

INCH-POUND

MIL-DTL-17/185C  
w/AMENDMENT 1  
15 April 2016  
SUPERSEDING  
MIL-DTL-17/185C  
22 May 2014

DETAIL SPECIFICATION SHEET

CABLE, RADIO FREQUENCY, FLEXIBLE COAXIAL,  
93 OHMS, M17/185-00001

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-17.

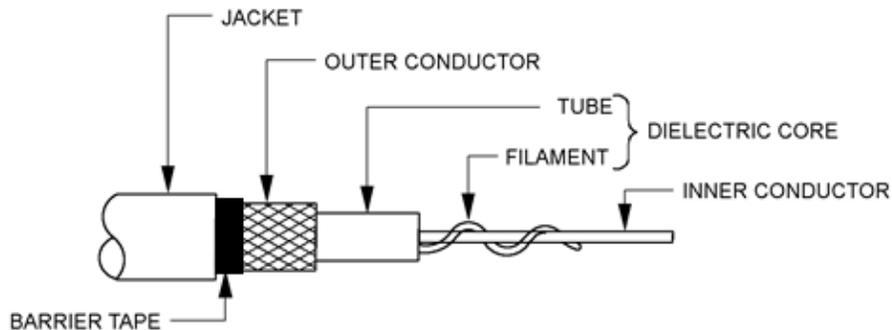


FIGURE 1. Configuration.

TABLE I. Description.

Components	Construction details
Inner conductor	Solid, copper-covered, steel wire. Diameter: .0253 inch $\pm$ .0010.
Dielectric core	Type A-3: Air-spaced polyethylene. A monofilament thread, .035 inch approximate diameter with a lay of 1/2 inch approximate, under an extruded tube. Diameter: .146 inch $\pm$ .005.
Outer conductor	Single braid of AWG No. 34, bare copper wire. Diameter: .182 inch maximum.  <u>Alternate</u>  Coverage: 94.3% nominal      96.5% nominal Carriers: 16                      24 Ends: 7                              5 Picks/inch: 8.2 $\pm$ 10%      12.3 $\pm$ 10%
Barrier tape	A .001 inch thick polyester tape faced with a .002 inch thick layer of aluminum. The tape will be applied with a 50% lap, aluminum face toward the outer conductor. Diameter: .192 inch maximum.
Jacket	Cross-linked polyolefin. Diameter: .242 inch $\pm$ .007.



## ENGINEERING INFORMATION

Continuous working voltage: 750 V rms, maximum.  
Operating frequency: 1 GHz, maximum.  
Velocity of propagation: 83 percent, nominal.  
Power ratings: See figure 2.  
Operating temperature range: -30°C to +85°C.

### Inner conductor properties:

DC resistance (maximum at +20°C): 4.4 ohms per 100 feet.  
Elongation: 1 percent, minimum.  
Tensile strength: 110 klb<sub>f</sub>/inch<sup>2</sup>, minimum.

Engineering notes: This cable is useful in low capacitance, medium low temperature applications. (See connector series "TNC" and "BNC" in accordance with MIL-PRF-39012.) These cables were redesigned to meet the vertical flame test.

## REQUIREMENTS:

Dimensions, configuration, and descriptions: See figure 1 and table I.

### Environmental and mechanical:

Visual and mechanical examination: Applicable.  
Out-of-roundness: Not applicable.  
Eccentricity: 10 percent maximum.  
Adhesion of conductors: Not applicable.

Aging stability: +98°C ± 2°C.

Cold bend: -30°C ± 2°C.

Dimensional stability: Not applicable.

Contamination: Not applicable.

Flame propagation: Applicable.

Acid gas generation: 2.0 percent, maximum.

Halogen content: 0.2 percent, maximum.

### Immersion test:

Tensile strength, percent of unaged minimum: 50

Elongation, percent of unaged minimum: 50.

Smoke index: 25 maximum.

Toxicity index: 5 maximum.

Durometer hardness: (Type A) 80 minimum.

Weathering: Applicable.

Abrasion resistance: 75 cycles minimum (jacket only).

Tear strength: 35 pounds per inch minimum.

Heat distortion: 30 percent maximum distortion.

### Physical tests on unaged jacket:

Tensile strength: 1,300 psi, minimum.

Elongation, 160 percent, minimum.

MIL-DTL-17/185C  
w/AMENDMENT 1

Physical tests on aged jacket:

Air oven:

Tensile strength, percent minimum: 60

Elongation, percent minimum: 60

Hot oil immersion:

Tensile strength, percent minimum: 50

Elongation, percent minimum: 50

Tensile strength and elongation: 1,300 psi, 160 percent minimum.

Weight: 4.2 pounds per 100 feet maximum.

Electrical:

Spark test: 5,000 V rms, minimum.

Voltage withstanding: 3,000 V rms, minimum.

Corona extinction voltage: Not applicable.

Characteristic impedance:  $93 \pm 5$  ohms.

