

3M™ Cold Shrink QT-III Silicone Rubber Termination 7673-S-8-JCN

For Jacketed Concentric Neutral (JCN) Cable

Instructions

IEEE Std. No. 48-1996

Class 1 Termination

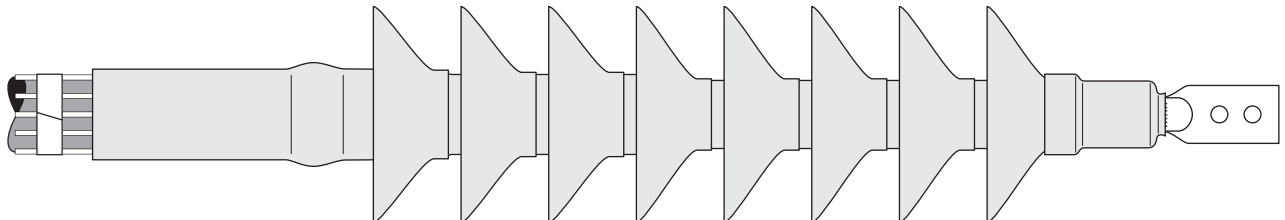
69 kV Class, 350 kV BIL

IEC 60840

72,5 kV

CAUTION

Working around energized systems may cause serious injury or death. Installation should be performed by personnel familiar with good safety practice in handling electrical equipment. De-energize and ground all electrical systems before installing product.



Kit Contents

- 1 Silicone Rubber Lug Seal Insulator Assembly
- 1 Hi-K Stress Control Assembly
- 1 Silicone Rubber Ground Seal Assembly
- 1 Silicone Rubber Skirted Insulator Assembly
- 1 Pre-formed Ground Braid Assembly
- 3 Constant Force Springs
- 1 Roll Scotch®Electrical Shielding Tape 24
- 4 Tubes 3M™ Red Dielectric Compound P55/R (Non-Silicone Grease)
- 1 Roll 3M™ Scotch-Seal™ Mastic 2229, 1" (25 mm) wide
- 1 Roll Scotch® Self-fusing Silicone Rubber Tape 70
- 1 Roll Scotch® Vinyl Electrical Tape Super 88, 3/4" × 66'
- 1 Roll Scotch® Rubber Mastic Tape 2228, 2" x 10'
- 2 3M™ Cable Cleaning Pads CC-3
- 1 3M™ EMI Copper Foil Shielding Tape Strip 1181, 15" long
- 3 Instruction Sheets

Note: Do not use knives to open plastic bags.

Kit Selection Chart

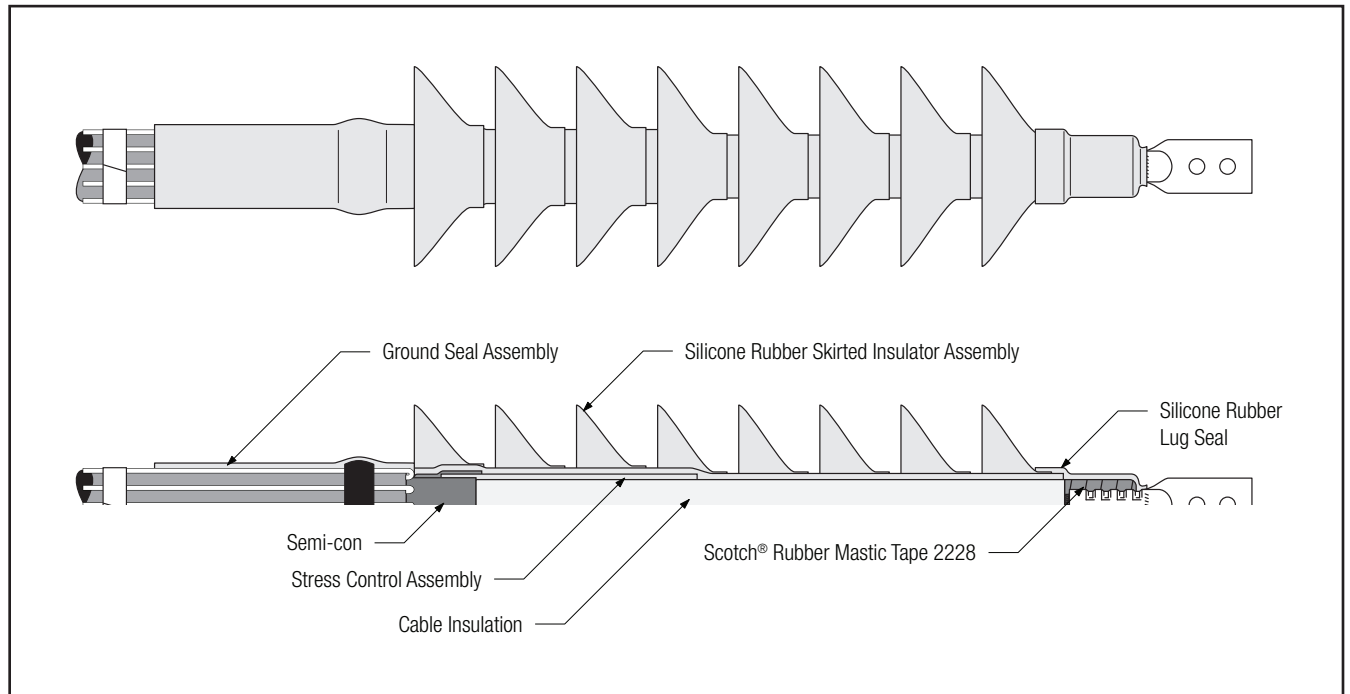
Note: Final determining factor is cable insulation diameter.

