

INCH-POUND

MIL-C-17/182B  
20 February 1991  
SUPERSEDING  
MIL-C-17/182A(EC)  
10 August 1987

MILITARY 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 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-17.

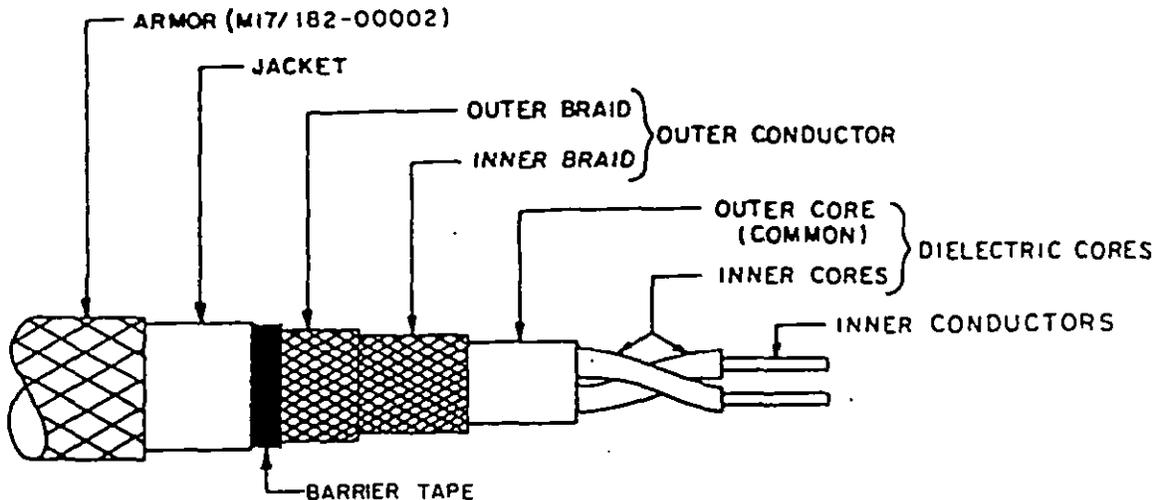


FIGURE 1. Configuration.

TABLE I. Description - Continued.

Components	Construction details
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 ±.0010.
Dielectric cores:	Two individual cores, under a common core.
Inner cores (individual)	Two cores, twisted together with a right-hand lay of 4 1/4 ±1/2 inches. Type A-2: Solid polyethylene, talc-coated each core. Diameter of each inner core: .090 inch ±.002.
Outer core (common)	Type A-1: Solid polyethylene, filled-to-round. Diameter: .285 inch ±.006.
Outer conductor:	Double braid of AWG No. 34, tinned copper wire. Diameter: .355 inch maximum.
Inner braid	Coverage: 94.1% nominal Carriers: 24 Ends: 8 Picks/inch: 9.1 ±10%
Outer braid	Coverage: 96.0% nominal Carriers: 24 Ends: 8 Picks/inch: 12.0 ±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: .365 inch maximum.
Jacket	Cross-linked polyolefin Diameter: .420 inch ±.010.
Armor (M17/182-00002)	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): 0.68 ohms per 100 feet (each conductor).

Elongation: 20 percent, minimum.

Engineering notes: This cable is useful in balanced cables applications. These cables were redesigned to meet the vertical flame test.

## REQUIREMENTS:

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

## Environmental and mechanical:

Visual and mechanical examination: Applicable.

Out-of-roundness: Not applicable.

Eccentricity: 10 percent, maximum. 1/

## Adhesion of conductors:

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

Aging stability: +98°C ±2°C.

Cold bend: -30°C ±2°C.

Dimensional stability: +85°C ±2°C.

Inner conductor from core: .062 inch, maximum.

Inner conductor from jacket: .125 inch, maximum.

Contamination: Not applicable.

Flame propagation: Applicable.

Acid gas generation: 2.0 percent, maximum.

Halogen content: 0.2 percent, maximum.

## Immersion test:

Tensile strength, percent of unaged minimum: 50

Elongation, percent of unaged minimum: 50

1/ (T<sub>MAX</sub> - T<sub>MIN</sub>) shall be interpreted as the difference in total wall thickness measured (1) along a line through the centers of the conductors between the edge of each conductor and the nearest surface of the core and (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<sub>MAX</sub> - T<sub>MIN</sub>) shall be reported.

