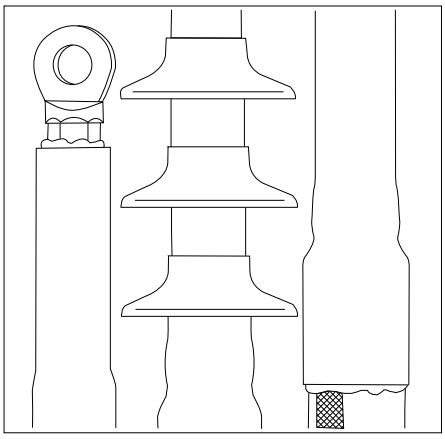
E L E C T R I C A L
P R O D U C T S · D I V I S I O N



Installation Instruction ESD 1363 9/94

Terminations for Screened Single Core Plastic and Rubber Insulated Cables 7.2 kV to 36 kV without Armour

Raychem

Installation Note

As Raychem has no control over the field conditions which influence product installation, it is understood that the user must take this into account and apply his own experience and expertise when installing the product.

Before Starting

Check to ensure that the kit you are going to use fits the cable.

Refer to the kit label and the title of the installation instruction.

It is possible that components or work steps have been improved since you last installed this product.

Carefully read and follow the steps in the installation instruction.

General Instructions

Use a propane (preferred) or butane gas torch.

Adjust the torch to obtain a soft blue flame with a yellow tip. Pencil-like blue flames should be avoided.

Keep the torch aimed in the shrink direction to preheat the material.

Keep the flame moving continuously to avoid scorching the material.

Clean and degrease all parts that will come into contact with adhesive.

If a solvent is used follow the manufacturer's handling instructions.

Tubing should be cut smoothly with a sharp knife leaving no jagged edges.

Start shrinking the tubing at the position recommended in the instruction.

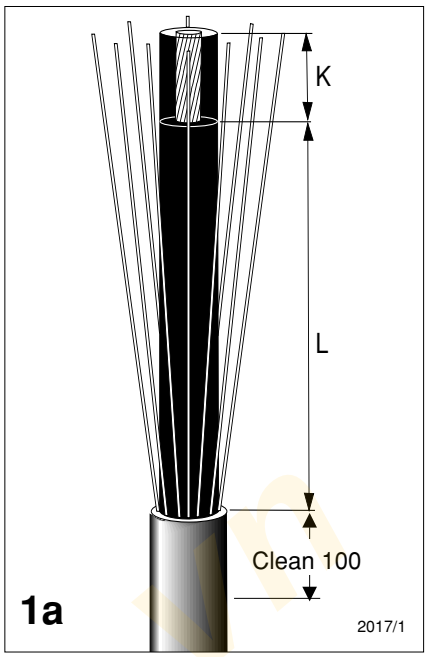
Ensure that the tubing is shrunk smoothly all round before continuing along the cable.

Tubing should be smooth and wrinkle free with inner components clearly defined.

Cable Preparation
A Cable with wire shield

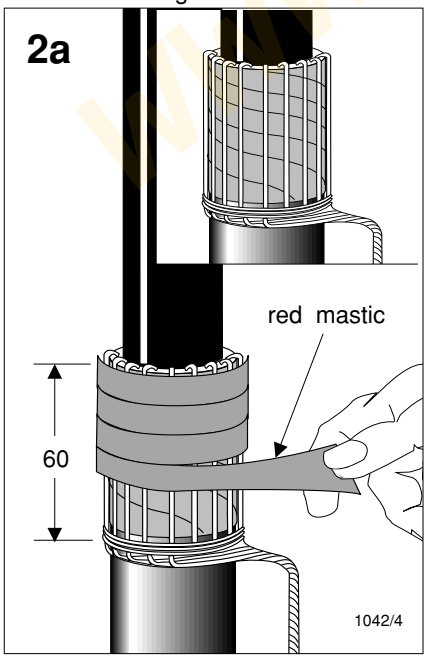
Table 1

Max. system voltage for cable [kV]	L indoor [mm]	L outdoor [mm]	K
7,2	150	200	according
12/17.5	230	300	to depth of connector
24	270	350	barrel hole + 5 mm
36	370	500	

