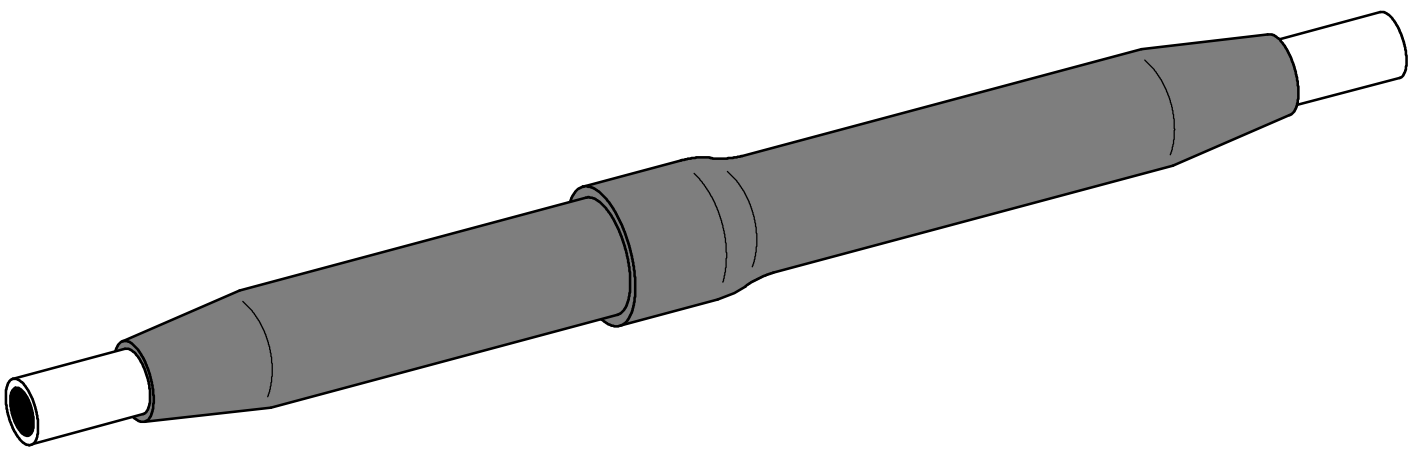
3M QS 3000



Application Range

Kit no.	Cable Dimensions			Connector Dimensions		
	Diameter over Cable Jacket max. (mm)	Diameter over Primary Insulation E (mm)	Cross Section (mm^2)	Diameter max. (mm)	Length max. (mm)	Screen Cross Section max. (mm^2)
AD-72XA1-20-N-50C	65.0	35.9 - 56.2	150 - 630	36.0 - 56.0*	230	50

Different cable constructions may change the actual application range. Diameter over Primary Insulation is the final determining factor.

Important information:
Remaining Material:
This kit contains a number of Constant Force Springs to cater for all types of cable screen constructions. Depending on the cable type, you may have left over Constant Force Springs. Depending on the cable construction, Constant Force Springs will remain.
*** Connector:**
For Connectors below 36 mm in diameter an adaptor tube must be installed over the centre of the connector

3M Deutschland GmbH	Issue: 1	Issue date: 11.01.2021

Please note: This product may only be assembled by trained specialized personnel according to these assembly instructions. The preceding specifications are the result of in-depth research. They correspond to the state of our experience. A test by you will convince you of the excellent properties of the 3M products. Verify yourself whether these products are suitable for your purposes. All questions regarding a warranty liability are governed by our terms of sale, unless legal provisions provide differently.

