

INCH-POUND

MIL-DTL-17/178B
28 MAY 2016
SUPERSEDING
MIL-C-17/178A AMD 1
23 May 2002
MIL-C-17/178A
22 MARCH 1988

DETAIL SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE, TRIAXIAL,
95 OHMS, M17/178-00001

This specification is approved for use by all Departments
and Agencies of the department of Defense.

The requirements for acquiring the cable described herein shall consist
of this specification and MIL-DTL-17.

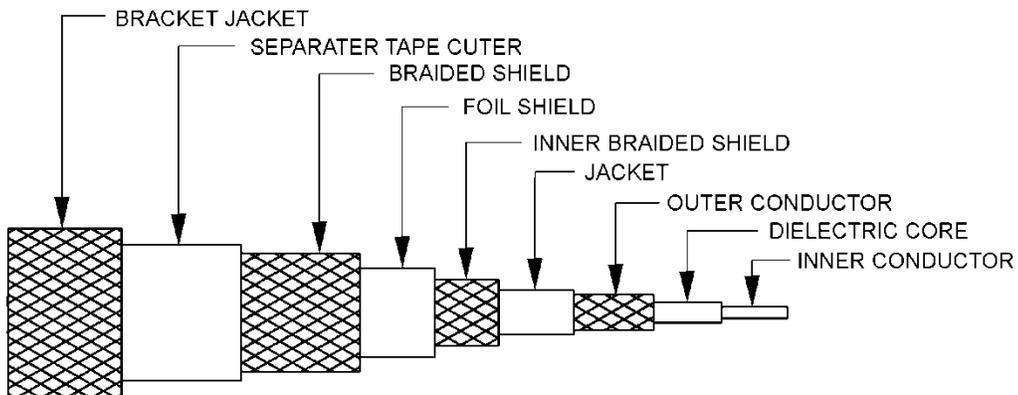


FIGURE 1. Configuration.



MIL-DTL-17/178B

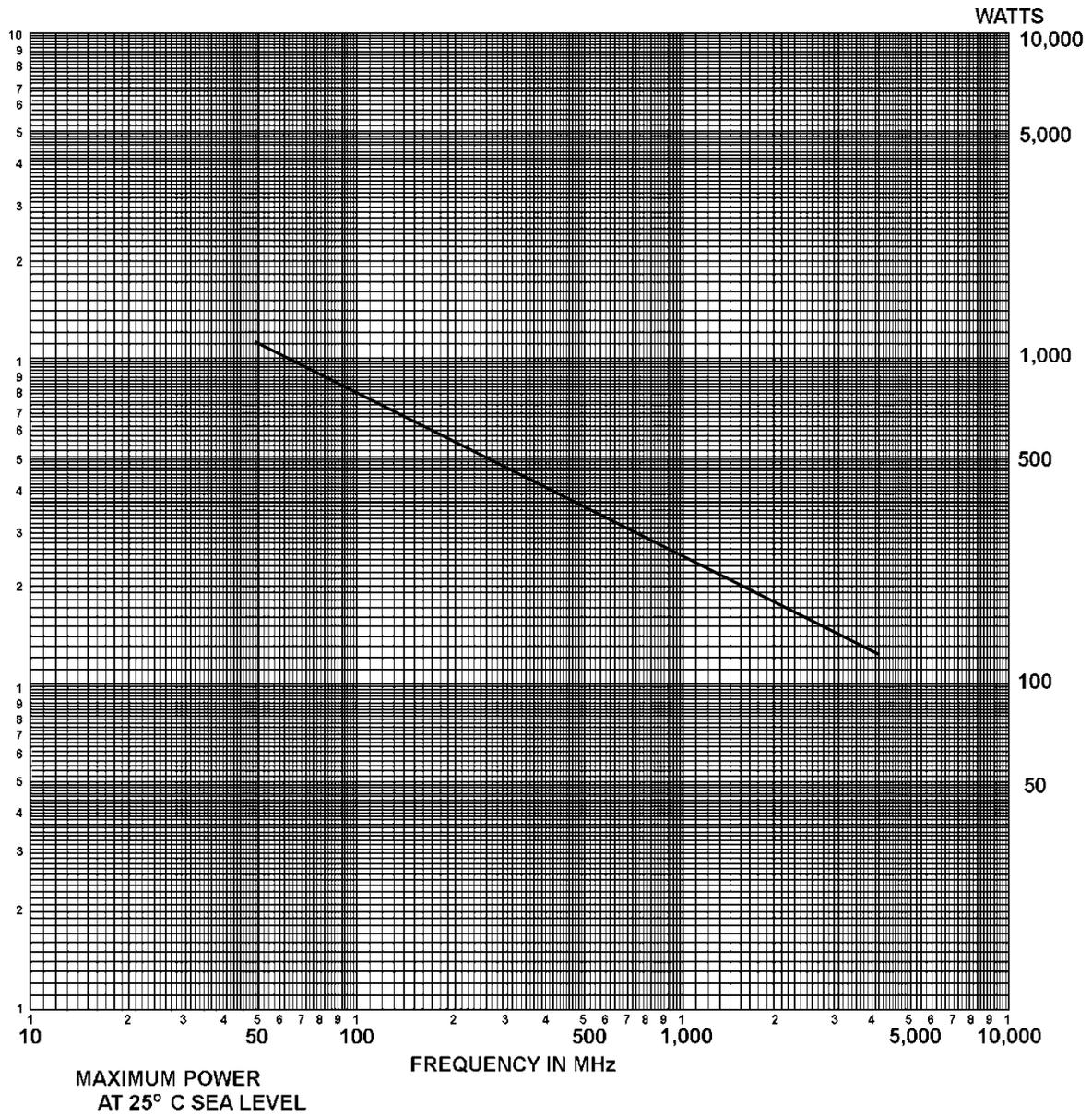


FIGURE 2. Power rating.

