

INCH-POUND
MIL-DTL-16878/38A
w/AMENDMENT 1
12 January 2016
SUPERSEDING
MIL-DTL-16878/38A
11 August 2000

DETAIL SPECIFICATION SHEET

WIRE, ELECTRICAL, ETHYLENE-PROPYLENE DIENE ELASTOMER
(EPDM) INSULATED, 125 DEGREE C, 5000 VOLTS, EXTRUDED
INSULATION

Inactive for new design after 12 January 2016. For new design, use
National Electrical Manufacturers Association (NEMA) HP 9.

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-16878.

REQUIREMENTS.

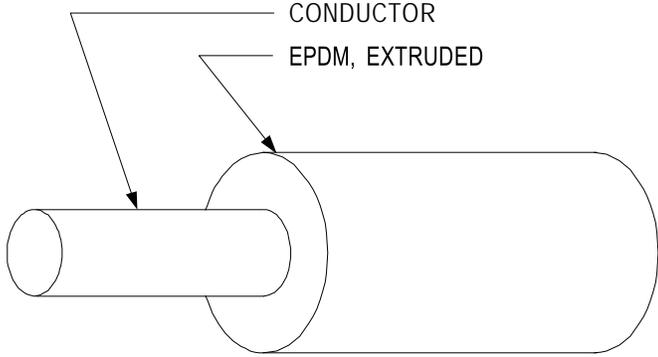


FIGURE 1. Wire configuration.

MIL-DTL-16878/38A
w/AMENDMENT 1

TABLE I. Wire configuration and dimensions.

PIN ^{1/}	Wire size	Stranding	Conductor		Conductor diameter (nominal) (inch)	Finished wire diameter (inch)	
			Material	Coating		Min	Max
M16878/38BHE*	18	19 X 30	Copper	Tin	.049	.090	.110
M16878/38BJE*	16	19 X 29	Copper	Tin	.056	.097	.112
M16878/38BKE*	14	19 X 27	Copper	Tin	.069	.122	.127
M16878/38BLE*	12	19 X 25	Copper	Tin	.088	.130	.145
M16878/38BMG*	10	37 X 26	Copper	Tin	.111	.156	.170

Notes:

^{1/} PIN stands for part or identifying number (see figure 2).

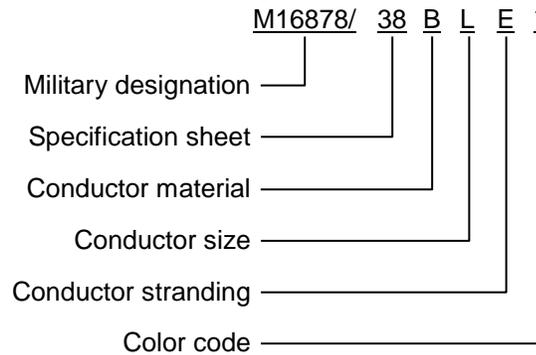


FIGURE 2. Example of PIN (see MIL-DTL-16878).

Operating voltage:	Up to 5000 volts
Operating temperature:	Up to 125 degrees C
Insulation:	Extruded ethylene-propylene diene elastomer (EPDM)
Spark test voltage:	11 kV
Impulse dielectric test voltage:	15 kV, or 10.6 kV using the 3.0 kHz spark test
Dielectric withstanding voltage:	7.5 kV
Insulation resistance:	IR = K log ₁₀ D/d
	Where: IR = Minimum insulation resistance in megohms-1000 feet at 20 degrees C
	K = 1,500
	D = Maximum average diameter of finished wire
	d = Conductor diameter
Cold bend:	Condition 4 hours at -25±1 degrees C (see table II)

MIL-DTL-16878/38A
w/AMENDMENT 1

TABLE II. Cold bend mandrel sizes.

Wire size	Cold bend mandrel diameter (inches, maximum)
18 through 10	1

Surface resistance: Not required
Heat resistance: Condition at 150 degrees C
Heat aging: Not required
Insulation tensile strength: 1500 pounds force per square inch (minimum)
Insulation elongation: 250 percent (minimum)

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-16878.

CONCLUDING MATERIAL

Custodians:
Navy - SH
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC
(Project 6145-2015-057)

Review activity:
Navy – AS

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>.