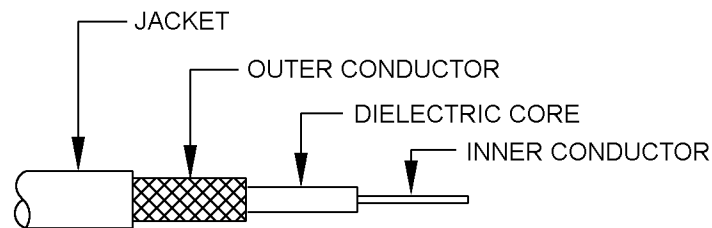


MILITARY SPECIFICATION SHEET

CABLE, RADIO FREQUENCY, FLEXIBLE, COAXIAL, 75 OHMS, M17/110-RG302

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	Solid, silver-coated, copper-covered steel wire. Diameter: .0253 inch $\pm$.0010.
Dielectric core	Type F-1: Solid extruded PTFE. Diameter: .146 inch $\pm$.004.
Outer conductor	Single braid of AWG size 36 silver-coated copper wire. Diameter: .176 inch maximum. Coverage: 88.4%, nominal Carriers: 16 Ends: 7 Picks/inch: 11.5 $\pm$ 10%
Jacket	Type IX: Diameter: .202 inch $\pm$.005.



ENGINEERING INFORMATION:

Continuous working voltage: 1,700 V rms, maximum.
Operating frequency: 3 GHz, maximum.
Velocity of propagation: 69.5 percent, nominal.
Power rating: See figure 2.
Operating temperature range: -55° to +200°C.
Inner conductor properties:
 DC resistance (maximum at 20°C): 4.4 ohms per 100 feet.
 Elongation: 1 percent, minimum.
 Tensile strength: 110 klbf/inch², minimum.

Engineering note: This cable useful in general purpose, high temperature applications (see connector series "BNC" and "TNC" per MIL-PRF-39012.)

REQUIREMENTS:

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

Environmental and mechanical:

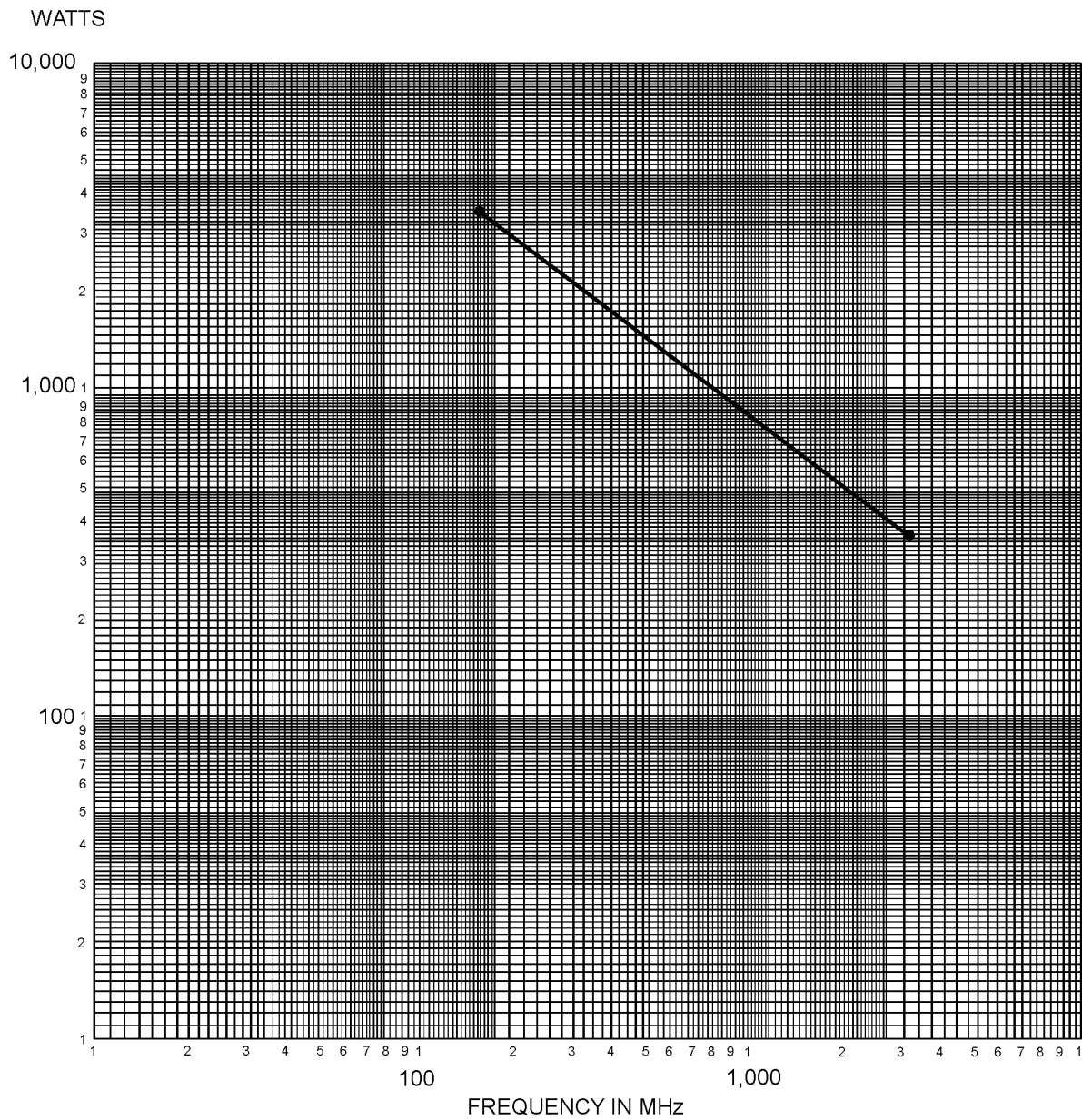
Visual and mechanical examination:
 Out-of-roundness: Not applicable.
 Eccentricity: 10 percent, maximum.
Adhesion of conductors:
 Inner conductor to core: 2 pounds, minimum; 16 pounds, maximum.
Aging stability: Not applicable.
Stress-crack resistance: +230°C ± 5°C; mandrel size five times the jacket diameter.
Outer conductor integrity: Not applicable.
Cold bend: -55°C ± 2°C.
Dimensional stability: +200°C ± 5°C.
 Inner conductor from core: .250 inch, maximum.
 Inner conductor from jacket: .312 inch, maximum.
Contamination: Not applicable.
Bendability: Not applicable.
Flammability: Applicable.
Weight: 4 pounds per 100 feet, maximum.

