

Thin-wall, semirigid, fluoropolymer heat-shrinkable tubing

RW-175 heat-shrinkable tubing is a tough, semirigid, very-thin-wall insulation. It is especially suitable for applications requiring high-temperature performance, outstanding abrasion and cut-through resistance, or superior chemical and solvent properties. The translucent polyvinylidene fluoride material permits visual inspection of covered components.

RW-175 tubing provides electrical insulation and strain relief of multipin connectors and solder joints. It is also widely used as insulation for high-temperature components and heater leads. With its thin-wall construction, RW-175 is ideal for applications that require dense packing of components.

RW-175 provides protection from most industrial solvents, fuels, and chemicals – including JP-8, oxidants, and strong acids. It is UL-recognized and CSA-certified at 150°C, 600 V, with VW-1 and OFT flame-retardancy ratings.

Temperature rating

Full recovery temperature:	175°C
Continuous operating temperature:	-55°C to 175°C
Recommended maximum temperature for use as a primary insulator:	135°C

Specifications*

Type	Raychem	Military	UL	CSA
RW-175	RW-3029/2	AMS-DTL-23053/8	E35586 VW-1	LR31929 OFT

*When ordering, always specify latest issue.

Dimensions (millimeters/inches)



Inside diameter		Wall thickness		Inside diameter		Wall thickness	
Size	D (min.) Expanded as supplied	d (max.) Recovered after heating	W Recovered after heating**	Size	D (min.) Expanded as supplied	d (max.) Recovered after heating	W Recovered after heating**
3/64	1.2 0.046	0.6 0.023	0.25 ± 0.05 0.010 ± 0.002	1/2	12.7 0.500	6.4 0.250	0.33 ± 0.05 0.013 ± 0.002
1/16	1.6 0.063	0.8 0.031	0.25 ± 0.05 0.010 ± 0.002	3/4	19.1 0.750	9.5 0.375	0.43 ± 0.08 0.017 ± 0.003
3/32	2.4 0.093	1.2 0.046	0.25 ± 0.05 0.010 ± 0.002	1	25.4 1.000	12.7 0.500	0.48 ± 0.08 0.019 ± 0.003
1/8	3.2 0.125	1.6 0.062	0.25 ± 0.05 0.010 ± 0.002	1 1/2	38.1 1.500	19.1 0.750	0.51 ± 0.08 0.020 ± 0.003
3/16	4.7 0.187	2.4 0.093	0.25 ± 0.05 0.010 ± 0.002	2	50.8 2.000	25.4 1.000	0.51 ± 0.08 0.020 ± 0.003
1/4	6.4 0.250	3.2 0.125	0.33 ± 0.05 0.013 ± 0.002	3	76.2 3.000	38.1 1.500	0.64 ± 0.10 0.025 ± 0.004
3/8	9.5 0.375	4.7 0.187	0.33 ± 0.05 0.013 ± 0.002	4	101.6 4.000	50.8 2.000	0.76 ± 0.13 0.030 ± 0.005

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

Ordering information

Colors	Standard Nonstandard	Translucent (clear) Black
Size selection	Always order the largest size that will shrink snugly over the component being covered.	
Nonstandard sizes	Sizes of 2 inches and larger are by special order only. In addition, a variety of nonstandard sizes are available.	
Standard packaging	4-foot lengths	
Ordering description	Specify product name, size, and color; for example, RW-175 1/4-X (X=Clear).	

Specification values

	Property	Unit	Requirement	Method of test
Physical	Dimensions	mm (<i>inches</i>)	See reverse	ASTM D 2671
	Longitudinal change	percent	+0, -10 maximum	ASTM D 2671
	Tensile strength	psi (<i>MPa</i>)	5000 (34.5) minimum	ASTM D 2671
	Ultimate elongation	percent	150 minimum	ASTM D 2671
	Secant modulus (expanded)	psi (<i>MPa</i>)	1 x 10 ⁵ (690) minimum	ASTM D 2671
	Specific gravity		1.8 maximum	ASTM D 2671
	Low-temperature flexibility (4 hours at -55°C/-67°F)		No cracking	AMS-DTL-23053/8
	Heat shock (4 hours at 300°C/572°F)		No dripping, flowing, or cracking	AMS-DTL-23053
	Heat resistance (168 hours at 250°C/482°F)			ASTM D 2671
	Followed by test for:			
	Ultimate elongation	percent	50 minimum	ASTM D 2671
	Vacuum outgassing			ASTM E 595
Electrical	TML (total mass loss)	percent	1.0 maximum	
	VCM (volatile condensable material)	percent	0.1 maximum	
	Dielectric strength	volts/mil (<i>kV/mm</i>)		ASTM D 2671
	Sizes 3/64 through 1/2		800 (31.5) minimum	
Chemical	Sizes 3/4 through 2		600 (23.6) minimum	
	Volume resistivity	ohm-cm	10 ¹³ minimum	ASTM D 2671
	Copper mirror corrosion (16 hours at 175°C/347°F)		Noncorrosive	ASTM D 2671 Procedure A
	Copper contact corrosion (168 hours at 175°C/347°F)		No pitting or blackening of copper	ASTM D 2671 Procedure B
	Followed by test for:			
	Ultimate elongation	percent	100 minimum	ASTM D 2671
	Flammability (average time of burning)	seconds	15 maximum	ASTM D 2671 Procedure A
	Fungus resistance			ISO 846 Method B
	Followed by tests for:			
	Tensile strength	psi (<i>MPa</i>)	5000 (34.5) minimum	ASTM D 2671
	Ultimate elongation	percent	150 minimum	ASTM D 2671
	Dielectric strength	volts/mil (<i>kV/mm</i>)		ASTM D 2671
	Sizes 3/64 through 1/2		800 (31,500) minimum	
	Sizes 3/4 through 2		600 (23,600) minimum	
	Water absorption (24 hours at 23°C/73°F)	percent	0.5 maximum	ASTM D 2671
	Fluid resistance (24 hours at 23°C/73°F) in:			ASTM D 2671
	JP-8 fuel (MIL-T-5624)			
	Skydrol 500			
	Hydraulic fluid (MIL-H-5606)			
	Aviation gasoline 100/300 (MIL-G-5572)			
	Salt water (5% salt)			
	Anti-icing fluid (MIL-A-8243)			
	Lubricating oil (MIL-L-7808)			
	Followed by tests for:			
	Dielectric strength	volts/mil (<i>kV/mm</i>)		ASTM D 2671
	Sizes 3/64 through 1/2		700 (27.6) minimum	
	Sizes 3/4 through 2		500 (19.7) minimum	
	Tensile strength	psi (<i>MPa</i>)	5000 (34.5) minimum	ASTM D 2671

Note: Consult RW-3029/2 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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