

High expansion ratio, adhesive-lined heat-shrinkable tubing

ATUM tubing is radiation-crosslinked, heat-shrinkable, and adhesive-lined to provide environmental sealing in a wide variety of electrical applications. The product is typically used to seal connector backshells and cable breakouts and to repair damaged cable.

ATUM has an internal adhesive coating that, when heated, melts and flows to form a positive environmental seal. The coating adheres to the outer

tubing and the surface below, creating an excellent barrier to moisture penetration. The adhesive bonds to a wide variety of plastics, rubbers, and metals, including PVC, polyethylene, rubber, and aluminum.

Because the tubing and adhesive are flexible, the moisture seal withstands bending of the substrate. This flexibility makes ATUM tubing ideal for cable repair.

ATUM tubing is available with expansion ratios of both 3:1 and 4:1. These high expansion ratios make it possible to repair cables without removing connectors. Just a few sizes of ATUM tubing cover a wide range of substrates. ATUM is UL-recognized at 110°C, 600 V.

**Temperature rating**

Full recovery temperature:	125°C
Continuous operating temperature:	-55°C to 110°C

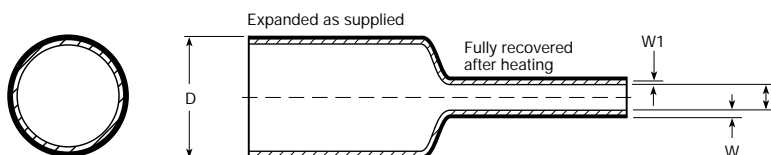
**Specifications\***

Type	Raychem	Military	UL
ATUM	RW-2063 (Black only) RK-6024 (Clear and colors)	AMS-DTL-23053/4, Cl. 3	E85381**



\*When ordering, always specify latest issue.  
\*\*Except sizes 3/1 and 4/1.

**Dimensions (millimeters/inches)**



Size	Inside diameter		Recovered wall thickness***		Size	Inside diameter		Recovered wall thickness***	
	D (min.) Expanded as supplied	d (max.) Recovered after heating	W Total wall	W1 (nom.) Meltable wall		D (min.) Expanded as supplied	d (max.) Recovered after heating	W Total wall	W1 (nom.) Meltable wall
<b>3:1</b>					<b>4:1</b>				
3/1	3	0.118	1	0.039	4/1	4	0.157	1	0.039
4.5/1.5	4.5	0.177	1.5	0.059	8/2	8	0.315	2	0.079
6/2	6	0.236	2	0.079	12/3	12	0.472	3	0.118
9/3	9	0.354	3	0.118	16/4	16	0.630	4	0.157
12/4	12	0.472	4	0.157	24/6	24	0.945	6	0.236
19/6	19	0.748	6	0.236	32/8	32	1.260	8	0.315
24/8	24	0.940	8	0.315	52/13	52	2.050	13	0.512
40/13	40	1.570	13	0.512					

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

**Ordering information**

Colors	<b>Standard</b> Black <b>Nonstandard</b> Clear (non-flame retardant jacket); other colors available on request.
Size selection	Always order the largest size that will shrink snugly over the component being covered. Some special order sizes are available.
Standard packaging	4-foot lengths
Ordering description	Specify product name, size, and color; for example, ATUM 6/2-0 (0=Black).

## 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, -15	ASTM D 2671
	Tensile strength	psi	1300 minimum	ASTM D 2671
	Ultimate elongation	percent	300 minimum	ASTM D 2671
	Secant modulus (recovered)	psi	1.2 x 10 <sup>4</sup> maximum	ASTM D 2671
	Low-temperature flexibility (4 hours at -55°C/-67°F)		No cracking	ASTM D 2671
	Heat shock (4 hours at 225°C/437°F)		No cracking, dripping, or flowing of outer wall	ASTM D 2671
	Heat resistance (168 hours at 150°C/302°F)		No cracking, dripping, or flowing of outer wall	ASTM D 2671
<b>Electrical</b>	Dielectric strength	volts/mil	300 minimum	ASTM D 2671
<b>Chemical</b>	Water absorption (24 hours at 23°C/73°F)	percent	0.5 maximum	ASTM D 570
	Corrosive effect (16 hours at 150°C/302°F)		Non corrosive	ASTM D 2671 Procedure A
	Flammability (colors only, outer jacket only)		60 second maximum burning duration: no burning or charring of indicator	ASTM D 2671 Procedure B
	Fungus resistance			ISO 846 Method B
	Followed by tests for:			
	Tensile strength	psi	1300 minimum	ASTM D 2671
	Ultimate elongation	percent	300 minimum	ASTM D 2671
	Inner wall adhesion:			T-PEEL
	ATUM to RNF-100	lbs/inch	30 minimum	2"/minute
	ATUM to aluminum	lbs/inch	10 minimum	2"/minute
	Fluid resistance (24 hours at 23°C/73°F) in:			AMS-DTL-23053
	Diesel fuel (BS 2869 Class A1)			
	Hydraulic fluid (MIL-H-5606)			
Lubricating oil (0-149)				
Followed by tests for:				
Tensile strength	psi	1000 minimum	ASTM D 2671	
Ultimate elongation	percent	300 minimum	ASTM D 2671	

Note: Consult RW-2063 for specific details about test procedures.

ATUM and Raychem are trademarks of Tyco Electronics Corporation.

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

### Tyco Electronics Corporation

300 Constitution Drive  
Menlo Park, CA 94025-1164  
USA  
Tel: (800) 926-2425 (US & Canada)  
Tel: +1 (650) 361-3860 (All other countries)

Faraday Road  
Dorcan, Swindon, SN3 5HH  
United Kingdom  
Tel: +44 1793 528171

3816 Noborito, Tama-ku  
Kawasaki, Kanagawa 214-8533  
Japan  
Tel: +81 44 900 5102

Asia Pacific Headquarters  
26 Ang Mo Kio, Industrial Park 2  
Singapore 569507  
Tel: +65 4866 151

All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their application. Tyco Electronics Corporation makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use. Tyco Electronics Corporation's only obligations are those in the Standard Terms and Conditions of Sale for these products and in no case will Tyco Electronics Corporation be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of the product. Tyco Electronics Corporation's Specifications are subject to change without notice. In addition, Tyco Electronics Corporation reserves the right to make changes in materials or processing without notification to the Buyer which do not affect compliance with any applicable specification.

**For more information about this product visit [www.tycoelectronics.com](http://www.tycoelectronics.com)**

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[TE Connectivity:](#)

[ATUM-4/1-0-SP](#)