

INCH-POUND

MIL-DTL-55021/2D
23 March 2011
SUPERSEDING
MIL-DTL-55021/2C
11 August 2000

DETAIL SPECIFICATION SHEET

CABLE, ELECTRICAL, SHIELDED SINGLES, SHIELDED AND JACKETED SINGLES, TWISTED PAIRS AND TRIPLES, INTERNAL HOOKUP, -65 TO 200 °C

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-55021.

REQUIREMENTS.

Cable construction: The cable shall consist of shielded singles, shielded and jacketed singles, or twisted pairs or triples in accordance with MIL-DTL-55021 (see figure 1 herein).

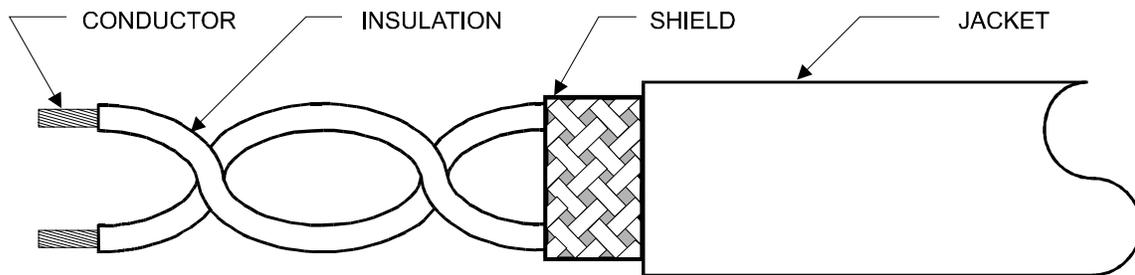


FIGURE 1. Shielded and jacketed cable.

Type of wire(s): The insulated wires used in constructing the cable shall conform to NEMA HP3 (type E) or NEMA HP3 (type EE) as specified (see MIL-DTL-55021). All wires in the cable shall be of the same wire type and AWG size.

Conductor stranding: Conductor stranding as specified in table I.

Length of lay: The length of lay shall be 8 to 16 times the outside major axis diameter of the unshielded, unjacketed cable.

Shield coverage and braid angle: If shielding is required by the contract or order (see MIL-DTL-55021), the minimum allowable coverage shall be 90 percent, and the angle made by the shielding braid with the longitudinal axis of the twisted conductors shall be between 20 and 40 degrees.

TABLE I. Conductor stranding.

AWG size	Number of strands	Nominal stranding (inch)	Nominal diameter over conductor (inch)	Maximum conductor dc resistance at 20 °C per 1000 ft. (ohms)
32	7	.0031	.010	173.0
30	7	.0040	.012	100.7
28	7	.0050	.015	63.8
26	7	.0063	.019	40.5
24	19	.0050	.024	24.3
22	19	.0063	.030	15.1
20	19	.0080	.038	9.19
18	19	.0100	.048	5.79
16	19	.0113	.057	4.52
14	19	.0142	.071	2.88
12	19	.0179	.090	1.81
10	37	.0159	.119	1.19
8	133	.0113	.166	.658
6	133	.0142	.208	.418

Jacket materials: If jacketing is required by the contract or order (see MIL-DTL-55021), the cable jacket shall be extruded or tape-wrapped polytetrafluoroethylene (PTFE), or fluorinated ethylene propylene (FEP), of uniform thickness as specified in table II. If the jacket is tape, two layers of tape shall be applied in opposite directions, each layer and adjacent convolutions being properly sealed together to form a homogeneous wall. The surface of the jacket shall be smooth, although a slight spiral ridge of the tape shall not be cause for rejection. Pre-fused tape shall not be used.

TABLE II. Jacket thickness.

Cable diameter (under jacket) ^{1/} (inch)	Nominal jacket thickness (inch)	Minimum jacket thickness (inch)
Under .300	.012	.008
.300 and over	.016	.012

^{1/} When specifying a jacket thickness, both unshielded and shielded constructions are applicable.

Heat resistance: The cable shall be conditioned at 250±5 °C for 96+1, -0 hours.

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issues due to the extensiveness of the changes.

Referenced documents. In addition to MIL-DTL-55021, this document references the following:
NEMA HP3

CONCLUDING MATERIAL

Custodians:
Army - MI
Navy - AS
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC

(Project 6145-2011-013)

Review activity:
Army – CR

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 using the Assist Online database at <https://assist.daps.dla.mil>.