Wood Poles, Pressure-Treated, Douglas Fir, DCOI

1. Scope

This standard covers the requirements for 4,5 dichloro-2-n-octyl-4-izothiazolin-3-one (DCOI), pressure-treated, solid, Douglas fir, wood utility poles.

This standard applies to the following Seattle City Light (SCL) stock numbers:

<table>
<thead>
<tr>
<th>Stock No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>014605</td>
<td>Class 1, 50-ft length</td>
</tr>
</tbody>
</table>

2. Application

Stock No. 014605 will be used for a pilot project to evaluate DCOI as an alternate wood pole treatment to that specified in SCL 5082.00.
3. Industry Standards

Wood poles shall meet the applicable requirements of the latest revision of the following industry standards:

**American Wood Protection Association** (AWPA) Book of Standards, published latest revision, including, but not limited to:

- **AWPA A9**: Standard Methods for Analysis of Treated Wood and Solutions by X-Ray Spectroscopy.
- **AWPA A71**: Standard Methods for Determining Penetration of Solvent Used with Oil-Soluble Preservatives
- **AWPA A76**: Standard Methods for Determining Penetration of Copper-Containing Preservatives
- **AWPA M1**: Standard for the purchase of Treated Wood Products
- **AWPA M4**: Standard for the care of Preservative-treated Wood Products
- **AWPA P39**: Standard for 4,5-Dichloro-2-N-Octyl-4-Isothiazolin-3-One (DCOI)
- **APWA HSA**: Standards for Hydrocarbon Solvent Type A
- **AWPA T1**: Use Category System: Processing and Treatment Standard
- **AWPA U1**: Use Category System: User Specification for Treated Wood
- **ANSI 05.1**: American National Standard for Wood Products - Specifications and Dimensions
- **ASTM D9**: Standard Terminology Relating to Wood

4. Conflict

Where conflict exists, the following order of precedence shall apply:

- Seattle City Light purchase order (PO)
- Seattle City Light general terms and conditions
- This standard
- ANSI 05.1 and AWPA standards
- Other industry standards

5. Requirements

5.1 Quality and Dimensions

Wood pole Use Category shall be UC4C according to the requirements of AWPA U1.

Wood pole species shall be Coast Douglas fir.

Wood pole quality and dimensions shall meet the requirements of ANSI O5.1 with the following clarifications:

- All wood shall be cut from live trees.
- Poles shall be flat-roofed.
- Poles shall have a two-inch wide by 1/2-inch deep notch on the pole face 12 ft 0 in from the pole butt.
- Poles 50 ft or less shall be burn-branded according to the requirements of ANSI O5.1 at 10 ft ± 2 in from the pole butt.

5.2 Boring

Poles shall be through-bored 2 ft above and 4 ft below the ground line prior to treatment to enhance penetration of the preservative into the pole as described in Table 5.2 and figures 5.2a through 5.2e.

All through-bored holes shall have a nominal diameter of 7/16 in or 1/2 in.

Ground Line (G) also known as Pole Setting Depth, shall be in accordance with Table 5.2.

Through-boring shall be done without charring or glazing the inner surfaces.

All holes shall be through-bored from a single direction.

Through-boring shall be done on the face of the pole.

Edge Distance (ED) shall be 2 ± 1/2 in.
Table 5.2. Ground Line Distance from Butt

<table>
<thead>
<tr>
<th>Pole Length (L) (ft)</th>
<th>Ground Line Distance from Butt (G) (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>7</td>
</tr>
</tbody>
</table>

Figure 5.2a. Pole Section
Figure 5.2b. Pattern for Through-Boring Template

Figure 5.2c. Through-Bore Zone
5.3 Preservative

5.3.1. Treatment

Wood poles shall be processed, and pressure treated according to the requirements of AWPA T1.

Wood poles shall be treated full length with DCOI meeting the requirements of AWPA P39, compounded with hydrocarbon solvent, Type A, carrier meeting the requirements of AWPA HSA.

Carrier and co-solvent shall be 100 percent pure diesel product. The carrier shall be free of polycyclic aromatic hydrocarbons (PAH) and contain no chlorinated co-solvent.

5.3.2. Retention and Penetration

Net retention of DCOI preservative in poles after treatment shall be not less than 0.20 pounds per cubic foot (UC4C), in accordance with AWPA U1.

The depth of preservative penetration shall be not less than 3/4 inch and 85% of the sapwood at the tagline of the pole as specified under AWPA T1 and 100% in the through-bored zone except that in the inner most third of the core (3/3) up to three consecutive annual rings of skip are allowed.
5.4 Sterilization

Poles shall be sterilized according to the requirements of AWAP M1.

6. Testing and Test Methods

Test data that establishes compliance with the requirements of AWPA A9, AWPA A71, and this standard shall be provided upon request.

DCOI concentration in wood shall be determined according to the requirements of AWPA A9.

DCOI penetration in wood shall be determined according to the requirements of AWPA A71.

7. Documentation

7.1 General

Documentation shall be in English and use customary inch-pound units.

Documentation shall utilize common industry terminology and well-understood abbreviations.

7.2 Technical Information

Upon request, the supplier shall provide the following technical information:

- Manufacturer name
- Manufacturing plant location(s) (all possible)
- Material Safety Data Sheet (MSDS) for the preservative used in the treatment process
- Material Safety Data Sheet (MSDS) for the solvent used in the treatment process
- Pole treatment report, including preservative charge, penetration, and retention.

Technical information shall be presented in a clear and consolidated manner for ease of review.

7.3 Plant QA Process

Upon request, supplier shall provide information describing the manufacturing plant’s quality assurance processes.

8. Shipping and Handling

Poles shall be delivered by trucks with “self-loading” capability.

Poles shall be handled according to AWPA M4 and ANSI O5.1.

9. Issuance

EA

10. Approved Manufacturers

Stella-Jones Corporation

11. References

SCL Material Standard 5082.00; “Wood Poles, Pressure-Treated, Douglas Fir”
12. Sources


Standards Engineering Directive No. 07-001; dated October 10, 2007, SCL; author, Chris Detter

Wang, Quan; SCL Standards Engineer; subject matter expert and co-originator of 5082.05 (quan.wang@seattle.gov)

www.ldm.com

www.treatedwood.com