INCH-POUND

MIL-DTL-55446B
27 October 2000
SUPERSEDING
MIL-C-55446A
19 February 1968

DETAIL SPECIFICATION

CABLES, TELEPHONE, SWITCHBOARD: PLASTIC INSULATED, PLASTIC JACKETED

Inactive for new design after 16 June 1997

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers plastic insulated, plastic jacketed, telephone switchboard cables consisting of number 22 AWG conductors in combinations of pairs and singles ranging from 4 pairs to 201 pairs (see 1.2).

1.2 Classification. The types of switchboard cables (see 6.2) covered by this specification are listed in table I.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto cited in the solicitation (see 6.2).

AMSC N/A FSC 6145

TABLE I. Switchboard cable types.

Number of pairs and singles (No.22 AWG)	Total number of conductors	Maximum average overall diameter of finished cables (inches)
4 pairs	8	.360
5 pairs, 5 singles	15	.440
6 pairs	12	.390
8 pairs, 8 singles	24	.480
10 pairs, 10 singles	30	.540
11 pairs	22	.470
16 pairs	32	.530
20 pairs	40	.560
20 pairs, 10 singles	50	.610
20 pairs, 20 singles	60	.660
25 pairs	50	.610
26 pairs, 26 singles	78	.720
30 pairs	60	.640
40 pairs	80	.720
41 pairs, 41 singles	123	.830
51 pairs	102	.800
76 pairs	152	.910
101 pairs	202	1.030
101 pairs, 100 singles	302	1.250
201 pairs	402	1.410

SPECIFICATIONS

FEDERAL

A-A-59551 - Wire, Electrical, Copper (Uninsulated)

DEPARTMENT OF DEFENSE

MIL-I-3930 - Insulating and Jacketing Compounds, Electrical (For Cable, Cords and Wires)

STANDARDS

FEDERAL

FED-STD-228 - Cable and Wire, Insulated; Methods of Testing

DEPARTMENT OF DEFENSE

MIL-STD-104 - Limits For Electrical Insulation Colors

(Unless otherwise indicated, copies of the above specifications and standards are available from the Document Automation and Production Service, Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents that are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

NATIONAL CONFERENCE OF STANDARDS LABORATORIES (NCSL)

ANSI/NCSL Z540-1 - Calibration Laboratories and Measuring and Test Equipment, General Requirements.

(Application for copies should be addressed to the National Conference of Standards Laboratories, 1800 - 30th Street, Suite 305B, Boulder, CO 80301-1032.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Description. The cables covered by this specification are switchboard cables, the conductors of which are No. 22 AWG solid copper wire, tinned and individually insulated with an extruded polyvinyl chloride (PVC) covering. The insulation is color coded (see 3.6.3) for convenient identification of pairs and single wires. The core is made up of pairs and single wires as required and cabled either concentrically in layers or in unit construction, depending on its size. The individual units of unit-constructed cables are bound with color coded spaced servings of yarn or polyethylene tape binders. The core is covered with an overlapped spiral winding of paper or, at the option of the manufacturer, polyester tape. Over this polyester covering and beneath the outer sheath is a nylon ripcord to facilitate stripping. The outer sheath is an extruded PVC jacket.

3.2 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible, provided that the material meets or exceeds the operational and maintenance requirements and promotes economically advantageous life-cycle costs.

3.3 Construction. The cable shall be made up of the number of pairs and single wires as required (see 1.2). The pairs shall be twisted, with the maximum length of pair twist not to exceed 6 inches. To minimize cross talk, each pair in a concentric type cable or each pair in a unit (for unit construction) shall have a twist with a length of lay different from that of any other pair in the cable or unit, respectively.

3.4. Materials. The materials for the cables covered by this specification shall be as specified herein. When a definite material is not specified, the best material commercially available for the purpose intended shall be used.

3.5 Conductors. Each conductor of the cables shall be No. 22 AWG solid, soft, or drawn and annealed tinned copper wire conforming to A-A-59551.

3.5.1 Joints in conductors. If joints are necessary, the joints shall be made by brazing with silver solder or by welding. The diameter of the wire measured at the joint shall be within the maximum diameter tolerance for the conductors (see 3.6.2). The conductor surface at the joint shall be smooth and free from lumps and sharp projections. The tensile strength of a section of the conductor containing a joint shall be not less than 90 percent of the tensile strength of an adjacent section of the conductor of equal length that is free from joints. The resistance of a section of the conductor not exceeding 6 inches in length, which includes the joint, shall be not more than 105 percent of the resistance of an adjacent section of equal length that is free from joints.

3.6 Insulation. Each conductor of the cable shall be insulated with an extruded layer of semi-rigid PVC. The PVC compound shall conform to MIL-I-3930, type IP.

3.6.1 Insulation thickness. The extruded layer of insulating compound applied to each conductor shall be not less than .008 inch thick.

3.6.2 Diameter of insulated conductor. The diameter of the insulated conductor shall be not more than .048 inch.

3.6.3 Color code. The insulated conductors shall be color coded to allow identification of pairs and single conductors. The color code shall be in accordance with table II for pairs and table III for singles.

3.6.3.1 Insulation color. The insulation color, including stripe colors, shall be within the limits specified in MIL-STD-104. The base color shall be integral. The color striping shall be either integral or applied to the insulation by any commercially accepted standard method, provided the colors are readily distinguishable on the insulation after the cable has been subjected to the tests of the specification, except for the flame retardation tests. The colors shall be durable and shall not abrade as a result of cable handling or abrasion.

TABLE II. Color code for pairs.

