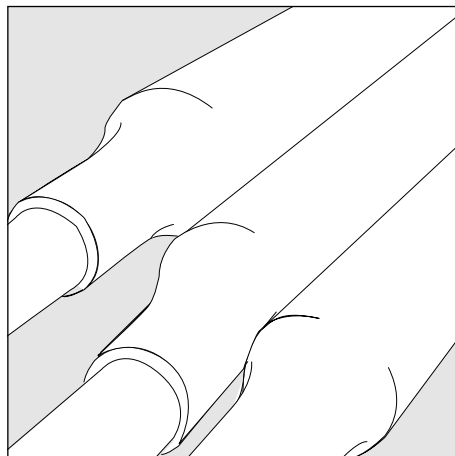


0 cm



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## TE's Raychem Cable Accessories



### Installation Instruction EPP-1779-10/17

**Raychem**  
**Joint for Single Core**  
**Polymeric Insulated Cables**  
**with Wire Screen**  
**12 kV up to 24 kV**

**Type: MXSU**

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To view the TE Connectivity 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.

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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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### Application range of the MXSU-kits:

The kit is based on polymeric insulated cables for **stranded circular conductors** and wire shielding.

Application range for aluminium or copper conductors are mentioned in **table A** below.

**Table A**

12 kV		17.5 kV and 24 kV	
Kit number	Range (mm <sup>2</sup> )	Kit number	Range (mm <sup>2</sup> )
MXSU-3161	630	MXSU-5161	630
MXSU-3171	800	MXSU-5171	800
MXSU-3181	1000	MXSU-5181	1000

### Admissible cable dimensions for MXSU-joints:

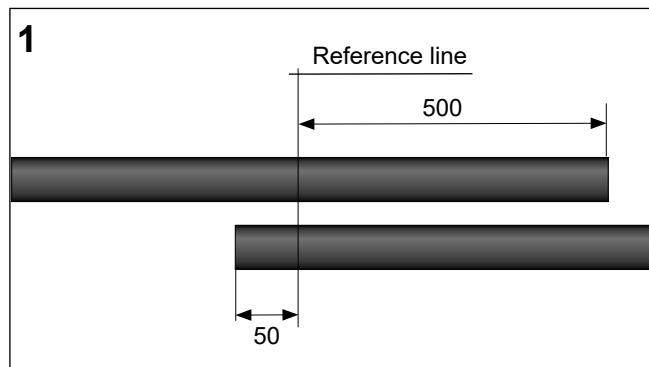
**Table B**

Kit number	Range (mm <sup>2</sup> )	Conductor Ø		Core Insulation Ø		Outer Cable Ø	
		min. (mm)	max. (mm)	min. (mm)	max. (mm)	min. (mm)	max. (mm)
MXSU-3161	630	27.9	32.5	35.9	40.0	47.0	54.0
MXSU-3171	800	32.5	35.3	38.5	42.6	52.0	57.0
MXSU-3181	1000	38.5	39.2	45.0	47.6	59.0	64.0
MXSU-5161	630	27.9	32.5	39.2	44.7	50.0	58.0
MXSU-5171	800	32.5	35.3	44.2	46.9	58.0	61.0
MXSU-5181	1000	38.5	39.2	49.4	53.2	64.0	67.0

## Cable Overlap

Overlap the cables as shown in drawing.

Mark the reference line.



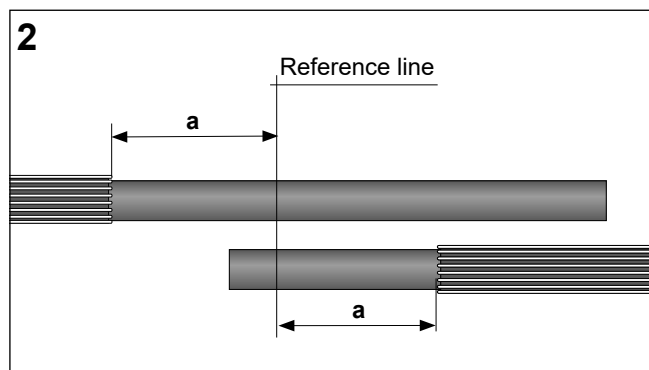
## Cable Preparation

Remove the oversheath to dimension shown in table 1 below.

Clean the remaining oversheath for about 1 m.

Bend back the shield wires onto the oversheath.

Fix the ends of the shield wires temporarily in place.



