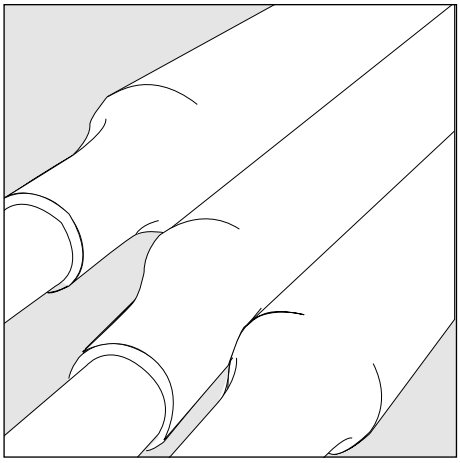
Raychem Cable Accessories



Installation Instruction ESD-7595-10/17

Raychem Joint for 4 or 5 Core Paper Insulated Cables

To view the TE Energy website:

Tyco Electronics Raychem GmbH
a TE Connectivity Ltd. Company
Finsinger Feld 1
85521 Ottobrunn/Munich, Germany
Tel: +49-89-6089-0
Fax: +49-89-6096-345
energy.te.com

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 instructions.
Components or working steps may have been modified since you last installed this product.
Carefully read and follow the steps in the installation instructions.

General Instructions

Use a propane (preferred) or butane gas torch.
Ensure the torch is always used in a well-ventilated environment.
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.
Start shrinking the tubing at the position recommended in the instruction.
Ensure that the tubing is shrunk smoothly all around before continuing along the cable.
Tubing should be smooth and wrinkle free with inner components clearly defined.

Cable Overlap

Overlap the cables to be jointed by about 150 mm.

Mark the reference-line (the middle of the overlap).

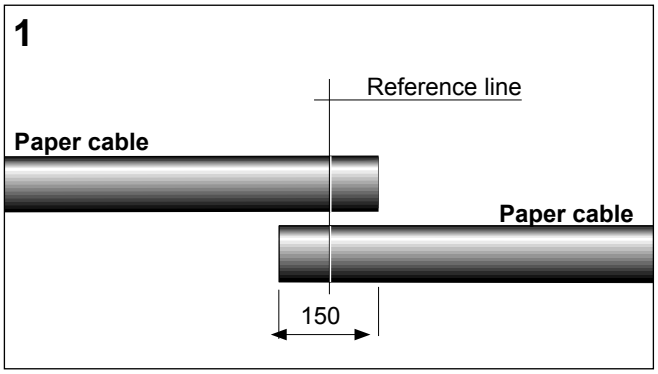


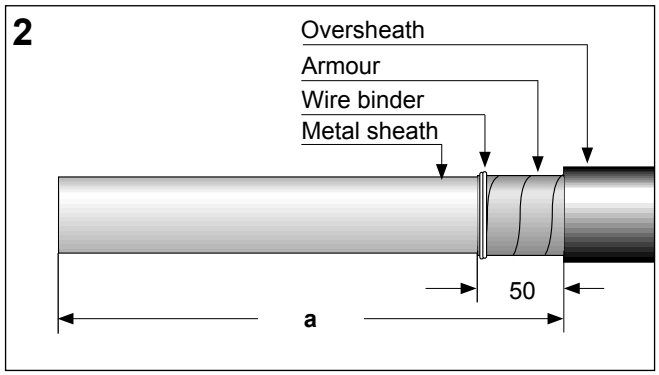
Table 1	Cross section	Cut back dimensions	
	mm²	a [mm]	b [mm]
LJTM – 4x10-50	10 - 50	350	150
LJTM – 5x35/16 - 120/16	35 - 120	450	150
LJTM – 5x150/16 - 300/16	150 - 300	500	150

Paper cable of both sides as below

Remove the oversheath, armour and bedding according to the dimensions given in table **1**.

Fix the outer sheath with wire binder as shown in the drawing.

