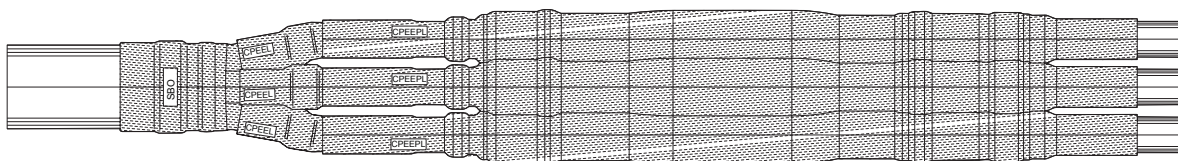




Saves Your Energy

INSTALLATION INSTRUCTION PEM1092ENG 2015-02

ENGLISH



**HEAT SHRINK TRANSITION JOINTS APYAKMM - AHXAMK-W
HJTW11.24**

GENERAL INFORMATION

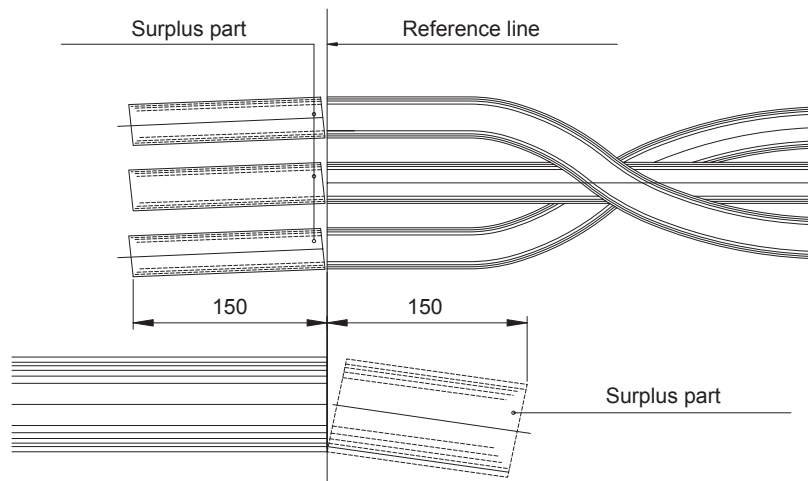
- Check that the kit is suitable for the cable type.
- Check the materials listed in the bill of materials for completeness.
- Read the installation instructions carefully before starting the installation.
- Install carefully and make sure the materials are clean during the installation.
- Clean the working place after the installation.

GENERAL INSTRUCTIONS FOR HEAT SHRINKING

- Please note that in some working places a hot work permit is needed.
- Use a propane burner with a flame length of approx. 20-30 cm. Do not use too large or sharp flame.
- Move the flame all around the cable on the shrinking direction. Move the flame continuously to avoid overheating.
- Make sure that the ventilation is good and there are no flammable materials around.
- Clean the cable surfaces before shrinking.
- When shrinking, always follow the installation instructions and the relevant sequence to avoid trapped air.
- Check that the tube has shrunk evenly around the cable before you continue shrinking.
- If the tube turns around at the end of shrinking, straighten the tube by directing the flame inside the tube from the opposite direction.
- After shrinking the tubes should be smooth and even following the shape inside.

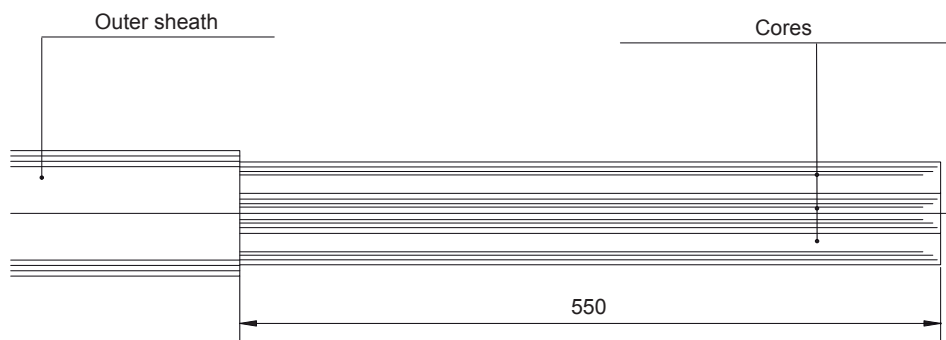
LEGAL NOTICE

- The product must be installed only by a competent person with sufficient training in installation practices and with sufficient knowledge of good safety and installation practices in respect of electrical equipment. If local legislation contains provisions in respect of such training or sufficient knowledge in respect of installation of electrical equipment such provisions shall be fulfilled by the said person.
- Ensto accepts no liability concerning claims resulting from misuse, incorrect installation or ignored national safety regulations or other national provisions.
- WARNING: Failure to follow the installation instructions may result in damage to the product and serious or fatal injury.

