



Domestic Hardwoods



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ASH



Common Name(s): White Ash, American White Ash

Scientific Name: Fraxinus americana

Distribution: Eastern North America

Tree Size: 65-100 ft (20-30 m) tall, 2-5 ft (.6-1.5 m) trunk diameter

Average Dried Weight: 42 lbs/ft³ (675 kg/m³)

Specific Gravity (Basic, 12% MC): .55, .67

Janka Hardness: 1,320 lb_f (5,870 N)

Modulus of Rupture: 15,000 lb_f/in² (103.5 MPa)

Elastic Modulus: 1,740,000 lb_f/in² (12.00 GPa)

Crushing Strength: 7,410 lb_f/in² (51.1 MPa)

Shrinkage: Radial: 4.9%, Tangential: 7.8%, Volumetric: 13.3%, T/R Ratio: 1.6

The color of ash is somewhat lustrous; cream to very light brown heartwood with lighter colored sapwood. Ash has a straight moderately open grain.



BIRCH



Common Name(s): Yellow Birch

Scientific Name: *Betula alleghaniensis*

Distribution: Northeastern North America

Tree Size: 65-100 ft (20-30 m) tall, 2-3 ft (.6-1.0 m) trunk diameter

Average Dried Weight: 43 lbs/ft³ (690 kg/m³)

Specific Gravity (Basic, 12% MC): .55, .69

Janka Hardness: 1,260 lb_f (5,610 N)

Modulus of Rupture: 16,600 lb_f/in² (114.5 MPa)

Elastic Modulus: 2,010,000 lb_f/in² (13.86 GPa)

Crushing Strength: 8,170 lb_f/in² (56.3 MPa)

Shrinkage: Radial: 7.3%, Tangential: 9.5%, Volumetric: 16.8%, T/R Ratio: 1.3

The heartwood tends to be a light reddish brown, with nearly white sapwood. Occasionally figured pieces are available with a wide, shallow curl similar to the curl found in Cherry. There is virtually no color distinction between annual growth rings, giving Birch a somewhat dull, uniform appearance.



CHERRY



Common Name(s): Black Cherry, Cherry, American Cherry

Scientific Name: *Prunus serotina*

Distribution: Eastern North America

Tree Size: 50-100 ft (15-30 m) tall, 3-5 ft (1-1.5 m) trunk diameter

Average Dried Weight: 35 lbs/ft³ (560 kg/m³)

Specific Gravity (Basic, 12% MC): .47, .56

Janka Hardness: 950 lb_f (4,230 N)

Modulus of Rupture: 12,300 lb_f/in² (84.8 MPa)

Elastic Modulus: 1,490,000 lb_f/in² (10.30 GPa)

Crushing Strength: 7,110 lb_f/in² (49.0 MPa)

Shrinkage: Radial: 3.7%, Tangential: 7.1%, Volumetric: 11.5%, T/R Ratio: 1.9

The heartwood is a light pinkish brown when freshly cut, darkening to a medium reddish brown with time and upon exposure to light. Sapwood is a pale yellowish color



HARD MAPLE



Common Name(s): Hard Maple, Sugar Maple, Rock Maple

Scientific Name: *Acer saccharum*

Distribution: Northeastern North America

Tree Size: 80-115 ft (25-35 m) tall, 2-3 ft (.6-1.0 m) trunk diameter

Average Dried Weight: 44 lbs/ft³ (705 kg/m³)

Specific Gravity (Basic, 12% MC): .56, .71

Janka Hardness: 15,800 lb_f/in² (109.0 MPa)

Modulus of Rupture: 15,800 lb_f/in² (109.0 MPa)

Elastic Modulus: 1,830,000 lb_f/in² (12.62 GPa)

Crushing Strength: 7,830 lb_f/in² (54.0 MPa)

Shrinkage: Radial: 4.8%, Tangential: 9.9%, Volumetric: 14.7%, T/R Ratio: 2.1

Unlike most other hardwoods, the *sapwood* of Hard Maple lumber is most commonly used rather than its heartwood. Sapwood color ranges from nearly white, to an off-white cream color, sometimes with a reddish or golden hue. The heartwood tends to be a darker reddish brown. Birdseye Maple is a figure found most commonly in Hard Maple, though it's also found less frequently in other species. Hard Maple can also be seen with curly or quilted grain patterns.



HICKORY



Common Name(s): Shellbark Hickory

Scientific Name: *Carya laciniosa*

Distribution: Eastern United States

Tree Size: 100-130 ft (30-40 m) tall, 1-2 ft (.3-.6 m) trunk diameter

Average Dried Weight: 48 lbs/ft³ (770 kg/m³)

Specific Gravity (Basic, 12% MC): .62, .77

Janka Hardness: 1,810 lb_f (8,100 N)

Modulus of Rupture: 18,100 lb_f/in² (124.8 MPa)

Elastic Modulus: 1,890,000 lb_f/in² (13.03 GPa)

Crushing Strength: 8,000 lb_f/in² (55.2 MPa)

Shrinkage: Radial: 7.6%, Tangential: 12.6%, Volumetric: 19.2%, T/R Ratio: 1.7

The heartwood tends to be light to medium brown, with a reddish hue; sapwood is a paler yellowish brown. Boards with contrasting heartwood and sapwood create a somewhat rustic appearance that's sometimes marketed as Calico Hickory.