Pair No.	Wire		Mate	
	Wide stripe (base color)	Narrow stripe	Narrow stripe	Wide strip (base color)
P 1	Blue	White	Blue	White
P 2	Orange	White	Orange	White
P-3	Green	White	Green	White
P 4	Brown	White	Brown	White
P 5	Slate	White	Slate	White
P 6	Blue	Red	Blue	Red
P 7	Orange	Red	Orange	Red
P 8	Green	Red	Green	Red
P 9	Brown	Red	Brown	Red
P 10	Slate	Red	Slate	Red
P 11	Blue	Black	Blue	Black
P 12	Orange	Black	Orange	Black
P 13	Green	Black	Green	Black
P 14	Brown	Black	Brown	Black
P 15	Slate	Black	Slate	Black
P 16	Blue	Yellow	Blue	Yellow
P 17	Orange	Yellow	Orange	Yellow
P 18	Green	Yellow	Green	Yellow
P 19	Brown	Yellow	Brown	Yellow
P 20	Slate	Yellow	Slate	Yellow
Spare pair: SP 1	White		Red	

TABLE III. Color code for singles.

Single No.	Color coding 1/		
	Base color	Stripe (wide)	Stripe (narrow)
S 1	Blue	-	-
S 2	Orange	-	-
S 3	Green	-	-
S 4	Brown	-	-
S 5	Slate	-	-
S 6	Blue	Red	White
S 7	Orange	Red	White
S 8	Green	Red	White
S 9	Brown	Red	White
S 10	Slate	Red	White
S 11	Blue	Black	White
S 12	Orange	Black	White
S 13	Green	Black	White
S 14	Brown	Black	White
S 15	Slate	Black	White
S 16	Blue	Yellow	White
S 17	Orange	Yellow	White
S 18	Green	Yellow	White
S 19	Brown	Yellow	White
S 20	Slate	Yellow	White
Spare single: SS 1	Red	White	-

NOTE: 1/ Approximate equal widths for both stripes is an acceptable alternative to wide and narrow stripe specified.

3.6.3.2 Color stripe length of lay. The color stripe length of lay shall not exceed 1 inch.

3.7 Cabling. The required number of pairs and single conductors shall be cabled in layers as a concentric-type construction or in units as a unit-type construction, as shown in figures 1 through 6.

3.7.1 Binders. Each individual unit of unit-constructed cables shall be spirally bound with a color coded binder of nylon yarn servings or polypropylene or polyethylene tape. The color code of the binders shall conform to the binder colors specified in the applicable cable configuration of figures 2b through 6.

3.7.2 Core wrapping. The core shall be wrapped with an overlapping spirally applied Kraft electrical grade paper tape having a .005 inch nominal thickness, or with a polyester tape having a .002 inch nominal thickness. If a core binder polyethylene or polypropylene tape is used (similar to unit binders in 3.7.1), the core wrapping may be omitted.

3.8 Ripcord. A ripcord of double-ply nylon yarn shall be laid over the wrapped cable core directly beneath the cable jacket.

3.9 Jacket. The outer covering shall be a slate-colored plasticized PVC or its copolymer with polyvinyl acetate conforming to MIL-I-3930, type JP. The jacket shall be suitably stabilized, compounded, and extruded to provide the cable with a tough, flexible, long-life protective covering. The wall thickness of the plastic jacket shall be .030 inch minimum for core diameters less than 1 inch, and .040 inch minimum for core diameters 1 inch and over.

3.9.1 Diameter of finished cables. The outside diameter of the finished cable shall be in accordance with the applicable cable and diameter identified in table I.

3.10 Electrical requirements.

3.10.1 Continuity. Each conductor in each cable shall be continuous.

3.10.2 Short circuit. Each conductor shall be free of any contact with any other conductor.

3.10.3 Resistance. The dc resistance of each conductor shall not exceed 94 ohms per mile of cable at 20 °C.

3.10.4 Dielectric strength. The insulation of each conductor shall be capable of withstanding an ac potential of 1,500 volts for one minute.

3.10.5 Insulation resistance. The insulation resistance between each conductor and the remaining conductors connected together shall be not less than 4,000 megohms per 1,000 feet at 20 °C.

3.11 Physical requirements for insulation.

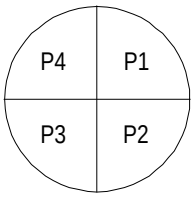
3.11.1 Tensile strength. The insulation shall have a tensile strength of 2,500 pounds per square inch.

3.11.2 Elongation. The insulation shall have an elongation of 100 percent minimum.

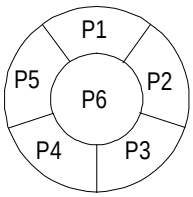
3.11.3 Adhesion. The maximum pull required to remove a 1.250-inch length of insulation shall be 3 pounds.

3.11.4 Shrinkage. The maximum allowable insulation shrinkback on the conductor shall not exceed .0625 inch when the conductor is exposed to solder at a temperature of 160 °C for 20 seconds.

