SEPARABLE CONNECTOR (ELBOW), 200 A, DEADBREAK

1. Scope

This material standard covers the requirements for 200 A, deadbreak, separable connectors (elbows) kits.

The requirements for 200 A, loadbreak separable connectors (elbows) are specified in Material Standard 6864.05.

This material standard applies to the following Seattle City Light Stock Numbers:

Stock Number	Description
686412	Deadbreak elbow kit for 5 kV, #2 AWG cable
686413	Deadbreak elbow kit for 5 kV, 1/0 AWG cable
686414	Deadbreak elbow kit for 15 kV, 1/0 AWG cable
686416	Deadbreak elbow kit for 28 kV, 1/0 AWG cable
686440	Deadbreak elbow kit for 27 kV, #8 AWG, Kerite cable
686426	Probe contact
012435	Hold down bail assembly, spring loaded, for Cooper Power Systems elbows
012587	Hold down bail assembly, spring loaded, for Elastimold elbows

2. Application

A separable connector (elbow) is a fully insulated and shielded system for terminating and electrically connecting an insulated power cable to electrical apparatus, other power cables, or both, so designed that the electrical connection can be readily established or broken by engaging or separating the connector at the operating interface.

The separable connectors specified in this material standard are intended for use on the following three-phase, 60 Hz systems:

- 26.4 kV, 4-wire, solidly-grounded, wye-connected
- 5 kV and below

Elbow kits, Stock Numbers 686412, 686413, and 686414, are special cases. Little technical information is known about the cables they are to be used with. Elbows and related cables were installed in the Seattle neighborhoods of Laurelhurst, Hillcrest, and/or Edge-O-Town. Kits are spares for emergency replacement.

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.

For cable technical data, refer to E6-1.0/NGE-70.

For cable specific information relating to jacket sealing and metallic shield adapters, refer to U5-16.05.

standards coordinator	*standards supervisor*	*unit director*
John Shipek	John Barnett	Richard Kent

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

4. Detailed Requirements

Separable connectors (elbows) 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 4

Separable connectors (elbows) shall be equipped with a test point with cap.

Each separable connector (elbow) kit shall include:

- Body
- Compression connector (not included with Stock Number 686440)
- Probe contact
- Probe installation tool
- Silicone lubricant
- Spring loaded hold down bail assembly
- Instruction sheet

Separable connector (elbow) kit Stock Number 686412 shall be designed to accommodate cable with XLP insulation with an outside diameter of 0.540 inch.

Separable connector (elbow) kit Stock Number 686413 shall be designed to accommodate cable with XLP insulation with an outside diameter of 0.585 inch.

Separable connector (elbow) kit Stock Number 686414 shall be designed to accommodate cable with XLP insulation with an outside diameter of 0.765 inch.

Compression connectors shall be bi-metallic, with copper top, and meet the requirements of 6864.00.

Separable connector (elbow) shall be designed for a cable insulation shield cutback length of 6-7/8 in. measured from the end of the installed compression connector.

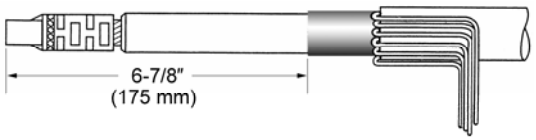

Figure 4, Cutback Length

Spring loaded hold down bail assemblies shall be stainless steel.

5. Testing

Separable connectors (elbows) 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.

8. Packaging

Separable connectors (elbows) shall be individually packaged in heavy duty, clear plastic bags or cardboard boxes.

Each individual package shall constitute a kit that includes all of the parts cited in Section 4 of this material standard.

Each individual package shall be marked with the manufacturer's identification and product description.

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

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10. Approved Manufacturers

Stock Number:	**686412**
Description:	**Deadbreak elbow kit**
Application:	5 kV, #2 AWG cable, Stock Number none, Seattle neighborhoods of Laurelhurst, Hillcrest, and/or Edge-O-Town
Cooper Power Systems	DE225BA04TSP
Thomas & Betts (Elastimold)	156LR-EB5220-CS624

Stock Number:	**686413**
Description:	**Deadbreak elbow kit**
Application:	5 kV, 1/0 AWG cable, Stock Number none, Seattle neighborhoods of Laurelhurst, Hillcrest, and/or Edge-O-Town
Cooper Power Systems	DE225BA06TSP
Thomas & Betts (Elastimold)	156LR-FA5240-CS624

Stock Number:	**686414**
Description:	**Deadbreak elbow kit**
Application:	15 kV, 1/0 AWG cable, Stock Number none, Seattle neighborhoods of Laurelhurst, Hillcrest, and/or Edge-O-Town
Cooper Power Systems	DE225DA06TSP
Thomas & Betts (Elastimold)	156LR-F5240-CS624

Stock Number:	**686416**
Description:	**Deadbreak elbow kit**
Application:	28 kV, 1/0 AWG solid aluminum, bare CN cable, Stock Number 602025
	28 kV, 1/0 AWG solid aluminum, jacketed CN cable, Stock Number 012098
Cooper Power Systems	DE225HA05TSP
Thomas & Betts (Elastimold)	156LR-H5230-CS624

Stock Number:	**686440**
Description:	**Deadbreak elbow kit** (does not include compression connector)
Application:	27 kV, #8 AWG copper Kerite cable, Stock Number 623650
Cooper Power Systems	DE225DA00TSP
Thomas & Betts (Elastimold)	156LR-F-CS624

10. Approved Manufacturers, continued

Stock Number:	**686426**
Description:	**Probe contact**
Application:	replacement
Cooper Power Systems	2638370C01EX
Thomas & Betts (Elastimold)	156LR-F

Stock Number:	**012435**
Description:	**Hold down bail assembly**, spring loaded, for Cooper Power Systems elbows
Application:	replacement
Cooper Power Systems	2690322D02

Stock Number:	**012587**
Description:	**Hold down bail assembly**, spring loaded, for Elastimold elbows
Application:	replacement
Thomas & Betts (Elastimold)	158BA

11. References

6864.00; “Compression Connectors, Bi-Metallic Type for 200 A Elbows”; *Material Standards*; SCL

6864.05; “Separable Connector (Elbow), 200 A, Loadbreak”; *Material Standards*; SCL

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

E6-1.0/NGE-70; “Properties of Medium Voltage Cables”; *Construction Guideline*; SCL

PG-CA-0506; *Cable Accessories for 5 kV-35 kV Distribution Systems, Product Selection Guide*; Elastimold

U5-16.05; “Separable Connector (Elbow), 200 A, Deadbreak”; *Construction Guideline*; SCL

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