

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)**



Size	Inside diameter		Wall thickness		Size	Inside diameter		Wall thickness					
	D (min.) Expanded as supplied	d (max.) Recovered after heating	W Recovered after heating*	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
<b>Physical</b>	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 ( <i>34.5</i> ) minimum	ASTM D 2671
	Ultimate elongation	percent	150 minimum	ASTM D 2671
	Secant modulus (expanded)	psi ( <i>MPa</i> )	1 x 10 <sup>5</sup> ( <i>690</i> ) 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) Followed by test for:			ASTM D 2671
	Ultimate elongation	percent	50 minimum	ASTM D 2671
	Vacuum outgassing			ASTM E 595
	TML (total mass loss)	percent	1.0 maximum	
	VCM (volatile condensable material)	percent	0.1 maximum	
	<b>Electrical</b>	Dielectric strength	volts/mil ( <i>kV/mm</i> )	
Sizes 3/64 through 1/2			800 ( <i>31.5</i> ) minimum	
Sizes 3/4 through 2			600 ( <i>23.6</i> ) minimum	
Volume resistivity		ohm-cm	10 <sup>13</sup> minimum	ASTM D 2671
<b>Chemical</b>	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) Followed by test for:		No pitting or blackening of copper	ASTM D 2671 Procedure B
	Ultimate elongation	percent	100 minimum	ASTM D 2671
	Flammability (average time of burning)	seconds	15 maximum	ASTM D 2671 Procedure A
	Fungus resistance Followed by tests for:			ISO 846 Method B
	Tensile strength	psi ( <i>MPa</i> )	5000 ( <i>34.5</i> ) 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 ( <i>31,500</i> ) minimum	
	Sizes 3/4 through 2		600 ( <i>23,600</i> ) 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: 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:			ASTM D 2671
	Dielectric strength	volts/mil ( <i>kV/mm</i> )		ASTM D 2671
	Sizes 3/64 through 1/2		700 ( <i>27.6</i> ) minimum	
	Sizes 3/4 through 2		500 ( <i>19.7</i> ) minimum	
Tensile strength	psi ( <i>MPa</i> )	5000 ( <i>34.5</i> ) 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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