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Shrink Polymer Systems

Cable Installation Materials – 24 volts to 36 kV

INSTALLATION INSTRUCTION
HEATSHRINK/RESIN COMBINATION JOINT SUIT 3 CORE 120mm^2 24kV XLPE CABLE WITH INDIVIDUAL LEAD SCREEN CORES AND STEEL TAPE/DOUBLE STEEL WIRE ARMOURS REF NO: SPS 1232

- THESE INSTRUCTIONS SHOULD BE FOLLOWED BY A TRAINED COMPETENT FITTER
- A PROPANE GAS TORCH IS THE PREFERRED METHOD FOR SHRINKING THESE MATERIALS
- ENSURE THAT THE MATERIALS ARE KEPT CLEAN AND DRY AND ARE FREE FROM DUST, SAND AND GREASE
- PLEASE CALL SHRINK POLYMER SYSTEMS FOR ANY ADVICE

DATE OF ISSUE: 24.05.12

CABLE PREPARATION

ALL DIMENSIONS SHOWN IN mm

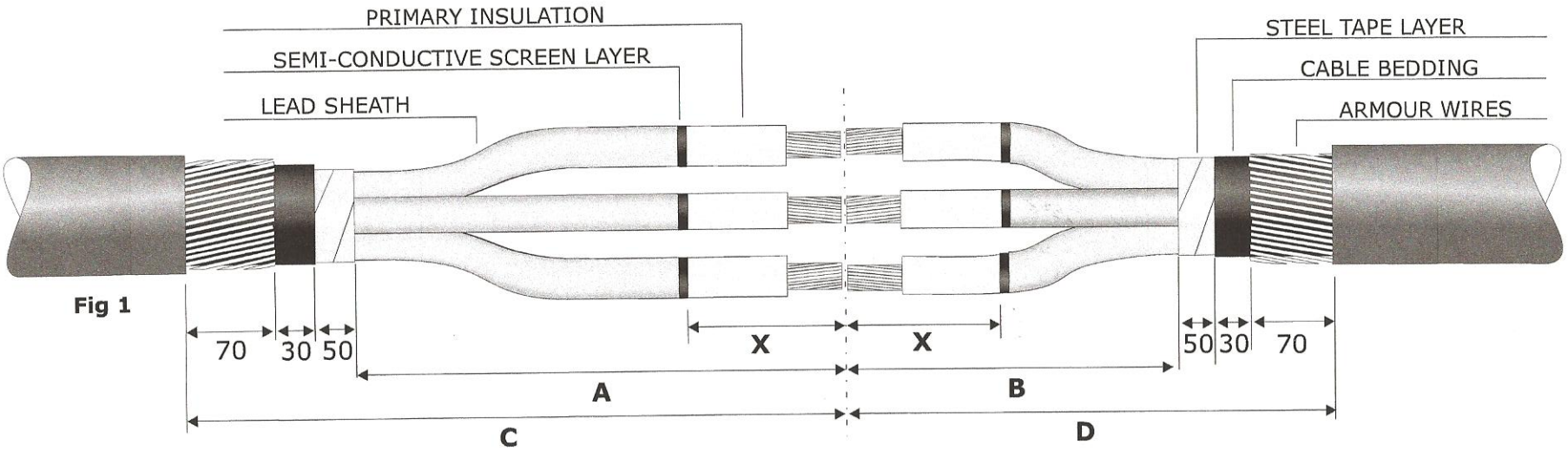

Fig 1

1. Ensure the cables overlap before preparing to the dimensions shown above and in accordance with the Table 1 below for conductor size. Ensure you use the same cable range dimensions as the kit supplied.

2. Before proceeding, ensure any components that need to be positioned over the cable end/s are positioned now before the cores are jointed.

CONDUCTOR SIZE (mm^2)	A	B	C	D	X (mm)	MAX CONNECTOR LENGTH (mm)
120-185	1000	550	1150	700	220	150

Table 1

Note:- These joints are designed for use with MV compression ferrules and "Tapered Centralised Conductor" mechanical connectors.

