

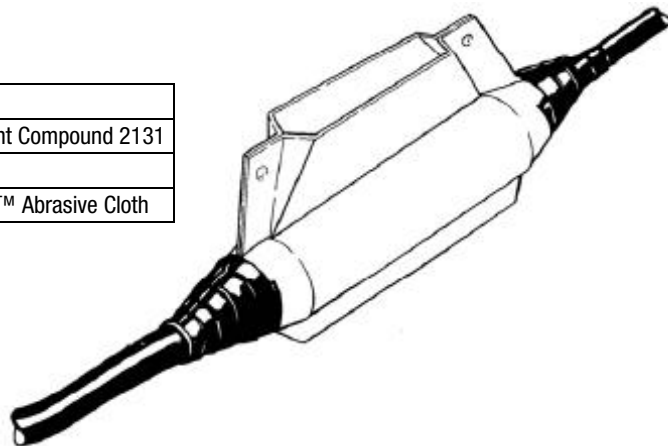
3M™ Scotchcast™ Flexible Power Cable Splice Kits 82-F Series

For use in weather-exposed, direct burial or submerged locations. For making in-line splices on non-shielded portable power cables and cords rated up to 5 kV for single-conductor, and up to 1000 Volts (600/2000 Volt mine portable cable) for multi-conductors.

Installation Instructions

1.0 Kit Contents: 82-F1 & 82-F2

82-F1	82-F2	
1	1	Removable Mold
1 Size "B"	1 Size "C"	Bag, 3M™ Scotchcast™ Flame-Retardant Compound 2131
2	2	Strips, Scotch® Rubber Splicing Tape 23
1	1	Strip, 3M™ Three-M-Ite™ Elek-Tro-Cut™ Abrasive Cloth



These kits will accommodate the following copper connector and conductor sizes:

Kit No.	Cable O.D. Range (inches)	Number of Conductors	Connection Max. O.D. (inches)	Voltage Rating (Max. Volts)	Conductor Size Range (AWG)
82-F1	0.25 – 0.80	1	0.62 (Connector)	5000	6 – 1/0
		Multi	0.90 (Connector Bundle O.D.)	1000 (600/2000)*	**
82-F2	0.80 – 1.20	1	0.82 (Connector)	5000	2/0 – 4.0
		Multi	1.30 (Connector Bundle O.D.)	1000 (600/2000)*	**

*Mine Portable Cable Rating

**Base selection on cable O.D. ranges above

DANGER: BEFORE ATTEMPTING ANY CABLE REPAIRS, MAKE SURE THAT THE PROPER CABLE IS DISCONNECTED, LOCKED OUT AND SUITABLY TAGGED.



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.

Technical Information:

For use on Non-shielded Portable Cable & Portable Cords:

- Single Conductor up to 5 kV
- 600/2000 Volt Mine Portable Cable
- Multi-Conductor up to 1000 Volts

Mine Safety and Health Administration Acceptance:
07-KA060002-MSHA

3M™
Scotchcast™
Flexible Power Cable Splice Kits
82-F Series

78-8126-9787-4

2.0 Prepare Cables

Table 1

Kit No.	Dimension		
	A	B	C
82-F1	3"	3"	3 ½"
82-F2	5 ½"	5"	7 ½"

2.1 Single Conductor (up to 5 kV)

- Remove conductor insulation (and jackets if applicable) for ½ connector length. (Figure 1)
- Smoothly pencil cable insulations for ¾". (Figure 1)
- Scuff ends of insulation or jacket for Dimension "B" with coarse abrasive cloth provided. Remove all wax, dirt and dust from surface. (Table 1 and Figure 1)

