



# ANSI O5.4-2017

## Naturally Durable Hardwood Poles: Specifications and Dimensions

AMERICAN NATIONAL STANDARD FOR WOOD UTILITY PRODUCTS



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American National Standard for Wood Utility Products

**Naturally Durable Hardwood Poles:  
Specifications and Dimensions**

Secretariat  
American Wood Protection Association, Inc.

Approved February 23, 2017  
American National Standards Institute, Inc.

## ANSI O5.4-2017

### Foreword

Consists of specification and dimensions for Naturally Durable Hardwoods for utility wood poles. These wood species do not require preservative treatment for field use. The poles described are considered as simple cantilever members subject to transversal loads only.

This standard was developed by Accredited Standards Committee O5 – Wood Utility Products (ASC O5) under the procedural administration of the American Wood Protection Association (AWPA). ASC O5 was organized in December 1924 and has produced revisions of this standard from time to time as required or deemed beneficial. This standard supersedes American National Standard ANSI O5.4-2009.

Suggestions for improvement of this standard will be welcomed. They should be sent to ASC O5 through its Secretariat American Wood Protection Association, P.O. Box 361784, Birmingham, AL 35236 <[www.awpa.com](http://www.awpa.com)>.

This standard was processed and approved for submittal to ANSI by ASC O5. Committee approval of this standard does not necessarily imply that all committee members voted for its approval. At the time it processed and approved this standard, ASC O5 had the following leadership and members:

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## American National Standard for Wood Poles and Wood Products --

# Naturally Durable Hardwood Poles – Specifications & Dimensions

## 1 Scope and general requirements

### 1.1 Scope

This Standard provides minimum specifications for the quality and dimensions of naturally durable hardwood poles without preservative treatment to be used in single-pole utility structures. The poles described herein are considered as simple cantilever members subject to transverse loads only. Fiber strength values, provided as a basis for determining pole class sizes, apply only to poles that meet or exceed the minimum quality specifications. The pole class size tables for each fiber strength value for the naturally durable hardwood species represent their heartwood circumferences unless the sapwood also possesses high natural durability. These fiber strengths may be used to estimate the average groundline moment capacity of the naturally durable hardwood poles.

Only poles that meet the naturally durable hardwood species criteria established in this Standard will be allowed to be listed as an approved naturally durable hardwood pole.

### 1.2 Natural durability

The heartwood of all naturally durable hardwood poles listed in this Standard shall be tested in accordance with ASTM D2017 - 05 and have an Indicated Class of Resistance of “Highly Resistant” for all applicable test fungi. The sapwood shall have an indicated Class of Resistance of “Resistant” or higher according to ASTM D2017-05. Sapwood does not need to be rated as “Highly Resistant” and if it is not, pole dimensions are based on heartwood measurements alone<sup>1</sup>. Sapwood tested and rated as “Highly Resistant” will be included in the determination of pole dimensions as described in section 4 of this Standard.

NOTE: This Standard does not purport to establish the durability or Indicated Class Resistance of any particular species listed herein. The users of this Standard shall review all pertinent data and make their own determination as to the appropriateness of the natural durability of a particular species for the user's application.

### 1.3 Moisture content (MC)

The natural durable hardwoods must have reached 20% MC or less at the heartwood/sapwood boundary, measured with a moisture meter before shipping. This requirement is intended to eliminate or reduce the potential splits caused by severe drying. Also, the pole classes in this Standard are determined in the dry state (< 20% MC) (see Dimension Tables below).

### 1.4 Shrinkage

The naturally durable hardwoods dimension presented in this Standard have been adjusted to accommodate for permanent shrinkage of the naturally durable hardwood poles. The shrinkage amount will vary somewhat from species to species. For the purposes of this Standard, 5% shrinkage is used in deriving the required pole dimensions.

### 1.5 General requirements

All naturally durable hardwoods shall originate from managed forests with sustainable forest management practices and shall be certified by an agency or third party acceptable to the end user as a sustainably managed forest. Examples of such certifying organizations include; Sustainable Forestry Initiative® (SFI), Forest Stewardship Council® (FSC); Sistema Brasileiro de Certificação Florestal (CERFLOR); as well as others.

<sup>1</sup> Refer to section 4 of this standard to determine dimension methodology for heartwood.