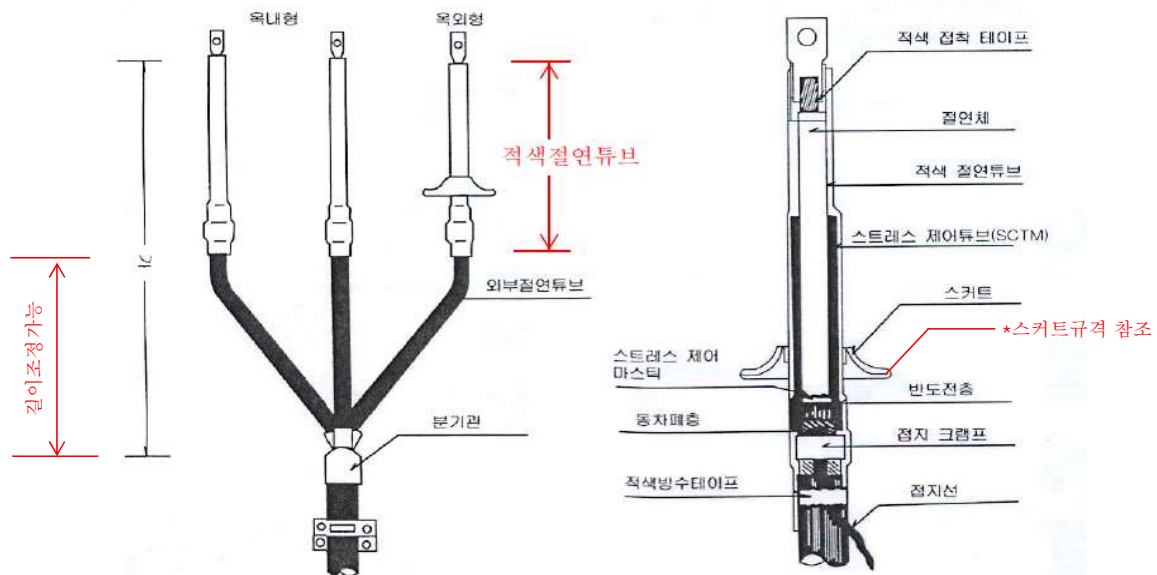


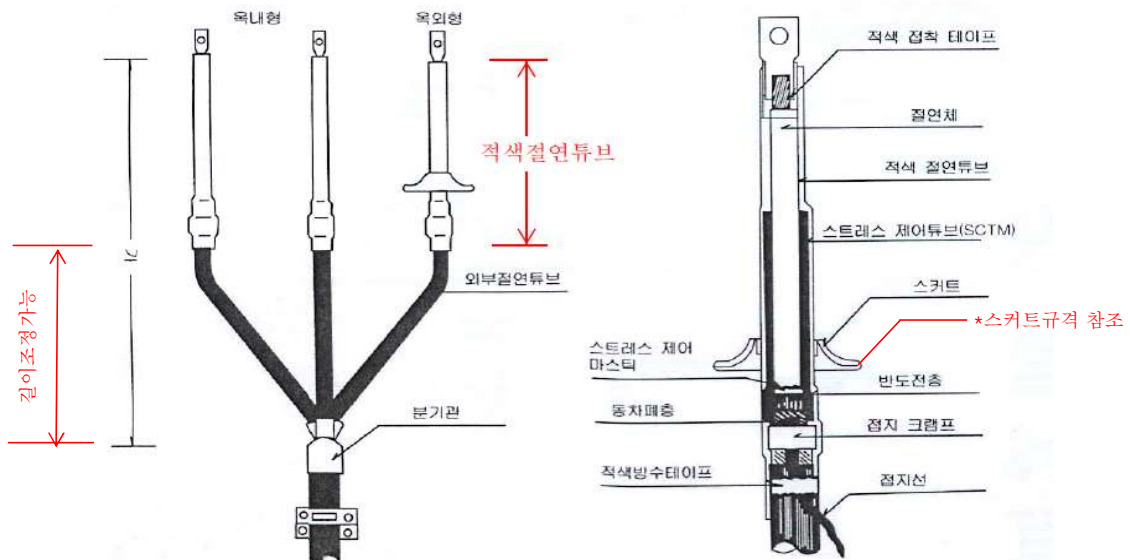
KHVT 고압 케이블 종단접속시공 6.6kV CU-CV (동차폐형)

MODEL	CABLE 적용규격	적색절연 튜브길이	외부절연튜브	분기관	"가"길이(3심)			SKIRT	
					옥내 최소	옥내 보통	옥외 보통	규격	SIZE(Ø)
KHVT-I-A-0	~38mmsq	250mm	MWTM 25/8-600	402W516	400	600	700	205W314	78mm
KHVT-I-A-1	50~100mmsq	270mm	MWTM 25/8-600	402W526	450	650	800	205W325	95mm
KHVT-I-A-2	120~250mmsq	290mm	MWTM 35/12-600	402W526					
KHVT-I-A-3	300~500mmsq	310mm	MWTM 50/16-600	402W248	550	700	900	205W336	115mm
KHVT-I-A-4	Over 630mmsq	360mm	MWTM 75/22-600	402W439				205W346	140mm



KHVT 고압 케이블 종단접속시공 17kV CU-CV (동차폐형)

MODEL	CABLE 적용규격	적색절연 튜브길이	SKIRT	
			규격	SIZE(Ø)
KHVT-151	~60mmsq	410mm	205W325	95mm
KHVT-152	100~150mmsq	415mm		
KHVT-153	200~500mmsq	420mm	205W336	115mm
KHVT-154	600~1200mmsq	420mm	205W346	140mm

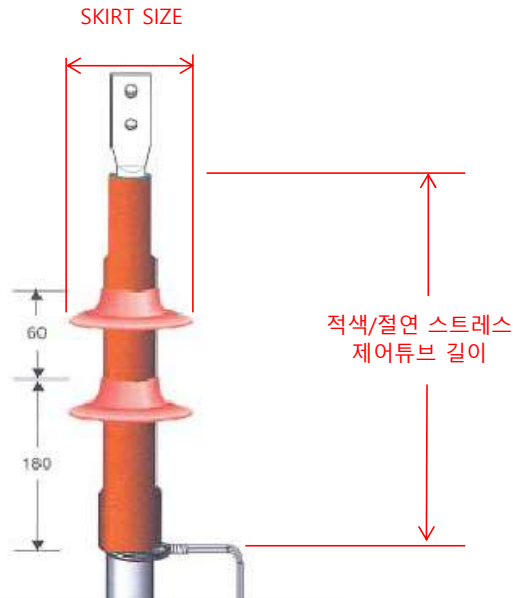




Raychem

KHVT 고압 케이블 종단접속시공 25kV CN-CV & CV 단심

MODEL	CABLE 적용규격	적색절연 튜브길이	SKIRT		STRESS 제어 튜브 길이
			규격	SIZE(Ø)	
KHVT-O-D-2	~100mmsq	520mm	205W325	95mm	200mm
KHVT-O-D-3	150~325mmsq	520mm	205W336	115mm	200mm
KHVT-O-D-4	400~600mmsq	520mm </td <td>205W346</td> <td>140mm</td> <td>200mm</td>	205W346	140mm	200mm

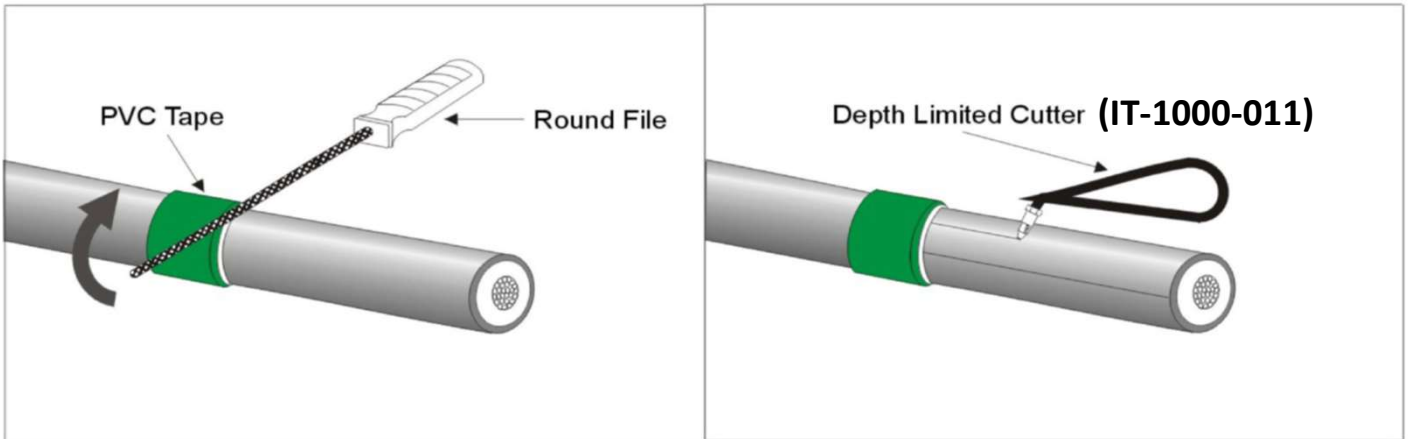


KANGNAMSANGGONG CO.,LTD.
강 남 상 공 (주)