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3M QS 3000

Universal Inline Splice with Cold Shrink rejacketing

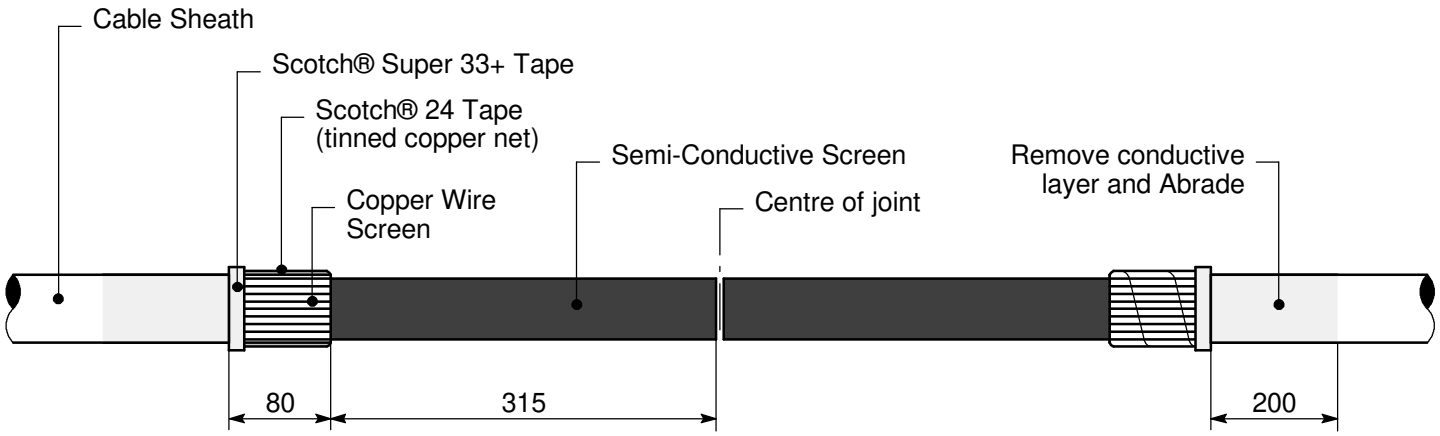
AD-72XA1-20-N-50C

For Polymeric single-core cables acc. IEC 60840 72.5 kV U_{max}
Cable Screen Construction:
-Copper Wire Screen -Copper Wire Screen with Al-laminate -Lead Sheath -Aluminum Tube Sheath

3M Electrical Products

XE-0091-4353-0

1a For Cables with Copper Wire Screen



1a.1 All dimensions are to “centre of joint”.
- Where blocked connectors are used, the dimensions of the block must be taken into account.

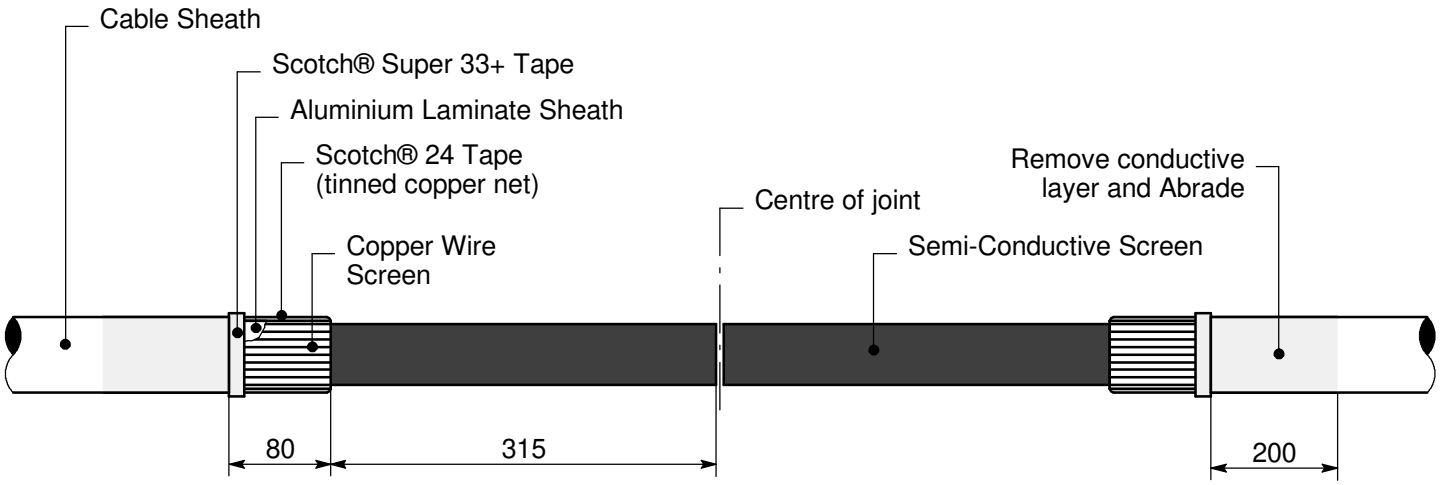
1a.2 Remove the outer sheath as per dimension in Fig 1a.

1a.3 Remove any conductive coating of the cable sheath like graphite or extruded conductive layer for a length of 200 mm and abrade this area.