**Table 1**

12 kV			
Kit number	Kit range (mm <sup>2</sup> )	a (mm)	l (mm)
MXSU-3161	630	190	70
MXSU-3171	800	190	85
MXSU-3181	1000	200	85

17.5 kV and 24 kV			
Kit number	Kit range (mm <sup>2</sup> )	a (mm)	l (mm)
MXSU-5161	630	200	70
MXSU-5171	800	210	85
MXSU-5181	1000	210	85

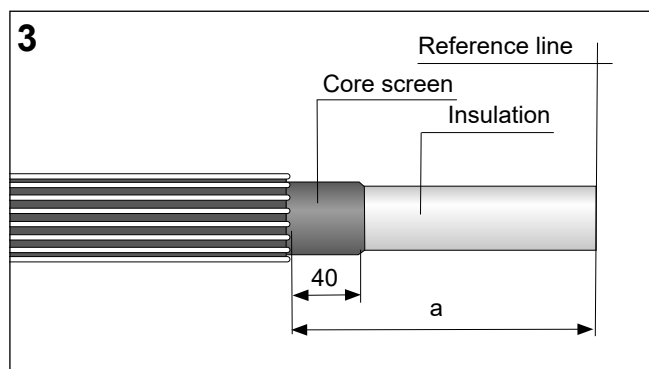
## Core Preparation

Cut the cores at the reference line using a hacksaw (see Table 1).

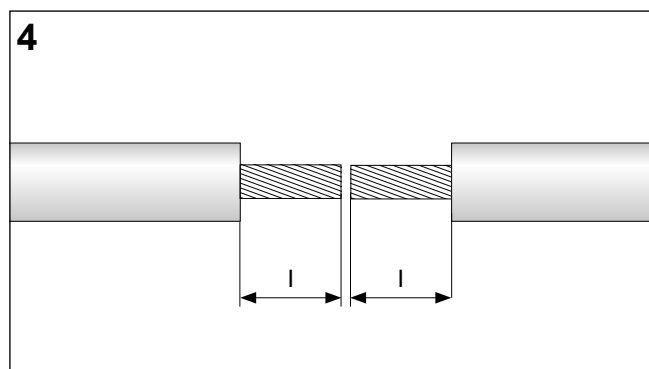
Thoroughly remove the core screen to the dimensions given in the drawing, so that the insulation surface is free from all traces of conductive material.

Clean and degrease the insulation.

**Note:** Do not nick the insulation!



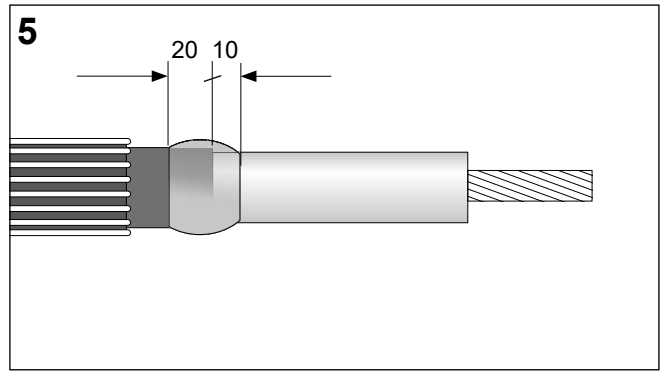
Measure the conductor bore depth of the connector and remove the insulation on both cores according to the dimensions given in table 1.



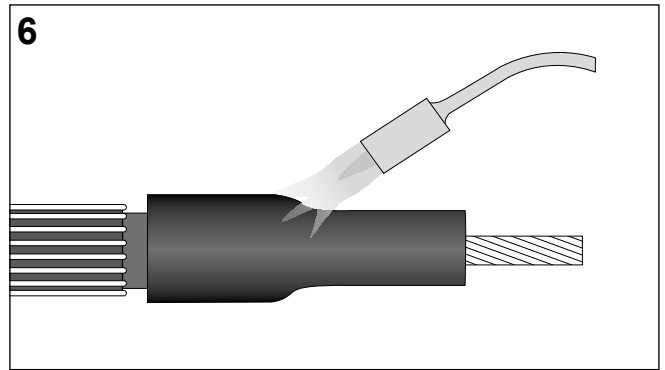
Take one short yellow void filling strip from the alu foil pocket. Remove the release papers from the strip with the pointed ends.