울산광역시 북구 산성로 40, 1동203호, (효문동, 울산지식산업센터)
TEL: 052-276-2773 / FAX: 052-267-9313
e-mail : kn2773@korea.com, <http://www.raychem.co.kr>

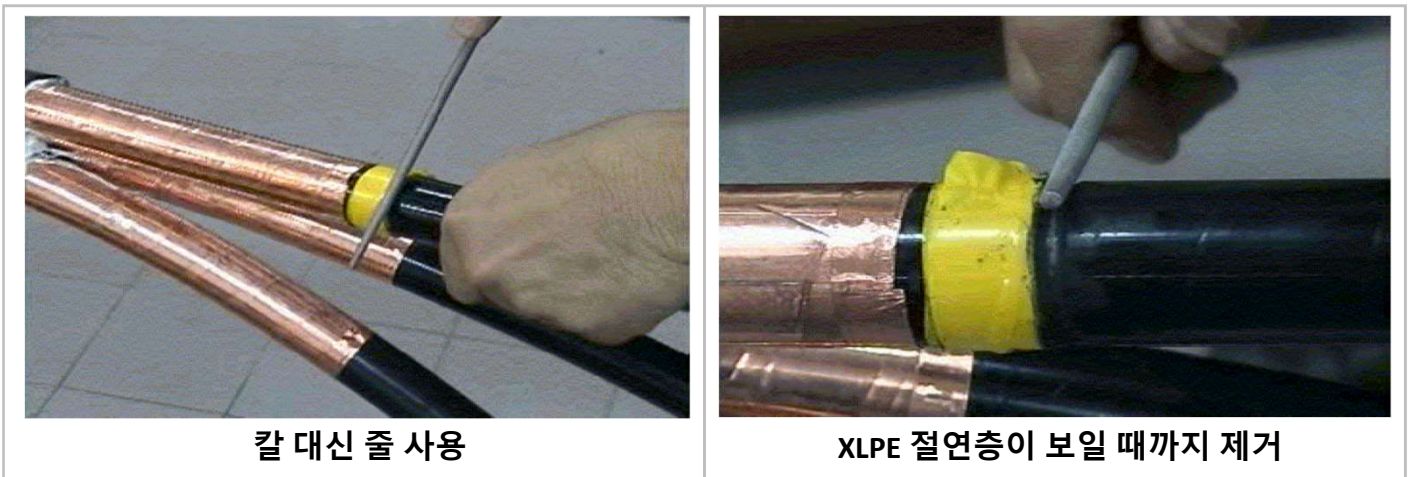
Raychem 단말 접속재 절연 차폐층 제거 방법

Round File(줄)이나 Depth Limited Cutter를 이용할 경우 절연 차폐층 손상 없이 쉽게 제거 가능



Cable 준비 작업

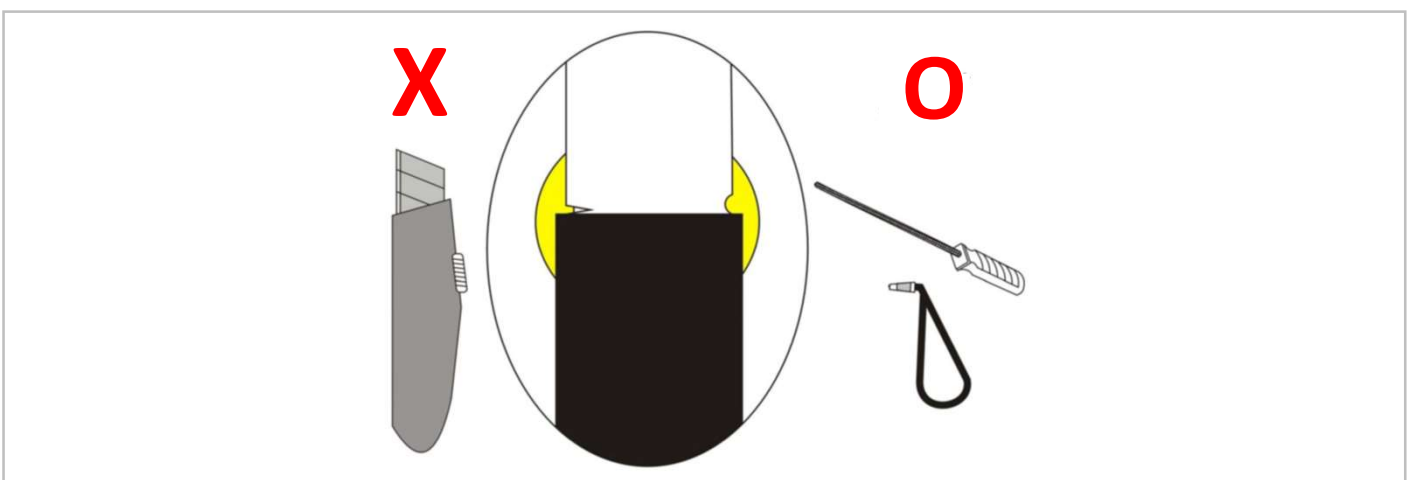
절연 차폐층 제거 시 사용 도구

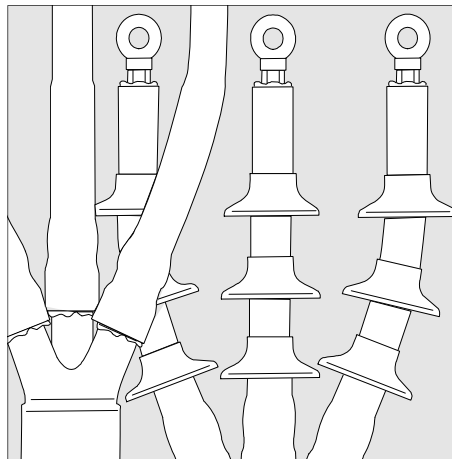


절연 차폐층 제거 시 손상 방지 법

칼을 사용하여 흠집 발생시 스트레스 제어 마스틱으로 커버 불가능 (X)

Round File(줄)이나 Depth Limited Cutter 사용 시 발생된 흠집은 커버 가능 (O)





**Installation Instruction
EPP-0277-12/02**

**Terminations for
Screened 3-Core
Polymeric Insulated
Cables
7.2 kV to 36 kV**

Tyco Electronics Raychem GmbH
Energy Division
Finsinger Feld 1
85521 Ottobrunn/Germany
0049-89-6089-0 tel
0049-89-6089-345 fax
<http://energy.tycoelectronics.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 instruction.

Components or working steps may 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.

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.

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

Cable Preparation

a. Cable with wire shield

Table 1

Max. system voltage (kV)	* L indoor straight connection [mm]	* L indoor crossed connection [mm]	* L outdoor [mm]	a [mm]	K
7,2	250	450	450	150	according to
12	300	450	650	150	depth of
17,5	350	500	650	150	cable lug
24	450	550	800	200	barrel hole
36	600	800	800	250	+ 5 mm

*L = min. length required.

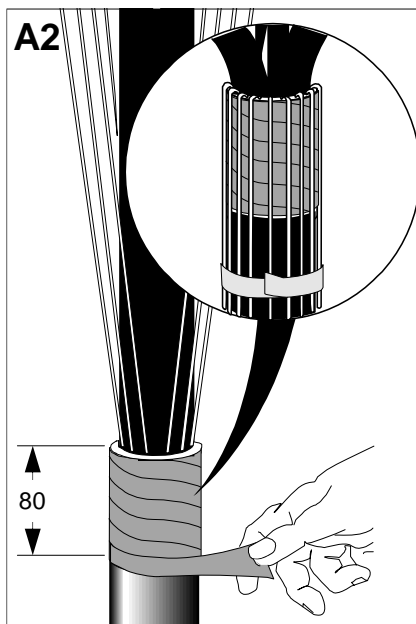
The actual length will be determined by the overall geometry of the equipment.

Remove the release paper and wrap one layer of sealant tape (red) with a small overlap and 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 well below the red sealant tape to the oversheath.

For **cables with tape armour** also connect the earth lead to the armour.

For **cables with wire armour** follow the instruction as supplied in separate armour earthing kit.



Bend and shape the cores into their final position.