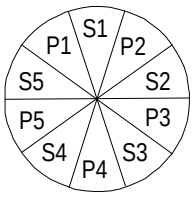
8 CONDUCTORS
(4 PAIRS)



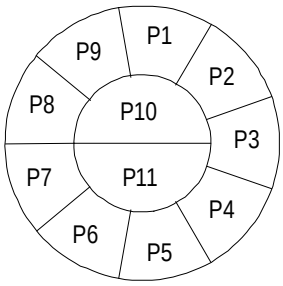
12 CONDUCTORS
(6 PAIRS)



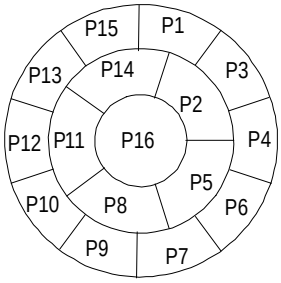
15 CONDUCTORS
(5 PAIRS, 5 SINGLES)



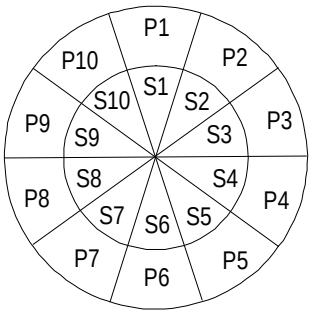
22 CONDUCTORS
(11 PAIRS)



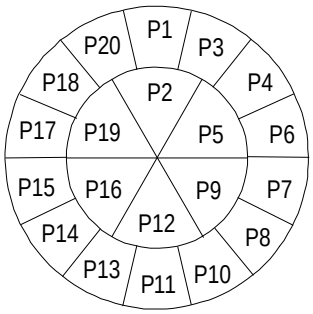
32 CONDUCTORS
(16 PAIRS)



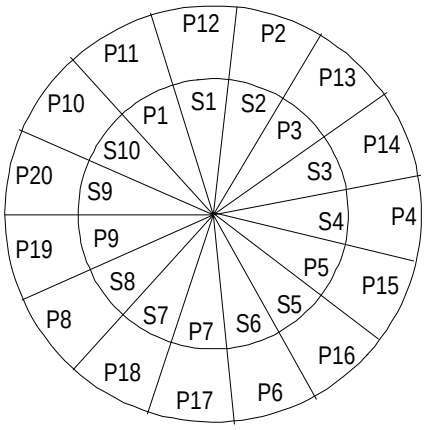
30 CONDUCTORS
(10 PAIRS, 10 SINGLES)



40 CONDUCTORS
(20 PAIRS)



50 CONDUCTORS
(20 PAIRS, 10 SINGLES)



60 CONDUCTORS
(20 PAIRS, 20 SINGLES)

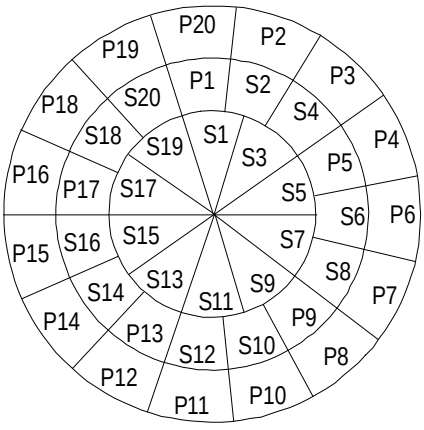


FIGURE 1. Cable configuration – layer type construction.

24 CONDUCTORS
(8 PAIRS, 8 SINGLES)

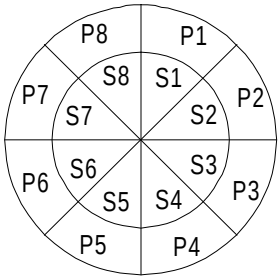
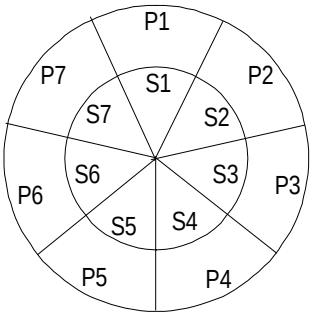
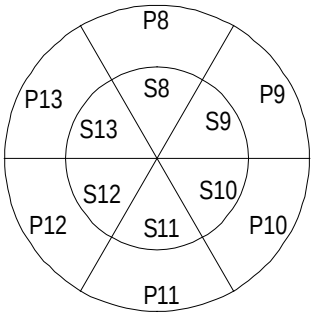


FIGURE 2a. Cable configuration – layer type construction
24 conductors (8 pairs – 8 singles).

78 CONDUCTORS
(26 PAIRS - 26 SINGLES)

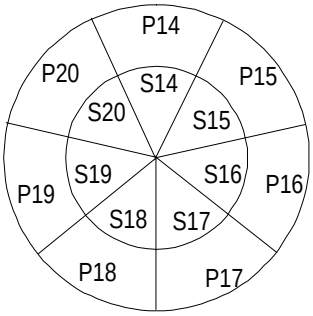


UNIT 1



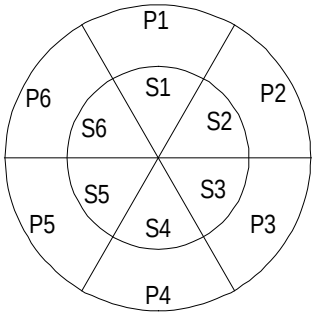
UNIT 2

7P - 7S UNIT

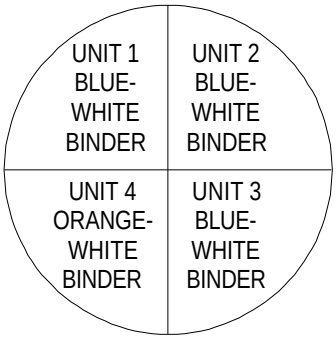


UNIT 3

6P - 6S UNIT



UNIT 4



26P - 26S

FIGURE 2b. Cable configuration – unit type construction
78 conductors (26 pairs – 26 singles).