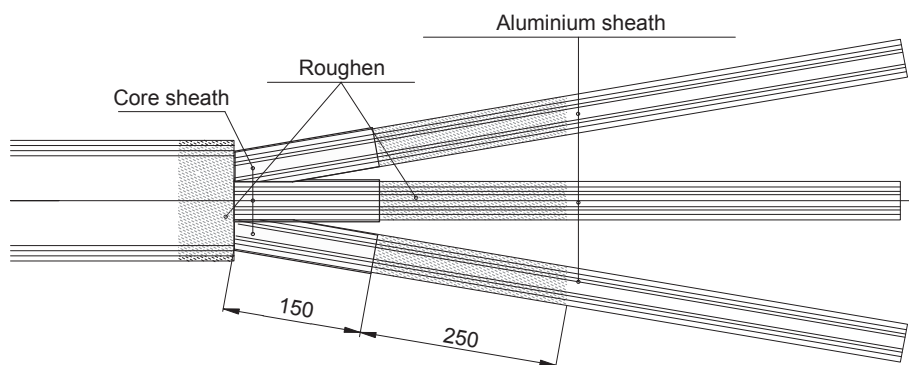


1. Overlap the cables for at least 300 mm. Cut the cables in the middle of the overlapping (reference line).

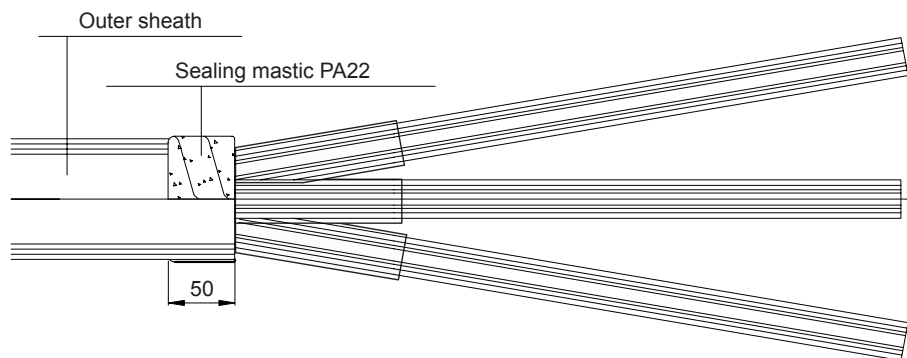
APYAKMM



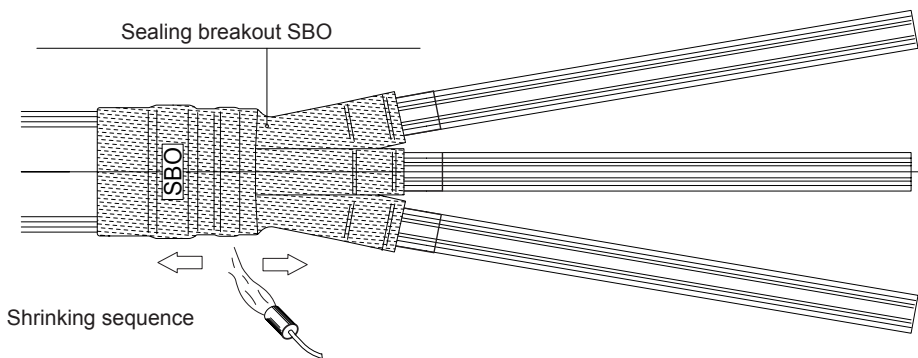
2. Cut and remove the outer sheath up to 550 mm. Cut and remove the possible fillers.



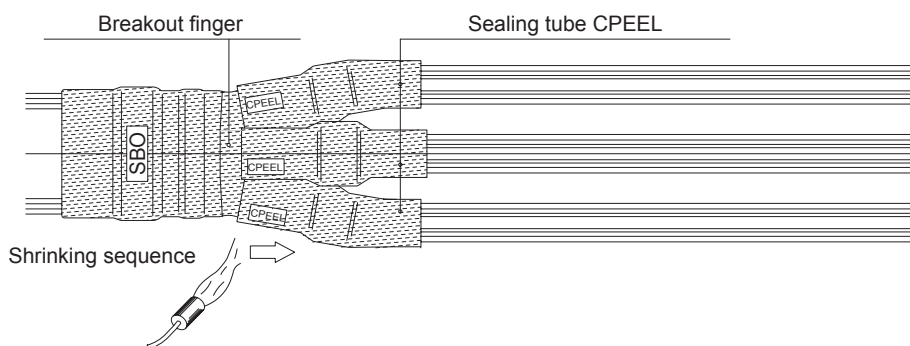
3. Clean the outer sheath up to at least 0.5 m distance. Spread the cores. Peel the core sheaths from 150 mm of the cable crutch. Clean the aluminium sheaths with a suitable solvent for 250 mm length from the core sheaths. Clean also the core sheath. Roughen the outer sheath for a distance of 100 mm. Roughen the aluminium sheaths for the distance of 250 mm from the core sheath with grinding paper.



