3M™ PST Cold Shrink Mine and Portable Cable Splice Kit 8043-1

Instruction Sheet December 2017

Applications	• Shielded Cable: Cable O.D. Range 1.80”-2.40” • 5kV and 8kV • Type SHD-GC: 4 AWG – 1/0 AWG • Type MPF-GC and MPF: 4 AWG – 3/0 AWG
Agency Approvals	Mine Safety & Health Administration Acceptance No. P-142-5 MSHA

Main Illustration

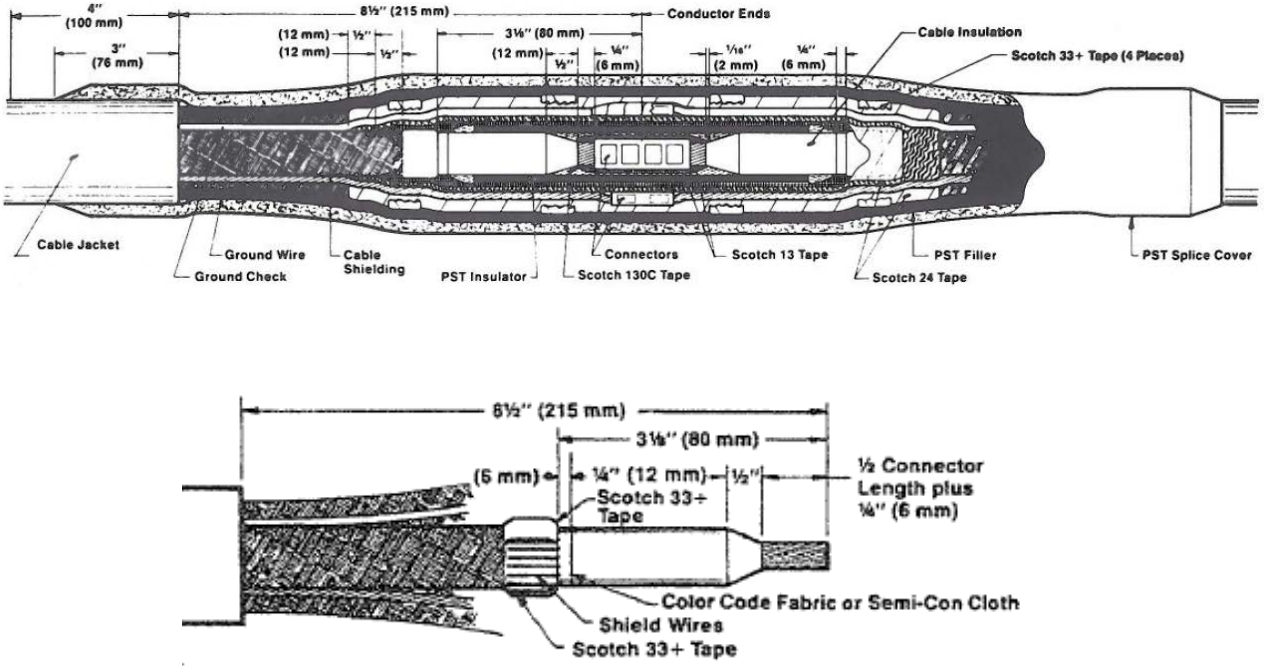


Figure 1

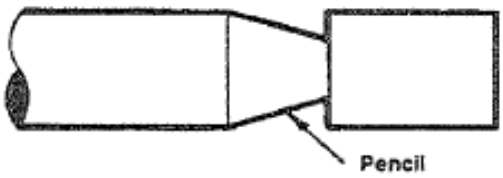
A. Prepare cables: Main illustration and Figure 1.

1. Train cables in position and cut so cable ends will butt squarely.
2. Cut cable jacket around its circumference 8-1/2” (215 mm) from cable ends.
   CAUTION: DO NOT CUT INTO CONDUCTOR SHIELDING OR INSULATION.