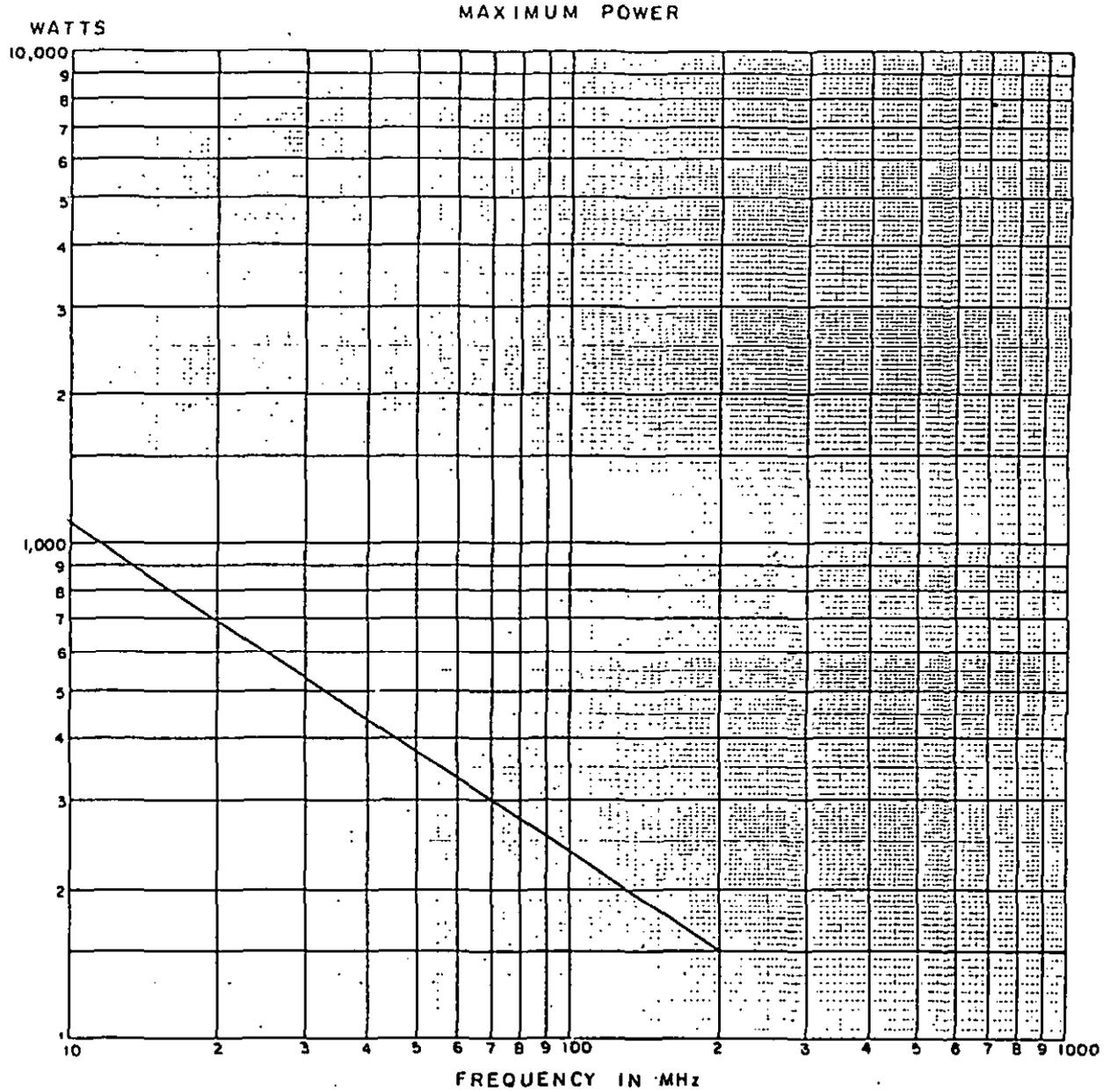


FIGURE 2. Power rating at 25°C sea level.

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).

Electrical:

Spark test: 5,000 V rms, minimum.

Voltage withstanding: 2,000 V rms, minimum.

Characteristic impedance: 95 ±5 ohms.

Attenuation: 4 dB at 100 MHz to 6 dB at 200 MHz per 100 feet, maximum.

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):

M17/182-00001 unarmored.

M17/182-00002 armored.

NOTE: Revision letters are not used to denote changes due to the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:

Army - CR  
Navy - EC  
Air Force - 85

Review activities:

Army - AR, MI  
Navy - SH  
Air Force - 11, 80, 99  
DLA - ES, IS

User activities:

Army - AT, ME  
Navy - AS, MC, OS  
Air Force - 19

Preparing activity:

Navy - EC

Agent:

DLA - ES

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