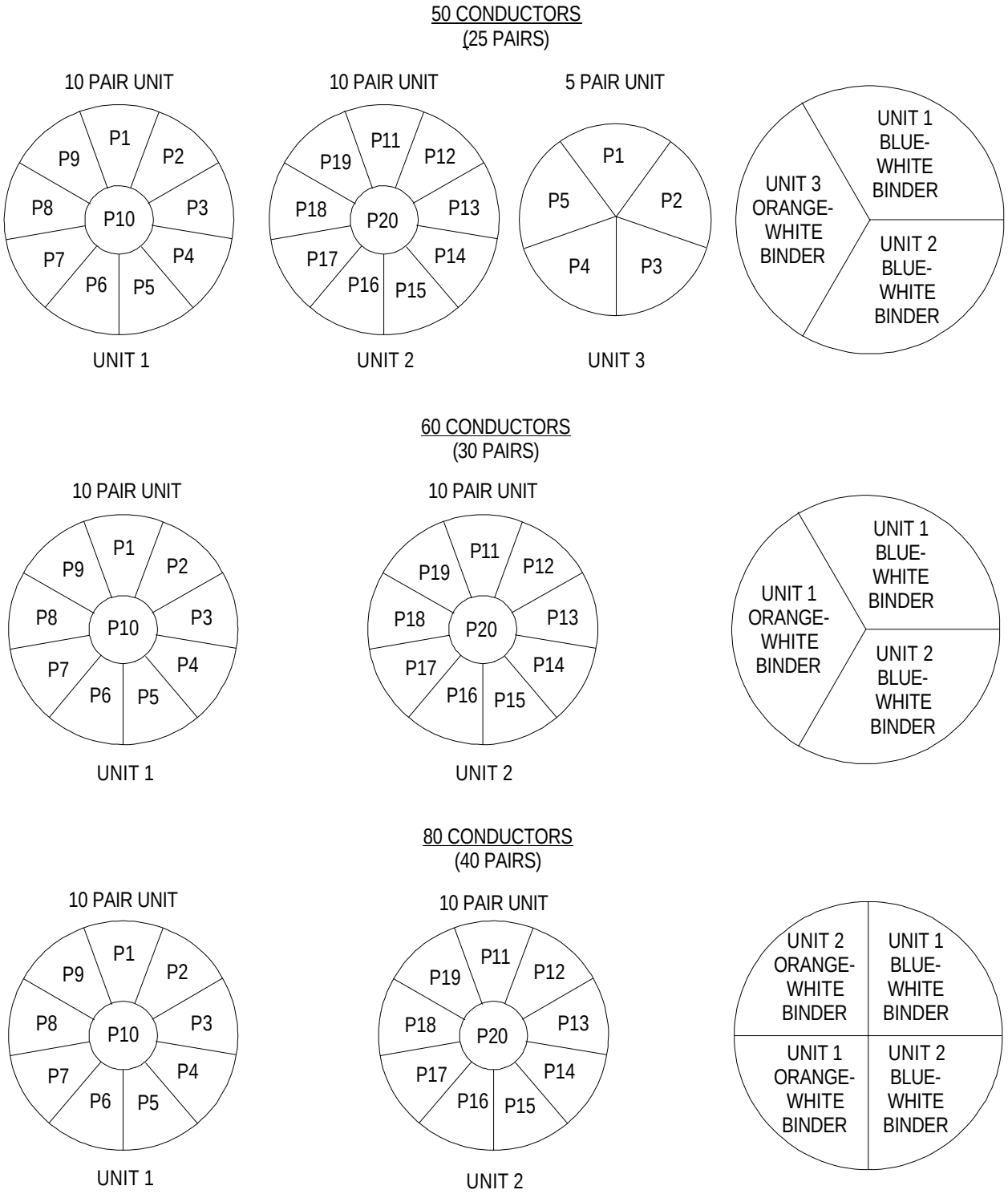


Figure 3. Cable configuration – unit type construction.