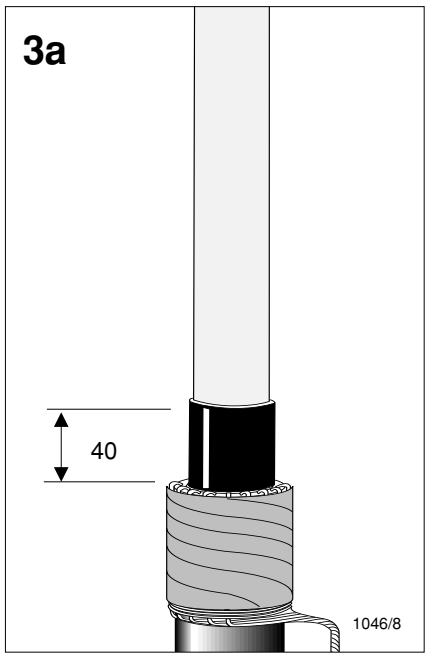


Cut the cable to the required length. Remove the oversheath to the dimension L + K in table 1. Clean and degrease the end of the oversheath for about 100 mm.

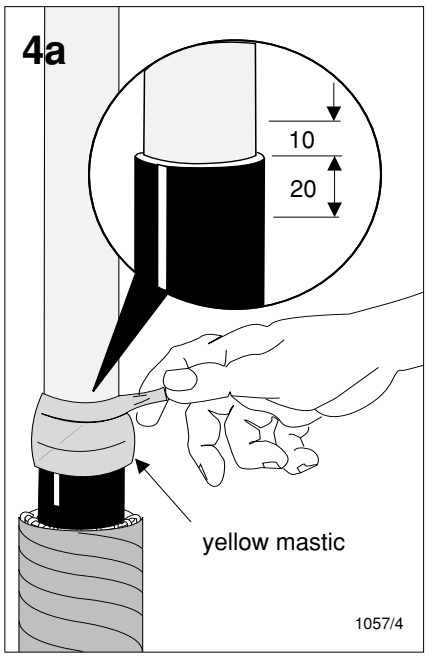
Wrap one layer of mastic (red) over the shielding wires for 60 mm as shown in the drawing.
Bend the shielding wires back onto the oversheath. Avoid crossing the individual wires. Fix the wires with a wire binder 60 mm from the end of the oversheath. Gather the shielding wires together to form an earth lead.
Wrap a second layer of sealant tape over the shielding wires for 60 mm.



Thoroughly remove the core screen to within 40 mm of the oversheath cut. The surface of the insulation should be free from all traces of conductive material.
Smooth out any irregularities.
Note: Do not nick the insulation.



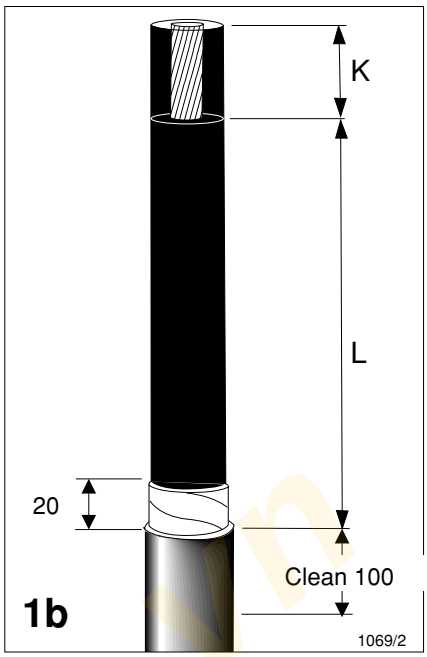
Wrap the mastic strip (yellow) around the end of the core screen. Cover 20 mm of the core screen and continue along the insulation for 10 mm. Stretch the strip to half of its original width to achieve a fine, thin edge onto the insulation.



