



American White Oak (*Quercus Michauxii*)

Botanical Name:	<i>Quercus michauxii</i>
Other Common Names:	Cow oak, Cucharillo, Encino, Encino negro, Mamecillo, Oak, Roble, Roble amarillo, Roble colorado, Roble encino, Roblecito, Swamp chestnut oak, White oak
Common Uses:	Cooperages, Flooring, Fuelwood, Mine timbers, Piling, Poles, Posts, Railroad ties, Veneer, Core Stock, Crossties, Decorative veneer, Domestic flooring, Factory flooring, Figured veneer, Foundation posts, Parquet flooring, Pile-driver cushions, Plain veneer, Stakes, Sub-flooring, Utility poles
Region:	North America
Country:	United States
Distribution:	This species is reported to occur in Alabama, Arkansas, Delaware, Florida, Georgia, Indiana, Kentucky, Louisiana, Maryland, Missouri, Mississippi, New Jersey, North Carolina, Illinois, Oklahoma, South Carolina, Tennessee, Texas, Virginia. The tree is usually found on moist sites including well-drained, sandy loam and silty clay flood plains along streams. It sometimes occurs in pure stands.

Numerical Values for: *Quercus michauxii*

<u>Category</u>	<u>Green</u>	<u>Dry</u>	<u>Unit</u>
Bending Strength	9750	13900	psi
Crushing Strength (Perp.)	570	1110	psi
Max. Crushing Strength	3540	7270	psi
Impact Strength	50	41	inches
Stiffness	1530	1770	1000 psi
Work to Maximum Load	13	12	in-lbs/in ³
Hardness		1240	Lbs

Shearing Strength		1990	psi
Specific Gravity	0.60	0.67	
Radial Shrinkage (G->OD)		5	%
Tangential Shrink. (G->OD)		11	%
Volumetric Shrink. (G->OD)		16	%

Tree & Wood Descriptions for: *Quercus michauxii*

Product Sources	<p>It is not known at present whether some material from this species is obtainable from sustainably managed, salvaged, recycled, or other environmentally responsible sources.</p> <p>Swamp chestnut oak is one of the members in the white oak group that are mixed and marketed together. White oak veneers are reported to be plentiful, and supplies of lumber are also abundant. Price of lumber is reported to be moderate, compared to other hardwoods.</p>
Tree Data	The mature tree is large and measures about 60 to 80 feet (18 to 24 m) in height, with a trunk diameter of about 24 to 36 inches (60 to 90 cm).
Sapwood Color	The sapwood is whitish to light brown in color, and is variable in width.
Heartwood Color	The color of the heartwood varies from light tan or pale yellow brown to pale or dark brown. The wood may also have a pinkish tinge.
Grain	Grain is open, and rays are typically longer than those in red oak. Crotches, swirls and burls are occasionally present and plainsawn boards have plumed or flare-grained appearance. The grain pattern is tighter, and figuring is usually lower in riftsawn lumber. Quartersawn material often has a flake pattern which are sometimes referred to as tiger rays or butterflies.
Texture	Texture is described as medium to coarse.
Odor	There is no distinctive odor or taste.
Movement in Service	Seasoned white oak timbers are reported to have moderate dimensional stability, and show medium movement after manufacture.
Natural Durability	Wood produced by members in the white oak group is highly regarded for its

	<p>natural resistance against attack by decay fungi and other wood destroying organisms. Logs are reported to be highly vulnerable to attack by ambrosia beetles, and standing trees and logs are also readily attacked by forest longhorn or Butrespid beetles.</p> <p>Resistance to Impregnation White oak heartwood is reported to be exceptionally difficult to treat with preservatives and the sapwood has moderate resistance to impregnation. High natural resistance to decay allows the heartwood to be used outdoors without chemical protection.</p>
Resistance to Abrasion	<p>White oak timbers are reported to have exceptional resistance to wear which makes them highly suitable for applications such as flooring in heavy traffic areas.</p> <p>Effect on Metals & Chemical Staining Metals used with white oak timber should be painted or galvanized to prevent corrosion. White oak is somewhat acidic and is reported to promote corrosion in iron and steel under damp conditions. Vapors from timber in the green condition may also corrode other metals, such as lead. Tannin tends to react with iron and iron compounds in the presence of moisture to produce blue-black stains in the wood.</p>
Veneering Qualities	<p>Selected white oak logs are reported to be converted into veneers. When quartered, white oak veneers exhibit a flaked figure, while the very popular straight line figure is prominent in rift cut veneer.</p>
Strength Properties	<p>Bending and crushing strength of White oaks are reported to be generally moderate, while stiffness is rated as low. Response to hand and machine tools in woodworking operations is reported to depend largely on the rate of growth of trees: slow grown trees are relatively easier to work. Wood from slow growing southern trees are reported to be comparably harder than the fast growing trees from the Appalachians.</p>

Working Properties for: *Quercus michauxii*

Blunting Effect	<p>The wood has moderate blunting effect on cutting tools.</p>
Cutting Resistance	<p>Cutting resistance is reported to be generally medium but is variable. Cross-cutting and narrow-bandsawing are reported to be satisfactory.</p>
Planing	<p>Machining characteristics of white oak timbers are reported to vary with species and rate of growth. Softer timber from slow-growth trees are reported to be generally easier to work. Planing properties are rated as good, but a cutting angle of 20 degrees has been recommended.</p>
Turning	<p>The wood is reported to turn easily, with very good results.</p>

Boring	Boring qualities are rated as very good. Bored surfaces are usually clean and smooth.
Mortising	The material responds very well to mortising operations to produce clean surfaces.
Gluing	Gluing properties are satisfactory.
Nailing	The material is rather heavy and requires pre-boring for best results in nailing operations.
Screwing	Screwing qualities are rated as generally good.
Sanding	The wood respond very well to sanding to yield clean surfaces.
Staining	Liquid from some finishing products, especially those with high water content such as bleach and water-based stains, react with tannins in white oak to turn the wood green or brown.
Steam Bending	White oak timbers are reported to be highly regarded for their steam bending qualities, and material free from defects such as surface checks are reported to bend to very small radius of curvature. Proper precautions should be taken to prevent chemical staining of steamed wood in contact with iron or steel.
Response to Hand Tools	Softer wood produced by slow-growth white oak trees are reported to generally easier to work with hand tools.

Drying for: *Quercus michauxii*

Ease of Drying	Drying is reported to be rather difficult.
Drying Defects	End-checks, surface-checks, iron stains, ring failure, collapse, gray sapwood stain, and honeycomb are reported to be some defects that may develop during drying.
Kiln Schedules	Upland T4 - C2 (4/4); T3 - C1 (8/4) US

Lowland T2 - C1 (4/4) US

T/R Ratio

2.08

This indicator is more meaningful if it is used together with other drying information and actual shrinkage data in the tangential and radial directions. (Refer to the Numerical Values window).

Credits for information:

Woodworkersource.com