

INCH-POUND

MIL-DTL-49285/30A

1 March 2010

SUPERSEDING

MIL-C-49285/30

19 October 1989

DETAIL SPECIFICATION SHEET

CABLE, SPECIAL PURPOSE, ELECTRICAL, ONE INDIVIDUALLY SHIELDED  
PAIR OF 20 (7 X 28) AWG

Inactive for new design after 16 June 1997.

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 MIL-DTL-49285.

Engineering information: See table I.

Note: Not for aerospace use.

TABLE I. Description, electrical.

Electrical characteristics	Requirements
Nominal capacitance between conductors	60 pF/ft (picofarads/foot)
Nominal capacitance between the conductor and the shield with one conductor tied to the shield	100 pF/ft
Continuous working voltage	300 V rms maximum between conductors
Shield dc resistance	14.0 ohms/1,000 feet maximum
Conductor dc resistance	11.7 ohms/1,000 feet maximum

TABLE II. Description, physical.

Components	Construction details
Number of pairs	One individually shielded
Conductor type and wire size	Stranded tinned copper 20 AWG
Conductor stranding	7 x 28 AWG
Conductor insulation	Polyvinyl chloride
Conductor insulation thickness	0.013 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 color	Gray or beige
Jacket thickness	0.030 inch
Finished cable diameter	0.208 inch maximum outside diameter
Cable style (UL)	2464
Tensile strength (jacket)	2,000 pounds per square inch minimum
Elongation (jacket)	150 percent minimum
Overall cabling lay lengths	8.0 twists per foot $\pm$ 10 percent

## REQUIREMENTS:

Design and construction: (see table II).

Shield color code. The shield color shall be blue.

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

Drain wire location. The drain wire is to be spirally located between the shield and jacket, and 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 2556 flame test requirements.

Shield integrity test.\*

<u>Frequency</u>	<u>Response</u> **
100 kHz	113 db below reference
500 kHz	105 db below reference
1 MHz	99 db below reference
5 MHz	85 db below reference
10 MHz	78 db below reference
15 MHz	73 db below reference
20 MHz	70 db below reference
25 MHz	65 db below reference
30 MHz	61 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 41 db below reference.

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

Durometer hardness. The cable jacket shall have a "Shore A" hardness of  $82 \pm 5$ .

Part or Identifying Number (PIN): The PIN shall be M49285/30.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Referenced documents. In addition to MIL-DTL-49285, this document references the following: UL 2556.

CONCLUDING MATERIAL

Custodians:  
Army – CR  
Navy – SH  
Air Force – 85  
DLA – CC

Preparing activity:  
DLA - CC

Review activities:  
Army – MI  
Air Force - 71  
DLA – IS

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NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change. You should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.