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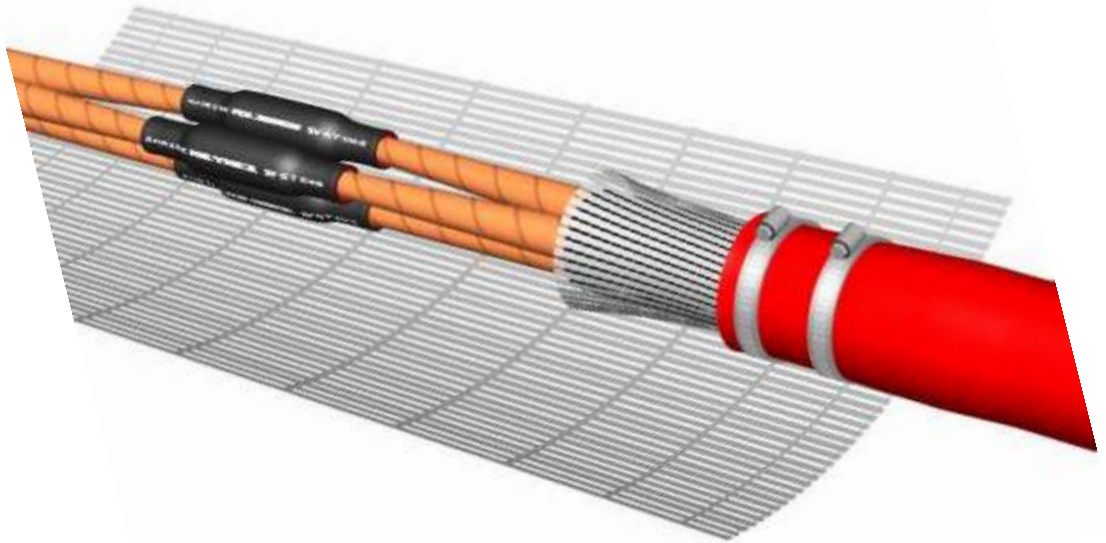
INSTALLATION INSTRUCTION
HEATSHRINK JOINT SUIT 3 CORE 7.2-12kV XLPE/SWA/PVC
REFERENCE TYPE: TDAJ --X-3C



- 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 THORNE & DERRICK FOR ANY ADVICE

DATE OF ISSUE: 27.07.09

CABLE PREPARATION

ALL DIMENSIONS SHOWN IN mm

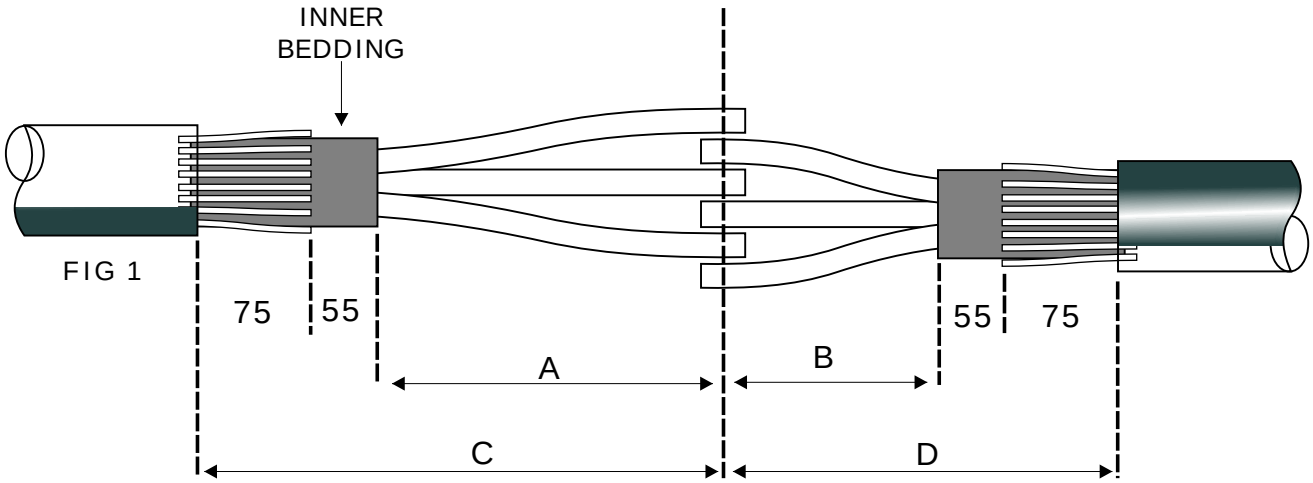


FIG 1

1. Ensure the cables overlap before preparing the Cables to the dimensions shown above and in accordance with the Table 1 below for Conductor size.