1a.4 Apply 2 layers of Scotch® 24 tape (tinned copper net) on to cable sheath to a point 80 mm from sheath off position.

1a.5 Fold the screen wires back onto the cable sheath and secure with Scotch® Super 33+ tape according Fig 1a. Cut off excess screen wires ends.

1b For Cables with Copper Wires and Aluminum Laminate Sheath



1b.1 All dimensions are to “centre of joint”.
- Where blocked connectors are used, the dimensions of the block must be taken into account.

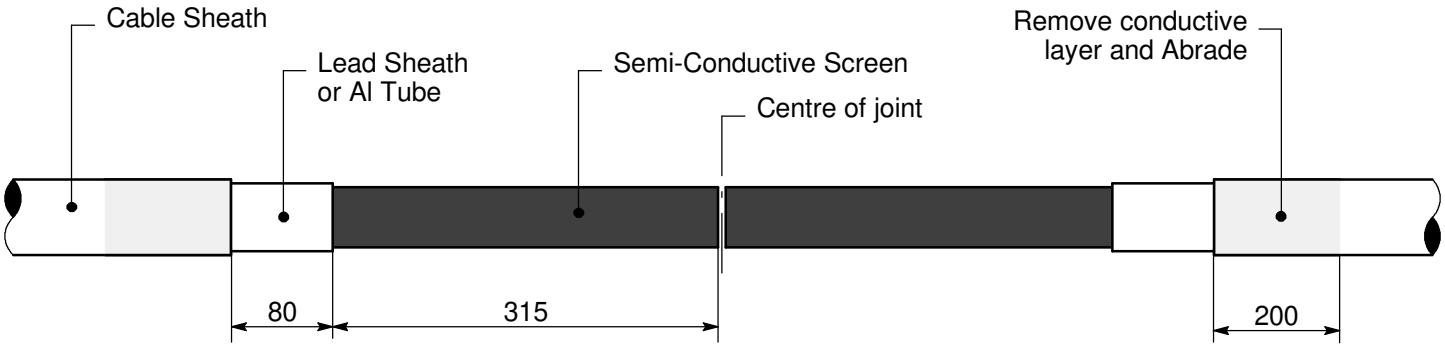
1b.2 Carefully remove the outer sheath as per dimension in Fig 1b exposing 80 mm of aluminium laminate sheath.

1b.3 Remove any conductive coating of the cable jacket like graphite or extruded conductive layer for a length of 200 mm and abrade this area.

1b.4 Apply 2 layers of Scotch® 24 tape (tinned copper net) onto aluminium laminate sheath.

1b.5 Fold the screen wires back onto the aluminium laminate sheath and secure with Scotch® Super 33+ tape according Fig 1b. Cut off excess screen wires ends.

1c For Cables with Lead Sheath or Al Tube

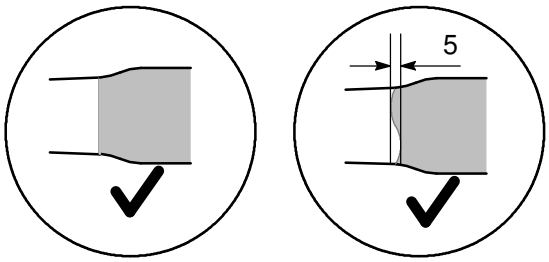


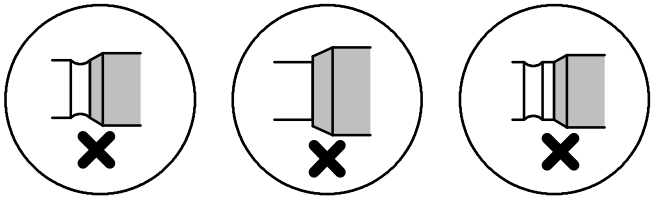
1c.1 All dimensions are to “centre of joint”.
- Where blocked connectors are used, the dimensions of the block must be taken into account.

1c.2 Remove the outer sheath as per dimension in Fig 1c.
1c.3 Remove any conductive coating of the cable sheath like graphite or extruded conductive layer for a length of 200 mm and abrade this area.
1c.4 Remove the lead sheath leaving 80 mm exposed.

