

INCH-POUND

MIL-DTL-17/190C  
12 June 2014  
SUPERSEDING  
MIL-C-17/190B  
20 February 1991

DETAIL SPECIFICATION SHEET

CABLE, RADIO FREQUENCY, FLEXIBLE, COAXIAL,  
50 OHMS, M17/190-00001

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.

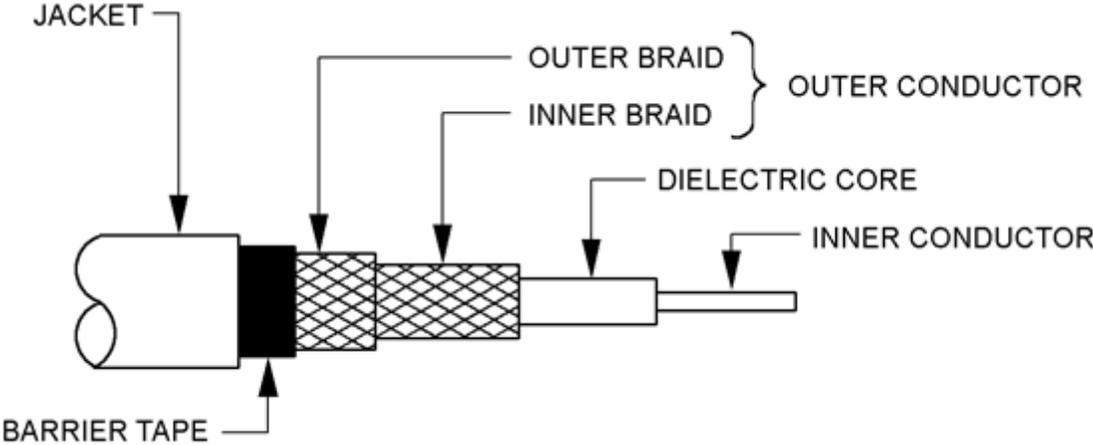


FIGURE 1. Configuration.

TABLE I. Description.

Components	Construction details
Inner conductor	Seven strands of silver-coated copper wire, each strand .0296 inch diameter. Overall diameter: .0888 inch $\pm$ .0010.
Dielectric core	Type A-1: Solid polyethylene. Diameter: .285 inch $\pm$ .007.
Outer conductor	Double braid of AWG No. 34, silver-coated copper wire. Diameter: .355 inch maximum.
Inner	Coverage: 95.7% nominal Carriers: 24 Ends: 6 Picks/inch: 16.6 $\pm$ 10%
Outer	Coverage: 98.0% nominal Carriers: 24 Ends: 7 Picks/inch: 15.4 $\pm$ 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: .365 inch maximum.
Jacket	Cross-linked polyolefin. Diameter: .425 inch $\pm$ .007.

## REQUIREMENTS:

Continuous working voltage: 3,700 V rms, maximum.

Operating frequency: 11 GHz, maximum.

Velocity of propagation: 65.9 percent, nominal.

Power ratings: See figure 2.

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

Inner conductor properties:

DC resistance (maximum at +20°C): 0.176 ohms per 100 feet.

Elongation: 25 percent, minimum.

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

Environmental and mechanical:

Visual and mechanical examination: Applicable.

Out-of-roundness: Applicable.

Eccentricity: 10 percent maximum.

Adhesion of conductors:

Inner conductor to core: 10 pounds, minimum; 50 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: 2.0 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.

Physical tests on aged jacket:

Air oven:

Tensile strength, percent minimum: 60

Elongation, percent minimum: 60

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Hot oil immersion:

Tensile strength, percent minimum: 50

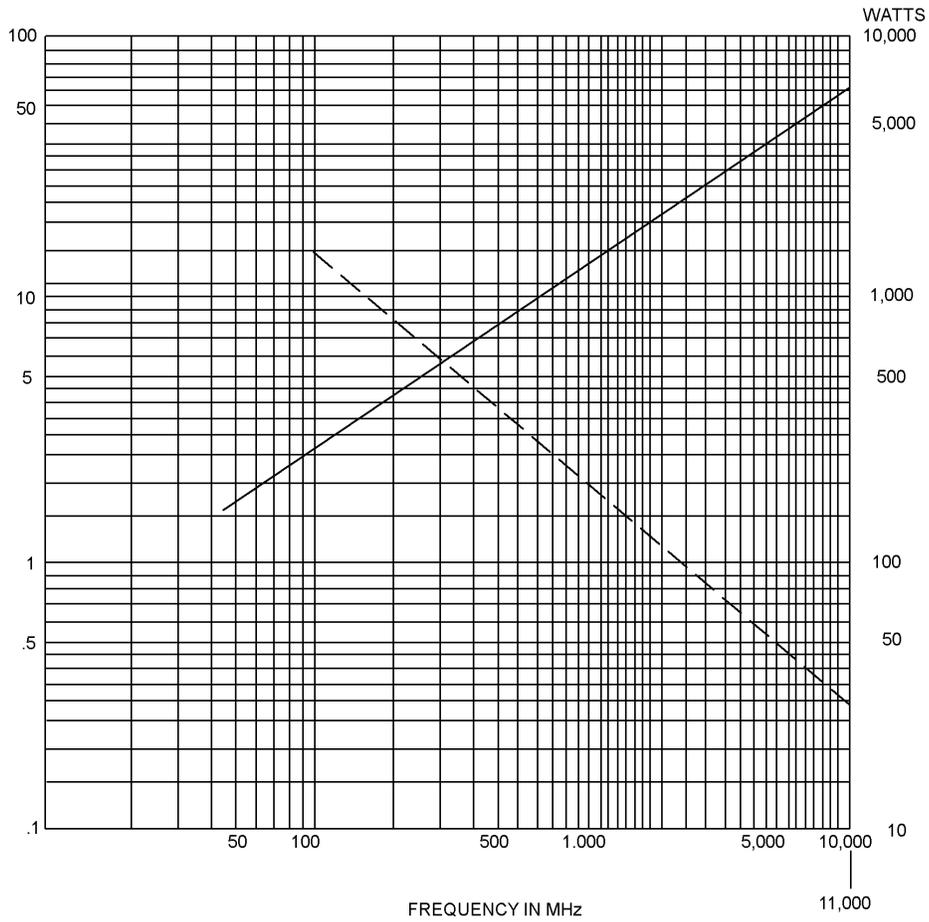
Elongation, percent minimum: 50

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

Weight: 15.4 pounds per 100 feet maximum.

