

SPECIFICATION CONTROL DRAWING

44A9083

TITLE WIRE, ELECTRIC, RADIATION-CROSSLINKED, POLYALKENE
INSULATED, SPECIAL STRANDING, GENERAL PURPOSE, 600 VOLT

Date 1-7-97

Revision E

This specification sheet forms a part of the latest issue of Raychem Specification 44 and MIL-W-81044 as applicable.

CONDUCTOR - TIN-COATED COPPER

PRIMARY INSULATION - RADIATION-CROSSLINKED,
EXTRUDED POLYALKENE

JACKET - RADIATION-CROSSLINKED
MODIFIED PVF₂

Thickness:
.003 ± .001 in., AWG 22 - 17,
.003 in. (minimum), AWG 16 - 13

TABLE I. CONSTRUCTION DETAILS

PART NUMBER	WIRE SIZE (AWG)	CONDUCTOR STRANDING (number x AWG)	MAXIMUM DIAMETER OF STRANDED CONDUCTOR (in.)	FINISHED WIRE		
				MAXIMUM RESISTANCE AT 20°C (ohms/1000 ft.)	DIAMETER (in.)	MAXIMUM WEIGHT (lbs/1000 ft.)
44A9083-22-*	22	37 x 38	.030	20.1	.044 ± .002	2.6
44A9083-21-*	21	37 x 37	.033	15.9	.047 ± .002	3.1
44A9083-20-*	20	37 x 36	.037	12.9	.051 ± .002	3.9
44A9083-19-*	19	37 x 35	.041	10.2	.055 ± .002	4.6
44A9083-18-*	18	37 x 34	.046	8.1	.060 ± .002	5.8
44A9083-17-*	17	37 x 33	.051	6.4	.065 ± .003	7.0
44A9083-16-*	16	37 x 32	.058	5.0	.072 ± .003	8.9
44A9083-15-*	15	37 x 31	.066	4.1	.080 ± .003	11.4
44A9083-14-*	14	37 x 30	.073	3.2	.089 ± .004	13.9
44A9083-13-*	13	37 x 29	.082	2.5	.100 ± .004	18.2

TABLE II. PERFORMANCE DETAILS

PART NUMBER	BEND TESTING				
	MANDREL DIAMETER (inch) (± 3%)			WEIGHT (lb) (± 3%)	
	IMMERSION, LIFE CYCLE AND ACCELERATED AGING	COLD BEND	WRAP	IMMERSION, LIFE CYCLE AND ACCELERATED AGING	COLD BEND
44A9083-22-*	.750	.750	.250	.375	1.00
44A9083-21-*	.750	.750	.250	.375	1.00
44A9083-20-*	.750	.750	.250	.375	1.00
44A9083-19-*	1.00	1.00	.375	.375	1.00
44A9083-18-*	1.00	1.00	.375	.500	1.00
44A9083-17-*	1.00	1.00	.375	.500	1.00
44A9083-16-*	1.00	1.00	.375	.500	1.00
44A9083-15-*	1.50	1.50	.500	.500	1.00
44A9083-14-*	1.50	1.50	.500	1.00	3.00
44A9083-13-*	2.00	2.00	.500	1.00	3.00

COLORS AND COLOR CODE DESIGNATORS SHALL BE IN ACCORDANCE WITH MIL-STD-681

DIMENSIONS ARE IN INCHES, AND UNLESS OTHERWISE DESIGNATED ARE NOMINAL

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WIRE RATINGS AND ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 150°C,

Maximum continuous conductor temperature

VOLTAGE RATING: 600 volts (rms)

ACCELERATED AGING: 300 ± 2°C for 6 hours

Identification legibility, 225 ± 2°C for 6 hours

BLOCKING: 150 ± 2°C for 24 hours

COLOR: white preferred

CONDUCTOR ELONGATION: 5% (minimum)

FLAMMABILITY: 30 seconds (maximum); 3 in. (maximum);

no flaming of facial tissue

HUMIDITY RESISTANCE: Insulation Resistance,

5000 Megohms for 1000 ft. (minimum)

IDENTIFICATION, STRIPING, OR BAND DURABILITY: 125 cycles

(250 strokes) (minimum), 500 g weight

IMMERSION: Diameter increase 5% (maximum); no cracking, no dielectric breakdown

INSULATION ELONGATION AND TENSILE STRENGTH:

Primary Insulation,

Elongation, 150% (minimum)

Tensile strength, 2500 lbf/in² (minimum)

INSULATION FLAWS:

Primary Insulation,

Spark test, 1.5 kV (rms), 60 Hz, 100% test

Impulse Dielectric test, 6.0 kV (peak), 100% test

Finished Wire,

Impulse Dielectric test, 8.0 kV (peak), 100% test

INSULATION RESISTANCE: 5000 Megohms for 1000 ft. (minimum)

LIFE CYCLE: 200 ± 2°C for 168 hours

LOW TEMPERATURE-COLD BEND: -65 ± 2°C for 4 hours

SHRINKAGE: 300 ± 2°C, 0.125 in. (maximum) in 12 in.

SMOKE TEST: 200 ± 2°C. No visible smoke

SURFACE RESISTANCE: 500 Megohms-in. (minimum), both readings

THERMAL SHOCK RESISTANCE: 150 ± 2°C, 0.060 in. (maximum)

VOLTAGE WITHSTAND TEST (POST ENVIRONMENTAL): 2500 volts (rms), 60 Hz,
5 minutes

WICKING: 2.25 in. (maximum)

PART NUMBER:

The "***" in the part numbers on page 1 shall be replaced by a color code designator.

Example: AWG 20, white: 44A9083-20-9

AWG 20, white with black stripe: 44A9083-20-90