

INCH-POUND

MIL-W-16878/4C(NAVY)

11 September 1992

SUPERSEDING

MIL-W-16878/4B(NAVY)

10 August 1981

MILITARY SPECIFICATION SHEET

WIRE, ELECTRICAL, POLYTETRAFLUOROETHYLENE
(PTFE) INSULATED, 200°C, 600 VOLTS, EXTRUDED INSULATION

This specification is approved for use by the Department of the Navy and is available 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-W-16878.

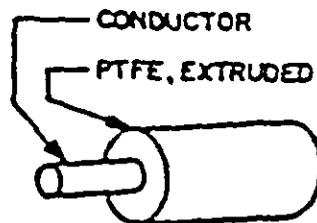


FIGURE 1. Construction.

AMSC N/A

FSC 6145

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

TABLE I. Construction details.

PIN <u>4/</u>	Wire size	Strand- ing	Conductor		Conductor diameter (nominal) (inch)	Finished wire diameter (inch)	
			Material <u>2/ 3/</u>	Coating		Min	Max
M16878/4-BAA*	32	1 X 32	Copper	Silver	0.0080	0.025	0.033
M16878/4-DAA*	32	1 X 32	H.S.C.A.	Silver	.0080	.025	.033
M16878/4-CAA*	32	1 X 32	C.C. steel	Silver	.0080	.025	.033
M16878/4-BAB*	32	7 X 40	Copper	Silver	.010	.026	.034
M16878/4-DAB*	32	7 X 40	H.S.C.A.	Silver	.010	.026	.034
M16878/4-BAA*	30	1 X 30	Copper	Silver	.0100	.026	.034
M16878/4-DBA*	30	1 X 30	H.S.C.A.	Silver	.0100	.026	.034
M16878/4-CBA*	30	1 X 30	C.C. steel	Silver	.0100	.026	.034
M16878/4-BBB*	30	7 X 38	Copper	Silver	.012	.028	.036
M16878/4-DBB*	30	7 X 38	H.S.C.A.	Silver	.012	.028	.036
M16878/4-BCA*	28	1 X 28	Copper	Silver	.0126	.029	.037
M16878/4-DCA*	28	1 X 28	H.S.C.A.	Silver	.0126	.029	.037
M16878/4-CCA*	28	1 X 28	C.C. steel	Silver	.0126	.029	.037
M16878/4-BDA*	26	1 X 26	Copper	Silver	.0159	.032	.040
M16878/4-DDA*	26	1 X 26	H.S.C.A.	Silver	.0159	.032	.040
M16878/4-CDA*	26	1 X 26	C.C. steel	Silver	.0159	.032	.040
M16878/4-BDB*	26	7 X 34	Copper	Silver	.019	.035	.043
M16878/4-DBD*	26	7 X 34	H.S.C.A.	Silver	.019	.035	.043
M16878/4-BEA*	24	1 X 24	Copper	Silver	.0201	.036	.044
M16878/4-DEA*	24	1 X 24	H.S.C.A.	Silver	.0201	.036	.044
M16878/4-CEA*	<u>1/</u> 24	1 X 24	C.C. steel	Silver	.0201	.036	.044
M16878/4-BEB*	24	7 X 32	Copper	Silver	.024	.040	.048
M16878/4-DEB*	24	7 X 32	H.S.C.A.	Silver	.024	.040	.048
M16878/4-BFA*	22	1 X 22	Copper	Silver	.0254	.041	.049
M16878/4-DFa*	22	1 X 22	H.S.C.A.	Silver	.0254	.041	.049
M16878/4-CFA*	<u>1/</u> 22	1 X 22	C.C. steel	Silver	.0254	.041	.049
M16878/4-BFB*	22	7 X 30	Copper	Silver	.030	.046	.054
M16878/4-DFB*	22	7 X 30	H.S.C.A.	Silver	.030	.046	.054
M16878/4-BGA*	20	1 X 20	Copper	Silver	.0320	.048	.056
M16878/4-DGA*	20	1 X 20	H.S.C.A.	Silver	.0320	.048	.056
M16878/4-BGB*	20	7 X 28	Copper	Silver	.038	.054	.062
M16878/4-DGB*	20	7 X 28	H.S.C.A.	Silver	.038	.054	.062
M16878/4-BHA*	18	1 X 18	Copper	Silver	.0403	.056	.066
M16878/4-BHB*	18	7 X 26	Copper	Silver	.048	.064	.074
M16878/4-BJA*	16	1 X 16	Copper	Silver	.0508	.067	.081
M16878/4-BLG*	12	37 x 28	Copper	Silver	.089	.105	.119

1/ Inactive for new design.

