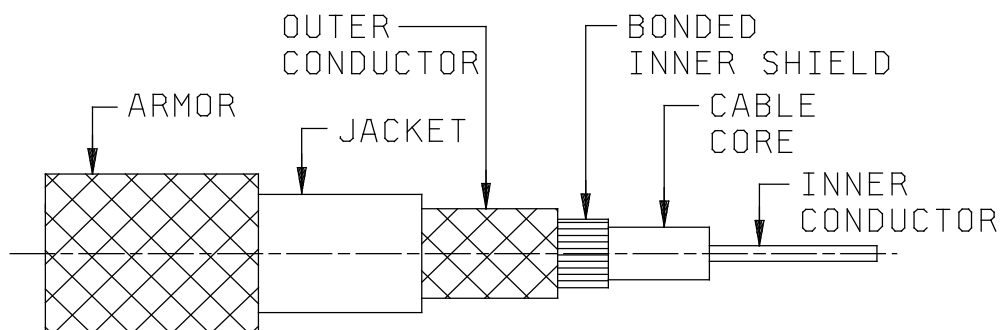


DETAIL SPECIFICATION SHEET

CABLE, RADIO FREQUENCY, FLEXIBLE, COAXIAL,
75 OHMS, LOW SMOKE, LOW LOSS
UNARMORED DIAMETER .242; ARMORED DIAMETER .312

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. General configuration.TABLE I. Description.

Components	Construction details	Diameters
Inner conductor	Solid bare copper	.032 $\pm$.001 inch
Dielectric core	Cellular polyethylene	.150 $\pm$.004 inch
Inner shield	.003 inch bonded aluminum tape	.156 $\pm$.004 inch
Outer conductor	Single braid of 36 AWG, tinned copper wire. Coverage: 90.7 percent, nominal Carriers: 16 Ends: 8 Picks/inch: 8.0	.178 $\pm$.005 inch
Jacket	Type XIV, crosslinked polyolefin	.242 $\pm$.005 inch
Armor	Single braid of aluminum alloy wire.	.312 inch maximum.



ENGINEERING INFORMATION:

Continuous working voltage: 900 V rms, maximum.

Operating frequency: 2.5 GHz, maximum.

Velocity of propagation: 84 percent, nominal.

Power rating: See figure 2.

Operating temperature range: -30°C to +105°C.

Inner conductor properties:

DC resistance, maximum, at 20°C: 1.22 ohms per 100 feet.

REQUIREMENTS:

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

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: 5 pounds, minimum; 50 pounds maximum.

Electrical and mechanical:

Continuity: Applicable.

Spark test: 3,000 V rms, minimum.

Voltage withstanding: 1,500V rms, minimum.

Insulation resistance: 5,000 megohms minimum per 1,000 feet.

Corona extinction voltage: 1,125 V rms, minimum.

Characteristic impedance: 75 ± 3 ohms.

RF transmission loss (attenuation): See table II.

Standing wave ratio (return loss): Not applicable.

Capacitance: 18.0 pF per feet, maximum.

Capacitance stability: Not applicable.

Capacitance unbalance: Not applicable.
Transmission unbalance: Not applicable.
Inductance: Not applicable.
Mechanically induced noise: Not applicable.
Time delay: Not applicable.

Aging stability: $+98^{\circ} \pm 2^{\circ}\text{C}$.

Stress crack resistance: Not applicable.

Outer conductor integrity: Not applicable.

Cold bend: $-30^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

Dimensional stability: $+85^{\circ}\text{C} \pm 2\text{C}$.

Inner conductor from core: 0.62 inch, maximum.

Inner conductor from jacket: .125 inch, maximum.

Contamination: Not applicable.

Bendability: Not applicable.
Flammability: Not applicable.

Flame propagation: Applicable.

Acid gas generation: 2.0 percent, maximum.

Halogen: 0.2 percent, maximum.

Fluid immersion:

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.

Heat distortion: 30 percent maximum.

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Physicals:

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: 1,300psi, 160 percent minimum.

Weight: 50.6 Lbs/1000 ft, maximum.

66.2 Lbs/1000 ft (armored), maximum.

Marking: Applicable.

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

Workmanship: Applicable.

Part or Identifying Number (PIN): M17/229-00001 (unarmored)
M17/229-00002 (armored).

Table II. Attenuation and Power.

Frequency MHz	Attenuation dB	Power Watts
50	2.10	950
150	3.80	530
450	6.50	300
900	9.40	210
1500	12.25	160
2000	14.30	130
2500	15.80	100

Tabulated values for power rating are for information only

TABLE III. 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				

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TABLE III. Qualification and Group A, B, and C Table - Continued.

Group	Qualification inspection	Requirement paragraph	Test paragraph	Qual- # of Specimens	Conf - # of Specimens	Conformance inspection
	Time delay	N/A				
	Aging stability	3.7.15	4.8.16	4	Per Table VIII	C
	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	3.7.23	4.8.25	1		
	Acid gas generation	3.7.24	4.8.26	1		
	Halogen content	3.7.25	4.8.27	1		
	Immersion tests	3.7.26	4.8.28	1		
	Smoke index	3.7.27	4.8.29	1		
	Toxicity Index	3.7.28	4.8.30	1		
	Durometer hardness	3.7.29	4.8.31	1		
	Weathering	3.7.30	4.8.32	1		
	Abrasion resistance	3.7.31	4.8.33	5		
	Tear strength	3.7.32	4.8.34	6	Per Table VIII	B
	Heat distortion	3.7.33	4.8.35	1	Per Table VIII	C
	Physicals (aged)	3.7.34	4.8.36	1	Per Table VIII	C
	Tensile strength and elongation	3.7.35	4.8.37	1	Per Table VIII	C
	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 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. This document references MIL-DTL-17.

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - EC
Air Force – 85

Preparing activity:
DLA - CC

(Project: 6145-2024-022)

Review activities:

Army - AR, AT, CR4
Navy - AS, MC, OS
Air Force - 19
NASA - NA
DLA - CQ

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>.