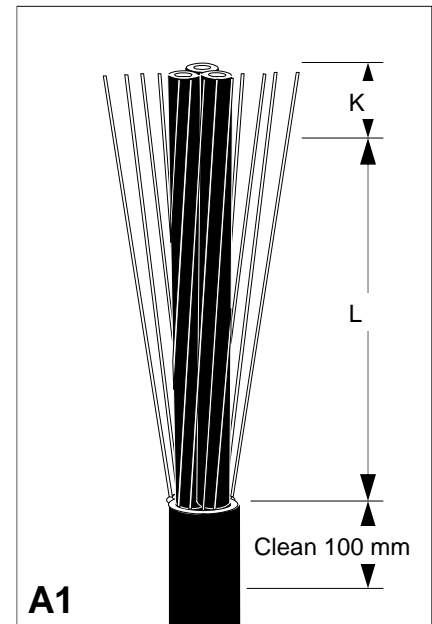
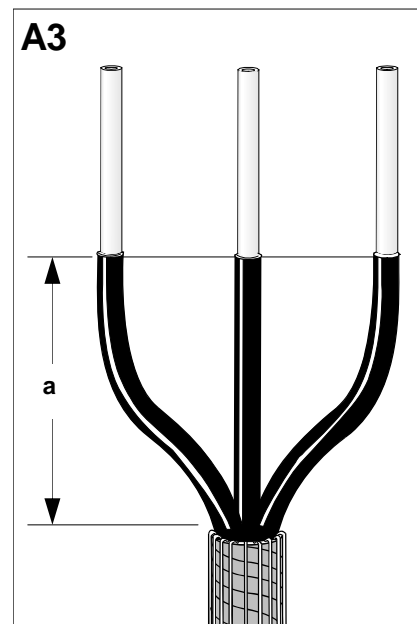
Cut the cores to the required length.

Thoroughly remove the core screen according to dim. a (see Table 1).

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 to the required length and remove the oversheath.

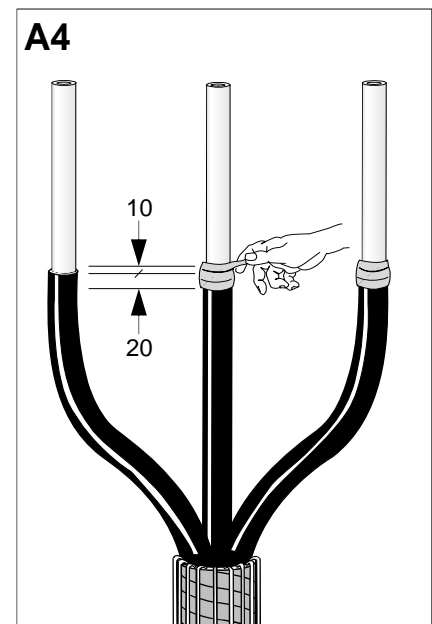
Leave enough length to set the cores into their final position.

Clean and degrease the end of the oversheath for about 100 mm.

Note: The minimum termination length (L) is given in Table 1.

Remove the release paper and wrap the void filling strip (yellow) around the end of the core screen.

Cover 20 mm of the core screen and continue onto the insulation for 10 mm. Stretch the strip to half of its original width to achieve a fine, thin edge onto the insulation.



Cable Preparation

b. Cable with metal tape shield

Table 2

Max. system voltage (kV)	* L indoor straight connection [mm]	* L indoor crossed connection [mm]	* L outdoor [mm]	b [mm]	K
7,2	250	450	450	130	according to
12	300	450	650	130	depth of
17,5	350	500	650	130	cable lug
24	450	550	800	180	barrel hole
36	600	800	800	210	+ 5 mm

*L = min. length required.

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

Separate the cores. Wrap an earth lead round each core and soldertack it to the metal tape shield (or attach the earth lead by any other equivalent method). Fill the earth lead with solder to form a 30 mm moisture block 30 mm from the overshooth end.

Remove the release paper and wrap one layer of sealant tape (red) round the overshooth end for 80 mm underneath the earth lead.

For **cables with tape armour** also connect the earth lead to the armour.

For **cables with wire armour** follow the instruction as supplied in separate armour earthing kit.

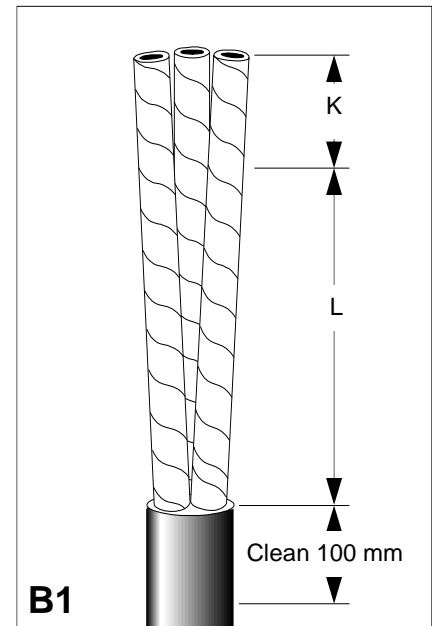
Bend and shape the cores into their final position.

Cut the cores to the required length. Place a temporary wire binder around the cores at the position shown in the drawing. Tear off the tape shield against the wire binder.

Remove the metal tape shield according to dimension **b** (see table 2). Thoroughly remove the core screen to 20 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.



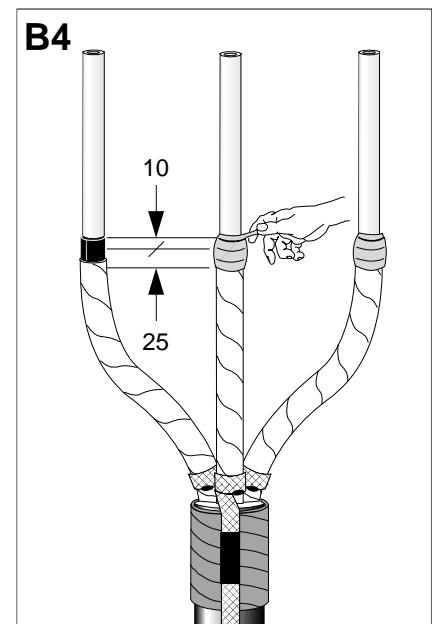
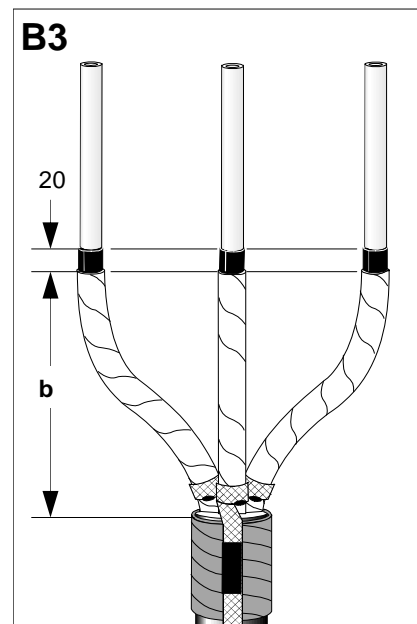
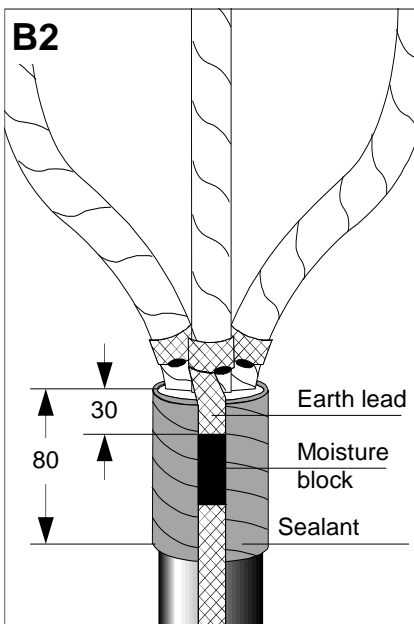
Cut the cable to the required length and remove the overshooth. Leave enough length to set the cores into the final position. Clean and degrease the end of the overshooth for about 100 mm.

Note: The minimum termination length (L) is given in Table 2.

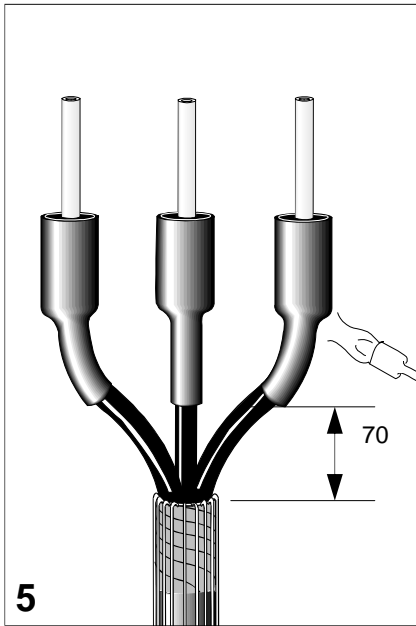
Remove the wire binder from the end of the metal tape shield.