Note for the edge of the semi-conductive layer of the cable

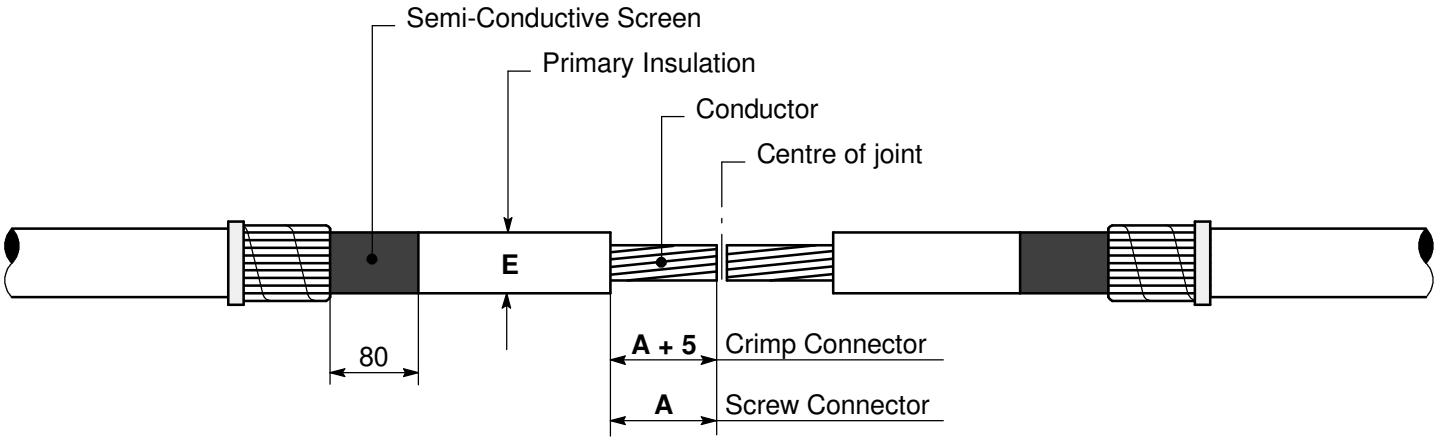
Avoid hollows, edges and sharp spikes at the border to the semi-conductive layer as described in the detailed enlargements.
A varying of the edge of 5 mm is allowed





2

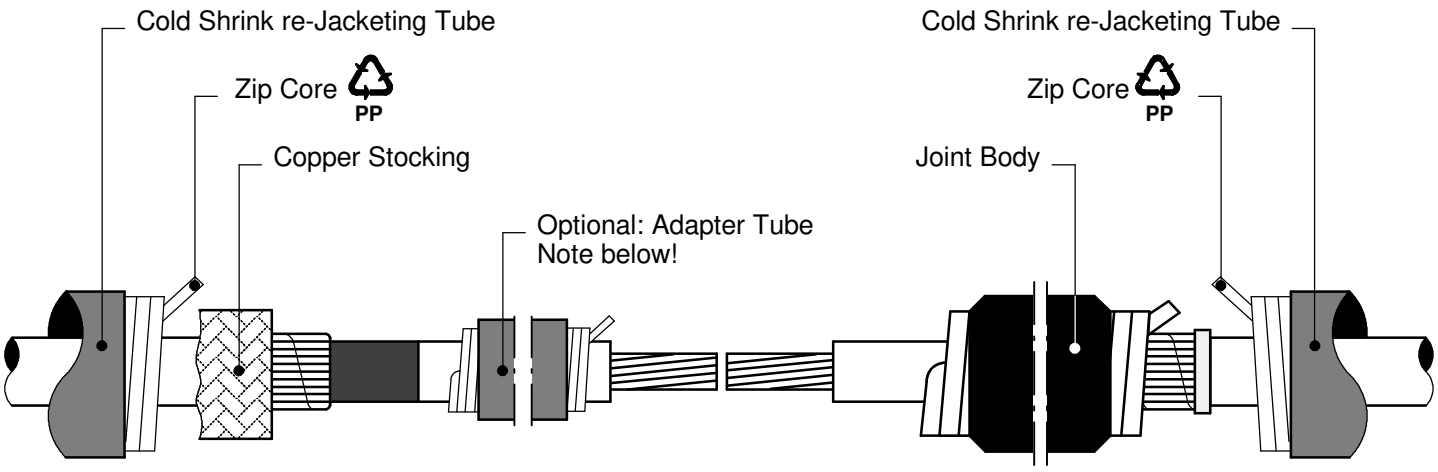
Note: For simplification, following pictures show as screen construction 'Copper Wire Screen'
All steps are also valid for the other screen constructions



