

INCH-POUND

MIL-C-49285/25  
19 October 1989

MILITARY SPECIFICATION SHEET

CABLE, SPECIAL PURPOSE, ELECTRICAL, FIFTEEN INDIVIDUALLY SHIELDED  
PAIRS OF 20 (10 X 30) 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.

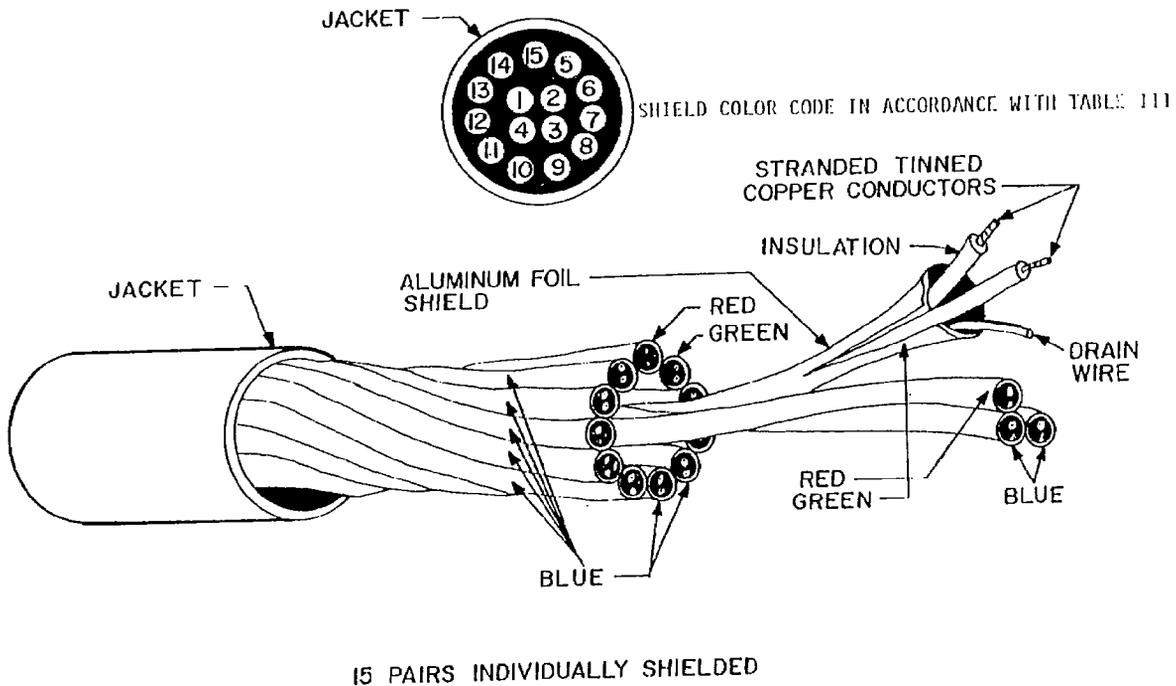


FIGURE 1. Cable illustration:

Engineering information: (See table I).

TABLE I. Description, electrical.

Electrical characteristics	Requirements
Nominal capacitance between conductors	30 pF/ft (picofarads/foot)
Nominal capacitance between the conductor and the shield with one conductor tied to the shield	55 pF/ft
Continuous working voltage	350 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	Fifteen individually shielded
Conductor type and wire size	Stranded tinned copper 20 AWG
Conductor stranding	10 x 30 AWG
Conductor insulation	Polypropylene
Conductor insulation thickness	0.013 inch nominal thickness
Drain wire type and size	Stranded tinned copper 22 AWG
Drain wire stranding	16 x 34 AWG
Jacket material	Polyvinyl chloride
Jacket thickness	0.050 inch
Finished cable diameter	0.688 inch maximum outside diameter
Cable style (UL)	2493
Tensile strength (jacket)	2,000 pounds per square inch minimum
Elongation (jacket)	150 percent minimum
Overall cabling lay lengths	1.3 twists per foot $\pm$ 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
<u>Center core</u>	
1st pair	Red
2nd pair	Green
3rd pair	Blue - 1
4th pair	Blue - 2
<u>Outer layer</u>	
5th pair	Red
6th pair	Green
7th pair	Blue - 1
8th pair	Blue - 2
9th pair	Blue - 3
10th pair	Blue - 4
11th pair	Blue - 5
12th pair	Blue - 6
13th pair	Blue - 7
14th pair	Blue - 8
15th pair	Blue - 9

## 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  $-20^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .

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

Shield integrity test.\*

<u>Frequency</u>	<u>Response **</u>
100 kHz	112 dB below reference
500 kHz	107 dB below reference
1 MHz	101 dB below reference
5 MHz	86 dB below reference
10 MHz	81 dB below reference
15 MHz	76 dB below reference
20 MHz	71 dB below reference
25 MHz	66 dB below reference
30 MHz	62 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 40 dB below reference.

Crosstalk test limits. All values are minimums.

<u>Frequency (kHz)</u>	<u>Near end crosstalk (dB)</u>	<u>Far end crosstalk (dB)</u>
40	57	58
70	52	53
100	44	50
1,000	43	44

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

Durometer hardness. The cable shall have a durometer hardness of 82 ±5.

Part or Identifying Number (PIN): The PIN shall be M49285/25.

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

(Project 6145-1114-26)