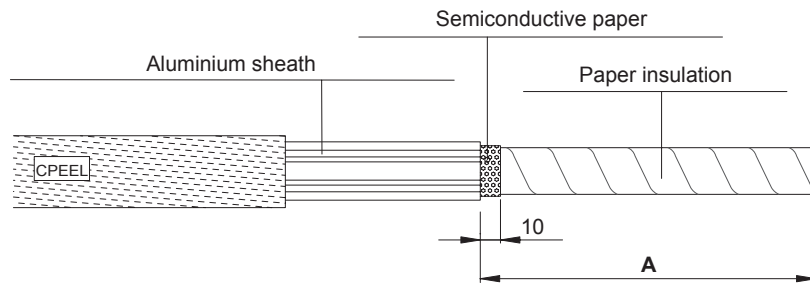
4. Wrap sealing mastic PA22 to cover 50 mm of the outer sheath.



5. Push the sealing breakout SBO into the crutch as far as possible. Shrink the breakout starting from the middle.



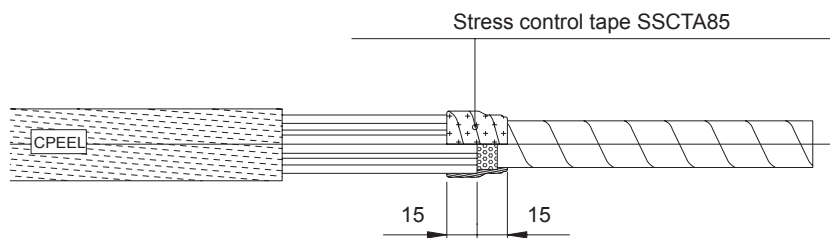
6. Place the sealing tubes on the cores and push them on the breakout fingers up to about 20 mm from the crutch. Shrink the tubes one by one starting from the breakout end.



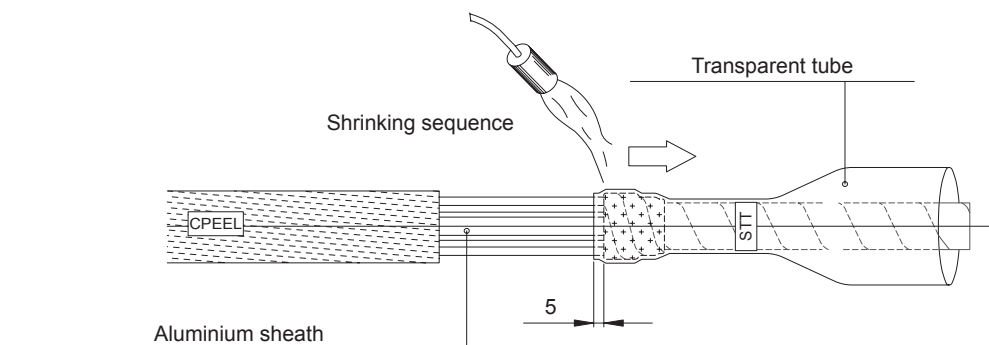
7. Cut and remove the aluminium sheath according to A measure in table 1. Remove the semiconductive paper leaving 10 mm at the aluminium sheath edge. Remove the first layer of the paper insulation up to the semiconductive paper edge.

TABLE 1

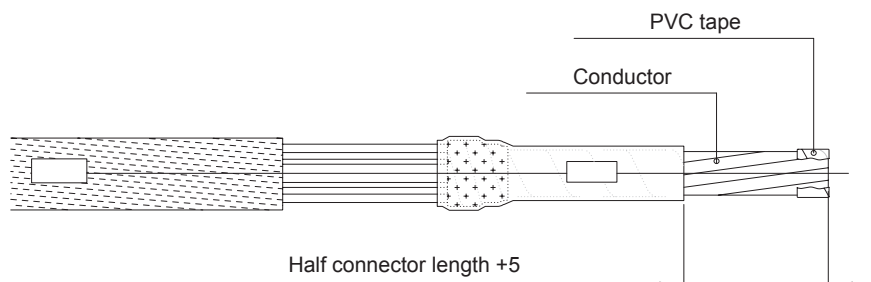
Kit	Um kV	Conductor size mm ²	Aluminium sheath removal A mm
HJTW11.2402	24	50-95	190
HJTW11.2403	24	70-240	190
HJTW11.2404	24	185-300	210



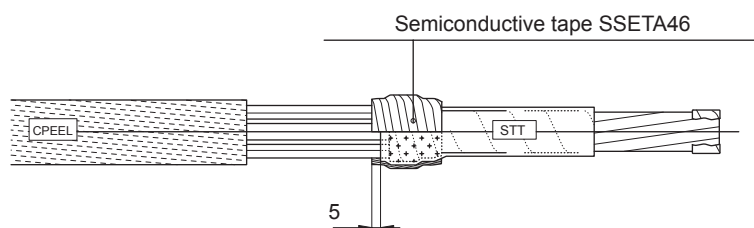
8. Wrap one layer of stress control tape SSCTA85 on the edge of the aluminium sheath. Cover 15 mm of the aluminium sheath and continue 15 mm to the insulation side so that the semiconductive paper remains under the taping. The tape must be applied with 50 % overlap and by stretching it to half of its original width.



