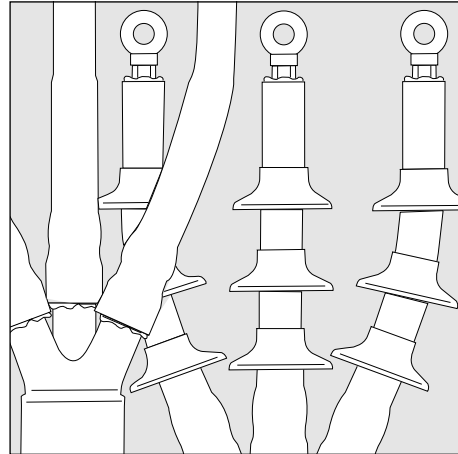




TE's Raychem Cable Accessories



Installation Instruction EPP-0797-5/16

**Termination for Screened
3-Core Polymeric
Insulated Cables
up to 24 kV
without Armour**

Type: IXSU-F / OXSU-F

To view the TE Energy website:



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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.

The Information contained in these installation instructions is for use only by installers trained to make electrical power installations and is intended to describe the correct method of installation for this product. However, TE Connectivity has no control over the field conditions which influence product installation.

It is the user's responsibility to determine the suitability of the installation method in the user's field conditions.

TE Connectivity's only obligations are those in TE Connectivity's standard Conditions of Sale for this product and in no case will TE Connectivity be liable for any other incidental, indirect or consequential damages arising from the use or misuse of the products.

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Cable Preparation

A. Cables with Wire Shield

Table 1 - Crimp Lug

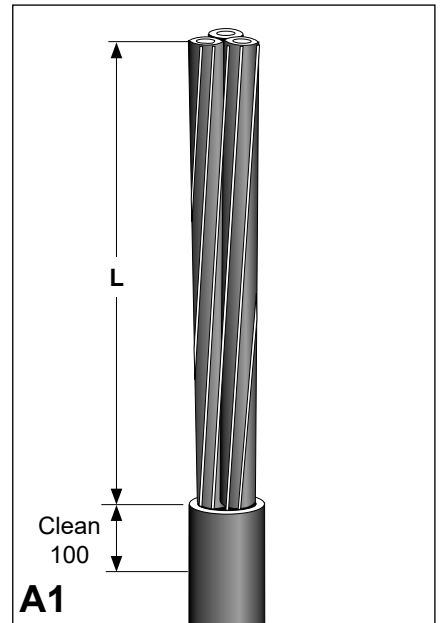
	Max. system voltage		
	12 kV [mm]	17.5 kV [mm]	24 kV [mm]
L* min indoor	320	320	360
a indoor	200	200	240
L* min outdoor	320	360	460
a outdoor	200	240	340

L* = min. core length required.

The actual length will be determined by the overall geometry of the equipment.

Table 2 - Mechanical Lug BLMT

BLMT (range mm ²)	25 to 95	35 to 150	95 to 240	120 to 300	185 to 400
	a [mm]	a [mm]	a [mm]	a [mm]	a [mm]
12 kV indoor	195	190	185	190	185
12 kV outdoor	195	190	185	190	185
17.5 kV indoor	195	190	185	190	185
17.5 kV outdoor	235	230	225	230	225
24 kV indoor	235	230	225	230	225
24 kV outdoor	335	330	325	330	325



Cut the cable and remove the oversheath to the required length, leaving enough length to set the cores into their final position.

Degrease and clean the end of the oversheath for about 100 mm.

Note: The minimum core length L is given in table 1 (for crimp lugs and for mechanical lugs).

Wrap one layer of sealant tape (red) with slight tension around the end of the oversheath for 80 mm.

Bend the shielding wires back onto the oversheath.

Avoid crossing individual wires.

Temporarily fix the shielding wires to the oversheath.

Remove any fillers up to the end of the oversheath. Bend and shape the cores into their final position.

Cut the cores to the required length. Thoroughly remove the core screen according to dimension a (see table 1) for crimp lugs. For mechanical lugs see table 2.

