

# SPECIFICATION CONTROL DRAWING

SCD

**55A0811**

Title WIRE, RADIATION-CROSSLINKED, MODIFIED ETFE-INSULATED,  
NORMAL WEIGHT, GENERAL PURPOSE, 600 VOLT

Date 1-12-17

Revision AA

This specification sheet forms a part of the latest issue of Raychem Specification 55A.



TABLE I. CONSTRUCTION DETAILS

PART NUMBER 1/	WIRE SIZE (AWG)	CONDUCTOR STRANDING (number x AWG)	DIAMETER OF STRANDED CONDUCTOR (inch)		FINISHED WIRE		
			MINIMUM	MAXIMUM	MAXIMUM RESISTANCE AT 20°C (ohms/1000 ft.)	DIAMETER (inch)	MAXIMUM WEIGHT (lbs/1000 ft.)
55A0811-28-*	28	7 x 36	.014	.016	68.6	.035 ± .002	1.30
55A0811-26-*	26	19 x 38	.018	.020	41.3	.040 ± .002	1.70
55A0811-24-*	24	19 x 36	.023	.024	26.2	.045 ± .002	2.30
55A0811-22-*	22	19 x 34	.029	.031	16.2	.050 ± .002	3.20
55A0811-20-*	20	19 x 32	.037	.039	9.88	.058 ± .002	4.70
55A0811-18-*	18	19 x 30	.046	.049	6.23	.070 ± .003	7.20
55A0811-16-*	16	19 x 29	.052	.055	4.81	.077 ± .003	9.00
55A0811-14-*	14	19 x 27	.065	.069	3.06	.094 ± .003	13.8
55A0811-12-*	12	37 x 28	.084	.089	2.02	.111 ± .003	20.5
55A0811-10-*	10	37 x 26	.106	.114	1.26	.134 ± .004	32.4
55A0811-8-*	8	133 x 29	.158	.173	.701	.195 ± .008	60.3
55A0811-6-*	6	133 x 27	.198	.217	.445	.241 ± .010	94.5
55A0811-4-*	4	133 x 25	.250	.274	.280	.310 ± .010	150.
55A0811-2-*	2	665 x 30	.320	.340	.183	.408 ± .012	249.
55A0811-1-*	1	817 x 30	.360	.380	.149	.470 ± .012	325.
55A0811-0-*	0	1045 x 30	.395	.425	.116	.510 ± .016	383.
55A0811-00-*	00	1330 x 30	.440	.475	.091	.570 ± .016	500.
55A0811-000-*	000	1665 x 30	.500	.540	.071	.610 ± .016	596.
55A0811-0000-*	0000	2109 x 30	.565	.605	.056	.675 ± .022	753.

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1/ COLORS AND COLOR CODE DESIGNATORS SHALL BE IN ACCORDANCE WITH MIL-STD-681. OTHER CODES AND SUFFIXES MAY BE ADDED TO THE PART NUMBER, AS NECESSARY, TO CAPTURE ANY ADDITIONAL REQUIREMENTS IMPOSED BY THE PURCHASE ORDER.

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

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**Raychem Wire & Cable**  
501 Oakside Avenue  
Redwood City, CA 94063-3800  
Phone: 1-800-522-6752  
Fax: 1-650-361-6297