9. Place the transparent tube on core so that it covers the stress control tape area and continues 5 mm on the aluminium sheath. Shrink the tube starting from the aluminium sheath end.



10. Cut the transparent tube and remove half of the bolt connector length + 5 mm from the insulation of the cable. If you use compression connectors, remove the insulation following the connector manufacturer's instructions. Be careful not to nick the conductor when removing the last paper layers. Clean the conductors and wrap some layers of PVC tape on them.

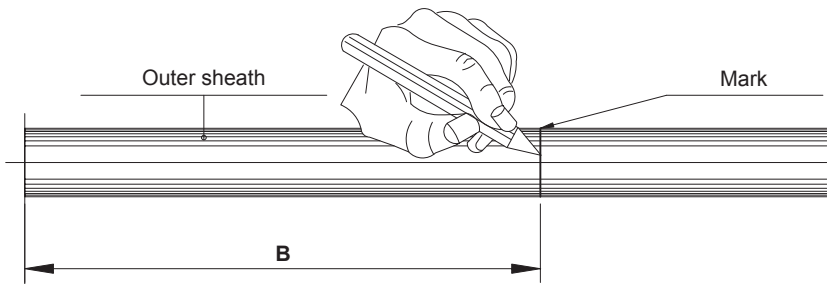


11. Wrap one layer of semiconductive tape SSE TA46 on the transparent tube. Cover the stress control taped area and continue 5 mm across the transparent tube edge on the aluminium sheath. The tape must be applied with 50 % overlap and by stretching it to half of its original width.

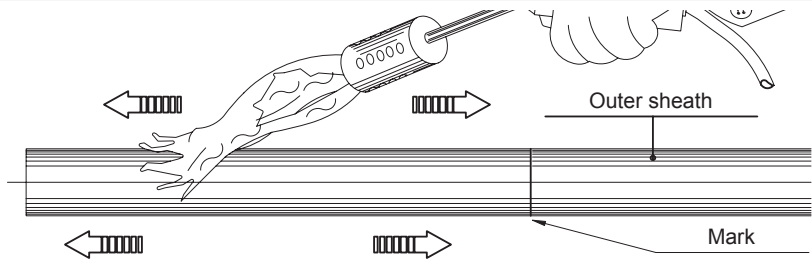
AHXAMK-W

Table 2

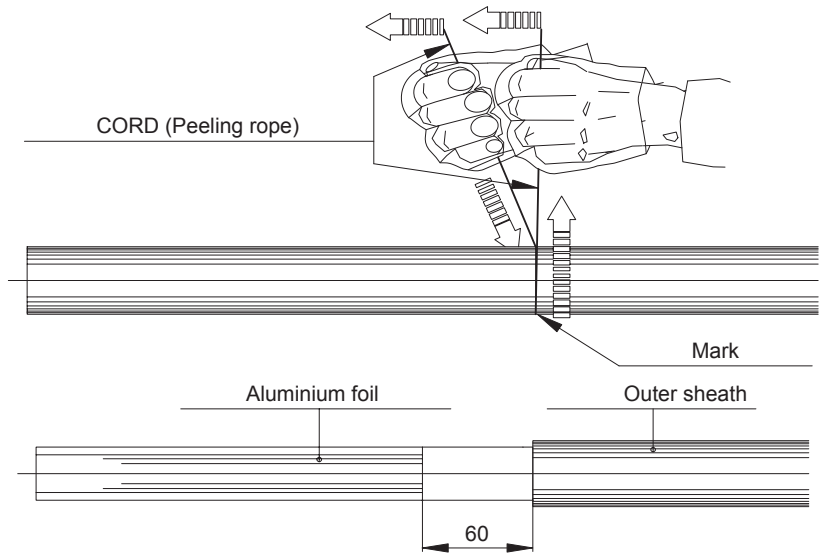
Package	Um kV	Conductor size mm ²	Outer sheath removal mm B
HJTW11.2402	24	50-95	310
HJTW11.2403	24	70-240	310
HJTW11.2404	24	185-300	330



