

MATERIAL STANDARD**Accessories, Separable Connector (Elbow),
200 A, 125 kV BIL, Loadbreak****1. Scope**

This material standard covers the requirements for 200 A, 125 kV BIL, loadbreak, separable connector (elbow) accessories, such as multi-way junction boxes (J-boxes), parking bushings, wells, inserts, plugs, caps, threaded studs, and test probes.

The requirements for 200 A, 125 kV BIL, loadbreak, separable connector (elbow) kits are specified in Material Standard 6864.05.

The requirements for 200 A, 125 kV BIL, deadbreak, separable connector (elbow) accessories are specified in Material Standard 6864.17.

This material standard applies to the Seattle City Light Stock Numbers in the table, right.

2. Application

The cable accessories specified in this standard are intended to be used in conjunction with 200 A, 125 kV BIL, loadbreak separable connector (elbow) kits, Material Standard 6864.05 to construct complete connector systems.

Because of high fault duty, connectors rated 200 A continuous are not appropriate for network systems. Network systems should be constructed with connectors rated 600 A (or 900 A) continuous.

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3. Industry Standards

Separable connectors (elbows) shall meet the applicable requirements of the following industry standard:

IEEE 386-2006 – Standard for Separable Insulated Connector Systems for Power Distribution Systems Above 600 V

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MATERIAL STANDARD

Accessories, Separable Connector (Elbow), 200 A, 125 kV BIL, Loadbreak

STANDARD NUMBER: **6864.07**

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4. General Requirements

Separable connector (elbow) accessories (except bushing well interfaces) shall have the following electrical ratings and attributes:

voltage class	25 kV
maximum voltage rating (ph-g)	15.2 kV RMS
maximum voltage rating (ph-g/ph-ph)	15.2/26.3 kV RMS
BIL	125 kV crest
continuous current rating	200 A RMS
short-time current rating	10 kA RMS, symmetrical
IEEE 386 interface	Figure 7

Bushing well interfaces shall have the following electrical ratings and attributes:

voltage class	15, 25, and 35 kV
maximum voltage rating (ph-g)	21.1 kV RMS
BIL	150 kV crest
continuous current rating	200 A RMS
short-time current rating	10 kA RMS, symmetrical
IEEE 386 interface	Figure 3

Brackets and mounting hardware shall be stainless steel or other corrosion-proof alloy. Galvanized parts are not acceptable.

Multi-way junction boxes shall be provided with adjustable angle mounting brackets.

Each cable accessory well shall be provided with a threaded stud.

Grounding parking bushing bases shall be marked red, orange, or yellow.

Grounding parking bushings shall be provided with 5-foot, flexible, 2/0 AWG copper ground leads.

Any accessory that requires permanent grounding shall be equipped with a connector for attaching a #2 AWG, bare, stranded copper grounding conductor.

Insulated caps shall be provided with grounding tab for the purpose of attaching a drain wire lead.

For the purposes of this standard, parking stands designed for use with Elastimold type 151 grounding and insulated parking bushings shall be designated type **151PS**.

Parking stands of this design have a nominal horizontal opening of 3/8 inch. Parking stands designed for use with Elastimold type 160 grounding and insulated parking bushings shall be designated type **160PS**.

Parking stands of this design have a nominal horizontal opening of 2 inches. IEEE 386 does not differentiate between type 151PS and 160PS parking stands.



Figure 4.0, type 151PS parking stand



Figure 4.1, type 160PS parking stand

5. Testing

Separable connector (elbow) accessories shall be tested according to the requirements of IEEE 386, Section 7.

Test results shall be provided upon request.

6. Design Changes

Manufacturer shall inform Seattle City Light in writing of all design changes that could affect the product's understood or published capabilities.

7. Marking

Separable connectors (elbows) shall be marked according to the requirements of IEEE 386, Section 6.1.

MATERIAL STANDARDAccessories, Separable Connector (Elbow), 200 A, 125 kV BIL,
Loadbreak**8. Packaging**

Separable connector (elbow) accessories shall be individually packaged in heavy duty, clear plastic bags or cardboard boxes, as appropriate for their size and weight, to prevent damage and/or contamination during shipping, handling, and storage.

