INCH-POUND

MIL-DTL-17/234
28 May 2016

DETAIL SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE, COAXIAL, 75 OHMS, LOW NOISE, 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.

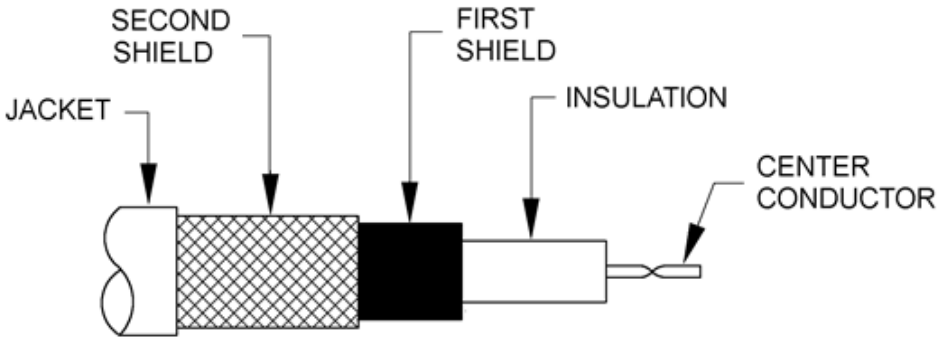

FIGURE 1. General configuration.

TABLE I. Description.

Components	Construction details
Inner conductor	26 AWG 19x38 silver copper plated alloy Overall diameter: .0189 nominal
Insulation	Expanded PTFE/PTFE tape composite Diameter: .080 inch ± .004.
First shield	Silver plated copper braid having 95% minimum coverage. .086 inch nominal diameter.
Second shield	38 AWG silver plated copper braid having 95% minimum coverage. .104 inch nominal diameter.
Jacket	Extruded flouropolymer; Diameter: .125 inch ± .005.

ENGINEERING INFORMATION:

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

Operating frequency: 1 GHz, maximum.

Velocity of propagation: 82 percent, nominal.

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

Inner conductor properties:

DC resistance, maximum, at 20°C: 0.65 ohms per 100 feet.

Elongation: 15 percent, minimum.

Tensile strength: 60 $klb_f/inch^2$, minimum.

Engineering notes: This cable useful in applications where electrical noise generated within the coaxial cable, due to flexure or vibration, must be limited.

REQUIREMENTS:

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

Environmental and mechanical:

Visual and mechanical examination: Applicable.

Adhesion of conductors:

Inner conductor to core: 7 pounds, minimum; 50 pounds maximum.

Aging stability: +98° ±2°C.

Stress crack resistance: Not applicable.

Outer conductor integrity: Not applicable.

Cold bend: -40°C ±2°C.

Special requirements:

Magnetic shield continuity: One hundred percent of all finished cable shall be tested for shield continuity prior to shipment. To establish continuity, no more than 25V dc shall be applied across the shield through an appropriate indicator, such as an ohmmeter, light or buzzer.

Magnetic shield: To be applied to the maximum tension possible so as to prevent loosening or creeping but not cause broken ends. Braids shall have no irregularities or loose unwoven strands. There shall be no splices of the completed braid.

Dimensional stability: +85°C ±2C.

Inner conductor from core: 0.062 inch, maximum.

Inner conductor from jacket: .130 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.

Heat distortion: 30 percent maximum.

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.

Weight: 0.235 Lbs/ft, maximum.

Electrical:

Spark test: 5,000 Vrms, +25 percent, -0 percent.

Voltage withstanding: 10,000 Vrms, minimum.

Insulation resistance:

300,000 megohms, minimum per 1,000 feet (center conductor to outer conductor) at 1,000 V dc.
1,500,000 megohms, minimum per 200 feet (center conductor to outer conductor) at 1,000 V dc.
10 megohms, minimum per 1,000 feet (outer conductor to magnetic shield) at 500 V dc.
50 megohms, minimum per 200 feet (outer conductor to magnetic shield) at 500 V dc.
15 megohms, minimum per 1,000 feet (magnetic shield to outer jacket surface) at 500 V dc.
75 megohms, minimum per 200 feet (magnetic shield to outer jacket surface) at 500V dc.

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

Characteristic impedance: 75 $\pm$5 ohms.

Attenuation: 100MHz - 5dB/100ft
400MHz - 10dB/100ft
500MHz - 12dB/100ft
1GHz - 17dB/100ft
2GHz - 24dB/100ft

Structural return loss: Not applicable.

Capacitance: 17pF per foot, maximum.

Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise voltage: 320 microvolts peak to peak, maximum.

Time delay: Not applicable.

Shielding effectiveness:

Frequency range: .00006 - .01 MHz.
Surface transfer impedance, 8.184 milliohms/meter, maximum.

Frequency range: .0101 – 100 MHz.
Surface transfer impedance, 11.296 milliohms/meter, maximum.

Surface transfer impedance measurements performed in accordance with SAE-AS85485. Testing performed with outer conductor shield and magnetic shield connected together on both ends and is considered the “Shield” in the test procedure.

TABLE II. Tools (Installing and Removing).

Bin Code	Inner Contact Tooling		Outer Contact Tooling		Installing Tool	Removal Tool
	Basic Crimping Tool	Contact Positioner	Basic Crimping Tool	Die Part Number		
660	MH992 Daniels	K1605 Daniels	M22520/5-01	M22520/5-03 Cavity A	M81969/8-09 OR M81969/14-04	M81969/8-10 OR M81969/14-04

Part or Identifying Number (PIN): M17/234-00001

Referenced documents. In addition to MIL-DTL-17, this document references the following:
SAE-AS85485

CONCLUDING MATERIAL

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

Preparing activity:
DLA - CC

(Project: 6145 - 2016 - 012)

Review activities:
Army - AR, AT, CR4, MI
Navy - AS, MC, OS, SH
Air Force - 19, 99

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.