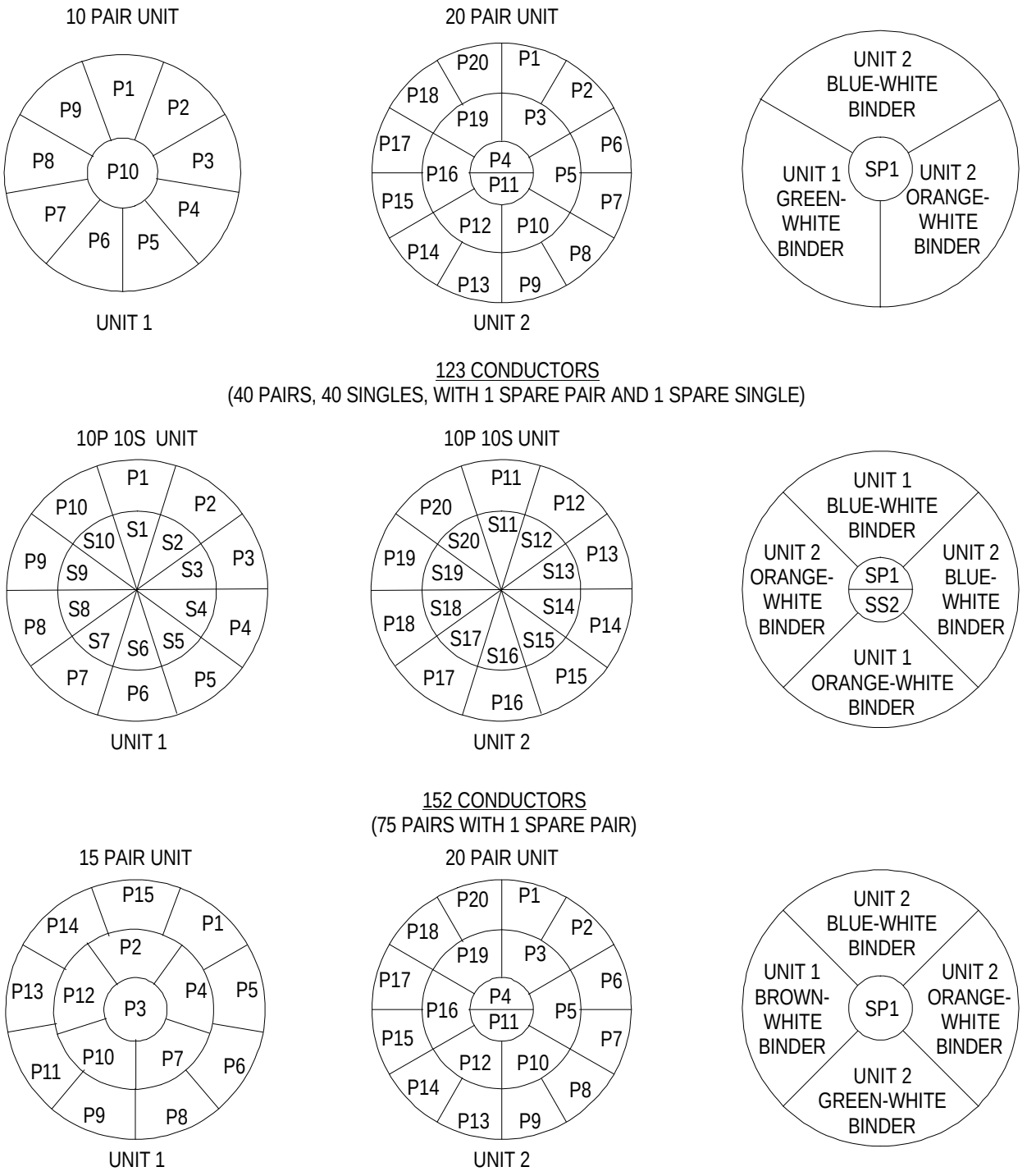
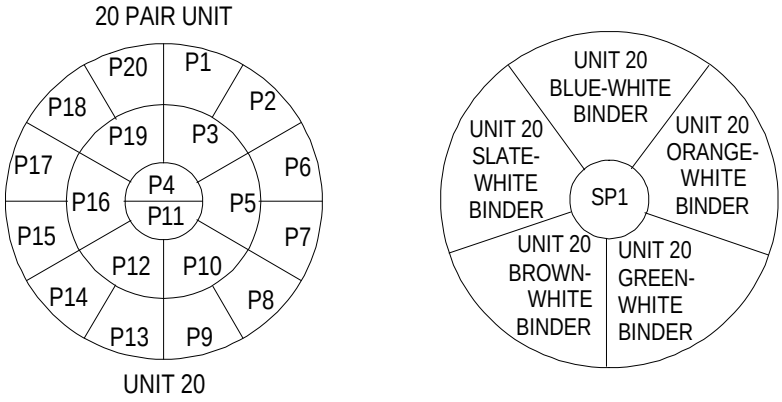


FIGURE 4. Cable configuration – unit type construction.

202 CONDUCTORS
(100 PAIRS WITH 1 SPARE PAIR)



302 CONDUCTORS
(1OO PAIRS, 1OO SINGLES WITH 1 SPARE PAIR)

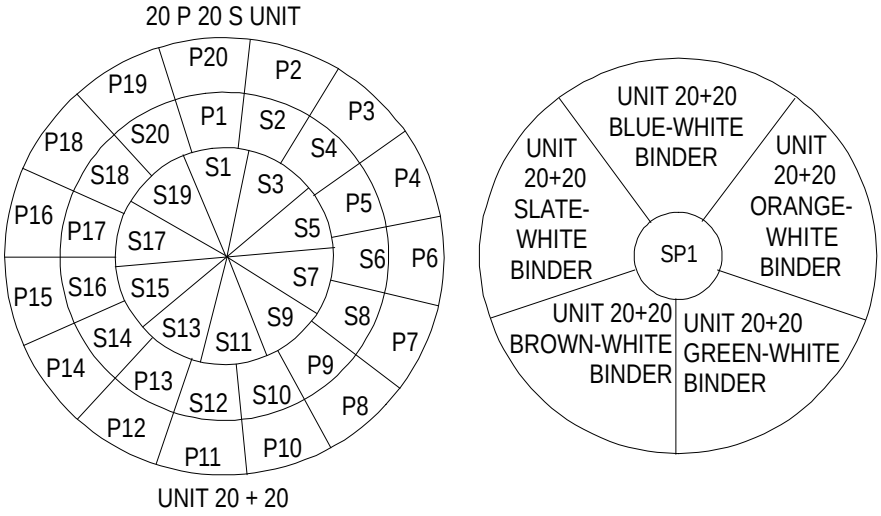


FIGURE 5. Cable construction – unit type construction.

