

Flexible, flame-retardant, high performance, polyolefin heat-shrinkable tubing

RNF-100 tubing is a high-quality, heat-shrinkable product for a wide variety of uses. It has become the industry standard for insulation, strain relief, wire bundling, and color-coding in both commercial and military applications. RNF-100 tubing meets the requirements of AMS-DTL-23053/5, Class 1 (colors) and Class 2 (clear).

It is also UL-recognized and CSA-certified at 125°C, 600 V.

Made from flame-retardant polyolefin, RNF-100 tubing has excellent physical, chemical, and electrical properties that meet industrial and military requirements for a highly reliable, general-purpose tubing. It sets itself apart in that it offers

a higher level of performance at elevated temperature, including mechanical abrasion and fluid resistance, than many heat-shrinkable polyolefin tubings available in the marketplace today.

Only a few sizes of RNF-100 tubing are required to cover many substrate diameters.

Temperature rating

Minimum shrink temperature:	121°C
Continuous operating temperature:	-55°C to 135°C

Specifications*

Type	Raychem	Military	UL 	CSA 
RNF-100 Type 1 (colors)	RT-350 Type 1	AMS-DTL-23053/5, Cl. 1	E35586	LR31929
RNF-100 Type 2 (clear)	RT-350 Type 2	AMS-DTL-23053/5, Cl. 2		

*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	0.40 ± 0.08 0.016 ± 0.003	3/4	19.1 0.750	9.5 0.375	0.77 ± 0.08 0.030 ± 0.003		
1/16	1.6 0.063	0.8 0.031	0.43 ± 0.08 0.017 ± 0.003	1	25.4 1.000	12.7 0.500	0.89 ± 0.12 0.035 ± 0.005		
3/32	2.4 0.093	1.2 0.046	0.51 ± 0.08 0.020 ± 0.003	1 1/4	31.7 1.250	15.9 0.625	1.02 ± 0.15 0.040 ± 0.006		
1/8	3.2 0.125	1.6 0.062	0.51 ± 0.08 0.020 ± 0.003	1 1/2	38.1 1.500	19.1 0.750	1.02 ± 0.15 0.040 ± 0.006		
3/16	4.7 0.187	2.4 0.093	0.51 ± 0.08 0.020 ± 0.003	2	50.8 2.000	25.4 1.000	1.14 ± 0.16 0.045 ± 0.007		
1/4	6.4 0.250	3.2 0.125	0.64 ± 0.08 0.025 ± 0.003	3	76.2 3.000	38.1 1.500	1.27 ± 0.20 0.050 ± 0.008		
3/8	9.5 0.375	4.8 0.187	0.64 ± 0.08 0.025 ± 0.003	4	101.6 4.000	50.8 2.000	1.40 ± 0.23 0.055 ± 0.009		
1/2	12.7 0.500	6.4 0.250	0.64 ± 0.08 0.025 ± 0.003	5	127.0 5.000	63.5 2.500	1.53 ± 0.23 0.060 ± 0.009		

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

Ordering information

Colors	Standard	Black (all sizes); clear, white, red, blue, green, and yellow (3/64" through 3")
	Nonstandard	Clear, white, red, blue, and yellow (4" and 5"); brown, orange, violet, and gray (all sizes)
Size selection	Always order the largest size that will shrink snugly over the component being covered.	
Standard packaging	On spools or in 4 foot lengths	
Ordering description	Specify product name, size, and color; for example, RNF-100-1/4-BK (BK=Black).	

Specification values

			Requirement		
	Property	Unit	Type 1 (colors)	Type 2 (clear)	Method of test
Physical	Dimensions	mm (<i>inches</i>)	See Reverse	See Reverse	ASTM D 2671
	Longitudinal change	percent	+0, -5	+0, -5	ASTM D 2671
	Tensile strength	psi (<i>Mpa</i>)	1500 (<i>10.3</i>) minimum	1500 (<i>10.3</i>) minimum	ASTM D 2671
	Ultimate elongation	percent	200 minimum	200 minimum	ASTM D 2671
	Secant modulus (as supplied)	psi (<i>Mpa</i>)	2.5 X 10 ⁴ (<i>172</i>) maximum	2.5 X 10 ⁴ (<i>172</i>) maximum	ASTM D 2671
	Specific gravity		1.35 maximum	1.0 maximum	ASTM D 2671
	Low temperature flexibility (4 hours at -55°C/-67°F)		No cracking	No cracking	AMS-DTL-23053
	Heat shock (4 hours at 250°C/482°F)		No dripping, flowing, or cracking	No dripping, flowing, or cracking	AMS-DTL-23053
	Heat resistance (336 hours at 175°C/347°F)				ASTM D 2671
	Followed by test for:				
	Ultimate Elongation	percent	150 minimum	150 minimum	ASTM D 2671
	Color		MIL-STD-104		MIL-STD-104
	Color stability (48 hours at 175°C/347°F)		MIL-STD-104		ASTM D 2671
	Electrical	Dielectric strength	volts/mil (<i>volts/mm</i>)	500 (<i>19,680</i>) minimum	500 (<i>19,680</i>) minimum
Volume resistivity		ohm-cm	10 ¹⁴ minimum	10 ¹⁶ minimum	ASTM D 2671
Chemical	Copper mirror corrosion (16 hours at 175°C/347°F)		No removal of copper	No removal of copper	ASTM D 2671 Procedure A
	Copper contact corrosion (168 hours at 160°C/320°F)		No pitting or blackening of copper	No pitting or blackening of copper	ASTM D 2671 Procedure B
	Copper stability (16 hours at 160°C/320°F)		No brittleness, glazing, cracking, or severe discoloration of tubing	No brittleness, glazing, cracking, or severe discoloration of tubing	ASTM D 2671 Procedure B
	Followed by test for:				
	Ultimate Elongation	percent	200 minimum	200 minimum	ASTM D 2671
	Flammability		Self-extinguishing within 1 minute, 25% maximum flag burn		ASTM D 2671 Procedure B
	Fungus resistance		Rating of 1 or less	Rating of 1 or less	ASTM G 21
	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 100/300 (MIL-G-5572) Water				ASTM D 2671
	Followed by tests for:				
	Dielectric strength	volts/mil (<i>volts/mm</i>)	400 (<i>15,760</i>) minimum	400 (<i>15,760</i>) minimum	ASTM D 2671
Tensile strength	psi (<i>Mpa</i>)	1000 (<i>6.9</i>) minimum	1000 (<i>6.9</i>) minimum	ASTM D 2671	

Note: Consult RT-350 for specific details about test procedures.
Raychem is a trademark of Tyco Electronics Corporation.

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

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