12. Mark the cutting point at the distance B.

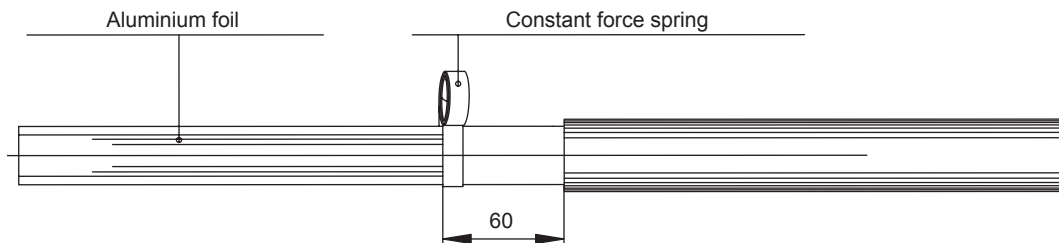


13. Heat the outer sheath up to the mark.

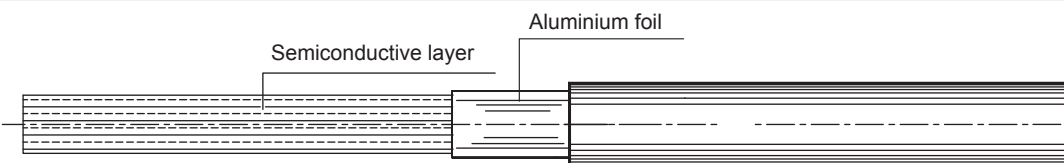


14. Use the peeling rope to remove the outer sheath to leave the aluminium foil exposed. Heat the aluminium foil close to the outer sheath with gentle flame.

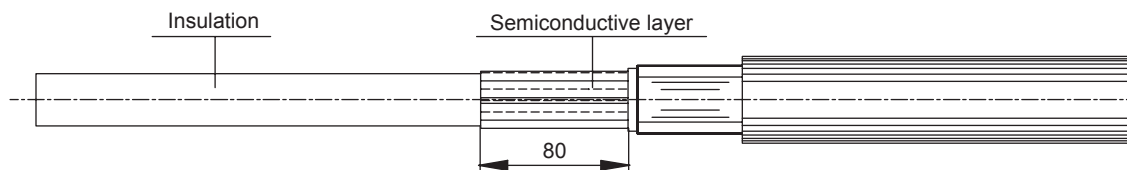
Remove the most of the adhesive coating from the aluminium foil for up to 60 mm from the outer sheath by the help of the peeling rope. Use the grinding paper included in the kit to remove rest of the adhesive coating from the aluminium foil up to 60 mm from the outer sheath. Take care that the aluminium foil does not break during the grinding.



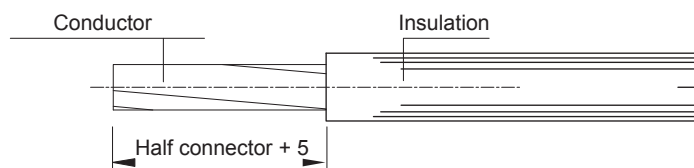
15. Install the constant force spring 40 mm away from the end of the outer sheath. Remove the aluminium foil by tearing it against the constant force spring.



16. Move the spring a little towards the core so that the aluminium foil edge remains under the spring. Tear the swelling tape in longitudinal strips up to the spring. Remove the tape strips by tearing them against the spring. Remove the constant force spring.

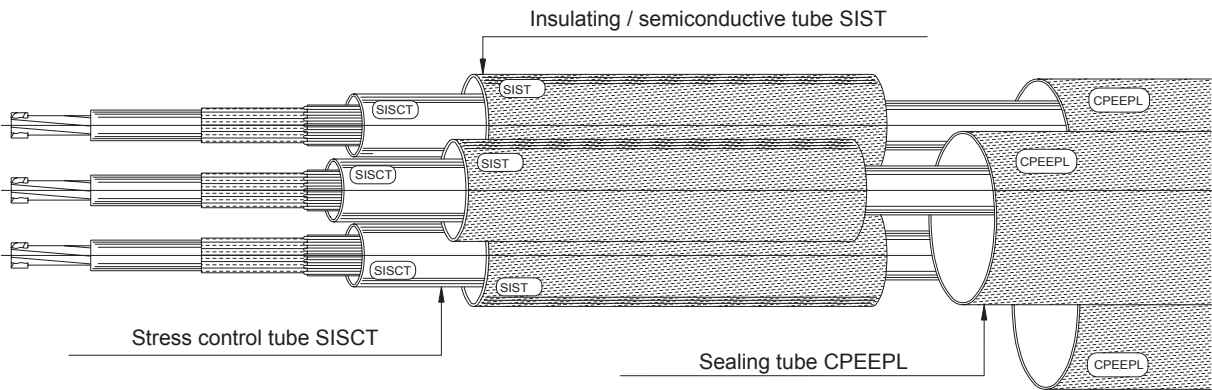


17. Remove the semiconductive layer leaving 80 mm measured from the aluminium foil. Use a suitable tool. If necessary, remove any remaining of the semiconductive layer with a piece of glass. Use the grinding paper included in the kit to smooth the insulation.

