

DETAIL SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE, COAXIAL, 75 OHMS,
LOW SMOKE, ENHANCED INSULATION RESISTANCE

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.

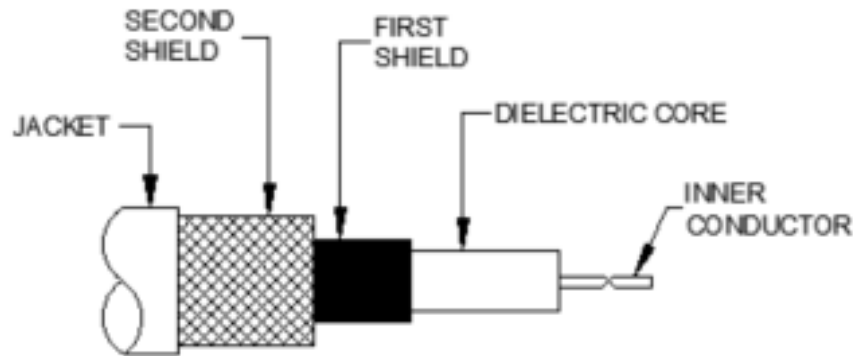


FIGURE 1. General configuration.

TABLE I. Description.

Components	Construction details
Inner Conductor	24 AWG 19x36 silver copper plated alloy Overall diameter: $.024 \pm .001$ nominal
Dielectric	Expanded PTFE/PTFE tape composite Diameter: $.100 \text{ inch} \pm .004$.
First shield	.002 inch Silver plated copper flat braid having 95% minimum coverage. .108 inch nominal diameter.
Second shield	38 AWG silver plated copper braid having 95% minimum coverage. .126 inch nominal diameter.
Jacket	Extruded fluorinated ethylene propylene (FEP) Diameter: $.150 \text{ inch} \pm .005$.



ENGINEERING INFORMATION:

Continuous working voltage: 750 V rms, maximum.

Operating frequency: 3 GHz, maximum.

Velocity of propagation: 79 percent, nominal.

Operating temperature range: -55° to +200°C.

Inner conductor properties:

DC resistance, maximum, at 20°C: 2.74 ohms per 100 feet.

Elongation: 6 percent, minimum.

Tensile strength: 50 klb/inch², minimum.

REQUIREMENTS:

Dimensions, configuration and description: See figure 1.

Environmental and mechanical:

Visual and mechanical examination: Applicable.

Diameter: Applicable.

Out-of-roundness: Not Applicable.

Eccentricity: 10 percent, maximum.

Adhesion of conductors: Inner conductor to core: 1 pounds, minimum; 10 pounds maximum.

Electrical and mechanical:

Continuity: Applicable.

Spark test: 1,500 Vrms, +25 percent, -0 percent.

Voltage withstanding: 750 Vrms, minimum.

Insulation resistance: Not applicable.

Corona extinction voltage: 1,200 V rms, minimum.

Characteristic impedance: 75 ±10 ohms.

RF transmission loss (attenuation): 100MHz – 4.3dB/100ft
400MHz – 8.7dB/100ft
500MHz – 9.8dB/100ft
1GHz – 14.2dB/100ft
2GHz – 21.0dB/100ft

Standing wave ratio (return loss): Not applicable.

Capacitance: 17.5pF per foot, maximum.

Capacitance stability: Not applicable
Capacitance unbalance: Not applicable.
Transmission unbalance: Not applicable.
Inductance: Not applicable
Mechanically induced noise: Not applicable.

Time delay: 1.30Ns/ft (nominal).

Aging stability: +98° ±2°C.

Stress crack resistance: 230° C.

Outer conductor integrity: Not applicable.

Cold bend: -55°C ±2°C.

Dimensional stability: +200°C ±5C.

Inner conductor from core: 0.125 inch, maximum.

Inner conductor from jacket: .187 inch, maximum.

Contamination: Not applicable.

Bendability: Not applicable.
Flammability: Not Applicable

Flame propagation: Applicable.

Acid gas generation: Not applicable.
Halogen content: Not applicable.
Immersion: Not applicable.
Smoke index: Not applicable.
Toxicity index: Not applicable.
Durometer hardness: Not applicable.
Weathering: Not applicable.
Abrasion resistance: Not applicable.
Tear strength: Not applicable.
Heat distortion: Not applicable.
Physicals: Not applicable.

Tensile strength and elongation: Not applicable.

Weight: 0.235 Lbs/ft, maximum.

Marking: Applicable

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

Workmanship: Applicable

Part or Identifying Number (PIN): M17/235-00001

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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	N/A				
	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	4.8.1.4	Entire sample	Per Table VIII	A
	Marking Durability	3.8.2	4.8.39	3	Per Table VIII	A
	Workmanship	3.10	4.8.1.4	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	3.7.14	4.8.15	2	Per Table VIII	B
	Aging stability	3.7.15	4.8.16	4	Per Table VIII	C

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

Group	Qualification inspection	Requirement paragraph	Test paragraph	Qual- # of Specimens	Conf - # of Specimens	Conformance inspection
	Stress crack resistance	3.7.16	4.8.17	4	Per Table VIII	C
	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	3.7.23	4.8.25	1		
	Acid gas generation	N/A				
	Halogen content	N/A				
	Immersion tests	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 (aged)	N/A				
	Tensile strength and elongation	N/A				
	Weight	3.9	4.8.24	1	Per Table VIII	B

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Amendment notations: The margins of this specification are marked with vertical lines to indicate where modifications from this amendment were made. 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. This document references MIL-DTL-17.

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:
DLA - CC

(Project: 6145-2024-025)

Review activities:

Army - AR, AT, CR4
Navy - AS, MC, OS
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>.