3. Remove irregular surfaces and cable identification from cable jacket for length of 4" (100 mm) beyond jacket cut using a course #80 abrasive cloth (main illustration).
4. Slit cable jacket lengthwise from circumferential cut to cable ends, in three places approximately 120° apart. CAUTION: USE CARE IN CUTTING.
5. Remove cable jacket with pliers.
6. Remove cable fillers as far back as the cable jacket was removed.
7. Place two wraps of tightly stretched Scotch® Super 33+™ Vinyl Electrical Tape around each conductor, 3-1/8" (80 mm) from ends. (Figure 1)
8. Wire shield: bend shielding back over the Super 33+ Tape. Use care to evenly distribute wires. (Figure 1) Ribbon shield: remove cable metallic shielding to previously applied Super 33+ Tape. If needed hold shielding in place with two wraps of highly elongated Scotch® Electrical Semi-Conducting Tape 13. Proceed to step 10.
9. Trim shielding to ¾" (20 mm) length. Overwrap with layer of Super 33+ Tape. (Figure 1)
10. Remove color coding fabric and/or semi-conducting cloth, leaving ¼" (6 mm) exposed beyond shielding. (Figure 1)
11. Remove insulation from ends of conductors for a distance of ¼" (6 mm) plus one half length of connector. CONNECTOR LENGTH SHOULD NOT EXCEED 2-1/2" (62 mm)
12. Clean exposed conductor insulation by buffing with fine #120 electrical grade abrasive cloth so that no voids will remain after insulating.
13. Pencil insulation for a length of ½" (12 mm). Buff tapers with fine #120 electrical grade abrasive cloth so that no voids will remain after insulating.

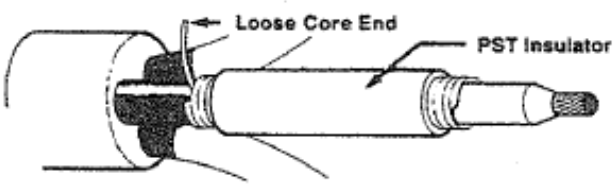
    HINT: Penciling may be performed before insulation end removal (steps 11 and 13). This aids in protecting conductor strands from knife cuts. (Figure 2)

Figure 2



B. Pre-stretched Tubing

Figure 3



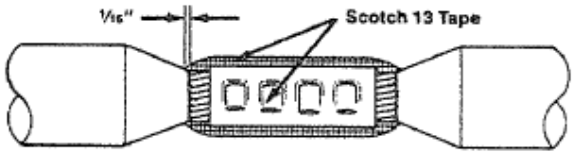
1. Slide PST Splice cover (tapered ends) and PST filler onto cable.
2. Slide one PST insulator over each individual conductor, putting loose core end on first. (Figure 3)

C. Connect Power Conductors

1. Match phases with appropriate power conductor color code (e.g. red to red, black to black, white to white).
2. Join power conductor by inserting into connectors and crimping with appropriate tool and die. BE SURE CONDUCTORS BUTT INDENT IN CENTER OF CONNECTOR BEFORE CRIMPING. (Figure 4)

   Note: ground wires and ground check will be joined after power conductors are reinsulated.

Figure 4



3. Spread conductors. Fill connector indents with Scotch 13 Tape. Smoothly tape two half-lapped layers of highly elongated Scotch 13 Tape over exposed conductor and connector area. OVERLAP CABLE INSULATION 1/16" (2 mm) ONTO PENCILS WITH 13 TAPE. (Figure 4)

   Taping Hint: stretching the Scotch 13 Tape increases its conductivity and will not harm it in any way.

   Taping Hint: To eliminate voids in critical areas, highly elongate splicing tape throughout connector area. Always attempt to exactly half-lap to produce a uniform buildup.

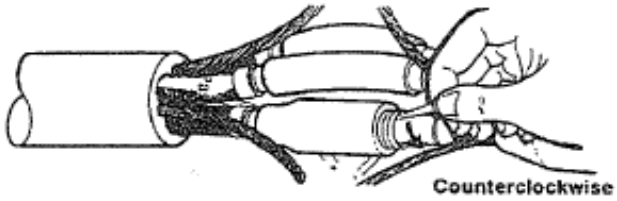
D. Apply Primary Insulation

Figure 5



1. Smoothly fill in connector area with half-lapped, highly elongated Scotch® Linerless Rubber Splicing Tape 130C; BUILD UP DIAMETER OF CABLE INSULATION, overlapping 1/16" (2 mm) beyond pencils. (Figure 5)

