Splice Kits, Cable, Cold-Shrink, Straight, 150 kV BIL

1. Scope

This standard covers the requirements for 150 kV BIL, straight, single conductor (1/C), cold-shrink, cable splice kits and associated connectors. IEEE 404 classifies this product as a "single-component cold-shrink."

This standard applies to the following Seattle City Light (SCL) stock numbers:

Stock No.	Item	Conductor Range (AWG/kcmil)
014193	SSC Series Cold Shrink Splice Kit with compression connector	#1-1/0
014194	SSC Series Cold Shrink Splice Kit with "range-taking" shear-bolt connector	350
014195	"	500
014197	"	750-1000
014198	"Range-taking" compression connector	#1-1/0
014199	"Range-taking" shear-bolt connector	1/0-500
014200	"	350-750
014201	"	600-1200

2. Application

Cold-shrink splices are used to permanently join two medium voltage cables. Cable may be insulated with TRXLPE, EPR, or EAM and shielded with tape, flat strap, or round wire/CN.

Cables of two different conductor sizes can be joined provided they fall within the same kit range.

The current and temperature rating of a properly installed cable splice is equal to or greater than that of the cable for which it is designed.

Cold-shrink cable splice kits contain everything needed to make up a splice including the connector.

The connectors used with the cable spice kits specified in this standard are not interchangeable with the connectors typically used with modular, heat-shrink, or multi-component cold-shrink splices. Richards' connectors are designed with a special groove that centers the splice body over the connector. See connector images, Table 4c.

#1-1/0 AWG cold-shrink cable splice kits, Stock No. 014193, include a compression style connector. The remaining cold-shrink cable splice kits include a shear-bolt style connector.

Cold-shrink splice kits, Stock Nos. 014194, 014195, and 014197 each include a 1/0 AWG, copper neutral jumper assembly. When splicing #1-1/0 AWG, round wire concentric neutral cable it is expected the concentric wires will be used to provide neutral continuity.

For general application information, see Table 4b.

3. Industry Standards

Cold-shrink cable splice kits shall meet the applicable requirements of the following industry standard:

404-2012 - IEEE Standard for Extruded and Laminated Dielectric Shielded Cable Joints Rated 2.5 kV to 500 kV

4. Requirements

Cold-shrink cable splice shall include a capacitive test point.

Cold-shrink cable splices shall meet the electrical requirements of Table 4a.

Table 4a. Cable Splice Electrical Requirements

Attributes	Requirements
Voltage class	25 kV
Voltage rating (ph-g), grounded systems	14.4 kV rms
Voltage rating (ph-ph)	25 kV rms
Basic impulse insulation level (BIL), minimum	150 kV crest
Withstand voltage, 15 minute, minimum	105 kV DC

Cold-shrink cable splice kits shall contain everything needed to make up a splice, including an appropriately-sized connector.

Cold-shrink splice kits, Stock Nos. 014194, 014195, and 014197 shall each include a 1/0 AWG, copper neutral jumper assembly.

Splice kits shall be designed for use with the cables described in Table 4b.

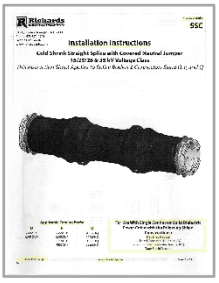
Table 4b. Splice-to-Cable Cross Reference

Splice Kit Stock No.	Cable Stock No.	Conductor Range (AWG/kcmil)	Cable Construction	Insulation Overall Diameter Range (in)	Jacket Overall Diameter, Maximum (in)
014193	602027	#1 str	RWCN[1]	0.88–0.98	1.30
	012098	1/0 sol	RWCN	0.88–0.97	1.35
014194	012099	350	FS[2]	1.22-1.28	1.57
014195	012100	500	FS	1.34-1.40	1.70
014197	012101	750	FS	1.52-1.58	2.00
	012102	1000	FS	1.67-1.73	2.10

[1] Round wire concentric neutral
[2] Flat strap shield

Each cold-shrink cable splice kit will typically include the items shown in Table 4c (quantities of some components may vary with kit size.)

Table 4c. Splice Kit Component Images (not to scale)

		
Splice body	Compression style connector	Shear-bolt style connector
		
Jacket mastic	Stress control mastic	Sealing mastic
		
Subunit mastic kit	Solvent wipe	Latex gloves
		
Silicone grease packet	Neutral jumper assembly	Installation instructions

5. Testing

Cold-shrink cable splices shall be tested according to the requirements of IEEE 404, sections 7 and 8.

Test results shall be provided upon request.

6. Design Changes

Manufacturer shall inform Seattle City Light in writing of all design changes that could affect the understood or published capabilities of the product.

7. Marking

Cold-shrink cable splice kit components shall be marked according to the requirements of IEEE 404, Section 6.1. This shall include but not be limited to:

- Company name or logo
- Part identification
- Maximum phase-to-phase or phase-to-ground voltage rating
- Cable insulation diameter range (or range code)

Connectors shall be permanently marked with:

- Company name or logo
- Part identification
- Conductor range
- Appropriate die, if applicable

8. Packaging

Cold-shrink cable splice kits shall be individually packaged to prevent damage during shipping, handling, and inside storage.

Connectors shall be individually packaged to prevent damage during shipping, handling, and inside storage.

Each individual package shall constitute a complete kit. See Section 4.

Individual packages shall be legibly marked with:

- Manufacturer identification
- Product description
- Date of manufacture (month and year)
- “Use before” date and storage conditions, if applicable
- Seattle City Light stock number

Each shipping container shall be legibly marked with the following information:

- Manufacturer identification
- Product description
- Seattle City Light purchase order number

9. Issuance

Stock Unit: EA

10. Approved Manufacturer

Stock No.	Item	Conductor Range (AWG/kcmil)	Richards Manufacturing Co. Catalog No.
014193	SSC Series Cold Shrink Splice Kit with compression connector	#1-1/0	62SSCTO8X8-SCL
014194	SSC Series Cold Shrink Splice Kit with “range-taking” shear-bolt connector	350	62SSCTPR1-SCL
014195	“	500	62SSCTQR1-SCL
014197	“	750-1000	62SSCTQR2-SCL
014198	“Range-taking” compression connector	#1-1/0	62SSCDO8X8-SCL
014199	“Range-taking” shear-bolt connector	1/0-500	63SSCCPR1
014200	“	350-750	63SSCCQR1
014201	“	600-1200	63SSCCQR2

11. Sources

Shipek, John; SCL Standards Engineering Supervisor and originator of 6874.19

Richards Manufacturing Co.; SSC Series Cold Shrink Splice 2015 Product Guide, MVSSC0615

Richards Manufacturing Co.; Installation Instructions, Cold Shrink Straight Splice with Covered Neutral Jumper 15/25/28 & 35 kV Voltage Class, RP-II-93SSC-CNJ[A]