

Neutral Hand Tie Installation



1. Scope

This work practice describes how to perform a hand tie to attach a covered neutral conductor to a spool insulator in the Looped Radial distribution system.

A neutral tie is also referred to as a secondary tie.

For cold (primary) hand tie installation refer to SCL 0100.31.

For hot (sissy) hand tie installation refer to SCL 0100.33.

2. Application

This work practice is for Seattle City Light (SCL) lineworkers who tie conductors to spool insulators by hand in the Looped Radial distribution system.

3. Definitions

Button: Wire that is wrapped tightly onto the conductor where the wire is almost vertical for the entire revolution. Each button should be touching each other.

Twist: Wire that is laid around the conductor where you go up straight up and then down at a 45-degree angle per revolution.

Loop: Wire that is trained back so that the end of the wire is contacting itself.

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4. Tying Procedure

Proper PPE shall be worn when performing tie installations.

Neutral hand ties are covered wire.

Step 1. Cut or obtain tie wire of the length shown in Table 4.

Table 4. Tie Wire Sizes

Conductor Size (AWG)	Tie Wire Size (Solid, AWG)	Tie Wire Length (ft)
#6	#6	3
#4	#6	3
#2	#6	3
2/0	#4	3
4/0	#4	3

Step 2. Start tie by wrapping the tie wire diagonally over the conductor on the side of the spool away from the bracket. Then wrap both sides around the back, cross over itself and return them back to the front of the spool.

Step 3. Take the side with the higher returning wire and start above the conductor wrapping down and then around the conductor at a 45-degree angle away from the spool to complete 4 to 5 twists until there is about 3 inches of wire left. Create a loop back on itself with the remaining wire.

Step 4 Take the side with the lower returning wire and start below the conductor wrapping up and then around the conductor at a 45-degree angle away from the spool to complete 4 to 5 twists until there is about 3 inches of wire left. Create a loop back on itself with the remaining wire.

5. References

SCL Work Practice 0100.31; “Cold Tie Installation”

SCL Work Practice 0100.33; “Hot Tie Installation”

6. Sources

Alexander, James; SCL Crew Chief and subject matter expert for 0100.35

Anderson, Jeff; SCL Craft Instructor of Apprenticeship and subject matter expert for 0100.35

Lu, Curtis; Standards Engineer and originator of 0100.35

SCL Construction Standard D15-2.2 (canceled); “Hand Wrapped Spool Ties for Copper or Aluminum Poly Covered Conductors, Single Tie”