Insulators, Line Post, Vise Top, Polymer, for Distribution Systems

1. Scope

This standard covers the requirements for polymer, vise top, distribution class, line post insulators. Polymer insulators are also known as composite insulators.

This standard applies to Seattle City Light Stock No. 014517.

2. Application

Vise top, line post insulators are used with crossarms and wood poles to support 26 kV, bare, 397 and 954 kcmil ACSR distribution conductors.

Vise top, line post insulators can be installed vertically or horizontally.

The tie top version of this insulator, for vertically supporting 4/0 copper and smaller size conductors, is specified in material standard 6901.45.

In 2019, Seattle City Light began a transition from porcelain line post insulators to polymer versions to support overhead 26 kV conductors.

3. Industry Standard

Vise top, line post insulators shall meet the applicable requirements of the latest revision of the following industry standard:

ANSI/NEMA C29.18-2013 - American National Standard for Composite Insulators – Distribution Line Post Type

4. Requirements

Vise top, line post insulators shall be made of fiberglass-reinforced resin rod core, polymer weathersheds, and metal end fittings.

Vise top, line post insulators shall meet the requirements of ANSI/NEMA C29.18 and Table 4 below. In cases where ANSI/NEMA C29.18 and Table 4 conflict, Table 4 shall take precedence.

Table 4. Electrical and Mechanical Requirements

Attribute	Requirement
60 Hz dry flashover, kV rms, minimum	118
60 Hz wet flashover, kV rms, minimum	84
Positive critical impulse flashover, kV crest, minimum	189
Section length, nominal, in	14.9
Leakage distance, in, nominal	21.5
Strike/dry arc distance, in, nominal	9.2
Specified cantilever load, minimum, lb	2400
Maximum design cantilever (MDC) load, minimum, lb	1250
Specified tensile load, lb	7000
Insulator top type	Hendrix proprietary vise-clamp top
Conductor diameter, in	
Maximum	1.3
Minimum	0.325
Center hole thread, in	3/4-10, UFS-2B
Insulator base type	ANSI C29.18, Figure 9a
Insulator base material	Steel
Weathershed material	Track and UV-resistant, high-density polyethylene
Weathershed color	Gray

5. Testing

Test data that establishes compliance with the requirements of ANSI C29.18 and this standard shall be provided upon request.

6. Marking

Vise top, line post insulators shall be marked according to the requirements of ANSI/NEMA C29.18, Section 7, which includes, but is not limited to:

- Manufacturer’s name or symbol
- Manufacturing date code or year of manufacture
- Specified Cantilever Load (SCL)

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

Labeling shall be in English.

Load ratings shall be stated in units of pounds.

7. Packaging

Vise top, line-post insulators shall be packaged in a way that prevents damage during shipping, handling, and long-term outside storage.

Crates shall be secured to pallets for handling by forklifts. Pallets shall not exceed 4 feet in height or 1,000 pounds in weight.

Individual packages shall be legibly marked with:

- Manufacturer name
- Manufacturer catalog number
- Seattle City Light stock number

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

- Manufacturer identification
- Seattle City Light purchase order number

8. Issuance

Stock Unit: EA

9. Approved Manufacturer

Hendrix Molded Products, Catalog No. HPI-CLP-15

10. References

SCL Material Standard 6901.45; “Insulator, Vertical Line Post, Tie Top, Polymer”

11. Sources

Hendrix Molded Products, Line Post Insulator, HPI-CLP-15, Product Data Sheet, 08/17

SCL Material Standard 6901.30 (canceled); “Insulator, Vertical Line-Post, Porcelain, Tie-Top, for Distribution Systems”

SCL Material Standard 6901.40; “Insulator, Vertical Line Post, Porcelain, Clamp Top, for Distribution Systems”

Shipek, John; SCL Standards Supervisor, originator, and subject matter expert for 6901.35 (john.shipek@seattle.gov)