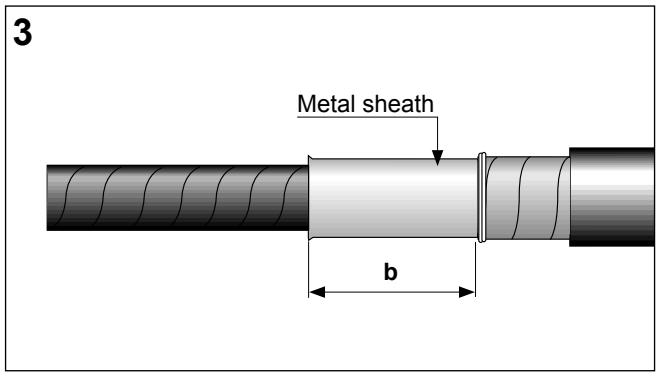
Clean and degrease the metal sheath and armour.



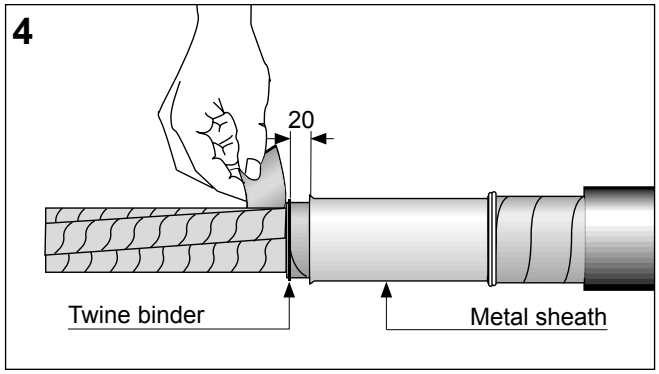
Clean, degrease and abrade the metal sheath and armour.

Remove the metal sheath according to the dimensions in table **1** in such a way that a slight bell is formed at the metal sheath cut (see drawing).

Pay attention not to cut into the papers underneath the metal sheath.



Tie a twine binder round the belt paper 20 mm from the end of the metal sheath. Tear off the belt papers and cut the fillers level with the twine binder. Take care not to damage the core insulation.



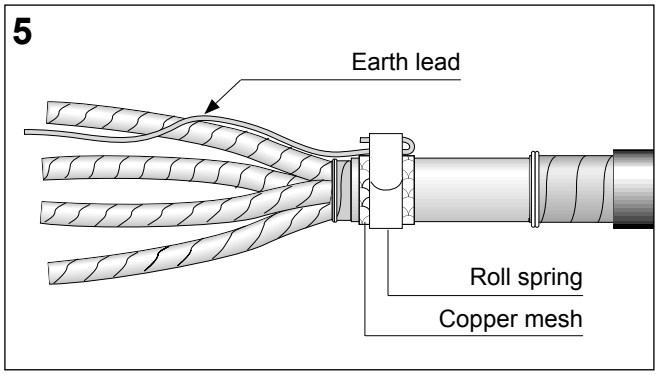
Wrap the copper mesh round the metal sheath.

Place the earth lead over the copper mesh wrap.

Wrap the roll spring twice over the earth lead in the direction of the copper mesh wrap.

Fold the end of the earth lead back over the roll spring. Wrap the rest of the roll spring over the earth lead.

Tighten the roll spring with a twisting action.

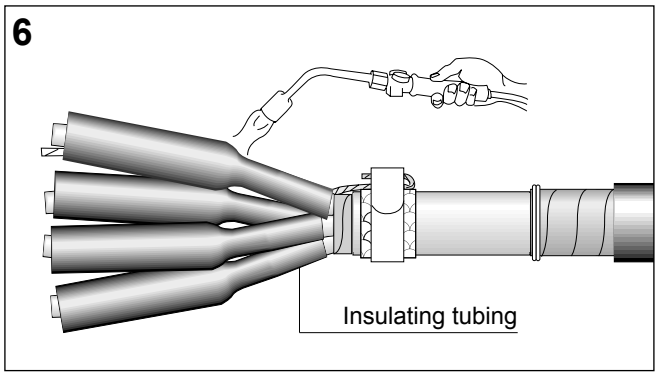


Slide all the insulating tubing (small diameter MWTM without adhesive) onto the cores butting them up to the belt papers. Put the earth lead under the neutral core insulation tubing.

