

# Raychem heat-shrinkable medium wall insulation tubing MWTM

## Raychem heat-shrinkable medium wall halogen-free insulation tubing MWTM

Insulating and sealing systems for power cables have to perform to a range of exacting requirements; to be unaffected by years of weathering and ultra-violet light, to stand up to continuous temperature changes, to keep out moisture and corrosive liquids for a generation, to be immune to oils and solvents, and to combine lasting insulating properties with low weight, toughness, impact strength and flexibility.

The need for modern standards of efficiency and simplicity of installation is a further significant consideration.

To meet these demands, we developed a Raychem heat-shrinkable halogen-free medium-wall tubing MWTM now in widespread use in terminations, joints and cable repairs throughout the world. Heating with a commonly available gas torch activates the tubing's "elastic memory" causing it to recover in diameter. The tubing's high shrink ratio enables it to shrink and tightly fit a wide range of cable sizes and accessories.

Appropriate to the particular application, our MWTM tubing is available with an inner sealant wall, which melts and flows under the heat and shrinking action of installation. This makes it suitable for either cable oversheath replacement and sealing, or uncoated as an insulating material. The shelf-life restrictions usually associated with tapes and resins do not apply, and the completed installation may be taken into service at once.

Raychem tubing MWTM is fast and easily installed, and has proven its long term reliability in harsh climatic conditions and polluted environments. It is one result of our capability in materials science and electrical power engineering, gained through extensive experience as one of the world's largest cable accessories makers and a sustained research effort. We make a wide range of specially developed products and support them with technical service and world-wide experience to meet the demands of the growing world of energy.

An electrical system in Austria. Raychem tubing MWTM protects and seals the cable cores and connectors as part of a Raychem termination, and seals the cable feedthrough into a building.

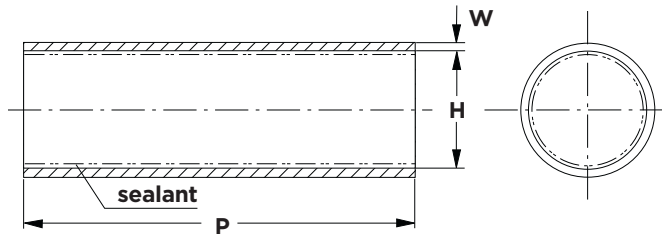


<b>Material properties</b>		<b>Test method</b>	<b>Material requirements</b>
<b>Tensile strength</b>		ISO 37	14 MPa min.
<b>Ultimate elongation</b>		ISO 37	350 % min.
<b>Density</b>		ISO 1183 Method A	0.9 - 1.1 g/cm <sup>3</sup>
<b>Hardness</b>		ISO 868	50 shore D
<b>Accelerated ageing</b>	7 days at 150°C ± 2°C	ISO 188	
	Tensile strength	ISO 37	14 MPa min.
	Ultimate elongation	ISO 37	300 % min.
<b>Thermal endurance*</b>		IEC 60216	120°C min.
<b>Low temperature flexibility</b>	4 hrs at -40°C ± 3°C	ASTM D 2671 Procedure C	No cracking
<b>Dielectric strength</b>	1 mm wall	IEC 60243	200 kV/cm
<b>Volume resistivity</b>		IEC 60093	1 x 10 <sup>12</sup> Ω cm min.
<b>Water absorption</b>		ISO 62 Method 1	0.25 % max after 14 days at 23°C ± 2°C
<b>Resistance to liquids</b>	7 days in transformer oil VDE 0370 at 23°C ± 2°C	ISO 1817	
	Tensile strength	ISO 37	14 MPa min.
	Ultimate elongation	ISO 37	300 % min.
<b>Weathering</b>	The material from which MWTM is manufactured contains carbon black to protect it from ultra-violet light.		
<b>Additional properties</b>	Further details are given in Raychem specification PPS 3010/19 (A) [1326].		

\* based on ultimate elongation

# Ordering information

## Dimensions



### Notes:

- Dimensions in millimeters  
a = as supplied  
b = after free recovery
- Max. longitudinal change after free recovery:  
+5% / -10%

Raychem tubing MWTM is supplied complete with installation instructions.

Product Size	Application range		H		W	
	from mm	to mm	a min	b max	a nom	b min
MWTM 10/3	3.5	9.0	10	3	0.3	1.0
MWTM 16/5	5.5	14.5	16	5	0.3	1.4
MWTM 25/8	9.0	22.5	25	8	0.4	2.0
MWTM 35/12	13.0	31.5	35	12	0.4	2.0
MWTM 50/16	18	45	50	16	0.5	2.0
MWTM 63/19	21	57	63	19	0.6	2.4
MWTM 75/22	24	68	75	22	0.6	2.7
MWTM 85/25	28	77	85	25	0.6	2.8
MWTM 95/29	32	86	95	29	0.7	3.1
MWTM 115/34	37	104	115	34	0.7	3.1
MWTM 140/42	46	126	140	42	0.7	3.1
MWTM 160/50	55	144	160	50	0.7	3.2
MWTM 180/60	66	162	180	60	0.7	3.2
MWTM 245/80 *	88	220	245	80	n.a.	2.4
MWTM 285/135 *	149	255	285	135	n.a.	1.4

\* uncoated only

## Standard lengths and coatings

### Lengths

All sizes types are available in the standard lengths: 1000 mm and 1500 mm.

Spools and other lengths on request. All lengths subject to standard cutting tolerances.

### Coatings

Raychem tubing MWTM is available with or without an inner sealant wall. The sealant exhibits excellent bonding and sealing characteristics to all materials commonly used in the various cable insulation and sheath constructions, such as plastic, rubber, lead and aluminium.  
Sealant /S (equivalent /243 and S1323) meets Raychem specification PPS 3012/76

## Ordering example

**Part number**  
MWTM 25/8-1000/S

Product type \_\_\_\_\_

Size \_\_\_\_\_

Standard length \_\_\_\_\_

/S = sealant \_\_\_\_\_

/U = without sealant \_\_\_\_\_

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**TE Energy - innovative and economical solutions for the electrical power industry: cable accessories, connectors & fittings, insulators & insulation, surge arresters, switching equipment, street lighting, power measurement and control.**

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