Wrap the void filler around the core screen starting 20 mm from the end of the screen and continue onto the insulation for 10 mm.

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



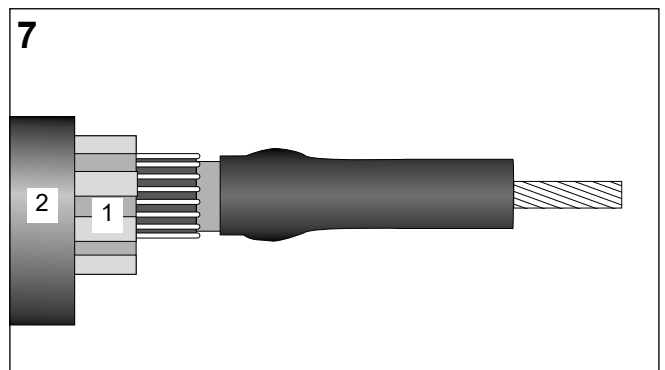
Slide the stress control tube (black) over the plastic cable core level with the end of the insulation cut back. Shrink down starting from the insulation cut back towards the oversheath as shown in the drawing.



## Completion of the Joint

Slide the tubings over the small cross section cable end.

1. Screened insulation sleeve (black and red)
2. Outer sleeve (black)



Clean and abrade the surface of the exposed conductors.

Insert conductors so that the insulation butts up with the end of the connector. Hand tighten the shear bolts so that the connector stays in place.

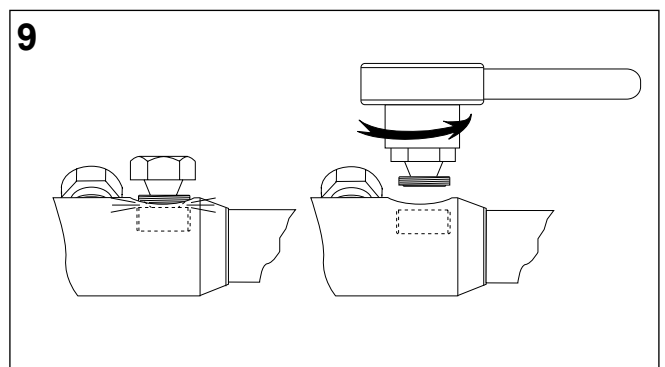
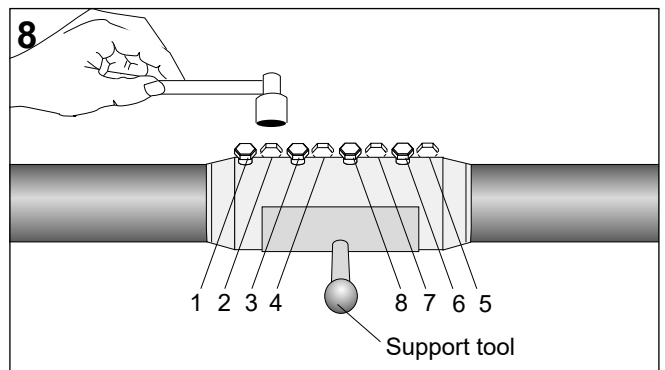
For connectors using more than one shear bolt per side, tighten the bolts alternately and shear them off starting with the outer bolts (see also sequence shown in the drawing).

### Notes:

- When a cordless impact wrench is in use the tightening intervals should be in the range of 2 seconds.
- Avoid core bending on smaller cross sections by using a support tool available such as IT-1000-019 or similar.

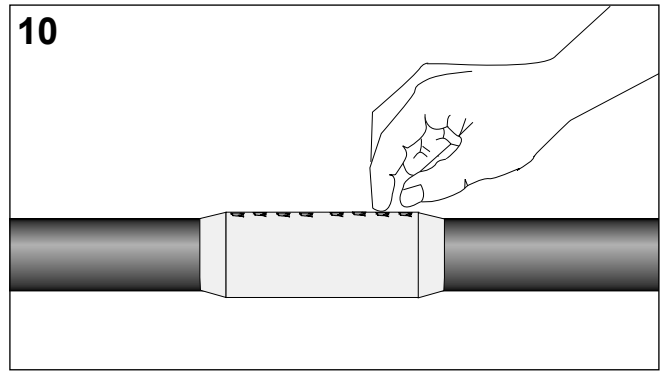
Smooth out any sharp edges of protruding bolts where appropriate. Clean and degrease the connector area and the insulation with a cleaning wipe.

