tyco Electronics

SCL

Raychem

Semirigid, encapsulant-lined, heat-shrinkable tubing

SCL is encapsulant-lined, heat-shrinkable tubing that provides moisture resistance, strain relief, and electrical insulation for electrical splices, terminations, breakouts, and mechanical connections.

SCL is constructed as a dual-wall tubing. The outer wall is a semirigid, crosslinked polyolefin, while the inner wall is a meltable polyolefin that flows with the application of heat.

Heating SCL shrinks the outer jacket and melts the inner "encapsulant" wall to flow and fill surface irregularities. While still hot, the tubing can be pinched and blocked to form a wire breakout. SCL provides a splash-resistant, moisture-resistant covering suitable for many applications. SCL also performs satisfactorily if briefly exposed to common solvents or chemicals.

The installed tubing provides rugged protection against abrasion, vibration, and flexing. A wide range of applications can be accommodated with only a few sizes of SCL tubing.

SCL tubing is UL-recognized at 125°C, 600 V, and meets the requirements of AMS-DTL-23053/4, Class 1.

Temperature rating

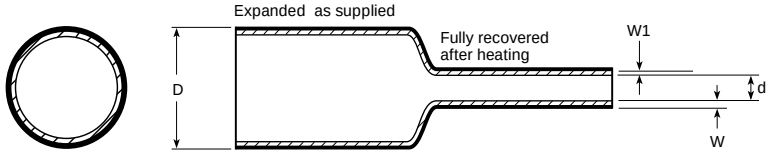
Full recovery temperature:	135°C
Continuous operating temperature:	–55°C to 110°C

*Specifications**

Type	Raychem	Military	UL
SCL	RT-1301	AMS-DTL-23053/4, Class 1	E85381

* When ordering, always specify latest issue.

*Dimensions (*millimeters/*inches)*



Size	Additional standard color	Inside diameter D (min.) Expanded as supplied		d (max.) Recovered after heating		Recovered wall thickness W Total wall**		W1 (nom.) Meltable wall	
1/8	Brown	3.2	*0.125*	0.6	*0.023*	0.96 ± 0.15	*0.038 ± 0.006*	0.51	*0.020*
3/16	Gray	4.7	*0.187*	1.5	*0.060*	1.09 ± 0.15	*0.043 ± 0.006*	0.64	*0.025*
1/4	White	6.4	*0.250*	2.0	*0.080*	1.19 ± 0.15	*0.047 ± 0.006*	0.69	*0.027*
3/8	Red	9.5	*0.375*	3.4	*0.135*	1.27 ± 0.18	*0.050 ± 0.007*	0.76	*0.030*
1/2	Blue	12.7	*0.500*	5.0	*0.195*	1.39 ± 0.18	*0.055 ± 0.007*	0.89	*0.035*
3/4	Yellow	19.1	*0.750*	8.0	*0.313*	1.65 ± 0.18	*0.065 ± 0.007*	1.01	*0.040*
1	N/A	25.4	*1.000*	10.2	*0.400*	1.90 ± 0.18	*0.075 ± 0.007*	1.01	*0.040*

**Wall thickness will be less if tubing recovery is restricted during shrinkage.

Ordering information

Standard colors	Black for all sizes, plus one additional color per size as per dimensions table
Size selection	Always order the largest size that will shrink snugly over the component being covered.
Standard packaging	4-foot lengths
Ordering description	Specify product name, size, and color; for example, SCL1/4-0 (0=Black).

Specification values

	Property	Unit	Requirement	Method of test
Physical	Dimensions	mm *(inches)*	See reverse	ASTM D 2671
	Longitudinal change	percent	+1, –10 maximum	ASTM D 2671
	Flow of inner wall		No openings upon reheating	AMS-DTL-23053/4
	Tensile strength	psi *(MPa)*	1500 *(10.3)* minimum	ASTM D 2671
	Ultimate elongation	percent	200 minimum	ASTM D 2671
	Low-temperature brittleness (–55°C/*–67°F*)		No failure	ASTM D 746 Procedure B
	Heat shock (4 hours at 250°C/*482°F*)		No dripping, flowing, or cracking of outer wall	AMS-DTL-23053
	Heat resistance (168 hours at 175°C/*347°F*)		No dripping, flowing, or cracking of outer wall	AMS-DTL-23053
Electrical	Dielectric strength	volts/mil	500 minimum	ASTM D 149
	Volume resistivity	ohm-cm	10^{15} minimum	ASTM D 257
Chemical	Corrosive effect (16 hours at 121°C/*250°F*)		Noncorrosive	ASTM D 2671
	Fungus resistance		Rating of 1 or less	ASTM G 21
	Water absorption (24 hours at 23°C/*73°F*)	percent	0.1 maximum	ASTM D 570
	Fluid resistance (24 hours at 23°C/*73°F*) in: JP-8 fuel (MIL-T-5624) Skydrol 500 Hydraulic fluid (MIL-H-5606) Aviation gasoline 100/130 Water			ASTM D 2671
	Followed by tests for:			
	Dielectric strength	volts/mil	400 minimum	ASTM D 2671
	Tensile strength	psi	1000 minimum	ASTM D 2671

Note: Consult RT-1301 for specific details about test procedures.

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Users should independently evaluate the suitability of the product for their application.