2.1 Remove swelling tapes (where applicable).
2.2 Remove semi-conducting layer leaving 80 mm exposed.
2.3 Check diameter over insulation (E). Diameter over insulation must be within the application range of the accessory (specified on the front page).
2.4 Remove primary insulation based on internal depth of connector (A) and according given dimension. Refer to manufacturers' instruction for installation of the connector

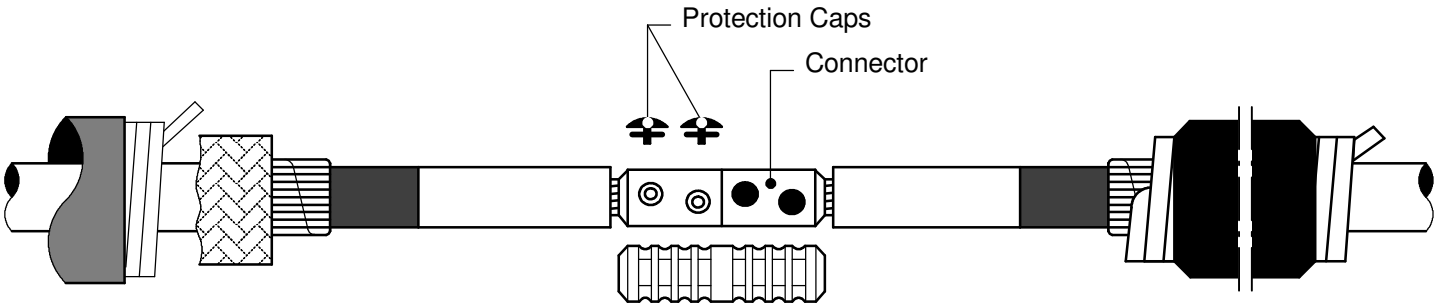
Note:
- All dimensions are to “centre of joint”.
- Where blocked connectors are used, the dimensions of the block must be taken into account.
- Where connectors with asymmetric design are used, the cut back length needs to be calculated accordingly.

3



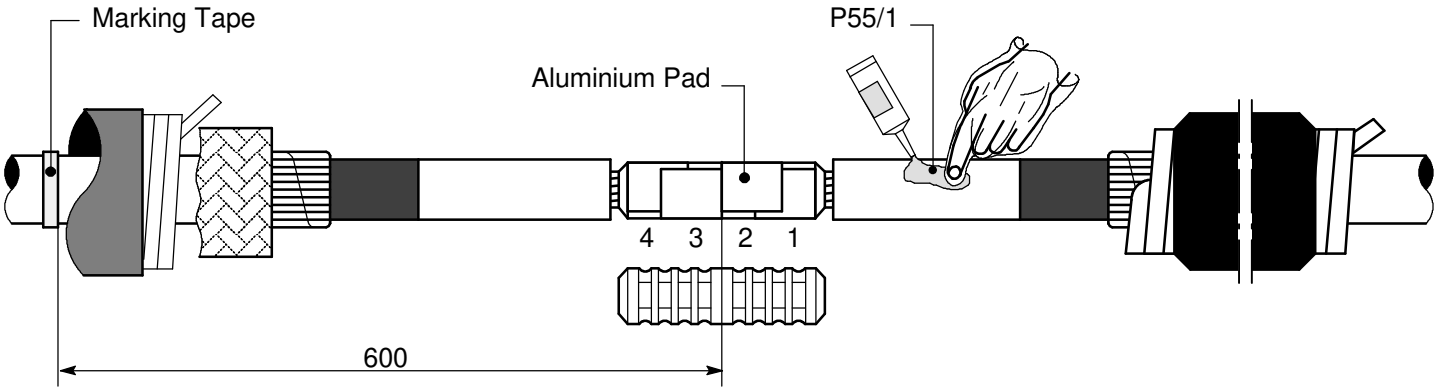
3.1 Position the joint body, the copper stocking and the cold shrink re-jacketing tubes on to the cable ends.
3.2 Position the re-jacketing tubes with the tails pointing to the center of the splice.
Note: For connectors below 36 mm in diameter, park adapter tube on core at this point.