Single Conductor

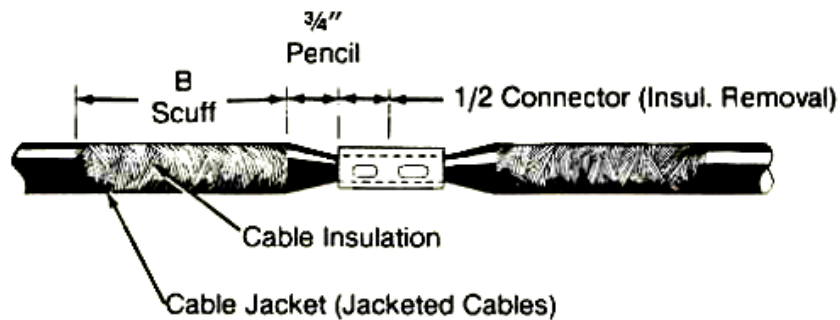


Figure 1

2.2 Multi- Conductors (up to 1000 Volts, or 600/2000 Volts)

- Remove cable jackets for dimension "A". (Table 1 and Figure 2)
- Taper ends of insulation/jackets for ¼". (Figure 2)
- Scuff ends of cable jackets for Dimension "B" with coarse abrasive cloth provided. Remove all wax, dirt and dust from jacket surface. (Table 1 and Figure 2)
- Remove cable fillers back to jacket. (Figure 2, Dimension "A")

Multi-Conductor

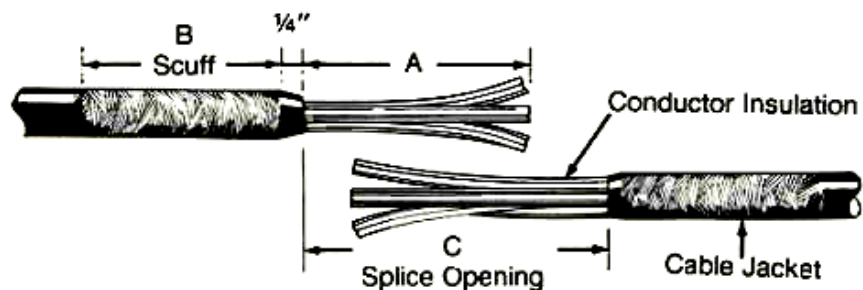


Figure 2

- e. Cut off individual conductor ends to allow for connector staggering with a maximum splice opening of Dimension "C". Provide for 1/4" spacing between connector ends. (Table 1 and Figure 3)
- f. Remove conductor insulations for 1/2 connector length. (Figure 3)

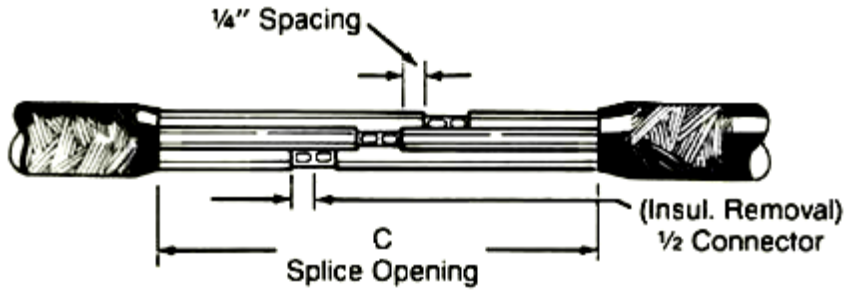


Figure 3

3.0 INSTALL CONNECTOR(S)

- 3.1. **Multi-Conductors:** Phase match conductors to appropriate color codes, if applicable.
- 3.2 Join conductors with proper connector(s) and appropriate crimping tool and die.

4.0 INSULATE CONNECTION(S) Multi-Conductors Only

- 4.1 **Non-insulated connectors only:** Overwrap connector(s) with 4 half-lapped layers of vinyl electrical tape (e.g. Scotch[®] Super 33+[™] Vinyl Electrical Tape) extending 1/4" onto conductor insulations.
- 4.2 Bundle conductors together with a band of vinyl tape wrapped around the center of the splice opening.