Kit Number	Primary Insulation O.D. Range	Jacket O.D. Range	Conductor Size Range* AWG (mm ²)
7673-S-8	2.79"-3.45" (70,9-87,6 mm)	3.00"-4.25" (76,2-108,0 mm)	1500-3000 (800-1500)

*Based on 650 mil insulation thickness

Table 1

Correct Installation of Termination



Note: Check to insure that the lug seal tube will fit over the lug. If the lug will not fit through the tube core, contact 3M for an alternative installation procedure.

1.0 Prepare Cable

- 1.1 Check to be sure the cable fits within the kit ranges as shown in Table 1.
- 1.2 Prepare cable using dimensions shown in Figure 1. **Be sure to allow for depth of terminal lug plus 0.5" (13 mm) plus crimp growth.**

Note: Provide additional exposed conductor to allow for growth of aluminum lugs or connectors during crimping.

Conductor Size	1100-3000
Growth Allowance	Field Determined

Table 2

- 1.2a **For cables that have a bonded semi-conductive (semi-con) insulation shield that does not peel squarely. The following steps describe how to square the semi-con cutback. Note: Graphite Spray is not provided in this kit.**

Semi-conductive Graphite Spray can be used to square the semi-con after insulation sanding has been completed. During cable preparation, remove additional cable semi-con to bring the highest point 1/8"-1/4" (3-6mm) past the instructions semi-con cutback dimension.

Following insulation sanding, use tape and clean plastic wrap to cover/mask the cable insulation from the original semi-con cutback dimension to the end of the insulation and partially cover the cable semi-con leaving 0.5"-1.0" (12-25mm) exposed. Apply a coat of Graphite Spray (avoid runs caused by excessive spray) and let dry. Apply a second coat of Graphite Spray and let dry. Using soft towel, lightly buff the graphite to remove any loose material. Remove masking tapes and plastic wrap.

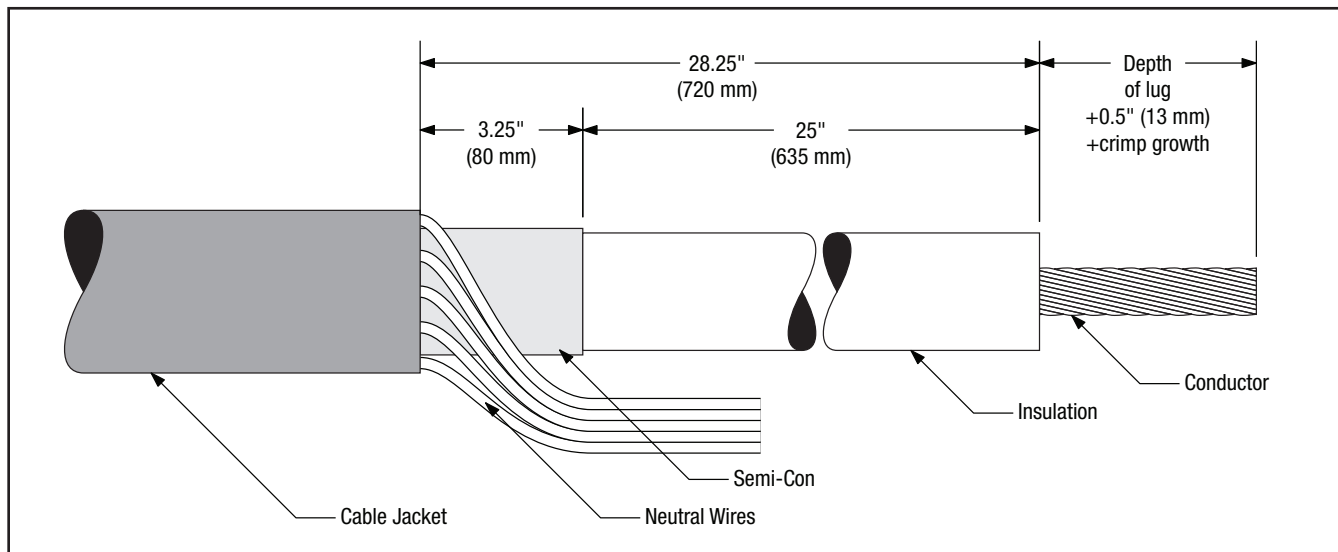


Figure 1

Typical Conductor Size Kcmil (mm ²)	Insulation OD after Preparation Inches (mm)
1500-3000 (800-1500)	2.79 – 3.45 (70,9 – 87,6)

