

Heat Shrink Splices, Straight, 110 kV BIL, Tyco



1. Scope

This standard covers the requirements for Tyco, 110 kV BIL, straight, heat shrink cable splices. Cable splices are also known as cable joints.

This Material Standard applies to the Seattle City Light Stock Numbers shown below:

Stock Number	City Light Application, AWG/kcmil
013055	#1 - 2/0
013056	350 - 500
013057	750 - 1000

2. Application

Heat shrink splices are used to permanently join two like-sized conductors, TRXLPE or EPR insulated, tape or flat strap shielded, medium voltage cable ends.

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

The heat shrink splices specified in this material standard are intended for use on Seattle City Light's 13.8 kV, 3-wire, delta network system, where load consists of network type transformers with delta connected primary and grounded wye connected secondary.

Heat shrink type joints consist of one or more expanded polymeric extruded tubes or molded parts that undergo thermally activated recovery when heated to an appropriate temperature.

Heat shrink kits contain everything that is needed to make up a splice, except the connector.

For cable-specific application information, refer to Construction Standard 0535.11 - Heat Shrink Splice, Straight, 110 kV BIL

The industry-popular Raychem Corporation was purchased by Tyco Electronics in 1999; in some circles, heat shrink splices are still referred to as Raychems.

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3. Industry Standards

Heat shrink splices shall meet the requirements of the following industry standard:

IEEE 404-2006 - Standard for Extruded and Laminated Dielectric Shielded Cable Joints Rated 2500 V to 500 000 V

4. Detailed Requirements

Heat shrink splices described in this Standard shall have the following electrical ratings and attributes:

Voltage class	15 kV
Maximum voltage rating (ph-g), grounded systems	8.7 kV rms
Maximum voltage rating (ph-ph)	15 kV rms
Basic impulse insulation level, BIL	110 kV crest
Withstand voltage, 15 minute	75 kV DC
Withstand fault current, 100 cycles	10 kA rms

Specific heat shrink splices shall be designed for use with the cables described in Table 4.

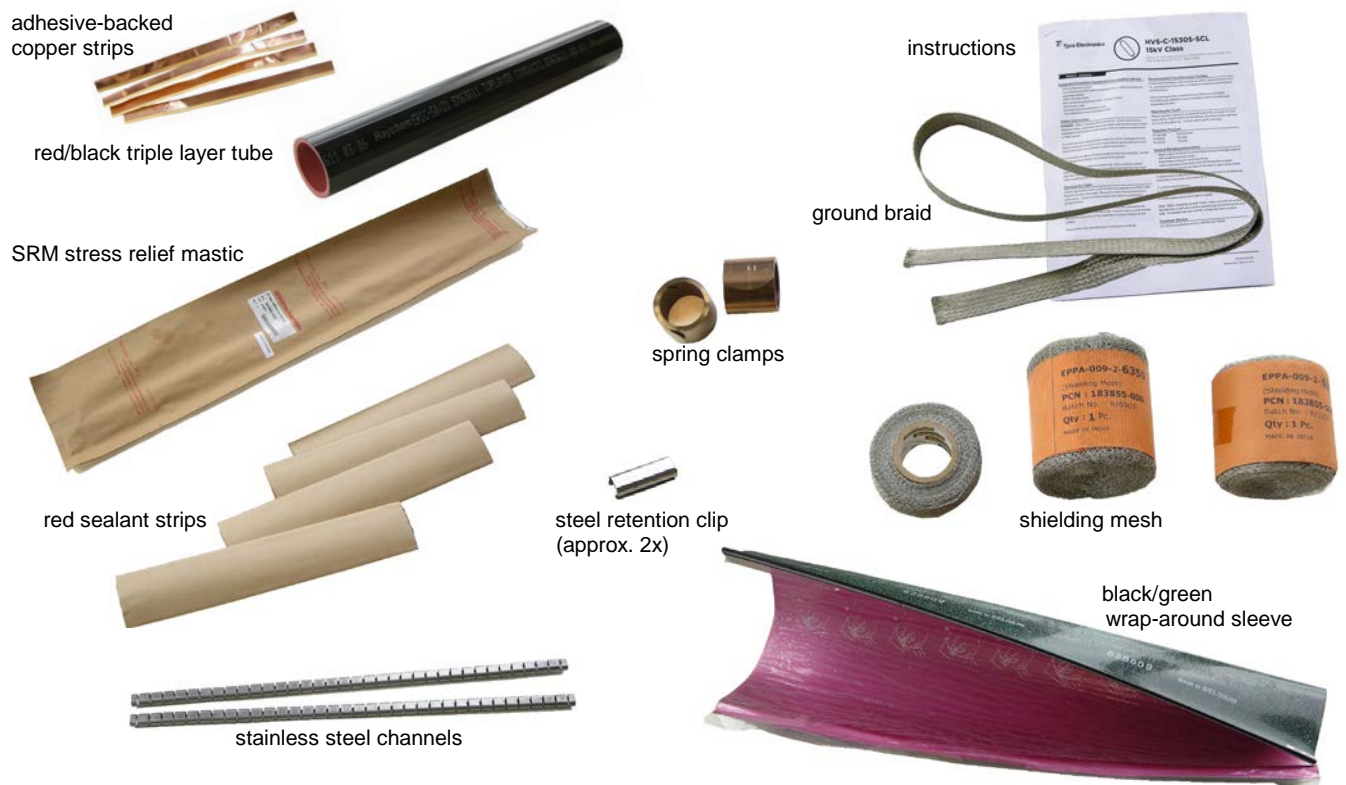
Table 4, Splice to Cable Cross Reference