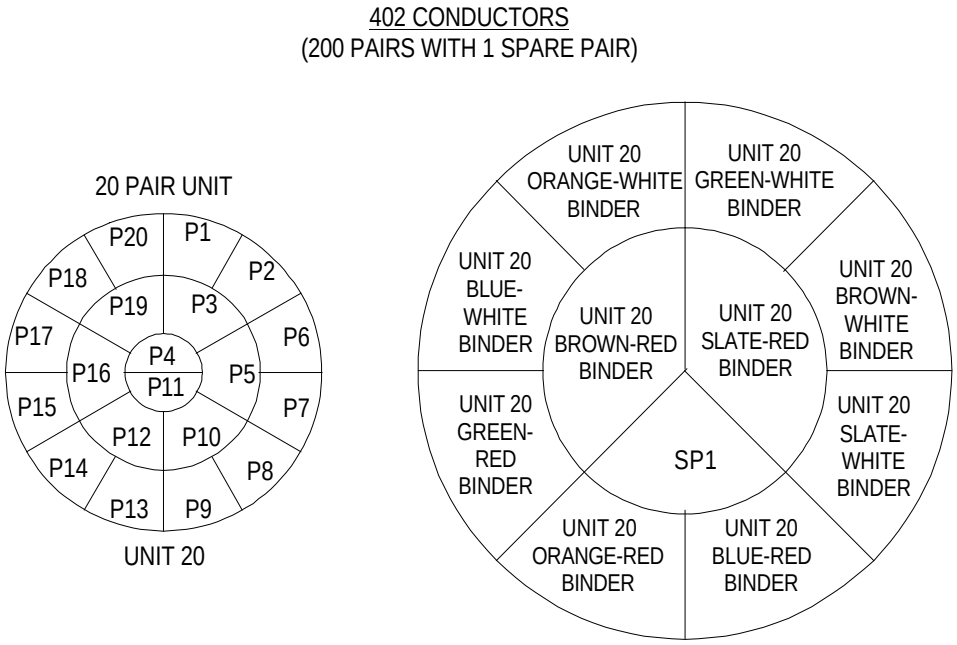


FIGURE 6. Cable construction – unit construction.

3.11.5 Cold bend. The insulation shall not develop any cracks visible to the unaided eye after being subjected to -18 °C for one hour and immediately bent over a .0625-inch diameter mandrel.

3.11.6 Flammability. The insulation on a conductor may burn when exposed to an open flame, but shall be self-extinguishing within 5 seconds after the flame is removed.

3.11.7 Compression strength. The insulation shall withstand a compression load of 1,000 pounds without failure.

3.12 Physical requirements for jacket.

3.12.1 Tensile strength. The jacket shall have a minimum tensile strength of 1,800 pounds per square inch.

3.12.2 Elongation. The jacket shall have an elongation of 200 percent minimum.

3.12.3 Aged elongation. The jacket shall have a minimum elongation of 100 percent after aging for 48 hours at 120 °C.

3.12.4 Heat shock. The jacket shall show no cracks when the cable is exposed to heating of 120 °C for one hour while bent around a mandrel (see 4.4.3.4) and then subjected to straightening after cooling to room temperature.

3.12.5 Cold bend. The jacket shall not develop any cracks when exposed to cold temperatures of -18 °C for 24 hours and then subjected to bending.

3.12.6 Flammability. The jacket shall be self-extinguishing within 5 seconds after being exposed to flame for 15 seconds.

3.12.7 Jacket stripping. The jacket shall not adhere to the cable and shall be freely skinned from the cable with the ripcord.

3.13. Workmanship. The cables shall be uniform in quality and free from defects that affect performance, serviceability, or appearance, including lumps, kinks, splits, abrasions, scrapes, corroded surfaces, skin impurities, and faulty extruded surfaces.

4. VERIFICATION

4.1 Test equipment and inspection facilities. Test and measuring equipment and inspection facilities of sufficient accuracy, quality, and quantity to permit performance of the required inspection shall be established and maintained by the contractor. The establishment and maintenance of a calibration system to control the accuracy of the measuring and test equipment (e.g., non-Government standard [NGS] or federal or military standard) shall be in accordance with ANSI/NCSL Z540-1 or equivalent.

4.2 Classification of inspections. The inspection requirements specified herein are classified as a conformance inspection (see 4.3).

4.3 Conformance inspection. Conformance inspection shall consist of the inspections listed for groups A, B, and C. Conformance inspection shall be performed on every lot of cable procured under this specification.

4.3.1 Inspection lot. Unless otherwise specified (see 6.2), an inspection lot shall consist of all finished cable of the same part or identifying number (PIN), produced under essentially the same conditions on the same machine, which is presented for inspection and shipment at one time.

4.3.2 Unit of product. The unit of product for determining lot size (see 6.4) for sampling shall be the quantity of cable offered for inspection on one coil, one reel, or one spool, as applicable.

4.3.3 Group A inspection. Group A inspection shall consist of the inspections specified in table IV. If these inspections cannot be performed on the finished cable as submitted for inspection, the inspections may be performed at an appropriate stage of the manufacturing operation. The inspections shall be performed on every lot of cable acquired under this specification.

4.3.4 Group B inspection. Group B inspection shall consist of the inspections specified in table V. Group B inspection shall be performed on sample specimens that have been subjected to and have passed the Group A inspection. Group B inspection shall be performed in any order on randomly selected sample specimens (see 4.3.6) from an inspection lot.

4.3.4.1 Group B sampling. A random sample shall first be selected from the lot. The sample size shall be based on the inspection lot size from which the sample was selected for group A inspection. Inspection sample size shall be in accordance with table VII.

4.3.5 Group C inspection. Group C inspection shall consist of the inspections specified in table VI. Group C inspection shall normally be performed on sample specimens that have been subjected to and have passed Group A and B inspections.

4.3.5.1 Group C sampling. Three sample specimens shall be randomly selected and inspected in any month that the cable is produced.

4.3.6 Specimen lengths. Unless otherwise specified herein, the specimen shall be of the length specified in the applicable test method.

TABLE IV. Group A inspection.