**TABLE II. PERFORMANCE DETAILS**

PART NUMBER 1/	MANDREL DIAMETER (inch) (± 3%)		WEIGHT (lb) (± 3%)	
	LIFE CYCLE, IMMERSION, AND ACCELERATED AGING	COLD BEND	LIFE CYCLE, IMMERSION, AND ACCELERATED AGING	COLD BEND
55A0811-28-*	.375	.750	.250	2.00
55A0811-26-*	.375	1.00	.500	3.00
55A0811-24-*	.500	1.00	.750	3.00
55A0811-22-*	.500	1.00	1.00	3.00
55A0811-20-*	.500	1.00	1.50	4.00
55A0811-18-*	.750	1.50	2.00	4.00
55A0811-16-*	1.00	1.50	2.00	5.00
55A0811-14-*	1.00	2.00	3.00	5.00
55A0811-12-*	1.50	2.00	3.00	5.00
55A0811-10-*	2.00	3.00	3.00	5.00
55A0811-8-*	3.00	4.00	4.00	6.00
55A0811-6-*	4.00	5.00	4.00	10.0
55A0811-4-*	5.00	6.00	4.00	10.0
55A0811-2-*	6.00	8.00	6.00	15.0
55A0811-1-*	8.00	10.0	6.00	15.0
55A0811-0-*	8.00	10.0	6.00	15.0
55A0811-00-*	10.0	12.0	8.00	20.0
55A0811-000-*	10.0	12.0	8.00	20.0
55A0811-0000-*	10.0	12.0	8.00	20.0

**WIRE RATINGS AND ADDITIONAL REQUIREMENTS**

**TEMPERATURE RATING: 150°C**

Maximum continuous conductor temperature

**VOLTAGE RATING: 600 volts (rms) at sea level**

**ACCELERATED AGING (CROSSLINKING PROOF):**

300 ± 3°C for 7 hours

**BLOCKING: 200 ± 3°C for 24 hours**

**COLOR: White preferred**

**CONCENTRICITY: 70% (minimum)**

**FLAMMABILITY: Procedure 1,**

3 seconds (maximum), 3 inches (maximum);

no flaming of facial tissue

**HUMIDITY RESISTANCE: Insulation Resistance,**

5000 megohms for 1000 ft. (minimum), AWG 28-10

3000 megohms for 1000 ft. (minimum), AWG 8-0000

**IDENTIFICATION, COLOR STRIPING, AND 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:**

Elongation,

125% (minimum) for primary insulation, AWG 28-10 only

75% (minimum) for total insulation (primary insulation & jacket)

Tensile Strength,

5000 lbf/in<sup>2</sup> (minimum) for primary insulation

5000 lbf/in<sup>2</sup> (minimum) for total insulation (primary insulation & jacket)

**INSULATION FLAWS:**

Primary Insulation,

Spark Test, 1.5 kV (rms) at 60 Hz; 4.2 kV (rms) at 3 kHz

Impulse Dielectric Test, 6.0 kV (peak)

Finished Wire,

Spark Test, 5.7 kV (rms) at 3 kHz

Impulse Dielectric Test, 8.0 kV (peak)

**INSULATION RESISTANCE:**

5000 megohms for 1000 ft. (minimum), AWG 28-10

3000 megohms for 1000 ft. (minimum), AWG 8-0000

**INSULATION THICKNESS:**

0.003 in. (minimum) for primary insulation

0.004 in. (minimum) for outer jacket

0.009 in. (minimum) for total insulation

**LIFE CYCLE: 200 ± 3°C for 500 hours**

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

**SHRINKAGE: 200 ± 3°C for 6 hours,**

0.125 in. (maximum) in 12 inches

**SMOKE TEST: 200 ± 2°C, no visible smoke**

**SOLDERABILITY (AWG 10 and smaller only):**

Per MIL-STD-202, Method 208, except without steam aging

**SURFACE RESISTANCE:**

500 megohms-in. (minimum), both readings

**THERMAL SHOCK RESISTANCE: 150 ± 3°C,**

0.060 in. (maximum), AWG 28-12

0.100 in. (maximum), AWG 10-8

0.125 in. (maximum), AWG 6-0000

**VOLTAGE WITHSTAND (Post Environmental):**

2500 volts (rms), 60 Hz

**WICKING: 2.25 in. (maximum)**

**WRAP TEST: 200 ± 3°C for 2 hours**

**1/ PART NUMBER:**

The "\*" in the part numbers in Tables I and II shall be replaced by a color code designator.

Example: AWG 22, white: 55A0811-22-9

AWG 22, white with a black stripe: 55A0811-22-90

1/ See footer section on page 1

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