

Splices, Straight Compression, Non-Tension, Secondary**1. Scope**

This standard identifies the material, and the procedures, required to install secondary, straight compression splices. This standard covers the joining of same and dissimilar conductor metals. Primary conductors are outside the scope of this standard. Bare overhead conductors are outside the scope of this standard.

2. Application

This standard is for Seattle City Light (SCL) engineers, crews, and contractors who install straight compression splices.

3. Splices

Straight compression splices include a connector, insulating sealant, oxide inhibiting compound, electrical insulation cleaner, and either electrical tape or a heat-shrinkable cover. The connector is installed using a corresponding tool and die as specified in Section 4.

Conductors shall be hand-taped when possible.

Figures 3a through 3d show the typical straight compression splices used at SCL.

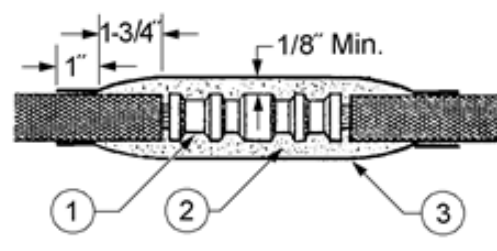
Figure 3a. Copper-to-Copper Splice

Figure 3b. Aluminum-to-Aluminum Splice

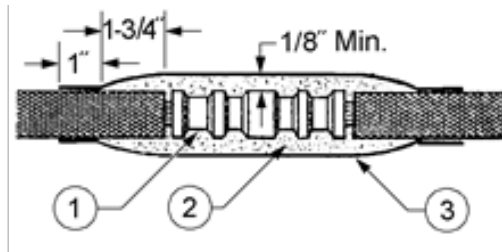


Figure 3c. Aluminum-to-Copper Reducing Splice

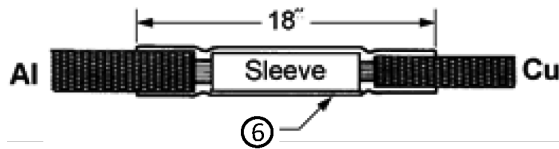
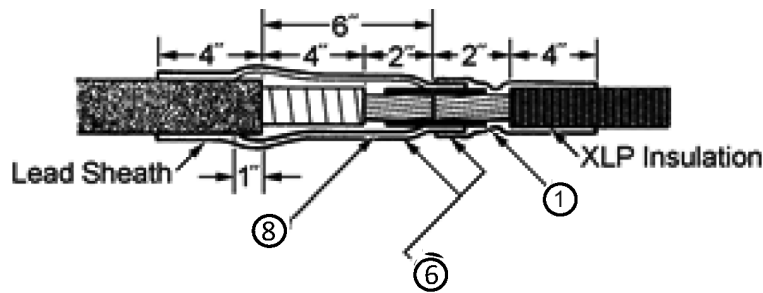


Figure 3d. Lead-to-XLP Splice



4. Tools, Dies, and Materials

There are three crimping tools available: the MD-6, Y35/39, and Y46. Each tool requires two (2) dies to perform the crimp: one for the top and one for the bottom.

Table 4a. Copper-to-Copper Splice

Item	Size (AWG/kcmil)	Stock No.	MD-6	Y35/39	Y46
1	#6	677354	–	U5RT	–
1	#4	677355	W161	U4RT	–
1	#2	677357	W162	U2RT	–
1	#1	677358	–	U1RT	–
1	#1/0	677359	W163	U25RT	–
1	#2/0	677360	W241	U26RT	–
1	#3/0	677361	W243	U27RT	–
1	#4/0	677362	W-BG	U28RT	–
1	250	677364	–	U29RT	–
1	300	677364	–	U30RT	–
1	350	677365	–	U31RT	–
1	500	677367	–	U34RT	–
1	750	677371	–	–	P39ART

Table 4b. Aluminum-to-Aluminum Splice

Item	Size (kcmil)	Stock No.	Y35/39	Y46
1	500	650611	U34ART	–
1	750	650613	–	P39ART

Table 4c. Aluminum-to-Copper Reducing Splice

Item	Size, kcmil	Stock No.	Y35/39	Y46
1	500 Al–350 Cu	650692	U34ART, U30RT	–
1	750 Al–500 Cu	650593	U34RT	P39ART

Table 4d. Lead-to-XLP Splice

Item	Size, kcmil	Stock No.	Y35/39	Y46
1	#1	650631	U1CART	–
1	1/0	650632	U25ART	–
1	4/0	650634	U28ART	–
1	350	650637	U31ART	–
1	500	650639	U34ART	–
1	750	650641	U39ART	–
1	#1	650631	U1CART	–

Table 4e. Splice Installation Materials

Item	Description	Stock No.
2	Sealing and insulating mastic tape	736470
3	Standard duty, 3/4", pressure-sensitive, vinyl, electrical tape	736655
4	Compound, oxide inhibiting	726180
5	Cleaner, electrical insulation	013894
8	Self-fusing, silicone rubber, electrical tape	736512

Table 4f. Heat-Shrink Splice Cover

Item	Cable Size (AWG/kcmil)	Cover Length (in)	Stock No.
6	1/0–4/0	9	737450
6	1/0–4/0	48	737601
6	250–500	12	737452
6	250–500	48	737602
6	750	12	737455
6	750	48	737603

Table 4g. Cold-Shrink Splice Cover

Item	Cable Size (AWG/kcmil)	Stock No.
6	#2 AWG–500 Al or 750 Cu	014307

5. Installation Procedures

Steps to install straight compression splices are as follows:

1. Remove insulation as required. Do not nick the strands.
2. Aluminum conductors: Apply a small amount of oxide-inhibiting compound (Item 4) to the bare strands and then brush with a wire brush parallel with the strands.
3. Attach the compression connector using recommended tools and dies. After compressing, clean connector and adjacent insulation with electrical insulation cleaner (Item 5).
4. Apply insulating sealant (Item 2), press firmly and form as shown in the illustrations. (Not needed for straight splices with heat-shrink).
5. Apply 3 half-lapped layers of plastic insulating tape (Item 3). Do not stretch while applying. Use same tension used to remove the tape from the roll. Heat shrink or cold-shrink tubing may be used.

Note: For splicing lead conductor, instead either cut 18 inches from a 48-inch piece of heat-shrink tubing or use one and a half pieces on 12 inch heat-shrink tubing.

6. Sources

Lu, Curtis; Standards Engineer and originator of 0575.14

SCL Construction Standard U5-1.02/NCB-80 (canceled); "Splices And Taps, 600 Volt, Aluminum To Aluminum, Aluminum To Copper, Copper To Copper"