



**WCSM**

**Heat-shrinkable heavy wall insulating tubing**

WCSM is a heat-shrinkable heavy wall tubing for insulating and sealing power cables and accessories. WCSM tubing combines the physical and electrical properties of a cable over sheath material with ruggedness and ease of installation.

WCSM material is halogen free. On heating, WCSM shrinks to fit tightly over a wide range of cable diameters. At the same time, the tubing's inner adhesive wall provides reliable moisture sealing of even the most irregular shapes.

WCSM tubing's mechanical strength allows immediate back-filling of cable trenches after jointing. Widely used to insulate, protect and seal power cable joints, accessories and electrical connections.



WCSM Properties	Test Method	Material Requirements
Tensile Strength	ISO 37	12 MPa min
Ultimate Elongation	ISO 37	350 % min
Density	ISO/R 1183 Method A	1.0 - 1.2 g/cm <sup>3</sup>
Hardness	ISO 868	40 - 60 shore D
Accelerated Ageing 7 days at 150°C ± 2° C Tensile Strength Ultimate Elongation	ISO 188 ISO 37 ISO 37	12 MPa min 350 % min
Low Temp. Flexibility 4 h at -50° C ± 2° C	ASTM D2671 Procedure C	no cracking
Electric Strength	IEC 60243 Part 1/2	120 kV/cm
Volume Resistivity	IEC 60093	1 x 10 <sup>12</sup> Ωcm min
Dielectric Constant	IEC 60250	5.0 max
Water Absorption	ISO/R 62 Procedure A	* 0.2 % max
Weathering	The material contains carbon black for protection against UV radiation	

\* after 14 days at 23° C ± 2° C

Tubing Size	Application Range (diameter)	Diameter of Tube		Wall Thickness	
		min. delivered	max. shrunked	A	B
WCSM 9/3	3.5 - 8.0	9.0	3.0	0.6	2.0
WCSM 13/4	4.5 - 11.5	13.0	4.0	0.6	2.4
WCSM 20/6	6.5 - 18.0	20.0	6.0	0.7	2.5
WCSM 33/8	9.0 - 29.5	33.0	8.0	0.7	3.2
WCSM 43/12	13.0 - 38.5	43.0	12.0	0.8	4.3
WCSM 51/16	17.5 - 46.0	51.0	16.0	1.0	4.5
WCSM 70/21	23.0 - 63.0	70.0	21.0	1.0	4.4
WCSM 85/25	27.5 - 76.5	85.0	25.0	1.0	4.3
WCSM 90/30*	33.0 - 81.0	90.0	30.0	1.0	4.3
WCSM 130/36	40.0 - 117.0	130.0	36.0	1.0	4.3
WCSM 160/50	55.0 - 145.0	160.0	50.0	1.0	4.3
WCSM 180/50	55.0 - 162.0	180.0	50.0	1.0	4.3

\* Size 90/30 is only available without adhesive

**Notes :**

1. Dimensions in millimeters
2. Longitudinal change +0% to -15%
3. Dimensions in table: A = as supplied, B = after free recovery

**Lengths**

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

Also available on spools and in other lengths.

All lengths subject to standard cutting tolerances.

**Adhesive**

WCSM tubing is available with or without an inner adhesive wall. The adhesive has 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.

**Ordering example**

**WCSM 9/3-1500/S**

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

Size \_\_\_\_\_

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

/S = adhesive \_\_\_\_\_

/U = without adhesive \_\_\_\_\_