



Cold Shrink Foldback Splice Jacket Kits

SJ-1FB, SJ-2FB, SJ-3FB & SJ-4FB

Data Sheet



1. Product Description

3M™ Cold Shrink Foldback Splice Jacket Kits SJ-FB Series are a series of folded back, tubular rubber sleeve that combined with Scotch® Rubber Mastic Tape 2228 provide a sealed jacket over cable splices installed on Jacketed Concentric Neutral (JCN) and other types of jacketed power cable. The Scotch® Rubber Mastic Tape 2228 provides for an assured sealing interface between the cable jacket and Cold Shrink Foldback Jacket Tube. Mastic strips are also used to seal around the optional, external ground conductor. The Cold Shrink Jacket Tube is provided in an expanded state, mounted on two inner supporting cores. As supplied in this pre-stretched condition, the tube is ready for field installation. The jacketing tube is made from EPDM rubber that contains no chlorides or sulfurs. The completed jacket tube will be continuous from cable jacket to cable jacket, with no seams. Four kit sizes cover an application range from 4AWG, 15kV to sizes larger than 4/0AWG, 35kV.

Kit Contents:

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

- 1 – Cold Shrink Foldback Jacket Tube
- 2 – 3' Rolls of Scotch® Rubber Mastic Tape 2228 (except SJ-1FB which contains 1 roll)
- 2 – Mastic Strips
- 1 – Instruction Sheet

Features:

- Easy to install, requires only workman's hands. Simply position the Cold Shrink Foldback Jacket Tube over one mastic cable seal and shrink to the other as directed.
- Versatile one-piece design, requires less parking space than stacked jacket tubes.
- Seamless rubber tube from cable jacket to cable jacket, reduces sealing steps and moisture ingress paths.
- Designed to fit 3M and most other manufacturers molded rubber splices.
- No torches or heat required.
- Seals tight, retains its resiliency and pressure even after prolonged years of aging and exposure.
- Tough rubber formulation to withstand rough backfilling.
- 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 the cable ground conductor.
- Resists fungus.
- Resists acid and alkalies.
- Resists ozone and ultraviolet light.

2. Applications

- To jacket inline splices installed on Jacketed Concentric Neutral (JCN) Cable and other jacketed power cables rated at 15, 25, and 35kV with continuous operating temperature rating of up to 105°C and an emergency overload temperature rating up to 140°C.
- Physical protection and moisture sealing of inline splices installed on shielded power cables having a solid dielectric insulation as follows:
 - Polyethylene (high and low density), cross-linked polyethylene (XLP) and ethylene propylene rubber (EPR).
- For use in indoor or outdoor installations including direct burial, aerial, and submersible applications.

A. Typical Physical and Electrical Properties

EPR (Ethylene Propylene Rubber) Physical Properties

Test Method	Typical Value*
Color	Black
100% Modulus (ASTM D 412)	170 psi (1.17 MPa)
300% Modulus (ASTM D 412-75)	700 psi (4.8 MPa)
Ultimate Tensile (ASTM D 412-75)	1680 psi (11.6 MPa)
Ultimate Elongation (ASTM D 412-75) Original	635%
Die C Tear (ASTM D 624C-73) Original	220 pli (38.5 KN/m)
Fungus Resistance (ASTM G-21) 28 days exposure	No Growth
Shore A Hardness (ASTM D 2240-75)	48
Permanent Set 3M test method @ 250% strain RT 5 minute recovery 14.6%	8.8% 40° F (4.4° C)
Moisture Absorption 24 hrs. 194° F (90° C) H ₂ O 7 days 194° F (90° C) H ₂ O	wt. gain 1.3% 3.2%

Electrical Properties

Test Method	Typical Value*
Dielectric Strength (ASTM D 149-75) Original @ 1,78 mm	490 V/mil (19.1 MV/m)
7 days in H ₂ O at 194° F (90° C)	465 V/mil (18.1 MV/m)
Dielectric Constant Original 7 days 194° F (90° C) H ₂ O	5.0 5.6

Scotch 2228 Rubber Mastic Physical Properties

Test Method	Typical Value*
Color	Black
Thickness (ASTM D-1000) Overall	0.065" (1,65 mm)
EPR Backing	0.030" (0,76 mm)
Mastic Layer	0.035" (0,89 mm)
Adhesion to steel (ASTM D-1000)	25 psi (0.17 MPa)
Water Absorption (ASTM D-570)	0.15%

Electrical Properties

Test Method	Typical Value*
Dielectric Strength (ASTM D-1000) Dry Wet	25.9 kV 30.5 kV
Dielectric Constant (ASTM D-150) @ 73° F (23° C)	3.84
Dissipation Factor (ASTM D-150)	0.005 (0.50%)

* This data is not to be used for specification. Values listed are for typical properties and should not be considered minimum or maximum.

B. Cold Shrink Foldback Jacket Kit Selection Table

Jacket Kit	Minimum Cable Jacket O.D. Inches (mm)	Maximum Splice O.D. Inches (mm)	Maximum Cable Jacket Opening Inches (mm)	Works with 3M Splice Number			Approximate Parking Space Required Inches (mm)
				15kV	25kV	35kV	
SJ-1FB	0.95 (24,1)	2.00 (50,8)	25 (635)	5411 5411A 5412	—	—	20 (508)
SJ-2FB	1.15 (29,2)	3.00 (76,2)	31 (787)	5403 5404 5405 5406	5420 5421 5422 5451 5451A 5452	5432 5461	22 (569)
SJ-3FB	1.55 (39,4)	3.62 (91,9)	34 (864)	5407 5408 5409	5423 5424 5425 5426	5433	24 (610)
SJ-4FB	1.75 (44,5)	4.10 (104,1)	32 (813)	—	—	—	24 (610)

Note: the above dimensions should be used to determine sizing for non-3M splices.

3. Maintenance

Components of the 3M™ Cold Shrink Foldback Splice Jacket Kits SJ-FB Series are not impaired by freezing or overheating due to ambient temperatures found in storage or shipping. Normal stock rotation procedures are recommended. The cold shrink removable core material is polypropylene and recyclable with other waste.



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