Table 3

- 1.3 Select the roll of 1" (25 mm) wide 3M™ Scotch-Seal™ Mastic Tape 2229 from the kit. Cut a length of the mastic long enough to wrap around the cable jacket. Remove the release liner from the mastic and, using a light tension, apply a single wrap of mastic around the cable jacket 1" (25 mm) from the cut edge. (*Figure 2*)

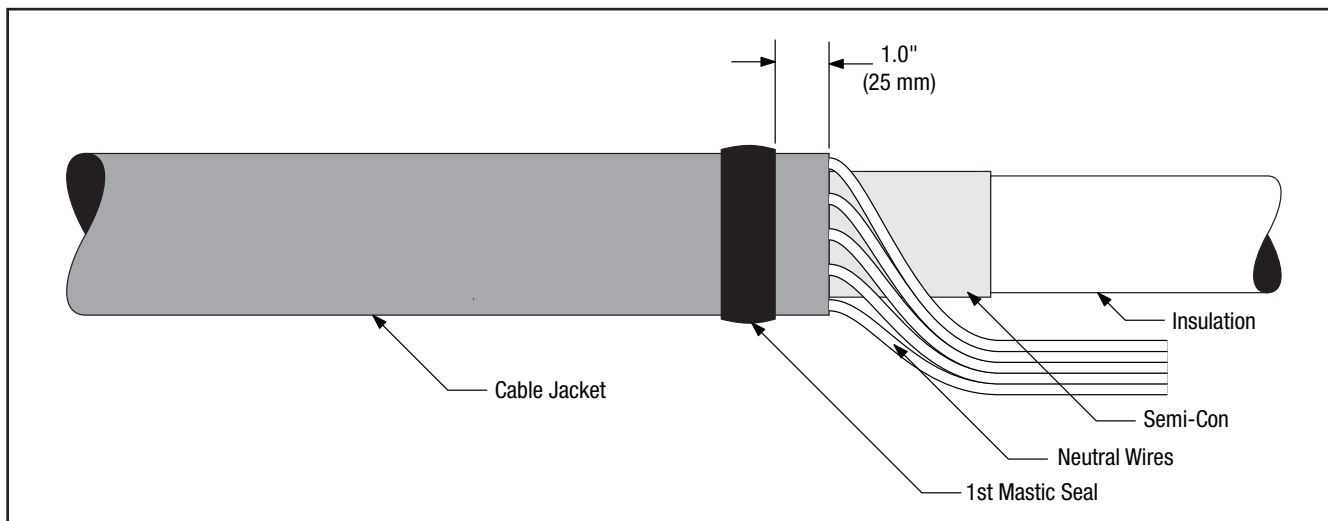


Figure 2

- 1.4 Bend neutral wires back over applied sealing mastic and secure to cable jacket with vinyl tape 6" (150 mm) below jacket cutback. (*Figure 3*)
- 1.5 Select the roll of 1" (25 mm) wide 3M™ Scotch-Seal™ Mastic Tape 2229 from the kit and cut a length of the mastic. Remove the release liner and, using a light tension, apply a single wrap of mastic around the cable jacket over the neutral wires and previously applied mastic. (*Figure 3*)

