

INCH-POUND

MIL-DTL-17/182C  
25 July 2014  
SUPERSEDING  
MIL-C-17/182B  
20 February 1991

DETAIL SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE, TWIN, 95 OHMS,  
M17/182-00001 UNARMORED, M17/182-00002 ARMORED

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.

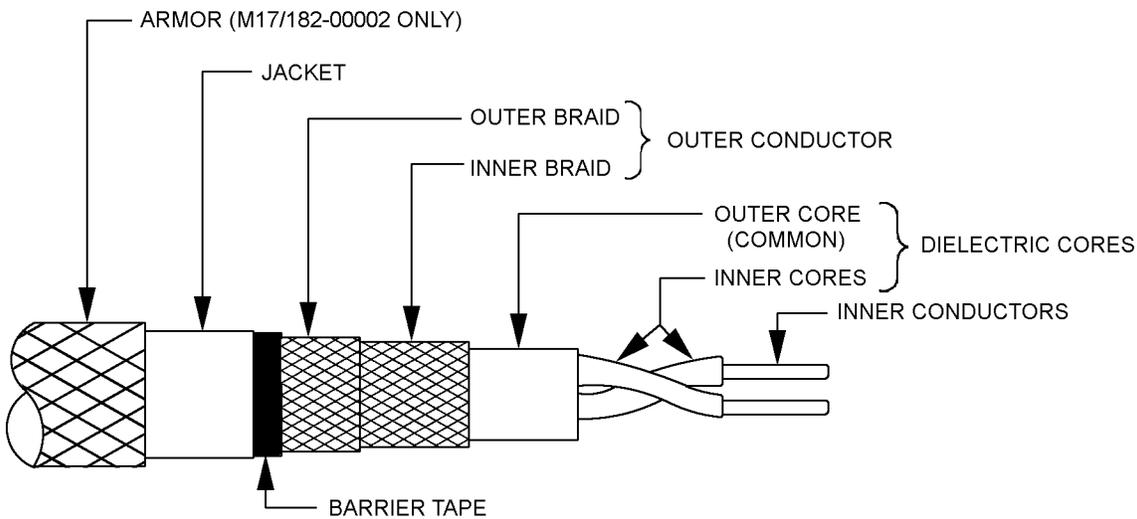


FIGURE 1. General configuration.

TABLE I. Description.

Component	Construction
Inner conductors	Two conductors. Seven strands of bare copper wire, each strand .0152 inch each diameter. One strand of one conductor shall be tinned copper for identification. Overall diameter of each conductor: .0456 inch $\pm$ 0.0010
Dielectric cores:	Two individual cores, under a common core.
Inner cores (individual)	Two cores, twisted together with a right-hand lay of 4.25 $\pm$ 0.5 inches. Type A-2: Solid, polyethylene, talc-coated each core. Diameter: .090 inch $\pm$ 0.002
Outer core (common)	Type A-1: Solid, polyethylene, filled to round. Diameter: .285 inch $\pm$ 0.006
Outer conductor:	Double braid of AWG No. 34, bare copper wire Diameter: .355 inch maximum
Inner braid	Coverage: 94.1% nominal Carriers: 24 Ends: 8 Picks/inch: 9.1 $\pm$ 10%
Outer braid	Coverage: 96.0% nominal Carriers: 24 Ends: 8 Picks/inch: 12.0 $\pm$ 10%
Barrier tape	A .001 inch thick polyester tape faced with a .002 inch thick layer of aluminum. The tape shall be applied with a 50% lap, aluminum face toward the outer conductor. Diameter: .365 inch maximum
Jacket	Cross-linked polyolefin Diameter: .420 inch $\pm$ 0.010
Armor (M17/182-00002 only)	Single braid of aluminum-alloy wire Diameter: .490 inch maximum

## ENGINEERING INFORMATION

Continuous working voltage: 750 V rms, maximum.

Operating frequency: 200 MHz, maximum.

Velocity of propagation: 65.9 percent, nominal.

Power rating: See figure 2.

Operating temperature range: -30°C to +85°C.

Inner conductor properties:

DC resistance (maximum at +20°C): .68 ohms per 100 feet (each conductor).

Elongation: 20 percent, minimum.

Engineering note: This cable is useful in balanced cables applications.

## REQUIREMENTS

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

Environmental and mechanical:

Visual and mechanical examination: Applicable.

Out-of-roundness: Not applicable.

Eccentricity: 10 percent, maximum.

( $T_{MAX} - T_{MIN}$ ) shall be interpreted as the difference in total wall thickness measured (1) along a line through the centers of the conductors (2) between a line tangent to the two conductors and a parallel line tangent to the surface of the core on both sides of the conductors. The eccentricity corresponding to the larger measured value ( $T_{MAX} - T_{MIN}$ ) shall be reported.

Adhesion of conductors:

Inner conductor to core: 2 pounds, minimum; 20 pounds, maximum.

Aging stability:  $+98^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .

Cold bend:  $-30^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .

Dimensional stability:  $+85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .

Inner conductor from core: .062 inch, maximum.

Inner conductor from jacket: .125 inch, maximum.

Contamination: Not applicable.

Flame propagation: Applicable.

