



Standard Practice for Preservative Treatment of Utility Poles by the Thermal Process¹

This standard is issued under the fixed designation D 4064; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers the full-length preservative treatment of utility poles by the thermal process.

1.2 Poles furnished under this practice shall be limited to the following species:

Douglas fir (*Pseudotsuga menziesii*),
Lodgepole pine (*Pinus contorta*),
Alaska yellow cedar (*Chamaecyparis nootkatensis*),
Northern white cedar (*Thuja occidentalis*), and
Western red cedar (*Thuja plicata*).

1.3 The purchaser should note that requirements both within and between species vary and care must be used in selection of specific options for the intended use and service area.

2. Referenced Documents

2.1 ASTM Standards:

D 390 Specification for Coal-Tar Creosote for the Preservative Treatment of Piles, Poles, and Timbers for Marine, Land, and Fresh Water Use²

D 1272 Specification for Pentachlorophenol²

D 1860 Test Method for Moisture and Creosote-Type Preservative in Wood²

D 2085 Test Method for Determining Chloride Used In Calculating Pentachlorophenol in Solutions or Wood (Lime Ignition Method)²

D 2604 Specification for High-Boiling Hydrocarbon Solvent for Preparing Oil-Borne Preservative Solutions²

D 3507 Test Methods for Penetration of Preservatives in Wood and for Differentiating Between Heartwood and Sapwood²

2.2 Other Standard:

ANSI 05.1 American National Standard for Wood Poles-

Specifications and Dimensions³

AWPA Standard A5, Section 6 Determination of Pentachlorophenol in Oil or Wood by the Copper Pyridine Method⁴

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *groundline or setting depth*—the groundline distance from the butt.

4. Description of Treating Process

4.1 The thermal treating process consists of at least two separate operations, namely the hot and cold (or cooling) cycles. A cold cycle is accomplished by removing the hot cycle preservative from the treating tank and replacing it with preservative at a lower temperature. A cooling cycle is accomplished by allowing the preservative of the hot cycle to remain in the treating tank and cool, or to cool the hot preservative by use of a heat exchanger piped to the treatment tank. In addition, a final expansion cycle with hot preservative may be applied.

4.2 At no time during the entire process shall the temperature of the preservative exceed 230°F (110°C).

5. Plant Equipment

5.1 Treating plants shall be equipped with thermometers, gages, clocks, recording devices, and related items to indicate and record accurately the conditions at all stages of the treating process. Such equipment shall be maintained in acceptable, working condition and be inspected for calibration and accuracy annually.

5.2 The apparatus and chemicals necessary for making the analyses and tests required shall be provided by plant operators and kept in condition for use at all times.

6. Prior to Treatment

6.1 *Seasoning*—Before treatment, poles shall be air seasoned, under proper sanitary conditions, or kiln dried as defined in ANSI 05.1, Paragraph 5.1.2.1, and 5.1.2.3 to minimize checking after treatment and to permit maximum

¹ This practice is under the jurisdiction of ASTM Committee D07 on Wood, and is the direct responsibility of Subcommittee D07.06 on Treatments for Wood Products.

Current edition approved April 10, 2001. Published June 2001. Originally published as D 4064 – 81. Last previous edition D 4064 – 89.

Some requirements in this practice are similar to those in the Commodities Standards of the American Wood-Preservers' Association for full-length preservative treatment of utility poles by the thermal process with preservative materials and solutions. Acknowledgment is made to the American Wood-Preservers' Association for its development of subject matter used in this practice.

² *Annual Book of ASTM Standards*, Vol 04.10.

³ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, N. Y. 10036.

⁴ Available from American Wood-Preservers' Association, P.O. Box 286, Woodstock, MD 21163-0286.