



# Shrink Polymer Systems

Cable Installation Materials – 24 volts to 36 kV

## Installation Instruction Heatshrink Termination For Single Core Paper Cables 7.2kV to 36kV

\* PLEASE READ INSTRUCTIONS THOROUGHLY BEFORE PROCEEDING \*

### INDOOR



### OUTDOOR



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## GENERAL FITTING INSTRUCTIONS

- Use a propane gas torch with a soft flame
- Avoid a pencil like flame due to unregulated air supply
- Keep the flame on the move to avoid scorching
- Ensure all components are kept clean and grease free during installation
- Allow the completed termination to cool before applying any mechanical strain

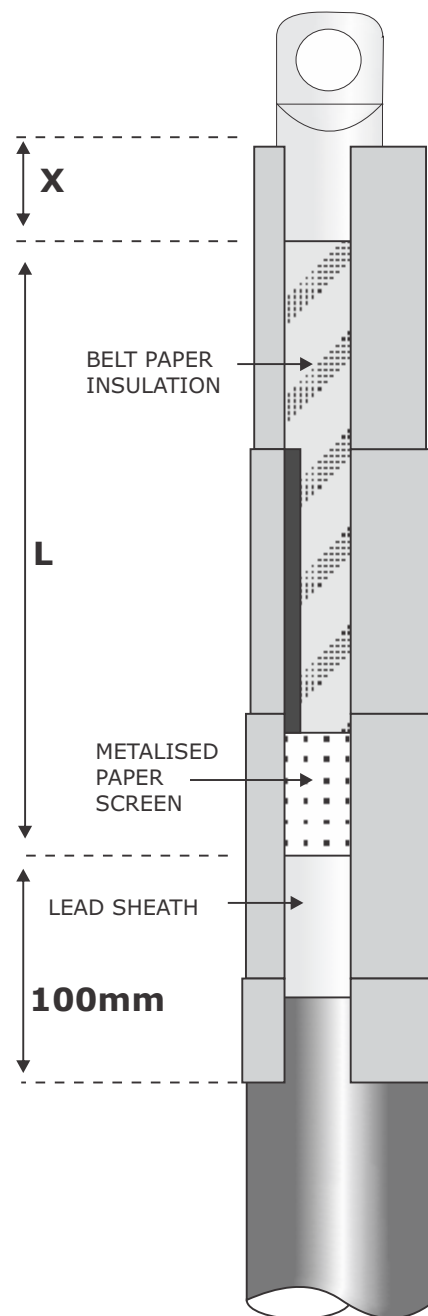
### REMOVE OUTER CABLE SHEATH:-

| VOLTAGE | INDOOR<br>L | OUTDOOR<br>L | X                             |
|---------|-------------|--------------|-------------------------------|
| 7.2kV   | 250mm       | 400mm        | LENGTH OF LUG<br>BARREL + 10% |
| 12kV    | 300mm       | 410mm        |                               |
| 17.5kV  | 400mm       | 550mm        |                               |
| 24kV    | 400mm       | 550mm        |                               |
| 36kV    | 600mm       | 800mm        |                               |

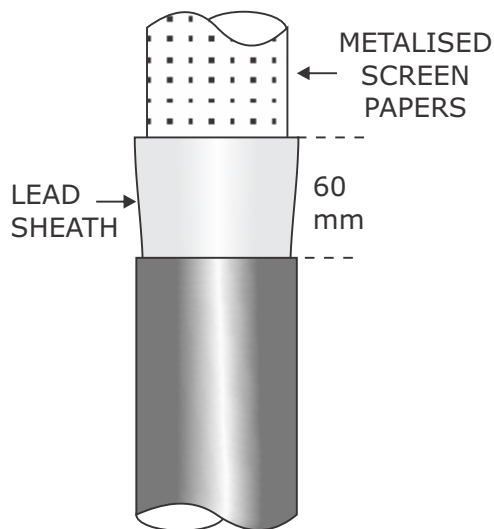
## GLANDING AND EARTHING

A) For Indoor Terminations (Cable End Box), a variety of Glanding and Earthing options are available. Please consult Shrink Polymer Systems.

