

CABLE CONNECTIONS

Heat-Shrinkable Insulating Tubing

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WCSM

Heat-shrinkable heavy-wall insulating tubing

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

WCSM material is halogen free. On heating, WCSM tubing 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 adhesive wall gives a dependable moisture seal over the most irregular shapes.

WCSM tubing'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.



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 ³
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 ¹² Ωcm min
Dielectric Constant	IEC 60250	5.0 max
Water Absorption	ISO/R62 Procedure A	* 0.2 % max
Weathering	The material contains carbon black to protect it from ultra-violet light.	

* after 14 days at 23°C ± 2°C

Tubing Size	Application Range (diameter)	Diameter of Tube		Wall Thickness	
		min. delivered	max. shrunk	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 available without adhesive only

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 the standard lengths: 1000 mm and 1500 mm.

On request: other lengths and on spools.

All lengths subject to standard cutting tolerances.

Adhesive

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

Ordering Example

WCSM 9/3-1500/S

Product Type _____
Size _____
Standard Length _____
/S = adhesive _____
/U = without adhesive _____

CABLE CONNECTIONS

Heat-Shrinkable Cable Caps

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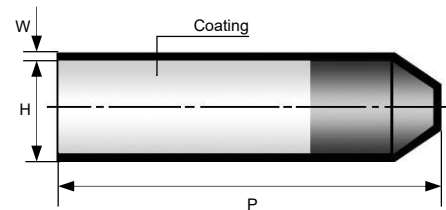
Heat-shrinkable cable caps

Wherever power cables are transported or installed, electrical engineers must deal with the risk of moisture and contamination. The methods they use to reduce these risks are often as long-established as cable technology itself.

But even the most tried and tested engineering practices can be suddenly rendered obsolete by new technological advances. Cable caps, a technique based on heat shrinkable materials which has brought unprecedented simplicity and reliability to the problem of protecting and sealing cable ends.

Cable caps shrink when heated to tightly fit a range of cable sizes and constructions. At the same time a special adhesive also melts and flows under the shrinking action, gripping the cable and ensuring a high-integrity moisture seal.

Cable caps, however, are far more than an exceptionally effective sealing system. The materials ensure that these cross-linked polymer products also provide high-quality electrical insulation while at the same time resisting abrasion, weathering, and chemical attack.



Ordering Information

Cap Type	Diameter H		Length P	Thickness W
	min. delivered	max. shrinked		
102L011/S	10	4.0	38	2.0
102L022/S	20	7.5	55	2.8
102L027/S	29	13.0	93	2.5
102L033/S	35	15.0	90	3.2
102L044/S	55	25.0	143	3.9
102L048/S	75	32.0	150	3.3
102L050/S	93	38.0	142	4.4
102L055/S	100	45.0	162	3.8
102L066/S	120	70.0	145	3.8

Notes: Dimensions in millimeters

Material

Cable Caps are made from materials specially formulated for sealing applications for all commonly used cables and cable sheath materials.

Coating

The adhesive can be used on plastic, rubber and paper insulated cables.