

INCH-POUND

MIL-DTL-17/180C
25 July 2014
SUPERSEDING
MIL-C-17/180B
20 February 1991

DETAIL SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE COAXIAL,
75 OHMS, M17/180-00001

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.

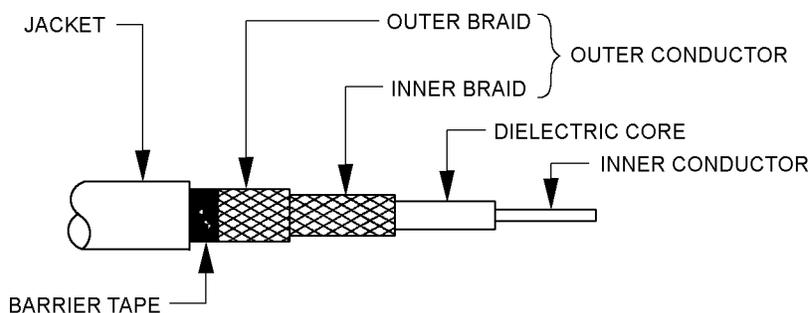


FIGURE 1. General configuration.

TABLE I. Description.

Component	Construction
Inner conductor	Solid, copper-covered, steel wire Diameter: .0285 inch \pm 0.0010
Dielectric core	Type A-1: Solid, polyethylene Diameter: .185 inch \pm 0.004
Outer conductor	Double braid of AWG No. 34, copper wire Diameter: .254 inch maximum
Inner braid	<u>Alternates</u> Wire coating: Silver-coated Silver-coated Coverage: 95% nominal 95% nominal Carriers: 24 16 Ends: 6 9 Picks/inch: 8.8 \pm 10% 5.9 \pm 10%
Outer braid	Wire coating: Bare Bare Coverage: 95% nominal 95% nominal Carriers: 24 16 Ends: 6 9 Picks/inch: 13.0 \pm 10% 8.7 \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: .264 inch maximum
Jacket	Cross-linked polyolefin Diameter: .332 inch \pm 0.004

ENGINEERING INFORMATION

Continuous working voltage: 2,000 V rms, maximum.

Operating frequency: 3 GHz, 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): 4.4 ohms per 100 feet.

Elongation: 30 percent, minimum.

Tensile strength: 115klb/inch² minimum.

Engineering note: This cable is useful in low temperature applications.
(See connector series "N" and "SC" in accordance with MIL-PRF-39012.)

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.

Adhesion of conductors:

Inner conductor to core: 4 pounds, minimum; 12 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, percent minimum: 1,300 psi, minimum.

Elongation, percent minimum: 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: 9.2 pounds per 100 feet, maximum.

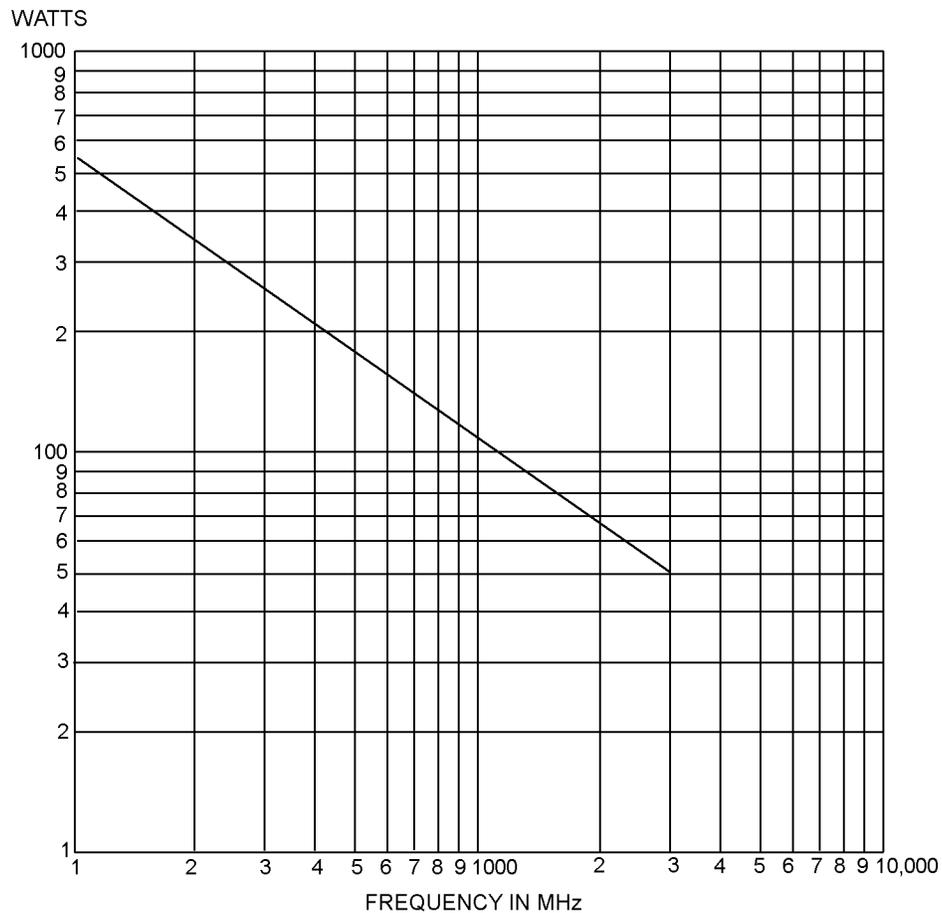


FIGURE 2. Power rating at sea level and 25°C.

Electrical:

Spark test: 5,000 V rms, minimum.

Voltage withstanding: 7,000 V rms, minimum.

Corona extinction voltage: 2,700 V rms, minimum.

Characteristic impedance: 75 \pm 3 ohms.

Attenuation:

6.5 db per 100 feet, maximum at 0.4 Ghz.

23.0 db per 100 feet, maximum at 3 Ghz.

Capacitance: 22 pF per foot, maximum.

Part or Identifying Number (PIN): M17/180-00001.

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. 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

(Project 6145-2014-028)

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>.