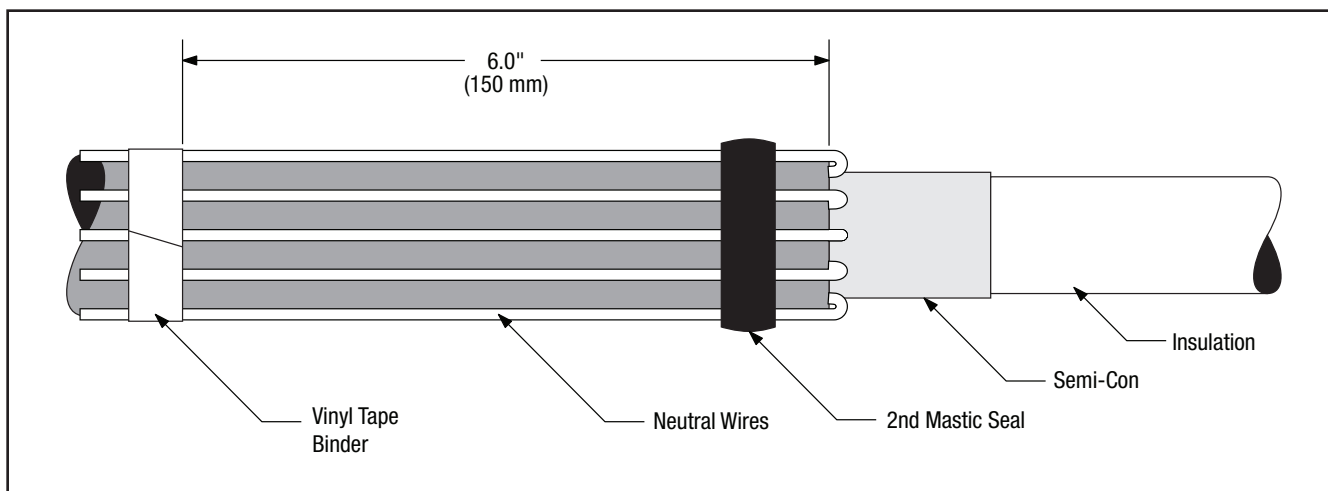


Figure 3

- 1.6 Compress mastic into neutral wires by over-wrapping seal strips with two half-lapped layers of highly-tensioned Scotch® Vinyl Electrical Tape Super 88 as shown. Do not cover cable semi-con. Cover all exposed mastic, overlapping 0.25" (4 mm) onto the exposed cable semi-con. (Figure 4)

Note: Take care to leave 3.0" (76 mm) of exposed semi-con. This will be a marker tape location later.

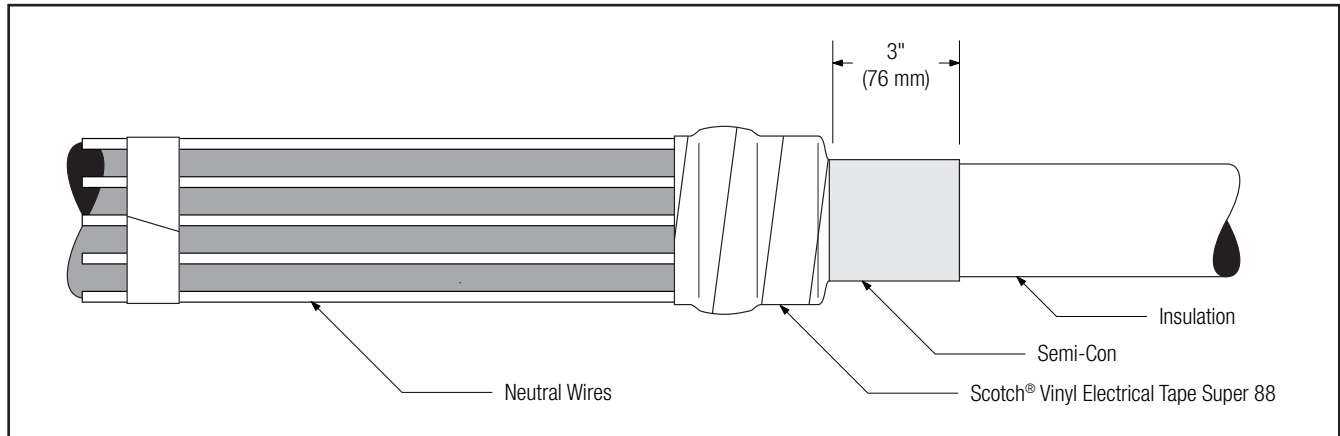


Figure 4

2.0 Clean Cable Insulation Using Standard Practice

- 2.1 Use only aluminum oxide abrasive (300 grit or higher) to finish and polish insulation surface.
- 2.2 Use abrasive only on cable insulation. **Do not use on semi-con.**
- 2.3 When using abrasive, do not reduce the cable insulation diameter below that allowed by the kit.
- 2.4 Wipe the cable insulation clean with an approved solvent. **Do not allow the solvent to touch semi-con insulation shield or graphite spray, if used.**

Note: Remove any remaining solvent with 3M™ Cable Cleaning Pads CC-DRY (not supplied with kit) or lint-free cloth.

3.0 Install Termination

- 3.1 Slide the ground seal assembly onto the cable jacket, loose core end first. (Figure 5)

