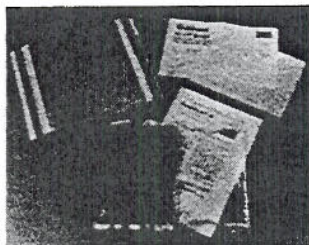


Product Data

Scotchcast® 85 Series Multi-Mold Inline, Wye, 4-Way Splicing Kits



3M

1. Product Description

Scotchcast® 85 Series Kits are a group of versatile splice kits for insulating and waterproofing odd-sized and odd-shaped splices in underground applications, up to 1000 V. Splices may be inline, wye, X, butt and dead-end splice configurations (for non-shielded cable) using split bolts, H or C tap compression connectors.

Four kits cover a range of cable conductor sizes from 8 AWG to 750 kcmil.

The 85 Series splice is comprised of flexible film plastic mold with a built-in porous spacer web (to insure the proper thickness of insulating compound around the connection), filled with a pliable polyurethane compound, Scotchcast® 2104 Electrical Insulating and Sealing Compound.

Kit Contents

Each kit contains sufficient quantities of the following materials to make one (1) splice, *excluding* the connector(s).

- One flexible film plastic mold with a built-in spacer web and sealing strips along the adjacent edges.
- Scotchcast® Electrical Insulating and Sealing Compound 2104 in convenient Unipak® container.
- One pressure-sensitive adhesive film sealing strip.

- Comprehensive instruction booklet showing installation techniques for some typical splice configurations in both the horizontal and vertical positions.

Splice Features

- Versatility designed into each kit accommodates a wide range of cable sizes.
- Convenient kits simplify ordering and stocking.
- All materials provided (with the exception of the connector) to insulate and waterproof one splice.
- Compound has low viscosity for fast, complete filling of splice.
- Compound has low exotherm which will not damage plastic insulated cable. (Can be used for small gauge signal/control and telecommunication cable splicing.)
- Convenient Unipak® container permits clean, easy compound handling.
- Wrap-around polyester film mold contains porous webbing which assures proper insulation spacing around splice and connector.
- No special tools required.

2. Applications

To splice cables rated up to 1000 volts.

- For inline, wye or 4-way splicing non-shielded cable.
- For use on plastic or rubber-insulated cables.
- For use in direct-burial applications.
- For use with underground systems.
 - Secondary distribution
 - Plant grounds
 - Parking lots
 - Airport runway lighting
 - Electric sprinkling systems
 - Sheath repair
 - Remodel wiring
 - Sealing anode leads
- For joining of cable reel ends
- For cable failures and dig-ins

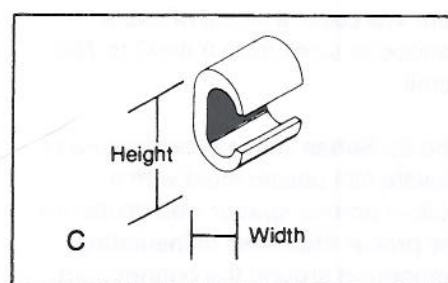
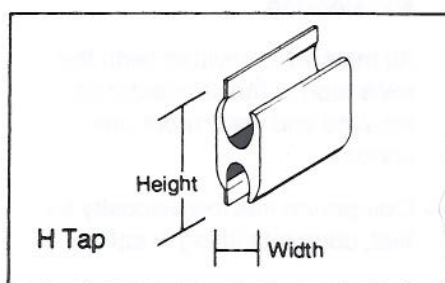
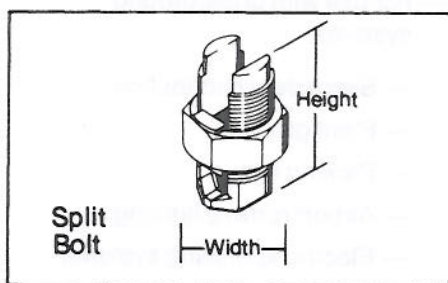
3. Data: Physical & Electrical Properties

Scotchcast® 85 Series Multi-Mold Splice Kits can be used on cable that operates continuously at 194°F (90°C) and has an emergency overload temperature rating of 266°F (130°C). The splices are rated at 1000 V.