2. Remove the Outer Sheath and expose the Armour Wires to 75mm and Inner Bedding 55mm beyond them as shown above.

CONDUCTOR SIZE (mm^2)	A	B	C	D	X (mm)	MAX CONNECTOR LENGTH (mm)
35-70	520	330	650	460	160	100
95-185	520	330	650	460	170	130
185-300	670	380	800	510	180	150

Table 1

Note:- If 7.2kV, Insulation Build up Tubes maybe required, see separate instruction

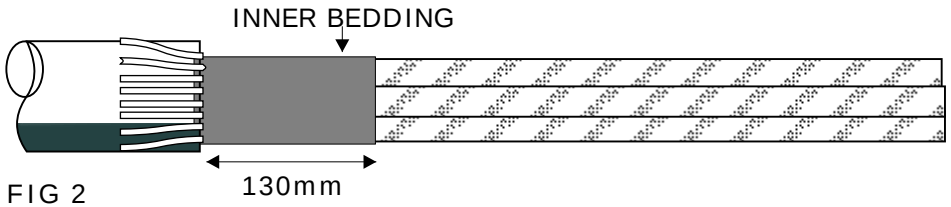


FIG 2

3. Expose the Armours in Accordance with Table 1 and expose the Inner Bedding to 130mm as shown in Fig 2.

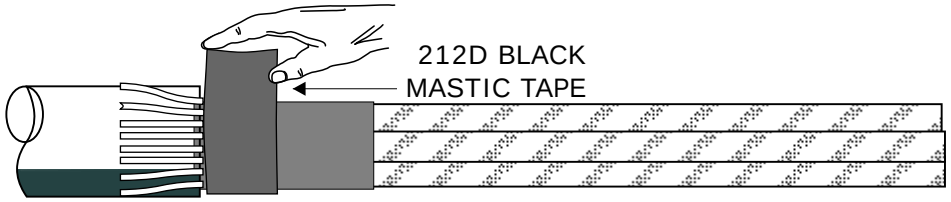


FIG 3

4. Wrap a turn of 212D Black Mastic Tape around the Inner Bedding butting up to the Armours.

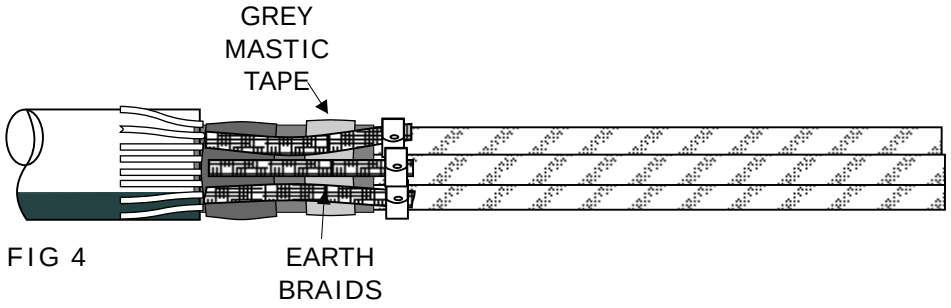


FIG 4

5. Apply a turn of Grey Mastic Tape around the Inner Cable Bedding as shown in Fig 4. Position the Copper Earth Braids onto the Cores so that they rest upon the Mastic Tape. Secure the Earth Braids to the Copper Tape Screens with the Roll Springs provided. Apply Grey Mastic Tape over the Braids as shown in Fig 5.

Note:- Braids not required if Cores have Copper Wire Screens.

