



## Raychem heat-shrinkable heavy wall insulation and outer sealing sleeve WCSM



**WOKING**

Unit 19, Woking Business Park  
Albert Drive, Woking GU21 5JY  
Tel: 01483 747747 • Fax: 01483 747001

**BRISTOL**

The Alpha Centre, Armstrong Way,  
Great Western Business Park, Yate, Bristol BS37 5NG  
Tel: 01454 322555 • Fax: 01454 323555

**NORTON CANES**

Unit 15-16, Bellsizes Close, Norton Canes,  
Staffordshire WS11 9TQ  
Tel: 01543 450555 • Fax: 01543 450600

**Raychem heat-shrinkable heavy wall halogen-free insulation and outer sealing sleeve WCSM**

Raychem heat-shrinkable heavy-wall tubing WCSM for insulating and sealing power cables and accessories. In this tubing, the electrical and physical properties of a cable oversheath material are combined with ruggedness and easy installation. The material used is halogen-free and UV resistant.

On heating, Raychem tubing WCSM recovers to a smaller diameter, fitting tightly over a wide range of cable sizes and accessories because of its high

shrink ratio. At the same time the tubing's inner sealant wall gives a dependable moisture seal over the most irregular shapes.

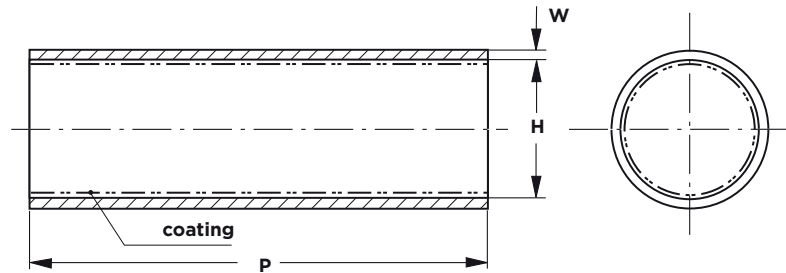
Raychem tubing WCSM's mechanical strength enables immediate back-filling of cable trenches after jointing. Widely used to insulate, protect and seal power cable joints, accessories and electrical connections, it is one result of our extensive capability in materials technology.

TE Energy is one of the world leaders in the technology of heat-shrinkable materials and one of the largest producers of heat-shrinkable polymeric and elastomeric components. By electron beam radiation Raychem materials are given an "elastic memory". They can then be installed over variously-shaped objects to make a tight, insulating or fluid-resistant cover. In a wide range of formulations, Raychem products are engineered to meet the specific demands of the growing world of energy.

WCSM Properties		Test Method	Material Requirements
<b>Tensile Strength</b>		ISO 37	12 MPa min
<b>Ultimate Elongation</b>		ISO 37	350% min
<b>Density</b>		ISO 1183 Method A	0.8-1.0 g/cm <sup>3</sup>
<b>Hardness</b>		ISO 868	40-50 shore D
<b>Accelerated Ageing</b>	7 days at 150 °C ± 2 °C	ISO 188	
	Tensile Strength	ISO 37	12 MPa min
	Ultimate Elongation	ISO 37	350% min
<b>Low Temperature Flexibility</b>	4 hours at -40 °C ± 3 °C	ASTM D2671 Procedure C	No cracking
<b>Dielectric Strength</b>		IEC 60243 Part 1 and 2	170 kV/cm min (1 mm wall) 120 kV/cm min (2 mm wall)
<b>Volume Resistivity</b>		IEC 60093	1 x 10 <sup>12</sup> Ω cm min
<b>Dielectric Constant</b>		IEC 60250	5.0 max
<b>Water Absorption</b>		ISO 62 Method 1	0.2% max after 14 days at 23 °C ± 2 °C
<b>Weathering</b>		The material from which WCSM is manufactured contains carbon black to protect it from ultra-violet light.	
<b>Additional Properties</b>		Further details are given in Raychem specification PPS 3010/10 (A) [1326]. Sealant characteristics are detailed in Raychem specification PPS 3012/76.	

## Ordering Information

### Dimensions



#### Notes:

1. Dimensions in millimeters

a = as supplied

b = after free recovery

1. Max. longitudinal change after free recovery: +5% / -10%

Raychem tubing WCSM is supplied complete with installation instructions.

Product Size	Application range		H		W	
	from mm	to mm	a min	b max	a nom	b min
WCSM 12/3	3.5	10	12	3	0.8	2.0
WCSM 16/4	4.5	14	16	4	0.9	2.4
WCSM 24/6	6.5	22	24	6	1.0	2.7
WCSM 34/8	9	31	33	8	1.3	4.0
WCSM 48/12	13	44	48	12	1.5	4.5
WCSM 56/16	17.5	50	56	16	1.5	4.4
WCSM 70/20	22	63	70	20	1.4	4.4
WCSM 90/25	27	81	90	25	1.3	4.3
WCSM 110/30	33	100	110	30	1.2	4.3
WCSM 130/35	38	118	130	35	1.2	4.3
WCSM 160/50	55	144	160	50	1.0	4.3
WCSM 180/50	55	162	180	50	1.0	4.3
WCSM 200/50	55	180	200	50	n.a.	4.3
WCSM 250/65	70	225	250	65	n.a.	4.3
WCSM 320/95	105	295	320	95	n.a.	4.3
WCSM 390/110	125	350	390	110	n.a.	4.3

### Standard Lengths and Sealant

#### Lengths

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

On request: other lengths and on spools.

All lengths subject to standard cutting tolerances.

#### Sealant

Raychem tubing WCSM are coated with 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

WCSM 9/3-1500/S

Product Type \_\_\_\_\_

Size \_\_\_\_\_

Standard Length \_\_\_\_\_

/S = Sealant \_\_\_\_\_

#### About TE Connectivity

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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.**

Tyco Electronics Raychem GmbH  
a TE Connectivity Ltd. Company  
TE Energy  
Finsinger Feld 1  
85521 Ottobrunn/Munich, Germany

Phone: +49-89-6089-0  
Fax: +49-89-6096345

[energy.te.com](http://energy.te.com)



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