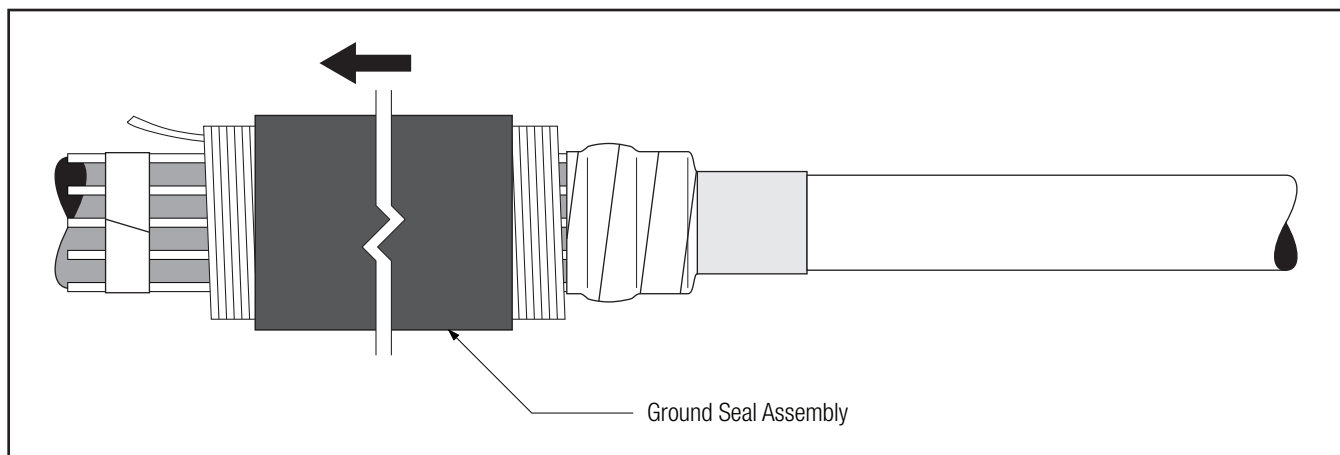


Figure 5

3.2 Place a marker tape on the cable semi-con located 1.75" (45 mm) from the end of the semi-con. (Figure 6)

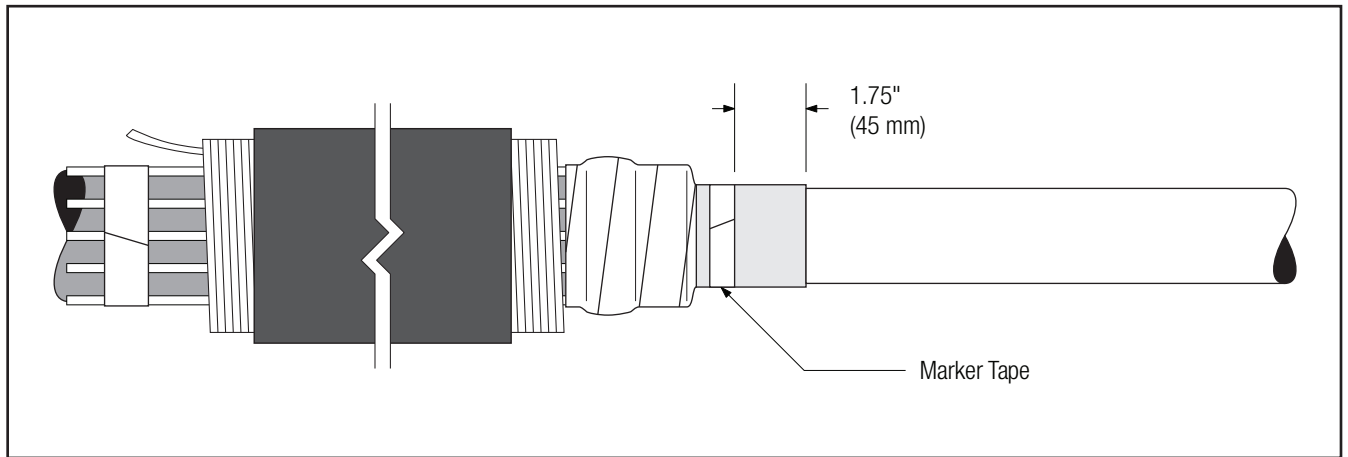


Figure 6

3.3 Apply 1 tube 3M™ Red Dielectric Compound P55/R starting at marker tape and continuing onto the cable insulation for approximately 8" (200 mm). (Figure 7)

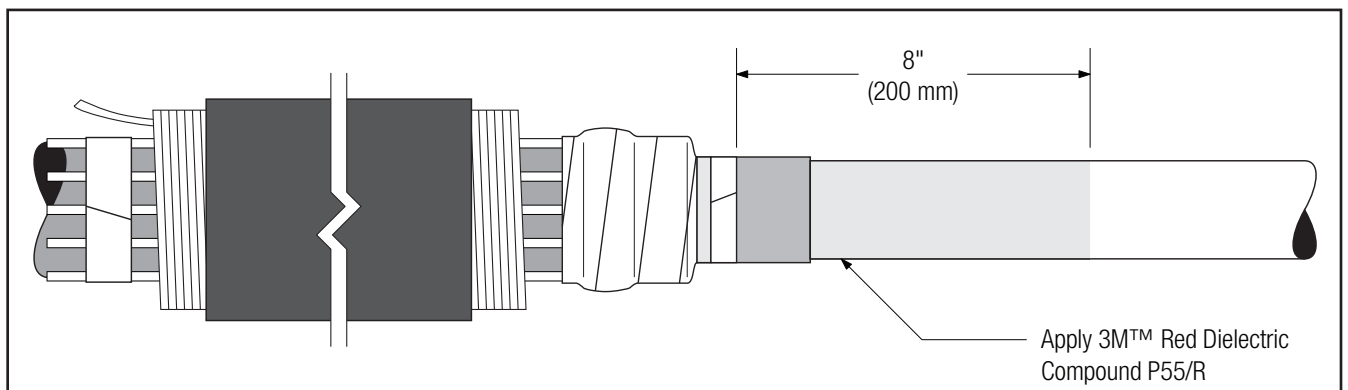


Figure 7

3.4 Select the Stress Control Assembly (medium length tubular assembly on white core) from the kit. Slide the Stress Control Assembly over the cable with the loose core end toward the cable end. Align the Stress Control Assembly Tube (not the core) with the marker tape, and remove the core by pulling the loose end while unwinding counter-clockwise. (Figure 8)