4



4.1 Install the connector according to the manufacturer's instructions. Clean, deburr and degrease the connector.
4.2 Use the protection caps in case of mechanical connector, SICON type.

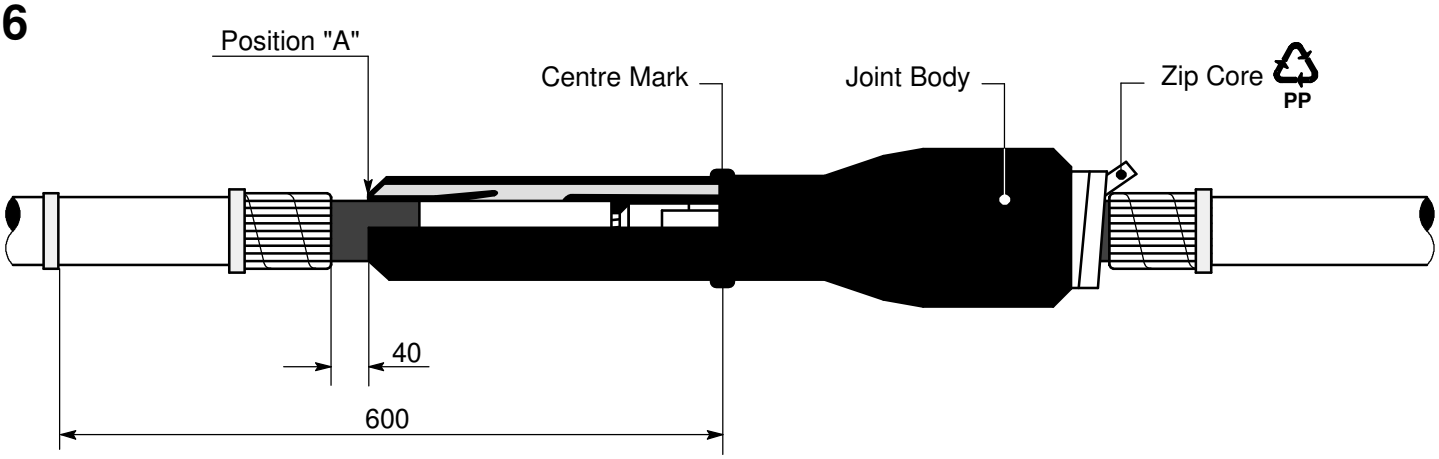
5



5.1 Apply the aluminium pads wrinkle-free over the protection caps or the shear bolts according given sequence. Mind the orientation of the zip core of the splice body.
5.2 Apply a marking tape on cable sheath 600 mm from the centre of the connector. Do this on both sides of the connector.
5.3 Clean the insulation and connector area.
5.4 Apply P55/1 grease over the semi-conductive screens, the insulation and the connector, use the plastic glove provided.

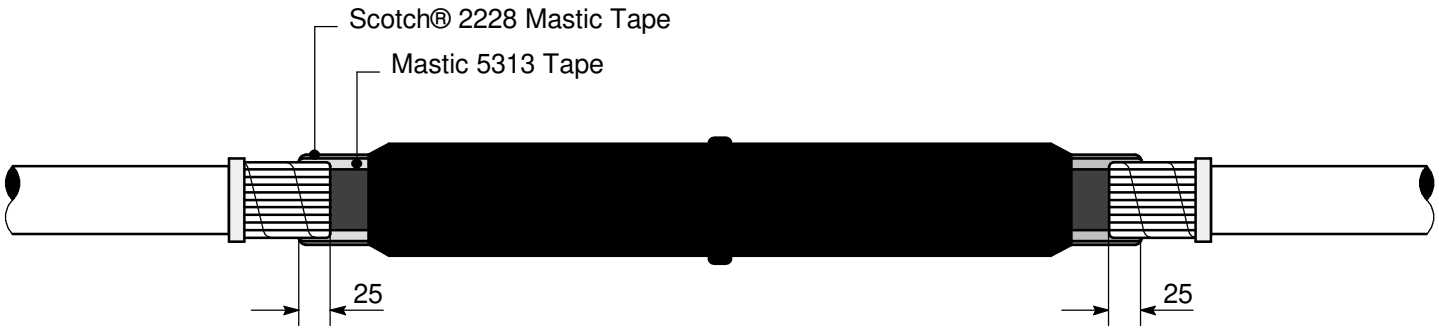
Note: For connectors below 36 mm in diameter, install adapter tube over the centre of the connector at this point.