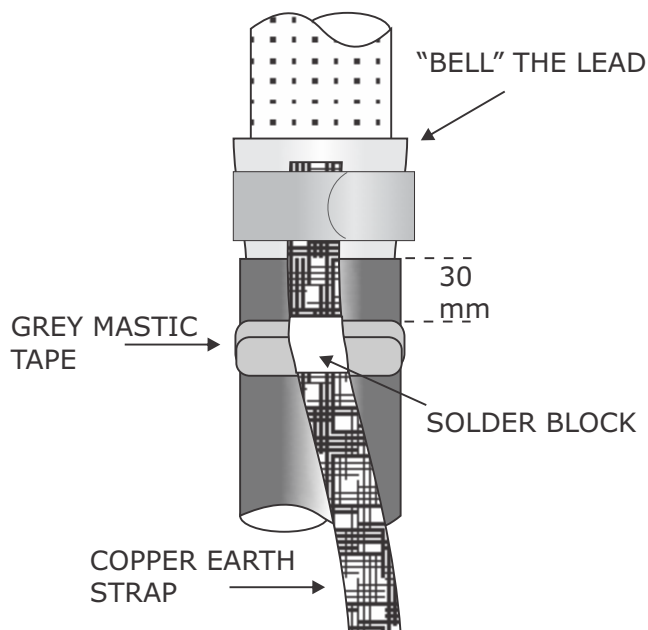
B) For Outdoor Terminations (Pole top), please advise Conductor and voltage rating.



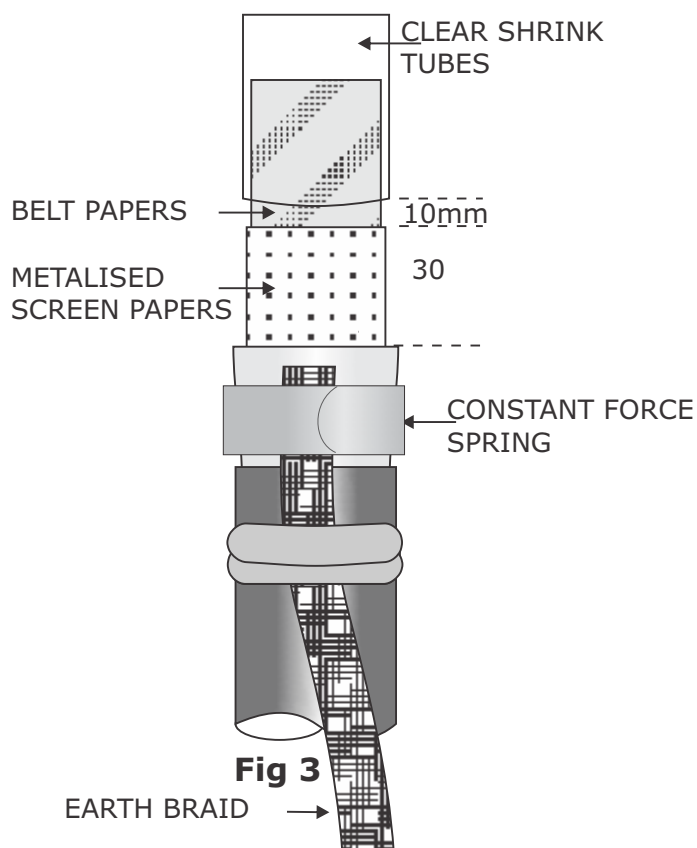
**Fig 1**



**Fig 1**



**Fig 2**



## 1. Installation

Remove the Outer Cable Sheath to the dimensions L+X given in Table 1.

Remove and expose the Lead Sheath to 50mm as shown in Fig 1. Clean and de-grease the Lead and Outer Cable Sheath and "Bell" the Lead cut to stop it from damaging the papers.

## 2. Solderless Lead Earthing

Apply a turn of Grey Mastic Tape at a point 30mm below the Outer Sheath cut.

Position the Tinned Copper Earth Strap onto the Lead Sheath and Secure with a Constant Force Earth Spring. Ensure the Solder Block within the Strap is bedded into the Grey Mastic Tape and apply one more turn of Tape over this point as shown in Fig 2+3. Bond the Earth Strap to a suitable Earth point.

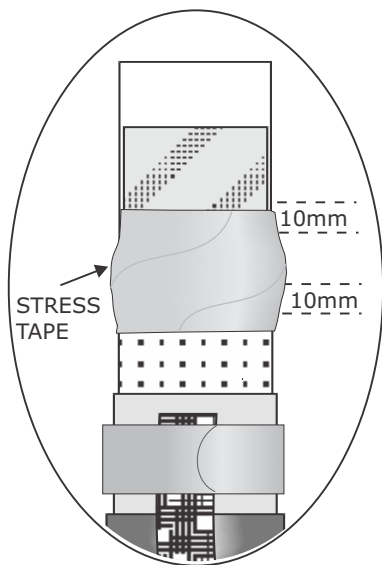
**Note:-** A full range of Solderless Earth kits are available for all voltages and Conductor sizes.

