

# SPECIFICATION CONTROL DRAWING

81/0811

TITLE	WIRE, RADIATION-CROSSLINKED, MODIFIED FLEXIBLE ETFE-INSULATED, NORMAL WEIGHT, OUTER SPACE, 600 VOLT	Date	10-17-12	Revision	A
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This specification sheet forms a part of the latest issue of Raychem Specification 80.

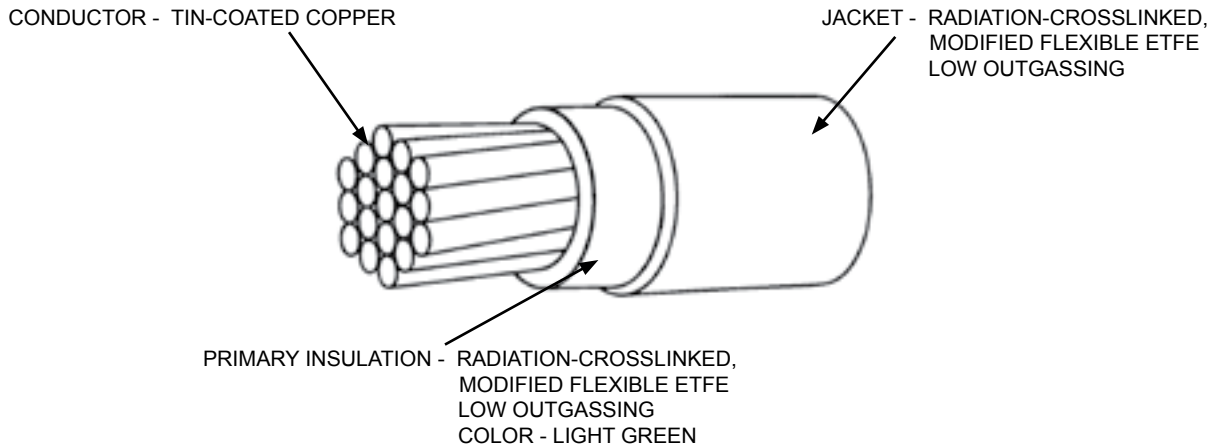


TABLE I. CONSTRUCTION DETAILS

PART NUMBER 1/	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/1000 ft.)
81/0811-24-*	24	19 x 36	.023	.025	26.2	.046 ± .002	2.6
81/0811-22-*	22	19 x 34	.029	.031	16.2	.052 ± .003	3.5
81/0811-20-*	20	19 x 32	.037	.039	9.88	.062 ± .003	5.3
81/0811-18-*	18	19 x 30	.046	.049	6.23	.072 ± .003	7.7
81/0811-16-*	16	19 x 29	.052	.055	4.81	.082 ± .004	9.9
81/0811-14-*	14	19 x 27	.065	.069	3.06	.100 ± .004	15.0
81/0811-12-*	12	37 x 28	.084	.089	2.02	.122 ± .005	22.9
81/0811-10-*	10	37 x 26	.106	.113	1.26	.151 ± .006	36.2
81/0811-8-*	8	133 x 29	.158	.173	.701	.216 ± .008	67.3
81/0811-6-*	6	133 x 27	.198	.217	.445	.267 ± .010	106.
81/0811-4-*	4	133 x 25	.250	.274	.280	.325 ± .010	165.
81/0811-2-*	2	665 x 30	.320	.340	.183	.407 ± .016	255.
81/0811-0-*	0	1045 x 30	.395	.425	.116	.504 ± .016	402.
81/0811-00-*	00	1330 x 30	.440	.475	.091	.553 ± .016	500.
81/0811-000-*	000	1665 x 30	.500	.540	.071	.630 ± .016	614.

Users should evaluate the suitability of this product for their application. Specifications are subject to change without notice. Tyco Electronics Corporation also reserves the right to make changes in materials or processing, which do not affect compliance with any specification, without notification to Buyer.

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.

THIS SPECIFICATION SHEET TAKES PRECEDENCE OVER DOCUMENTS REFERENCED HEREIN. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATION FOR BID.



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TABLE II. PERFORMANCE DETAILS

PART NUMBER 1/	BEND TESTING	
	MANDREL DIAMETER (inch) (± 3%)	WEIGHT (lb) (± 3%)
	CROSSLINKING PROOF TEST	CROSSLINKING PROOF TEST
81/0811-24-*	.500	.750
81/0811-22-*	.500	1.00
81/0811-20-*	.500	1.50
81/0811-18-*	.750	2.00
81/0811-16-*	1.00	2.00
81/0811-14-*	1.00	3.00
81/0811-12-*	1.50	3.00
81/0811-10-*	2.00	3.00
81/0811-8-*	3.00	4.00
81/0811-6-*	4.00	4.00
81/0811-4-*	5.00	4.00
81/0811-2-*	6.00	6.00
81/0811-0-*	8.00	6.00
81/0811-00-*	10.0	8.00
81/0811-000-*	10.0	8.00

WIRE RATINGS AND ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 150°C

Maximum continuous conductor temperature

VOLTAGE RATING: 600 volts (rms) at sea level

CONCENTRICITY: 70% (minimum)

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

IDENTIFICATION AND COLOR STRIPING DURABILITY:

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

INSULATION ELONGATION AND TENSILE STRENGTH:

AWG 24-10: Elongation, 75% (minimum)

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

AWG 8-000: Elongation, 125% (minimum)

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

INSULATION FLAWS:

Primary Insulation,

Spark Test, 1.5 kV (rms) at 3 kHz

Impulse Dielectric Test, 6.0 kV (peak)

Finished Wire,

Spark Test, 3.0 kV (rms) at 3 kHz

Impulse Dielectric Test, 8.0 kV (peak)

INSULATION THICKNESS:

AWG 24-18: .004 in. (minimum) for primary insulation

.004 in. (minimum) for outer jacket

AWG 16-10: .005 in. (minimum) for primary insulation

.005 in. (minimum) for outer jacket

AWG 8-4: .008 in. (minimum) for primary insulation

.012 in. (minimum) for outer jacket

AWG 2-000: .010 in. (minimum) for primary insulation

.015 in. (minimum) for outer jacket

JACKET COLOR: White preferred

PRODUCT IDENTIFICATION: AWG 24-10, black ink only

AWG 8-000, black ink preferred

RADIATION RESISTANCE (Test per Raychem Spec. 55/): 500 megarads

SECANT MODULUS: (Test per ASTM D 882)

AWG 24-10: 5.0 x 10<sup>4</sup> lbf/in<sup>2</sup> (maximum)

AWG 8-000: 4.0 x 10<sup>4</sup> lbf/in<sup>2</sup> (maximum)

2% strain, 2 inch jaw separation, 0.2 inch/minute

SHRINKAGE: 150 ± 3°C for 6 hours,

AWG 24-10: 0.13 in. (maximum) in 12 inches

AWG 8-000: 0.25 in. (maximum) in 12 inches

VACUUM STABILITY (Test per ASTM E 595):

Total Mass Loss (TML), 1.00% (maximum)

Volatile Condensable Material (VCM), 0.10% (maximum)

VOLTAGE WITHSTAND (Post Environmental): 2500 volts (rms), 60 Hz

PART NUMBER:

The “\*” in the part numbers in tables 1 and 2 shall be replaced by a color code designator.

1/ Example: AWG 12, white; 81/0811-12-9

AWG 12, white with a black stripe; 81/0811-12-90

1/ See footer section on page 1