


<b>- Material Specification -</b>		<b>Material Standards</b>	<b>1100.02</b>
CHELAN COUNTY <b>PUBLIC UTILITY DISTRICT</b> <i>Owned By The People We Serve</i>		 <b>Laminated Wood Pole Material Specification</b>	
Originator: J. Caldwell	Date: 8/1/2022		
Approval: C. Bowman	Date: 11/26/2012	Page 1 of 3	
Revision: Added foundation engineering requirement		Stds Committee Approval:	

## **SCOPE:**

The purpose of this specification is to cover the Public Utility District No. 1 of Chelan County, Wenatchee, Washington, requirements for laminated wood poles used in overhead electric line construction.

### **1. GENERAL REQUIREMENTS**

All poles shall meet the requirements of the latest American National Standard Institute; Structural Glued Laminated Timber for Utility Structures, ANSI 05.2-2006, except as otherwise specified herein. Preservative treatments shall be in accordance with the latest American Wood Preservers' Association (AWPA) Standards, except as modified herein.

### **2. MATERIAL REQUIREMENTS**

Poles shall be west coast Douglas fir or Southern Red Pine glue laminated wood poles. Poles shall be manufactured in accordance with the latest revisions of: ANSI 05.2-2006; AITC 110, 111, and 200; and all applicable AWPAs specifications including but not limited to M6, U1-10 and T1-10: except as modified herein.


### **3. ENGINEERING**

Unless otherwise specified, poles will be custom engineered to suit the needs of the specific location. Line engineering will be provided to the manufacture and the manufacture shall provide the engineering to meet the structural needs of the pole. Line engineering will be provided either by electronic, PLS-POLE back up files, or other means at the discretion of the District. Foundation depth engineering, field rake and camber dimensions shall be provided with the pole engineering from the manufacture.

Approval drawings shall be submitted and approved by the District prior to manufacturing of poles.

### **Revision History**

Version	Date	Action	Change Tracking
0	7/6/12		New
1	11/26/12	Added foundation engineering requirement	rev

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#### 4. DIMENSIONS

Poles shall meet the dimensional requirements of the manufactures standard materials specifications if the pole is a stock size, or as required to meet the structural requirements for the specific location if the pole is custom engineered. Pole length tolerances shall be +12",-6". Size and tolerances shall be as follows: depth  $\pm \frac{1}{2}$ ", width  $\pm \frac{1}{4}$ " squareness  $\pm \frac{3}{8}$ " per foot of depth. Use of pole tolerances shall not decrease the structural capacity of the pole. The final size of the pole shall be as specified on the approved shop drawings.

#### 5. MANUFACTURING REQUIREMENTS


Poles shall meet manufacturing requirements as referenced in the latest ANSI 05.2-2006 and ANSI/ATIC A190.1. Adhesives shall be compatible with the selected preservative and meet the requirements of ANSI/ATIC A190.1, for use in wet conditions. Adhesives containing Urea shall not be used.

#### 6. INCISING AND TREATMENT

Poles shall be given a full-length, hot pressure treatment as referenced in the latest AWPA M2 and especially U1-10 and T1-10. Laminated poles constructed of Douglas-fir shall be incised prior to treatment. This incising shall be for the full pole length and on all four sides with a minimum depth of 5/8". The pattern shall minimize any damage to the surface of the pole by splintering and shall be a sufficiently dense pattern to assure uniform treatment. All laminated poles constructed of or containing Douglas-fir shall be drilled or through bored prior to treatment. This drilling is in the zone extending 2' above and 3' below the standard groundline (as defined in ANSI 05.1), or as otherwise designated. For drilling, the boring shall be 3/16" diameter by 3" long and shall be spaced in a diamond pattern so that holes within a given diamond are approximately 6" apart. Drilled holes on the edge faces shall be omitted for the first 2 laminations on each side. Care shall be taken on the edge faces to ensure that drill holes do not penetrate along glue lines. All laminated poles constructed with Southern Pine shall be drilled with this pattern on the two constant pole faces only. Preservative shall be pentachlorophenol petroleum solution meeting the requirements of the latest AWPA P8 and P9.

#### 7. FRAMING AND HARDWARE

Poles shall include all wood framing and hardware unless otherwise specified. Wood framing shall include crossarms and mounting hardware, and the pole foundation system. Insulators, switches and associated mounting hardware are not included unless specified. When specific drilling information is available, all holes shall be neatly drilled and cleaned so that they are completely open. Holes shall be a minimum of 1/16" and a maximum of 1/8" larger than the bolt diameter. Hole location tolerance shall be  $\pm 1/8$ ". Holes shall be drilled prior to pole treatment and splintering shall be kept to a minimum. Hardware shall meet the requirements as specified in the District's Material Stock Catalog unless otherwise approved.

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## 8. APPEARANCE

Laminated poles shall be manufactured in accordance with the industrial appearance grade as per AITC 110 and as follows:

Pole corners shall be eased full length to a minimum of  $\frac{3}{4}$ " and a maximum of 1".

All members shall be surfaced after gluing.

Wane and laminations scant of width shall be kept to a minimum and shall not be larger than  $\frac{1}{2}$ ".

All voids on the tops of poles shall be filled after treatment with a void filling compound. The compound shall be sanded smooth after curing.

## 9. DEFECTS

The manufacture shall not allow use of any product that does not meet the requirements of this document. Decay is not permitted in any form. Lumber utilized for laminated poles and cross arms shall be free of timber breaks.

## 10. STORAGE AND HANDLING

Poles shall meet storage and handling requirements as referenced in the latest ANSI 05.2-2006. Canthooks, carrying tongs, or other tools that might puncture the treated wood shall not be applied to the section between the butt and 2 feet above the ground line.

The approximate treated weight of the pole shall be marked at the balance point of the pole.

## 11. INSPECTION

Testing and Inspection shall meet the requirements of ANSI/ATIC A190.1, AITC 200 and AWPA M2. Random samples shall be taken for testing and inspections from the materials utilized in production for this order. Test reports shall be available to the District upon request.

## 12. ALUMINUM TAG

Poles shall have two aluminum tags or brands displaying pertinent information in accordance with the latest ANSI 05.2-2006. One tag will be located on the butt of the pole and the other located on the face of the pole. Branding will be considered at the discretion of the District.

Poles shall have the location of the aluminum tag on the face of the pole to be 10% of the nominal pole length plus seven (7) feet from the butt of the pole.