Acid gas generation: 2 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.

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:

14.2 pounds per 100 feet, maximum. (M17/182-00001)

16.9 pounds per 100 feet, maximum. (M17/182-00002)

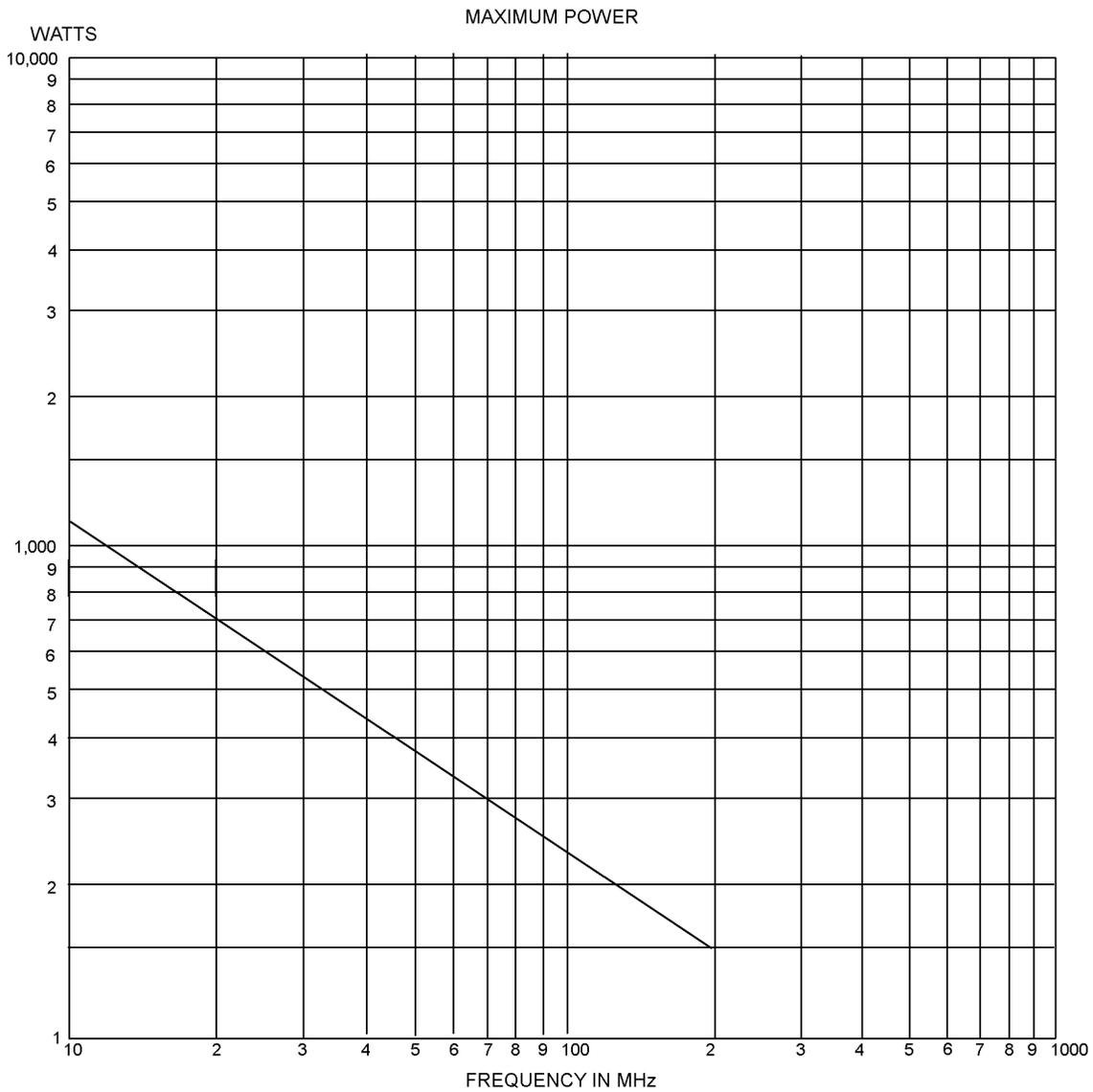


FIGURE 2. Power rating at sea level and 25°C.

Electrical:

Spark test: 5,000 V rms, minimum.

Voltage withstanding: 2,000 V rms, minimum.

Characteristic impedance: 95 ohms  $\pm$  5.

Attenuation:

4 db per 100 feet, maximum at 100 Mhz.

6 db per 100 feet, maximum at 200 Mhz.

Structural return loss: Not applicable.

Capacitance: 17.4 pF per foot, maximum.

Capacitance unbalance: 5 percent, maximum.

Transmission unbalance: 10 percent, maximum, on a 100 foot length when measured between 100 and 160 Mhz.

Part or Identifying Number (PIN): See table II.

TABLE II. Cross - reference of PIN.

PIN	
M17/182-00001	UNARMORED
M17/182-00002	ARMORED

Qualification: Not applicable.

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

Referenced documents. This document references MIL-DTL-17.

CONCLUDING MATERIAL

Custodians:

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

Preparing activity  
 DLA - CC

(Project 6145-2014-026)

Review activities:

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

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>.