Each individual package shall be marked with the following information:

- Manufacturer's identification
- Product description

8. Packaging, continued

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

- Manufacturer's identification
- Product description
- Quantity contained
- Seattle City Light's Purchase Order Number
- Seattle City Light's Stock Number

9. Issuance

EA

10. Approved Manufacturers

Stock Number:	686452
Description:	Insulated cap with 5-ft (+/1 ft) drain wire lead
Application:	An accessory device designed to electrically insulate, electrically shield, and mechanically seal a bushing insert or integral bushing. For 26.4 kV or 5 kV loadbreak, transformer and junction box bushings.
Cooper Power Systems	L PC225CS
Thomas & Betts (Elastimold)	273DRG(3)

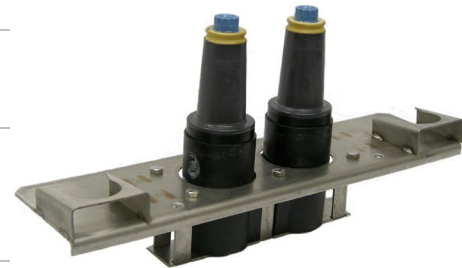


Stock Number:	686555
Description:	Multi-way junction (J-Box), five-well, with type 160PS parking stand each end
Application:	An accessory device with five interconnected wells. Center-to-center spacing is four inches. This Stock No. does not include bushing inserts. Order five loadbreak bushing inserts, Stock No. 686449, or five deadbreak bushing inserts, Stock No. 686430, for each five-well, junction box to form a complete unit.
Cooper Power Systems	JB125C5WSPS
Thomas & Betts (Elastimold)	-



Stock Number:	686216
Description:	Threaded stud, 1-5/16" x 3/8"-16
Application:	For replacement purposes if original threaded stud is lost or damaged. Stud is used to connect a loadbreak bushing insert, Stock No. 686449, or deadbreak bushing insert, Stock No. 686430, into a Patton & Cooke or Cooper Power Systems five-well, junction box, Stock No. 686555.
Cooper Power Systems	JB1WELLSTUD
Thomas & Betts (Elastimold)	-



MATERIAL STANDARDAccessories, Separable Connector (Elbow), 200 A, 125 kV BIL,
Loadbreak**10. Approved Manufacturers, continued****Stock Number:** 686455**Description:** **Multi-way junction (J-Box)**, four-bushing, with type 160PS parking stand each end**Application:** An accessory device with four interconnected bushings. Center-to-center spacing is four inches.Cooper Power Systems L J225C4B
Thomas & Betts (Elastimold) 274J4**Stock Number:** 686454**Description:** **Multi-way junction (J-Box)**, three-bushing, with type 160PS parking stand each end**Application:** An accessory device with three interconnected bushings. Center-to-center spacing is four inches.Cooper Power Systems L J225C3B
Thomas & Betts (Elastimold) 274J3**Stock Number:** 686552**Description:** **Multi-way junction (J-Box)**, two-bushing, with type 160PS parking stand each end**Application:** An accessory device with two interconnected bushings. Center-to-center spacing is four inches.Cooper Power Systems L J225C2B
Thomas & Betts (Elastimold) 274J2**Stock Number:** 686453**Description:** **Feed-thru parking bushing****Application:** An accessory device with two electrically interconnected bushing interfaces that can be installed into a type PS160 parking stand.Cooper Power Systems L PF225H
Thomas & Betts (Elastimold) 274FT

MATERIAL STANDARDAccessories, Separable Connector (Elbow), 200 A, 125 kV BIL,
Loadbreak**10. Approved Manufacturers, continued**

Stock Number:	686449
Description:	Bushing insert
Application:	A connector component intended for insertion into a bushing well designed for use with another connector component, such as an elbow.
Cooper Power Systems	L BI225
Thomas & Betts (Elastimold)	2701A4



Stock Number:	686450
Description:	Insulated parking bushing, type 160PS
Application:	An accessory device designed to electrically insulate, electrically shield, and mechanically seal a power cable terminated with an elbow and to be installed into a type 160PS parking stand.
Cooper Power Systems	ISB225S
Thomas & Betts (Elastimold)	272SOP



Stock Number:	686451
Description:	Grounding parking bushing, type 160PS, with 5' ground lead, 2/0 AWG copper
Application:	An accessory device designed to electrically ground and mechanically seal a de-energized power cable terminated with an elbow and to be installed into a type 160PS parking stand.
Cooper Power Systems	-
Thomas & Betts (Elastimold)	371GB



Stock Number:	686443
Description:	Test probe
Application:	An accessory device designed to extend the energized bus contained within a bushing for the purpose of allowing easy attachment of a voltage detector, fault locator, or other test equipment. Test probe is not rated for grounding.
Cooper Power Systems	2606602A01
Thomas & Betts (Elastimold)	370TR



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11. References

B100-02024; *Components Master Catalog; 5 kV-35 kV Electrical Distribution Systems, Specifiers Guide*; Cooper Power Systems

Components & Protective Equipment UD (Underground Distribution) Manual; Cooper Power Systems; 1993

PG-CA-0506; *Cable Accessories for 5 kV-35 kV Distribution Systems, Product Selection Guide*; Thomas & Betts (Elastimold)

SCL Material Standard 6864.05; "Separable Connector (Elbow), 200 A, Loadbreak"

SCL Material Standard 6864.17; "Accessories, Separable Connector (Elbow), 200 A, 125 kV BIL, Deadbreak"

Shipek, John; SCL Standards Supervisor, subject matter expert, and originator of 6864.07