

## Exothermic Connection System, Single-Use Kits



### 1. Scope

This standard covers the requirements of single-use, exothermic connection system kits.

This standard applies to Seattle City Light (SCL) Stock No. 014728

See SCL 6762.90 for Exothermic Connection Systems with a wide variety of reusable, graphite molds, weld metals, and an electronic control unit.

### 2. Application

Exothermic connection systems are used to form permanent, low resistance; highly reliable, welded electrical connections that may be direct buried or embedded in concrete. The term “exothermic” means the process gives off heat.

Single-use exothermic connection systems are referred to as Cadweld® Plus One Shot; however, Cadweld® is just one of many manufacturers of such systems. Components from different suppliers may or may not be interchangeable.

Single-use exothermic connection system kits are used in tight locations or hard-to-reach areas. For copper conductor only.

Kits contain everything required to make one connection (ceramic mold and weld metal) with the exception of the electronic control unit (Stock No. 013335). See SCL 6762.90.

### 3. Industry Standards

Exothermic connection system kits shall meet the applicable requirements of the following industry standards:

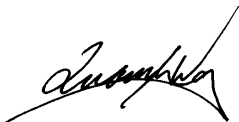
**IEEE 80**; Guide for Safety in AC Substation Grounding

**IEEE 837**; Standard for Qualifying Permanent Connections Used in Substation Grounding

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#### 4. Requirements

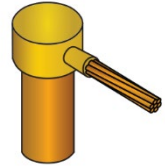
Each single-use, exothermic connection system kit shall include:

- One refractory ceramic body mold
- One weld metal capsule
- One set of instructions

Single-use, exothermic connection system kits shall be designed to join copper conductors to other copper conductors or plain copper-bonded, threaded copper bonded, full-size galvanized or stainless-steel ground rods. See Table 4.

**Table 4. Connection Configuration**

Ground Rod Diameter, Nominal (in)	Conductor Size		Connection Configuration
	Solid	Stranded	
5/8	#4, #3	#6, #4	One conductor to top of ground rod



#### 5. Packaging

Single-use connection system kits shall be packaged to prevent damage during shipping, handling, and inside storage.

Weld metal capsules shall be moisture resistant.

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

- Manufacturer identification
- Product description
- Ground rod and conductor sizes
- SCL stock number
- Quantity

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

- SCL purchase order number

#### 6. Issuance

Stock Unit: EA

#### 7. Approved Manufacturers

Manufacturer	Catalog No.
nVent/Erco/Cadweld	GR1161LPLUS

#### 8. References

**SCL Material Standard 6762.90**; Exothermic Connection Systems

## 9. Sources

**nVent ERICO CADWELD PLUS ONE SHOT**, ERICO-FLY-E468S-CADWELDOS-USEN-2006

**nVent ERICO Cadweld Plus One Shot Safety Data Sheet**;  
CadweldPlusOneShot\_OSHA, Revision 2020-02-01

**SCL Construction Standard 0468.90**; “Exothermic Connection System”

**SCL Construction Standard 1714.50**; “Underground Streetlight Systems”

**SCL Design Standard 9814.50**; “Streetlight System Grounding and Bonding”

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