

Terminals and Splices, Insulated Solderless Type



1. Scope

This standard covers the requirements for insulated ring, fork, and flanged fork terminals and butt splices.

This material standard applies to the Seattle City Light Stock Numbers cited in Section 11.

2. Application

Terminals are installed on the ends of low voltage conductors and secured with a hand-operated crimping tool. Design provides a reliable electrical connection and wire strain relief. Terminals are intended for use with a wide range of insulated control cable, metering, switchboard, streetlight, automotive, and appliance wire. Terminals and splices are not appropriate for direct burial.

Standard work practice in stations, generation, and relay is to use Amp crimp tools with Amp ring terminals exclusively.

This class of connector is known as Pre-Insulated Diamond Grip (PIDG) type. Industry standard color-coding indicates intended wire range.

Refer to Material Standard 6771.20 for non-insulated terminals.

3. Industry Standards

Terminals and splices shall meet the applicable requirements of the following industry standard:

ANSI/UL 486A-486B; Wire Connectors

4. Attributes

Terminals and splices shall have the following attributes and ratings:

- nylon insulation
- straight receptacle style
- standard duty
- chamfered/funneled terminal entry
- deep serrated barrel interior
- brazed or overlap seam
- pure copper or brass body
- electroplated-tin finish
- insulation support
- EU RoHS/ELV compliant

Muneer Shetab *Brett Hanson*

Bob Risch

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4. Attributes, continued

Insulation rating, minimum, V	300
Operating temperature, maximum, degrees C	105
Terminal tongue thickness, nominal, in	
wire size, #22 to #14	0.033
wire size, #12 to #10	0.042
Female disconnect terminal tab size, nominal, in	0.250 x 0.032
Stud #, equivalent diameter, in	
#4	0.112
#6	0.138
#8	0.164
#10	0.190

Terminals and splices shall be free from sharp edges and degreased prior to plating.

5. Tests and Test Reports

Data that establishes compliance with the requirements of ANSI/UL 486A-486B and this material standard shall be provided upon request.

6. Product Approval

Manufacturers interested in having their product approved for purchase by Seattle City Light must participate in a stepped evaluation process. Contact Standards for the details.

7. Marking

Each terminal and splice shall be permanently and legibly marked with:

- Manufacturer's name or symbol
- Wire size/range

Terminal and splice insulation shall be color-coded to indicate intended wire size range according to established industry convention.

8. Packaging

Terminals and splices shall be packaged to prevent damage during shipping, handling, and inside storage.

Individual packages shall be legibly marked with:

- Manufacturer's name
- Manufacturer's catalog number
- Product description
- Quantity contained
- Seattle City Light's Stock Number

Standard package quantity shall be 50, 100, 500, or 1000 units, as determined by the manufacturer's approved catalog number, purchase order, or mutual agreement.

9. Issuance

Stock Unit: EA

10. Approved Manufacturers

10.1 General

Refer to the following subsections for approved catalog numbers.

- TE Connectivity AMP (formerly Tyco Electronics AMP), abbreviated **AMP**
- **Burndy** (a division of Hubbell), Insulug series
- Thomas & Betts, Sta-Kon series, abbreviated **T&B**

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10. Approved Manufacturers, continued**10.2 Ring Terminals**

Stock Number	Wire Size Range, AWG	Stud Size, Stud # / in	Insulation Color	Manufacturer and Catalog Number	
				AMP	
677172	#22 - #18	#4	red ■	8-31880-1	
677174	#22 - #18	#6	red ■	8-36152-1	
677173	#22 - #18	#8	red ■	8-31890-1	
677175	#22 - #18	#10	red ■	8-36154-1	
677177	#22 - #18	1/4	red ■	8-31894-1	
677178	#22 - #18	5/16	red ■	8-31895-1	
677179	#22 - #18	3/8	red ■	8-31897-1	
677154	#16 - #14	#4	blue ■	8-328996-1	
677155	#16 - #14	#6	blue ■	8-320619-1	
014906	#16 - #14	#6, long tongue	blue ■	50881	
677156	#16 - #14	#8	blue ■	8-320565-1	
677157	#16 - #14	#10	blue ■	8-36160-1	
677151	#16 - #14	1/4	blue ■	8-321045-1	
677153	#16 - #14	3/8	blue ■	8-328999-1	
677176	#12 - #10	#6	yellow ■	8-35149-2	
677164	#12 - #10	#8	yellow ■	8-35108-1	
677160	#12 - #10	#10	yellow ■	8-35109-1	
677165	#12 - #10	1/4	yellow ■	8-35110-1	
677166	#12 - #10	5/16	yellow ■	8-35111-1	
677167	#12 - #10	3/8	yellow ■	8-35112-1	
677168	#12 - #10	1/2	yellow ■	8-35151-2	