It could be possible that the bolt shears but the top is retained in the connector body. In that case unscrew the head of the bolt until it is removed from the connector.



Clean and degrease the cable cores and the connector.

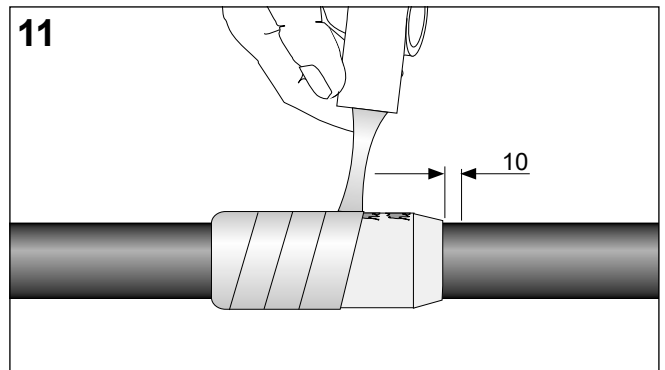
Fill Raychem clay over the sheared off bolts to obtain a smooth finish.



Remove the printed release paper from the void filling tape (yellow). Apply the tape with a 50 % overlap stretching it to about half of its original width.

Fill up the connector area continuing onto the insulation for not more than 10 mm. Use the filler to achieve a smooth transition from the connector onto the insulation.

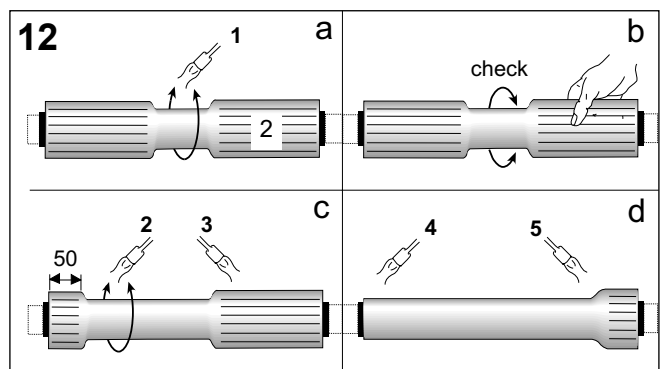
**Note:** Do not use too much void filler, max. 2 mm over the connector



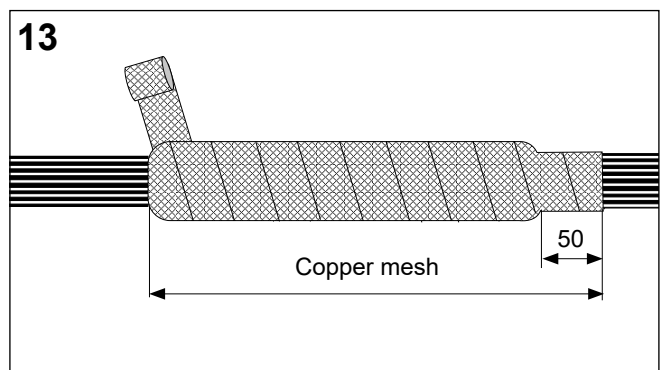
Position the screened **insulating sleeve** (black and red) centrally over the connector area.

- Start shrinking the sleeve in the centre (1).
- Check if fully shrunk by twisting the end.**
- Continue shrinking by working towards one side (2), stopping 50 mm from the end. Shrink the other half in the same way (3).
- Shrink down the first end (4) and finally the second (5).

**The sleeve should be fully shrunk without leaving ridges.**



Starting with a 50 mm overlap onto the oversheath of the cable side with the short shield wires, wrap one layer of copper mesh round the joint with a 50% overlap.



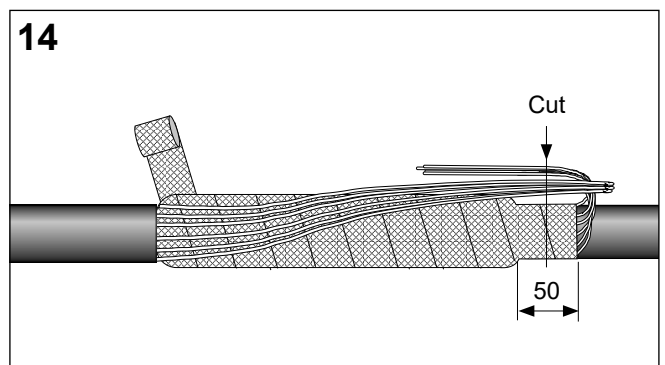
**Cable side with long shield wires:**

Bend the shield wires back over the joint area.

