

# SPECIFICATION CONTROL DRAWING

44/0611

WIRE, RADIATION-CROSSLINKED, POLYALKENE-INSULATED,  
LIGHTWEIGHT, OUTER SPACE, 2500 VOLT

7-23-09

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This specification sheet forms a part of the latest issue of Raychem Specification 44.

CONDUCTOR - TIN-COATED COPPER

PRIMARY INSULATION - RADIATION-CROSSLINKED,  
EXTRUDED POLYALKENE

JACKET - RADIATION-CROSSLINKED,  
MODIFIED PVDF  
Thickness: .005 ± .001 in.

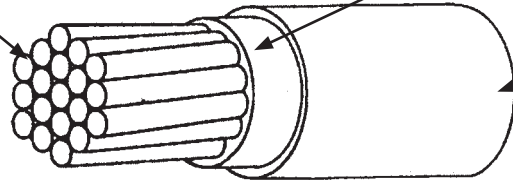


TABLE I. CONSTRUCTION DETAILS

PART NUMBER 1/	WIRE SIZE (AWG)	CONDUCTOR STRANDING (number x AWG)	MAXIMUM DIAMETER STRANDED CONDUCTOR (in.)	FINISHED WIRE		
				MAXIMUM RESISTANCE AT 20°C (ohms/1000 ft)	DIAMETER (in.)	MAXIMUM WEIGHT (lbs/1000 ft.)
44/0611-24-*	24	19 x 36	.026	26.2	.056 ± .003	3.0
44/0611-22-*	22	19 x 34	.033	16.2	.068 ± .003	4.3
44/0611-20-*	20	19 x 32	.041	9.88	.077 ± .003	6.1
44/0611-18-*	18	19 x 30	.051	6.23	.087 ± .003	8.6
44/0611-16-*	16	19 x 29	.058	4.81	.096 ± .004	10.9
44/0611-14-*	14	19 x 27	.073	3.06	.114 ± .004	16.1
44/0611-12-*	12	37 x 28	.090	2.02	.142 ± .004	26.1
44/0611-10-*	10	37 x 26	.114	1.26	.160 ± .005	36.2

TABLE II. PERFORMANCE DETAILS

PART NUMBER 1/	BEND TESTING					
	MANDREL DIAMETER (inch) (± 3%)				WEIGHT (lb) (± 3%)	
	IMMERSION LIFE CYCLE AND ACCELERATED AGING	COLD BEND	WRAP	RADIATION RESISTANCE	IMMERSION LIFE CYCLE AND ACCELERATED AGING	COLD BEND
44/0611-24-*	1.00	1.00	.500	1.50	.375	2.00
44/0611-22-*	1.00	1.00	.500	1.50	.375	2.00
44/0611-20-*	1.00	1.00	.500	2.00	.375	2.00
44/0611-18-*	1.50	1.50	.750	2.00	.500	2.00
44/0611-16-*	1.50	1.50	.750	2.50	.500	3.00
44/0611-14-*	2.00	2.00	.750	2.50	1.50	3.00
44/0611-12-*	2.00	2.00	1.00	3.50	1.50	3.00
44/0611-10-*	3.00	3.00	1.50	3.50	1.50	5.00

Users should evaluate the suitability of this product for their application. Specifications are subject to change without notice.  
Tyco Electronics 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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## WIRE RATINGS AND ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 135°C

Maximum continuous conductor temperature

VOLTAGE RATING: 2500 volts (rms) at sea level

ACCELERATED AGING: 225 ± 2°C for 6 hours

BLOCKING: 150 ± 2°C for 24 hours

COLOR: White preferred

FLAMMABILITY: 30 seconds (maximum); 3 in. (maximum); no flaming of facial tissue

HUMIDITY RESISTANCE: Insulation Resistance, 5000 megohms for 1000 ft. (minimum)

IDENTIFICATION AND COLOR STRIPING 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, AWG 24-12, 2500 lbf/in<sup>2</sup> (minimum)

AWG 10, 2000 lbf/in<sup>2</sup> (minimum)

INSULATION FLAWS:

Primary Insulation,

Spark Test, 5.0 kV (rms)

Impulse Dielectric Test, 6.0 kV (peak)

Finished Wire,

Spark Test, 8.0 kV (rms) at 3 kHz

Impulse Dielectric Test, 8.0 kV (peak)

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

LIFE CYCLE: 200 ± 2°C for 120 hours

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

RADIATION RESISTANCE: 500 megarads

SHRINKAGE: 225 ± 2°C, 0.125 in. (maximum) in 12 in., AWG 24 - 12

225 ± 2°C, 0.250 in. (maximum) in 12 in., AWG 10

SMOKE TEST: 165 ± 2°C, no visible smoke.

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

THERMAL SHOCK RESISTANCE: 135 ± 2°C, 0.060 in. (maximum)

VACUUM STABILITY:

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

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

VOLTAGE WITHSTAND (Post Environmental): 5000 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 color code designators.

1/ Example: AWG 20, white: 44/0611-20-9

AWG 20, white with black stripe: 44/0611-20-90

1/ See footer section on page 1