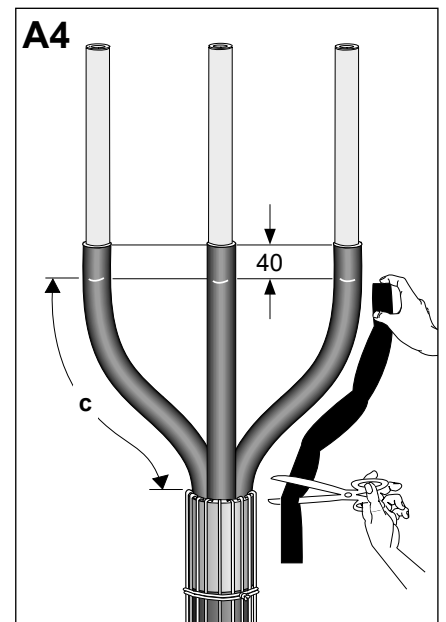
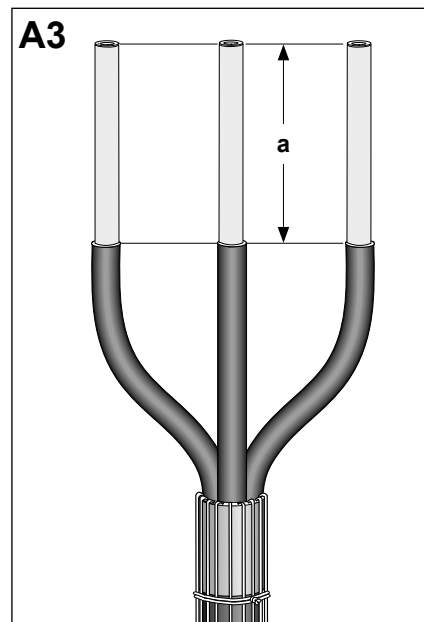
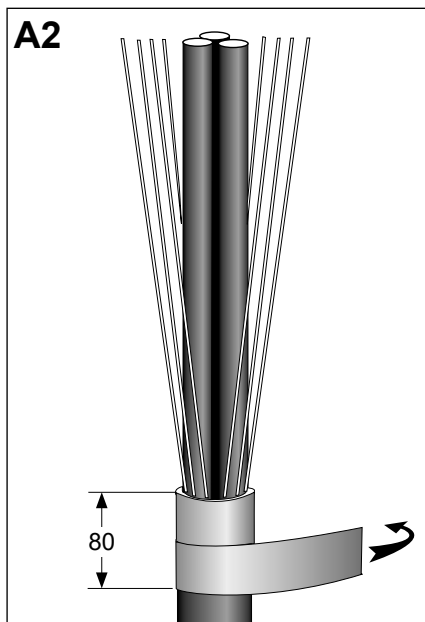
The surface of the insulation should be free from all traces of conductive material. Smooth out any irregularities.

Note: Do not nick the insulation.

Mark the core screen 40 mm below the screen cut.

Measure the distance c of each individual core and cut the conductive tubing accordingly.

Continue with step 5.



Cable Preparation

B. Cables with Metal Tape Shield

Table 3 - Crimp Lug Max. system voltage

	12 kV [mm]	17.5 kV [mm]	24 kV [mm]
L* min indoor	320	320	360
b indoor	240	240	280
L* min outdoor	320	360	460
b outdoor	240	280	380

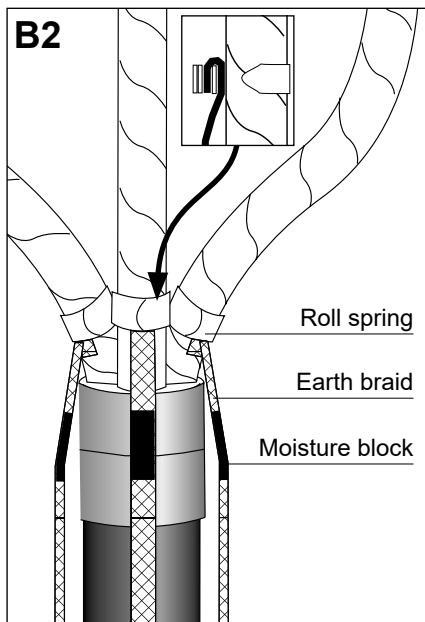
L* = min. core length required.

The actual length will be determined by the overall geometry of the equipment.