Inspection	Requirement	Verification
Visual and dimensional		4.4.4
Construction	3.3	
Materials	3.4	
Conductor	3.5	
Joints in conductors	3.5.1	
Insulation	3.6	
Insulation thickness	3.6.1	
Diameter of insulated conductor	3.6.2	
Color code	3.6.3, 3.6.3.1, 3.6.3.2	
Cabling, binders	3.7, 3.7.1	
Core wrapping	3.7.2	
Ripcord	3.8	
Jacket	3.9	
Diameter of finished cables	3.9.1	
Workmanship	3.13	
Electrical		
Continuity	3.10.1	4.4.1.1
Short circuits	3.10.2	4.4.1.2
Resistance	3.10.3	4.4.1.3
Dielectric strength	3.10.4	4.4.1.4
Insulation resistance	3.10.5	4.4.1.5

TABLE V. Group B inspection.

Physical inspection	Requirement	Verification
Insulation		
Tensile strength	3.11.1	4.4.2.1
Elongation	3.11.2	4.4.2.2
Adhesion	3.11.3	4.4.2.3
Shrinkage	3.11.4	4.4.2.4
Cold bend	3.11.5	4.4.2.5
Jacket		
Tensile strength	3.12.1	4.4.3.1
Elongation	3.12.2	4.4.3.2
Heat shock	3.12.4	4.4.3.4
Jacket stripping	3.12.7	4.4.3.7

TABLE VI. Group C inspection.

Physical inspection	Requirement	Verification
Insulation		
Flammability	3.11.6	4.4.2.6
Compression strength	3.11.7	4.4.2.7
Jacket		
Aged elongation	3.12.3	4.4.3.3
Cold bend	3.12.5	4.4.3.5
Flammability	3.12.6	4.4.3.6

4.3.7 Rejected lot. Failure to pass any of the tests and inspections shall constitute failure of the lot and the lot shall be rejected. If an inspection lot is rejected, the lot may be reworked to correct the defects or screen out the defective units, and the lot submitted for re-inspection. Such lots shall be separated from new lots and shall be identified as re-inspected lots.

4.3.8 Non-compliance. If a sample fails to pass any of the inspections, the contractor shall notify the cognizant inspection activity of such failure and take corrective action on the materials or processes, or both, as warranted, on all units of the product. Acceptance and shipment of the product shall be discontinued until corrective action has been taken. After the corrective action has been taken, the inspections shall be repeated on replacement articles. (This includes all tests and examinations, or only the test that the original sample failed, at the option of the cognizant inspection activity.) Where Group A inspection is re-instituted, final acceptance and shipment shall be withheld until Group B or C inspection has shown that the corrective action was successful. In the event of failure after re-inspection, information concerning the failure shall be provided to the cognizant inspection activity.

TABLE VII. Inspection sample.

Inspection lot size 1/	Accept on zero sample size
1	1
2 to 8	2
9 to 90	3
91 to 150	12
151 to 280	19
281 to 500	21
501 to 1,200	27
1,201 to 3,200	36
3,201 to 10,000	38
10,001 to 35,000	46

NOTE: 1/ Lot size is based on number of reels, spools, or coils

4.4 Methods of inspection.

4.4.1 Electrical inspection.

4.4.1.1 Continuity. Test continuity of all conductors with a low dc voltage and an appropriate indicating meter.

4.4.1.2 Short circuit. Test each conductor individually to verify that each conductor is free of any contact with any of the other conductors that may be bunched together. Use a test voltage of 100 V dc, minimum.

4.4.1.3 Resistance. Measure the resistance of the conductors to verify that the resistance does not exceed the 94-ohm requirement at 20 °C.

4.4.1.4 Dielectric strength. Apply 1,500 V ac between each conductor in turn, and the remaining conductors connected together, for one minute to verify that the insulation meets the dielectric requirement. The conductors may be split into groups so that neither an adjacent single conductor nor both conductors of a pair are in the same group.

4.4.1.5 Insulation resistance. Following the dielectric strength test of 4.4.1.4, verify the insulation resistance between each conductor in turn and the remaining conductors connected together at 20 °C.

Use a testing voltage of not less than 100 V dc nor more than 550 V dc. The measured value shall meet the requirement specified.

4.4.2 Physical inspections for insulation.

4.4.2.1 Tensile strength. A specimen of the insulation shall be tested in accordance with method 3021 of FED-STD-228.

4.4.2.2 Elongation. A specimen of the insulation shall be tested in accordance with method 3031 of FED-STD-228.

4.4.2.3 Adhesion. The insulation adhesion shall be verified by removing 4.5 inches of insulation from one end and .25 inch from the other end of a 6-inch sample of insulated conductor. The 4.5 inch end of the conductor shall be put through a .125-inch thick brass plate having a hole approximately .010 inch larger than the diameter of the wire. A loop in the long end of the sample shall be made and a tension testing scale attached to this loop. The scale shall be pulled at the rate of approximately 10 feet per minute to verify that the maximum pull required to remove the conductor from the 1.25 inch of insulation is not over 3 pounds.

4.4.2.4 Shrinkage. Remove .5 inch of insulation from one end of a 6-inch sample of insulated conductor taken from the finished cable. Immerse the bare conductor .25 inch deep for 20 seconds into a pot of solder at approximately 160 °C. Examine the insulation to verify that it has shrunk not more than .0625 inch from the end of the conductor.

4.4.2.5 Cold bend. Condition an 8-inch sample of an insulated conductor and a .0625-inch diameter mandrel for one hour at -18±2 °C. At the end of the hour, while the sample and mandrel are still in the cold box, wrap the sample for five consecutive turns in a closed helix about the mandrel at the rate of approximately 60 turns per minute. Examine the insulation to verify that no cracks are visible to the unaided eye.

4.4.2.6 Flammability. Suspend an 18-inch length of insulated conductor vertically in a draft-free enclosure and apply the flame of a Bunsen burner for 5 seconds. The flame shall be applied so that the apex of the blue cone is played on the lower portions of the wire at the angle of approximately 45 degrees. After removing the flame, the insulation shall be observed for self-extinguishment.