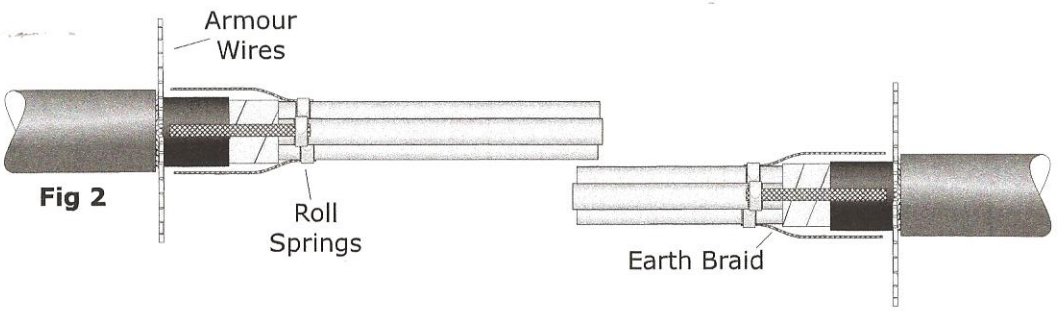

Fig 2

3. Secure the 3 x short tinned copper earth braids to the lead sheath on each core with the stainless steel roll springs supplied as shown in Fig 2.

Note: the user may wish to not fit these shorter braids at this stage and instead, secure the 3 x longer earth braids to the lead at the same time as the longer braids are secured to the steel tape and armour wires. However, it maybe easier to fit these now before the cores are connected.

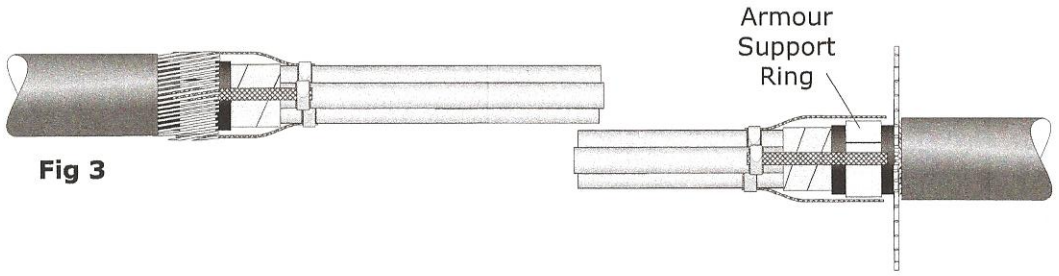

Fig 3

4. Bend back the armour wires and fit the armour support ring and bend back the wires upon it. **Note:** due to double armour wire and steel tape layer, it may not be necessary to fit an armour support ring.

Single core shown for clarity

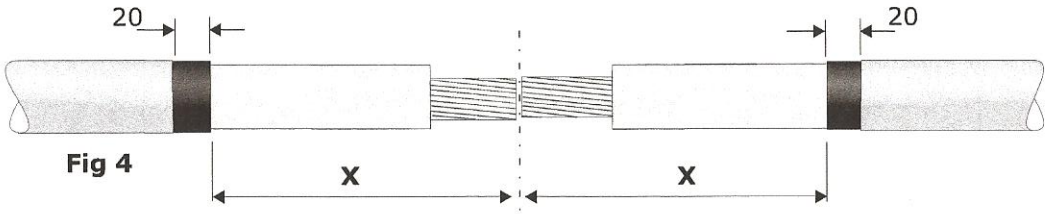

Fig 4

5. Using a suitable tool, remove the lead sheath from each core to distance of 20mm from the end of the semi-conductive screens as shown in Fig 4.

Very carefully remove the semi-conductive layer to the "**X**" distance shown in Table 1. Take care not to damage the primary insulation, particularly at the screen ends.

Thoroughly de-grease the exposed insulation using the cleaning tissues provided and ensure no trace of the screen remains.