6



6.1 Slide the joint body over the connector up to position “A".
6.2 Shrink the joint body on to the connection by turning and pulling out the spiral in counter clockwise direction, starting at position “A".
6.3 Check position of the joint body during the shrinking and adjust to get the joint body in the centre.

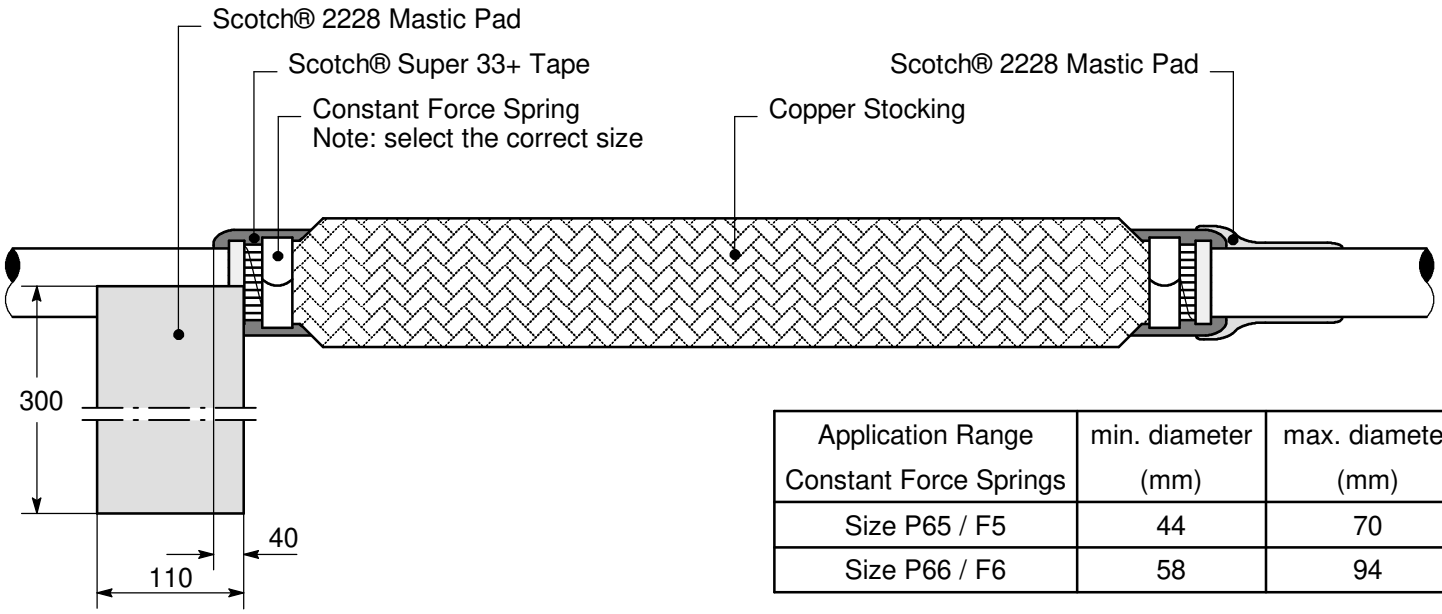
7



7.1 Apply one layer Mastic tape 5313 beginning onto the screen (Copper Wires / Copper Wires with AL laminate / Lead) with slightly tension according given dimension and fill out the gap between the screening wires and the joint body.

7.2 Overwrap the area of Mastic 5313 tape with two half-lapped layers of Scotch® 2228 Mastic tape sligthly stretched.

8



Application Range Constant Force Springs	min. diameter (mm)	max. diameter (mm)
Size P65 / F5	44	70
Size P66 / F6	58	94

