

## **4.0 WOOD POLE SPECIFICATION DOUGLAS FIR**

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### **4.1 SCOPE**

- 4.1.1 This specification covers the minimum requirements for wood poles used for electric transmission and distribution. These requirements include material (wood product), treatment, inspection, handling and delivery, and storage. Douglas fir is the only accepted wood species.

### **4.2 REFERENCE DOCUMENTS**

- 4.2.1 All poles shall comply with the AWPAs Book of Standards (hereinafter AWPAs), latest revision. For pole classes, dimensions, material requirements, and manufacturing requirements, reference the latest revision of ANSI O5.1 Wood Product Specifications and Dimensions. For wood treatment requirements, reference the latest revision of AWPAs.

### **4.3 ORDER OF PRECEDENCE**

- 4.3.1 In the event of inconsistency between this specification and documents listed in this specification, the order of precedence shall be as follows:
- A. This specification
  - B. The associated (attached) drawings
  - C. The referenced documents

### **4.4 PRE-TREATMENT REQUIREMENTS**

- 4.4.1 Conditioning
- A. Although partial air seasoning is acceptable, Boulton Drying/Boultonizing is the preferred means of conditioning. Further conditioning to reduce moisture content will be in accordance with AWPAs Standard T1.
- 4.4.2 Star Locks
- A. All poles (except glue lam poles) shall have star locks installed at the pole top. All star locks shall be installed before treatment.
- 4.4.3 Incising
- A. All poles, regardless of deep incising, through boring or species, shall be full-length incised.
- 4.4.4 Through Boring
- A. All poles shall be through-bored, as specified in the latest version of ANSI-O5.1.
- 4.4.5 Framing

- A. Poles shall be drilled in accordance with the attached pole drilling guides prior to treatment. Tolerances shall be in accordance with Table 1 herein.

| Table 1: Drilling Tolerances   |                              |                                   |
|--------------------------------|------------------------------|-----------------------------------|
|                                | HOLE ENTRANCE<br>(GAIN SIDE) | HOLE EXIT<br>(SIDE OPPOSITE GAIN) |
| FROM CENTERLINE<br>OF HOLES    | $\pm 1/8"$                   | $\pm 1/4"$                        |
| LOCATION<br>(FROM TOP OF POLE) | $\pm 1/4"$                   | $\pm 1/2"$                        |

- B. The Supplier shall carefully select pole stock that is dimensionally stable in order to minimize error. Tolerance for unit assembly holes such as pole pins, brackets, and stand-off arms is  $\pm 1/2"$ . Tolerance for holes not used in unit assemblies is  $\pm 2"$ .
- C. Plastic or metal crossarm pole gains shall be provided with each pole.

#### 4.4.6 Markings

- A. The code letters of species, treatment, date of treatment, class of pole, pole length, and supplier's code or trademark shall be stamped on a metal pole identification disc (marking disc). The marking disc shall be installed in a  $1/2"$  deep mortise located 10' from the pole butt for poles up to 55' in length, and 14' from the pole butt for poles over 55' in length.
- B. Each pole shall have its length, class, and pole drilling guide branded or otherwise permanently marked on the butt surface. Refer to AWP Standard M6.

## 4.5 TREATMENT REQUIREMENTS

- 4.5.1 Preservative treatment shall be DCOI (4,5-Dichloro-2-n-octyl-isothiazolin-3-one). Douglas fir poles shall not be treated with chromated copper arsenate (CCA).
- 4.5.2 The preferred preservative carrier shall be heavy oil, heated to higher temperatures than straight diesel, resulting in better sterilization.
- 4.5.3 Treatment shall be for use area UC4B of the AWP Standard U1.
- 4.5.4 Treatment retention shall conform of the requirements of AWP Standard U1, table 4.4A.
- 4.5.5 Should re-treatment be necessary, re-treatment shall be in accordance with AWP Standard T1, Section 6.

Figure 1: Through-Boring Requirements

## **4.6 POST-TREATMENT REQUIREMENTS**

- 4.6.1 Testing for penetration of preservative shall be in accordance with AWPAs Standard M2 and T1.
- 4.6.2 Checks at drilled bolt holes shall not exceed 3/8" in width.
- 4.6.3 Any holes drilled after treatment shall be treated with copper naphthenate.
- 4.6.4 Poles shall be dry before shipment. Moisture content in the pole after treatment shall be approximately 25% at a depth of 2". Bleeders (or poles with freely draining liquid) will not be accepted.

## **4.7 INSPECTION**

- 4.7.1 Inspection will be performed by the Purchaser's designated inspection agency. Inspection will examine white wood prior to treatment, optional inspection during treatment, and the finished poles after treatment. The inspection process will be in accordance with AWPAs Standard M2, Part A and RUS Bulletin 1728H-702.
- 4.7.2 The Inspector will confirm preservative has achieved 100% penetration in the through-bored section of the pole.
- 4.7.3 The inspector will have and maintain liability insurance in the amount of \$500,000 and a surety bond or miscellaneous errors and omission insurance for consequential damages for of less than \$250,000.