Types of Woods with Description

Hardwoods

# Ash

## White

Important species of the white ash group are American whiteash (*Fraxinus americana)*, green ash (*F. pennsylvanica*), blue ash (*F. quadrangulata*), and Oregon ash (*F. latifolia*). The first three species grow in the eastern half of the United States. Oregon ash grows along the Pacific Coast. The heartwood of the white ash group is brown, and the sapwood is light-colored or nearly white. Second-growth trees are particularly sought after because of the inherent qualities of the wood from these trees: it is heavy, strong, hard, and stiff, and it has high resistance to shock. Oregon ash has somewhat lower strength properties than American white ash, but it is used for similar purposes on the West Coast. American white ash is used principally for nonstriking tool handles, oars, baseball bats, and other sporting and athletic goods. For handles of the best grade, some handle specifications call for not less than 2 nor more than 7 growth rings per centimeter (not less than 5 nor more than 17 growth rings per inch). The additional weight requirement of 690 kg/m3 (43 lb/ft3) or more at 12% moisture content ensures high quality material. Principal uses for the white ash group are decorative veneer, cabinets, furniture, flooring, millwork, and crates.

# Cherry

## Black

Black cherry (*Prunus serotina*) is sometimes known as cherry, wild black cherry, and wild cherry. It is the only native species of the genus *Prunus* of commercial importance for lumber production. Black cherry is found from southeastern Canada throughout the eastern half of the United States. Production is centered chiefly in the Middle Atlantic States. The heartwood of black cherry varies from light to dark reddish brown and has a distinctive luster. The nearly white sapwood is narrow in old-growth trees and wider in second growth trees. The wood has a fairly uniform texture and very good machining properties. It is moderately heavy, strong, stiff, and moderately hard; it has high shock resistance and moderately high shrinkage. Black cherry is very dimensionally stable after drying. Black cherry is used principally for furniture, fine veneer panels, and architectural woodwork. Other uses include burial caskets, wooden ware, novelties, patterns, and paneling.

# Magnolia

## Cucumber

Commercial magnolia consists of three species: southern magnolia (*Magnolia grandiflora*), sweetbay (*M. virginiana*), and cucumbertree (*M. acuminata*). Other names for southern magnolia are evergreen magnolia, big laurel, bull bay, and laurel bay. Sweetbay is sometimes called swamp magnolia. The lumber produced by all three species is simply called magnolia. The natural range of sweetbay extends along the Atlantic and Gulf Coasts from Long Island to Texas, and that of southern magnolia extends from North Carolina to Texas. Cucumbertree grows from the Appalachians to the Ozarks northward to Ohio. Louisiana leads in the production of magnolia lumber. Sapwood of southern magnolia is yellowish white, and heartwood is light to dark brown with a tinge of yellow or green. The wood, which has close, uniform texture and is generally straight grained, closely resembles yellow-poplar (*Liriodendron tulipifera*). It is moderately heavy, moderately low in shrinkage, moderately low in bending and compressive strength, moderately hard and stiff, and moderately high in shock resistance. Sweet bay is much like southern magnolia. The wood of cucumber tree is similar to that of yellow poplar (*L.tulipifera*); cucumber tree that grows in the yellow poplar range is not separated from that species on the market. Magnolia lumber is used principally in the manufacture of furniture, boxes, pallets, venetian blinds, sashes, doors, veneer, and millwork.

# Maple

## Hard

Hard maple includes sugar maple (*Acer saccharum*) and black maple (*A. nigrum*). Sugar maple is also known as hard and rock maple, and black maple as black sugar maple. Maple lumber is manufactured principally in the Middle Atlantic and Great Lake States, which together account for about two-thirds of production.

The heartwood is usually light reddish brown but sometimes considerably darker. The sapwood is commonly white with a slight reddish-brown tinge. It is roughly 7 to 13 cm or more (3 to 5 in. or more) wide. Hard maple has a fine, uniform texture. It is heavy, strong, stiff, hard, and resistant to shock and has high shrinkage. The grain of sugar maple is generally straight, but birdseye, curly, or fiddleback grain is often selected for furniture or novelty items. Hard maple is used principally for lumber and veneer. A large proportion is manufactured into flooring, furniture, cabinets, cutting boards and blocks, pianos, billiard cues, handles, novelties, bowling alleys, dance and gymnasium floors, spools, and bobbins.