B Cable with metal tape shield

Table 2

Max. system voltage for cable [kV]	L indoor [mm]	L outdoor [mm]	K
7,2	150	200	according
12/17.5	230	300	to depth of connector
24	270	350	barrel hole + 5 mm
36	370	500	

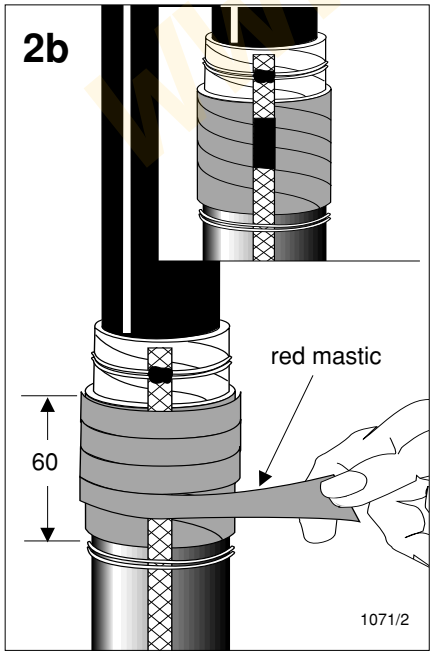


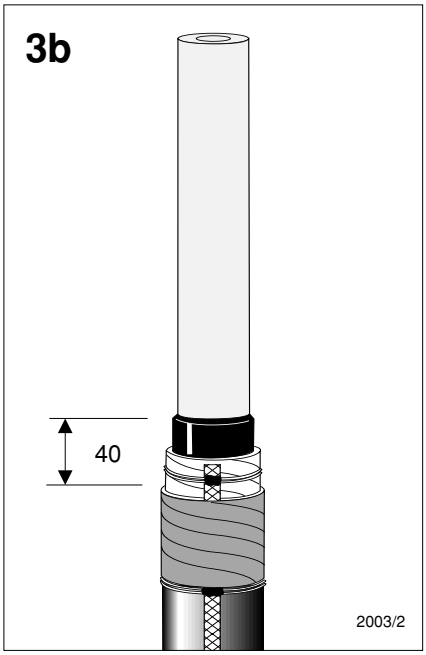
Cut the cable to the required length. Remove the oversheath to the dimension L + K in table 2. Remove the metal tape shield to within 20 mm of the oversheath cut. Clean and degrease the end of the oversheath for about 100 mm.

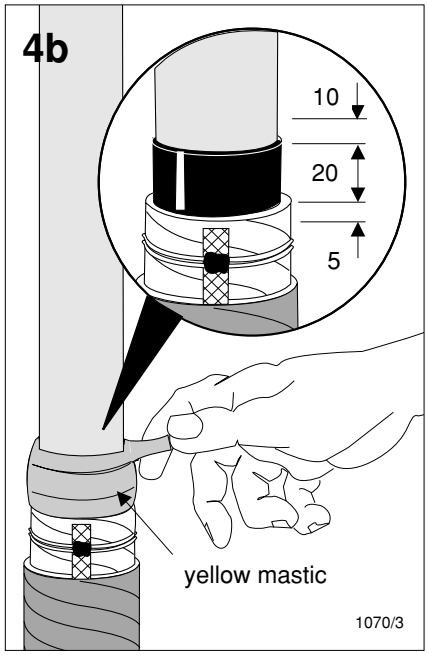
Thoroughly remove the core screen to within 40 mm of the oversheath cut. The surface of the insulation should be free from all traces of conductive material.
Smooth out any irregularities.
Note: Do not nick the insulation.

Wrap the mastic strip (yellow) around the end of the tape shield. Cover 5 mm of the tape shield and continue along the insulation for 10 mm. Stretch the strip to half of its original width to achieve a fine, thin edge onto the insulation.

