

INCH-POUND

MIL-DTL-25038/3E
15 February 2011
SUPERSEDING
MIL-DTL-25038/3D
1 December 2000

DETAIL SPECIFICATION SHEET

WIRE, ELECTRICAL, HIGH TEMPERATURE, FIRE RESISTANT,
FLIGHT CRITICAL, LIGHT WEIGHT, SMALL DIAMETER

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-25038.

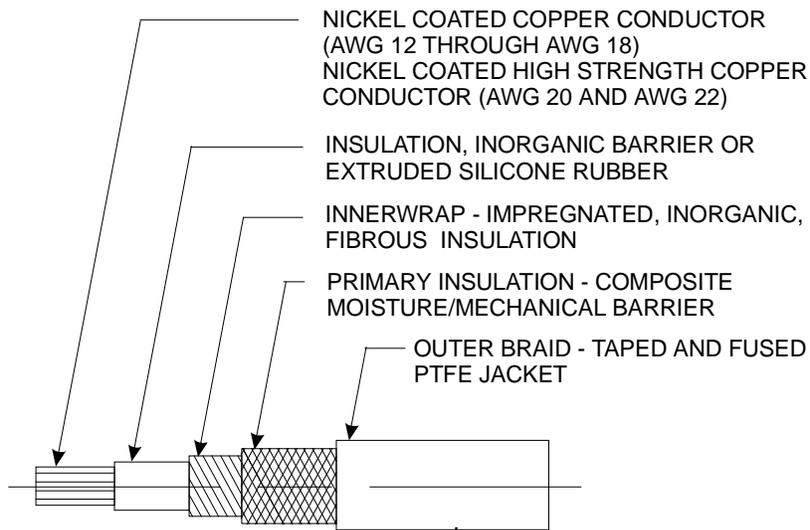


FIGURE 1. Wire electrical.

REQUIREMENTS:

Design and construction: See figure 1.

Temperature rating: 260 °C.

Voltage: 600 V rms.

Color: Unless otherwise specified by the Part or Identifying Number (PIN), the color shall be white.

Thermal shock: .060 inch maximum change in insulation measurement.

PIN: M25038/3 – (wire size from table I) – (color code designator in accordance with MIL-STD-681 and MIL-DTL-25038.)

Examples: Size 20 AWG, white = M25038/3-20-9;
 Size 20 AWG, white with orange stripe = M25038/3-20-93.

TABLE I. Finished wire construction and performance details.

Wire size ^{1/}	Conductor stranding ^{2/}			Maximum conductor diameter (inch)	Maximum dc resistance 1,000 feet at 20 °C (ohms)	Finished wire diameter (inch) ^{3/}		Weight lbs/1,000 feet (max)	Performance details	
	Number of strands	AWG size	Nominal diameter (inch)			Min.	Max.		Bend and cold bend test mandrel	
									Mandrel OD (inches)	Load on mandrel (pounds)
22	19	34	.0063	.033	23.70	.040	.054	4.15	6	2
22H ^{4/}	19	34	.0063	.033	23.70	.055	.075	6.00	6	2
20	19	32	.0080	.041	15.27	.048	.083	9.00	6	2
18	19	30	.0100	.052	8.50	.065	.097	10.50	6	2
16	19	29	.0113	.061	6.66	.068	.103	13.50	8	3
14	19	27	.0142	.074	4.32	.097	.123	19.50	8	3
12	19	25	.0179	.093	2.78	.100	.142	28.00	8	3

^{1/} Wire size 20 AWG and 22 AWG shall be constructed with nickel-coated high-strength copper strands.

^{2/} The conductor strands shall have an annular nickel coating, whose weight shall be not less than 27 percent of the total weight of the nickel-coated strand.

^{3/} These wires shall comply with the sealing range requirements for firewall connectors as specified in SAE-AS50151, MIL-DTL-38999, and MIL-DTL-83723.

^{4/} The 22H wire is defined as heavy-wall or thick-wall version of size 22 wire for use in specific applications. It is considered to be "light weight, small diameter" when compared with the normal weight size 22 of MIL-DTL-25038/1. The 22H wire should only be used with a size 20 type contact for MIL-DTL-38999 connectors.

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-25038, this document references the following:

- SAE-AS50151
- MIL-STD-681
- MIL-DTL-38999
- MIL-DTL-83723
- MIL-DTL-25038/1

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - AS
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC

(Project 6145-2010-016)

Review activities:

Army - AR, AV, MI
Navy - OS
Air Force - 99
NASA – NA

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.daps.dla.mil>.