

MIL-W-81822/7A
 3 March 1982
 SUPERSEDING
 MIL-W-81822/7 (NAVY)
 4 April 1972

MILITARY SPECIFICATION SHEET

WIRE, ELECTRICAL, SOLDERLESS WRAP, POLYAMIDE
 JACKET OVER EXTRUDED POLYVINYL CHLORIDE (PVC)
 INSULATION, TIN COATED SOLID CONDUCTOR

This specification is approved for use by all Departments 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.

1. THIS SPECIFICATION SHEET IS INACTIVE FOR NEW DESIGN AFTER DATE OF ISSUE.
2. WIRE SPECIFIED BY THIS SPECIFICATION SHEET SHALL NOT BE USED IN EQUIPMENT FOR MANNED AEROSPACE APPLICATIONS.

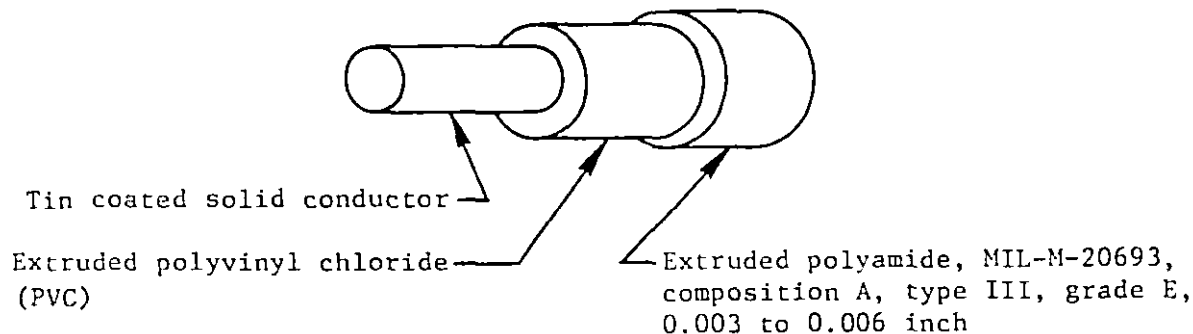


TABLE I. Construction and performance details.

Part no. 1/	Wire size (AWG)	Finished wire diameter (inches)	Finished weight ^(A) (lb/1,000 ft) (max)	Cut-through load (grams)	Bend testing			Insulation pull-off (lbs)
					Mandrel diameter (ins.)		Tension load (lbs)	
					Heat resistance	Cold bend	Cold bend	
M81822/7-X30-*	30	0.0340 ± .0020	0.84	1400	7/64	1.0	0.25	0.5 to 2.5
M81822/7-X28-*	28	0.0370 ± .0020	1.11	1800	1/8	1.0	0.50	0.5 to 2.5
M81822/7-X26-*	26	0.0400 ± .0020	1.47	2200	9/64	1.0	0.50	1 to 4
M81822/7-X24-*	24	0.0450 ± .0020	2.08	2600	5/32	1.0	0.50	1 to 4
M81822/7-X22-*	22	0.0490 ± .0020	2.91	2800	11/64	1.0	0.75	1 to 6
M81822/7-X20-*	20	0.0560 ± .0020	4.30	2900	3/16	1.0	0.75	1 to 6
M81822/7-X18-*	18	0.0640 ± .0030	6.44	3000	13/64	1.0	1.00	1 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 white insulation - M81822/7-A22-9.

^(A) Denotes changes.

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WIRE RATINGS AND ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 105°C (221°F) max conductor temperature.

VOLTAGE RATING: 300 volts (rms).

INSULATION TENSILE STRENGTH: 1,800 psi (min).

INSULATION ELONGATION: Wire sizes 30 and 28 - 35 percent (min).

Wire sizes 26 through 18 - 50 percent (min).

COLOR: MIL-STD-104, Class 1, color as specified in contract or order.

(All MIL-STD-104, Class 1, colors are available.)

① SPARK TEST: 2,000 volts (rms).

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

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

COLD BEND CONDITIONING: 4 hrs at -54°C ± 2°C (-65.2°F ± 3.6°F).

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

INSULATION HEAT RESISTANCE: (Retention of insulation color not required.)

Conditioning, 96 hrs at 150°C ± 2°C (302°F ± 3.6°F).

Shrinkage, 0.062 inch (max).

DIELECTRIC CONSTANT: 4.50 max at 1 MHz.

POWER FACTOR: 0.17 max at 1 MHz.

① 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: 5 megohms (min).

① FUNGUS RESISTANCE: Wire constructed in accordance with MIL-W-81822/7A contains polyvinyl chloride, a component which is not fungus-resistant in all grades.

Wire of this specification sheet shall be subjected to and shall be required to pass the fungus resistance test of MIL-STD-454, Requirement 4.

Custodians:

Army - CR

Navy - AS

Air Force - 85

Preparing activity:

Navy - AS

(Project 6145-0683-8)

Review activities:

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DOCUMENT IDENTIFIER (Number) AND TITLE WIRE, ELECTRICAL, SOLDERLESS WRAP, POLYAMIDE
MIL-W-81822/7A JACKET OVER EXTRUDED POLYVINYL CHLORIDE (PVC) INSULATION, TIN
NAME OF ORGANIZATION AND ADDRESS OF SUBMITTER COATED SOLID CONDUCTOR

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2. REMARKS

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