INCH-POUND

MIL-C-49285/24
19 October 1989

MILITARY SPECIFICATION SHEET

CABLE, SPECIAL PURPOSE, ELECTRICAL, FOUR INDIVIDUALLY SHIELDED PAIRS OF 22 (7 X 28) AWG

NOTE: NOT FOR AEROSPACE USE.

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

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-C-49285.

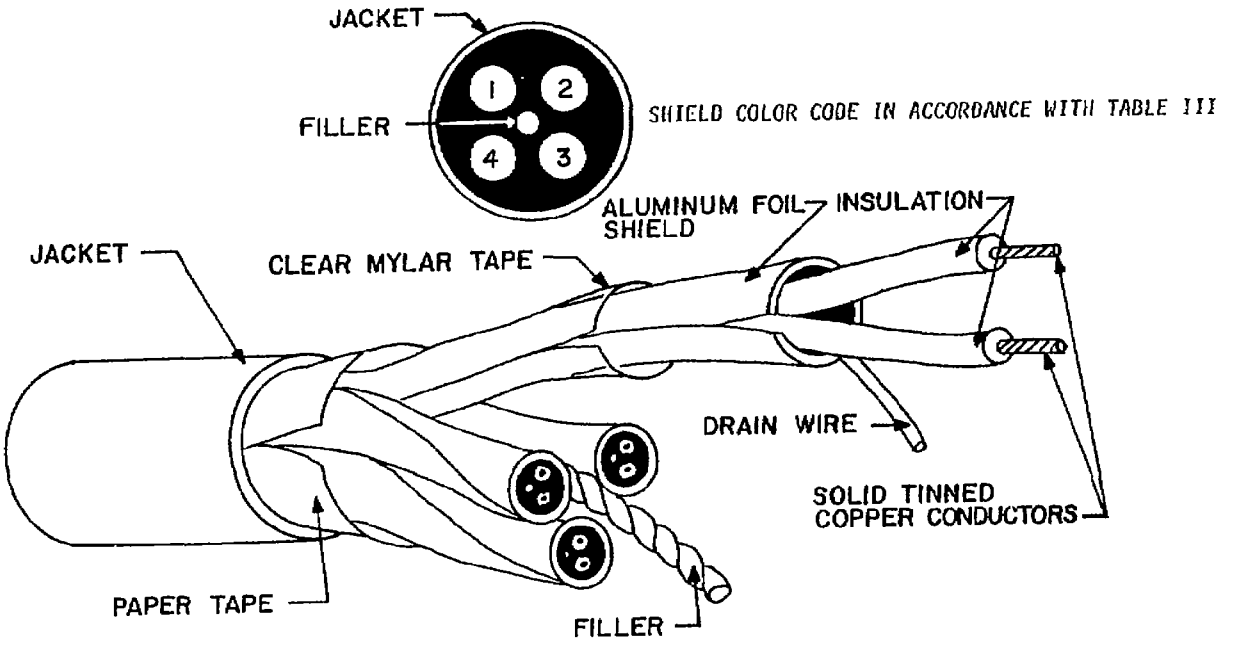

FIGURE 1. Cable illustration.

Engineering information: (See table I).

TABLE I. Description, electrical.

Electrical characteristics	Requirements
Nominal capacitance between conductors	27 pF/ft (picofarads/foot)
Nominal capacitance between the conductor and the shield with one conductor tied to the shield	49 pF/ft
Continuous working voltage	400 V rms maximum between conductors
Nominal capacitance between adjacent shields	150 pF/ft
Continuous working voltage between adjacent shields	50 volts maximum
Shield dc resistance	14 ohms/1,000 feet maximum

TABLE II. Description, physical.

Components	Construction details
Number of pairs	Four individually shielded
Conductor type and wire size	Stranded tinned copper 20 AWG
Conductor stranding	7 x 28 AWG
Conductor insulation	Polypropylene
Conductor insulation thickness	0.015 inch nominal thickness
Drain wire type and size	Stranded tinned copper 22 AWG
Drain wire stranding	7 x 30 AWG
Jacket material	Polyvinyl chloride
Jacket thickness	0.030 inch
Finished cable diameter	0.380 inch maximum outside diameter
Cable style (UL)	Not applicable
Tensile strength (jacket)	2,000 pounds per square inch minimum
Elongation (jacket)	150 percent minimum
Overall cabling lay lengths	5.7 twists per foot ±10 percent

Cabled pair orientation: The position of the red and green pair shield shall determine the rotation direction for pair location (see figure 1).

TABLE III. Shield color code.

Pair numbers	Shield color
Center core	
1st pair	Red
2nd pair	Green
3rd pair	Blue
4th pair	Blue

REQUIREMENTS:

Design and construction: (See tables II and III).

Shield location and orientation. The polyester aluminum shield is to be located on the outer circumference of the pair with the aluminum foil side inward. Insulation on the exterior of the shield is to be complete with no aluminum available for contact.

Drain wire location. Each drain wire is to be spirally located beneath the shield with the insulated conductors. It is to be in continuous contact with the aluminum surface of the foil shield throughout the cable.

Cable temperature rating. The cable temperature rating shall be -20°C to +80°C.

Flammability. The cable shall pass UL 1581 VW-1 flame test requirements.

Shield integrity test.*

Frequency	Response **
100 kHz	110 dB below reference
500 kHz	102 dB below reference
1 MHz	95 dB below reference
5 MHz	80 dB below reference
10 MHz	73 dB below reference
15 MHz	69 dB below reference
20 MHz	65 dB below reference
25 MHz	62 dB below reference
30 MHz	59 dB below reference

* Any two readings may deviate to a value of 0.9 times the stated limits.

** All values are a minimum numerical value.

Fixture resonance will occur between 40 and 70 MHz.

At 100 MHz: At least 47 dB below reference.

Crosstalk test limits. Crosstalk testing is not required for this configuration.

Frequency (kHz)	Near end crosstalk (dB)	Far end crosstalk (dB)
40	24	23
70	21	20
100	20	19
1,000	30	24

Conductor color code.

1st pair:

1st conductor: Red
2nd conductor: Black

2nd pair:

1st conductor: Green
2nd conductor: White

3rd pair:

1st conductor: White with red stripe
2nd conductor: White with black stripe

4th pair:

1st conductor: White with green stripe
2nd conductor: White with yellow stripe

Polyester tape wrap. Each shielded pair is to be covered with a plastic barrier tape.

Paper tape wrap. A paper barrier tape is to be placed between the jacket and the cabled pair.

Roundness. Fillers will be used to insure roundness.

Insulation resistance between shields: 100 megohms/1,000 feet (minimum).

Durometer hardness. The cable jacket shall have a "Shore A" hardness of 94 ±3.

Part or Identifying Number (PIN): The PIN shall be M49285/24.

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - SH
Air Force - 85

Review activities:
Army - MI
Air Force - 71
DLA - ES, IS

Preparing activity:
Army - CR

Agent:
DLA - ES

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