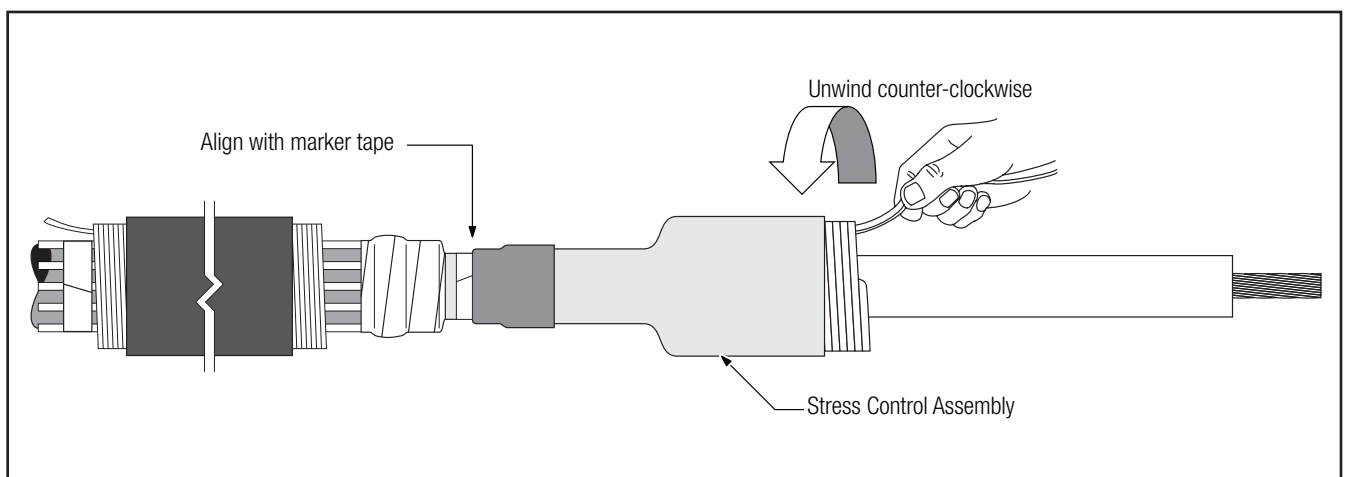


Figure 8

3.5 Apply 2 tubes 3M™ Red Dielectric Compound P55/R to the exposed insulation and stress control adapter. Fill the top edge of the stress control tube with the 3M™ Red Dielectric Compound P55/R. (Figure 9)

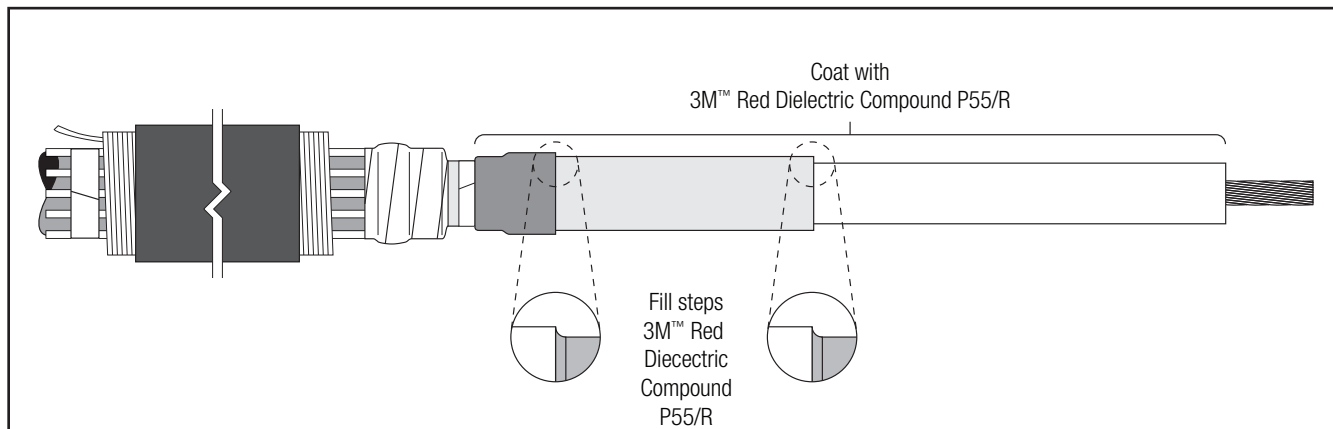


Figure 9

3.6 Slide the Silicone Rubber Skirted Insulator Assembly onto the cable. Align the assembly tube (not the core) with the sealing mastic/wire cover tape located 3.0" (76 mm) from the end of the cable semi-con, and remove the core by pulling the loose end while unwinding counter-clockwise. (Figure 10)