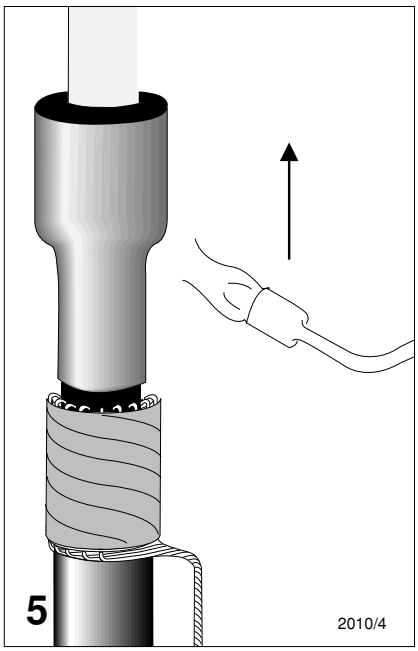
Wrap one layer of mastic (red) over the earth lead and oversheath for 60 mm as shown in the drawing. Bind and solder an earth lead to the metal tape shield (or attach the earth lead by any other equivalent method). Fill the braid with solder to form a 30 mm moisture block. Fix the earth braid with a second wire binder 60 mm from the end of the oversheath.



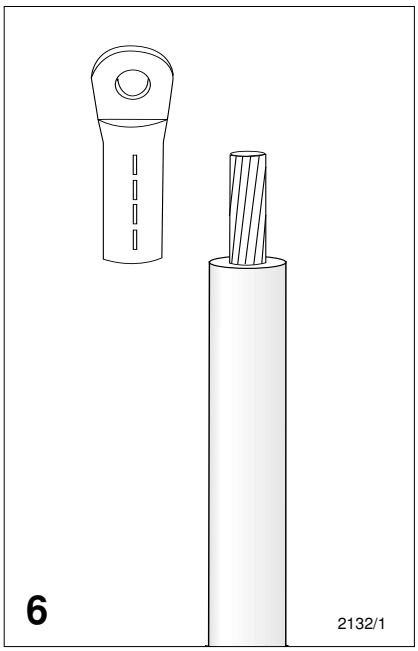




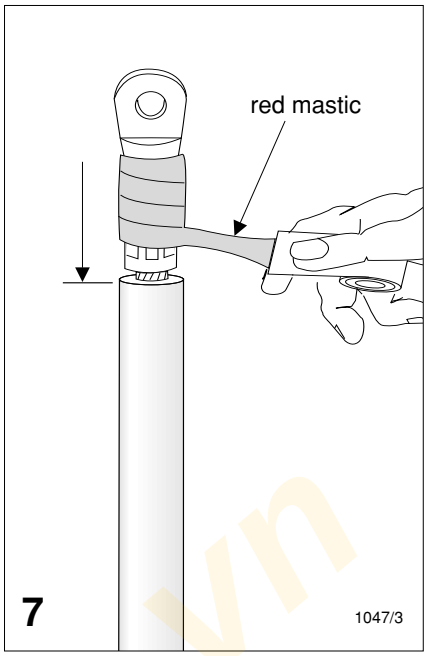
Completion of Termination



Place the stress control tubing (black) over the core and position it so that it is level with the oversheath cut.
Shrink down starting at the bottom and working towards the core end.



Cut back the insulation according to dimension **K = depth of cable lug barrel hole + 5 mm.**
Install the cable lug.
Clean and degrease the core insulation and the lug.

