

This representation of a log shows how characteristic shrinkage of wood items depends on position in the cross-section. Radial shrinkage is about half as great as tangential. (Note: most logs are not this large, and posts and timbers usually come from the center.)

Independent inspection agencies monitor production of all Wolmanized® wood, and treating plants perform internal inspections to see that AWWPA standards are met. Wolmanized® wood carries a limited warranty.

For an extra measure of assurance, particularly with structural timbers that are sawn during construction, liberally coat all cut ends, holes, or other intrusions into the wood with a suitable wood preservative product containing a minimum of 0.675% copper as oxine copper (copper-8 or copper-8-quinolinolate) or 1% copper as copper naphthenate.

Water repellent within wood and applied on the surface every year or so will reduce the rate of swelling and the effects of moisture on treated decking and lumber.

Heartwood, Sapwood, Grain, & Wolmanized® Wood Treatment

*the inside
story of a tree*

Wolmanized®
OUTDOOR® WOOD

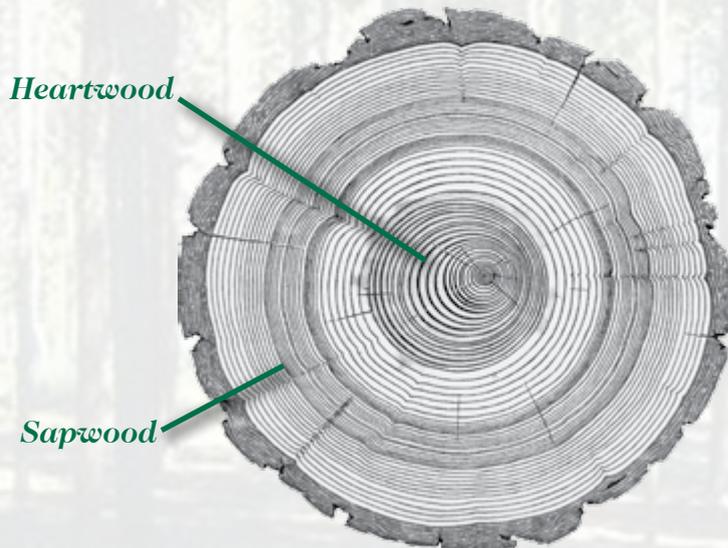


Take a look at the cross-section of a tree and there's a story before you. It tells of the tree's past, but also portends the future of lumber sawn from the tree.

Annual rings indicate the age of the tree and provide evidence of conditions that the tree faced during its life – years of good growth, drought years, fires, competitive stresses. Within a particular species of wood, cross-sectional differences affect the strength of lumber cut from the tree (denser rings usually mean stronger lumber), its stability (edge-grained lumber tends to shrink less), and the thoroughness of preservative treatment.

The cross-section encompasses three primary zones: heartwood, sapwood, and bark.

The *heartwood* is the center of the tree. It has become inactive, and is unnecessary for the continued life of the tree. Heartwood may be infiltrated with gums and resins, which usually make it darker in color than sapwood and more resistant to decay.



Between the heartwood and the bark lies the sapwood, the younger, living part of a tree. It is more porous than heartwood and more susceptible to decay, but has essentially the same strength.

When lumber is sawn from a log, individual pieces may contain a small amount of heartwood or, in the case of a 4x4 or 6x6 cut from the center of the log, there could be more than 50% heartwood. (This will vary by species; southern pine, for example, usually has more sapwood than western hemlock or Douglas fir.)

The location of the piece in the cross-section affects the amount of heartwood and the direction of the grain; grain may run roughly perpendicular to the width of the lumber (called edge-grained or quartersawn) or it may arc roughly parallel to the width (flat-grained or plainsawn). Or it could be somewhere in between.

Heartwood typically is somewhat more resistant to decay than sapwood, but sapwood accepts treatment with water-borne preservative better than heartwood. In many pieces of lumber there is some heartwood, often surrounded by sapwood.

Thus the heartwood, which gets very little preservative penetration, is protected by the well-penetrated sapwood around it.

If you cut a cross-section of pressure-treated lumber, you may notice that the greenish color of the preservative does not permeate the entire piece of wood. Industry standards, established by the American Wood Protection Association (AWPA), specify the amount of penetration required for effective treatment. The standards vary for different species of wood and different sizes of lumber.