Remove the release paper and wrap the void filling strip (yellow) for 5 mm onto the metal tape shield, continuing over the core screen and 10 mm onto the insulation.

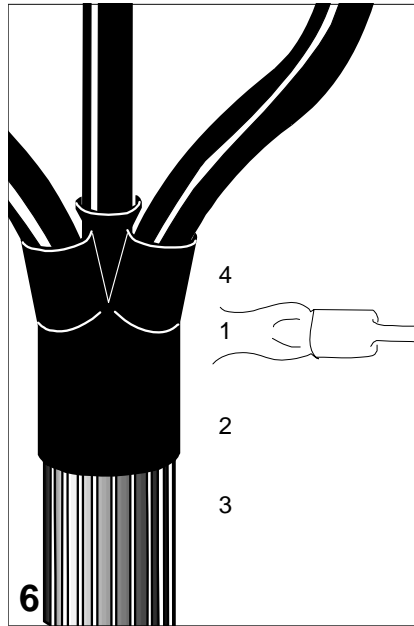
Stretch the strip to half of its original width to achieve a fine, thin edge onto the insulation.



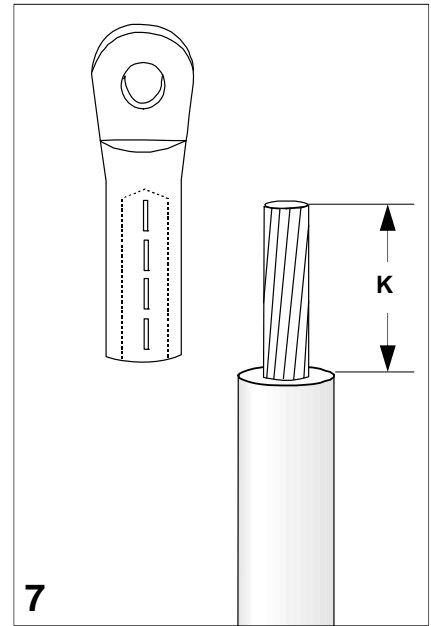
Completion of Termination



Place the stress control tubing (black) over the cores and position them 70 mm above the end of the oversheath cut. Shrink down the tubing starting at the bottom and working upwards.



Remove the release paper and slide the breakout over the cores. Pull the breakout as far down the crutch 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.



Cut back the insulation according to dimension $K = \text{depth of cable lug barrel hole} + 5 \text{ mm}$. Install the cable lugs. Clean and degrease the insulation and the lugs.

Remove the release paper and wrap the sealant tape (red) around the barrel of the cable lug with a small overlap and slight tension.

Note: Use the remaining sealant tape (red) to fill any remaining gap between the core insulation and the cable lug.

Remove the release paper from the red tubing. Place the tubing over the cores with the sealant coated end downwards. Push the tubing over the breakout turrets as far as possible and shrink it down starting at the crutch and working upwards.

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

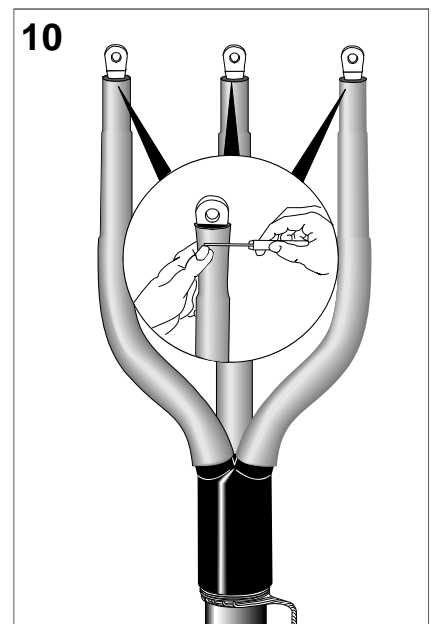
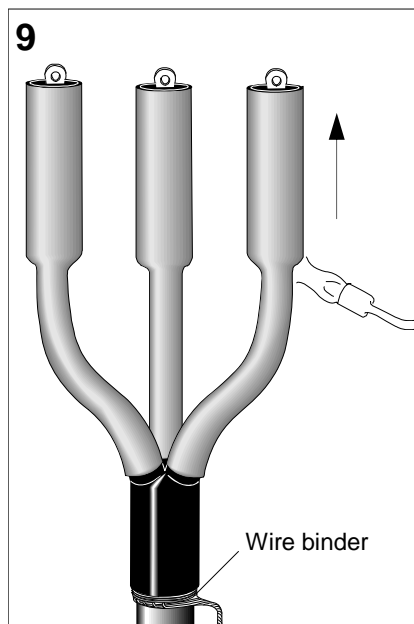
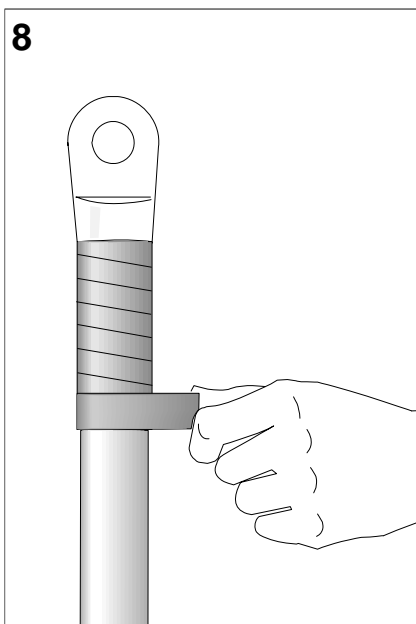
Cut the tubing back onto the connector barrel if necessary.

Postheat the palm of the lug until a bead of mastic appears around the top of the tubing.

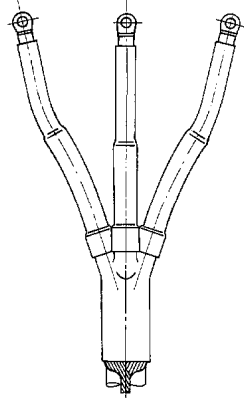
Indoor termination up to 17.5 kV completed.

Allow the terminations to cool before applying any mechanical strain.

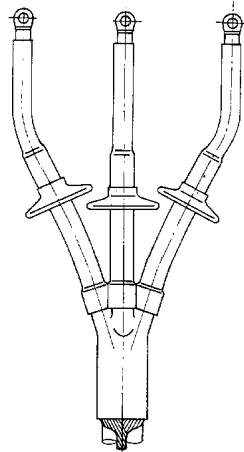
For indoor terminations above 17.5 kV and outdoor terminations shrink the skirts into place as shown on the next page.