## 3. Paper Screen Treatment

Tie a Binder around the Metalised Screen Papers 30mm up from the Lead cut. Remove the Papers by tearing off at this point.

Position the Clear Shrink Tubes 10mm up from the end of the Paper Screen point and shrink evenly from this end to the top of the Core.

Carefully remove the Binder.



**Fig 4**

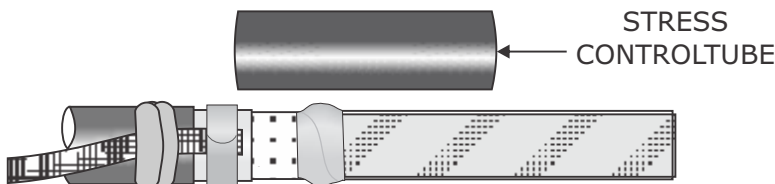
#### 4. Stress Control Tape

Wrap the Yellow Stress Tape with stretch and  $\frac{1}{2}$  width overlap to extend onto the Metalised Paper Screen and Clear Tube by 10mm each as shown in Fig 4.

#### 5. Stress Control Tubes

Position the Stress Control Tube so that it 'Butts' up to the Lead Sheath cut.

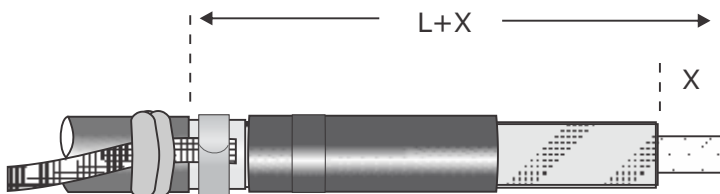
Shrink the Tube starting at the bottom. Shrink evenly all around the Tube to ensure an even wall thickness.



**Fig 5**

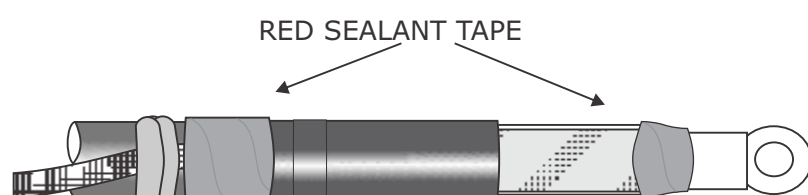
#### 6. Installing Cable Lugs

The Cable should be cut to the dimension  $L+X$  given in Table 1. Remove the Insulation at  $X$  and install the Lug using the appropriate method.

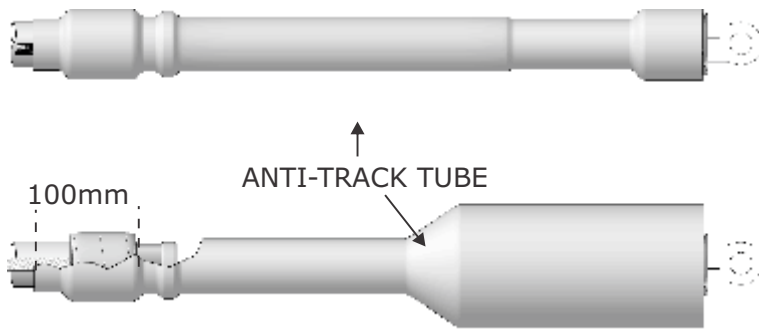


**Fig 6**

Preheat each Lug and wrap two layers of Red Sealant Tape over the Lug Barrel and extend onto the Insulation by approx 10mm. Apply a similar amount of Tape over the Earth Connection point.



**Fig 7**



**Fig 8**

## 7. Installing Anti-Track Tube

Position the Anti-Track Tube so that it overlaps the Earth connection point and outer Cable Sheath by 100mm as shown in Fig 8.

Shrink the Tube starting from the bottom towards the top. Keep the flame on the move to ensure an even wall thickness. Trim the Tube at the Lug end with a sharp knife if necessary.

## 8. Indoor Terminations

Anti-Track Rain Sheds are not required on Indoor Terminations rated between 7.2 and 24kV. One Shed per phase is required on 36kV types (see Table 2).

