MILITARY SPECIFICATION SHEET

WIRE, ELECTRIC, CROSSLINKED POLYALKENE INSULATED, SILVER-COATED HIGH STRENGTH COPPER ALLOY, NORMAL WEIGHT, 600-VOLT, 150°C

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The complete requirements for procuring the wire described herein shall consist of this document and the issue in effect of Specification MIL-W-81044.

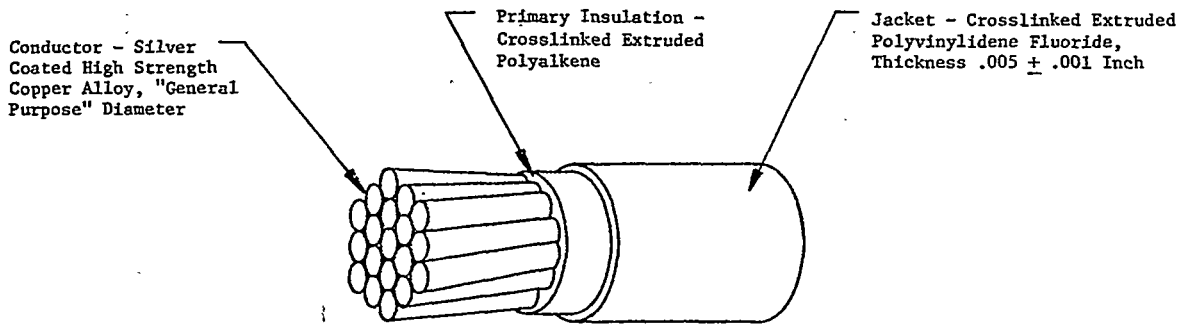

TABLE I. CONSTRUCTION DETAILS

Part No. 1/	Wire size	Stranding (Number of strands X AWG gage of strands)	Diameter of stranded conductor (inches)		Finished wire			
			(min)	(max)	Resistance at 20°C (68°F) (ohms/1000 ft) (max)	Diameter (inches)	Weight (lbs/1000 ft) (nom) 2/	(max)
M81044/7-26-*	26	19 X 38	.018	.020	44.8	.053 ±.002	2.1	2.2
M81044/7-24-*	24	19 X 36	.023	.025	28.4	.057 ±.002	2.8	3.0
M81044/7-22-*	22	19 X 34	.029	.032	17.5	.069 ±.003	4.1	4.3
M81044/7-20-*	20	19 X 32	.037	.040	10.7	.078 ±.003	5.8	6.1

1/ PART NO.: The asterisks in the part number column, Tables I and II, shall be replaced by color code designators in accordance with MIL-STD-681. Examples: Size 20, white - M81044/7-20-9; white with orange stripe - M81044/7-20-93.

2/ Nominal values are for information only. Nominal values are not requirements.

(B) This revision deleted a temperature cut-through note from the specification sheet.

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TABLE II. PERFORMANCE DETAILS

Part No.	Abrasion resistance (Procedure I)				Bend testing				
					Mandrel diameter (inches) (±3%)			Test load (lbs) (±3%)	
	Resistance (inches of tape) (min) (initial and after immersion)	Weight support bracket	Weight (lbs)	Tension load (lbs)	Life cycle test and accelerated aging test 1/	Cold bend test	Wrap test	Life cycle test and accelerated aging test 1/	Cold bend test
M81044/7-26-*	12	A	0.5	1.0	.50	1.0	.25	1.0	3.0
M81044/7-24-*	12	A	1.0	1.0	.50	1.0	.25	1.0	3.0
M81044/7-22-*	22	A	1.0	1.0	.75	1.0	.25	3.0	3.0
M81044/7-20-*	22	A	1.0	1.0	.75	1.0	.25	4.0	4.0

1/ Also for bend tests after immersion.

WIRE RATINGS AND ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 150°C (302°F) max conductor temperature
VOLTAGE RATING: 600 volts (rms) at sea level
ACCELERATED AGING: Oven temperature, 300 ±2°C (572 ±3.6°F) for 6 hours; for identification legibility, 225 ±2°C (437 ±3.6°F) for 6 hours
BLOCKING: 225 ±2°C (437 ±3.6°F)
COLOR: In accordance with MIL-STD-104, Class 1; white preferred
FLAMMABILITY: 30 seconds (max); 3.0 inches (max); no flaming of tissue paper
HUMIDITY RESISTANCE: 5000 megohms for 1000 ft, min insulation resistance after humidity exposure

IDENTIFICATION, STRIPING, OR BANDING DURABILITY: 125 cycles (250 strokes) (min), 500 grams weight
IMPULSE DIELECTRIC TEST:
Primary insulation (when test is used in lieu of spark test): 6.0 kilovolts (peak), 100% test
Finished wire: 8.0 kilovolts (peak), 100% test
INSULATION RESISTANCE: 5000 megohms for 1000 ft (min)
LIFE CYCLE: Oven temperature, 200 ±2°C (392 ±3.6°F) for 168 hours
PHYSICAL PROPERTIES OF PRIMARY INSULATION:
Tensile strength, 2500 psi (min)
Elongation, 150% (min)
POLYIMIDE CURE TEST: Not applicable
PROPELLANT RESISTANCE: Test required
SHRINKAGE: 0.125 inch max at 300 ±2°C (572 ±3.6°F)
SMOKE: 200 ±2°C (392 ±3.6°F)
SPARK TEST OF PRIMARY INSULATION: 3000 volts (rms), 60Hz, 100% test
SURFACE RESISTANCE: 500 megohms-inches (min), initial and final readings
THERMAL SHOCK: Oven temperature, 150 ±2°C (302 ±3.6°F)
Max change in measurement: 0.060 inch
WET DIELECTRIC TEST: 2500 volts (rms)
WICKING: 2.25 inches (max)
WRAP TEST: Mandrel wrap test required

Custodians:
Navy - AS
Army - EL
Air Force - 11

Preparing activity:
Navy - AS
(Project No. 6145-0700-7)

Review activities:
Navy - EC
Army - AT, AV, MI, MU
Air Force - 99
DSA - IS
NSA

User activities:
Navy - MC, OS

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