

MILITARY SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE COAXIAL, 125 OHMS,  
 M17/218-00001, UNARMORED, M17/218-00002, 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.

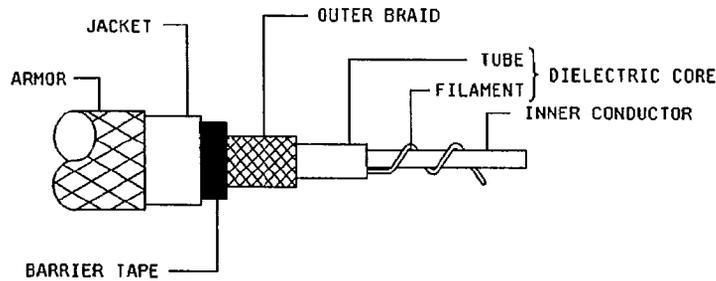


FIGURE 1. Configuration

TABLE I. Description.

Components	Construction details
Inner conductor	Solid, copper-covered, steel wire. Diameter: .0253 inch ±.0010.
Dielectric core	Type A-3: Air-spaced polyethylene. A mono-filament thread, .070 inch approx diameter, with a lay of 1/2 inch approx., under an extruded tube. Overall diameter: .285 inch ±.010.  <u>Alternate</u> A continuous tube, .003 inch thick maximum under two continuous spiral fins, with a lay of 1-1/4 inches approx., under an extruded tube of type A dielectric. Overall diameter: .285 inch ±.010.

TABLE I. Description - Continued.

Outer conductor	<p>Single braid of AWG#33, bare, copper wire. Diameter: .340 inch maximum.</p> <p style="text-align: right;"><u>Alternate</u></p> <table border="0"> <tr> <td>Coverage:</td> <td>94.9% nominal</td> <td>94.9% nominal</td> </tr> <tr> <td>Carriers:</td> <td>16</td> <td>24</td> </tr> <tr> <td>Ends:</td> <td>12</td> <td>8</td> </tr> <tr> <td>Picks/inch:</td> <td>4.3 ±10%</td> <td>6.5 ±10%</td> </tr> </table>	Coverage:	94.9% nominal	94.9% nominal	Carriers:	16	24	Ends:	12	8	Picks/inch:	4.3 ±10%	6.5 ±10%
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Barrier tape	<p>A .001 inch thick polyester tape faced with a .002 inch thick layer of aluminum. The tape will be applied with a 50% lap, minimum. Aluminum face toward the outer conductor. Diameter: .350 inch, maximum.</p>												
Jacket	<p>Cross-linked polyolefin. Diameter: .405 inch ±.010.</p>												
Armor M17/218-00002 only	<p>Single braid of aluminum-alloy wire. Diameter: .475 inch maximum.</p>												

## ENGINEERING INFORMATION:

Continuous working voltage: 750 V rms, maximum.

Operating frequency: 1 GHz, maximum.

Velocity of propagation: 84 percent, nominal.

Power ratings: See figure 2.

Operating temperature range: -40° to +80°C, maximum.

Inner conductor properties:

DC resistance (maximum at +20°C): 4.4 ohms per 100 feet.

Elongation: 1 percent, minimum.

Tensile strength: 110 klb/inch/inch, minimum.

Engineering notes: This cable is useful in low temperature applications. (See connector series 'N', 'C', and 'SC' per MIL-C-39012. This cable is to be used in new designs in-lieu-of MIL-C-17/31 cables.

The US Government preferred system of measurement is the metric SI system. However, since this item was originally designed using inch-pound units of measurement, in the event of conflict between the metric and inch-pound, the inch-pound units shall take precedence.

## REQUIREMENTS:

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

Environmental and mechanical:

Visual and mechanical examination: Applicable.

Out-of-roundness: Not applicable.

Eccentricity: Not applicable.

Adhesion of conductors: Not applicable.

Aging stability: +98° ±2°C.

Cold bend: -40° ±2°C.

Stress crack resistance: Not applicable.

Dimensional stability: Not applicable.

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.

Hot oil immersion:

Tensile strength, percent minimum: 50.

Elongation, percent minimum: 50.

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

MIL-C-17/218

Weight: 8.8 pounds per 100 feet maximum (M17/218-00001). 13.8 pounds per 100 feet maximum (M17/218-00002).

Electrical:

Spark test: 5,000 V rms, minimum.

Voltage withstanding: 3,000 V rms, minimum.

Insulation resistance: Not applicable.

Corona extinction voltage: Not applicable.

Characteristic impedance: 125 ohms  $\pm 6$ .