MIL-DTL-17/178B

ENGINEERING INFORMATION:

Continuous working voltage: 1.100 V rms, maximum.

Operating frequency: 3 GHz, maximum.

Velocity of propagation: 69.5 percent, nominal.

Power rating: See figure 2.

Operating temperature range: -55°C to +150°C.

Inner conductor properties:

DC resistance (maximum at +20°C): 24.45 ohms per 100 feet.

Elongation: 10 percent, minimum.

Tensile strength: 50 klb/inch² minimum.

Notes: This cable is useful in shield critical medium high temperature applications (see connector series "TRB" and "TRT" in accordance with MIL-PRF-49142).

REQUIREMENTS:

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

TABLE I. Description.

Components	Construction details
Inner conductor	Seven strands of silver-coated, annealed-copper-covered, steel wire, each strand .004 inch diameter. Overall diameter: 0.012 inch ± 0.001.
Dielectric core	Type F-1: Solid, extruded PTFE. Diameter: 0.102 inch ± 0.003
Outer conductor	Single braid of AWG #38, silver-coated copper wire. Diameter: 0.124 inch maximum. Coverage: 91.0 percent nominal. Carriers: 16 Ends: 7 Picks/inch: 12.0 ± 10 percent.
Jacket	Type IX: FEP Diameter: 0.141 inch ± 0.004.
Inner braid shield	AWG #34 nickel coated copper wire conforming to ASTM-B355. Outer diameter: .175 maximum. Coverage: 95.2 percent nominal. Braid angle: 20.5° nominal Carriers: 16 Ends: 7 Picks/inch: 6.3 ± 5 percent
Foil shield	Copper-polyester-copper laminate, 0.0024 inch thick O.D., 0.0007 inch copper each side of 0.001 inch polyester film conforming to MIL-I-631, type G, subform T _f , class I. Overlap shall be 20 to 40 percent of tape width. Elongation: 3 percent minimum. Outer diameter: .190 maximum.

MIL-DTL-17/178B

TABLE I. Description – Continued.

Components	Construction details
Outer braid shield	AWG #34 nickel coated copper wire conforming to ASTM-B355. Outer diameter: .225 maximum. Coverage: 91.1 percent nominal. Braid angle: 31° nominal Carriers: 16 Ends: 7 Picks/inch: 8.2 ± 5 percent.
Separator tape	0.001 inch polyester film conforming to MIL-I-631, type G, form T, subform T _f , class I. Tape shall be spirally applied with not less than one third nor more than two thirds lap. Outer diameter: .230 maximum.
Braided jacket	Single braid of polyester fiber braid with high temperature finishers, conforming to NEMA-WC27500. Diameter: .270 inch maximum.

REQUIREMENTS

Out-of-roundness: Not applicable.

Eccentricity: 10 percent maximum.

Adhesion of conductors:

Inner conductor to core: 1.5 pounds, minimum; 4 pounds, maximum.

Aging stability: Not applicable.

Stress crack resistance: +230°C ± 5°C. ^{1/}

Outer conductor integrity: Not applicable.

Cold bend: -55°C ± 2°C.

Dimensional stability: +200°C ± 5°C. ^{1/}

Inner conductor from core: 0.187 inch, maximum.

Inner conductor from any jacket: 0.250 inch, maximum.

Contamination: Not applicable.

Bendability: Not applicable.

Flammability: Applicable.

Weight: 60 pounds per 1,000 feet, maximum.

^{1/} Requirements are prior to adding shields over jacket.

MIL-DTL-17/178B

Continuity: Applicable.

Spark test: 2,000 V rms + 10, -0 percent.

Voltage withstanding: 2,000 V rms, +10, -0 percent. 2/

2/ 2,000 V rms +10, -0 percent applied between the inner and outer conductor with the outer conductor grounded; 200 V dc minimum applied between the outer conductor and the outer shield with the outer shield grounded.

Insulation resistance: Not applicable.

Corona extinction voltage: 1,500 V rms minimum.

Characteristic impedance: 95 ± 5 ohms.

Attenuation: 17 dB per 100 feet maximum at 400 MHz.

Structural return loss: Not applicable.

Capacitance: 17.4 pF per foot, maximum.

Capacitance stability: Not applicable.

Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Phase stability: Not applicable.

Mechanically induced noise voltage: Not applicable.

Time delay: Not applicable.

Shielding effectiveness: To be determined.

Part or Identifying Number (PIN): M17/178-00001.

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

ASTM-B355
MIL-I-631
MIL-PRF-49142
NEMA-WC27500

MIL-DTL-17/178B

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:
DLA - CC

(Project: 6145-2016-031)

Review activities:

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

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>.