum values given in Table I of MIL-W-5086. (The two percent extra allowance is for cabling.)

3.5 Circuit identification - Wire numbers and color names, in accordance with Table I of MIL-C-915, shall be printed approximately every 1.5 inches along the entire length of wires 1 through 44. Wire numbers only, with the numbers underlined, shall be printed approximately every inch along the entire length of wires 45 and above. Alternate identifications shall be inverted and except wire number 1, the above identifications shall be on opposite sides of each wire. The circuit identifications shall be on one side only of wire number 1 since the manufacturer's identification will be on the opposite side (see 3.6). All circuit identifications shall be printed in black ink along the wire axis on the white primary insulation before the clear polyamide jacket is applied.

3.6 Manufacturer identification - The name of the manufacturer

and the date of manufacture shall be printed on wire number 1 on the opposite side to the circuit identification. The color of the manufacturere's identification shall conform to the following color for the year of manufacturer

1965	Yellow
1966	Red
1967	Green
1968	Orange
1969	Blue

The code repeats every five years.

3.7 Detailed construction - All cables shall conform to the appropriate dimensions of detailed cable construction shown in Tables I and II.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection - Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified the supplier may utilize his own facilities or any commercial laboratory acceptable to 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.

4.2 Sampling -

4.2.1 Lot - A lot shall consist of completed cable of one type and size (see 1.2 and Tables I and II) manufactured under essentially the same conditions and offered for delivery at the same time. The lot shall be further defined as follows, based on footage being delivered.

Order	Lot
Up to 10,000 feet	Total order
10,000 to 50,000 feet	10,000 feet
Over 50,000 feet	20,000 feet

4.2.2 Visual and dimensional inspection - A specimen shall be selected from each manufactured length of cable offered for delivery for visual and dimensional inspection.

4.2.3 Lot acceptance tests - Two specimens shall be selected of sufficient length from each lot offered for delivery to be subjected to all of the acceptance tests covered in this specification.

4.3 Wire tests - In addition to the wire tests specified in MIL-W-5086 and modified herein. the following tests will also be performed. (See 3.4.1)

4.3.1 Spark test - The individual wire shall be subjected to three 5000-volt(rms) spark tests as follows, prior to its final assembly (See 3.4.1.1).

(a) After polyvinyl chloride extrusion
(b) After polyamide extrusion
(c) During the respooling before cable assembly

4.3.2 Elongation of insulation - Specimens of primary insulation shall be tested in accordance with MIL-W-5086. (See 3.4.2.1.)

4.3.3 Elongation after accelerated aging of insulation - Specimens of aged primary insulation shall be tested in accordance with MIL-W-5086. (See 3.4.2.2.)

4.3.4. Tensile - Three specimens of wire primary insulation shall be individually elongated at a rate of 20 inches per minute until they break. The test shall be performed by a Scott Tensile Tester Type L-6 or equivalent. The tensile strengths shall be computed using the area of the specimens before elongation. (See 3.4.2.3.)

4.3.5 Radial strain - Three split specimens of primary insulation shall be elongated 100 percent and examined for visible radial strains. (See 3.4.2.4.)

4.4 Cable tests -

4.4.1 Physical properties of polyvinyl chloride - The polyvinyl chloride used in the cable jacket and fillers shall be tested as follows to determine its physical properties. These tests shall be made at a room temperature of 20 to 30 degrees C, unless otherwise indicated. (See 3.4.3.1.)

4.4.1.1 Tensile - Three unaged specimens of polyvinyl chloride material shall be elongated by a continuous uniformly applied force until they break. The tensile strengths shall be computed using the areas of the specimens before elongation. (See 3.4.3.1.1.)

4.4.1.2 Unaged elongation - Three unaged specimens of polyvinyl chloride material having bench marks 2 inches apart shall be elongated by a continuous uniformly applied force until initial rupture occurs. The elongated distance between the bench marks shall be measured and the percent of elongation shall be computed. (Increase in length times 100 divided by the original length. For example, the original two inch length should stretch to a minimum of seven inches, before initial rupture.) (See 3.4.3.1.2.)

