

MILITARY SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE, TWINAXIAL, EMP HARDENED,
DOUBLE SHIELD, DATA BUS, 77 OHMS

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.

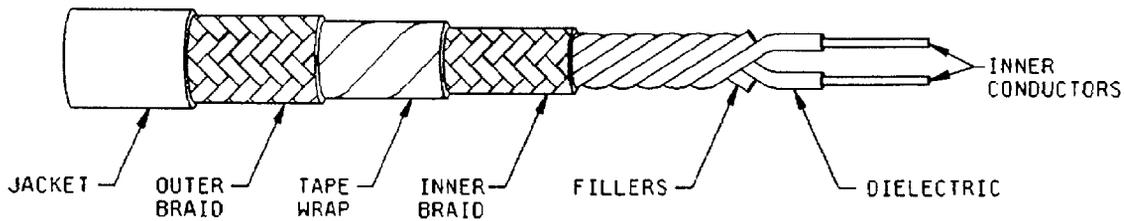


FIGURE 1. Configuration for M17/203-00001.

TABLE I. Description.

Components	Construction
Inner conductors <u>1/ 2/</u>	M17/203-00001
	AWG 24. 19 strands AWG 36 silver-coated, high strength copper alloy. O.D.: .025 ±.0001 inch.
Dielectrics <u>3/</u>	Radiation-crosslinked modified ETFE, one light blue, one white. Permittivity: 2.7 nominal. O.D.: .048 ±.002 inch.
Fillers	Radiation-crosslinked modified ETFE. O.D.: .032 ±.002 inch.
Inner braid <u>4/</u>	AWG 38 tin-coated copper. Coverage: 90% minimum. Braid angle: 18°-40°. C.D.: .114 ±.006 inch.
Tape wrap	Mumetal tape, .002 inch thick nominal; 25% overlap minimum. C.D.: .130 inch maximum.
Outer braid <u>4/</u>	AWG 38 tin-coated copper. Coverage: 90% minimum. Braid angle: 18°-40°. O.D.: .147 inch maximum.
Jacket	Radiation-crosslinked modified ETFE, white. O.D.: .161 ±.001 inch.

- 1/ Lay length shall be 1.00 ±.25 inch.
- 2/ High strength copper alloy in accordance with MIL-W-22759/35.
- 3/ Radiation-crosslinked modified ETFE copolymer in accordance with MIL-W-22759/35.
- 4/ Minimum coverage of 90% in accordance with MIL-C-27500 (shield type T) (tin-coated copper).

ENGINEERING INFORMATION:

Continuous working voltage: 600 V rms maximum at sea level.

Operating frequency: 10 MHz maximum.

Velocity of propagation: 61% nominal.

Operating temperature range: -65°C to +150°C.

Inner conductor properties:

DC resistance (maximum at 20°C): 28.4 ohms/100 feet.

Elongation: 6% minimum.

Tensile strength: 22.4 pounds minimum.

Jacket properties:

Elongation: 50% minimum.

Tensile strength: 5k lbf/inch², minimum.

Engineering note: Cables shall be suitable for use in MIL-STD-1553 data bus systems for use as main bus or stub cable.

REQUIREMENTS:

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

Environmental and mechanical:

Visual and mechanical examination:

Out-of-roundness: Applicable.

Eccentricity: 10% maximum.

Adhesion of conductors: Dielectrics shall be free stripping, using conventional stripping tools, without breakage of conductor strands and without bunching of the dielectric.

Electrical and mechanical:

Operational:

Continuity: Applicable.

Spark test: 1,000 V rms minimum.

Voltage withstanding: 1,000 V rms, +10%, -0%.

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

Corona extinction voltage: Not applicable.

Characteristic impedance: 77 ±5 ohms at 1 MHz.

Surface transfer impedance: In accordance with MIL-C-85485; 1.0 milliohm/meter maximum at 1 MHz.

RF transmission loss (attenuation): 1.4 dB/100 feet maximum at 1 MHz.

Standing wave ratio (return loss): Not applicable.

Capacitance: 30 pF/foot maximum at 1 MHz.

Capacitance stability: Not applicable.

Capacitance unbalance: 5% maximum.

Transmission unbalance: Not applicable.

Mechanically induced noise voltage: Not applicable.

MIL-C-17/203

Time delay: Not applicable.

Aging stability: Not applicable.

Stress-crack resistance: Not applicable.

Outer conductor integrity: Not applicable.

Cold bend: -65°C (6-inch mandrel). Jacket shall pass spark test.

Dimensional stability: Not applicable.

Contamination: Not applicable.

Bendability: Not applicable.

Flammability: Cable shall be tested in accordance with the flammability procedure of MIL-W-22759/35 and shall meet the requirements specified therein.

Flame propagation: Not applicable.

Acid gas generation: Not applicable.

Halogen: Not applicable.

Fluid immersion: Cable shall be tested in accordance with MIL-W-22759/35 using a 6-inch diameter mandrel. There shall be no cracking of the jackets or evidence of breakdown. The increase in diameter shall be 5 percent maximum.

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.

Physical properties of insulation: Shall be in accordance with MIL-W-22759/35.

Hot oil immersion: Not applicable.

Accelerated aging: Shall be in accordance with MIL-W-22759/35 (.5-inch mandrel, .375-pound load).

Impulse dielectric: Shall be in accordance with MIL-W-22759/35 .

Marking: M17/203-00001.

Weight: 29.1 pounds/1,000 feet maximum.

Workmanship: Applicable.

Supersession: This specification sheet shall supersede Air Force drawing 8421528 when a QPL source becomes available.

MIL-C-17/203

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - EC
Air Force - 85

Review activities:

Army - AR, AT, MI, ME
Navy - AS, MC, OS, SH, TD
Air Force - 17, 19, 99

Preparing activity:

Air Force - 85

Agent:

DLA - ES

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