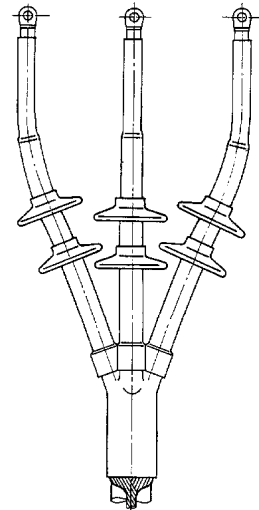
Indoor



7.2, 12 and 17.5 kV

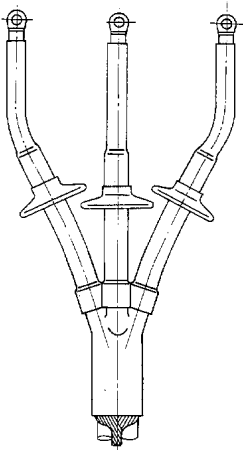


24 kV

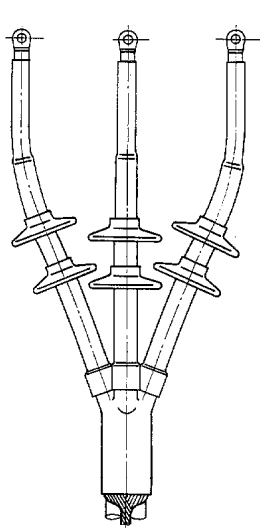


36 kV

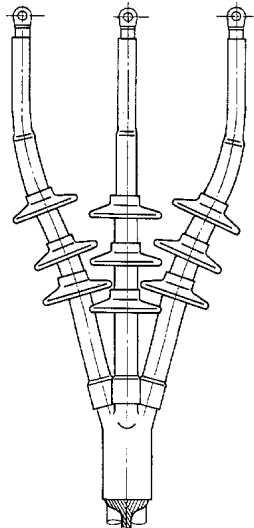
Outdoor



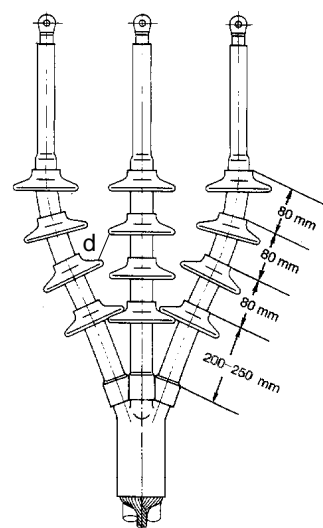
7.2 kV



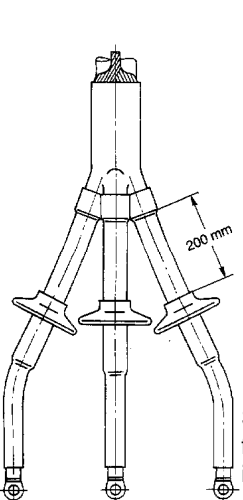
12 and 17.5 kV



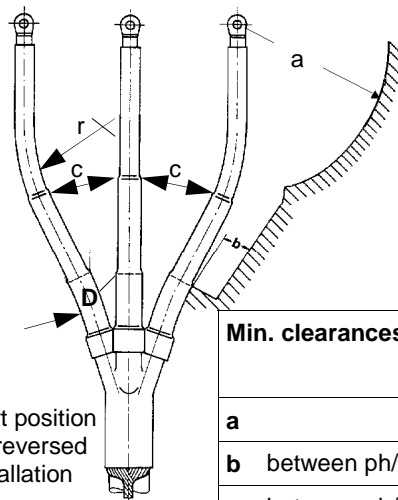
24 kV



36 kV



Skirt position for reversed installation

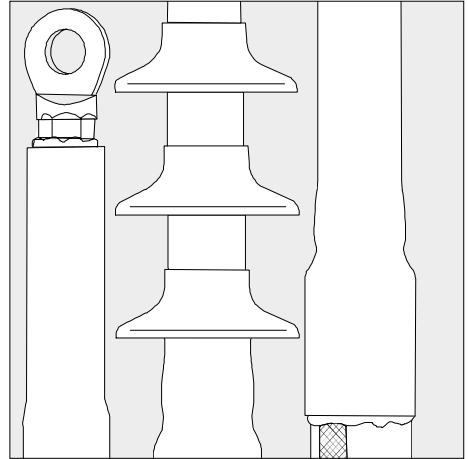


Note: Maintain minimum distance between skirts (see table below) by staggering skirts between cores.

Min. clearances	Max. system voltage (kV)				
	7,2	12	17,5	24	36
a	as for local specifications				
b between ph/ground [mm]	10	15	20	25	35
c between ph/ph [mm]	15	20	30	40	50
d between skirts [mm]	10	10	15	20	25
r min. bending radius 15xD , before bending heat cable up to approx. 70°					

Please dispose of all waste according to environmental regulations.





**Installation Instruction
EPP-1452-7/07**

**Raychem Terminations
for Polymeric Insulated
Cables
52 kV
with Cu. Wire Shield and
Al. Wire Armour**

Tyco Electronics Raychem GmbH
Energy Division
Finsinger Feld 1
85521 Ottobrunn
Munich, Germany
Tel. ++49-89-6089-0
Fax ++49-89-6096345

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.

Components or working steps may 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.

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.

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 around before continuing along the cable.

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

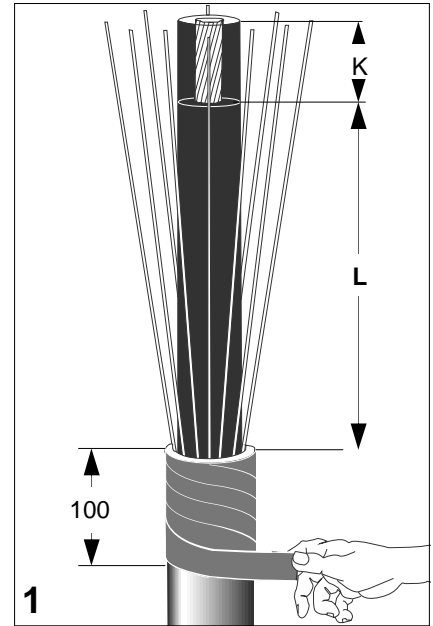
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	Item	Description
Accessories	207R0xx	Insulating boots
	205W3xx	Skirts
	EPPA-007	Silicone grease
	EPPA-009	Copper mesh
	EPPA-029	Copper wire
	EPPA-034	Roll spring
	EPPA-036	Copper conductor with water block
	EPPA-042	Hose clamps
	EPPA-043	Textile tape
	EPPA-202	PVC insulating tape
	EPPA-220	Conductive paint
	EXRM-0542	Contact plate
	EXRM-0764	Kelvar string
	H019-PAPIER-HANDTUCH	Cleaning tissue
	S1085	Sealant (red)
	S1300	Stress control patch
Tubes	SCTM	Stress control tube (black)
	HVOT	Insulating tube (red)
	WCSM	Insulating tube (black)

Cable Preparation

Table 1

L Indoor mm	L Outdoor mm	K Crimped Connection	K Mechanical Connection
600	750	according to cable lug barrel + 5 mm	according to cable lug barrel - 5 mm

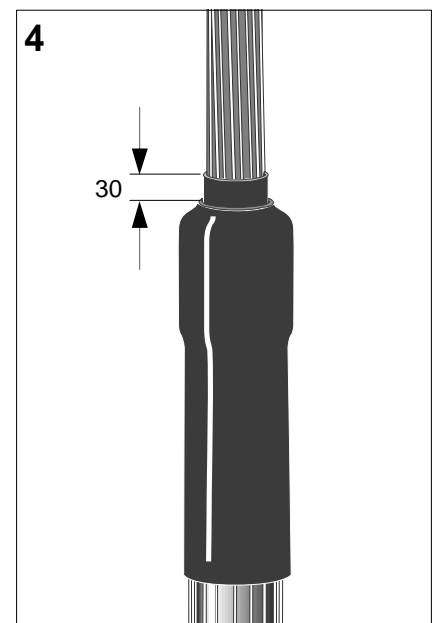
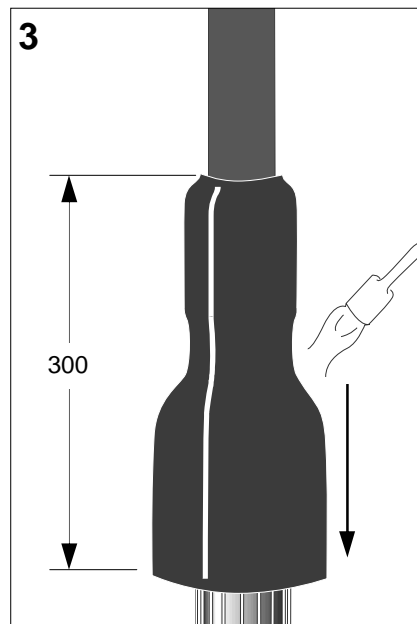
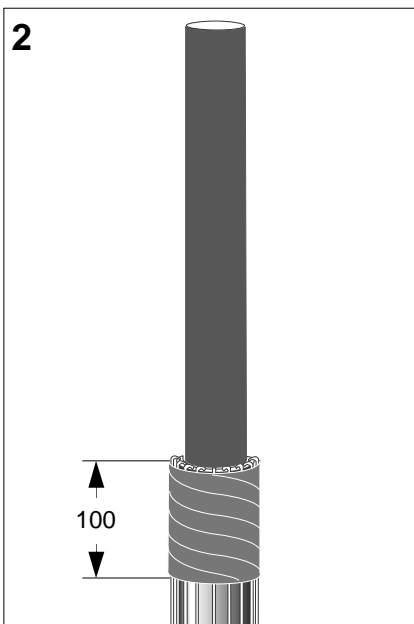


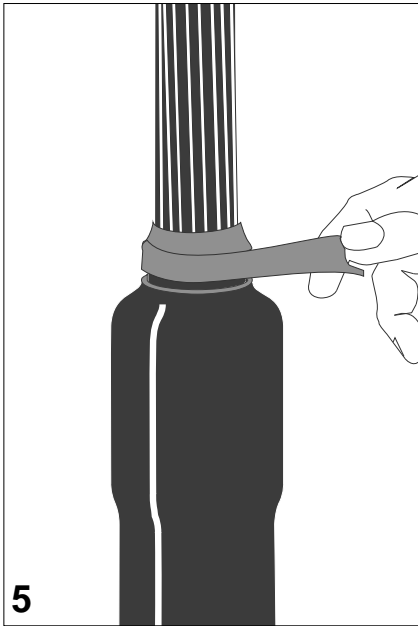
Remove the oversheath to dimension **L** given in table 1.
Clean the end of the oversheath for up to 200 mm.
Apply red sealant with slight tension over 100 mm of the oversheath.