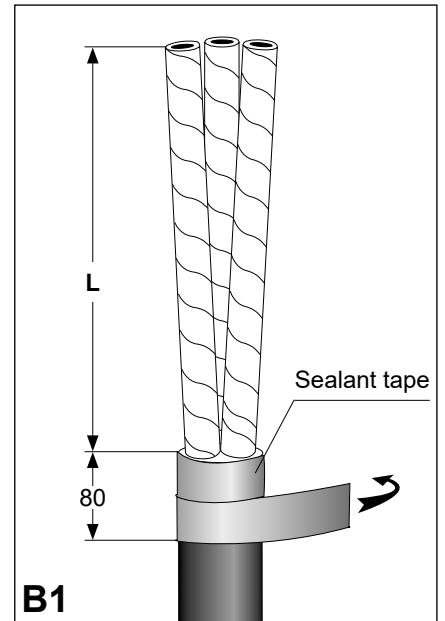
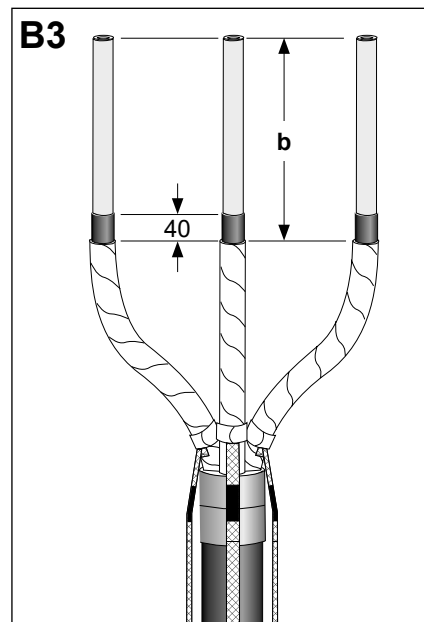
Table 4 - Mechanical Lug BLMT

BLMT (range mm ²)	25 to 95 b [mm]	35 to 150 b [mm]	95 to 240 b [mm]	120 to 300 b [mm]	185 to 400 b [mm]
12 kV indoor	235	230	225	230	225
12 kV outdoor	235	230	225	230	225
17.5 kV indoor	235	230	225	230	225
17.5 kV outdoor	275	270	265	270	265
24 kV indoor	275	270	265	270	265
24 kV outdoor	375	370	365	370	365

Position the end of the earth lead onto the metal tape shield of each core about 100 mm from the end of the oversheath. Starting at the opposite side of the core, wrap the roll spring twice over the earth lead in direction of the metal tape shield wrap. Fold the earth lead back over the roll spring. Wrap the remaining roll spring around the earth lead. Carefully slide the roll spring and earth lead down into the crutch until it is about 10 mm from the end of the oversheath. Tighten the roll spring with twisting action and fix it into place with two layers of PVC tape. Place the moisture block in the centre of the red sealant tape.



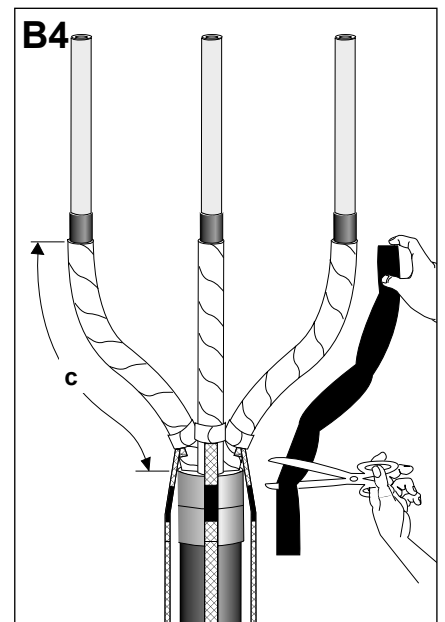
Bend and shape the cores into their final position. Cut the cores to the required length. Remove the metal tape shield according to dimension **b** (see table 3) for crimp lugs. For mechanical lugs see table 4. Fix the metal tape temporarily in place. Thoroughly remove the core screen to 40 mm above the metal tape shield 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.



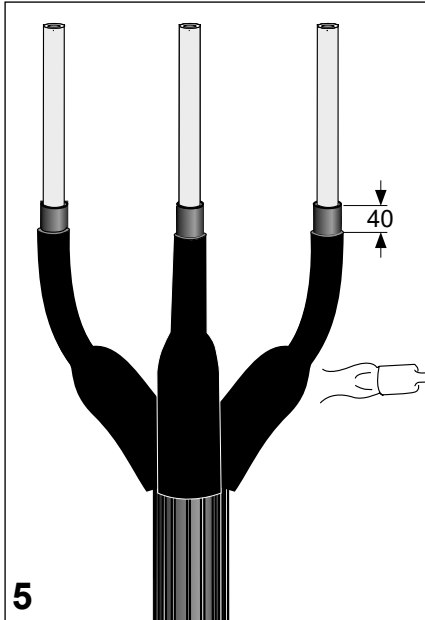
Cut the cable and remove the oversheath to the required length, leaving enough length to set the cores into the final position. Degrease and clean the end of the oversheath for about 100 mm. **Note:** The minimum core length **L** is given in table 3 (for crimp lugs and for mechanical lugs). Wrap one layer of sealant tape (red) round the oversheath end for 80 mm.