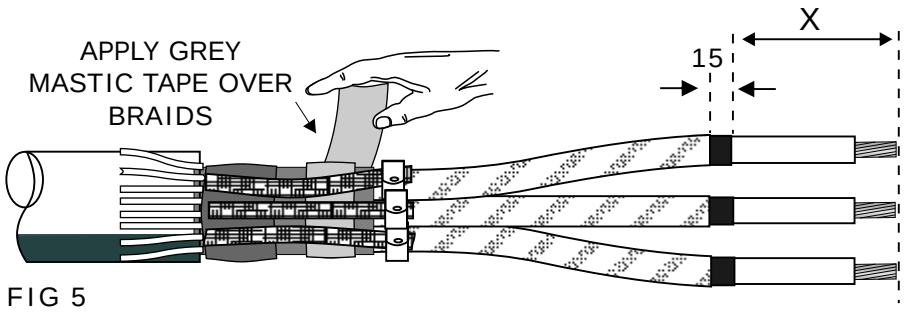


FIG 5

6. Remove the Copper Tape Screens to dimension shown in Table 1 (X) +15mm as in Fig 5.

Carefully remove the Semi-Conductive layer to a point 15mm from the Copper Tapes as shown in Fig 5.

Important:- Be very careful not to score or nick the Insulation at this point. Suitable Tools can be provided for this purpose.

Clean and de-grease the Screen cut area before proceeding.

Note:- If Cable has Copper Wire Screens on each Core, twist together and bend back out of the way. These can be laid across the joint gap and connected at a later stage.

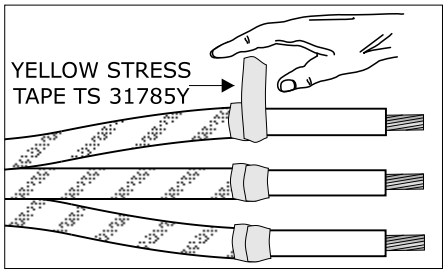


FIG 6

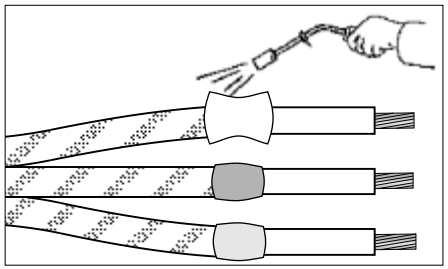


FIG 7

7. Stretch the Yellow (TS 31785Y) Stress Tape and apply over the ends of the Screen cuts, overlapping them by 10mm onto the Copper Tape Screens and 10mm onto the Primary Insulation.

8. Position the short Phase Colour Sleeves centrally over the applied Yellow Stress Tape and shrink into position as shown in Fig 7. This protects the Tape whilst positioning the Connector Tubes and provides useful phase marking.

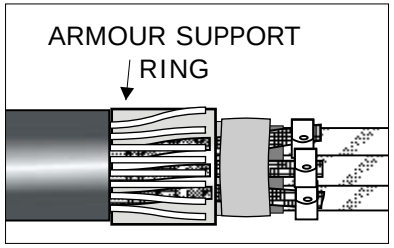


FIG 8

9. Position the Armour Support Ring over the Cable Bedding. Build up the Diameter underneath it with 212D Black Mastic Tape if necessary. Bend back the Armour Wires upon the Ring along with the Earth Braids from the Copper Tape Screens.

Note:-

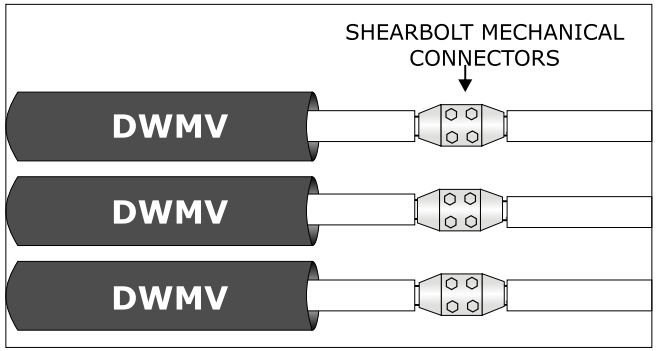


FIG 9

10. Position the Outer Shrink Tube/s over the Cable end/s and the Connector Insulation/Semi-Conductive Tubes (DWMV) onto the longer prepared Cores.

