

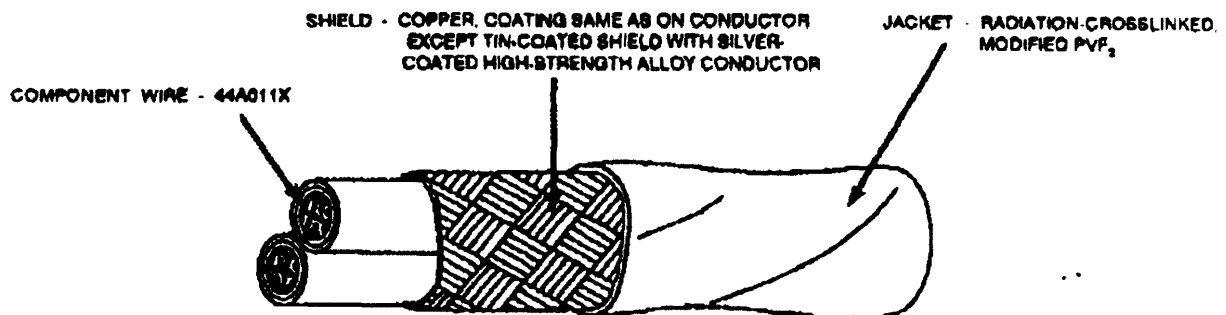
SPECIFICATION CONTROL DRAWING**44A112X**

TITLE CABLE, RADIATION-CROSSLINKED, POLYALKENE-INSULATED, TWO CONDUCTOR,
SHIELDED, JACKETED, LIGHTWEIGHT, GENERAL PURPOSE

Date 2-19-91

Revision E

This specification sheet forms a part of the latest issue of Raychem Specification 44 and MIL-W-81044 as applicable

**TABLE I. CABLE CONSTRUCTION DETAILS**

PART NUMBER	CONDUCTOR SIZE (AWG)	SHIELD SIZE (AWG)	JACKET THICKNESS (in.)		OUTSIDE DIAMETER (in.)		MAXIMUM WEIGHT (lb/1000 ft)
			MINIMUM	NOMINAL	NOMINAL	MAXIMUM	
44A112X-30*	30	36	.006	.008	.088	.092	5.8
44A112X-28*	28	36	.006	.008	.094	.098	6.8
44A112X-26*	26	36	.006	.008	.102	.107	8.1
44A112X-24*	24	36	.006	.008	.118	.123	11.3
44A112X-22*	22	36	.006	.008	.132	.137	14.6
44A112X-20*	20	36	.006	.008	.149	.153	18.9
44A112X-18*	18	36	.007	.009	.170	.174	25.7
44A112X-16*	16	36	.007	.009	.184	.189	30.2
44A112X-14*	14	36	.007	.009	.218	.223	43.2
44A112X-12*	12	36	.007	.009	.256	.261	61.5

TABLE II. CABLE PERFORMANCE DETAILS

PART NUMBER	BEND TESTING			
	MANDREL DIAMETER (inch) (± 3%)		WEIGHT (lb) (± 5%)	
	LIFE CYCLE, IMMERSION AND ACCELERATED AGING		LIFE CYCLE, IMMERSION AND ACCELERATED AGING	
	COLD BEND		COLD BEND	
44A112X-30*	2.30	2.60	250	1.50
44A112X-28*	2.75	2.75	250	1.50
44A112X-26*	2.75	2.75	250	1.50
44A112X-24*	3.25	2.25	375	1.50
44A112X-22*	3.75	3.75	375	3.00
44A112X-20*	4.00	4.00	375	3.00
44A112X-18*	4.80	4.80	500	3.00
44A112X-16*	5.00	5.00	500	3.00
44A112X-14*	8.00	8.00	1.00	3.00
44A112X-12*	10.0	10.0	1.00	3.00

NOTE: Nominal values are for information only.
Nominal values are not requirements.