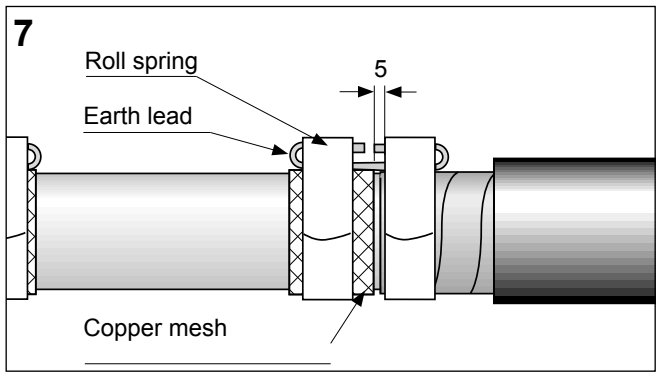
Shrink all tubing down starting at the belt papers.

Ensure that the tubing is shrunk down evenly.

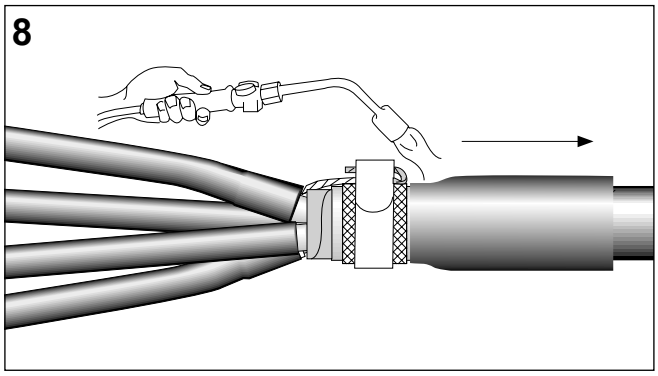
Cut off the exceeding end of the earth lead.
Keep the end of the earth lead!



Clean and abrade the armour.
Wrap the one small roll of copper mesh round the metal sheath about 5 mm from the armour.
Place the rest of the earth lead (see drawing **7**) over the copper mesh wrap and armour. Wrap two roll springs twice over the earth lead in the direction of the copper mesh wrap. Fold the end of the earth lead back over the roll spring. Wrap the rest of the roll springs over the earth lead.
Tighten the roll springs with a twisting action. Fix them with insulation tape.



Clean degrease and pre heat the metal sheath. Position the shim tubing (WCSM, 300 mm long) close to the first roll spring. See the drawing. Shrink it down start at the roll spring.

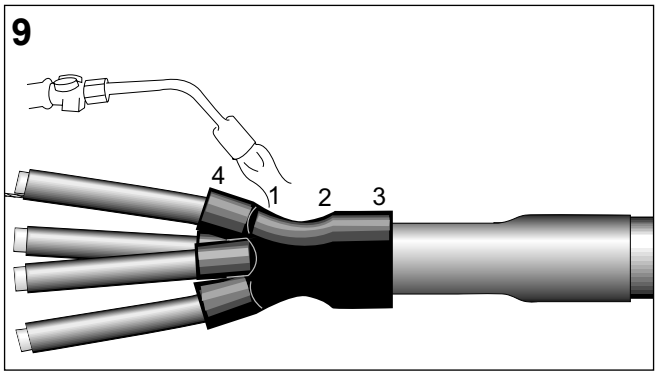


Pass the breakout over the cores and pull it well down into the crotch. Put the earth lead and neutral core into one finger.

Shrink the breakout into place starting at the crotch, working towards the metal sheath. Shrink the turrets onto the cores last.

The numbers in the drawing indicate the shrink sequence.

Note for 5 core cables: Insert the neutral core and the earth lead into the smallest finger.



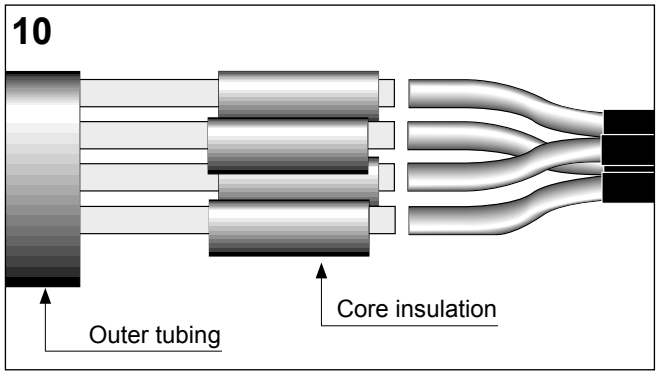
Completion of the joint

Clean the oversheath.