Measure the distance **c** of each individual core and cut the conductive tubing accordingly.

Continue with step 5.

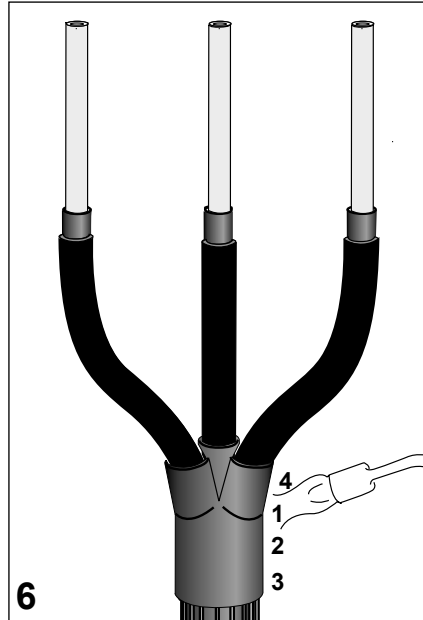
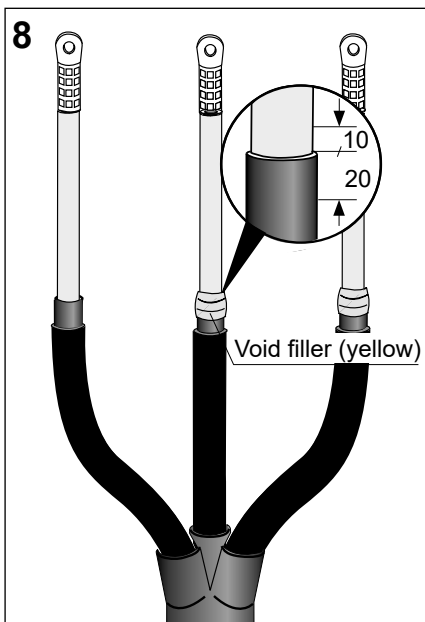


Completion of Termination



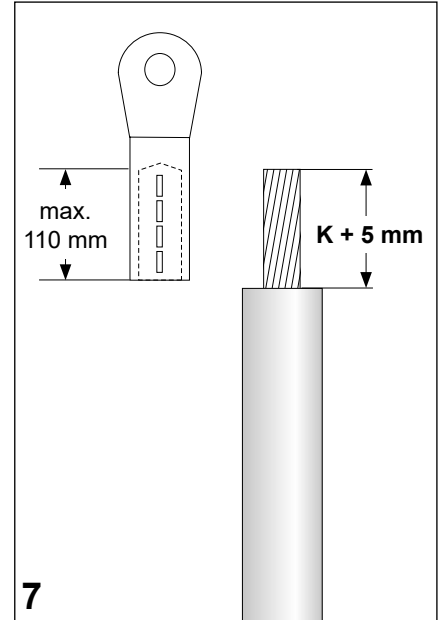
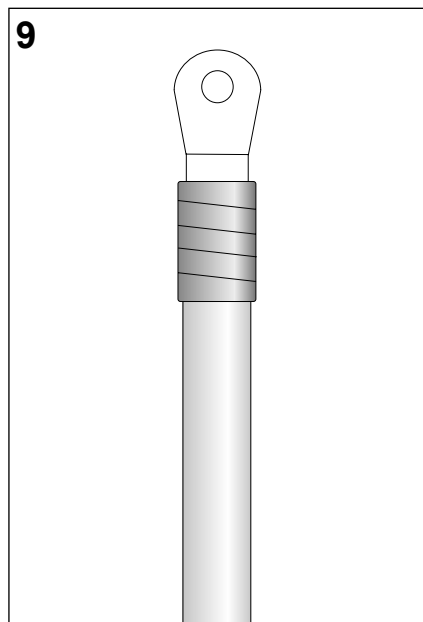
Position the conductive tubing over the cores 40 mm below the end of the core screen.
Shrink each tubing into place by starting on top and continue shrinking them down towards the cable overshooth.
Allow the tubing to cool before continuing.

