

# SPECIFICATION CONTROL DRAWING

81A0111

TITLE

WIRE, ELECTRIC, RADIATION-CROSSLINKED, MODIFIED, FLUOROPOLYMER-INSULATED, LIGHTWEIGHT, FLEXIBLE

Date

25APR11

Revision

J1

This specification sheet forms a part of the latest of Raychem Specification 80.

CONDUCTOR - TIN-COATED COPPER

INSULATION - RADIATION-CROSSLINKED, MODIFIED FLEXIBLE ETFE

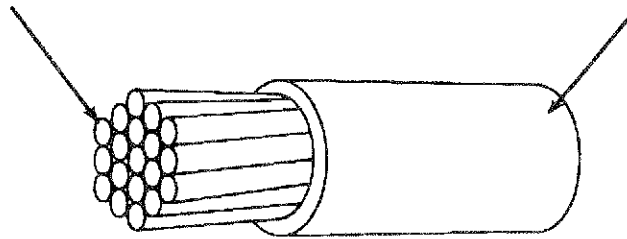


TABLE I. CONSTRUCTION DETAILS

PART NUMBER	WIRE SIZE (AWG)	CONDUCTOR STRANDING (number x AWG)	DIAMETER OF STRANDED CONDUCTOR (in.)		FINISHED WIRE		
			MINIMUM	MAXIMUM	MAXIMUM RESISTANCE AT 20°C (ohms/1000 ft.)	DIAMETER (in.)	MAXIMUM WEIGHT (lbs/1000ft.)
81A0111-28-*	28	7 x 36	.014	.015	68.6	.027 ± .002	.90
81A0111-26-*	26	19 x 38	.018	.019	41.3	.031 ± .002	1.4
81A0111-24-*	24	19 x 36	.023	.024	26.2	.036 ± .002	2.0
81A0111-22-*	22	19 x 34	.029	.030	16.2	.042 ± .002	2.8
81A0111-20-*	20	19 x 32	.037	.038	9.88	.051 ± .002	4.4
81A0111-18-*	18	19 x 30	.046	.047	6.23	.061 ± .003	6.7
81A0111-16-*	16	19 x 29	.052	.053	4.81	.068 ± .003	8.5
81A0111-14-*	14	19 x 27	.065	.067	3.06	.083 ± .004	13.1
81A0111-12-*	12	37 x 28	.084	.086	2.02	.105 ± .004	20.4
81A0111-10-*	10	37 x 26	.106	.108	1.24	.131 ± .005	32.9
81A0111- 8-*	8	133 x 29	.158	.162	.715	.190 ± .008	59.8
81A0111- 6-*	6	133 x 27	.198	.204	.445	.237 ± .010	92.7

TABLE II. PERFORMANCE DETAILS

PART NUMBER	BEND TESTING			
	MANDREL DIAMETER (inch) (±3%)		WEIGHT (lb) (± 3%)	
	IMMERSION, LIFE CYCLE AND CROSSLINKING PROOF	COLD BEND	IMMERSION, LIFE CYCLE AND CROSSLINKING PROOF	COLD BEND
81A0111-28-*	.250	.375	.125	.500
81A0111-26-*	.375	.500	.125	.500
81A0111-24-*	.375	.500	.250	1.00
81A0111-22-*	.500	.750	.375	1.00
81A0111-20-*	.500	.750	.500	1.00
81A0111-18-*	.500	1.00	.500	1.00
81A0111-16-*	.750	1.00	.750	1.00
81A0111-14-*	1.00	1.50	1.00	3.00
81A0111-12-*	1.50	2.00	1.50	3.00
81A0111-10-*	2.00	3.00	1.50	3.00
81A0111- 8-*	3.00	4.00	2.00	4.00
81A0111- 6-*	3.00	4.00	2.00	4.00

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

DIMENSIONS ARE IN INCHES, AND UNLESS OTHERWISE DESIGNATED ARE NOMINAL.

**TE** TE Connectivity

Tyco Electronics Corporation  
Raychem Wire and Cable  
300 Constitution Drive, Menlo Park, California 94025  
1-800-2 RAYCHEM FAX: 1-415-361-6297

WIRE RATINGS AND ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 150°C

Maximum continuous conductor temperature

VOLTAGE RATING: 600 volts (rms)

BLOCKING: 150 ± 3°C for 24 hours

COLOR: White preferred

CONCENTRICITY: 70% (minimum)

CROSSLINKING PROOF TEST: 300 ± 3°C for 7 hours

FLAMMABILITY: Procedure 1, 3 seconds (maximum); 3 in. (maximum)

IDENTIFICATION AND COLOR STRIPING DURABILITY:

125 cycles (250 strokes) (minimum), 500 g weight

INSULATION ELONGATION AND TENSILE STRENGTH:

AWG 28 - 10, Elongation, 75% (minimum)

Tensile Strength, 3500 lbf/in<sup>2</sup> (minimum)

AWG 8 - 6, Elongation, 125% (minimum)

Tensile Strength, 3000 lbf/in<sup>2</sup> (minimum)

INSULATION FLAWS: Impulse Dielectric Test, 6.0 kV (peak)

INSULATION RESISTANCE: 500 megohms for 1000 ft. (minimum) for AWG 28 - 10;

100 megohms for 1000 ft. (minimum) for AWG 8 - 6

INSULATION THICKNESS:

0.004 in. (minimum) for AWG's 28 - 16,

0.006 in. (minimum) for AWG's 14 - 10,

0.012 in. (minimum) for AWG's 8 - 6

LIFE CYCLE: 200 ± 3°C for 500 hours

LOW TEMPERATURE-COLD BEND: -65 ± 3°C for 4 hours

PRODUCT IDENTIFICATION: AWG 28 - 10, Black ink only;

AWG 8 and larger, black ink preferred

SECANT MODULUS: 5.0 x 10<sup>4</sup> lbf/in<sup>2</sup> (maximum), for AWG's 28 - 10,

4.0 x 10<sup>4</sup> lbf/in<sup>2</sup> (maximum), for AWG's 8 - 6,

2% strain, 2 inch jaw separation, 0.2 inch/minute, procedural reference ASTM D 882

SHRINKAGE: 150 ± 3°C for 6 hours,

0.13 inch (maximum) in 12 inches for AWG's 28 - 10,

0.25 inch (maximum) in 12 inches for AWG's 8 - 6

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

THERMAL SHOCK: 150 ± 3°C,

0.060 in. (maximum) for AWG's 28 - 12;

0.100 in. (maximum) for AWG 10;

0.250 in. (maximum) for AWG 8 and larger

VOLTAGE WITHSTAND TEST (POST ENVIRONMENTAL): 2500 volts (rms)

PART NUMBER:

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

Example: AWG 12, white: 81A0111-12-9

AWG 12, white with black stripe: 81A0111-12-90