

**POLYMER CONCRETE HANDHOLE, SECONDARY AND STREETLIGHT**



**1. Scope**

This standard covers requirements for precast polymer handholes. There are three main components that make up a handhole assembly: box, extension, and cover.

This standard applies to the following Seattle City Light Stock Numbers: 013321, 013322, 013323, and 013324.

**2. Application**

Precast polymer handholes are non-conductive, non-flammable, corrosion resistant, and lightweight underground enclosures used to house connections for secondary service and streetlight (SL) located on pedestrian sidewalks. Two types of handholes are approved for secondary and SL connections. Type 1 and 2 with nominal interior dimensions of 13 inches by 24 inches and 17 inches by 30 inches, respectively.

The following table gives the application for each of the Stock Numbers.

Stock number 013322 can be used as a box or an extension.

Stock Number	Type	Description	Application
013321	1	box with cover	streetlight
013322	2	box/extension, without cover	secondary or streetlight
013323	2	cover	secondary
013324	2	cover	streetlight

Polymer concrete handholes are not intended for use in constant traffic areas.

**3. Industry Standards**

Polymer precast concrete handholes shall meet the following national standard:

**ANSI/SCTE 77 2010:** Specification for Underground Enclosure Integrity

**MATERIAL STANDARD**

Polymer Concrete Handhole, Secondary and Streetlight

standard number: **7203.20**

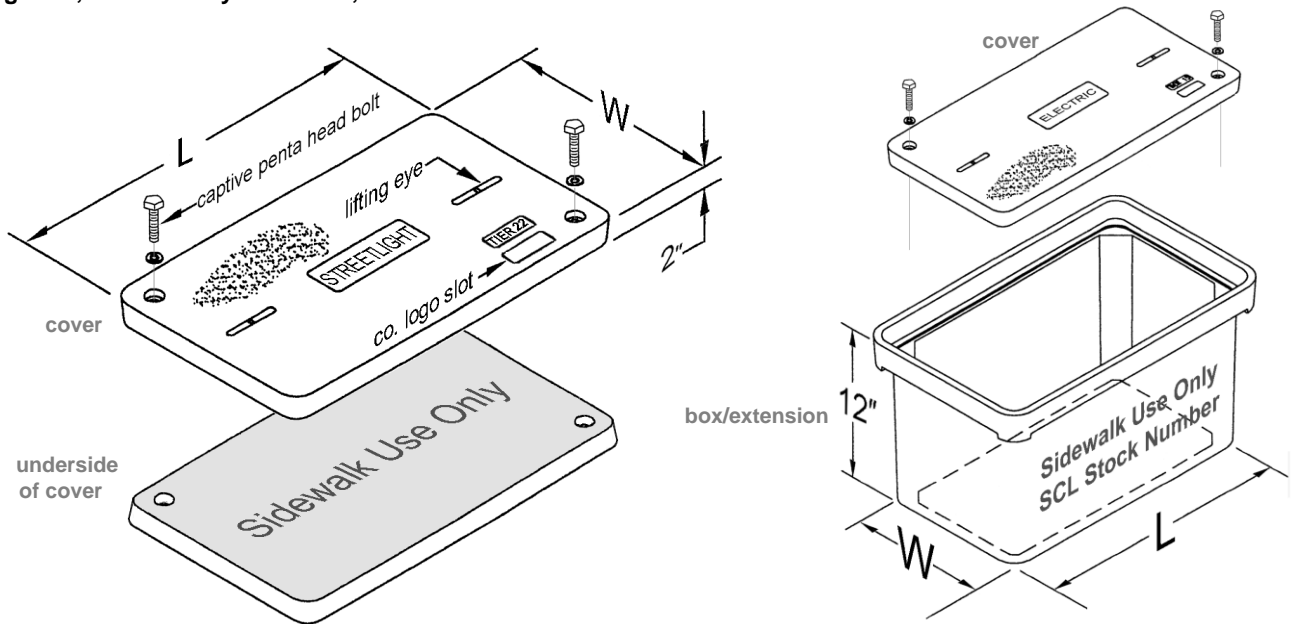
superseding: June 29, 2012

effective date: February 2, 2017

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**4. Requirements**

**Figure 4, Precast Polymer Cover, Box and Extension**



**4.1 General**

Stock Number	013321	013322	013323	013324
Type	1	2	2	2
Description	box and cover	box/extension	cover	cover
Dimensions, inside, in, nominal				
Length (L)	24	24	30	30
Width (W)	13	13	17	17
Height/Thickness	12	02	12	02
Cover label	-	"STREETLIGHT"	-	"ELECTRIC" "STREETLIGHT"
Design load				
Vertical, lb, nominal	22,500	22,500	22,500	22,500
Lateral, lb/sq ft	800	800	800	800
Test Load				
Vertical, lb, nominal	33,750	33,750	33,750	33,750
Lateral, lb/sq ft	1,200	1,200	1,200	1,200
Lifting eye (pull slot), lb, minimum	-	3,000	-	3,000