COLORS AND COLOR CODE DESIGNATORS SHALL BE IN ACCORDANCE WITH MIL-STD-883

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

Page 1 of 2

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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SPECIFICATION CONTROL DRAWING

Page 2 of 2

ECO Number

44A112X**CABLE RATINGS AND ADDITIONAL REQUIREMENTS****TEMPERATURE RATING: 150°C**

Maximum continuous conductor temperature

VOLTAGE RATING: 600 volts (rms)**ACCELERATED AGING: 300 ± 3°C for 6 hours****BLOCKING: 150 ± 3°C for 6 hours****DIELECTRIC WITHSTAND: 2500 volts (rms), 60 Hz, 1 minute****FLAMMABILITY: 30 seconds (maximum); 3 in. (maximum); no flaming of facial tissue****IMMERSION: Diameter increase 5% (maximum); no cracking, no dielectric breakdown****JACKET COLOR: White preferred****JACKET CONCENTRICITY: 70% (minimum)****JACKET ELONGATION AND TENSILE STRENGTH:**

Elongation, 200% (minimum)

Tensile Strength, 4000 lbf/in² (minimum)**JACKET FLAWS:**

Spark Test, 1.5 kV (rms), 60 Hz, 100% test

Impulse Dielectric Test, 8.0 kV (peak), 100% test

LIFE CYCLE: 200 ± 3°C for 168 hours**LOW TEMPERATURE-COLD BEND: -65 ± 2°C for 4 hours****SHIELD COVERAGE: 85% (minimum)****VOLTAGE WITHSTAND TEST (POST ENVIRONMENTAL): (After Accelerated**

Aging, Immersion, Life Cycle and Low Temperature-Cold Bend)

1000 volts (rms), 60 Hz, 1 minute

PART NUMBER:

The "X" in the part numbers on page 1 shall be replaced by the applicable conductor material designator as follows:

- 1 tin-coated copper
- 2 silver-coated copper
- 3 nickel-coated copper
- 4 silver-coated high strength copper alloy
- 5 nickel-coated high strength copper alloy

The "X" in the part numbers on page 1 shall be replaced by color code designators with a slash separating component wire colors and a dash separating the component wire color from the jacket color.

Example: AWG 20, tin-coated copper, white and black component wires;
white jacket: 44A1121-20-9/0-9

Shield Resistance

Resistance of Raybraid

Below are calculated nominal shield resistances for standard 44A and 55A cable constructions at 20°C:

AWG	Units	1111	1121	1131	1141
30	$\Omega/1000\text{ft}$	34	16	14	9
	Ω/Km	112	54	47	30
28	$\Omega/1000\text{ft}$	30	14	12	10
	Ω/Km	100	46	41	32
26	$\Omega/1000\text{ft}$	28	12	9	8
	Ω/Km	93	40	30	27
24	$\Omega/1000\text{ft}$	18	9	8	6
	Ω/Km	59	30	27	21
22	$\Omega/1000\text{ft}$	12	8	7	6
	Ω/Km	38	26	24	19
20	$\Omega/1000\text{ft}$	9	7	6	5
	Ω/Km	31	24	19	16
18	$\Omega/1000\text{ft}$	9	6	5	4
	Ω/Km	29	19	18	14
16	$\Omega/1000\text{ft}$	8	5	5	4
	Ω/Km	26	18	15	13
14	$\Omega/1000\text{ft}$	7	5	4	4
	Ω/Km	24	15	14	13
12	$\Omega/1000\text{ft}$	6	4	4	2
	Ω/Km	19	14	13	8

The formula to calculate shield resistance at 20°C is:

$$R_s = \frac{r_l \times 3.94}{C N \cos a}$$

where:

R_s - shield resistance in Ohms/km

r_l - individual carrier wire resistance in $\Omega/1000\text{ft}$ (SEE BELOW)

C - number of carriers

N - ends per carrier

a - braid angle