4.4.2.7 Compression strength. Condition a test specimen of insulated wire for at least 1 hour at a temperature of 25±3 °C, at which temperature the compression strength shall be determined. Place the test specimen between 2-inch by 2-inch plates and measure the crushing load required to cause contact between the wire and either of the plates when the approach speed of the plates is approximately 2.25 inches per minute.

4.4.3 Physical inspections for jacket.

4.4.3.1 Tensile strength. A specimen of the jacket shall be tested in accordance with method 3021 of FED-STD-228.

4.4.3.2 Elongation. A specimen of the jacket shall be tested in accordance with method 3031 of FED-STD-228.

4.4.3.3 Aged elongation. Oven-age a specimen of the jacket for 48 hours at 120±2 °C and then test in accordance with method 4001 of FED-STD-228.

4.4.3.4 Heat shock. Wind six close turns of a finished cable around a mandrel and fasten the ends securely to the mandrel. The diameter of the mandrel shall be three times the overall diameter of the cable for all cables under .75 inch. For cables .75 inch and larger, the mandrel diameter shall be eight times the overall diameter of the cable. Place the cable on the mandrel in an oven maintained at

120±2 °C for a period of 1 hour. Remove from the oven and allow to cool to room temperature, then, remove the cable from the mandrel and straighten. Slit the jacket lengthwise and remove from the core. Examine the jacket to verify that there are no visible cracks to the unaided eye.

4.4.3.5 Cold bend. Condition a sample of finished cable in a cold box at –18±2 °C for 24 hours. After the 24 hours of exposure, remove the sample from the cold box and immediately bend it 180 degrees around a mandrel of the size specified below at a uniform rate of bend. Complete the bending within 10 seconds. Examine the jacket to verify that there are no cracks visible to the unaided eye.

Number of conductors	Mandrel diameter (inches)
8 - 13	.5
14 - 24	1.5
25 - 65	2.0
66 - 109	2.5
110 - 205	4.0
206 - 305	8.0
306 - 405	12.0

4.4.3.6 Flammability. Expose a sample of the jacket to a Bunsen burner flame for 15 seconds in a draft-free area. Remove the Bunsen flame and verify that the jacket flame goes out within 5 seconds. Repeat three times at 15-second intervals to verify that the jacket is self-extinguishing and does not continue to burn.

4.4.3.7 Jacket stripping. Pull the ripcord to cut a section of the jacket. Remove the jacket to determine that it skins freely and clearly.

4.4.4 Visual and dimensional inspection. Inspect the finished cable to verify that the materials, dimensions, and all workmanship comply with this specification. Certification as to the materials and splices may be accepted at the option of the Government.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point packaging activity within the Military Department or Defense Agency, or within the Military Department's Systems Command. Packaging data retrieval is available from the managing Military Department or Defense Agency automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The switchboard cable covered by this specification is intended for use indoors for interconnecting multiple appearances of circuits on military switchboards with the distributing frame.

6.2 Ordering data. Acquisition documents should specify the following:

a. Title, number, and date of this specification.

b. The quantity required.

c. Type of cable (number of pairs and singles to be furnished) (see 1.2).

d. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2.1 and 2.3).

e. Inspection lot size, if different than specified (see 4.3.1).

f. Packaging and packing requirements (see 5.1).

6.3 Subject term (key word) listing.

Switchboard cable.

6.4 Definitions. For the purpose of this specification, the definitions given below should apply.

Lot size. A lot size is the number of units of product in an inspection lot (see 4.3.1). The minimum and maximum lot sizes for inspection purposes should be determined by the Government and may differ from the quantity designated in the contract or order as a lot for production, shipment, or other purposes.

Sample. A sample is one or more sample units selected from an inspection lot to represent that inspection lot for inspection purposes.

Sample unit. A sample unit is a unit of product (see 4.3.2), selected in an unbiased manner to be a sample, from which specimens are taken for inspection.

Specimen. A specimen is a single piece of finished cable that is taken from a sample unit and subjected to inspection.

Finished cable. Finished cable is cable on which all manufacturing operations have been completed and which is ready to be submitted for acceptance.

6.5 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue, due to the extent of the changes.

CONCLUDING MATERIAL

Custodians:
Army - CR
Air Force - 11
DLA -CC

Preparing activity:
DLA - CC

(Project 6145-2271)

Review activity:
Air Force - 99

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7, and send to preparing activity.
3 The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-DTL-55446B	2. DOCUMENT DATE *(YYYYMMDD)* 20000929

3. DOCUMENT TITLE

Cables, Telephone Switchboard; Plastic Insulated, Plastic Jacketed

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME *(Last, First, Middle Initial)*	b. ORGANIZATION	
c. ADDRESS *(Include zip code)*	d. TELEPHONE *(Include Area Code)* (1) Commercial (2) DSN *(if applicable)*	7. DATE SUBMITTED *(YYYYMMDD)*

8. PREPARING ACTIVITY

a. NAME Defense Logistics Agency Defense Supply Center, Columbus	b. TELEPHONE *(Include Area Code)* (1) Commercial 614-692-0538 (2) DSN 850-0538
c. ADDRESS *(Include Zip Code)* DSCC-VAI P.O. Box 3990 Columbus, Ohio 43216-5000	**IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:** **Defense Standardization Program Office (DLSC-LM)** **8725 John J. Kingman Road, Suite 2533** **Fort Belvoir, Virginia 22060-6621** **Telephone 703 767-6888 DSN 427-6888**