Attenuation: 8 dB at 400 MHz and 13 dB at 1 GHz, maximum.

Structural return loss: Not applicable.

Capacitance: 14.5 pF per foot, maximum.

Capacitance stability:  $\pm 1.5$  percent, maximum.

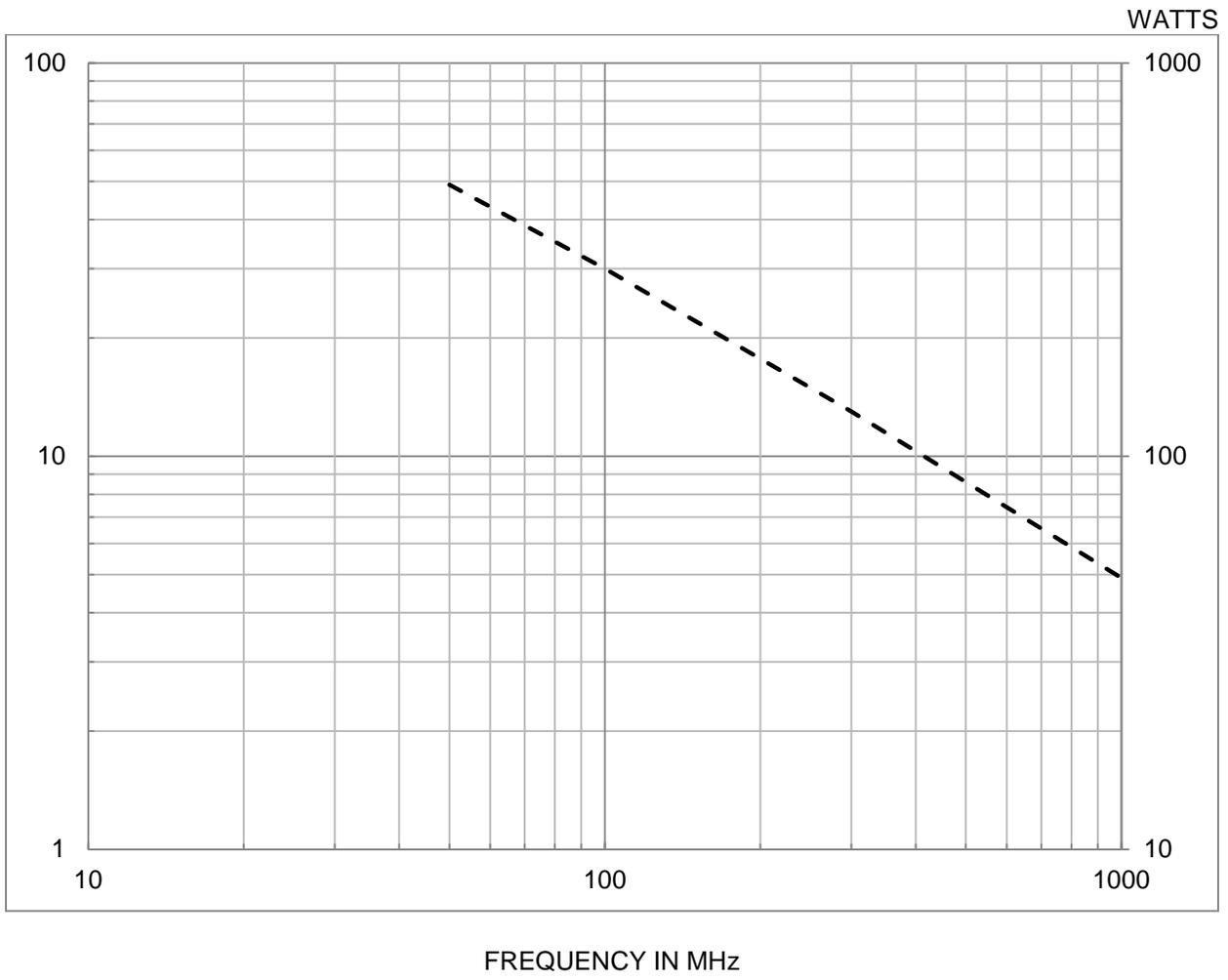
Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise voltage: Not applicable.

Time delay: Not applicable.

Part or Identifying Number (PIN): M17/185-00001.



MAXIMUM POWER - - - - -  
AT 25°C SEA LEVEL

FIGURE 2. Power rating.

MIL-DTL-17/185C  
w/AMENDMENT 1

Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. 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.

Referenced documents. In addition to MIL-DTL-17, this document references the following:

MIL-PRF-39012

CONCLUDING MATERIAL

Custodians:

Army – CR  
Navy – EC  
Air Force – 85  
DLA - CC

Preparing activity:  
DLA-CC

Review activities:

Army – AR, AT, CR4, MI  
Navy – AS, MC, OS, SH  
Air Force – 19, 99

(Project 6145-2016-011)

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 <https://assist.dla.mil>.