Walnut (Juglans Nigra)

Common Name:	Walnut
Botanical Name:	Juglans nigra
Other Common Names:	American black walnut, American walnut, Black walnut, Eastern black walnut, Nogal, Nogal blanco, Nogal silvestre, Nuez meca, Tocte, Tropical walnut, Walnut
Common Uses:	Bedroom suites, Cabinetmaking, Caskets, Decorative veneer, Desks, Fixtures, Furniture , Gunstocks, Living-room suites, Paneling , Specialty items, Tables , Turnery, Bobbins, Building materials, Chairs, Chests, Concealed parts (Furniture), Dining-room furniture, Dowell pins, Dowells, Drawer sides, Figured veneer, Fine furniture, Floor lamps, Furniture components, Furniture squares or stock, Hatracks, Interior construction, Kitchen cabinets, Office furniture, Picker sticks, Radio, stereo, TV cabinets, Rifle stock, Rustic furniture, Shade rollers, Shuttles, Spindles, Spools, Sporting Goods, Stencil & chisel blocks, Stools, Sucker rods, Umbrella handles , Utility furniture, Veneer, Wainscotting, Wardrobes
Region:	North America
Country:	Canada, United States
Distribution:	Black walnut is reported to be distributed in Ontario and Quebec in Canada. Its growth range in the United States is reported to include Alabama, Arkansas, Delaware, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Massachusetts, Maryland, Maine, Michigan, Minnesota, Missouri, Mississippi, North Carolina, North Dakota, Nebraska, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Great Smoky Mountain National Park, Connecticut, Iowa, Illinois, Tennessee, Texas, Virginia, Vermont, Wisconsin, West Virginia, and Wyoming. The tree prefers moist, well-drained soils, particularly along streams, and is usually found scattered in mixed forests.

Numerical Values for: Juglans nigra

Category	Green	Dry	Unit
Bending Strength	9100	14800	psi
Crushing Strength (Perp.)	560	1125	psi

Max. Crushing Strength	4175	7680	psi
Static Bending (FSPL)	4400	9100	psi
Impact Strength	53	44	inches
Stiffness	1480	1790	1000 psi
Work to Maximum Load	16	14	in-lbs/in3
Hardness		1010	lbs
Shearing Strength		1370	psi
Specific Gravity	0.52	0.59	
Weight	58	40	lbs/cu.ft.
Density (Air-dry)		40	lbs/cu.ft.
Radial Shrinkage (G->OD)		5	%
Tangential Shrink. (G->OD		8	%
Volumetric Shrink. (G->OD		14	%

Tree & Wood Descriptions for: Juglans nigra

Product Sources	Some material from this species is reported to be available from environmentally responsible or sustainably managed sources. Although Black walnut lumber is reported to be available, supplies are not as abundant as they once were, and its use is reported to be down because of high prices. American black walnut, which is reported to produce the greatest variety of figure types than any other tree, demands a high price because it is so well respected that buyers are not deterred by the price.
Tree Data	The mature tree is described as rather large. It is reported to attain a height of 70 to 90 feet (21 to 27 m), with a trunk diameter of 24 to 48 inches (60 to 120 cm). Boles are reported to be often clear of branches to 50 to 60 feet (15 to 18 m).
Sapwood Color	The sapwood is described as whitish to yellowish brown. It is a common practice to steam or stain the sapwood to match its color with that of the heartwood.
Heartwood Color	The color of the heartwood varies from light grayish brown to deep chocolate brown to an almost black purplish brown. The appearance of the wood is usually described as warm and inviting.
Grain	The grain is slightly open and usually straight, but may be wavy or irregular. Pore arrangement is reported to be similar to that in the Hickories (Carya) and Persimmon (Diospyros virginiana), but the pores are smaller. The wood is famous for its wavy, curly and mottled figures which are obtained from burls, crotches and stumpwood.

Texture	Texture is usually coarse, but uniform.
Luster	Wood surfaces are generally dull, but the wood is reported to develop a lustrous patina after many years in use.
Odor	The wood is tasteless but it is characterized by a mild odor when worked.
Movement in Service	Wanut is dimensionally stable after seasoning. It is reported to absorb and give off moisture more slowly than most woods, and tends to stay in place with very little movement in use.
Natural Durability	Resistance to insect and fungal attack is reported to be very good.
Veneering Qualities	American black walnut is reported to be popular for decorative veneer. The wood produces a great variety of of very unusual figures which are reported to be highly desirable in veneers. The figures include crotches, swirls, stumpwood, stripe or ribbon, mottle, snail and occasional burls.

Working Properties for: Juglans nigra

Cutting Resistance	The timber is reported to be very easy to cut.
Blunting Effect	The wood exerts a moderate blunting effect on cutters.
Planing	Material containing irregular grain may be difficult to plane, but the wood is generally easy to work. (Average number of planed pieces out of one hundred reported to yield perfect results = 62).
Turning	The wood is characteristically very easy to turn. (Percent of pieces reported to produce fair to excellent results in turning = 91).
Boring	Boring qualities are reported to be very good. (Percent of bored pieces reported to produce good to excellent results = 100).
Moulding	Moulding properties are reported to be rather poor. (Expected number of moulded pieces out of one hundred producing good to excellent results = 34).

Mortising	The wood has exceptional mortising properties. (Percent of mortised pieces reported to yield fair to excellent results = 98).
Gluing	The gluing properties of the wood have been reported as fair to satisfactory.
Nailing	The wood is reported to have good nail-holding qualities. (Percent of pieces reported to be free from complete splits in nailing operations = 50).
Screwing	Screw-holding qualities are reported to be good. (Average number of pieces out of one hundred reported to screw without complete splits = 59).
Sanding	The material responds very well to sanding operations, and the wood is reported to leave the sander with a clean and smooth surface.
Polishing	The wood has excellent finishing characteristics.

Drying for: Juglans nigra

Ease of Drying	The timber is reported to be somewhat difficult to dry, and seasons at a slow rate.
Drying Defects	Defects that may occur include checking due to severe drying, iron stains due to extractives, honeycomb, collapse, and ring failure due to wetwood.
Kiln Schedules	T6 - D4 (4/4); T3 - D3 (8/4) US (Air-dry as thoroughly as possible before kiln drying.)
T/R Ratio	1.60 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).

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