5.0 Install Mold

- 5.1 Trim tapered ends of mold with knife or diagonal cutting pliers to fit cable diameter. (Figure 4)

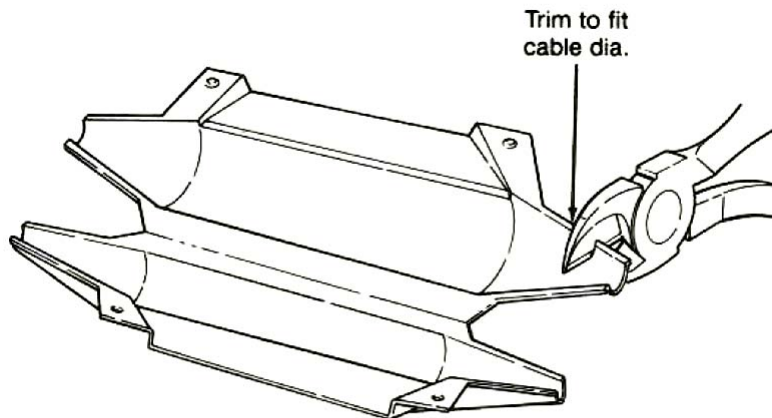


Figure 4

- 5.2 Center mold over splice and tape into place by applying Scotch® Rubber Splicing Tape 23 (provided in kit) over the mold ends and onto the cable. (Figure 5)

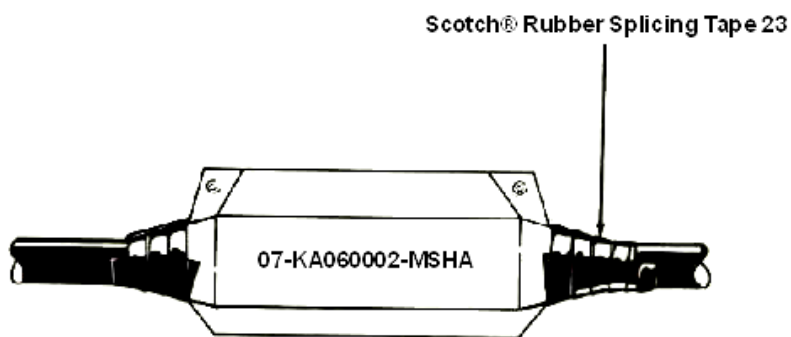


Figure 5

- 5.3 Center splice within the mold by tensioning (pulling) cables from both ends.

Hint: Use empty kit carton as a work stand.

- a. Make a straight knife slit in cover of closed carton that is slightly longer than the mold's hinge. (Figure 6)

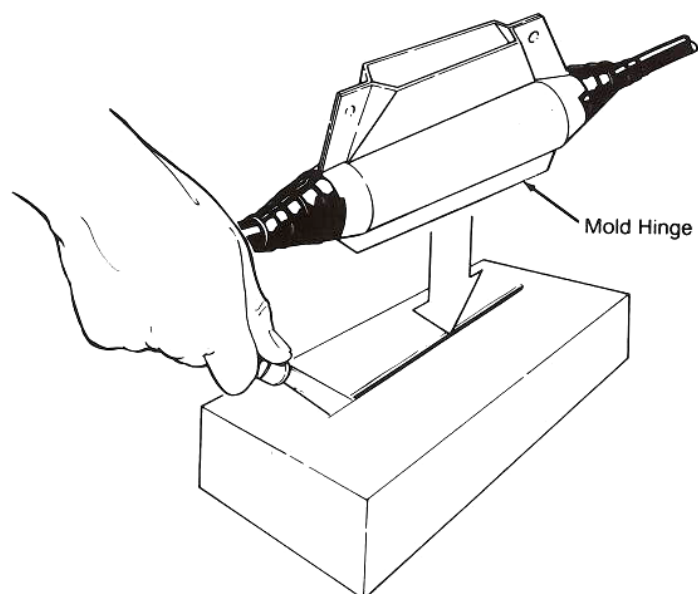


Figure 6

- b. Position carton beneath splice and press the mold's hinge into the knife slit. This holds splice in position for compound pouring. (Figure 6)