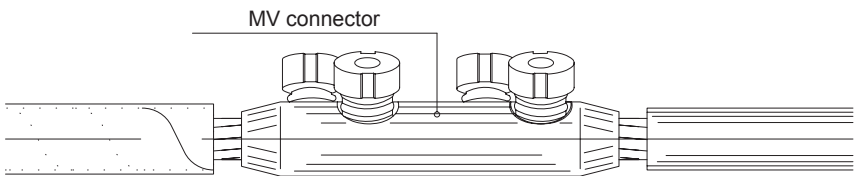


18. Remove half of the bolt connector length + 5 mm from the insulation of the cable. If you use compression connectors, remove the insulation following the connector manufacturer's instructions. Be careful not to nick the conductor. Clean the conductor and wrap a couple layers of PVC tape on the end of the conductor.

JOINTING



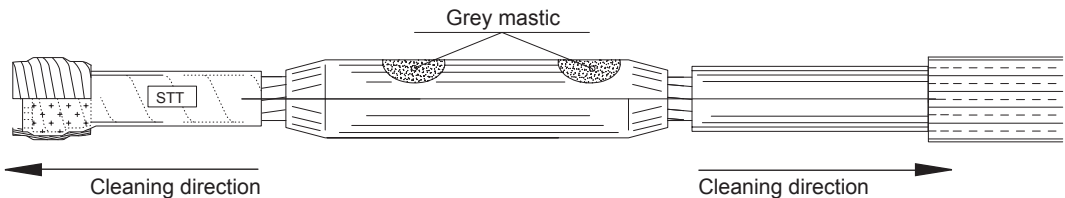
19. Slip the sealing tube CPEEPL, insulating / semiconductive tube SIST, the stress control tube SISCT on each XLPE insulated cable. Protect them from dirt.



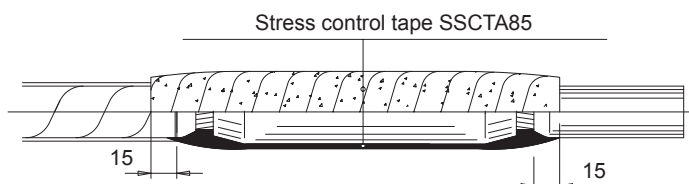
20. Remove the PVC tape from the ends of the conductors and install the MV connectors following the manufacturer's instructions.

TABLE 3

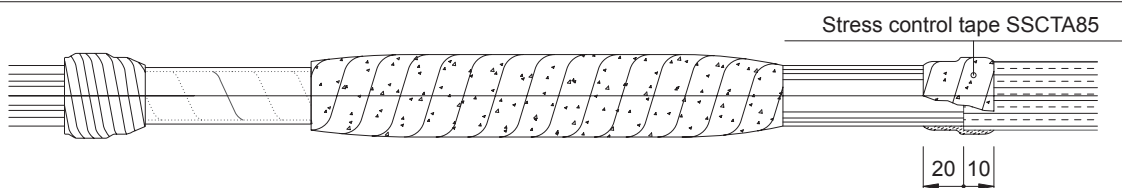
KIT	Cable size mm ²	Max connector dimensions	
		length mm	diameter mm
HJTW11.2402	50-95	130	30
HJTW11.2403	70-240	130	33
HJTW11.2404	185-300	180	38



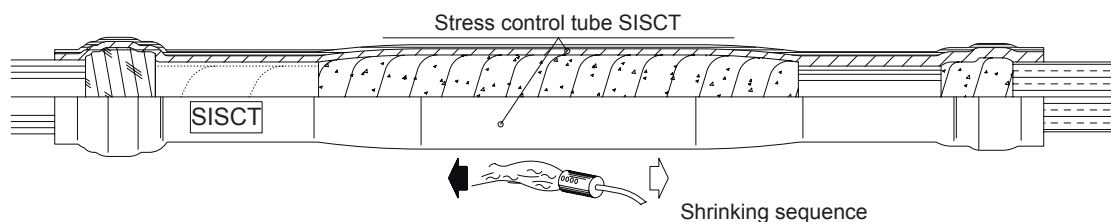
21. Fill any holes left in the connector with grey mastic. Clean the XLPE cable insulation and the semiconductive layer with the cleaning tissue starting from the insulation towards the semiconductive layer. Take care that no semiconductive particles are deposited on the insulation. Clean respectively the paper insulated cable side. Clean the connector.



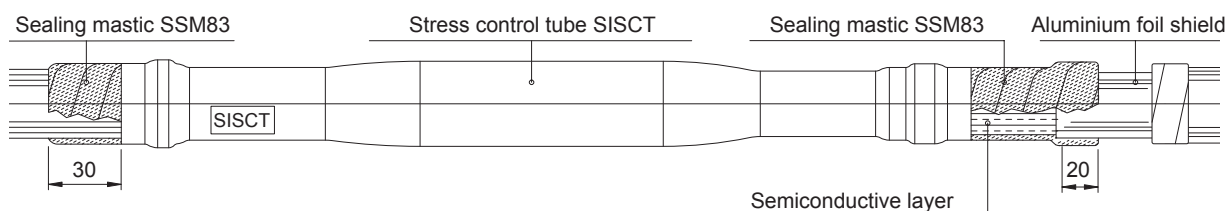
22. Fill the gap between the end of the connector and the insulation with stress control tape SSCTA85. Then wrap two layers of SS CTA85 to cover the connector covering 15 mm of the transparent tube on the other side and the insulation on the other. SS CTA85 must be applied with a 50 % overlap and by stretching it to half of its original width.