11. Fit the Mechanical Shearbolt Connectors and using a Socket or wrench, tighten the bolts until they shear. De-grease Connectors and check for any sharp points which should be removed before proceeding.

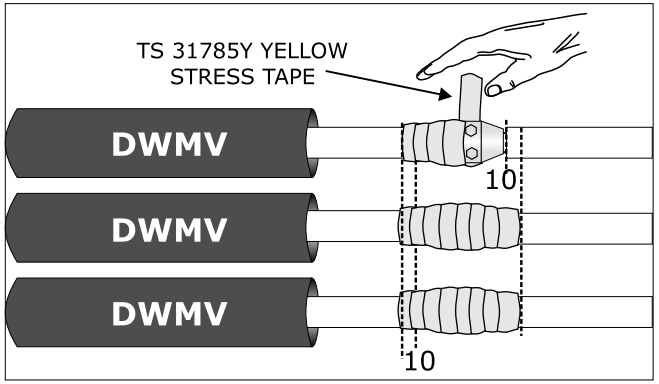


FIG 10

12. Wrap the Yellow Stress Tape (TS 31785Y) around the Connector area with stretch and ½ width overlap. Extend the Tape onto the Primary Insulation by 10mm either side as shown in Fig 10.

Important:- Fill in the gap between Primary Insulation and Connector. Also fill any voids that the Bolts leave after they have been sheared.

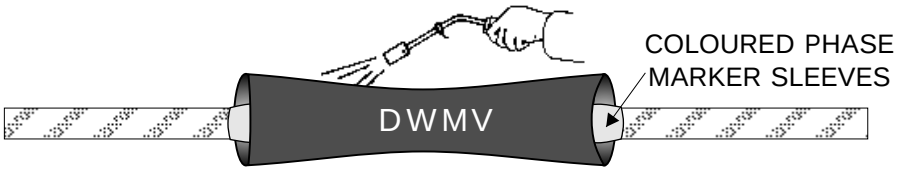


FIG 11

13. Position the (DWMV) Combined Insulation/Semi-Conductive Tubes centrally over the Connectors and starting at the centre, shrink to one end at a time. Keep the flame on the move to ensure an even wall thickness.

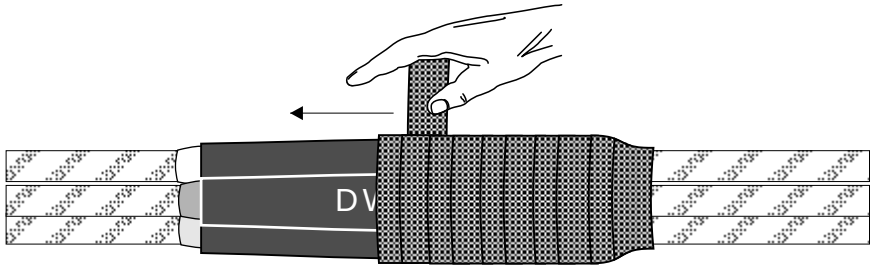


FIG 12

14. Pull the Cores together and wrap the roll of KM50 Copper Screening Bandage around the Insulation/Conductive Tubes extending onto the Copper Tape Screens as shown in Fig 12.

Open spiral the remaining end of the Screening Bandage to the earth connection point on the opposing Cable as shown in Fig 13.

Note:- If Cores are Copper Wire Screened, twist the Wires together to form a Conductor and connect to the opposing side with suitable Connectors.

Do the same for any separate Earth/Ground Core that maybe present.

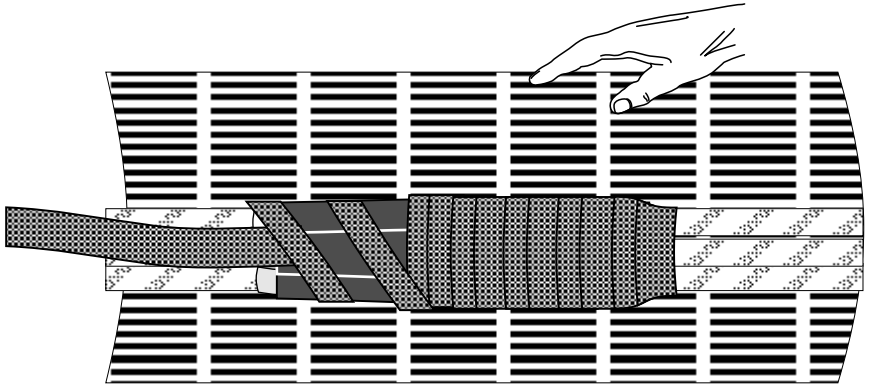


FIG 13

15. Take the Heavy Duty Aluminium Armour Cage and wrap it tightly around the joint gap.

This is only supplied if Cables are Steel Wire /Tape Armoured.

