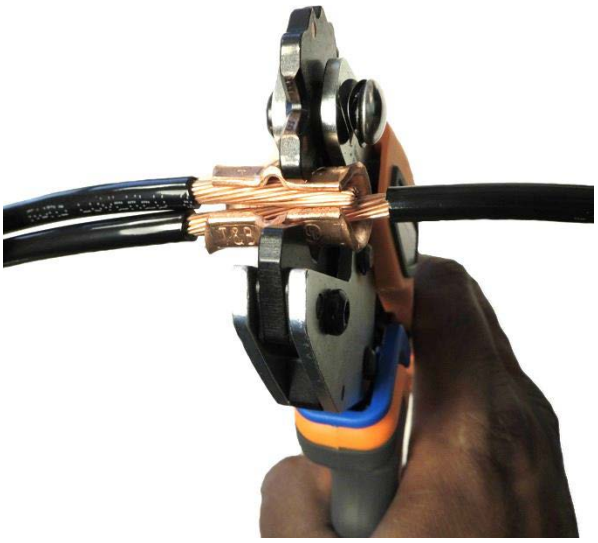
Streetlight Handhole Connections



1. Scope

This practice covers streetlight handhole connections for all streetlight systems owned by Seattle City Light (SCL).

Handhole connections for non-streetlight systems are outside the scope of this document.

Connections for multiple connectors are outside the scope of this document.

2. Application

This practice provides direction to SCL crews, contractors, and customers on making proper handhole connections of SCL-owned streetlight systems.

This practice is not intended to be prescriptive for making streetlight handhole connections. Instead, it should be used as a best-practice method for making reliable, waterproof, and irreversible connections to ensure system integrity and safety.

Handhole connections shall only be performed on de-energized wires.

3. Definitions

Run-wire: Also known as the streetlight system feed (L1, L2); A feed from streetlight distribution handhole to streetlight handholes. Usually #2 or #6 wire.

Tap-wire: Also known as the luminaire feed; A tap off the streetlight system feed (L1 or L2) to the streetlight luminaire. Usually #10 or #12 wire.

4. Discussion

Handhole connections are also known as splices.

Streetlight handhole connections include the following: hot to hot, neutral to neutral, neutral to ground, and ground to ground.

The streetlight handhole connections in this standard meet the requirements of SCL 1710.50 for streetlight grounding and bonding.

Table 4. Typical Streetlight Handhole Connections

Run-wire	Tap-wire	Image
Hot	Black	
Neutral	Neutral	
Ground	Neutral	
Ground	Ground	

5. Required Tools, Material, and PPE

The following personal protective equipment (PPE) is required:

- Gloves
- Safety glasses

The following materials and tools are required:

- One crimp tool and corresponding die as described in Table 5
- Thin-wall, pressure-tap, copper connectors as described in Table 5 and pictured in Figure 5
- Vinyl electrical tape, Stock No. 736655
- Insulating mastic tape, Stock No. 736750

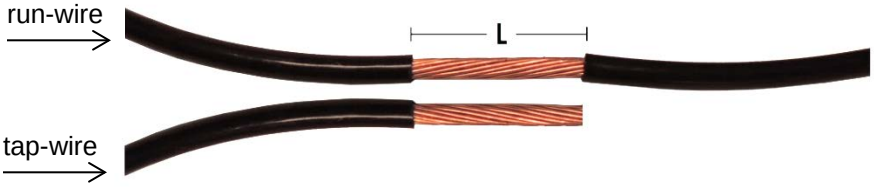
Figure 5. Copper Connectors

Table 5. Thin-wall, Pressure-Tap, Copper Connectors

					Tool and Die	
Stock No.	**Run**	**Tap**	**Color Code**	**Wire Strip Length (in)**	**MD-6/Husky In-Line**	**Y35/39**
013633	#2	#12–#6	Pink	1-13/16	W25VT (2)	UC2
013634	#6	#8–#6	Brown	1-3/16	W2CVT (2)	UC4
013635	#8 #6	#10–#8 #12–#10	Gray	5/8	W4CVT (1)	–

6. Steps

1. Ensure the system is de-energized. Do not crimp energized wires.
2. Strip the run-wire and tap-wire to length according to Table 5. Strip length varies by type of C-tap connection. Be careful not to nick any cable strands which may later result in strands breaking.



Crimp run-wire and tap-wire together using the manual hand tool. After crimping, remove all sharp edges, flash, or burrs that occurred during crimping.

3. Wrap the connection with black vinyl electrical tape.

4. Wrap the connection with a layer of insulating mastic tape.

5. Wrap the connection with a final layer of black vinyl electrical tape.

7. References

SCL Construction Standard 1710.50; “Streetlight System Grounding and Bonding”

8. Sources

Burndy Compression Master Catalog; burndy.com

Chao, Yaochiem; SCL Standards Engineer and originator of 1714.30 (yaochiem.chao@seattle.gov)

Edwards, Tommy; SCL Electrical Reviewer and subject matter expert of 1714.30 (tommy.edwards@seattle.gov)