6.0 Pour Compound

- 6.1 Premix BLACK side of 3M™ Scotchcast™ Flame-Retardant Compound 2131 pouch by squeezing to a smooth consistency and uniform color.
- 6.2 Firmly grasp each flat side of the closed mixing pouch near the center barrier; at the same time pull sides of barrier apart and roll sides of thumbs through barrier. Break the barrier all the way across to the side seals. (Figure 7)



Figure 7

- 6.3 Alternately squeeze ends of pouch forcing compound rapidly back and forth, strip compound from corners of pouch between fingers. Mix until color is completely uniform – 30 to 40 VIGOROUS SQUEEZES. DO NOT EXCEED 1 MINUTE. (Figure 8)

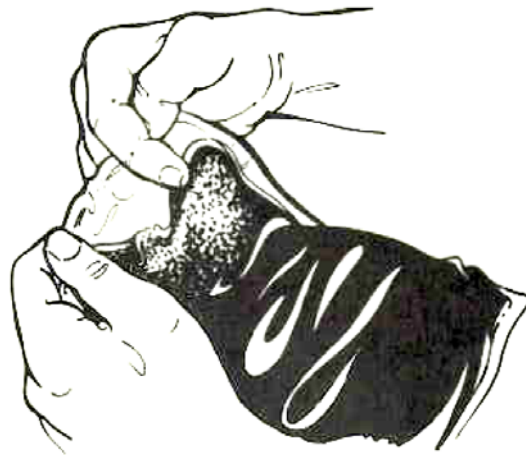


Figure 8

- 6.4 Clip off a corner of pouch and immediately pour into mold.

6.5 Fill mold until compound reaches a level that is within the mold's filler spout. (Figure 9)

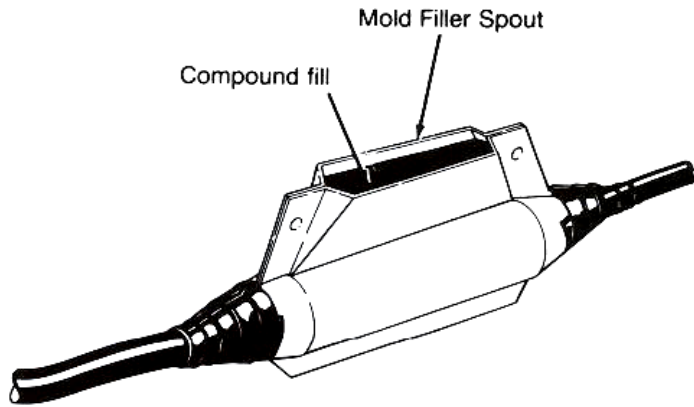


Figure 9

6.6 Allow compound to cure. Check compound in Filler Spout for curing.

NOTE: Splice may be de-molded when compound is no longer tacky.

Typical Cure Time: 16 – 24 hrs. @ 70°F (21°C)
24 – 30 hrs. @ 50°F (10°C)
36 hrs. @ 32°F (0°C)

Typical De-mold Time: 1.5 hrs. @ 70°F (21°C)
4 hrs. @ 50°F (10°C)
6 – 8 hrs. @ 32°F (0°C)

NOTE: Values are typical, not to be considered minimum or maximum. Always confirm based on tack and hardness of compound that resin is sufficiently cured.

7.0 De-mold

- 7.1 Remove Scotch® Rubber Splicing Tape 23 from mold ends.
- 7.2 Remove mold; start removal by first separating mold halves at the filler spout.
- 7.3 Trim off excess compound from filler spout by cutting off at base. (Figure 10)

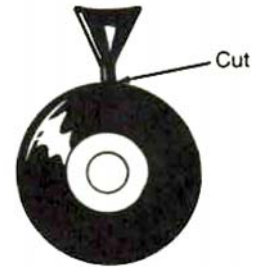


Figure 10

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