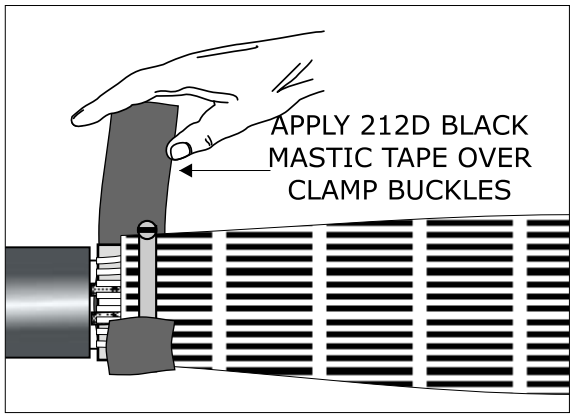


FIG 14

16. Secure the Armour Cage along with the KM 50 Screening Bandage and the Earth Braids from the Copper Tape Screens to the Armour Support Ring at each end with the Armour Clamps provided.

17. Apply 212D Black Mastic Tape over the Clamp Buckles as shown in Fig 14.

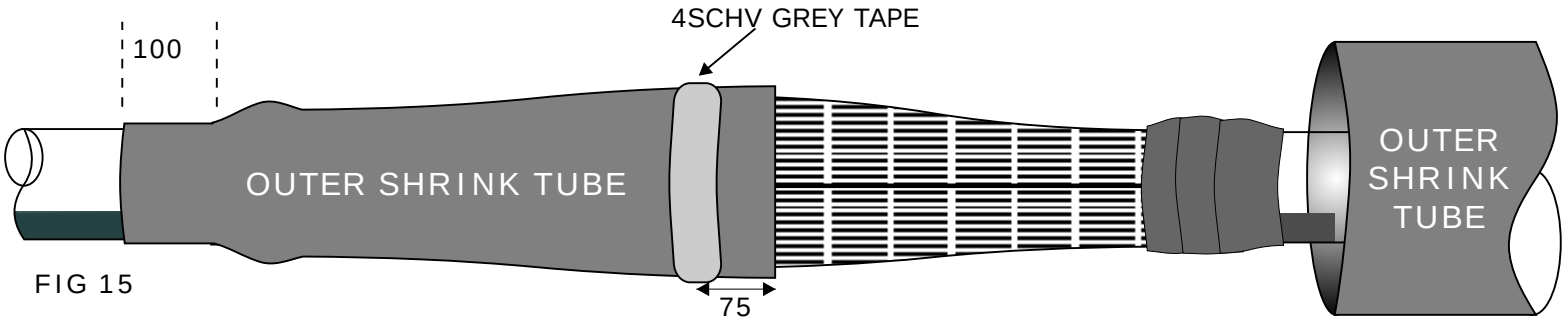


FIG 15

18.Make a mark at 100mm on the Outer Cable Sheath on the Long side of the Joint and position one of the Shrink Tubes to this point. With a suitable heat source, start shrinking from the centre of the Tube to one end at a time. Keep the flame on the move to ensure an even wall thickness. Apply a turn of 4SCHV Grey Tape approx 75mm in from the end of the Tube as in Fig 15.