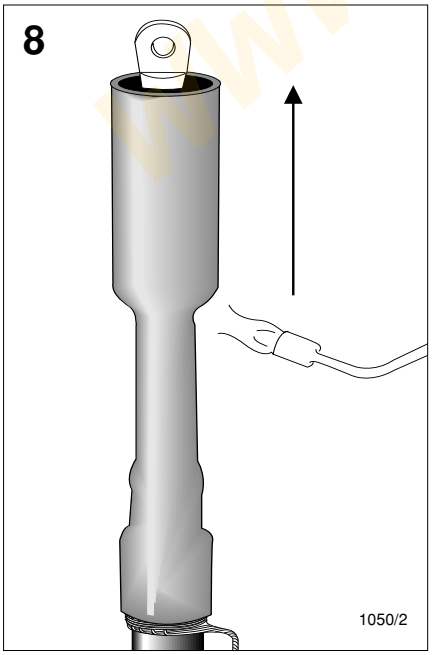


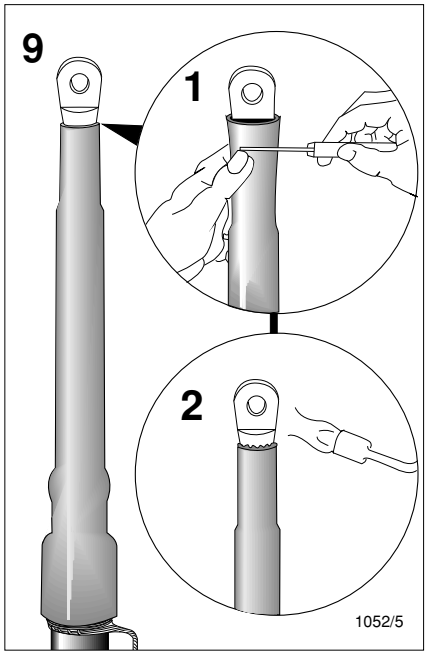
Wrap the red mastic around the barrel of the cable lug. Stretch the tape to half of its width and apply with half overlap.
Use the remaining sealant (red) to fill in the space between the core insulation and the cable lug to leave a smooth transition.

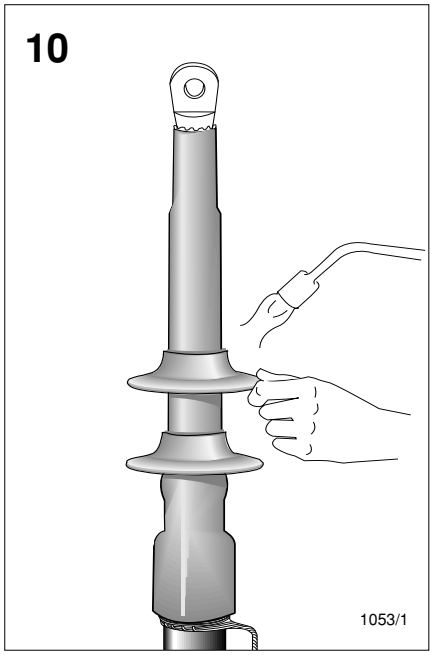
Slide the tubing (red) over the core, level with the wire binder.
Shrink down the tubing starting at the oversheath end working towards the cable lug.

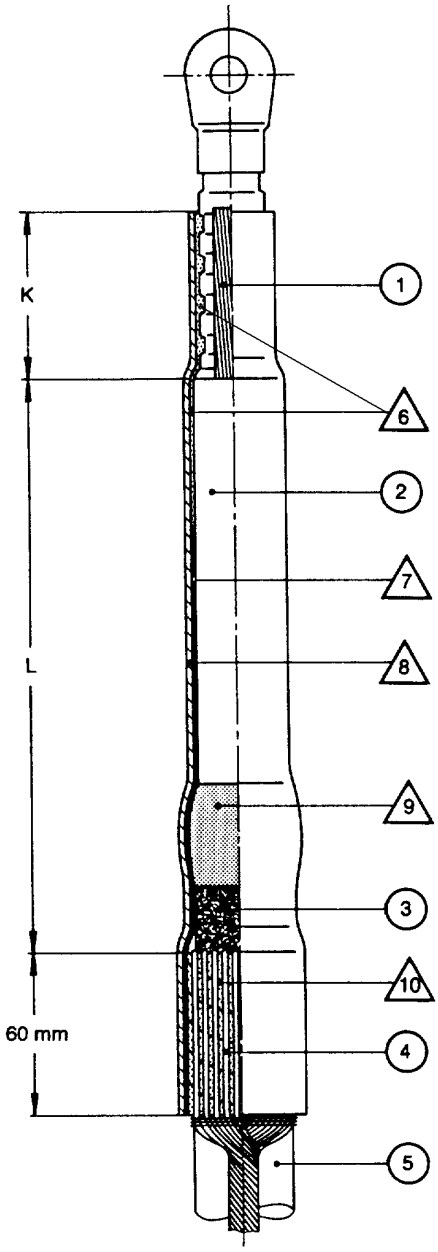
Cut the tubing back onto the cable lug barrel if necessary. Postheat the palm of the cable lug until a bead of mastic is seen around the top of the tubing.
Indoor termination up to 17.5 kV completed.
Allow the termination to cool before applying any mechanical strain.