Bend back the Armour wires onto the oversheath.
Apply red sealant with slight tension over 100 mm onto the Armour wires as shown.

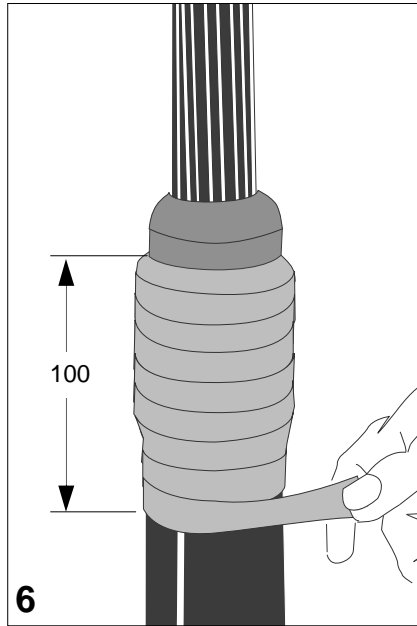
Cut the black tubing (WCSM 85/25) to a length of 300 mm.
Place it over the cable, its upper edge in line with the oversheath cut. Shrink down starting at the top and working downwards.

Remove the inner jacket to within 30 mm from the oversheath cut.

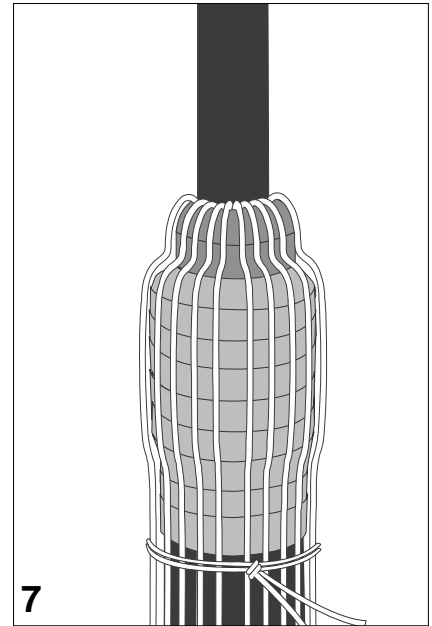




5 Apply red sealant with slight tension around the inner jacket.



6 Apply red sealant over a length of 100 mm starting at the oversheath cut.

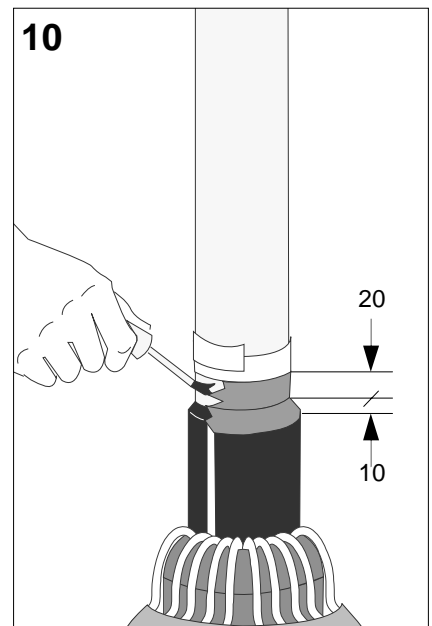
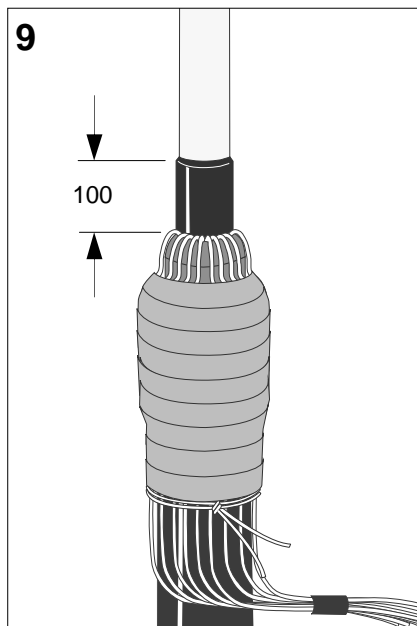
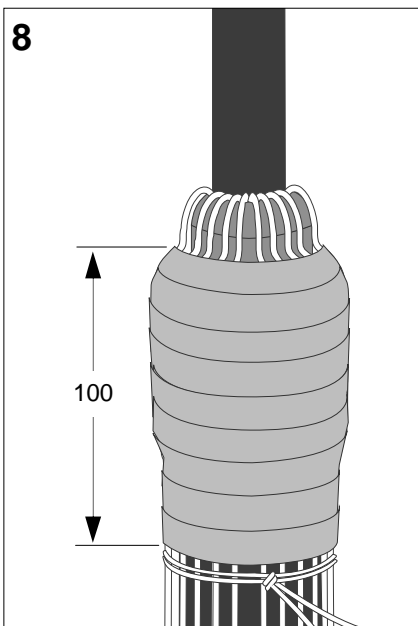


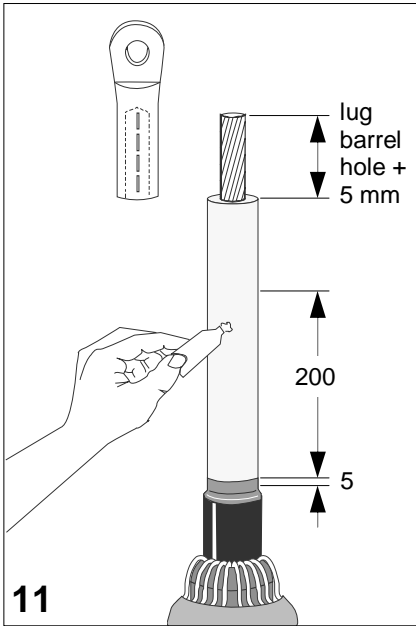
7 Bend back the copper shield wires onto the red sealant tape and fix them with a wire binder below the red sealant tape.

Wrap another layer of red sealant tape using only slight tension over the copper shield wires. Cover approx. 100 mm as shown.

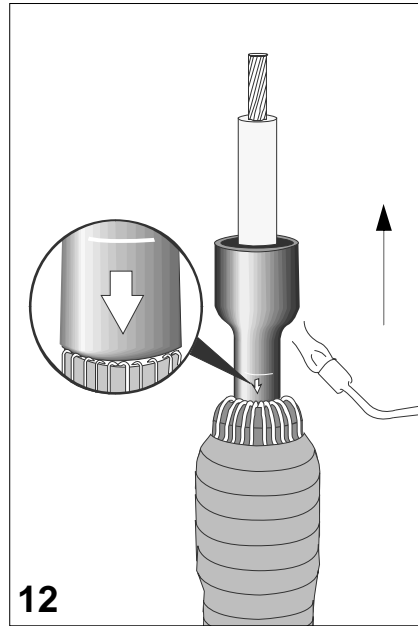
Thoroughly remove the core screen to within 100 mm of the inner jacket cut. The surface of the insulation should be free from all traces of conductive material. Chamfer the core screen. Smooth out any irregularities. **Note:** Do not nick the insulation. Protect the area below from contamination.

Apply a PVC tape (adhesive side up) to the core insulation leaving a distance of approx. 20 mm between the tape and core screen. Shake the bottle of conductive paint thoroughly. Apply the conductive paint onto the 20 mm length of core insulation overlapping the core screen by approximately 10 mm. When dry remove the PVC tape.

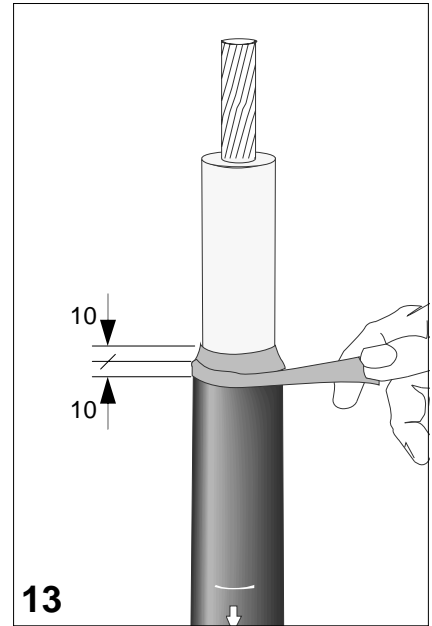




11
Cut back the insulation according to cable lug barrel hole + 5 mm. Apply a thin film of silicone grease cover 5 mm of the conductive paint and 200 mm of the insulation.

