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

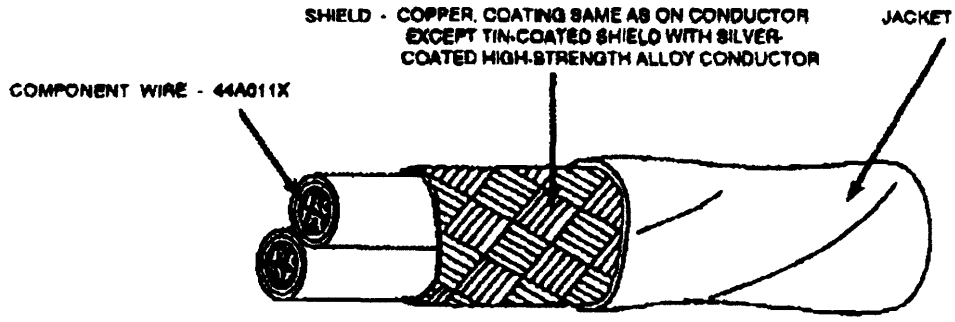

TABLE I. CABLE CONSTRUCTION DETAILS

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	14.5
44A112X-20-*	20	36	.006	.008	.149	.155	18.8
44A112X-18-*	18	36	.007	.009	.170	.174	25.7
44A112X-16-*	16	36	.007	.009	.184	.188	30.2
44A112X-14-*	14	36	.007	.009	.218	.226	43.2
44A112X-12-*	12	36	.007	.009	.256	.264	61.5

TABLE II. CABLE PERFORMANCE DETAILS

PART NUMBER	BEND TESTING			
	MANDREL DIAMETER (inch) (± 3%)		WEIGHT (lb) (± 3%)	
	LIFE CYCLE, IMMERSION AND ACCELERATED AGING	COLD BEND	LIFE CYCLE, IMMERSION AND ACCELERATED AGING	COLD BEND
44A112X-30-*	2.50	2.50	.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	3.25	.375	1.50
44A112X-22-*	3.75	3.75	.375	3.00
44A112X-20-*	4.00	4.00	.375	3.00
44A112X-18-*	4.50	4.50	.500	3.00
44A112X-16-*	5.00	5.00	.500	3.00
44A112X-14-*	9.00	9.00	1.00	9.00
44A112X-12-*	10.0	10.0	1.00	9.00

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

COLORS AND COLOR CODE DESIGNATORS SHALL BE IN ACCORDANCE WITH MIL-STD-681

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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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, 6.0 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
6 nickel-coated high strength copper alloy
The "*" 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	Ω/1000ft	34	16	14	9
	Ω/Km	112	54	47	30
28	Ω/1000ft	30	14	12	10
	Ω/Km	100	46	41	32
26	Ω/1000ft	28	12	9	8
	Ω/Km	93	40	30	27
24	Ω/1000ft	18	9	8	6
	Ω/Km	59	30	27	21
22	Ω/1000ft	12	8	7	6
	Ω/Km	38	26	24	19
20	Ω/1000ft	9	7	6	5
	Ω/Km	31	24	19	16
18	Ω/1000ft	9	6	5	4
	Ω/Km	29	19	18	14
16	Ω/1000ft	8	5	5	4
	Ω/Km	26	18	15	13
14	Ω/1000ft	7	5	4	4
	Ω/Km	24	15	14	13
12	Ω/1000ft	6	4	4	2
	Ω/Km	19	14	13	8

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

$$Rs = \frac{r1 \times 3.94}{CN \cos a}$$

where:

Rs - shield resistance in Ohms/km
r1 - individual carrier wire resistance in Ω/1000ft (SEE BELOW)
C - number of carriers
N - ends per carrier
a - braid angle