Remove the release paper from the void filling strip (yellow).
Wrap the void filling strip (yellow) around the cable starting on the core screen 20 mm below the core screen cut (see detail).
Stretch the strip to half of its original width to achieve a fine, thin edge onto the insulation.
Cover 20 mm of the core screen and continue onto the insulation for 10 mm.
Move back down and end as far down on the 20 mm of core screen as possible.



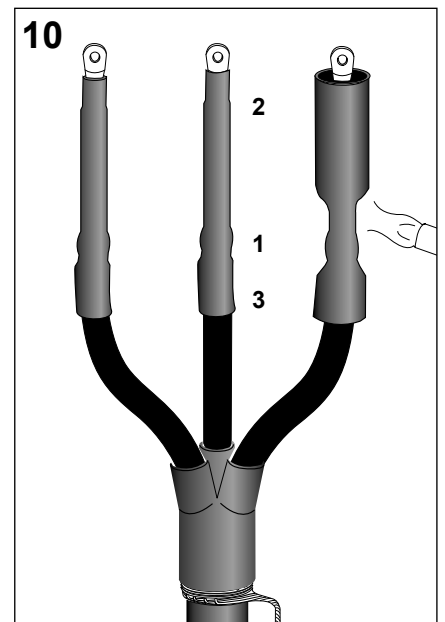
Pull the breakout down the crutch as far as possible. Shrink the breakout into place starting at the centre. Work first towards the lower end and then shrink the turrets onto the cores. The numbers in the drawing indicate the shrinking sequence.

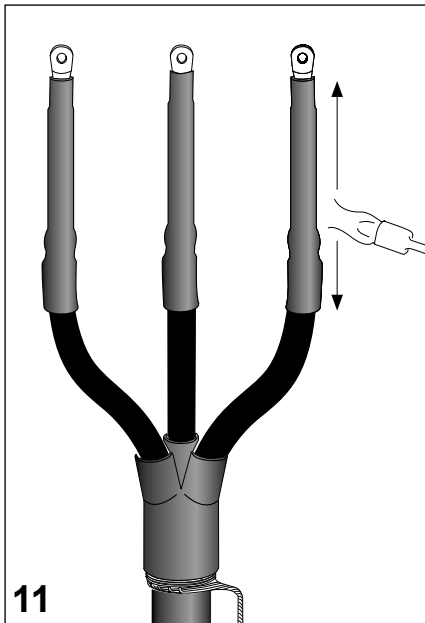
Shim the cable lug barrel:
Use additional red sealant tape to shim the cable lug barrel for the following voltage levels and cross sections (only for crimp lugs):
12 kV: 10 to 25 mm²
17,5 kV: 16 to 25 mm²
24 kV: 10 to 25 mm²



Cut back the insulation according to **K = depth of cable lug barrel hole + 5 mm** for crimp lug. BLMT = depth of the **cable lug + 0 mm**.
Install the cable lug. Remove any sharp edges. Degrease and clean the lug and the insulation.
Note: Do not use cable lugs with barrel holes deeper than 110 mm.

Preheat the cable lug slightly before placing the tubing over the core so that the top of the tubing covers the crimping area of the cable lug. Shrink the tubing down starting at the screen cut **using a soft yellow flame**. Heat the area well but avoid scorching of surface. Continue shrinking towards the cable lug. Finally shrink down the bottom end of the tubing. The numbers in the drawing indicate the shrinking sequence.



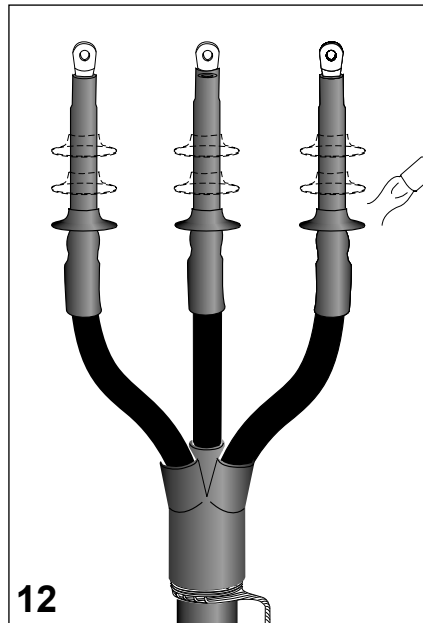


Indoor termination completed.