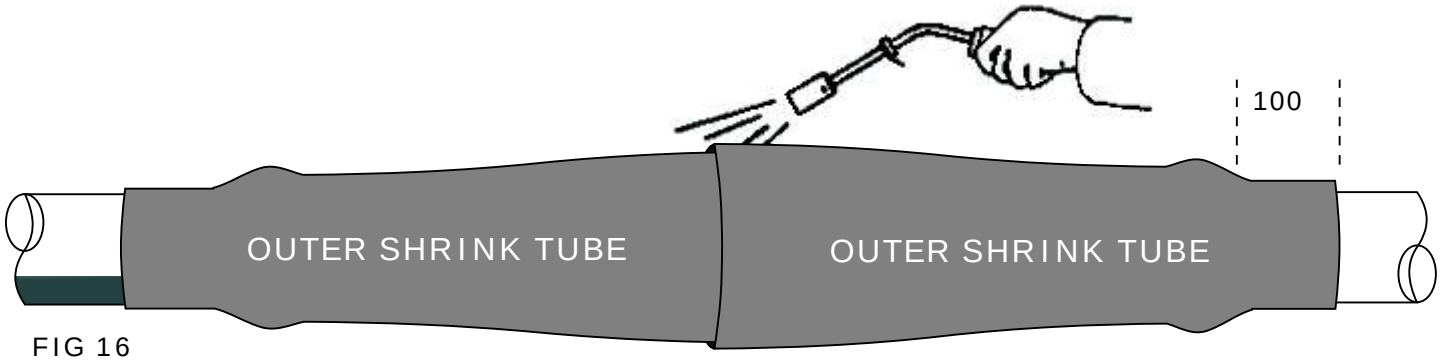


FIG 16

19. Make a mark at 100mm on the Outer Cable Sheath on the Short side of the joint and position the second Tube at this point. Shrink as previous keeping the flame on the move. Once fully shrunk Sealants should be visible at Tube ends.

20. Allow the completed Joint to cool before applying any mechanical strain.

SUPPLEMENT INSTRUCTION SHEET
INSULATION BUILD UP ON 7.2kV XLPE CABLE

Our Medium Voltage Heatshrink Joints are designed to cover a wide range of Conductors by utilising Heatshrink Tubes with high Shrink Ratios. Occasionally we are asked to provide a Joint outside of the normal operating range and when this is the case, Insulation Build Up Tubes are sometimes required to be fitted onto the smaller Cores.

If no extra Tubes are supplied within this Joint, they are not required.

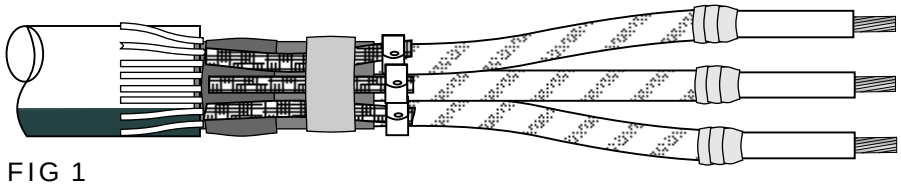


FIG 1

1. Apply the Yellow Stress Tape over the Screen points as shown previously in Fig 6 and section 7.
Note: No need to fit Colour Phase Marker Sleeves

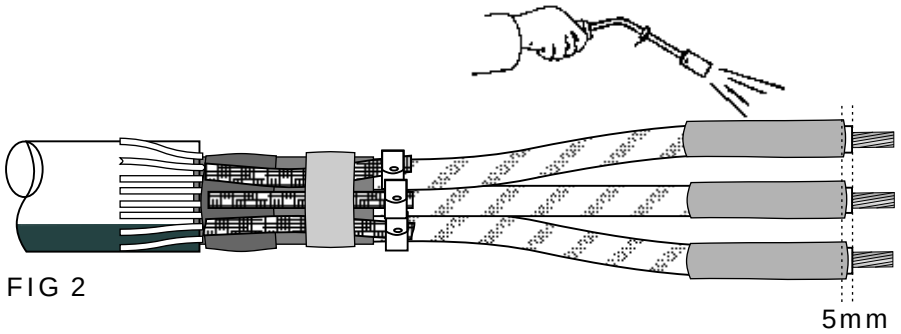


FIG 2

2. Position the Short Red Insulation Build Up Tubes and position them at a point 5mm back from the end of the Primary Insulation as shown in Fig 2. With a suitable heat source shrink the Tubes into position. Keep the flame on the move all around the Tube to ensure an even wall thickness.

Refer back to main Installation Instruction. The Dual Wall Insulation/Conductive Tubes are fitted next.