

Joint Compounds, Oxide-Inhibiting



1. Scope

This standard covers the requirements for oxide-inhibiting electrical joint compounds.

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

Stock No.	Description
726180	Synthetic, with grit, 8 oz. squeeze bottle
726181	Synthetic, without grit, 8 oz squeeze bottle
726182	Non-synthetic, without grit, 8 oz squeeze tube
725696	Electrical contact grease, 16-oz (1 pt) can with brush

2. Application

Oxide-inhibiting compounds lower contact resistance, seal out air and moisture, and prevent oxidation or corrosion. Applications for each item listed in this standard are described in the following subsections.

2.1 Synthetic Compound with Grit, Stock No. 726180

These oxide-inhibiting compounds are recommended for use on bare aluminum to aluminum and aluminum to copper **compression connections**. The compound is compatible with rubber, polyethylene, and other insulating materials.

The compound contains conductive metal particles (grit) whose function is to break through the oxide film on the contact surfaces, act as electrical bridges between the conductor strands, aid in gripping the conductor, improve electrical conductivity, and enhance the integrity of the connection.

For details, see SCL Work Practice 0576.03; "Preparation for Bolted and Compression Connections" and SCL Construction Standard 0575.14; "Splices, Straight Compression, Non-Tension, Secondary."

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2.2 Synthetic Compound, No Grit, Stock No. 726181

These oxide-inhibiting compounds are recommended for use on bare aluminum to aluminum and aluminum to copper ***cable-to-joint***, ***flat-to-flat***, and ***sliding surfaces***. The compound is compatible with rubber, polyethylene, and other insulating materials.

Aluminum bolt setups that are to be torqued require the application of small amounts of Stock No. 726181 on the threads for proper torque.

This compound does not contain conductive metallic particles as it will impair or abrade the contact surfaces.

For details, see SCL Construction Standard 0575.02; "Bolted Connections."

2.3 Non-Synthetic Compound, No Grit, Stock No. 726182

These oxide-inhibiting compounds are recommended for use on bare aluminum to aluminum and aluminum to copper ***flat-to-flat surfaces***, such as ***bus-to-bus*** and ***terminal pad-to-bus bolted*** connections.

This is the only recommended flat-to-flat compound to use in Network.

The compound is petroleum-based that acts to dissolve aluminum or copper oxide films, promote low resistance joints, and seal the contact surface against moisture and further oxidation.

This compound does not contain conductive metal particles.

For details see SCL Work Practice 0576.03; "Preparation for Bolted and Compression Connections."

2.4 Rust Preventive Compound, Stock No. 725696

This oxide-inhibiting compound is used on copper to steel and steel to copper in severe corrosive environments and directly burial applications.

For details see SCL Work Practice 0576.03 for Preparation for Bolted and Compression Connections.

3. Definitions

Maximum Pour Point: The temperature below which the compound loses its flow characteristics.

Minimum Dropping Point: The upper temperature limit at which the compound retains its structure, though it is not the maximum temperature at which compound can be used.

4. Industry Standards

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

ASTM D 97; Standard Test Method for Pour Point of Petroleum Products

ASTM D566; Standard Test Method for Dropping Point of Lubricating Grease

5. Requirements

Oxide-inhibiting compounds shall be designed to effectively seal electrical joints against oxidation and corrosion and shall remain stable under the heat cycling test conditions.

Compounds shall meet the application requirements of Section 2 and detailed requirements cited in Tables 5.1a through 5.1d.

Table 5.1a. Requirements for Synthetic Compound with Grit, Stock No. 726180

Base Oil	Synthetic (non-petroleum)
Grit Type	Contains Grit
Color	Gray
Maximum Pour Point	-20 F (29 C)
Minimum Dropping Point	500 F (260 C)
Operating Temperature Range	-20F (29C) to 500F (260C)
Container Type	Squeeze Bottle

Table 5.1b. Requirements for Synthetic Compound, No Grit, Stock No. 726181

Base Oil	Synthetic (non-petroleum)
Grit Type	Without Grit
Color	Gray
Maximum Pour Point	0 F (-18 C)
Minimum Dropping Point	350 F (177 C)
Operating Temperature Range	0F (-18C) to 350F (177C)
Container Type	Squeeze Bottle

Table 5.1c. Requirements for Non-Synthetic Compound, No Grit, Stock No. 726182

Base Oil	Non-synthetic (petroleum)
Grit Type	Without Grit
Color	Clear
Minimum Dropping Point	150 F (65C)
Operating Temperature Range	194 F (90C), maximum
Container Type	Squeeze Tube

Table 5.1d. Rust Preventive Compound Requirements, Stock No. 725696

Base Oil	n/a
Color	Clear to brown
Maximum Pour Point	n/a
Minimum Dropping Point	n/a
Operating Temperature Range	n/a
Container Type	Can with brush

6. Packaging

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

Product shall be packaged as described in Section 8.

Each standard package shall be legibly marked with the following information:

- Manufacturer identification
- Product description
- SCL stock number
- Quantity

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

- SCL purchase order number

7. Issuance

Stock Unit: See Section 8.

8. Approved Manufacturers

Stock No.	Description	Stock Unit	Manufacturer	Part No.	Packaging
726180	Synthetic, with grit, 8-oz squeeze bottle	EA	Hubbell Power Systems (Burndy)	PENA138	12 bottles/carton
			ABB (HOMAC, Thomas & Betts)	HM 56	12 bottles/carton
726181	Synthetic, without grit, 8-oz squeeze bottle	EA	AFL	ALNOXUG10T	10 bottles/carton
			ABB (HOMAC, Thomas & Betts)	CTB8	10 bottles/carton
			Hubbell Power Systems (Fargo)	CF178	10 bottles/carton
			IlSCO	DE-OX	10 bottles/carton
726182	Non-synthetic, without grit, 8-oz squeeze tube	EA	AFL	EJC10T	10 tubes/carton
725696	Electrical contact grease, 16-oz (1 pt) can with brush	PT	Sanchem, Inc.	NO-OX-ID "A SPECIAL"	10 cans/carton

9. References

SCL Construction Standard 0575.02; Bolted Connections

SCL Construction Standard 0575.14; Splices, Straight Compression, Non-Tension, Secondary

SCL Work Practice 0576.03; Preparation for Bolted and Compression Connections

10. Sources

Shetab, Muneer; SCL Standards Engineer, originator, and subject matter expert for 7530.35.

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www.abb.com

www.AFLglobal.com

www.ilsco.com

www.sanchem.com