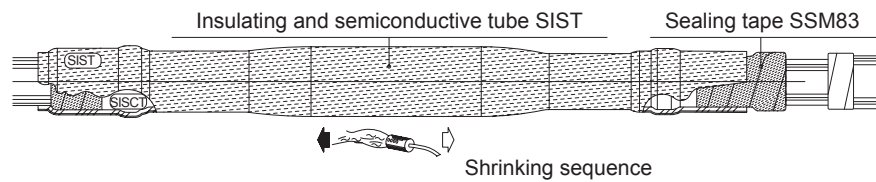
23. Wrap two layers of stress control tape SSCTA85 on the semiconductive layer edge on the XLPE cable side. Wrap SSCTA for 10 mm on the semiconductive layer and for 20 mm on the insulation. Start from the semiconductive layer side. SSCTA85 must be applied with a 50 % overlap and by stretching it to half of its original width.



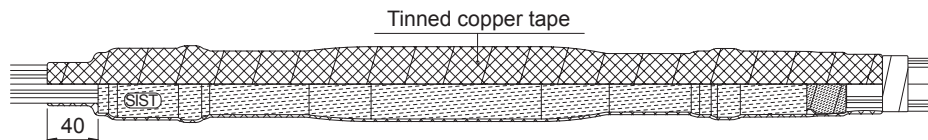
24. Centre the stress control tube SISCT on the connector. Start shrinking the tube from the middle and move towards the ends. Clean the surface of the stress control tube after shrinking.



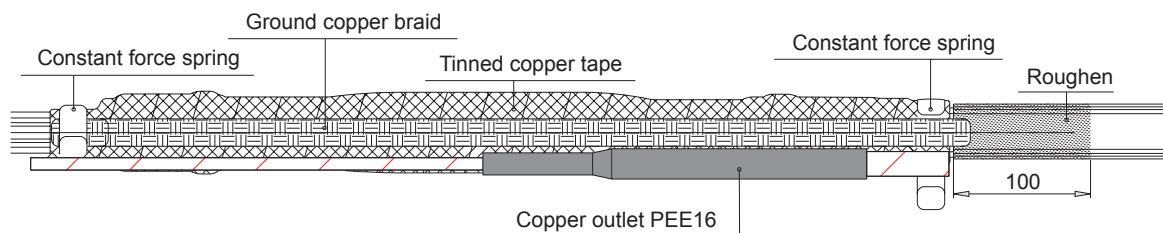
25. Wrap two layers of sealing tape SSM83 starting from the end of the stress control tube and continuing for 30 mm on the paper insulated core side. Wrap two layers of sealing tape SSM83 starting from the end of the stress control tube and continuing to cover 20 mm of the wires, tapes or AHXAMK-W aluminium foil shield on the XLPE insulated cable side.



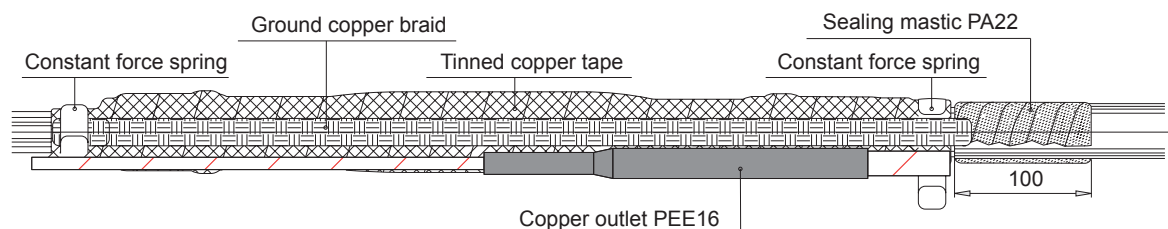
26. Centre the insulating and semiconductive tube SIST on top of the stress control tube. Start shrinking it from the middle and move towards the ends.



