DEFENSE LOGISTICS AGENCY
WEAPONS SUPPORT
P.O. BOX 3990
COLUMBUS, OHIO 43218-3990

September 15, 2026

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

SUBJECT: Initial Drafts of: MIL-DTL-17/178, /220 through /222, and /225 through /228
Project Numbers: 6145-2026-025 through 6145-2026-032

These initial drafts for these subject documents, are now available for viewing and downloading from the DLA Weapons Support (Columbus)-VA Web site:

https://weaponssupportapps.dla.mil/programs/milspec/default.aspx

Major changes to these documents include adding qualification tables for clarification, and updating documents to be in accordance with MIL-STD-961.

Concurrence or comments are required at this Center within 30 days from the date of this letter. Late comments will be held for the next coordination of the document. Comments from military departments must be identified as either "Essential" or "Suggested". Essential comments must be justified with supporting data. Military review activities should forward comments to their custodians of this office, as applicable, in sufficient time to allow for consolidating the department reply. Lack of response to this draft will be construed as concurrence.

If these documents are of interest to you, please provide your comments or suggested changes. The point of contact for this document is Mr. Candelaria, phone number 614-693-3113, e-mail Eric.Candelaria@dla.mil.

Sincerely,

-/ Signed/-
MUHAMMAD AKBAR
Chief,
Interconnection Branch

NOTE: This draft, dated 15 September 2026, prepared by DLA – CC has not been approved and is subject to modification.
DO NOT USE PRIOR TO APPROVAL. (Project 6145-2026-026)

INCH-POUND

MIL-DTL-17/220A
w/AMENDMENT 1
DRAFT 2026
SUPERSEDING
MIL-DTL-17/220A
27 May 2016

DETAIL SPECIFICATION SHEET

# CABLE, RADIO FREQUENCY, FLEXIBLE, COAXIAL, 50 OHMS, LOW SMOKE, LOW LOSS DIAMETER .195

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.

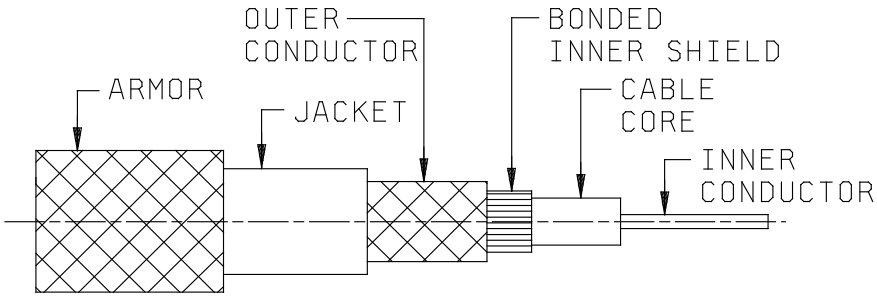



FIGURE 1. General configuration.

TABLE I. Description.

| Components | Construction details | Diameters |
|---|---|---|
| Inner conductor | Solid bare copper | .044 ±.001 inch ~~(1.12 ±0.03 mm)~~ |
| Dielectric core | Cellular polyethylene | .116 ±.004 inch ~~(2.95 ±0.10 mm)~~ |
| Inner shield | .003 inch bonded aluminum tape | .122 ±.004 inch ~~(3.10 ±0.10 mm)~~ |
| Outer conductor | Single braid of 36 AWG, tinned copper wire.<br><br>Coverage: 90.9 percent, nominal<br>Carriers: 16<br>Ends: 6<br>Picks/inch: 13.0 | .144 ±.005 inch ~~(1.12 ±0.13 mm)~~ |
| Jacket | Type XIV, crosslinked polyolefin | .195 ±.005 inch ~~(4.95 ±0.13 mm)~~ |
| Armor | Single braid of aluminum-alloy wire | .265 inch ~~(6.73mm)~~, maximum. |


DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

ENGINEERING INFORMATION:

Continuous working voltage: 560 V rms, maximum.