**MATERIAL STANDARD****4. Requirements, continued****4.2 Box, Cover and Extension**

Handhole box, cover and extension shall be:

- a. Polymer concrete
- b. Gray in color
- c. Non-conductive
- d. Non-flammable
- e. Corrosion resistant
- f. ANSI Tier 22 load rated, designed for areas subjected to occasional non-deliberate heavy vehicular traffic.
- g. To avoid accidental placement of both the box body and the cover in areas for which they are not rated, each product shall display securely affixed labels stating "Sidewalk Use Only".
- h. The chemical resistance (sunlight exposure, water absorption, and flammability) of polymer handholes and covers shall be according to ANSI/SCTE 77 2010, Section 6.

**4.3 Box and Extension**

Handhole box and extension shall be:

- a. Bottomless without any knockouts or mouseholes.
- b. Straight wall and stackable.

**4.4 Cover**

Cover shall:

- a. Require the use of tools to open to avoid easy removal by unauthorized persons.
- b. Be skid resistant with a minimum coefficient of friction of 0.5 percent.
- c. Have recessed bolt holes such that the bolt head will not protrude above the cover surface.
- d. Be attached to the handhole box by two, stainless steel, captive, penta head bolts (1/2 inches – 13 UNC, 2-1/2 or 3 inches long).
- e. Have 1/16-inch to 1/8-inch clearance on each edge of the box.
- f. Be marked with the ANSI load rating (Tier 22)

**5. Testing**

The structural testing shall be in accordance with ANSI/SCTE 77 2010, Section 7. The maximum deflection shall be one-half-inch for vertical tests and one-quarter-inch per foot of length for lateral tests.

Test data that establishes compliance with the requirements of STCE 77 shall be provided upon request.

Tests of complete boxes and covers shall be performed by an independent testing agency.

**6. Marking**

Handhole covers shall have embedded on the top surface an identifying mark or label that defines the function of the enclosure: "ELECTRIC" or "STREETLIGHT".

Polymer handholes shall be clearly and indelibly marked in accordance with NEC2008. Marking shall include but not be limited to:

- Manufacturer's name
- Year of manufacture
- Product identification number
- ANSI load rating

**7. Packaging**

Handholes, covers, and extensions shall be packaged in a way that allows the product to withstand normal shipping and installation practices without chipping, cracking, or structural damage.

Individual packages shall be legibly marked with:

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

Shipping containers shall be legibly marked with:

- Seattle City Light's Purchase Order Number
- Seattle City Light's Stock Number

**8. Issuance**

Stock Unit: EA

**MATERIAL STANDARD**

Polymer Concrete Handhole, Secondary and Streetlight

**9. Approved Manufacturers**

Stock Number	Description	Manufacturers		
		Hubbell	Newbasis	Armorcast Products Company
013321	Type 1 Assembly, Streetlight	PG1324Z584	PCA132412-90130	A6001946HDAPCX12
013322	Type 2 Box/Extension	PG1730B701	PCB173012-00006	A6001640PCX12
013323	Type 2 Cover, Electric	PG1730H554CG2	PCC1730P1-90098	A6001947HD-EL
013324	Type 2 Cover, Streetlight	PG1730H554CH2	PCC1730P1-90099	A6001947HD-SL

**10. References**

**Diop, Aida**; Standards Engineer; originator and subject matter expert for 7203.20 (aida.diop@seattle.gov)

**National Electrical Code (NEC) 2008**; "Article 314.30"

**Ng, Sharon**; Senior Civil Engineer; subject matter expert for 7203.20 (sharon.ng@seattle.gov)

**SCL 7203.10**; "Handhole, 17" x 28" Precast, Secondary"; Material Standard

**SCL 7203.12**; "Handhole, Secondary, Composite Fiberglass, Reinforced Plastic Type"; Material Standard

**Standard Plan J-40.10-02**; Washington State Department of Transportation

**Standard Plan no. 550a**; City of Seattle Standard Plans and Specifications, 2010

**Wang, Quan**; Standards Engineer; subject matter expert for 7203.20 (quan.wang@seattle.gov)

**Western Underground Committee**; "Guide 3.6 – Non-Concrete Enclosures"