



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

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.

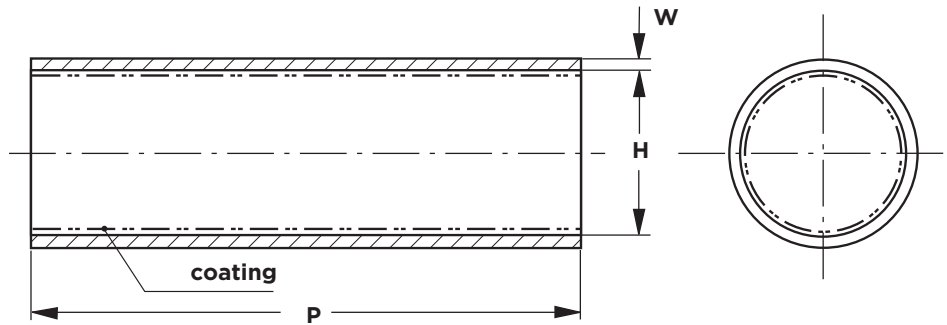
Raychem tubing WCSM's mechanical strength enables immediate back-filling of cable trenches after jointing. Widely used to insulate, protect and seal power cable joints, accessories and electrical connections, it is one result of our extensive capability in materials technology.

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 |
|------------------------------------|---|---|--|
| Tensile Strength | | ISO 37 | 12 MPa min |
| Ultimate Elongation | | ISO 37 | 350% min |
| Density | | ISO 1183 Method A | 0.8-1.0 g/cm ³ |
| Hardness | | ISO 868 | 40-50 shore D |
| Accelerated Ageing | 7 days at 150 °C ± 2 °C | ISO 188 | |
| | Tensile Strength | ISO 37 | 12 MPa min |
| | Ultimate Elongation | ISO 37 | 350% min |
| Low Temperature Flexibility | 4 hours at -40 °C ± 3 °C | ASTM D2671 Procedure C | No cracking |
| Dielectric Strength | | IEC 60243 Part 1 and 2 | 170 kV/cm min (1 mm wall) 120 kV/cm min (2 mm wall) |
| Volume Resistivity | | IEC 60093 | 1 x 10 ¹² Ω cm min |
| Dielectric Constant | | IEC 60250 | 5.0 max |
| Water Absorption | | ISO 62 Method 1 | 0.2% max after 14 days at 23 °C ± 2 °C |
| Weathering | | The material from which WCSM is manufactured contains carbon black to protect it from ultra-violet light. | |
| Additional Properties | 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.

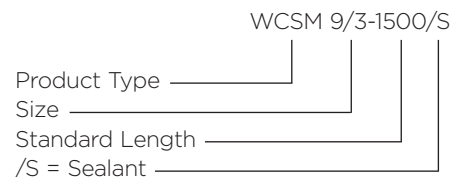
All lengths subject to standard cutting tolerances.

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



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.

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