

# SPECIFICATION CONTROL DRAWING

55FA0411

TITLE CABLE, ELECTRIC, FILTER LINE - ELECTROLOSS\*  
COMPONENT WIRE

Date 3-20-90

Revision P

This specification sheet forms a part of the latest issue of Raychem Specification 55F.

CONDUCTOR - TIN-COATED COPPER

FILTER LAYER - RADIATION-MODIFIED,  
ABSORPTIVE COMPOUND

PRIMARY INSULATION - RADIATION-CROSSLINKED,  
MODIFIED ETFE  
COLOR - WHITE

PRIMARY JACKET - RADIATION-CROSSLINKED,  
MODIFIED ETFE

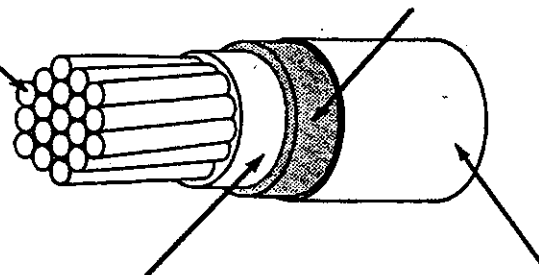


TABLE I. CONSTRUCTION DETAILS

PART NUMBER	WIRE SIZE (AWG)	CONDUCTOR STRANDING (number x AWG)	DIAMETER OF STRANDED CONDUCTOR (in.)		FINISHED WIRE		
			MINIMUM	MAXIMUM	MAXIMUM RESISTANCE AT 20°C (ohms/1000ft)	DIAMETER (in.)	MAXIMUM WEIGHT (lb/1000 ft)
55FA0411-22.*	22	19 x 34	.029	.033	16.2	.062 ± .004	5.1
55FA0411-20.*	20	19 x 32	.037	.041	9.88	.070 ± .004	7.0
55FA0411-18.*	18	19 x 30	.046	.051	6.23	.080 ± .004	9.7
55FA0411-16.*	16	19 x 29	.052	.058	4.81	.086 ± .004	11.7
55FA0411-14.*	14	19 x 27	.065	.073	3.06	.100 ± .004	16.6
55FA0411-12.*	12	37 x 28	.084	.090	2.02	.127 ± .004	26.1
55FA0411-10.*	10	37 x 26	.106	.114	1.26	.151 ± .005	39.1
55FA0411-8.*	8	133 x 29	.158	.173	.701	.227 ± .007	80.6

TABLE II. PERFORMANCE DETAILS

PART NUMBER	BEND TESTING			
	MANDREL DIAMETER (Inch) (± 3%)		WEIGHT (lb) (± 3%)	
	LIFE CYCLE, IMMERSION AND CROSSLINKING PROOF TEST		LIFE CYCLE, IMMERSION AND CROSSLINKING PROOF TEST	
	COLD BEND		COLD BEND	
55FA0411-22.*	.500	1.00	.750	3.00
55FA0411-20.*	.750	1.00	1.25	4.00
55FA0411-18.*	1.00	1.50	1.75	4.00
55FA0411-16.*	1.00	1.50	2.00	5.00
55FA0411-14.*	1.00	1.50	2.00	5.00
55FA0411-12.*	1.50	3.00	2.50	5.00
55FA0411-10.*	1.50	3.00	2.50	5.00
55FA0411-8.*	3.00	12.0	3.00	6.00

\*Raychem Trademark

COLORS AND COLOR CODE DESIGNATORS SHALL BE IN ACCORDANCE WITH MIL-STD-881.

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

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## WIRE RATINGS AND ADDITIONAL REQUIREMENTS

## TEMPERATURE RATING: 150°C

Maximum continuous conductor temperature

VOLTAGE RATING: 600 volts (rms) at sea level

ATTENUATION (INSERTION LOSS): See Page 3

BLOCKING: 200 ± 3°C for 6 hours

COLOR: Light violet preferred

COLOR STRIPING DURABILITY: 125 cycles (250 strokes) (minimum), 500 g weight

CONCENTRICITY: Primary Insulation - 50% (minimum); Finished Wire - 70% (minimum)

CROSSLINKING PROOF TEST (ACCELERATED AGING): 300 ± 3°C for 7 hours

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

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

IDENTIFICATION 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, Filter Layer and Primary Jacket pulled together

Elongation, 50% (minimum)

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

## INSULATION FLAWS:

Primary Insulation only

Spark Test, 2.5 kV (rms), 60 Hz

Impulse Dielectric Test, 6.0 kV (peak)