Cut the cores at the reference line.

Park the outer tubing on the cable oversheath.

Park the core insulation tubing (coated, WSCM) over the cores.



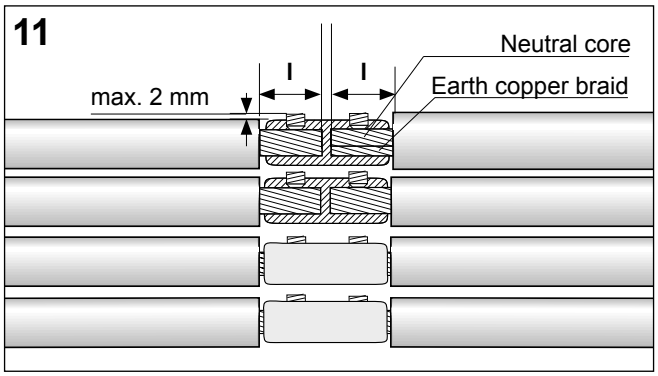
Cut back the insulation to dimension **l = hole depth of the connector.**

Use only connector provided in the kit.

Use connector only with oil barrier.

Connect the cores with mechanical connectors.

Note: When correctly installed the screws will not stand proud more than 2 mm.

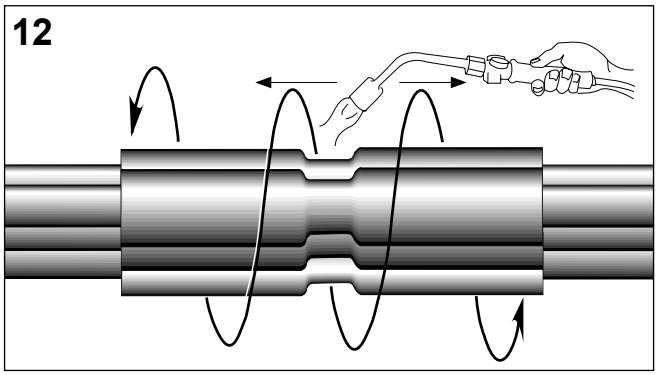


Clean and degrease the connectors and the insulating tubing.

Centre the inner sleeves over the connectors.

Shrink them into place starting in the centre and working towards the ends.

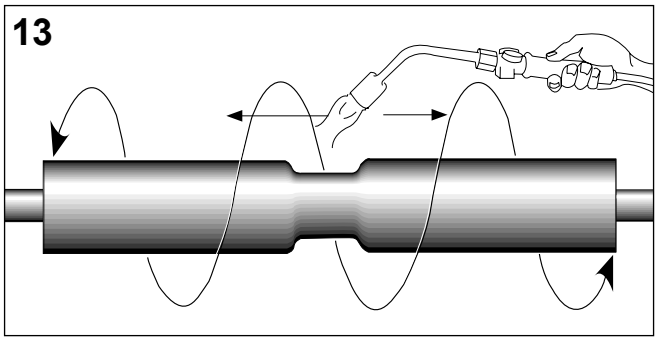
Allow the insulating sleeves to cool.



Clean, degrease and abrade 150 mm of the oversheath on the cable.

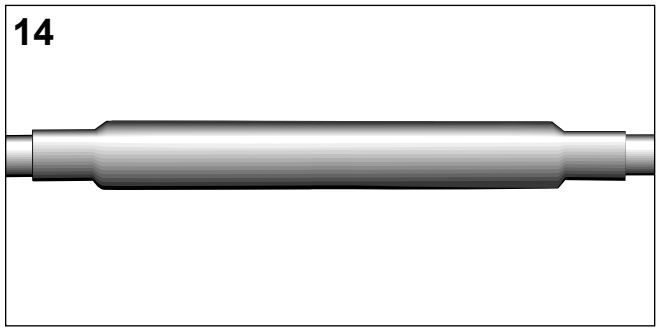
Position the outer sealing sleeve centrally over the joint as shown in the drawing.

Start shrinking at the centre, working towards the cable oversheaths.



Joint completed.

Allow the joint to cool before applying any mechanical strain.



Please dispose of all waste according to environmental regulations.