4.4.1.3 Elongation after accelerated aging - Three specimens of the polyvinyl chloride material shall undergo accelerated aging by being confined within a test chamber at 100 degrees C for five calendar days. The aged specimens shall then be tested in the same manner as the unaged specimen and the percent of elongation computed. (See 3.4.3.1.3.)

4.4.1.4 Heat shock test - After removal of the black polyamide jacket, the cable specimen shall be kept wound around the following applicable diameter mandrel for one hour at a temperature of 121 plus or minus one degree C, and then the polyvinyl chloride jacket shall be examined for visible cracks:

Cable Outside Diameter	Mandrel Size
Up to 1.5 inches	8 times cable diameter
1.5 inches and over	12 times cable diameter

4.4.1.5 Heat distortion test - The polyvinyl chloride cable jacket material shall be tested in accordance with ASTM D-1047. (See 3.4.3.1.5.)

4.4.1.6 Flame test - The polyvinyl chloride cable jacket, after removal of the black polyamide jacket, shall be subjected to five 15-second applications of the standard vertical flame test in Appendix I of the IPCEA S-19-81 that are spaced 15 seconds apart, and observed to see if the jacket will convey flame and how long it will continue to burn after the last flame is removed. (See 3.4.3.1.6.)

4.4.1.7 Cold bend test - After removal of the black polyamide jacket, the cable specimen shall be subjected to a temperature of minus 40 plus or minus one degree C for one hour and then bent 180 degrees around the following applicable diameter mandrel immediately upon removal from the cold chamber. Following this procedure, the jacket shall be thoroughly examined for visible cracks: (See 3.4.3.1.7).

Cable Outside Diameter (inches)	Mandrel Size
Equal to or less than 0.800	8 times cable diameter
Greater than 0.800	10 times cable diameter

4.4.2 Polyamide pre-extrusion tests - The polyamide resin molding powder, prior to molding, shall be tested for solution light transmission and carbon content range in accordance with the procedures of MIL-M-19098. (See 3.4.3.2.1.)

4.4.3 Dielectric strength - Each manufactured length of the completed cable shall be subjected to a dry dielectric test in which 3,000 volts (rms) are applied for one minute between the conductor of each wire and all other conductors and the shield connected together.

4.4.4 Insulation resistance - In each manufactured length of the completed cable the insulation resistance between the conductor of each wire and all other conductors and the shield connected together shall be measured, and the megohms per thousand feet computed. (See 3.4.3.4.)

4.4.5 Bending - Using a specimen of the completed cable, three turns shall be wound around a mandrel having a diameter 20 times that of the cable. The same section of the specimen shall be unwound and rewound in such a manner that the cable is bent in the opposite direction. This operation shall be repeated until the specimen has been wound on the mandrel a total of 5 times. Then, while still on the mandrel, the specimen shall be subjected to the dielectric-strength test, examined for cracks or breaks in the outer jacket, and tested for continuity of conductors and shielding. (See 3.4.3.5.)

4.4.6 Wire resistance - In each length of completed cable, the d-c resistance of each conductor shall be measured with an accuracy of ±1.0 percent. (See 3.4.3.6.)

4.4.7 Watertightness test - Watertightness test shall conform to the requirements of MIL-C-915, unless otherwise specified. (See 3.3.3.6.)

4.4.8 In addition, the cable shall be tested to any of the other requirements specified herein which the cognizant Government quality control representative considers necessary to determine conformance to the requirements of this specification.

4.5 Rejection and retest - Acceptance or rejection of cable procured in accordance with this specification shall be based upon examination of product and satisfactory performance under all applicable acceptance tests. If any specimen fails in any test, 2 additional specimens shall be subjected to the same test. If either of the 2 retest specimens fail the lot shall be rejected. Cable which has been rejected may be reworked to correct the defects and resubmitted for acceptance. Before resubmitting, full particulars concerning previous rejection and the action taken to correct the defects found in the original shall be furnished in writing to the cognizant Government quality control representative. Units rejected after retest shall not be resubmitted without specific approval of the procuring activity.