Finished Wire

Spark Test, 3.0 kV (rms), 60 Hz

Impulse Dielectric Test, 8.0 kV (peak)

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

## INSULATION THICKNESS:

Primary Insulation, .003 in. (minimum)

Filter Layer, average .003 in. (minimum)

Primary Jacket, .0035 in. (minimum)

LIFE CYCLE: 200 ± 3°C for 168 hours

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

SHRINKAGE: 200 ± 3°C for 6 hours, 0.125 in. (maximum)

SMOKE: 200 ± 2°C, no visible smoke

SURFACE RESISTANCE: 500 megohms-in. (minimum) initial and final readings

THERMAL SHOCK RESISTANCE: 150 ± 3°C, .060 in. (maximum)

VOLTAGE WITHSTAND (POST-ENVIRONMENTAL): (After Crosslinking Proof Test, Immersion, Life Cycle and Low Temperature-Cold Bend)

1500 volts (rms), 60 Hz

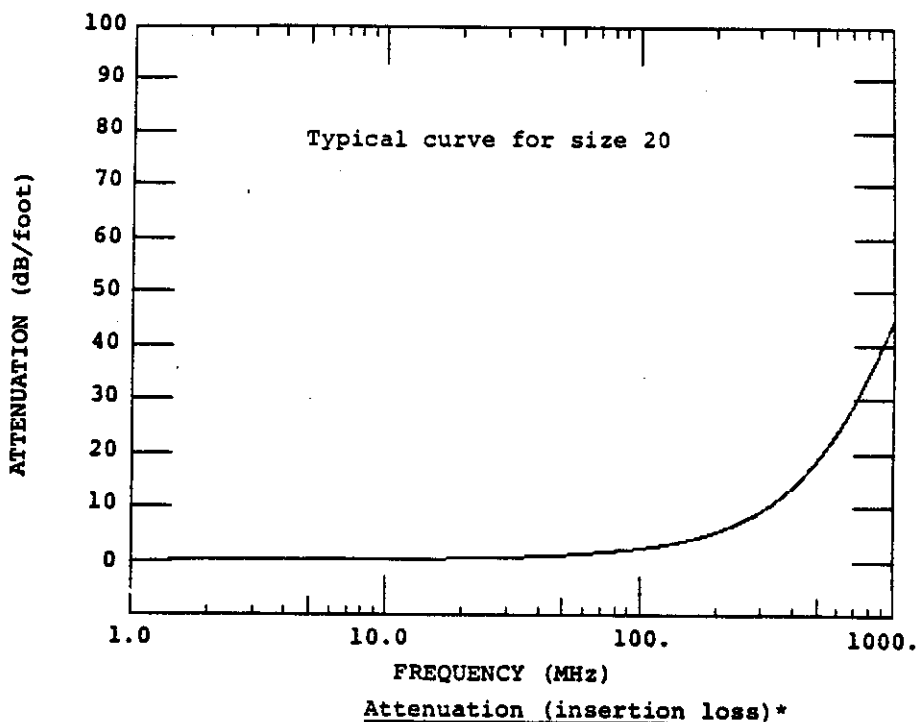
WRAP TEST: 6 hours at 200 ± 3°C, no cracking

## PART NUMBER:

The \*\*\* in the part number above shall be replaced by color code designators. Violet shall be light violet and the designator shall be 7L.

Example: AWG 22, light violet: 55FA0411-22-7L

AWG 22, light violet with blue stripe: 55FA0411-22-7L6



Attenuation (insertion loss) \*

Part no.	Pass band (dB/ft)			Transition band (dB/ft)			Stop band (dB/ft)
	1.0 MHz	10.0 MHz		100 MHz	500 MHz	1000 MHz	1 to 12 GHz
	(max)	(min)	(max)	(min)	(min)	(min)	(min)
55FA0411-22	.015	.04	0.10	1.3	12	30	30
55FA0411-20	.015	.04	0.10	1.3	12	30	30
55FA0411-18	.015	.04	0.10	1.3	13	33	33
55FA0411-16	.015	.04	0.10	1.3	13	33	33
55FA0411-14	.015	.04	0.10	1.3	13	33	33
55FA0411-12	.015	.02	0.10	1.3	12	30	30
55FA0411-10	.015	.02	0.10	1.3	12	30	30
55FA0411- 8-*	TBD	TBD	TBD	TBD	TBD	TBD	TBD

\*THE PRIMARY WIRE OF THIS SPECIFICATION SHEET SHALL MEET THE ATTENUATION REQUIREMENTS SHOWN ABOVE ONLY WHEN USED AS A SINGLE COMPONENT IN A SHIELDED CABLE.