Operating frequency: 2.5 GHz, maximum.

Velocity of propagation: 83 percent, nominal.

Power rating: See figure 2.

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

Inner conductor properties: DC resistance, maximum, at 20°C: .545 ohms per 100 feet.

REQUIREMENTS:

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

Environmental and mechanical:

Visual and mechanical examination: Not applicable.

Out-of-roundness: Not Applicable.

Eccentricity: 10 percent, maximum.

Adhesion of conductors:

Inner conductor to core: 5 pounds, minimum; 40 pounds maximum.

Aging stability: +98° ±2°C.

Cold bend: -30°C ±2°C.

Dimensional stability: +85°C ±2C.

Inner conductor from core: 0.62 inch ~~(mm)~~, maximum.

Inner conductor from jacket: .125 inch ~~(mm)~~, 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: 1,300psi, 160 percent minimum.

Weight: 37.4 Lbs/1000 ft ,maximum.
50.6 Lbs/1000 ft (armored), maximum.

Electrical:

Spark test: 3,000 V rms, minimum.

Voltage withstanding: 1,000 V rms, minimum.

Corona extinction voltage: 750 V rms, minimum.

Characteristic impedance: 50 ±2 ohms.

Attenuation: See figure 2.

Structural return loss: See figure 3.

Capacitance: 27.0 pF per feet, maximum.

Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise: Not applicable.

Time delay: Not applicable.

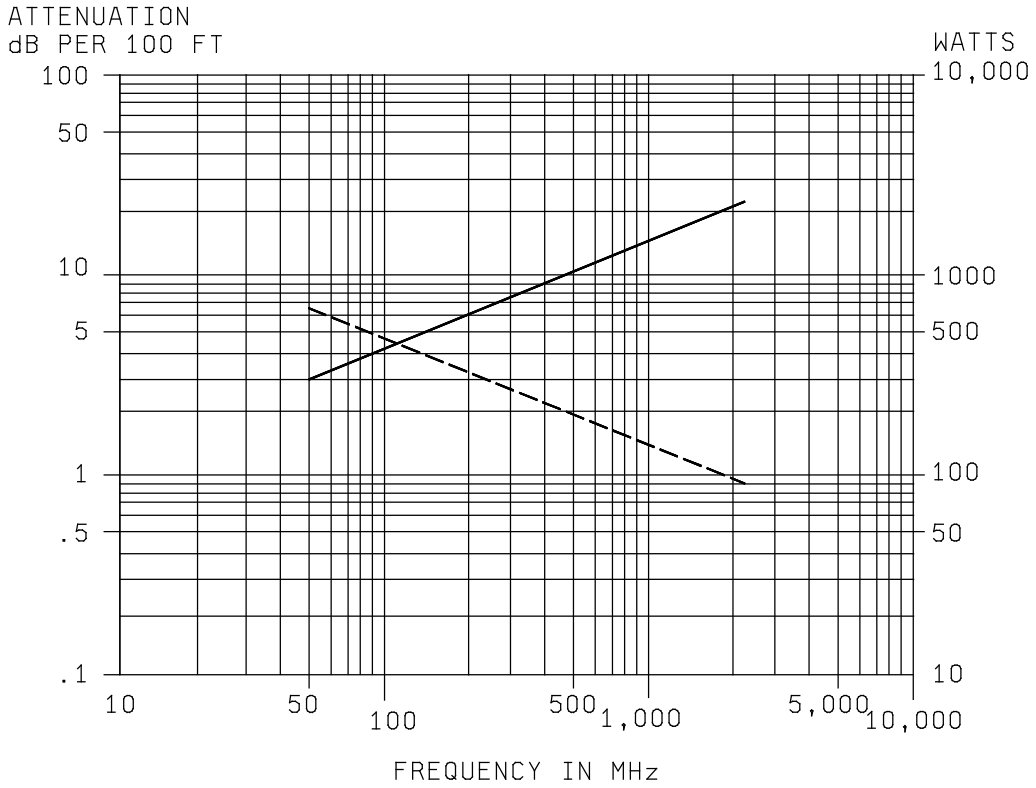
Part or Identifying Number (PIN): M17/220-00001 (unarmored)
M17/220-00002 (armored).