A. Splice Selection Table

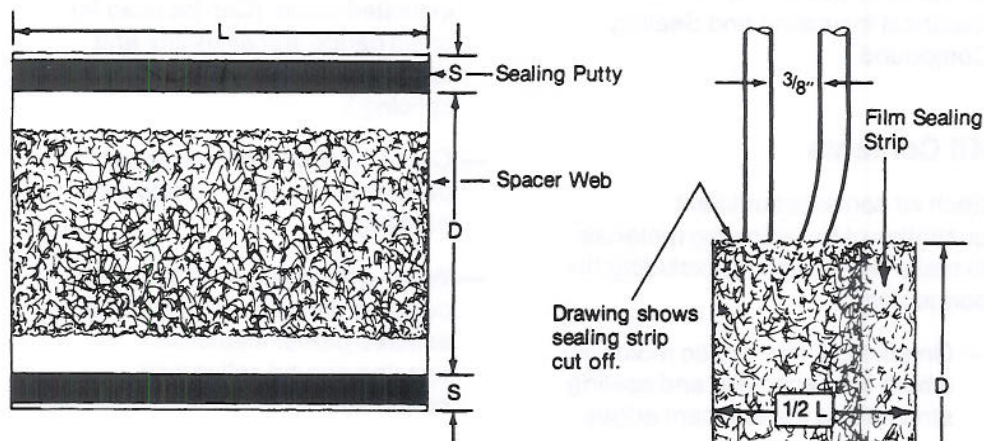
Kit No.	Connector Type	Maximum Conductor Size*	Max. Connector Size (height plus width in inches/mm)	Max. Sheath Opening (inches/mm)	Maximum Cable O.D. (inches/mm) Wye or 4-Way
85-10	Split Bolt H Tap or C Compression	8 AWG	1 ³ / ₄ (44.5)	1 ¹ / ₂ (38.1)	Run & Tap — 7 ¹ / ₁₆ (11.1)
		4 AWG	1 ³ / ₄ (44.5)		
85-12	Split Bolt H Tap or C Compression	1 AWG	2 ³ / ₄ (69.9)	1 ¹ / ₂ (38.1)	Run & Tap — 3 ³ / ₄ (19.1)
		2/0 AWG	2 ³ / ₄ (69.9)		
85-14	Split Bolt H Tap or C Compression	2/0 AWG	3 ¹ / ₄ (82.6)	4 ¹ / ₂ (114.3)	Run & Tap — 7 ⁷ / ₈ (22.2)
		4/0 AWG	3 ¹ / ₄ (82.6)		
	Inline Compression	750 kcmil	N/A		Inline — 1 ¹ / ₂ (38.1)
85-16	Split Bolt	250 kcmil (Run) 2/0 AWG (Tap)	3 ³ / ₄ (95.3)	6 (152.4)	Run & Tap — 7 ⁷ / ₈ (22.2)
	H Tap or C Compression	500 kcmil (Run) 4/0 AWG (Tap)	6 (152.4)		

* Assuming wye or 4-way connection using same cable splices. For other combinations and configurations, see instruction sheet.

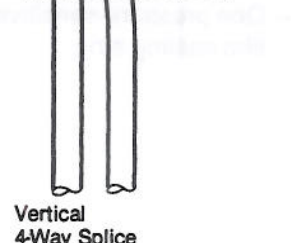
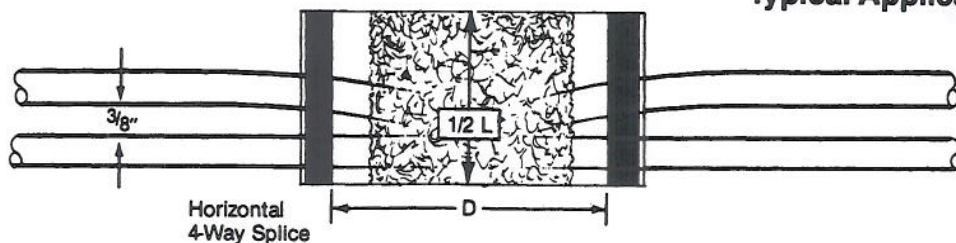


B. Typical Dimensions

Kit No.	Dimension — Inches (mm)		
	L	D	S
85-10	5.0 (127)	4.75 (120.7)	0.50 (12.7)
85-12	7.0 (177.8)	5.25 (133.4)	0.50 (12.7)
85-14	8.0 (203.2)	8.25 (209.6)	0.50 (12.7)
85-16	8.0 (203.2)	10.75 (273.1)	0.50 (12.7)



