

Connectors, Aluminum Compression, Range-Taking



1. Scope

This standard details manufacturer requirements for aluminum compression connectors.

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

Class	Stock No.	Conductor Range
Minimum Tension	650100	#10 AWG Solid Cu – 1/0 ACSR
	650102	#8 AWG Solid Cu – 2/0 ACSR
	650104	#4 AWG Solid Cu – 4/0 ACSR
	650106	2/0 – 336.4 kcmil ACSR
Partial	014780	#2 AWG – 2/0 ACSR
	013530	1/0 – 4/0 ACSR
	650138	4/0 – 477 kcmil ACSR
Full Tension	014781	#2 AWG – 2/0 ACSR
	650172	1/0 – 4/0 ACSR
	650174	4/0 – 336.4 kcmil AAC
	650196	4/0 – 397.5 kcmil ACSR
Tap	650198	397.5 – 477 kcmil ACSR
	650314	#4 AWG – 4/0 ACSR

2. Application

Aluminum compression connectors are intended for use on aluminum, aluminum-to-copper, or ACSR conductors in overhead construction.

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3. Industry Standards

Aluminum compression connectors shall meet the applicable requirements of the following industry standard:

ANSI C119.4-2011 American National Standard for Electric Connectors – Connectors for Use Between Aluminum-to-Aluminum and Aluminum-to-Copper Conductors Designed for Normal Operations at or Below 93° C and Copper-to-Copper Conductors Designed for Normal Operation at or Below 100°C

4. Requirements

4.1 General

Connectors shall be designed and manufactured to be installed with VERSA-CRIMP® compression tool VC6.

Each connector shall be factory-filled with a measured amount of oxide-inhibiting compound that will not affect the dielectric strength or power factor of cables insulated with butyl, cross-linked polyethylene or ethylene-propylene rubber.

4.2 Detailed Requirements

4.2.1 Minimum Tension

Compression connectors shall be tensile strength Class 3, as defined in ANSI C119.4.

Stock No.	Conductor Range	Length (in)
650100	#10 AWG Solid Cu – 1/0 ACSR	2 ± 1/16
650102	#8 AWG Solid Cu – 2/0 ACSR	3 ± 1/16
650104	#4 AWG Solid Cu – 4/0 ACSR	4 ± 1/16
650106	2/0 – 336.4 kcmil ACSR	5-5/16 ± 7/16



4.2.2 Partial Tension

Compression connectors shall be tensile strength Class 2, as defined in ANSI C119.4.

Stock No.	Conductor Range	Length (in)
013530	1/0 – 4/0 ACSR	7-11/16 ± 7/16
650138	4/0 – 477 kcmil ACSR	7-11/16 ± 7/16
014780	#2 AWG – 2/0 ACSR	6 ± 1/2



4.2.3 Full Tension

Compression connectors shall be tensile strength Class 1, as defined in ANSI C119.4.

Stock No.	Conductor Range	Length (in)
650172	1/0 – 4/0 ACSR	19-7/8 ± 1/8
650174	4/0 – 336.4 kcmil AAC	9 ± 1/2
650196	4/0 – 397.5 kcmil ACSR	22-7/8 ± 1/8
650198	397.5 – 477 kcmil ACSR	22-7/8 ± 1/8
014781	#2 AWG – 2/0 ACSR	18 ± 3/4



4.2.4 Tap

Tap connectors shall be tensile strength Class 3, as defined in ANSI C119.4.

Stock No.	Conductor Range
650314	#4 AWG – 4/0 ACSR



5. Product Marking

Each connector shall be clearly and indelibly marked with the following:

- Manufacturer's name or symbol
- Aluminum or copper application
- Conductor range
- Number of crimps
- Catalog number
- VERSA-CRIMP® tool
- Insulating strip length.

6. Packaging

Connectors shall be packaged to prevent damage during shipping.

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

- Manufacturer identification
- Product description
- Quantity contained
- Seattle City Light purchase order number
- Seattle City Light stock number.

Shipping container weight shall not exceed 50 pounds.

7. Issuance

Stock Unit: EA

8. Approved Manufacturers

Class	Stock No.	Conductor Range	Hubbell Power Systems (formerly Anderson)	Homac (a division of Thomas & Betts)
Minimum Tension	650100	#10 AWG Solid Cu – 1/0 ACSR	VCSE44	SGAC 1/0
	650102	#8 AWG Solid Cu – 2/0 ACSR	VCSE55	SGAC 3/0
	650104	#4 AWG Solid Cu – 4/0 ACSR	VCSE66	SGAC 250
	650106	2/0 – 336.4 kcmil ACSR	VCSE77	SGAC 350
Partial	014780	#2 AWG – 2/0 ACSR	VCJS50R	SKAC 2/0
	013530	1/0 – 4/0 ACSR	VCJS61R	SKAC 4/0
	650138	4/0 – 477 kcmil ACSR	VCJS85R	SKAC 500
Full Tension	014781	#2 AWG – 2/0 ACSR	VC50R	ACSR 2/0FT
	650172	1/0 – 4/0 ACSR	VC61R	ACSR 4/0FT
	650174	4/0 – 336.4 kcmil AAC	VC70A	AAC 350FT
	650196	4/0 – 397.5 kcmil ACSR	VC80R	ACSR 397.5FT
	650198	397.5 – 477 kcmil ACSR	VC90R	–
Tap	650314	#4 AWG – 4/0 ACSR	VCL66	–

9. References

SCL Material Standard 6501.1 (canceled); “Connectors, Aluminum Compression, Range-Taking”

Panomvana, Tanya; SCL Standards Engineer, subject matter expert and originator of 6501.10