Note:- Screen removal tools can be provided. See website for screen removal advice/videos.

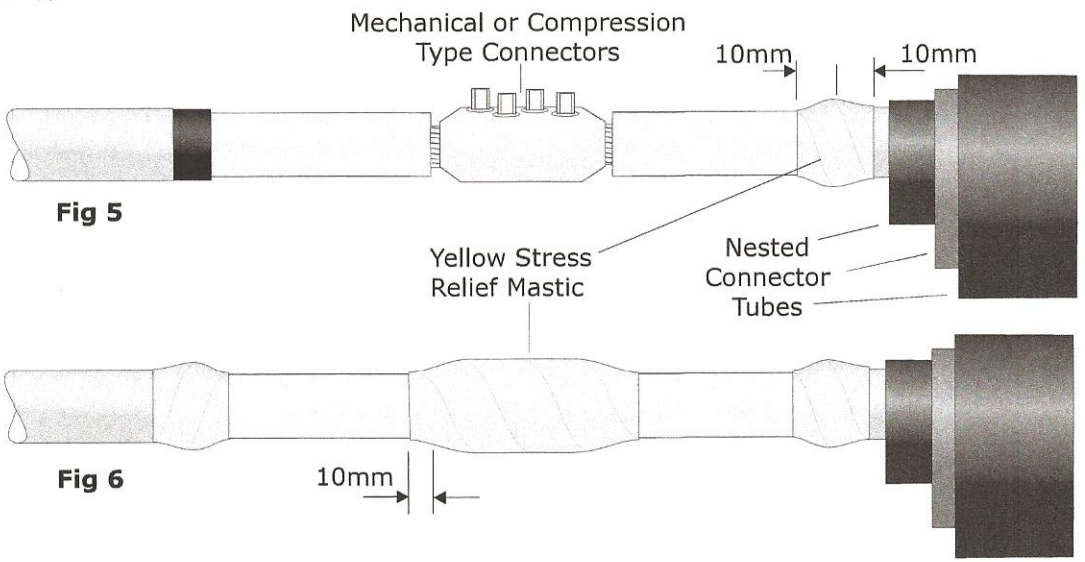

Fig 5

Fig 6

Fig 7

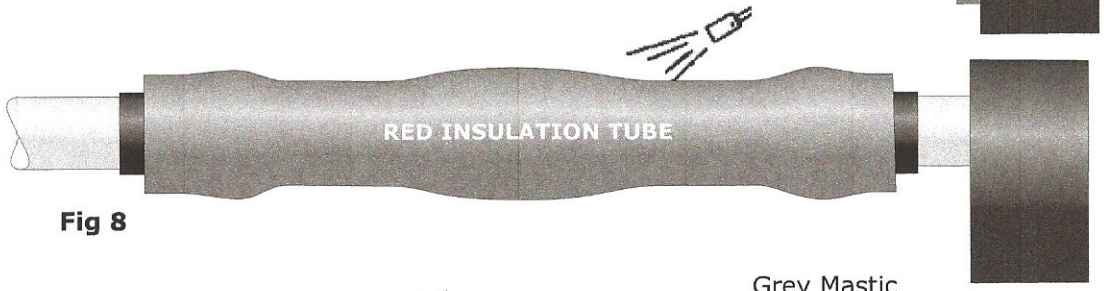

Fig 8

Fig 9

6. Park the stress control tubes, red insulation tubes and red/black dual wall tubes over each core as shown in Fig 5.

Join the conductors using an approved MV "Tapered" connector, remove any sharp edges and de-grease before proceeding.

7. Stretch the yellow stress relief tape and apply over the screen cut area, extending onto the primary insulation by 10mm and onto the lead sheath on each core also by 10mm as in Fig 5.

8. Apply the yellow stress relief mastic over the connector area under tension and with a 50% overlap. Extend onto the primary insulation by 10mm, as shown in Fig 6.

Important:- Fill in the gap between primary insulation and connector. Also if mechanical connectors used, fill any voids that the bolts leave after they have been sheared.