Typical Applications



C. Typical Physical and Electrical Properties

Scotchcast 2104 Electrical Insulating and Sealing Compound

Property	Test Method	Typical Value
Physical Properties		
Tensile Strength	ASTM D 412	600 psi
Elongation	ASTM D 412	150%
Hardness	Shore A	70
Apparent Free Isocyanate	Distill 15 min. at 338°F (170°C) and 3 mm mercury vacuum	3.5%
	Distill 15 min. at 171°F (77°C) and 3 mm mercury vacuum	0.01%
Viscosity	Brookfield at 20 rpm	1200 cps
Gel Time	180 g sample at 23°F (-5°C)	15 min.
Exotherm	180 g sample at 75°F (24°C)	150°F (65°C) max.
Water Absorption	7 days at 75°F (24°C)	0.28%
Insulation Resistance	Aged 28 days/95°F (35°C)/96% Relative Humidity	5×10^{10} ohms
Hydrolytic Stability	7 days in 212°F (100°C) water	+ 2.4%
		-10 points Shore A hardness
Dry Heat Aging	21 days at 270°F (132°C)	-4.7% wt. loss + 10 Shore A
Copper Corrosion	30 days at 95°F (35°C)/96% Rel. Hum. under 45 V	0
Stress Cracking	On cut and stressed polyethylene for 48 hrs./ 120°F (49°C)	0
Fungi Resistance	ASTM G 21-70	0
Electrical Properties		
Dielectric Constant	ASTM D 150	4.1 at 10^3 Hz. 3.8 at 10^6 Hz.
Dissipation Factor	ASTM D 150	0.04 at 10^3 Hz. 0.05 at 10^6 Hz.

4. Specifications

Product

The multi-mold cable splices must be capable of normal continuous operation at 1000 volts. The splices must consist of a flexible film plastic mold with a built-in spacer web to automatically provide for cable and connector centering and proper compound coverage. The applied mold shall be filled with a flexible polyurethane electrical compound capable of continuous operation at 194°F (90°C), with an emergency overload temperature rating of 266°F (130°C). Splices must have provisions for inline, wye or 4-way splicing of non-shielded, plastic or rubber insulated cables. The splices shall be rated for direct burial applications.

Engineering/Architectural

Splicing of cables rated at 1000 volts or less and with conductor sizes ranging from 8 AWG to 750 kcmil, using inline compression, split bolt, or H or C tap connectors shall be performed in accordance with instructions provided with 3M Scotchcast® Brand Multi-Mold Cable Splicing Kits 85-10, 85-12, 85-14 or 85-16.

5. Performance Tests

Moisture Resistance

Thermo cycling submerged in water pressurized to simulate a 6-foot head:

85 Series Splice exceeds 1.0×10^6 ohms insulation resistance after ten temperature cycles at 35°F (2°C) to 75°F (24°C).

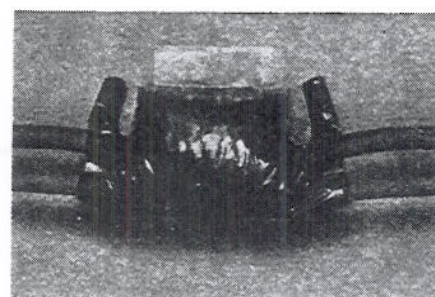
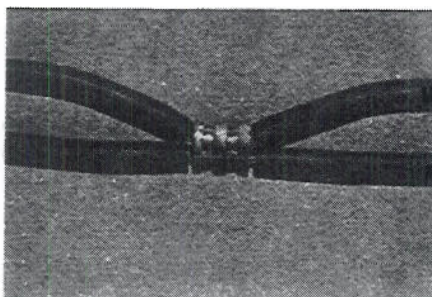
6. Installation Techniques

The exact instructions for constructing a splice are packed in each kit. The following summarizes these instructions:

- Scrape each cable exterior clean for distance from the connector

as specified in the instructions. If cable is sheathed, pencil insulation 3/4" (19.1 mm).

- Connection should be completed according to connector manufacturer's instructions.
- Center mold body along connector and wrap around connection. Starting at bottom of mold, seal and compress sealing putty around and between each cable to form a resin-tight seal.
- Position splice so bottom of mold is not in contact with any surface. Mix resin and pour into mold.
- Remove liner from film strip supplied with kit. Tape strip over mold.



7. Maintenance

The components within this kit are stable under normal storage conditions. Normal storage and stock rotation are recommended. The Scotchcast® 2104 Compound is not impaired by freezing; however, it should be warmed to 32°F (0°C) before being mixed and poured.

8. Availability

Scotchcast® 85 Series Multi-Mold Splicing Kits are available in four sizes and will accommodate inline, wye, and 4-way splicing of cables using split bolts, and H or C tap compression connectors. They are available from your local authorized 3M distributor.

9. Handling Precautions

Scotchcast® 2104 Electrical Insulating and Sealing Compound contains Isocyanate. May irritate eyes and skin on direct contact. The vapor and liquid may cause sensitization.

Avoid skin and eye contact. Avoid repeated and prolonged breathing of the compound's vapor. Use only in well ventilated areas.

When first aid is necessary, do the following: For inhalation, provide fresh air. In case of eye contact, eyes should be flushed with plenty of water for 10 minutes and a physician called. If the compound is ingested, do not induce vomiting. Call a physician. Wash with soap and water if skin comes in contact with the compound.

IMPORTANT NOTICE:

All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied: Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for his intended use, and user assumes all risk and liability whatsoever in connection therewith. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.