

# SPECIFICATION CONTROL DRAWING

44/0412

WIRE, RADIATION-CROSSLINKED, POLYALKENE-INSULATED,  
LIGHTWEIGHT, OUTER SPACE, 600 VOLT

5-25-11

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

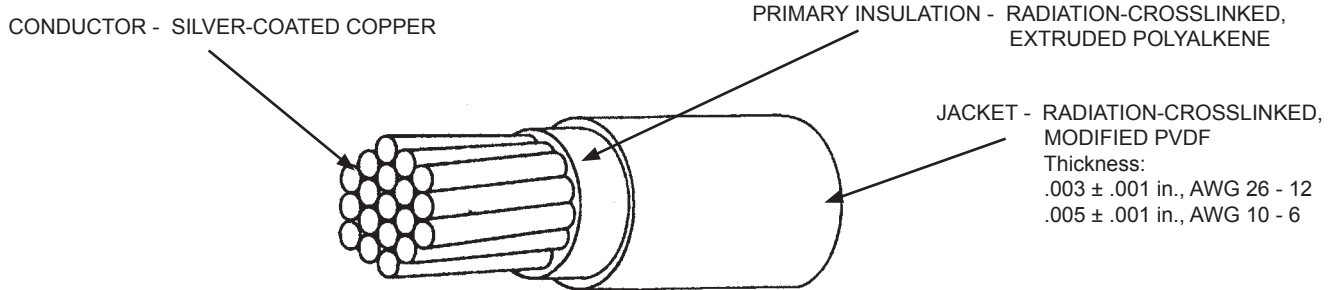


TABLE I. CONSTRUCTION DETAILS

PART NUMBER 1/	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.)
44/0412-26-*	26	7 x 34	.021	40.4	.033 ± .002	1.3
44/0412-24-*	24	19 x 36	.025	24.3	.039 ± .002	2.0
44/0412-22-*	22	19 x 34	.032	15.1	.046 ± .002	3.0
44/0412-20-*	20	19 x 32	.040	9.19	.054 ± .002	4.5
44/0412-18-*	18	19 x 30	.050	5.79	.064 ± .002	7.0
44/0412-16-*	16	19 x 29	.057	4.52	.071 ± .003	8.7
44/0412-14-*	14	19 x 27	.072	2.88	.086 ± .004	13.7
44/0412-12-*	12	37 x 28	.089	1.90	.108 ± .004	21.7
44/0412-10-*	10	37 x 26	.112	1.19	.155 ± .005	35.7
44/0412-8-*	8	133 x 29	.169	.658	.214 ± .006	62.8
44/0412-6-*	6	133 x 27	.213	.418	.264 ± .007	99.3

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%)		
	IMMERSION LIFE CYCLE AND ACCELERATED AGING	COLD BEND	WRAP	RADIATION RESISTANCE	IMMERSION AND ACCELERATED AGING	LIFE CYCLE	COLD BEND
44/0412-26-*	.500	.500	.250	.750	.125	.125	.500
44/0412-24-*	.500	.500	.250	1.00	.185	.125	.500
44/0412-22-*	.750	.750	.375	1.00	.185	.185	1.00
44/0412-20-*	.750	.750	.375	1.25	.185	.185	1.00
44/0412-18-*	1.00	1.00	.500	1.50	.250	.250	1.00
44/0412-16-*	1.00	1.00	.500	1.50	.250	.250	1.00
44/0412-14-*	1.50	1.50	.750	1.75	.500	.500	3.00
44/0412-12-*	2.00	2.00	1.00	2.50	.500	.500	3.00
44/0412-10-*	3.00	6.00	1.00	3.00	2.00	2.00	5.00
44/0412-8-*	3.00	8.00	1.00	4.00	3.00	3.00	6.00
44/0412-6-*	4.00	10.0	1.00	5.00	3.00	3.00	10.0

## WIRE RATINGS AND ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 135°C

Maximum continuous conductor temperature

VOLTAGE RATING: 600 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,

AWG 26 - 10, 5000 megohms for 1000 ft. (minimum)

AWG 8 - 6, 500 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 26-12, 2500 lbf/in<sup>2</sup> (minimum)

AWG 10-6, 2000 lbf/in<sup>2</sup> (minimum)

INSULATION FLAWS:

Primary Insulation,

Spark Test, 1.5 kV (rms)

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 RESISTANCE: AWG 26-10, 5000 megohms for 1000 ft. (minimum)

AWG 8-6, 500 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,

AWG 26-12, 0.125 in. (maximum) in 12 inches

AWG 10-6, 0.250 in. (maximum) in 12 inches

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):

2500 volts (rms), 60 Hz, 5 minutes; except for the following

AWG 26-24 Life Cycle only: 600 volts (rms), 60 Hz, 5 minutes

WICKING: 2.25 in. (maximum)

PART NUMBER: The "\*" in the part numbers on pages 1 and 2 shall be replaced by color code designators.

1/ Example: AWG 20, white: 44/0412-20-9

AWG 20, white with black stripe: 44/0412-20-90

1/ See footer section on page 1