2/ H.S.C.A. stands for high-strength copper alloy.

3/ C.C. stands for copper-clad.

4/ PIN stands for part or identifying number.

ADDITIONAL REQUIREMENTS:

Visual and mechanical examination: Required.
 Spark test: 3.4 kV.
 Impulse dielectric test: 6.5 kV.
 Dielectric withstanding voltage: 2.0 kV.
 Insulation resistance: $IR = K \log_{10} D/d$

Where: IR - Minimum insulation resistance in
 megohms per 1000 feet at 20°C.
 K - 50,000.
 D - Maximum average diameter of finished
 wire.
 d - Conductor diameter.

Cold bend: Condition 4 hours at minus $65 \pm 1^\circ\text{C}$ (see table II).

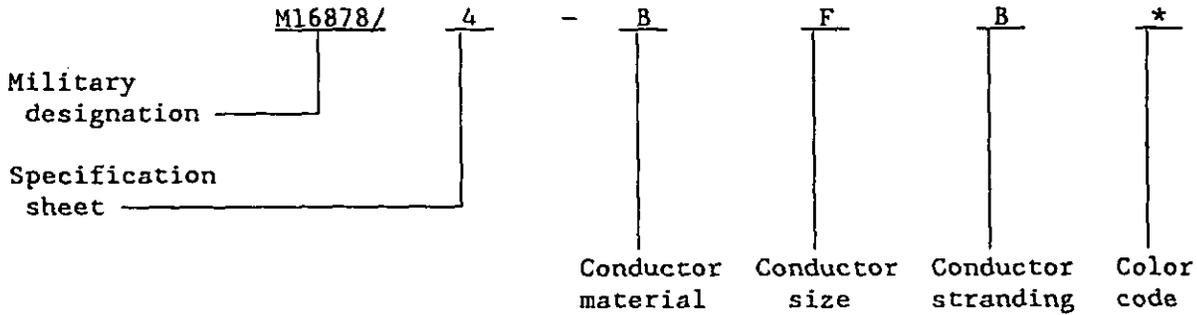
TABLE II. Cold bend mandrel sizes.

Wire size	Cold bend mandrel (maximum diameter in inches)
32 through 16	1
14 through 10	2

Concentricity: 70 percent (minimum).
 Surface resistance: Not required.
 Heat resistance: Condition at 290°C.
 Wrap back: Required.
 Flammability: Meets requirements of UL VW1 Flame Test.
 Shrinkage: Required.
 Toxicity: Meets requirements of concentration levels specified in MIL-E-917.
 Heat aging: Not required.
 Insulation tensile strength: 4000 pounds force per square inch (minimum).
 Insulation elongation: 150 percent (minimum).
 Marking and stripe durability: Required.
 Fungus resistance: Not required.
 Maximum dc resistance of finished wire: See table I of MIL-W-16878.
 Wire length requirements: See appendix B.
 Identification of product: Required for wire sizes 22 AWG and larger.

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PIN example (see MIL-W-16878):



SUPERSESION DATA:

The wire of this specification sheet, by part number, has been replaced and superseded by the wire of MIL-W-22759 as specified in table III.

TABLE III. Supersession by part number.

Part number (former) MIL-W-16878	Part number (replacement) MIL-W-22759
MIL-W-16878/4-BCB	MIL-W-22759/11-28
MIL-W-16878/4-DCB	MIL-W-22759/22-28
MIL-W-16878/4-BDE	MIL-W-22759/11-26
MIL-W-16878/4-DDE	MIL-W-22759/22-26
MIL-W-16878/4-BEE	MIL-W-22759/11-24
MIL-W-16878/4-DEE	MIL-W-22759/22-24
MIL-W-16878/4-BFE	MIL-W-22759/11-22
MIL-W-16878/4-DFE	MIL-W-22759/22-22
MIL-W-16878/4-BGE	MIL-W-22759/11-20
MIL-W-16878/4-DGE	MIL-W-22759/22-20
MIL-W-16878/4-BHE	MIL-W-22759/11-18
MIL-W-16878/4-BJE	MIL-W-22759/11-16
MIL-W-16878/4-BKE	MIL-W-22759/11-14
MIL-W-16878/4-BLE	MIL-W-22759/11-12
MIL-W-16878/4-BMG	MIL-W-22759/11-10

Revision letters are not used to denote changes due to the extensiveness of the changes.

Preparing activity:
Navy - SH
(Project 6145-N330-04)