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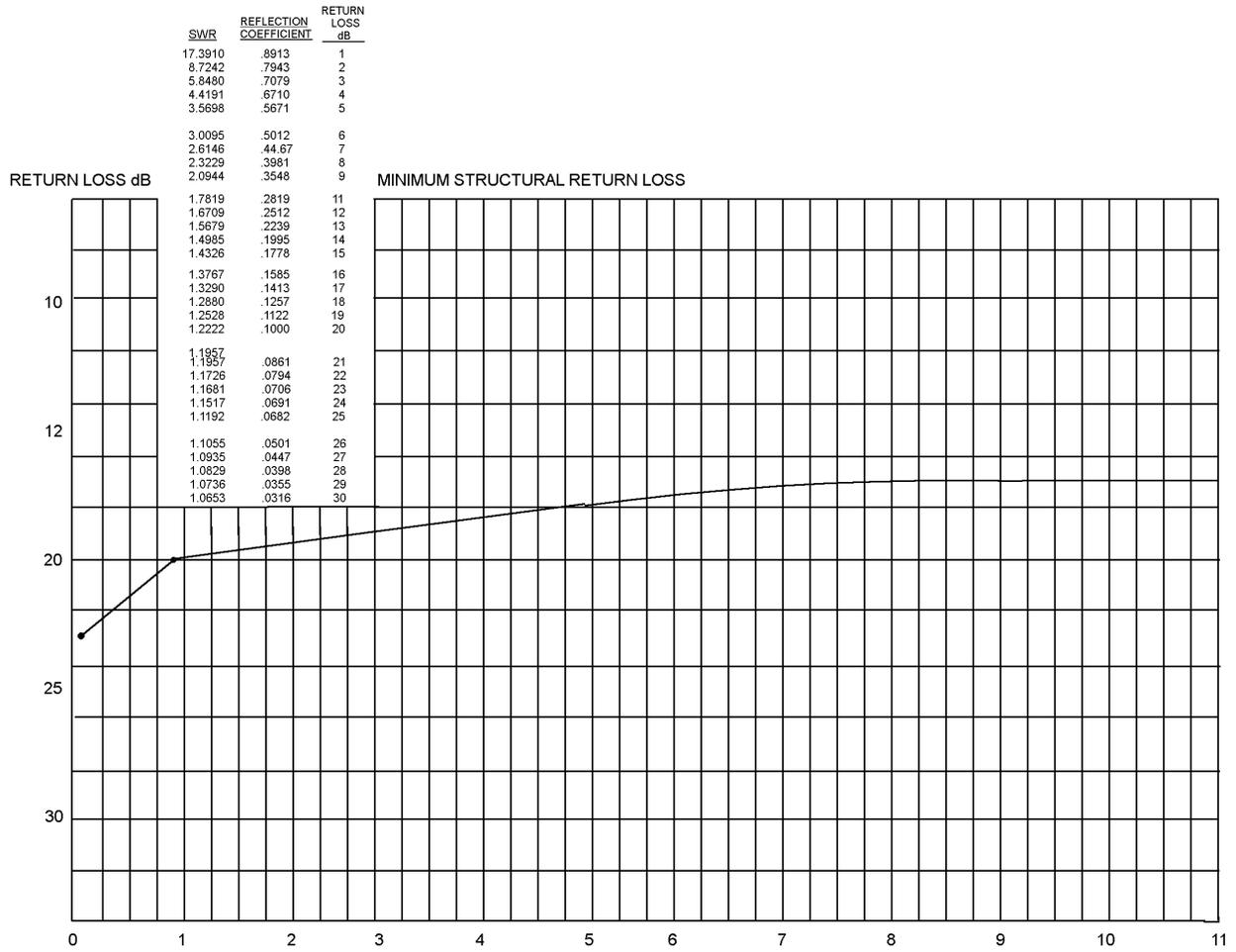
ATTENUATION dB PER 100 FT.



MAXIMUM ATTENUATION \_\_\_\_\_  
 MAXIMUM POWER - - - - -  
 AT 25° C SEA LEVEL

Attenuation	
MHz	dB
50	1.7
400	6.8
3000	28
11000	60

FIGURE 2. Power rating and attenuation.



Structural Return Loss	
GHz	dB
1	23
1	20
3	19
5	18
11	17

FIGURE 3. Structural return loss.

Electrical:

Spark test: 5,000 V rms, minimum.

Voltage withstanding: 10,000 V rms, minimum.

Corona extinction voltage: 5,000 V rms, minimum.

Characteristic impedance:  $50 \pm 2$  ohms.

Attenuation: See figure 2.

Structural return loss: See figure 3.

Capacitance: 32.2 pF per foot, maximum.

Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise voltage: Not applicable.

Time delay: Not applicable.

Part or Identifying Number (PIN): M17/190-00001.

NOTE: Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent 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

Review activities:

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

(Project 6145-2014-018)

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>.