**Cable side with the short shield wires:**

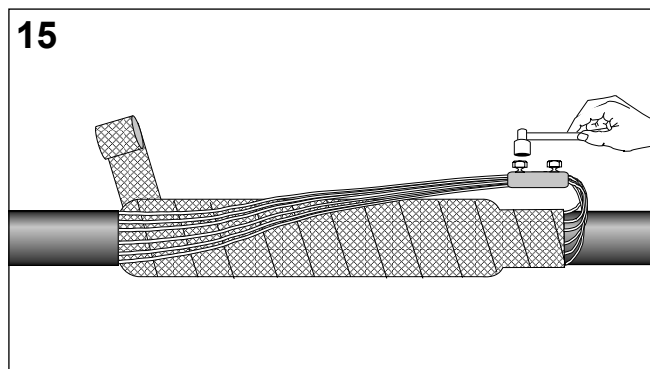
Bend the shield wires back over the joint area close to the copper mesh.

Gather the wires together and cut them centrally above the 50 mm copper mesh overlap on the cable oversheath.

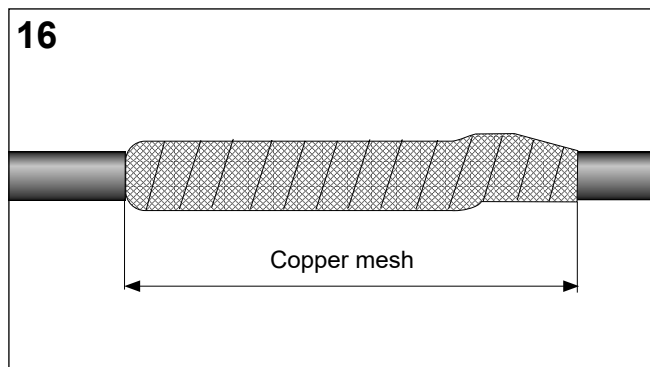


Form an earth lead of the shield wires and insert both ends into the mechanical shield connector supplied.

Tighten the bolts with an Allen key until the heads shear off.



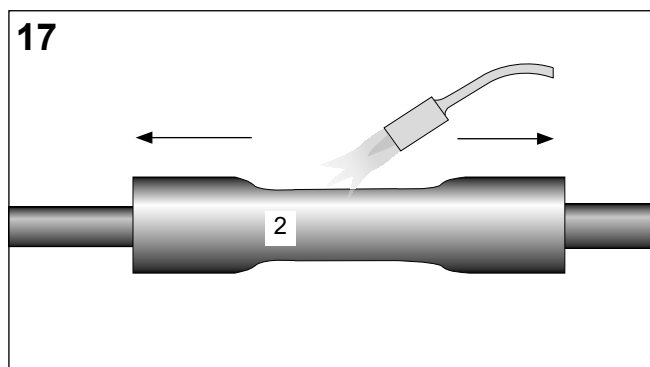
Wrap a second layer of copper mesh round the joint with a 50% overlap. Cover the complete joint area including the mechanical shield connector.



Clean and degrease the ends of the oversheath for a length of about 150 mm.

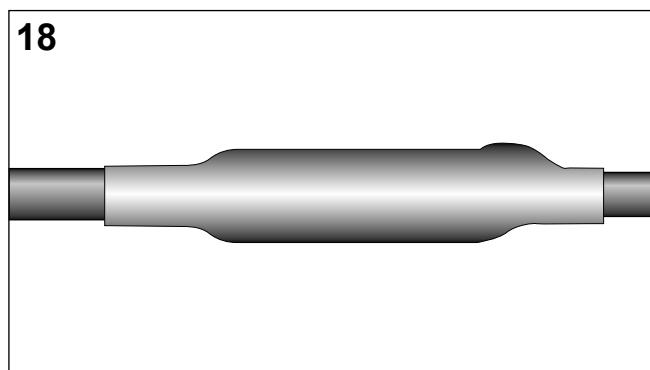
Centre the outer sleeve (black) over the copper mesh area.

Start shrinking in the centre, working towards the ends.



**Joint completed.**

Allow the joint to cool before applying any mechanical strain.



**Please dispose of all waste according to environmental regulations.**



