
Reinforced Porcelain Wireholders



1. Scope

This standard covers the requirements for reinforced porcelain wireholders with steel wood screws.

This standard applies to Seattle City Light (SCL) Stock No. 690706.

Reinforced porcelain wireholders are also known as house knobs or service knobs.

2. Application

Reinforced porcelain wireholders are used to support overhead secondary service conductors at service entrances.

For distribution system neutral and secondary service conductors requiring spool insulators, see SCL 6904.15.

3. Industry Standards

Reinforced porcelain wireholders shall meet the applicable requirements of the latest revision of the following industry standards:

ASTM A153/A153M - Zinc Coating (Hot-Dip) on Iron and Steel Hardware

ASTM A109 – Steel Strip Carbon Cold-Rolled

ASTM A570 – Hot-Rolled Carbon Steel Strip of Structural Quality

ASTM B766 – Electrodeposited Coating of Cadmium on Steel

ASTM B633 – Electrodeposited Coating of Zinc on Steel

ANSI C29.1 – Test Methods for Electrical Power Insulators

4. Requirements

Reinforced porcelain wireholder insulators shall:

- Be made of a commercial grade dry-process or wet-process porcelain
- Have a high-gloss glazed finish to resist the adherence of contamination materials and to minimize tracking and ultraviolet damage
- Remain stable and uniform in varying temperature conditions
- Have well rounded edges and smooth surfaces to prevent damage to the conductor or conductor covering

Steel cup-bases and yokes shall:

- Be a one-piece pressed steel housing consisting of a cup base and yoke
- Conform to either ASTM A570 or ASTM A109
- Be hot-dip galvanized in accordance with ASTM A153
- Be rigidly assembled to the wood screw

Steel screws shall:

- Be a #22 wood screw
- Be coated by hot-dip galvanizing in accordance with ASTM A153, by electrodeposited cadmium in accordance with ASTM B766, or by electrodeposited zinc in accordance with ASTM B633
- Be embedded in a recess in the insulator and held in place by a lead-alloy or other suitable material
- Have none of its matrix protruding beyond the base of the wireholder
- Be no shorter than 2-1/8 inches

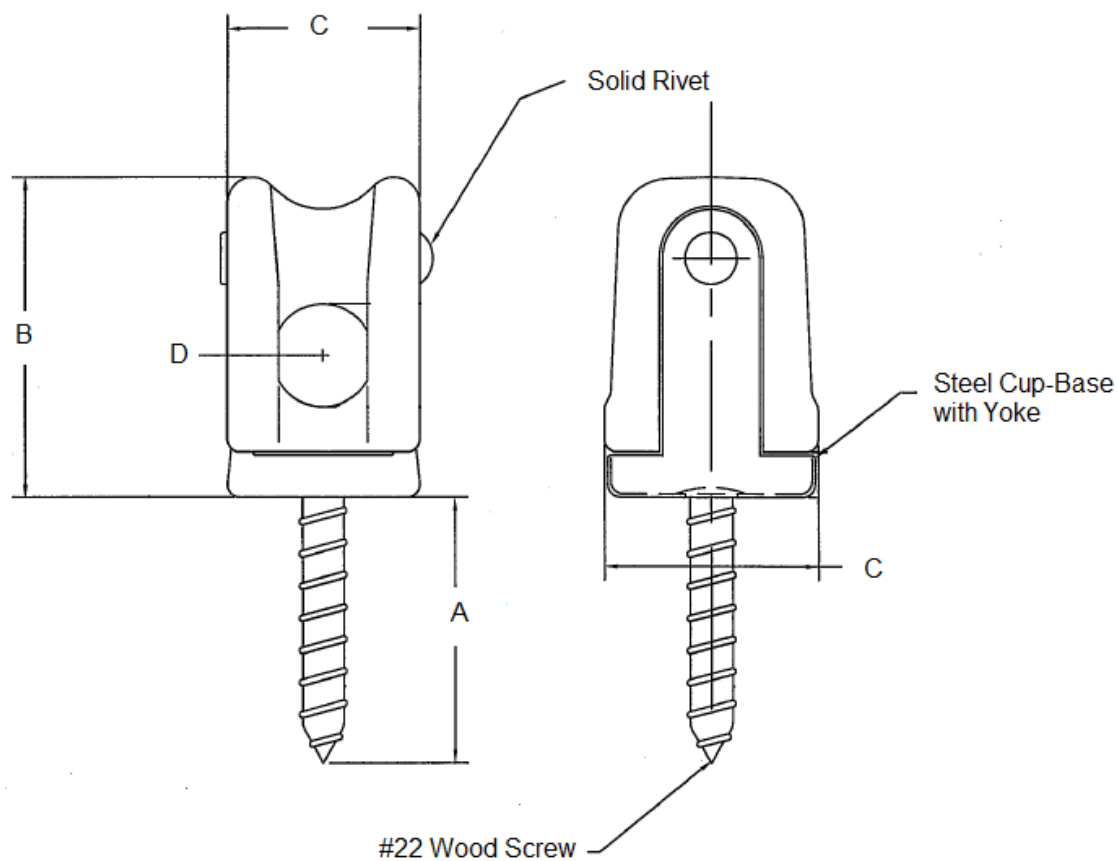
A round head solid rivet shall be utilized to mount the insulator to the steel housing.

Reinforced porcelain wireholders shall meet the cited requirements listed in Table 4 and Figure 4.

Table 4. Reinforced Porcelain Wireholder, Requirements

Attribute	Requirement
Pull Strength, max (lb)	1500
Cantilever, max (lb)	800
Torsion, max (in-lb)	150
Insulator Material	Porcelain
Metallic Material	Steel
Insulator Color	Gray

Figure 4. Reinforced Porcelain Wireholder, Dimensions



Letter	Attribute	Requirement	Tolerance
A	Screw Length, nominal (in)	2-1/4	+/-1/8
B	Insulator Height, nominal (in)	3	+/-1/4
C	Insulator Width, nominal (in)	2	+/-1/4
D	Insulator Hole Size, minimum (in)	7/8	-

5. Testing

Test data that establishes compliance with the requirements of ANSI C29.1 and this material standard shall be provided upon request.

6. Product Marking

Marking shall be legible and durable over the expected life of the product.

Each wireholder shall be marked with manufacturer's identification and product number.

7. Packaging

Reinforced porcelain wireholders shall be packaged in a way that prevents damage during shipping, handling, and long-term outside storage.

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

- Product description
 - Seattle City Light purchase order number
 - Seattle City Light stock number
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8. Issuance

EA

9. Approved Manufacturers

	Allied Bolt Products, LLC	Arlington Industries, Inc.	Hubbell Power Systems, Inc.	Thomas & Betts
Catalog No.	9223	616	31144	SW3BB

10. References

SCL Material Standard 6904.15; "Insulator, Polymer Spool and Steel Clevis and Angle Bracket"

11. Sources

Neuansourinh, Ponet; SCL Standards engineer, subject matter expert and originator of 6904.23 (ponet.neuansourinh@seattle.gov)

SCL Material Standard 6907.1 (canceled); "Reinforced Porcelain Wireholders"

TD-24 – 1957; "Specifications for Porcelain Wireholders;" Transmission and Distribution Committee, Edison Electric Institute