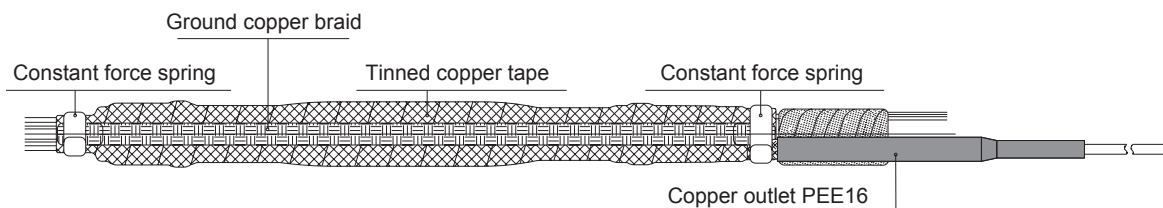
27. Wrap tinned copper tape on the joint starting to cover 40 mm of the aluminium sheath, continue to cover the joint and the open part of the AHXAMK-W cable aluminium foil. Tinned copper tape must be applied with a 20 % overlap. Fix the end of the tape by knotting it.



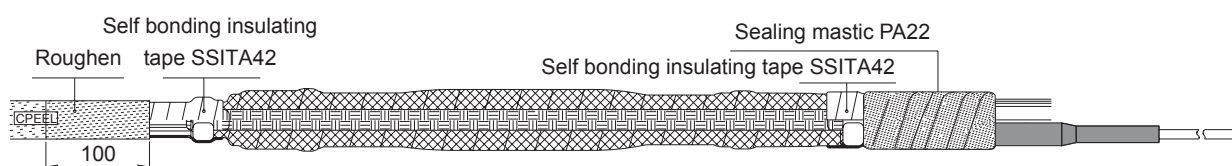
28. Roughen 100 mm of the AHXAMK-W cable outer sheath with grinding paper. Place the ground copper braid on the joint. Fix the braid on the paper insulated cable end with two turns of the constant force spring. Fold the braid end over the spring and wrap the rest of the spring on the folded braid end.
- Put the copper outlet PEE16.3 on the joint so, that the braid end is on the tinned copper taped end on the AHXAMK-W cable side and the outlet conductor end directs to the paper insulated cable side. Fix the outlet braid end and the other end of the ground copper braid with two turns of the constant force spring.



29. Cover the 100 mm length of the roughened part of the AHXAMK-W cable outer sheath with one layer of sealing mastic PA22. Wrap the sealing mastic with a 50 % overlap and by stretching it to half of its original width.



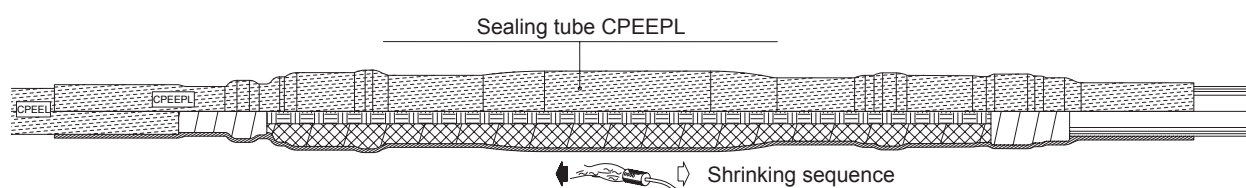
30. Fold the copper outlet to the opposite direction so that the copper conductor end directs out from the joint on the AHXAMK-W cable side. Fold the ground copper braid end over the spring and wrap the rest of the spring on the both folded braid ends.



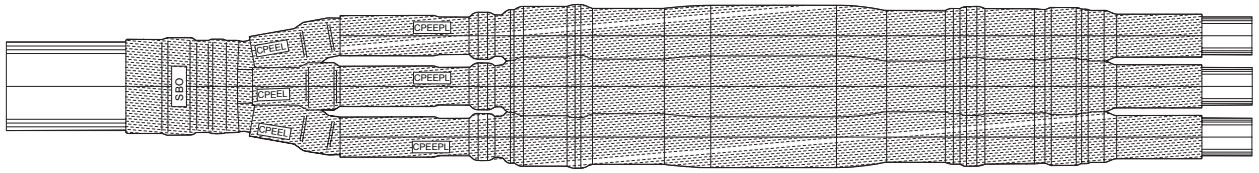
31. Wrap one layer of sealing mastic PA22 on the outlet and the previous layer of the sealing mastic. Wrap the sealing mastic with a 50 % overlap and by stretching it to half of its original width.

Wrap some layers of self-bonding insulating tape SSITA42 on the constant force springs and the ground copper braid wires to smooth the sharp edges. Take care that the ends of the braid wires are fully embedded in the taping. Self bonding insulating tape must be wrapped by stretching it a bit. Wrap the tape to the direction, which tightens up the constant force spring. Cover also the open aluminium sheath.

Roughen 100 mm of the CPEEL tube on the paper insulated cable side with grinding paper.



32. Centre the CPEEPL sealing tube on the joint. Start to shrink the tube from middle and move towards the ends. The tube is properly shrunk when the adhesive starts to come out from the ends.



33. The joint is finished and ready to use, but let it cool down before loading it mechanically.
34. Connect the separate earth conductor of the AHXAMK-W cable to the copper outlet conductors of the joint with the connectors included in the kit.



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