5. PREPARATION FOR DELIVERY

5.1 Packaging -

5.1.1 Levels A, B and C -

5.1.1.1 The cable shall be wound on reels with a drum diameter not less than 20 times the cable diameter. Lengths of cable shall be in accordance with Table III and 6.2.

TABLE III - CABLE LENGTHS, SHIPPING

Nominal Length	Standard Length No Price Reduction	Random Length No Price Reduction	Remnant Lengths Price Reduction 5%	10%	Scrap Lengths Not Acceptable
Feet	Feet	Feet	Feet	Feet	Feet
1000	1100 to 900	899 to 300	299 to 200	199 to 100	99 to 0
2000	2200 to 1800	1799 to 600	599 to 400	399 to 200	199 to 0

5.1.1.2 End caps - Snug fitting vinyl end caps shall be cemented to both cut ends of a wound length. The cemented end cap shall be so sealed that it cannot be readily removed by hand.

5.2 Packing - Levels A, B and C cables wound on reels with appropriate marking (See 5.3) will require no further packing.

5.3 Marking -

5.3.1 General - Each reel shall be plainly marked on both flanges with the following information completed:

Cable, Electrical Shielded, 600 Volt (Nonflexing Service)
MIL-C-21609
Type and size
Footage
Reel No.
Contract No.
Manufacturer
Gross Weight

5.3.1.1 Where practicable, metal tags, stencils, or paper labels containing the information requested above shall be securely attached to reels. Where paper labels are used, they shall be securely attached and protected by a transparent waterproof compound to prevent deterioration of the markings. Markings shall remain legible under indefinite exposure to sunlight.

5.3.2 Yearly marking - The lagging, either wood or V3c type fiberboard of PPP-B-636, of all reels shall be marked with a color coded in accordance with 3.6 to indicate the year of manufacture. This marking shall consist of a painted or printed stripe approximately 2 inches wide applied circumferentially over the lagging and midway between the flanges, comprising one coat of commercial quality outside paint or non-fading waterproof ink of the appropriate color. In addition to the stripe over the lagging, both flanges of all reels shall be stenciled with 4-inch-high figures to show the year of manufacture.

5.3.3 In addition to the foregoing and any special marking required by the contract or order, marking shall be in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use - The cable covered by this specification is intended for installation in electrical systems where the potential does not exceed 600 volts(rms), and where resistance to mechanical damage and to damage by hydraulic fluids is required.

6.2 Ordering data - Procurement documents should specify the following:

(a) Title, number, and date of this specification.
(b) Type and size of cable (see 1.2 and Tables I, and II).
(c) Acceptable lengths of cable (see 5.1.1.1.) (Table III lengths should be specified whenever possible.)
(d) Total footage required.

SPECIFICATION ANALYSIS SHEET

Form Approved
Budget Bureau No. 119-R004

INSTRUCTIONS

This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity *(as indicated on reverse hereof).*

SPECIFICATION

MIL-C-21609A(WP) CABLE, ELECTRICAL, SHIELDED, 600-VOLT (FOR NONFLEXING SERVICE)

ORGANIZATION *(Of submitter)*	CITY AND STATE

CONTRACT NO.	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT

MATERIAL PROCURED UNDER A

☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT

1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?
   A. GIVE PARAGRAPH NUMBER AND WORDING.

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.

2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID

3. IS THE SPECIFICATION RESTRICTIVE?

☐ YES ☐ NO IF "YES", IN WHAT WAY?

4. REMARKS *(Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)*

SUBMITTED *(Printed or typed name and activity)*	DATE

DD FORM 1 NOV 64 1426 REPLACES NAVSHIPS FORM 4863, WHICH IS OBSOLETE C-8279

FOLD

DEPARTMENT OF THE NAVY
Naval Air Engineering Center
Philadelphia, Pennsylvania 19112

OFFICIAL BUSINESS

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