9. Centralise the 3 x black stress control tubes over the connector area, ensuring they overlap the core screens at both ends. Starting from the middle, using a soft flame torch, apply heat all around the tubes until fully recovered.

10. Now centrally position the red insulation tubes and shrink as previous.

11. Finally position the red/black dual wall tubes and starting in the middle and working towards the ends, shrink them, keeping the flame moving all around the tubes to ensure an even recovery and wall thickness.

12. Stretch and apply the short lengths of 4SCHV grey mastic tape over the tube ends (both sides), as in Fig 9.

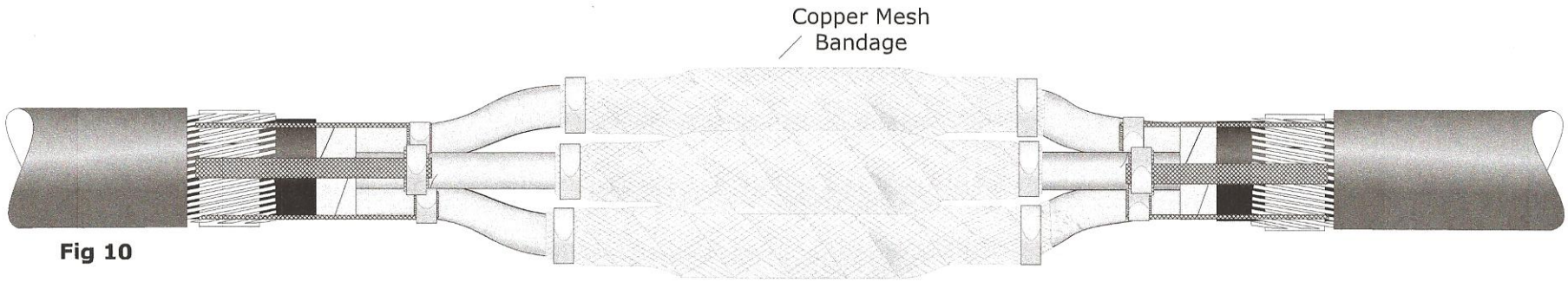

Fig 10

13. Take a roll of the copper mesh bandage and with half width overlap apply around each core. Extend past the end/s of the connector insulation tube set and secure to the lead sheath at each side with roll springs as shown above in Fig 10.

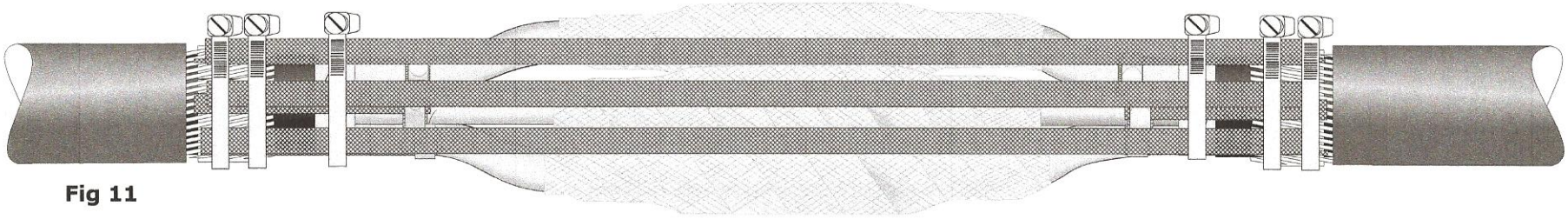

Fig 11

14. Position the 3 x main earth straps from one side of the joint to the other. Use the worm drive armour clamps supplied to secure the braids to the armour wires and the steel tape armour layer, as shown above in Fig 11.

Note: if user decided not to fit the 3 x shorter earth braids to the lead, as shown in Fig 2, he should now secure these longer earth braids to the lead sheath at each side with the roll springs.

15. As this joint will be contained within a resin filled stainless steel box, refer to the box and resin application instructions supplied with these additional components.