Note: After installation the termination must be post-heated as well as the palm of the cable lug until a bead of sealant (green) appears around the top of the tubing.

Allow the termination to cool before applying any mechanical strain.

Tie the shielding wires or the earth leads with a wire binder to the oversheath below the breakout. Gather the shielding wires together to form an earth lead.

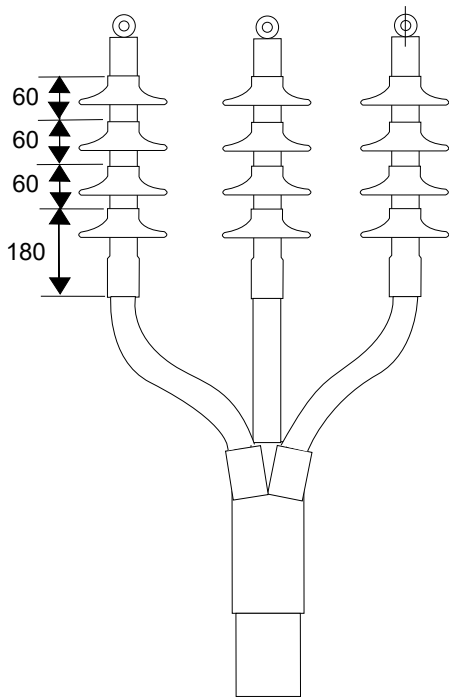


For outdoor terminations:

Shrink the skirts into place at the position shown in the drawings on the next page. Start with the first skirt on the lowest position.

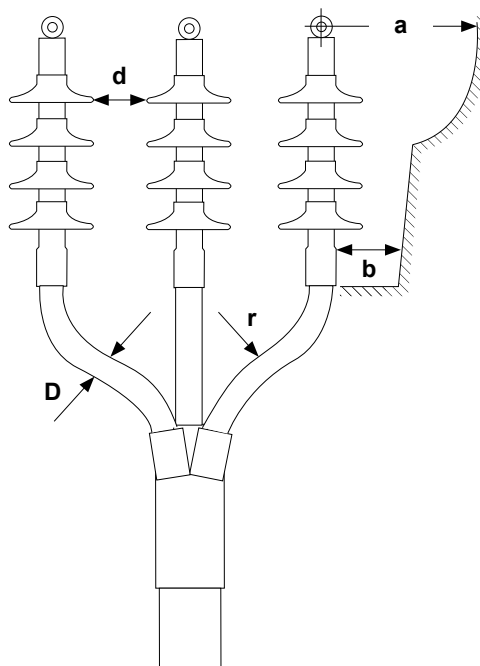
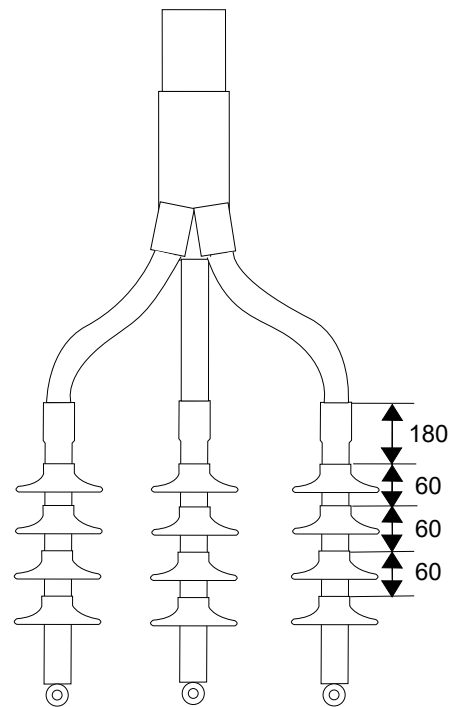
Please dispose of all waste according to environmental regulations.





Number of skirts per core		
kV	Indoor	Outdoor
12	0	1
17.5	0	1
24	0	3
36	0	4
42	0	4

Skirt position for reversed installation



Min. clearances		Max. system voltage in kV		
		12	17.5	24
a	Air clearance	as for local specifications		
b	ph/ph and ph/ground in mm	15	20	25
d	Between skirts in mm	10	15	20
r	(min. bending radius) = $15 \times D$			