# Oak

## Southern red

Most red oak comes from the Eastern States. The principal species are northern red (*Quercus rubra*), scarlet (*Q. coccinea)*, Shumard (*Q. shumardii*), pin (*Q. palustris*), Nuttall (*Q. nuttallii*), black (*Q. velutina*), southern red (*Q. falcata*), cherrybark (*Q. falcata* var. *pagodaefolia*), water (*Q. nigra*), laurel (*Q. laurifolia*), and willow (*Q. phellos*) oak. The sapwood is nearly white and roughly 2 to 5 cm (1 to 2 in.) wide. The heartwood is brown with a tinge of red. Sawn lumber of the red oak group cannot be separated by species on the basis of wood characteristics alone. 1–8 Red oak lumber can be separated from white oak by the size and arrangement of pores in latewood and because it generally lacks tyloses in the pores. The open pores of red oak make this species group unsuitable for tight cooperage, unless the barrels are lined with sealer or plastic. Quartersawn lumber of the oaks is distinguished by the broad and conspicuous rays. Wood of the red oaks is heavy. Rapidly grown second-growth wood is generally harder and tougher than finer textured old-growth wood. The red oaks have fairly high shrinkage in drying. The red oaks are primarily cut into lumber, railroad crossties, mine timbers, fence posts, veneer, pulpwood, and fuelwood. Ties, mine timbers, and fence posts require preservative treatment for satisfactory service. Red oak lumber is remanufactured into flooring, furniture, general millwork, boxes, pallets and crates, agricultural implements, caskets, wooden ware, and handles. It is also used in railroad cars and boats.

## White

White oak lumber comes chiefly from the South, South Atlantic, and Central States, including the southern Appalachian area. Principal species are white (*Quercus alba*), chestnut (*Q. prinus*), post (*Q. stellata*), overcup (*Q. lyrata*), swamp chestnut (*Q. michauxii*), bur (*Q. macrocarpa*), chinkapin (*Q. muehlenbergii*), swamp white (*Q. bicolor*), and live (*Q. virginiana*) oak. The sapwood of the white oaks is nearly white and roughly 2 to 5 cm or more (1 to 2 in. or more) wide. The heartwood is generally grayish brown. Heartwood pores are usually plugged with tyloses, which tend to make the wood impenetrable by liquids. Consequently, most white oaks are suitable for tight cooperage. Many heartwood pores of chestnut oak lack tyloses. The wood of white oak is heavy, averaging somewhat greater in weight than red oak wood. The heartwood has good decay resistance.

White oaks are usually cut into lumber, railroad crossties, cooperage, mine timbers, fence posts, veneer, fuelwood, and many other products. High-quality white oak is especially sought for tight cooperage. Live oak is considerably heavier and stronger than the other oaks, and it was formerly used extensively for ship timbers. An important use of white oak is for planking and bent parts of ships and boats; heartwood is often specified because of its decay resistance. White oak is also used for furniture, flooring, pallets, agricultural implements, railroad cars, truck floors, furniture, doors, and millwork.

# Walnut

## Black

Black walnut (*Juglans nigra*), also known as American black walnut, ranges from Vermont to the Great Plains and southward into Louisiana and Texas. About three-quarters of walnut wood is grown in the Central States.

The heartwood of black walnut varies from light to dark brown; the sapwood is nearly white and up to 8 cm (3 in.) wide in open-grown trees. Black walnut is normally straight grained, easily worked with tools, and stable in use. It is heavy, hard, strong, and stiff, and has good resistance to shock. Black walnut is well suited for natural finishes.

Because of its good properties and interesting grain pattern, black walnut is much valued for furniture, architectural woodwork, and decorative panels. Other important

Softwoods

# Douglas-fir

## Interior west

Six commercial species make up the western true firs: subalpine fir (*Abies lasiocarpa*), California red fir (*A. magnifica*), grand fir (*A. grandis*), noble fir (*A. procera*), Pacific silver fir (*A. amabilis*), and white fir (*A. concolor*). The western true firs are cut for lumber primarily in Washington, Oregon, California, western Montana, and northern Idaho, and they are marketed as white fir throughout the United States. The wood of the western true firs is similar to that of the eastern true firs, which makes it impossible to distinguish the true fir species by examination of the wood alone. Western true firs are light in weight but, with the exception of subalpine fir, have somewhat higher strength properties than does balsam fir. Shrinkage of the wood is low to moderately high. Lumber of the western true firs is primarily used for building construction, boxes and crates, planing-mill products, sashes, doors, and general millwork. In house construction, the lumber is used for framing, subflooring, and sheathing.