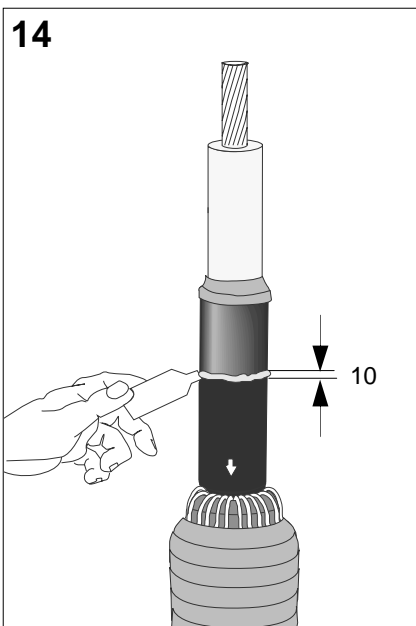


12
Place the long stress control tubing (black) with the arrow pointing downwards over the core against the inner jacket cut. Shrink down starting at the bottom and working upwards.



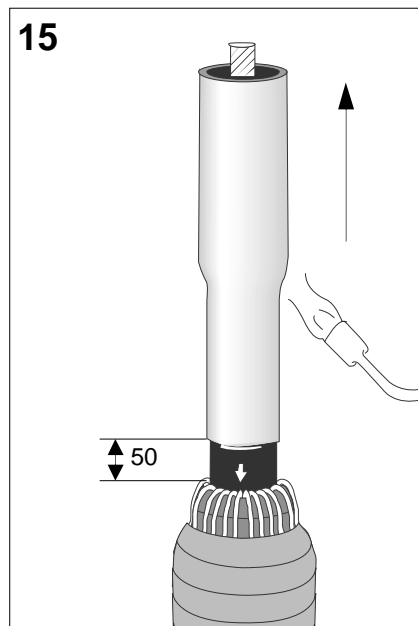
13
Apply red sealant using only slight tension and a small overlap. Cover 10 mm of the stress control tubing and 10 mm of the insulation.

Apply a thin film of silicone grease on approx. 10 mm on the edge of the matt surface of the stress control sleeve as shown.



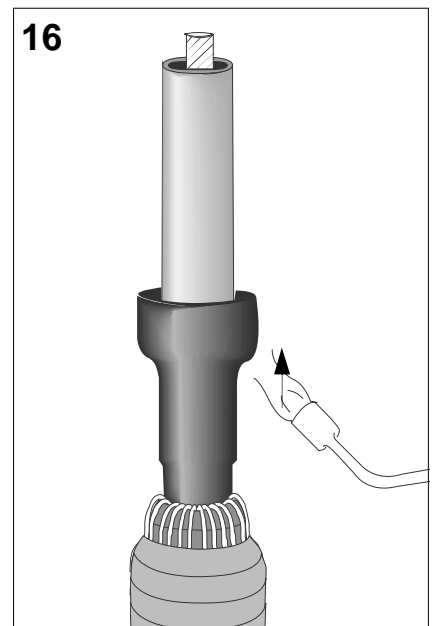
14

Place the short tubing (red) over the core 50 mm above the inner jacket cut. Shrink down starting at the bottom and working upwards.

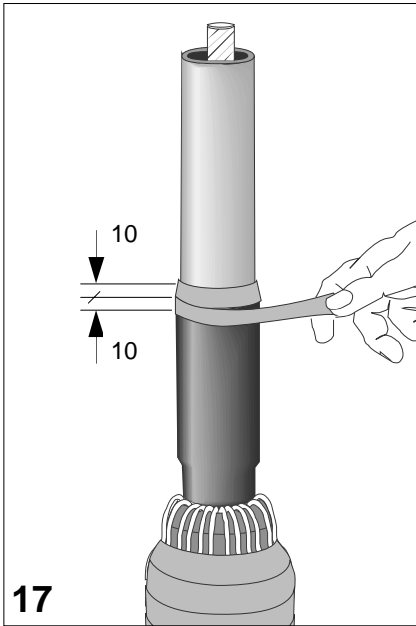


15

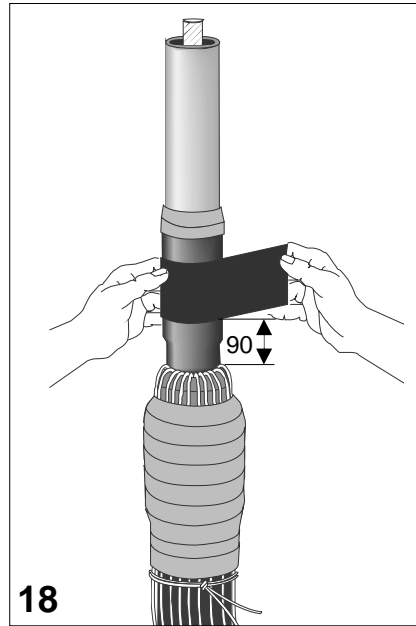
Place the short stress control tubing over the core against the inner jacket cut. Shrink down starting at the bottom and working upwards.



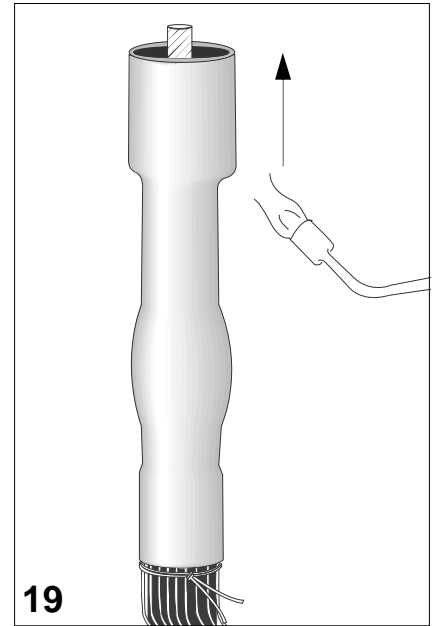
16



Apply red sealant using only slight tension and a small overlap. Cover 10 mm of the stress control tubing and 10 mm of the red tubing.



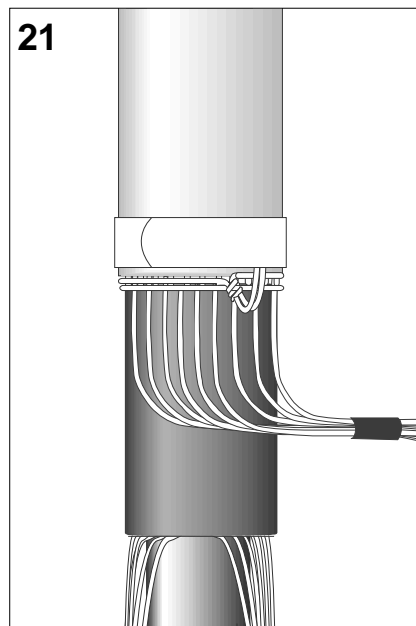
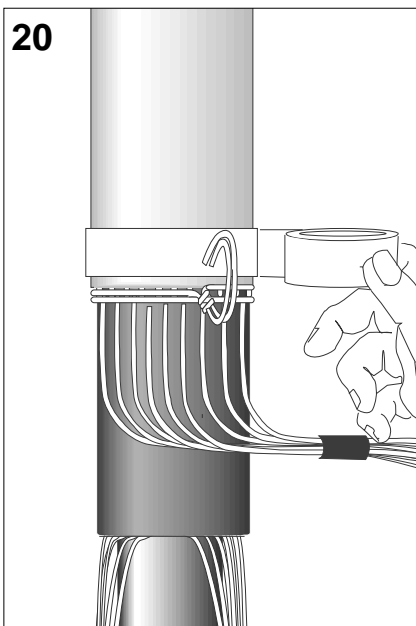
Wrap two layers of insulating profile over the stress control tubing starting 90 mm above the inner jacket cut.



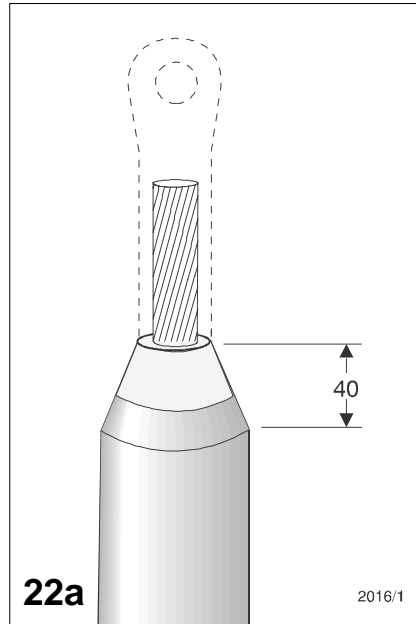
Place the long red tubing over the cable, completely covering the mastic. Shrink down starting at the bottom and working upwards.

