

Very flexible, flame-retardant, polyolefin heat-shrinkable tubing

MIL-LT tubing is a very flexible, low-shrink-temperature, heat-shrinkable product for a variety of military applications. It meets the requirements of AMS-DTL-23053/5, Classes 1 and 3, and is used for insulation, identification, strain relief, wire bundling, and color coding.

MIL-LT tubing hot-stamps extremely well. Made from flame-retardant polyolefin, the tubing has excellent physical, chemical, and electrical properties that meet military requirements for highly reliable, general-purpose tubing.

Only a few sizes of MIL-LT tubing are required to cover many substrate diameters.

**Temperature rating**

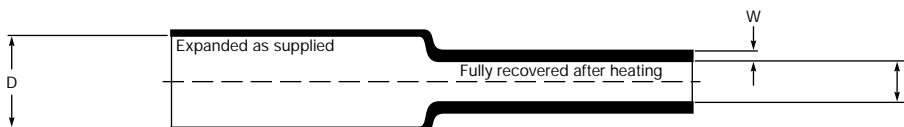
Full recovery temperature:	90°C
Continuous operating temperature:	-55°C to 135°C

**Specifications\***

Type	Raychem	Military
MIL-LT	RT-1171	AMS-DTL-23053, Cl. 1 and 3

\*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	Recovered after heating**		D (min.) Expanded as supplied	d (max.) Recovered after heating	W Recovered after heating	Recovered after heating**				
3/64	1.2	0.046	0.6	0.023	0.40 ± 0.08	0.016 ± 0.003	1/2	12.7	0.500	6.4	0.250	0.64 ± 0.08	0.025 ± 0.003
1/16	1.6	0.063	0.8	0.031	0.43 ± 0.08	0.017 ± 0.003	3/4	19.1	0.750	9.5	0.375	0.76 ± 0.08	0.030 ± 0.003
3/32	2.4	0.093	1.2	0.046	0.51 ± 0.08	0.020 ± 0.003	1	25.4	1.000	12.7	0.500	0.89 ± 0.12	0.035 ± 0.005
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	4.8	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

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

**Ordering information**

Colors	<b>Standard</b>	Black, white, red, blue, yellow and green
	<b>Nonstandard</b>	Brown, orange, violet, and gray
Size selection	Always order the largest size that will shrink snugly over the component being covered.	
Standard packaging	On spools	
Ordering description	Specify product name, size, and color; for example, MIL-LT 1/4-0 (0=Black).	

## Specification values

	Property	Unit	Requirement	Method of test	
Physical	Dimensions	mm ( <i>inches</i> )	See reverse	ASTM D 2671	
	Longitudinal change	percent	+0, -5	ASTM D 2671	
	Tensile strength	psi ( <i>MPa</i> )	1500 ( <i>10.3</i> ) minimum	ASTM D 2671	
	Ultimate elongation	percent	200 minimum	ASTM D 2671	
	Secant modulus (recovered)	psi ( <i>MPa</i> )	1.3 x 10 <sup>4</sup> ( <i>89</i> ) maximum	ASTM D 2671	
	Concentricity (expanded)	percent	70 minimum	ASTM D 2671	
	Restricted shrinkage (30 minutes at 175°C/347°F) Proof voltage: 2000 V/a-c		No cracks	ASTM D 2671 Procedure A	
	Specific gravity (recovered)		1.35 maximum	ASTM D 2671	
	Low-temperature flexibility (4 hours at -55°C/-67°F)		No cracking	AMS-DTL-23053	
	Heat shock (4 hours at 250°C/482°F)		No dripping, flowing, or cracking	ASTM D 2671	
	Heat resistance (168 hours at 175°C/347°F) Followed by tests for:			ASTM D 2671	
	Tensile strength	psi ( <i>MPa</i> )	1500 ( <i>10.3</i> ) minimum	ASTM D 2671	
	Ultimate elongation	percent	200 minimum	ASTM D 2671	
	Color		MIL-STD-104	MIL-STD-104	
	Color stability (24 hours at 175°C/347°F)		MIL-STD-104	ASTM D 2671	
	Shore A Hardness		85 ± 5	ASTM D 2240	
	Electrical	Dielectric strength	volts/mil ( <i>kV/mm</i> )	500 ( <i>19.7</i> ) minimum	ASTM D 2671
		Volume resistivity	ohm-cm	10 <sup>14</sup> minimum	ASTM D 2671
	Chemical	Copper mirror corrosion (16 hours at 175°C/347°F)		Noncorrosive	ASTM D 2671 Procedure A
		Copper contact corrosion (16 hours at 175°C/347°F)		No pitting or blackening of copper	ASTM D 2671 Procedure B
Flammability			No flaming or glowing longer than 1 minute from any flame application; 25% maximum flag burn; no burning of cotton. Self-extinguishing within 15 seconds, no burning or charring of indicator.	ASTM D 2671 Procedure C	
Fungus resistance			Rating of 1 or less	ASTM G 21	
Water absorption (recovered) (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 Lubricating oil (MIL-L-7808) Lubricating oil (MIL-L-23699) Deicing fluid (MIL-A-8243) 5% NaCl Followed by tests for:				ASTM D 2671	
Dielectric strength		volts/mil ( <i>kV/mm</i> )	400 ( <i>15.8</i> ) minimum	ASTM D 2671	
Tensile strength		psi ( <i>MPa</i> )	1000 ( <i>6.9</i> ) minimum	ASTM D 2671	

Note: Consult RT-1171 for specific details about test procedures.

Skydrol is a trademark of Monsanto Company.

Raychem is a trademark of Tyco Electronics Corporation.

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

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