Attenuation: 5.5 dB per 100 feet, maximum at .4 GHz.

Structural return loss: Not applicable.

Capacitance: 11.0 pF per foot, maximum.

Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise: Not applicable.

Time delay: Not applicable.

Part or Identifying Number (PIN): M17/218-00001 and -00002.

CONCLUDING MATERIAL

Custodians:

Army - CR  
Navy - EC  
Air Force - 85

Preparing activity:

Navy - EC

Agent:

DLA - ES

Review activities:

Army - AR, AT, ME, MI  
Navy - AS, MC, OS, SH  
Air Force - 11, 19, 80, 99  
DLA - ES, IS

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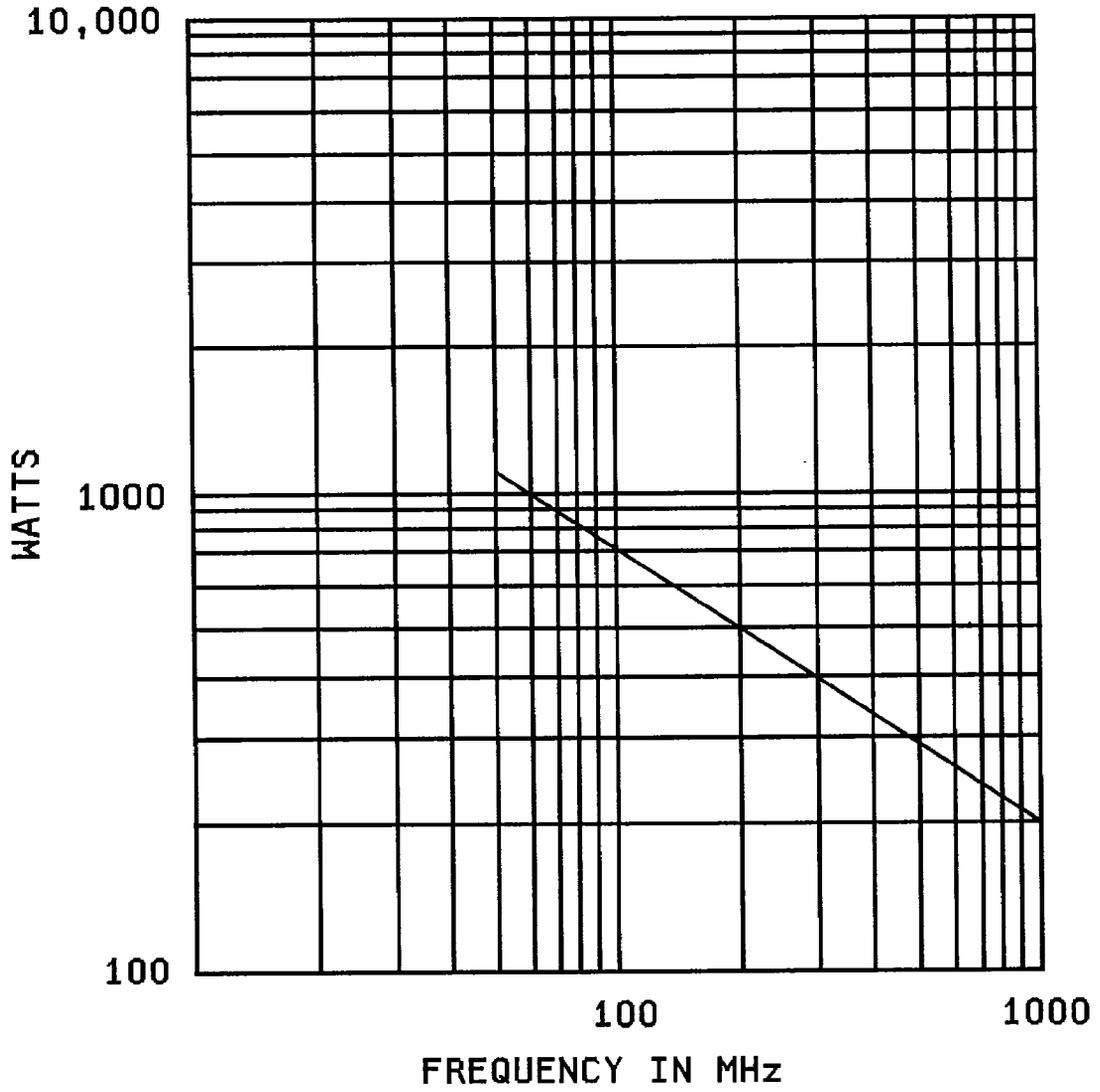


FIGURE 2. Power rating at 25°C sea level.