### Clearance Dimensions

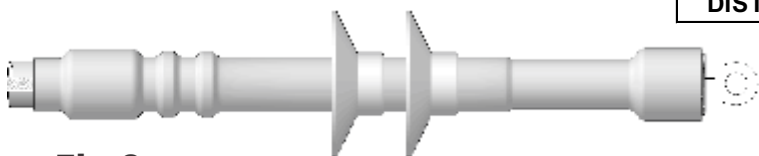
Minimum clearances should be observed for phase to phase and phase to ground (see Table 3).

| NUMBER OF SHEDS PER PHASE |        |         |
|---------------------------|--------|---------|
| VOLTAGE                   | INDOOR | OUTDOOR |
| 7.2kV                     | -      | 2       |
| 12kV                      | -      | 2       |
| 17.5kV                    | -      | 2       |
| 24kV                      | -      | 3       |
| 36kV                      | 1      | 4       |

**Table 2**

| VOLTAGE (kV)  | 7.2 | 12 | 17.5 | 24 | 36 |
|---------------|-----|----|------|----|----|
| DISTANCE (mm) | 15  | 20 | 20   | 40 | 50 |

**Table 3**



**Fig 9**

## 9. Outdoor Terminations

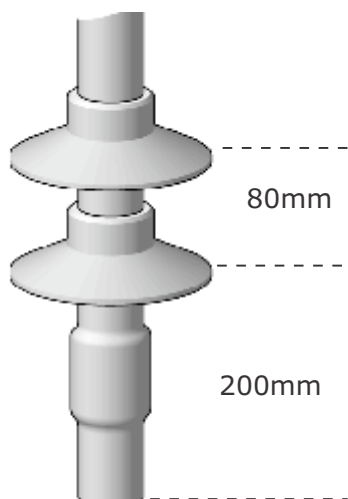
Anti-Track Rain Sheds should be fitted starting from the bottom up as per the dimensions given in Fig 10.

The number of Sheds required depends on the system voltage (see Table 2).

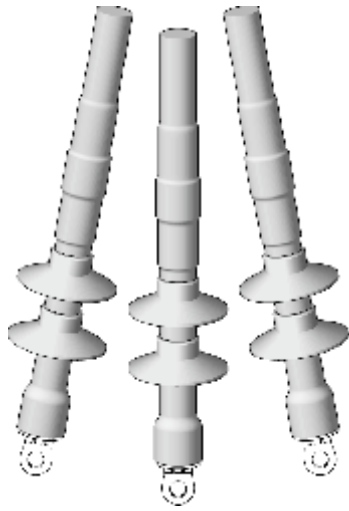
### Positioning of Sheds

The first Shed should be fitted at a distance of 200mm from the lower edge of the Anti-Track Tube to the edge of the Shed. All subsequent Sheds should be fitted at a distance of 80mm from edge to edge.

**Note:-** It is advisable not to position Sheds at the top of the Stress Control Tubes. Re-position Sheds if necessary.



**Fig 10**



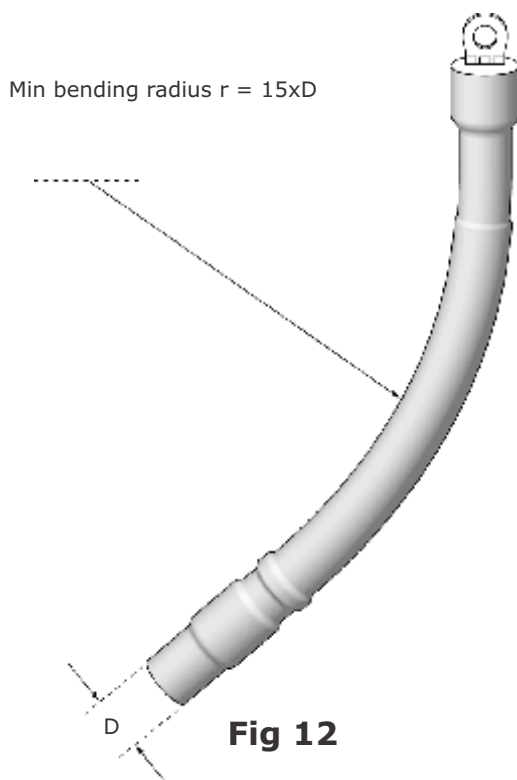
**Fig 11**

## Reverse Connection

If a Termination is mounted so that the connection is above the equipment i.e in the reverse position, Sheds should be installed through 180°.

## 10. Cable Bending Radius

If required, the Cable can be heated to approx 70° C to enable a bend to be introduced. See Fig 12 for bending radius.



**Fig 12**



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