tyco Electronics

CRN

Raychem

Semirigid, flame-retardant, polyolefin heat-shrinkable tubing

Heat-shrinkable CRN tubing is ideally suited for wire strain-relief applications. It provides excellent strain-relief and insulation of weak points such as wire splices and terminations. CRN tubing helps ensure a reliable connection because it transfers the flex stress away from typically sensitive points such as solder and crimp joints.

CRN tubing has a broad range of uses including component protective covering and packaging. The flame-retardant material is fabricated from radiation-crosslinked polyolefin and exhibits excellent mechanical and chemical properties. It meets major military and industrial specifications for an all-purpose, semirigid tubing.

CRN tubing is abrasion-resistant. It's superior chemical properties permit satisfactory performance after exposure to common chemicals and solvents.

Only a few sizes of CRN tubing are required to cover a wide range of substrate diameters.

Temperature rating

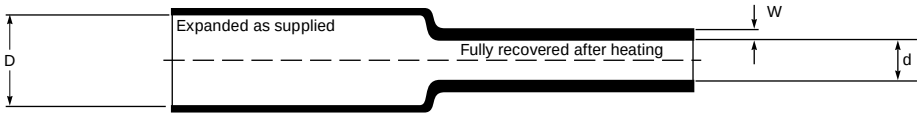
Full recovery temperature:	135°C
Continuous operating temperature:	–55°C to 135°C

*Specifications**

Type	Raychem	Military	UL	CSA
CRN Type 1 (colors)	RT-360 Type 1	AMS-DTL-23053/6 Cl. 1	E35586	LR31929 (Black only)
CRN Type 2 (clear)	RT-360 Type 2	AMS-DTL-23053/6 Cl. 2		

*When ordering, always specify latest issue.

*Dimensions (***millimeters***/inches)***



Size	Inside diameter D (min.) Expanded as supplied		d (max.) Recovered after heating		Wall thickness W Recovered after heating**	
3/64	1.2	*0.046*	0.6	*0.023*	0.51 ± 0.08	*0.020 ± 0.003*
1/16	1.6	*0.063*	0.8	*0.031*	0.51 ± 0.08	*0.020 ± 0.003*
3/32	2.4	*0.093*	1.2	*0.046*	0.51 ± 0.08	*0.020 ± 0.003*
1/8	3.2	*0.125*	1.6	*0.062*	0.51 ± 0.08	*0.020 ± 0.003*
3/16	4.8	*0.187*	2.4	*0.093*	0.64 ± 0.08	*0.025 ± 0.003*
1/4	6.3	*0.250*	3.2	*0.125*	0.64 ± 0.08	*0.025 ± 0.003*
3/8	9.5	*0.375*	4.8	*0.187*	0.76 ± 0.08	*0.030 ± 0.003*
1/2	12.7	*0.500*	6.4	*0.250*	0.76 ± 0.08	*0.030 ± 0.003*
3/4	19.0	*0.750*	9.5	*0.375*	0.89 ± 0.12	*0.035 ± 0.005*

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

Ordering information

Colors	**Standard**	Black
	Nonstandard	Clear (not flame-retardant)
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, CRN 1/4-0 (0 = Black).	

Specification values

	Property	Unit	Requirement Type 1 (Colors)	Requirement Type 2 (Clear)	Method of test
Physical	Dimensions	mm *(inches)*	See reverse	See reverse	ASTM D 2671
	Longitudinal change	percent	5 maximum	5 maximum	ASTM D 2671
	Tensile strength	psi *(MPa)*	2000 *(13.8)* minimum	2000 *(13.8)* minimum	ASTM D 2671
	Ultimate elongation	percent	200 minimum	200 minimum	ASTM D 2671
	Secant modulus (expanded)	psi *(MPa)*	2.5×10^4 *(172)* minimum	2.5×10^4 *(172)* minimum	ASTM D 2671
	Specific gravity		1.35 maximum	1.0 maximum	ASTM D 792
	Low-temperature flexibility (4 hours at –55°C/*–67°F*)		No cracking	No cracking	AMS-DTL 23053 ASTM D 2671 Procedure C
	Heat shock (4 hours at 250°C/*482°F*)		No dripping, flowing, or cracking	No dripping, flowing, or cracking	AMS-DTL 23053 ASTM D 2671
	Heat resistance (168 hours at 175°C/*347°F*)				ASTM D 2671
	Followed by test for:				
	Ultimate elongation	percent	150 minimum	150 minimum	ASTM D 2671
Electrical	Dielectric strength	volts/mil *(volts/mm)*	500 *(19,680)* minimum	500 *(19,680)* minimum	ASTM D 2671
	Volume resistivity	ohm-cm	10^{14} minimum	10^{16} minimum	ASTM D 2671
Chemical	Copper mirror corrosion (16 hours at 150°C/*302°F*)		No removal of copper	No removal of copper	ASTM D 2671 Procedure A
	Copper contact corrosion (168 hours at 150°C/*302°F*)		No pitting or blackening of copper	No pitting or blackening of copper	ASTM D 2671 Procedure B
	Flammability		Self-extinguishing within 1 minute; 25% of indicator burned or charred; no falling, burning particles.	Not applicable	ASTM D 2671 Procedure B
	Fungus resistance				ISO 846
	Followed by tests for:				Method B
	Tensile strength	psi *(MPa)*	2000 *(13.8)* minimum	2000 *(13.8)* minimum	ASTM D 2671
	Ultimate elongation	percent	200 minimum	200 minimum	ASTM D 2671
	Dielectric strength	volts/mil *(volts/mm)*	500 *(19,680)* minimum	500 *(19,680)* minimum	ASTM D 2671
	Water absorption (24 hours at 23°C/*73°F*)	percent	0.5 maximum	0.2 maximum	ASTM D 2671
	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) (MIL-G-5572) Water				ASTM D 2671
	Followed by tests for:				
	Dielectric strength	volts/mil *(volts/mm)*	400 *(15,760)* minimum	400 *(15,760)* minimum	ASTM D 2671
	Tensile strength	psi *(MPa)*	1600 *(11.0)* minimum	1600 *(11.0)* minimum	ASTM D 2671

Note: Consult RT-360 for specific details about test procedures.
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Users should independently evaluate the suitability of the product for their application.

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