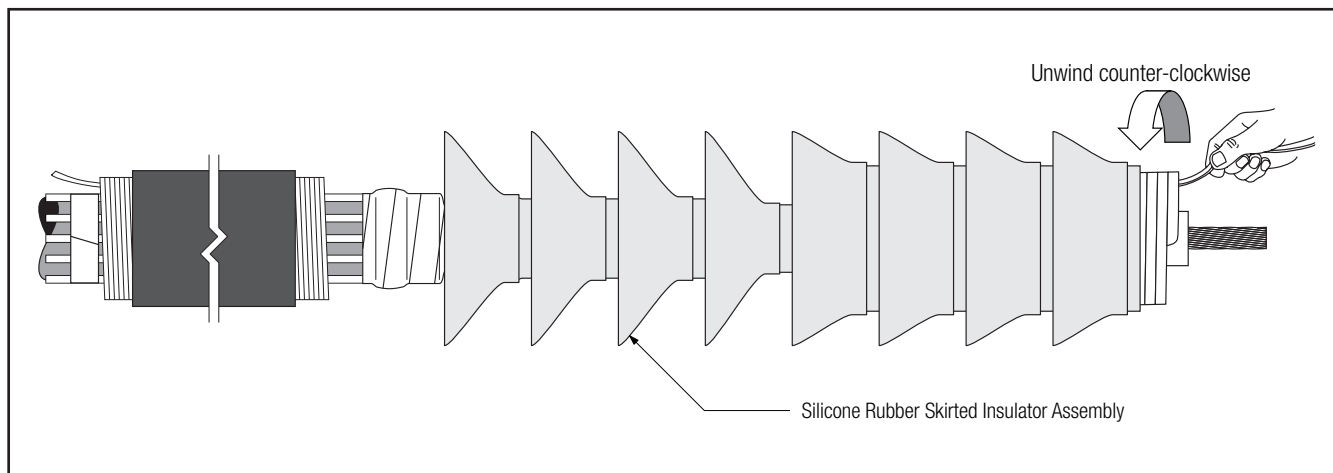


Figure 10

4.0 Install Lug or Connector

- 4.1 Position lug/connector and crimp according to manufacturer's directions. Remove excess oxide inhibitor and sharp crimp flashing following crimping.
- 4.2 Wrap Scotch® Rubber Mastic Tape 2228 half-lapped over the lug barrel and insulation/lug gap, building to a diameter equal to the cable insulation. Cover 2" (50 mm) of the lug barrel. (*Figure 11*)

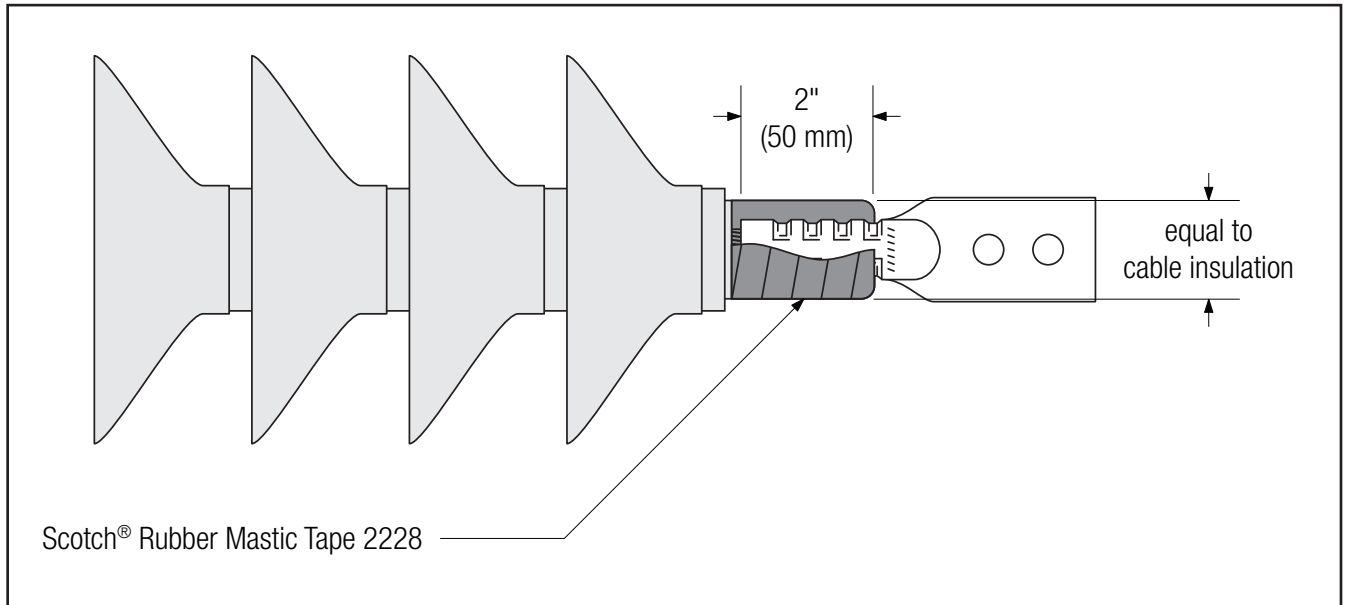


Figure 11

5.0 Install Sealing Tubes

- 5.1 Slide the parked ground seal assembly onto the termination. Start to shrink underneath the first skirt. Remove the core by pulling the loose end while unwinding counter-clockwise. (*Figure 12*)

