

Outlet and Switch Boxes, Metallic



1. Scope

This standard covers the requirements for metallic outlet and switch boxes.

This standard applies to the Seattle City Light (SCL) stock numbers cited in Section 7.

For nonmetallic outlet and switch boxes, see SCL 7136.19.

For outlet and switch box covers see SCL 7137.15.

2. Application

Outlet and switch boxes are designed to facilitate the pulling of wires, to protect and facilitate wiring splices and taps, to provide a means of mounting and protecting wiring devices, such as switches and receptacles, and to provide a connection for rigid conduit, electrical metallic tubing, armored cable, metal clad cable, nonmetallic sheathed cable, and flexible metallic conduit wiring systems.

Weatherproof duplex outlet boxes, Stock No.732149, are used with weatherproof cover plates, Stock No. 732318.

Article 314 of the National Electrical Code (NEC) covers the installation and use of outlet and switch boxes.

3. Industry Standards

Outlet and switch boxes shall meet the applicable requirements of the latest revision of the following industry standards:

UL 514A; Metallic Outlet Boxes

ANSI/NEMA OS1 – Sheet-Steel Outlet boxes, Device Boxes, Covers, and Box Supports

NEMA 250 – Enclosures for Electrical Equipment

4. Requirements

Outlet and switch boxes detailed in subsections 4.1 through 4.6 shall have the following general attributes:

- Steel, hot-dip galvanized construction
- 0.0625" minimum thickness

Number and size of knockout may vary slightly between manufacturers.

4.1 Octagonal Boxes

Octagonal boxes shall be supplied with two mounting screws.

Figure 4.1. Octagonal Box Examples



Table 4.1. Octagonal Box Dimensions

Stock No.	Size (in)	Depth (in)	Number and Size of Knockouts	
			Sides	Bottom
732050	3 - 1/4	1-1/2	4 - 1/2"	1 - 1/2"
732060	4	1-1/2	4 - 1/2"	5 - 1/2"
732062	4	1-1/2	2 - 1/2" & 2 - 3/4"	3 - 1/2" & 2 - 3/4"
732163	4	1-1/2	2 - 1/2" & 2 K.O.	1 - 1/2"
010379	4	2-1/8	4 - 1/2"	5 - 1/2"
732065	4	2-1/8	4 - 3/4"	3 - 1/2" & 2 - 3/4"
732066	4	2-1/8	2 - 1/2" & 2 - 3/4"	3 - 1/2" & 2 - 3/4"
732067	4	2-1/8	4 - 1"	3 - 1/2" & 2 - 3/4"

4.2 Square Boxes

Square boxes shall be supplied with two mounting screws.

Figure 4.2. Square Box



Table 4.2. Square Box Dimensions

Stock No.	Size (in)	Depth (in)	Number and Size of Knockouts	
			Sides	Bottom
732080	4	1-1/2	3 - 1/2"	5 - 1/2"
732082	4	1-1/2	2 - 1/2" & 1 - 3/4"	3 - 1/2" & 2 - 3/4"
732085	4	2-1/8	3 - 1/2"	3 - 1/2" & 2 - 3/4"
010411	4	2-1/8	2 - 1/2" & 1 - 3/4"	3 - 1/2" & 2 - 3/4"

4.3 Switch Boxes

Switch boxes shall have the following attributes:

- Gangable*
- Non-Leveling (732017 & 732019)
- Leveling bumps (732018)
- External nail brackets
- Plaster ears
- Beveled corners (732017 & 732018)
- Square corners (732019)
- 2 pryouts for loom or nonmetallic sheathed cable

*NOTE: Gangable boxes have provisions that allow one or both sides of the box to be removed and connected (ganged) side-by-side with another box to form a large single electrical box.

Figure 4.3. Switch Boxes

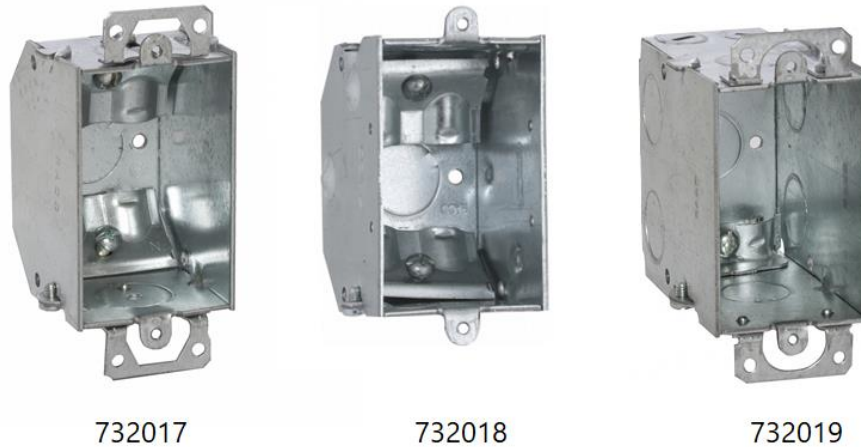


Table 4.3. Switch Box Dimensions

Stock No.	Length (in)	Width (in)	Depth (in)	Number and Size of Knockouts		
				Sides	Ends	Bottom
732017	3	2	2-1/4	—	2 - 1/2"	1 - 1/2"
732018	3	2	2-1/4	—	2 - 1/2"	1 - 1/2"
732019	3	2	3-1/2	4 - 1/2"	2 - 1/2"	1 - 1/2"