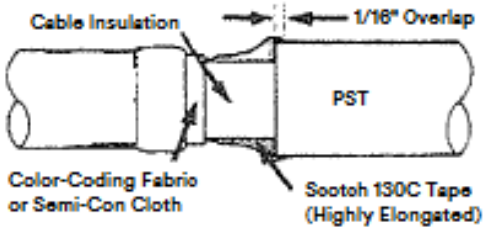
Figure 6



2. Slide PST over taped connection. As the core is removed, the rubber tube will elongate ¼" (6 mm). Position PST so tube is centered over connection when core is removed.
3. Remove cores by UNWIDING CONTERCLOCKWISE. (Figure 6)

   NOTE: An occasional tug of the strand while unwinding will aid in removal of core.

Figure 7



4. Apply highly elongated Scotch 130C Tape to cable insulation at ends of PSTs, forming tapers to PSTs. Extend tapers from cable color-coding fabric and/or semi-conducting cloth to 1/16" (2 mm) onto PSTs. (Figure 7)
5. Wrap 1 half-lapped layer of Scotch® Electrical Semi-Conducting Tape 13 over each PST, extending ½" (12 mm) onto exposed cable metallic shielding. (Main illustration)
6. Wrap 1 half-lapped layer of Scotch® Electrical Shielding Tape 24 over the semi-conducting tape, extending ½" (12 mm) onto exposed cable metallic shielding. Secure ends with 2 wraps of tightly applied Scotch® Super 33+™ Vinyl Electrical Tape. (Main Illustration)

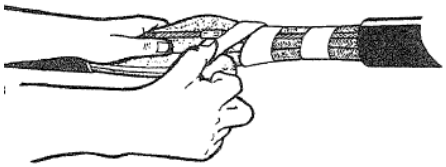
E. Connect Ground Wires

1. Join ground wires by inserting into connector and crimping with appropriate tool and dies. (For Type SHD-GC Cable, proceed to Step 2 for joining ground check conductor).

2. GROUND CHECK. Remove insulation from ends of ground check conductor for a distance of one-half length of connector. Join wires and crimp connector with hand crimping pliers. Insulate ground check connector with Scotch® Super 33+™ Vinyl Electrical Tape. Apply four half-lapped layers, extending approximately 1" (25 mm) onto conductor insulation.

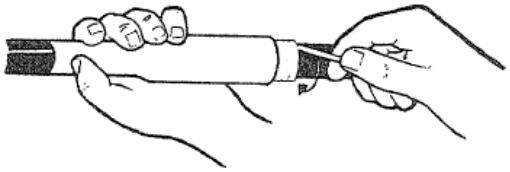
F. Apply Outer Sheath

Figure 8



1. Arrange conductors and ground wires into nested bundle. Tie bundle together in four places using wraps of Super 33+ Tape. (Figure 8)
2. Center PST filler over splice. Start to remove core. Just as the PST starts to shrink, butt it against the cable jacket. Continue removal of core by unwinding in a counterclockwise direction.
   HINT: An occasional tug of the strand while unwinding will aid in removal of core.
3. Wrap Super 33+ Tape over the resulting cracks between the filler and cable jacket (four wraps are sufficient). This will smooth the crack as an aid to the following PST core removal.
4. Mark cable 3" (76 mm) from edge of previously applied tape at end of splice where PST splice cover will be started.
5. Position PST Splice cover over splice so leading edge of cover (not core) aligns with mark on cable jacket. Remove core by unwinding in counterclockwise direction, starting with loose end. (Figure 9)
   HINT: An occasional tug of the strand while unwinding will aid in removal of core.

Figure 9



3M, Scotch and Super 33+ are trademarks of 3M Company.

Important Notice	All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product, which are not contained in 3M's current publications, or any contrary statements contained on your purchase order, shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.
Warranty; Limited Remedy; Limited Liability	This product will be free from defects in material and manufacture at the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any direct, indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**

3M
Electrical Markets Division
6801 River Place Blvd.
Austin, TX 78726-9000
800.245.3573
FAX: 800.245.0329
www.3M.com/electrical

Please recycle
© 3M 2017 All rights reserved
78-9237-0830-5 Rev A