Marking: Applicable

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

Workmanship: Applicable

Qualification: Shall consist of the inspections specified in table II.




MAXIMUM ATTENUATION ———
MAXIMUM POWER ----------

Tabulated values are for reference only. The values on the graph represent the requirements for attenuation. The data regarding power rating are for information only.

| Frequency MHz | Attenuation dB | Power Watts |
|---|---|---|
| 50 | 3.05 | 680 |
| 150 | 5.30 | 390 |
| 450 | 9.25 | 220 |
| 900 | 13.10 | 150 |
| 1500 | 17.05 | 130 |
| 2000 | 19.80 | 110 |
| 2500 | 22.40 | 90 |

FIGURE 2. Power rating and attenuation.

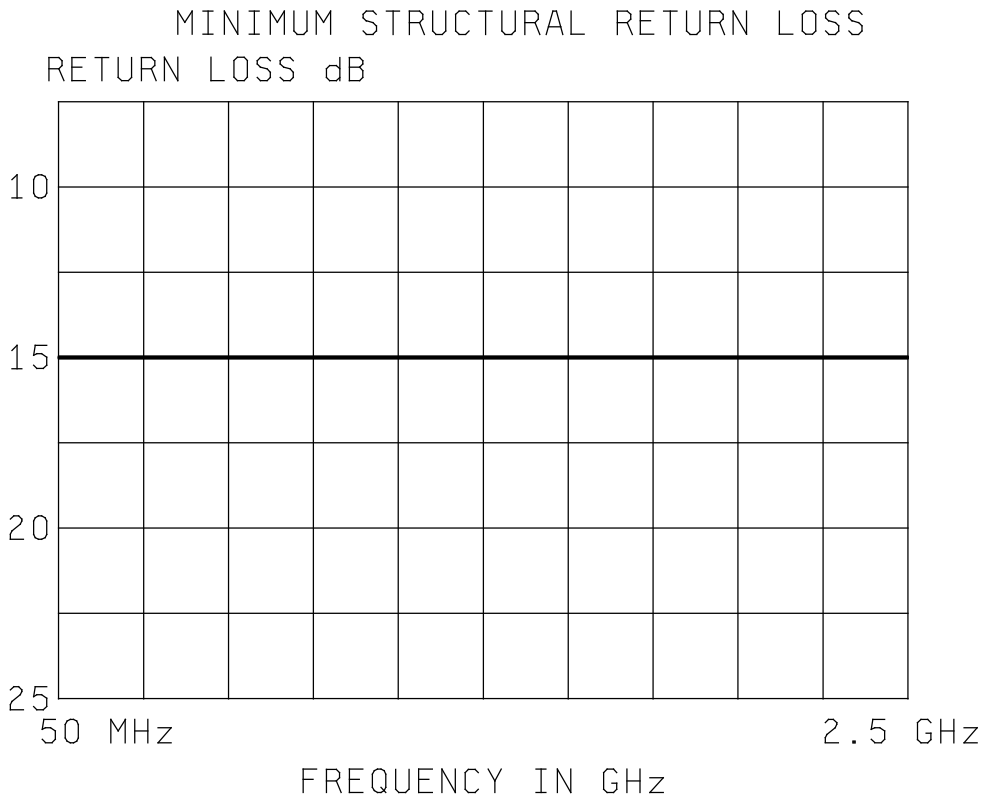



FIGURE 3. Structural return loss.

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 | 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) | 3.7.8 | 4.8.9 | 2 | Per Table VIII | 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 | 3.7.15 | 4.8.16 | 4 | Per Table VIII | C |

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 |
|---|---|---|---|---|---|---|
| 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 | 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 | 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 |

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
DLA – CC

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

Preparing activity:
DLA - CC

(Project: 6145-2026-026)

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.