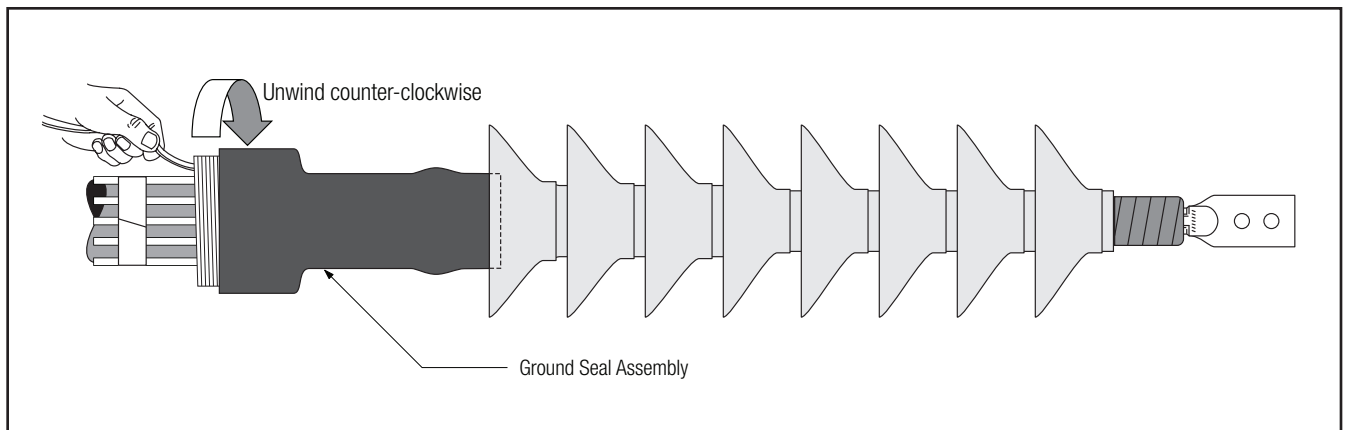


Figure 12

- 5.2 Slide the lug sealing tube onto the lug/termination, as shown. Start to shrink the tube near the top of the last skirt and onto the lug barrel. If the tube overlaps the lug pad or is not tight to the lug barrel, carefully trim the tube just past (1/4" or 6 mm) the Scotch® Rubber Mastic Tape 2228 sealing tape. A roll of Scotch® Self-fusing Silicone Rubber Tape 70 is provided to cover the edge of the trimmed tube, apply with moderate tension, stretching only enough to conform to the lug barrel and tube.

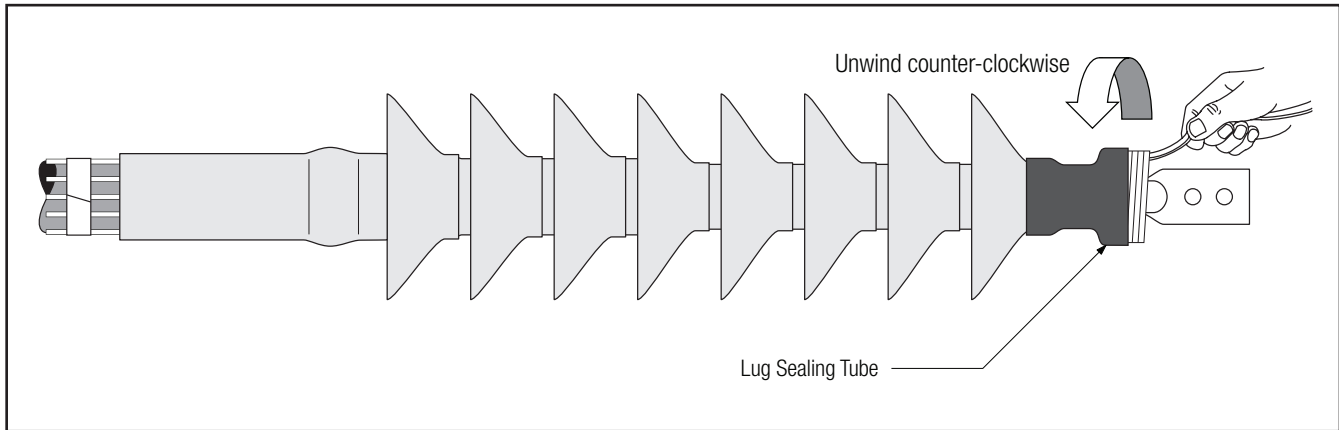


Figure 13

- 5.3 Connect the completed termination to equipment/system following standard practice.
- 5.4 Connect the neutral wires to the ground system following standard practice.

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78-8141-4839-7 Rev B