Electrical:

Continuity: Applicable.
Spark test: 2,000 Vrms, +10%, -0%.
Voltage withstanding: 3,500 V rms, +10%, -0%.
Insulation resistance: Not applicable.
 Corona extinction voltage: 2,300 V rms, minimum.
Characteristic impedance: 75 ohms ± 3.
Attenuation: 8 dB per 100 feet, maximum, at .4 GHz; 26 dB per 100 feet, maximum, at 3 GHz.
Structural return loss: Not applicable.
Capacitance: 22 pF per foot, maximum.
Capacitance stability: Not applicable.
Capacitance unbalance: Not applicable.
Transmission unbalance: Not applicable.
Mechanically induced noise voltage: Not applicable.
Time delay: Not applicable.

Marking: Applicable.

Marking Durability: 125 cycles (250 strokes), 1 pound.
Workmanship: Applicable.



Maximum power at 25°C, sea level.

MHz	Watts
150	3500
400	1700
1000	800
2000	470
3000	350

FIGURE 2. Power rating.

Verification: See table II

TABLE II. Qualification and Group A, B, and C Table.

Group	Qualification inspection	Requirement paragraph	Test paragraph	Qual- # of Specimens	Conf - # of Specimens	Conformance inspection
I	In-process inspection:		4.5	Entire sample		
	Continuity	3.7.1	4.8.2	Entire sample		
	Spark test	3.7.2	4.8.3	Entire sample		
	Voltage withstanding	3.7.3	4.8.4	Entire sample		
	Insulation resistance	3.7.4	4.8.5	Entire Sample		
	Visual and mechanical inspection	3.6	4.8.1	Entire sample	Per Table VIII	A
	Diameter measurements.	3.6.1	4.8.1.1	Entire sample	Per Table VIII	A
	Out-of-roundness	N/A				
	Eccentricity of inner conductor	3.6.3	4.8.1.3	2	Per Table VIII	A
	Adhesion of conductors	3.6.4	4.8.1.4	4	Per Table VIII	A
	Marking	3.8	4.8.1	Entire sample	Per Table VIII	A
	Marking Durability	3.8.2	4.8.39	3	Per Table VIII	A
	Workmanship	3.10	4.8.1	Entire sample	Per Table VIII	A
II	Corona extinction voltage	3.7.5	4.8.6	1	Per Table VIII	B
	Characteristic impedance	3.7.6	4.8.7	1	Per Table VIII	A
	RF transmission loss (attenuation)	3.7.7	4.8.8	2	Per Table VIII	A
	Standing wave ratio (return loss)	N/A				
	Capacitance	3.7.9	4.8.10	1	Per Table VIII	B
	Capacitance stability	N/A				
	Capacitance unbalance	N/A				
	Transmission unbalance	N/A				
	Inductance	N/A				
	Mechanically induced noise voltage	N/A				
	Time delay	N/A				
	Aging stability	N/A				

TABLE I. Qualification and Group A, B, and C Table – Continued.

Group	Qualification inspection	Requirement paragraph	Test paragraph	Qual- # of Specimens	Conf - # of Specimens	Conformance inspection
II	Stress crack resistance	N/A				
	Outer conductor integrity	N/A				
	Cold bend	3.7.18	4.8.19	3	Per Table VIII	B
	Dimensional stability	3.7.19	4.8.20	1	Per Table VIII	C
	Contamination	N/A				
	Bendability	N/A				
	Flammability	N/A				
	Flame propagation	N/A				
	Acid gas generation	N/A				
	Halogen content	N/A				
	Immersion	N/A				
	Smoke index	N/A				
	Toxicity index	N/A				
	Durometer hardness	N/A				
	Weathering	N/A				
	Abrasion resistance	N/A				
	Tear strength	N/A				
	Heat distortion	N/A				
	Physicals	N/A				
	Tensile strength and elongation	N/A				
	Weight	3.9	4.8.24	1	Per Table VIII	B

Part or Identifying Number (PIN): M17/110-RG302.

Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

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 6145-2025-018)

Review activities:

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

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>.