

MIL-W-81822/4A
 3 March 1982
 SUPERSEDING
 MIL-W-81822/4 (NAVY)
 4 April 1972

MILITARY SPECIFICATION SHEET

WIRE, ELECTRICAL, SOLDERLESS WRAP, POLYIMIDE
 COATING OVER EXTRUDED POLYTETRAFLUOROETHYLENE (PTFE)
 INSULATION, SILVER COATED SOLID CONDUCTOR

This specification is approved for use by all De-
 partments and Agencies of the Department of Defense.

The complete requirements for acquiring the wire described herein shall consist of this document and the issue in effect of Specification MIL-W-81822.

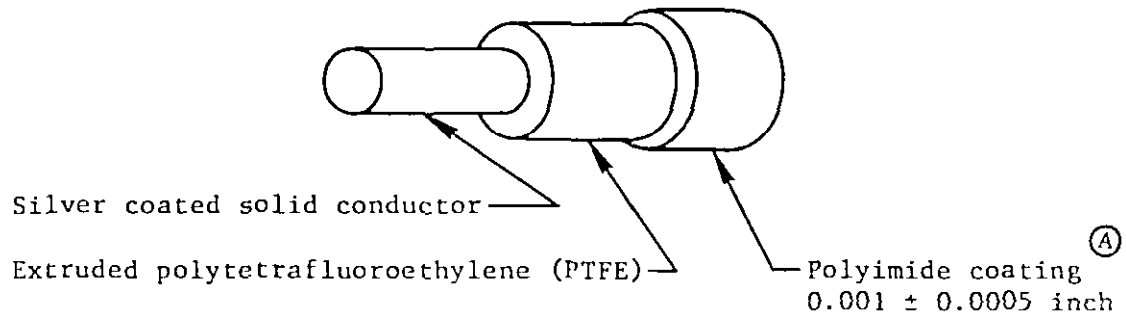


TABLE I. Construction and performance details.

Part no. 1/	Wire size (AWG)	Finished wire diameter (inches)	Finished weight ^(A) (lb/1,000 ft) (max)	Cut-through load ^(A) (grams)	Bend testing			Insulation pull-off (lbs) ^(A)
					Mandrel diameter (ins.)		Tension load (lbs)	
					Heat resistance	Cold bend	Cold bend	
M81822/4-X30-*	30	0.0195 ± .0010	0.55	500	1/16	1.0	0.25	0.15 to 2.5
M81822/4-X28-*	28	0.0265 ± .0015	0.96	525	5/64	1.0	0.50	0.15 to 2.5
M81822/4-X26-*	26	0.0295 ± .0015	1.32	550	3/32	1.0	0.50	0.25 to 4
M81822/4-X24-*	24	0.0340 ± .0015	1.91	575	7/64	1.0	0.50	0.5 to 4
M81822/4-X22-*	22	0.0390 ± .0020	2.80	600	1/8	1.0	0.75	0.5 to 6
M81822/4-X20-*	20	0.0460 ± .0020	4.19	650	9/64	1.0	0.75	0.5 to 6
M81822/4-X18-*	18	0.0540 ± .0030	6.34	700	11/64	1.0	1.00	0.5 to 6

1/ PART NO.: The "X" in the generalized part numbers of table I shall be replaced by the designator for the conductor type and the asterisk shall be replaced by the code designator for the insulation color. Example: Size 22 wire with type A (soft annealed copper) conductor and black insulation - M81822/4-A22-0.

^(A) Denotes changes.

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WIRE RATINGS AND ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 200°C (392°F) max conductor temperature.

VOLTAGE RATING: 300 volts (rms).

INSULATION TENSILE STRENGTH: 2,500 psi (min).

INSULATION ELONGATION: Wire sizes 28 and 30 - 35 percent (min).
Wire sizes 26 through 18 - 50 percent (min).

COLOR: Black, green, brown, red, yellow or orange, as specified in contract or order (MIL-STD-104 is not applicable to wire of this specification sheet.)

Ⓐ SPARK TEST: 2,000 volts (rms).

INSULATION RESISTANCE: 2,500 megohms-1,000 ft (min).

Ⓐ WET DIELECTRIC TEST: 1,000 volts (rms), 60 Hz.

COLD BEND CONDITIONING: 4 hrs at -65°C ± 2°C (-85°F ± 3.6°F).

DIELECTRIC TEST FOR CUT-THROUGH: 500 volts (rms), 60 Hz.

INSULATION HEAT RESISTANCE:

Conditioning, 120 hrs at 275°C ± 2°C (527°F ± 3.6°F).

Shrinkage, 0.062 inch (max).

DIELECTRIC CONSTANT: 2.30 max at 1 MHz.

POWER FACTOR: 0.005 max at 1 MHz.

Ⓐ RESISTANCE TO FLUIDS, APPLICABLE TEST FLUIDS:

Isopropyl alcohol, TT-I-735.

Hydraulic fluid, MIL-H-5606.

Trichlorotrifluoroethane, MIL-C-81302.

Trichloroethane, MIL-T-81533.

FLAMMABILITY: 30 sec (max) after-flame.

3.0 inches (max) flame travel.

No flaming of tissue paper.

SURFACE RESISTANCE: 500 megohms (min).

Ⓐ FUNGUS RESISTANCE: Wire constructed as specified in MIL-W-81822/4A shall be considered fungus resistant in accordance with Requirement 4 of MIL-STD-454 by virtue of the recognized inherent fungus resistance of all components. Fungus resistance test is not required.

Custodians:

Army - CR

Navy - AS

Air Force - 85

Preparing activity:

Navy - AS

(Project 6145-0683-5)

Review activities:

Navy - EC, SH

Air Force - 11, 99

DLA - ES, IS

User activities:

Navy - MC, OS

Air Force - 17

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DOCUMENT IDENTIFIER (Number) AND TITLE

MIL-W-81822/4A

WIRE, ELECTRICAL, SOLDERLESS WRAP, POLYIMIDE
COATING OVER EXTRUDED POLYTETRAFLUOROETHYLENE (PTFE) INSULATION,

NAME OF ORGANIZATION AND ADDRESS OF SUBMITTER

SILVER COATED SOLID CONDUCTOR

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