Separate the armour wires from the shield wires. Form two separate earth leads by twisting the strands together. Wrap the roll spring twice over the tubing (red). Position two ends of the wire binder onto the roll spring. Wire ends should not overlap the roll spring.

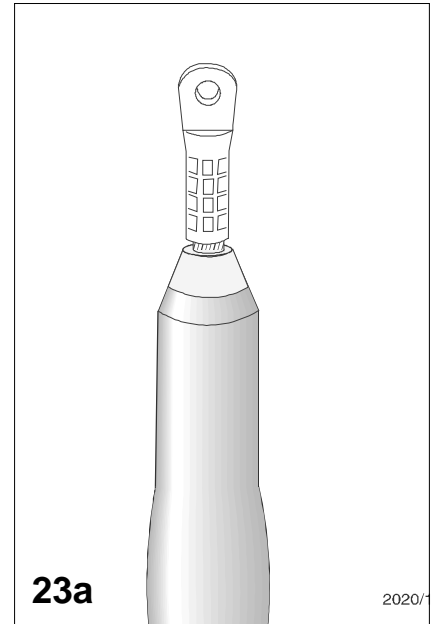
Fold the wires back and wrap the rest of the roll spring over the wire binder. Tighten the roll spring with a twisting action.



Termination with crimp connector



Cut back the tubing onto the insulation. Chamfer the insulation to the diameter of the cable lug to achieve a smooth transition.



Install, clean and degrease the cable lug.

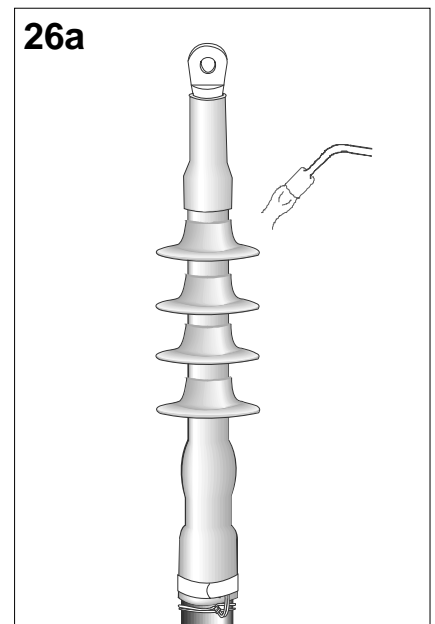
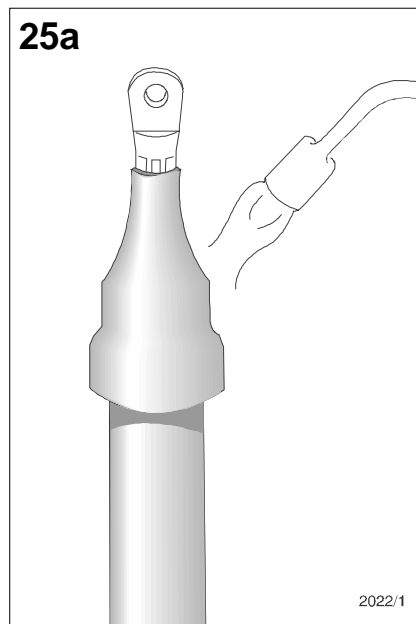
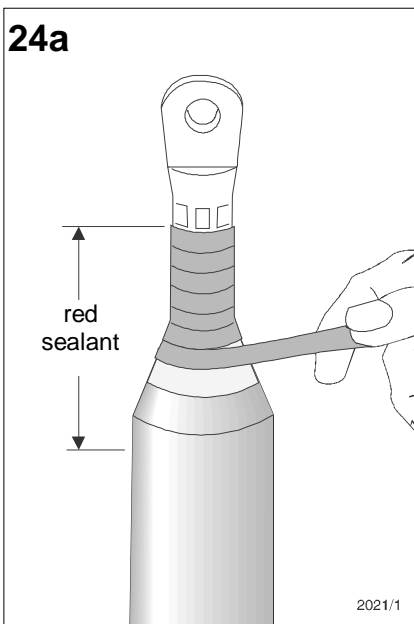
Wrap sealant (red) with slight tension around the insulation and connector. Fill up any gaps between insulation and cable lug.

Position the sealing boot so that it covers the core and connector equally and shrink it into place, starting at the top.

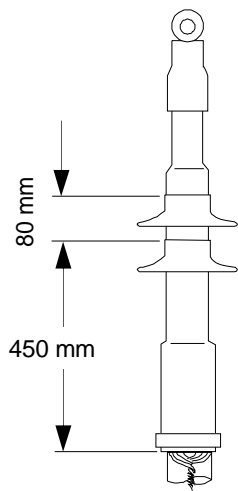
Shrink the skirts into place according to the dimensions at the last page.

Make sure that the first skirt is placed slightly above the end of the insulation profile which is located under the outer tubing.

Termination completed.

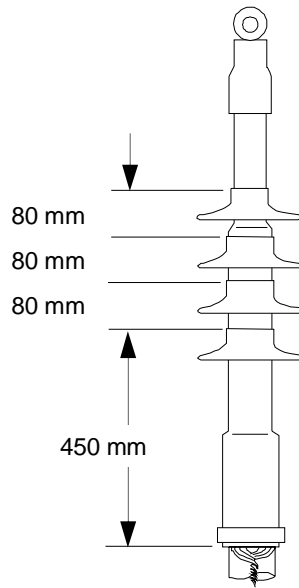


Indoor



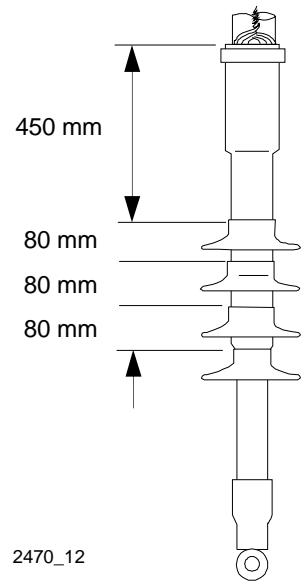
2470_11

Outdoor

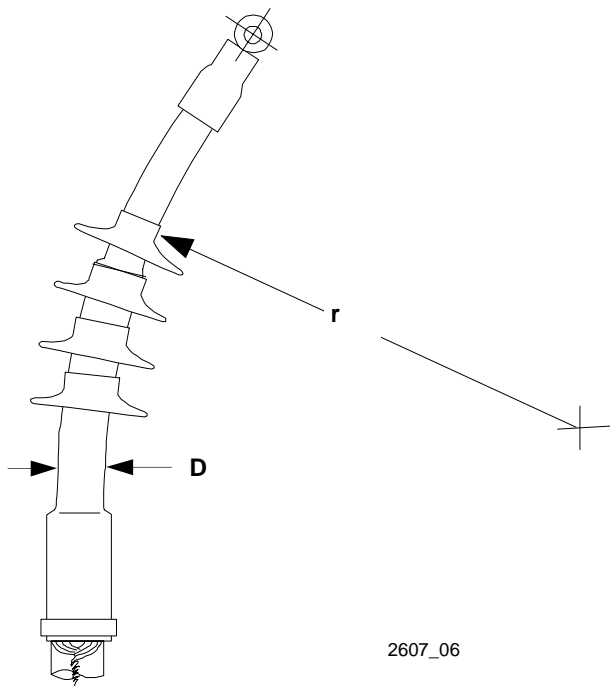


2470_13

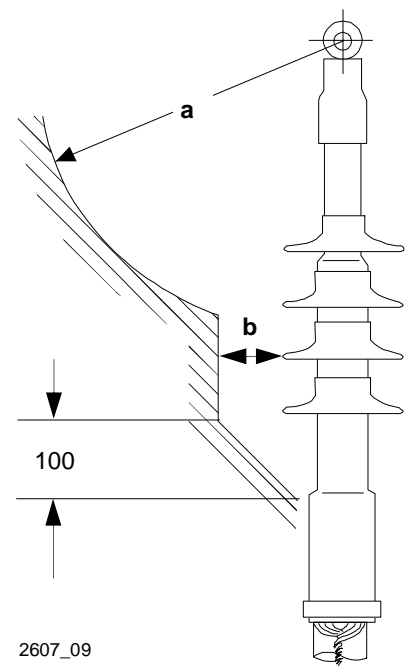
Reversed Installation



2470_12



2607_06



2607_09

Number of skirts per core		
kV	Indoor	Outdoor
52	2	4

Min. clearances	Max. system voltage 52 kV
a air clearance	according to local specifications
b between ph/ground [mm]	100
r min. bending radius $10 \times D$, before bending heat cores up to approx. 70° C	

Please dispose of all waste according to environmental regulations.