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page: 4 of 6**10. Approved Manufacturers, continued****10.3 Fork Terminals**

Stock Number	Wire Size Range, AWG	Stud Size, Stud # / in	Insulation Color	Manufacturer and Catalog Number		
				AMP	Burndy	T&B
677184	#22 - #18	#6	red 	8-34541-1	TN186F	18 RA-6F
677190	#16 - #14	#6	blue 	8-35559-1	TN146F	14 RB-6F
677191	#16 - #14	#10	blue 	8-32060-1	TN1410F	14 RB-10F
677196	#12 - #10	#6	yellow 	8-35152-2	TN108F	10 RC-6F
677197	#12 - #10	#10	yellow 	8-32589-2	TN1010F	10 RC-10F

10.4 Flanged Fork Terminals

Stock Number	Wire Size Range, AWG	Stud Size, Stud # / in	Insulation Color	Manufacturer and Catalog Number		
				AMP	Burndy	T&B
677185	#22 - #18	#6	red 	8-32562-1	YAE18Z2BOX	RA 1103
677186	#22 - #18	#8	red 	8-32498-1	YAE18Z3 BOX	RA 1223
677192	#16 - #14	#6	blue 	8-320861-1	YAE14Z2 BOX	RB 1203

10.5 Short Spade Tongue

Stock Number	Wire Size Range, AWG	Stud Size, Stud # / in	Insulation Color	Manufacturer and Catalog Number		
				AMP	Burndy	T&B
677200	#22 - #18	#6	red 	8-52929-1	TN186 LF	-
677201	#22 - #18	#8	red 	8-52930-1	TN188 LF	-
677206	#16 - #14	#6	blue 	7-52935-1	TN146 LF	-
677210	#12 - #10	#6	yellow 	8-52941-2	TN106 LF	-
677211	#12 - #10	#8	yellow 	8-52942-1	TN108 LF	-

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10. Approved Manufacturers, continued**10.6 Long Spade Tongue**

Stock Number	Wire Size Range, AWG	Stud Size, Stud # / in	Insulation Color	Manufacturer and Catalog Number		
				AMP	Burndy	T&B
677207	#16 - #14	#8	blue 	8-52421-1	TN148LF	-
677212	#12 - #10	#10	yellow 	52432-1	TN1010LF	-
677213	#12 - #10	1/4	yellow 	52433-1	-	-

10.7 Disconnect Terminals

Stock Number	Type	Wire Size Range, AWG	Duty	Insulation Color	Manufacturer and Catalog Number		
					AMP	Burndy	T&B (ABB)
677170	Female	#16 - #14	standard	blue 	640905-1	QN14F25X03D	RB14-250F
014980	Male	#16 - #14	standard	blue 	3-520107-2	FQN14M25X03D	14RB-250T
014981	Female	#22 - #18	standard	red 	640903-1	QN18F25X03D	RA18-250F
014982	Male	#22 - #18	standard	red 	2-520103-2	FQN18M25X03D	18RA-250T

10.8 Butt Splices

Stock Number	Wire Size Range, AWG	Insulation Color	Manufacturer and Catalog Number		
			AMP	Burndy	T&B
677384	#22 - #18	red 	8-320559-2	SN18	2RA18
677386	#16 - #14	blue 	8-320562-5	SN14	2RB14
677392	#12 - #10	yellow 	8-320570-2	SN10	2RC10

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11. References

SCL Material Standard 6771.20; "Terminals and Splices, Non-Insulated, Solderless Type"

12. Sources

AMP Standard Terminals and Splices; Catalog 82042; Tyco Electronics; Revised 07-08

"Anatomy of a Good Solderless Terminal Connection"; Aero Electric Connection; Bob Nuckolls; November 18, 1999

SCL Drawing D-44327, Class E, Revision 4, 04/03/12, Wiring Method Specification

SCL Material Standard 6771.3 (canceled); "Connectors, Compression Terminals and Splices, Pre-Insulated with Wire Insulation Support"

Shetab, Muneer; SCL Standards Engineer and subject matter expert for 6771.30

Shipek, John; SCL Standards Supervisor, subject matter expert, and originator of 6771.30

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