PILC to TRXLPE Transition Splices, 150 kV BIL

1. Scope

This standard covers the requirements for 150 kV BIL, heat shrink, PILC to TRXLPE transition splices.

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

Stock No.	Transition From	To
687136	3/C, #1-4/0 AWG, PILC	3-1/C, #1-1/0 AWG, TRXLPE
687138	3/C, 4/0 AWG, PILC	3-1/C, 350 kcmil, TRXLPE
687140	3/C, 500 kcmil, PILC	3-1/C, 350 kcmil, TRXLPE

2. Application

Heat shrink transition splices are used with 28 kV rated Network cable. See Section 1 for common City Light cable applications.

Heat shrink transition splices reduce the complexity of splicing one 3/C PILC cable to three 1/C polymeric cables. By converting the PILC cable to a polymeric equivalent, the splices eliminate compound filling and difficult lead wiping.

Here, polymeric cable insulation means either tree retardant crosslinked polyethylene (TRXLPE), ethylene propylene rubber (EPR), or ethylene alkene copolymer (EAM). PILC stands for paper-insulated, lead-covered cable.

Kits do not include connectors. See Table 2 for connectors required to complete a splice.

Table 2. Required Connectors

Kit Stock No.	Homac Connector Catalog No.
687136	SAC 4/0R2
687138	SAC 350R4/0
687140	SAC 500R350

3. Industry Standards

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

IEEE 404-2012; Standard for Extruded and Laminated Dielectric Shielded Cable Joints Rated 2500 V to 500 000 V

4. Requirements

Heat shrink transition splices shall be appropriate for installation on 28 kV rated primary cable.

Heat shrink transition splices shall meet the requirements as described in Table 4.

Table 4. Heat Shrink Transition Splice Requirements

	Stock No.		
	687136	**687138**	**687140**
Conductor size range, AWG/kcmil	#1-250	#1-250	350-500
Basic insulation level (BIL), kV	150	150	150
Insulation diameter, minimum-maximum (in)			
PILC	1.85-1.20	1.85-1.20	1.15-1.40
Poly	0.90-1.25	0.90-1.25	1.15-1.50
Jacket outside diameter, maximum (in)	1.55	1.55	2.00
Connector dimensions, maximum (in)			
Outside diameter	1.10	1.10	1.35
Length	5.50	5.50	7.0
Kit installed length (in)	48	48	48
Required installation space (in)	65	65	75
Connector supplied with kit	none	none	none
External grounding/shield interrupting kit (included with main kit)	EG-1	EG-2	EG-2

Heat shrink transition splices shall be capable of withstanding 15 psi (minimum) continuous internal operating oil pressure under load.

5. Testing

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

Test results shall be provided upon request.

6. Marking

Heat shrink transition splices shall be permanently marked with the manufacturer’s name.

7. Packaging

Heat shrink transition splices shall be packaged one kit per box.

Each standard package shall be legibly marked with the following information:

- Manufacturer's identification
- Product description
- Seattle City Light stock number

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

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

8. Issuance

Stock Unit: EA

9. Approved Manufacturers

Stock No.	TE Connectivity Catalog No.
687136	HVS-T-2582E w/HVS-EG-1
687138	HVS-T-2582E w/HVS-EG-2
687140	HVS-T-2583E w/HVS-EG-2

10. Sources

Shipek, John; SCL Standards Supervisor, originator, and subject matter expert for 6873.51 (john.shipek@seattle.gov)

TE Connectivity, Energy Division; Product Sheet E573, Reducer Kits (HVS-T/HVSR-T) 3/C PILC/VCLC to 1/C Poly Trifurcating Transition and Transition, 10/2014

Tyco Electronics, Energy Division; HVS-T-2580E 25kV Class, Trifurcating Transition Splice for 3/C PILC to 3-1/C Extruded Dielectric (Poly/EPR) Power Cables, Installation Instructions, PII 54850, Revision AD, PCN 591315-000, April 29, 2010