Stock Number	Conductor Size, AWG/kcmil	Insulation overall dia, range, in	Jacket overall dia, max, in
013055	#2 - 2/0	0.65 - 0.95	1.20
013056	3/0 - 400	0.85 - 1.30	1.65
013057	500 - 750	1.10 - 1.55	1.90

Each heat shrink splice kit shall include (quantities of some components may vary with kit size):

- 4 - Strips adhesive-backed copper tape
- 1 - Red/black triple layer tube
- 1 - SRM-stress relief mastic
- 4 - Red sealant strips
- 2 - Ground braid with solder block
- 4 - Spring clamps
- 2 - Rolls shielding mesh
- 1 - Black/green wraparound sleeve
- 2 - Stainless steel channels
- 1 - Stainless steel retention clip
- 1 - Set installation instructions

Figure 4, Heat Shrink Splice Kit Contents:



5. Testing

Heat shrink splices shall be tested according to the requirements of IEEE 404, Section 7.

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 product's understood or published capabilities.

7. Marking

Heat shrink splices 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
- Date of manufacture (month and year)

8. Packaging

Heat shrink splices shall be individually packaged to prevent damage during shipping, handling, and storage.

Each individual package shall constitute a kit that includes all of the parts cited in Section 4 of this material standard.

Individual packages shall be legibly marked with:

- Manufacturer's name
- Manufacturer's catalog number
- Product description
- Seattle City Light's Stock Number

Shipping containers shall be legibly marked with:

- Seattle City Light's Purchase Order Number
- Seattle City Light's Stock Number

9. Issuance

Stock unit: EA

10. Approved Manufacturers

Stock Number	City Light Application, AWG/kcmil	Tyco Electronics Energy Division
013055	#1 - 2/0	HVS-C-1531S-SCL
013056	350 - 500	HVS-C-1532S-SCL
013057	750 - 1000	HVS-C-1533S-SCL

11. Sources

2-1773453-8 E322; Tyco Electronics Energy Division, Raychem Rayfit In-Line Heat Shrinkable Splices; HVS-C-1530S & HVS-S-1530S, 1/C Shielded Longitudinal Corrugated and FS Cables 15 kV; November 2008

PCN DH793P-000; Installation Instructions, Tyco Electronics, HVS-C-1530S-SCL, 15 kV Class, Splice for Extruded Dielectric (Poly/EPR) Power Cable with Flat Strap Neutral (FS) or Table Shield; April 23, 2010

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12. References

SCL Construction Standard 0535.11; "Heat Shrink Splice, Straight, 110 kV BIL, Tyco"

SCL Material Standard 6871.3; Splices, "15-kV through 69-kV, Heat Shrinkable"