4.4 Utility Boxes

Figure 4.4 Utility Box



Table 4.4. Utility Box Dimensions

Stock No.	Length (in)	Width (in)	Depth (in)	Number and Size of Knockouts		
				Sides	Ends	Bottom
732130	4	2-1/8	1-7/8	6 - 1/2"	2 - 1/2"	3 - 1/2"
732142	4-1/8	2-3/8	2-3/16	4 - 3/4"	2 - 3/4"	3 - 1/2"

4.5 Box Extensions

Figure 4.5. Box Extensions Examples (Octagon, Square, and Rectangle)



Table 4.5. Box Extension Dimensions

Stock No.	Shape	Length (in)	Width (in)	Number and Size of Knockouts		
				Depth (in)	Sides	Ends
732069	Octagon	4	4	1 - 1/2"	2 - 1/2"	2 - 1/2"
732071	Octagon	4	4	1 - 1/2"	2 - 1/2"	2 - 3/4"
732095	Square	4	4	1 - 1/2"	6 - 1/2"	6 - 1/2"
732139	Rectangle	4	2-1/8	1 - 1/2"	6 - 1/2"	2 - 1/2"

4.6 Weatherproof Duplex Outlet Box

Weatherproof duplex outlet boxes are used in branch circuit wiring in wet, damp, or dry locations. They may be used as weatherproof junction box, or as a housing for receptacles, switches, and GFCI.

Weatherproof duplex outlet boxes shall have the following attributes:

- Die-cast aluminum
- 4 threaded outlets
- Gray powdered coating for weatherability
- Ground screw installed
- Include gasket and mounting hardware
- Include two closure plugs
- NEMA 3R rated

Figure 4.6. Weatherproof Duplex Outlet Box



Table 4.6. Weatherproof Duplex Outlet Dimensions

Stock No.	Length (in)	Width (in)	Depth (in)	Number and Size of Knockouts		
				Sides	Ends	Bottom
732149	4-1/2	2-3/4	2 – 1/8	—	3 - 1/2"	1 - 1/2"

5. Packaging

Outlet and switch boxes shall be packaged to prevent damage during shipping, handling, and storage.

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

6. Issuance

Stock Unit: EA

7. Approved Manufacturers

Table 7.1 Octagonal Boxes

Stock No.	Manufacturer Catalog No.				
	Appleton	Bowers	Raco	Steel City	Crouse Hinds
732050	3-0-1/2	3-0-1/2	100	54151-1/2	TP256
732060	4-0-1/2	4-0-1/2	125	54151-1/2	TP274
732062	4-0-SPL	4-0-SPL	127	54151-1/2-3/4	TP278
732163	561-L	4-0-LC	146	54151-N	TP310
010379	—	—	165	54171-1/2	TP288
732065	40D3/4	4-0-d-3/4	166	54171-3/4	TP290
732066	4-0D-SPL	4-0D-SPL	167	54171-1/2-3/4	TP292
732067	4-0D-1	4-0D-1	168	54171-1	TP294

Table 7.2. Square Boxes

Stock No.	Manufacturer Catalog No.				
	Appleton	Bowers	Raco	Steel City	Crouse Hinds
732080	4-S-1/2	4-S-1/2	189	52151-1/2	TP404
732082	4-S-SPL	4-SW-SPL	182	52151-1/2-3/4	TP414
732085	4-SD-1/2	4-SD-1/2	230	—	TP403
010411	—	—	232	52171-1/2-3/4E	TP434

Table 7.3. Switch Boxes

Stock No.	Manufacturer Catalog No.				
	Appleton	Bowers	Raco	Steel City	Crouse Hinds
732017	44	230LC	471	LCNOW	TP138
732018	388LR	230LCC	473	LCLE-25	TP134
732019	384D	–	601	CX	TP238

Table 7.4. Utility Boxes

Stock No.	Manufacturer Catalog No.				
	Appleton	Bowers	Raco	Steel City	Crouse Hinds
732130	4-CS-1/2	103	660	58361-1/2	TP604
732142	–	106-3/4	–	–	–

Table 7.5. Box Extensions

Stock No.	Manufacturer Catalog No.				
	Appleton	Bowers	Raco	Steel City	Crouse Hinds
732069	4-OE-1/2	4-0-EXT-1/2	128	55151-1/2	TP284
732071	4-OE-SPL	4-0-EXT-SPL	130	55151-1/2-3/4	TP286
732095	4-SE-1/2	4-S-EXT-1/2	201	53151-1/2	TP424
732139	–	103-EXT	653	59361-7/8	TP600

Table 7.6. Weatherproof Duplex Outlet Boxes

Stock No.	Manufacturer Catalog No.			
	Appleton	Raco	Steel City	Crouse Hinds
732149	WSL175	5330-0	1H4-2	TP7026

8. References

SCL Material Standard 7136.19; “Outlet and Switch Boxes, Nonmetallic”

SCL Material Standard 7137.15; “Outlet and Switch Box Covers, Metallic”

9. Sources

Article 314 of the National Electrical Code (NESC)

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www.appletonelec.com

www.crouse-hinds.com

www.hubbell.com

www.o-zgedney.com

www.tnb.com