Some western true fir lumber is manufactured into boxes and crates. High-grade lumber from noble fir is used mainly for interior woodwork, moulding, siding, and sash and door stock. Some of the highest quality material is suitable for aircraft construction. Other special uses of noble fir are venetian blinds and ladder rails.

# Hemlock

## Eastern

Eastern hemlock (*Tsuga canadensis*) grows from New England to northern Alabama and Georgia, and in the Great Lake States. Other names are Canadian hemlock and hemlock– spruce. The production of hemlock lumber is divided fairly evenly among the New England States, Middle Atlantic States, and Great Lake States. The heartwood of eastern hemlock is pale brown with a reddish hue. The sapwood is not distinctly separated from the heartwood but may be lighter in color. The wood is coarse and uneven in texture (old trees tend to have considerable shake); it is moderately lightweight, moderately hard, moderately low in strength, moderately stiff, and moderately low in shock resistance. Eastern hemlock is used principally for lumber and pulpwood. The lumber is used primarily in building construction (framing, sheathing, subflooring, and roof boards) and in the manufacture of boxes, pallets, and crates.

# Pine

## Eastern white pine

Eastern white pine (*Pinus strobus*) grows from Maine to northern Georgia and in the Great Lake States. It is also known as white pine, northern white pine, Weymouth pine, and soft pine. About one-half the production of eastern white pine lumber occurs in New England, about one-third in the Great Lake States, and most of the remainder in the Middle Atlantic and South Atlantic States. The heartwood of eastern white pine is light brown, often with a reddish tinge. It turns darker on exposure to air. The wood has comparatively uniform texture and is straight grained. It is easily kiln dried, has low shrinkage, and ranks high in stability. It is also easy to work and can be readily glued. Eastern white pine is lightweight, moderately soft, moderately low in strength, low in shock resistance, and low in stiffness. Practically all eastern white pine is converted into lumber, which is used in a great variety of ways. A large proportion, mostly second-growth knotty wood or lower grades, is used for structural lumber. High-grade lumber is used for patterns for castings. Other important uses are sashes, doors, furniture, interior woodwork, knotty paneling, caskets, shade and map rollers, and toys.

## Eastern sugar pine

Sugar pine (*Pinus lambertiana*), the world’s largest species of pine, is sometimes called California sugar pine. Most sugar pine lumber grows in California and southwestern Oregon. The heartwood of sugar pine is buff or light brown, sometimes tinged with red. The sapwood is creamy white. The wood is straight grained, fairly uniform in texture, and easy to work with tools. It has very low shrinkage, is readily dried without warping or checking, and is dimensionally stable. Sugar pine is lightweight, moderately low in strength, moderately soft, low in shock resistance, and low in stiffness. 1–15 Sugar pine is used almost exclusively for lumber products. The largest volume is used for boxes and crates, sashes, doors, frames, blinds, general millwork, building construction, and foundry patterns. Like eastern white pine (*Pinus* *strobus*), sugar pine is suitable for use in nearly every part of a house because of the ease with which it can be cut, its dimensional stability, and its good nailing properties.

# Cedar

## Western red

Western redcedar (*Thuja plicata*) grows in the Pacific Northwest and along the Pacific Coast to Alaska. It is also called canoe-cedar, giant arborvitae, shinglewood, and Pacific redcedar. Western redcedar lumber is produced principally in Washington, followed by Oregon, Idaho, and Montana. The heartwood of western redcedar is reddish or pinkish brown to dull brown, and the sapwood is nearly white. The sapwood is narrow, often not more than 2.5 cm (1 in.) wide. The wood is generally straight grained and has a uniform but rather coarse texture. It has very low shrinkage. This species is lightweight, moderately soft, low in strength when used as a beam or posts, and low in shock resistance. The heartwood is very resistant to decay. Western redcedar is used principally for shingles, lumber, poles, posts, and piles. The lumber is used for exterior siding, decking, interior woodwork, greenhouse construction, ship and boat building, boxes and crates, sashes, and doors.