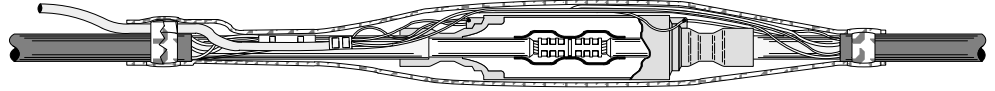




Cold Shrink™ Jacket Kits

SJ-1A, SJ-2A & SJ-3A



Data Sheet

1. Product Description

3M™ SJ series Cold Shrink™ Splice Jacket Kits are a series of open ended, tubular, rubber sleeves that combined with Scotch™ 2228 Rubber Mastic Tape provide a sealed jacket over cable splices installed on Jacketed Concentric Neutral (JCN) and other types of jacketed power cable. The Scotch™ 2228 Rubber Mastic Tape provides for an assured sealing interface between the cable jacket and the Cold Shrink™ Jacket tube. It is also used to seal around a cable ground conductor. The Cold Shrink™ Jacket tube is provided in an expanded state, mounted on two inner supporting plastic cores. As supplied in this prestretched condition, the tube is ready for field installation. The jacketing tube is made of EPDM rubber which contains no chlorides or sulfurs. Three kit sizes cover an application range of 0.95" (24 mm) to 4.0" (101,6 mm).

Kit Contents:

Each kit contains sufficient quantity of the following materials to jacket one cable splice.

- 1 Cold Shrink™ Jacketing Tube
- 1 Three Foot (914 mm) Roll Of Scotch™ 2228 Rubber Mastic Tape

Features:

- Easy to install, requires only workman's hands. Simply center over splice area and unwind core from each end to shrink in place.
- Versatile one-piece jacket that accommodates a wide range of cable sizes and splice diameters.
- No torches or heat required.
- Seals tight, retains its resiliency and pressure even after years of aging and exposure.
- Tough rubber formulation to withstand rough back filling.
- Water resistant. Meets the water seal requirements of ANSI C119.1.
- Compatible with cable jackets and cable semi-conducting insulation shields.
- Provides for a seal around cable ground conductor.

- Resists fungus.
- Resists acids and alkalis.
- Resists ozone and ultraviolet light.

2. Applications

To jacket inline splices installed on Jacketed Concentric Neutral (JCN) Cables rated 15, 25 and 35 kV and operating temperature of 90°C and an emergency overload rating of 130°C.

Physical protection and moisture sealing inline splices installed on shielded power cables having solid dielectric insulation as follows: polyethylene (high and low density), cross-linked polyethylene (XLP) and ethylene propylene rubber (EPR).

For use at indoor and outdoor installations including direct burial, aerial and submersible applications.

A. Typical Physical and Electrical Properties

EPDM Rubber

Physical Properties

Test Method	Typical Value*
• Color	Black
• 300% Modulus (ASTM D 412-75)	480 psi (3,3 MPa)
• Ultimate Tensile (ASTM D 412-75)	1400 psi (9,6 MPa)
• Ultimate Elongation (ASTM D 412-75) Original	750%
• Die C Tear (ASTM D 624C-73) Original	150 pli (26,3 KN/m)
• Fungus Resistance (ASTM G-21) 28 days exposure	No Growth
• Moisture Absorption 7 days 90°C (194°F) H ₂ O	wt. gain 1.8%

Electrical Properties

Test Method	Typical Value*
• Dielectric Strength (ASTM D 149–75) Original @ 1,78 mm	365 V/mil (14,3 MV/m)
• 7 days in H ₂ O at 90°C (194°F)	282 V/mil (11,1 MV/m)

— EPR Backing	0.030" (0,76 mm)
— Mastic Layer	0.035" (0,89 mm)
• Adhesion to steel (ASTM D–1000)	15 lbs/in. (0,17 MPa)
• Water Absorption (ASTM D–570)	0.15%

Scotch™ 2228 Rubber Mastic Tape

Physical Properties

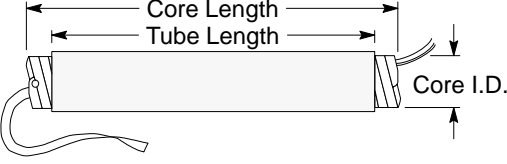
Test Method	Typical Value*
• Color	Black
• Thickness (ASTM D–1000) — Overall	0.065" (1,65 mm)

Electrical Properties

Test Method	Typical Value*
• Dielectric Strength (ASTM D–1000) — Dry	500 V/mil (19,6 kV/mm)
— Wet	500 V/mil (19,6 kV/mm)

* All values are averages and are not intended for specification purposes.

B. Typical Dimensions



Jacket Kit	Approximate Core Length	Approximate Tube Length	Core I.D.	Approximate Minimum Installed Length	Approximate Maximum Installed Length
SJ–1A	26.5" (673 mm)	24.0" (610 mm)	2.85" (72,4 mm)	23.0" (584 mm)	27.0" (686 mm)
SJ–2A	31.0" (787 mm)	27.0" (686 mm)	3.87" (98,3 mm)	32.0" (813 mm)	35.0" (889 mm)
SJ–3A	32.0" (813 mm)	28.0" (711 mm)	4.50" (114,3 mm)	33.0" (838 mm)	37.0" (940 mm)

Table 1

C. Cold Shrink™ Jacket Kit Selection Table


Jacket Kit	Minimum Cable Jacket O.D.	Maximum Splice O.D.	Maximum Cable Jacket Opening	3M 15 kV Splice Number	3M 25 kV Splice Number	3M 35 kV Splice Number
SJ–1A	0.95" (24,1 mm)	2.4" (61,0 mm)	20" (508 mm)	5411 5411A 5412 5411R*	—	—
SJ–2A	1.15" (29,2 mm)	3.3" (83,8 mm)	28" (711 mm)	5403 5404 5405 5406	5420 5421 5422 5451 5452	5432 5461
SJ–3A	1.55" (39,4 mm)	4.0" (101,6 mm)	30" (762 mm)	5407 5408 5409	5423 5424 5425 5426	5433

*3M 5411R QSII requires an additional 8428–12 Cold Shrink™ Tube to jacket splice. The procedure for jacketing the 5411R QSII is detailed in the SJ–1A kit installation instruction.

Table 2

3. Maintenance

Components of the 3M SJ Series Cold Shrink™ Splice Jacket Kit are not impaired by freezing or overheating due to ambient temperatures found in storage or shipping. Normal

stock rotation procedures are recommended. 3M Cold Shrink™ removable core material is polypropylene and recyclable with other  waste.

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