POPLAR



Common Name(s): Poplar, Tulip Poplar, Yellow Poplar

Scientific Name: Liriodendron tulipifera

Distribution: Eastern United States

Tree Size: 130-160 ft (40-50 m) tall, 6-8 ft (1.8-2.5 m) trunk diameter

Average Dried Weight: 29 lbs/ft³ (455 kg/m³)

Specific Gravity (Basic, 12% MC): .40, .46

Janka Hardness: 540 lb_f (2,400 N)

Modulus of Rupture: 10,100 lb_f/in² (69.7 MPa)

Elastic Modulus: 1,580,000 lb_f/in² (10.90 GPa)

Crushing Strength: 5,540 lb_f/in² (38.2 MPa)

Shrinkage: Radial: 4.6%, Tangential: 8.2%, Volumetric: 12.7%, T/R Ratio: 1.8

The heartwood is light cream to yellowish brown, with occasional streaks of gray or green. Sapwood is pale yellow to white, not always clearly demarcated from the heartwood. Can also be seen in mineral stained colors ranging from dark purple to red, green, or yellow, sometimes referred to as Rainbow Poplar. Colors tend to darken upon exposure to light.



RED OAK



Common Name(s): Red Oak

Scientific Name: Quercus rubra

Distribution: Northeastern United States and Southeastern Canada

Tree Size: 80-115 ft (25-35 m) tall, 3-6 ft (1-2 m) trunk diameter

Average Dried Weight: 44 lbs/ft³ (700 kg/m³)

Specific Gravity (Basic, 12% MC): .56, .70

Janka Hardness: 1,220 lb_f (5,430 N)

Modulus of Rupture: 14,380 lb_f/in² (99.2 MPa)

Elastic Modulus: 1,761,000 lb_f/in² (12.14 GPa)

Crushing Strength: 6,780 lb_f/in² (46.8 MPa)

Shrinkage: Radial: 4.0%, Tangential: 8.6%, Volumetric: 13.7%, T/R Ratio: 2.2

The color of Red Oak varies to the region in which the tree has grown. Banks prides itself with high quality Red Oak from the Northern Region. Red Oak is straight grained with a coarse texture and prominent rays. Its color is reddish tan heartwood and narrow, almost white sapwood.



SOFT MAPLE



Common Name(s): Red Maple

Scientific Name: *Acer rubrum*

Distribution: Eastern North America

Tree Size: 65-100 ft (20-30 m) tall, 2-3 ft (.6-1.0 m) trunk diameter

Average Dried Weight: 38lbs/ft³ (610 kg/m³)

Specific Gravity (Basic, 12% MC): .49, .61

Janka Hardness: 950 lb_f (4,230 N)

Modulus of Rupture: 13,400 lb_f/in² (92.4 MPa)

Elastic Modulus: 1,640,000 lb_f/in² (11.31 GPa)

Crushing Strength: 6,540 lb_f/in² (45.1 MPa)

Shrinkage: Radial: 4.0%, Tangential: 8.2%, Volumetric: 12.6%, T/R Ratio: 2.1

Unlike most other hardwoods, the *sapwood* of maple lumber is most commonly used rather than its heartwood. Sapwood color ranges from almost white, to a light golden or reddish brown, while the heartwood is a darker reddish brown. Red Maple can also be seen with curly or quilted grain patterns.



WALNUT



Common Name(s): Black Walnut

Scientific Name: Juglans nigra

Distribution: Eastern United States

Tree Size: 100-120 ft (30-37 m) tall, 2-3 ft (.6-1 m) trunk diameter

Average Dried Weight: 38 lbs/ft³ (610 kg/m³)

Specific Gravity (Basic, 12% MC): .51, .61

Janka Hardness: 1,010 lb_f (4,490 N)

Modulus of Rupture: 14,600 lb_f/in² (100.7 MPa)

Elastic Modulus: 1,680,000 lb_f/in² (11.59 GPa)

Crushing Strength: 7,580 lb_f/in² (52.3 MPa)

Shrinkage: Radial: 5.5%, Tangential: 7.8%, Volumetric: 12.8%, T/R Ratio: 1.4

The heartwood can range from a lighter pale brown to a dark chocolate brown with darker brown streaks. Color can sometimes have a grey, purple, or reddish cast. Sapwood is pale yellow-gray to nearly white. Figured grain patterns such as curl, crotch, and burl are also seen.



WHITE OAK



Common Name(s): White Oak

Scientific Name: Quercus alba

Distribution: Eastern United States

Tree Size: 65-85 ft (20-25 m) tall, 3-4 ft (1-1.2 m) trunk diameter

Average Dried Weight: 47 lbs/ft³ (755 kg/m³)

Specific Gravity (Basic, 12% MC): .60, .75

Janka Hardness: 1,350 lb_f (5,990 N)

Modulus of Rupture: 14,830 lb_f/in² (102.3 MPa)

Elastic Modulus: 1,762,000 lb_f/in² (12.15 GPa)

Crushing Strength: 7,370 lb_f/in² (50.8 MPa)

Shrinkage: Radial: 5.6%, Tangential: 10.5%, Volumetric: 16.3%, T/R Ratio: 1.9

White Oak, like Red Oak grows broadly across the eastern half of the United States. Although in smaller quantities than Red Oak, White Oak is a ring porous species with a characteristic strong grain and rays that are more pronounced and longer than those in Red Oaks. The heartwood is light to medium tan; the sapwood is creamy-white.