For indoor terminations above 17.5 kV and all outdoor terminations shrink the skirts into place at the positions shown in the drawing on the next page.



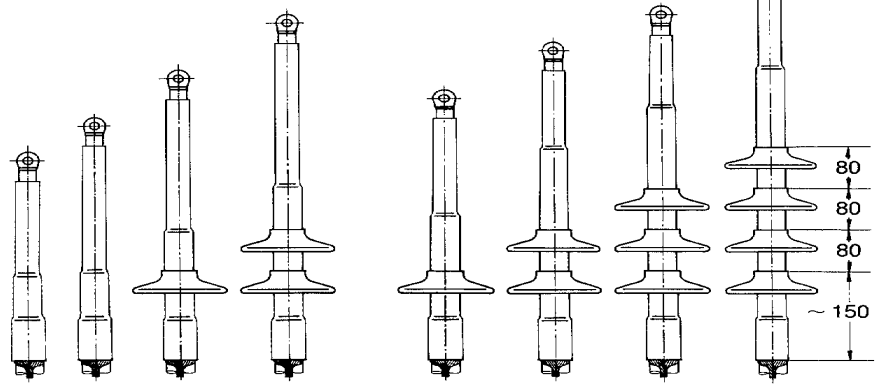




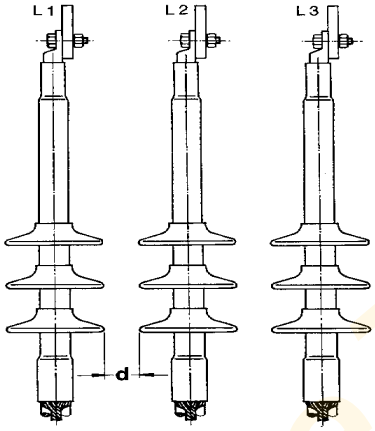


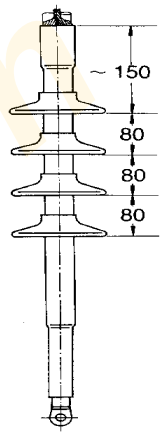
1 conductor
2 insulation
3 core screen
4 metal shield
5 oversheath
6 red mastic
7 stress control layer
8 non-tracking tubing
9 yellow mastic
10 red mastic

indoor **outdoor**

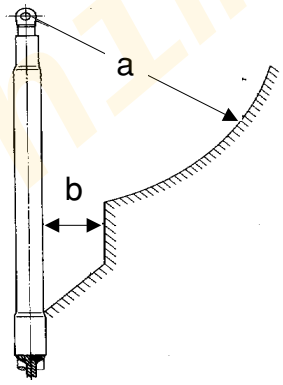


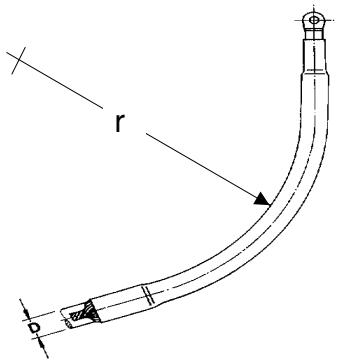
7.2 kV 12/17.5 kV 24 kV 36 kV 7.2 kV 12/17.5 kV 24 kV 36 kV





skirt position
for reversed
installation





Min. clearances		Max. system voltage (kV)				
		7,2	12	17,5	24	36
a	air clearance	as for local specifications				
b	ph/ground [mm]	10	15	20	25	35
d	between skirts [mm]	10	10	15	20	25
r	min. bending radius = 15xD, before bending heat cable up to approx. 70° C					

At Raychem we are committed to continuous quality improvement in every aspect of our business.
If you have comments on the installation instruction please contact your local Raychem office.

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