8.1 Slide the copper stocking over the connection and connect it to the screen by means of constant force springs.

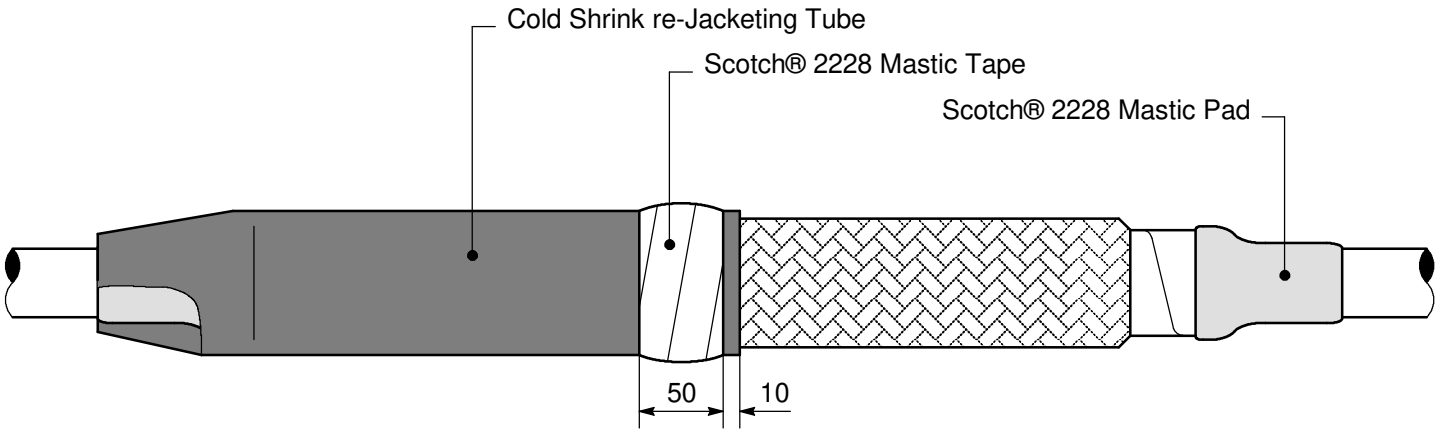
8.2 Measure the diameter over Copper socket and select the correct size of Constant force spring according given application range.

8.3 Install the constant force spring over the copper socket to connect it to the cable screening. Cut off the remaining wires of the copper stocking

8.4 Cover the constant force springs and the exposed gap to cable sheath with two layers of Scotch Super 33+ tape and overlap the sheath for 40mm. Wrapping direction indentical to constant force spring.

8.5 Apply completely one Scotch® 2228 mastic pad on each cable end according given dimension (slightly stretched).

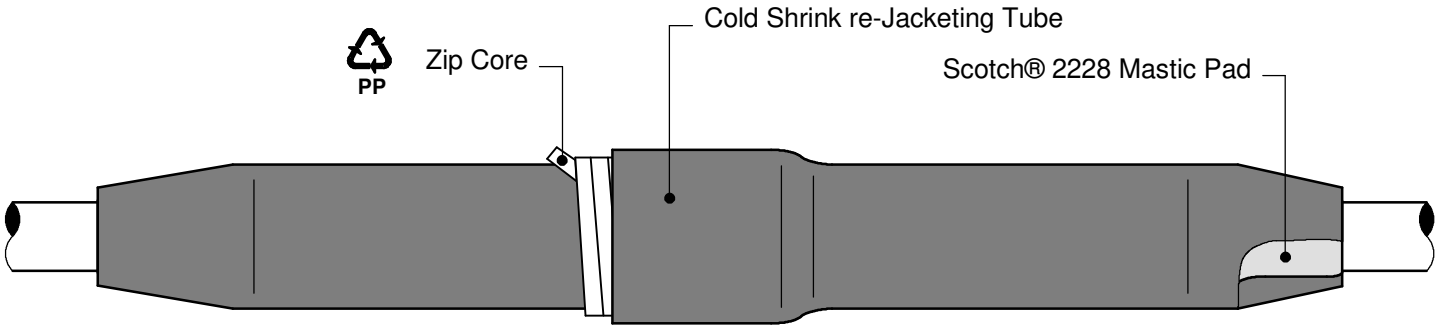
9



9.1 Slide the shortest cold shrink re-jacketing tube over the connection and start to shrink at the outer end of the Scotch® 2228 mastic pad. Shrink the tube down by turning and pulling out zip core in counter clockwise direction.

9.2 Apply two layers Scotch® 2228 mastic tape as shown in the Fig 9. Stretch the tape and make it smooth, tape ears must be removed.

10



10.1 Slide the long cold shrink re-jacketing tube over the connection and start to shrink at the outer end of the Scotch® 2228 mastic pad. Shrink the tube down by turning and pulling out zip core in counter clockwise direction.

Note: Be careful not to hook the zip core in the mastic tape.