

Building Materials - A Closer Look at Different Types of Wood

When considering lumber or wood for various woodcraft projects or construction, there is a wide variety from which to choose. The type of wood you use will depend on the project. Some wood is more suitable than others are for building construction, while other wood types are popular for the creating of instruments or novelty items. In general, there are two main types of wood with the main difference being the way trees reproduce. Hardwood trees are angiosperms that reproduce from seed that are covered in some way, such as fruit, nuts, or acorns; this must be removed or decayed before the seed begins growth. Most hardwood trees lose their leaves in the fall. Softwood trees are gymnosperms, which reproduce from uncovered seed. Pines and other conifers are examples of softwood trees that depend on the wind to carry the lightweight seed across distances. Before choosing wood for any building or constructing project it pays to know the characteristics of the wood you are considering. Spending time to investigate how easy a wood is to work with, or how strong it is to hold up during construction can save time and money.

Softwoods

Cedar

Cedar has the quality of density and lightweight to make it an excellent choice in construction. Cedar is resistant to decay and the aromatic oil wards off insects and makes this an excellent choice for closets and other wall coverings.

- [Questions on: Cedar](#) – The NDSU Extension Service and horticulturist, Ron Smith, answer an assortment of questions concerning cedar trees.
- In addition to the use of cedars for beauty and scent in landscapes, this site gives a number of other uses for which cedar is an ideal choice.

Cypress

Cypress is found in swampy marshlands throughout the southeastern part of the United States and because cypress wood does not rot when exposed to extremely wet conditions, it is sought after for building outdoor furnishings, docks, or decks. Cypress trees are related to sequoias and redwoods found in California.

- [Cypress Swamps](#) – Cypress is found in the swampy marshlands of the Florida Everglades. Cypress is resistant to rotting when it gets wet and is useful in the construction of shingles, decks, outdoor furnishings and more.
- While cypress is a valuable wood in the construction of a variety of outdoor designs, cypress trees are also a valuable part of the ecological system of swamplands such as the Everglades.

Fir

Fir, especial Douglas fir accounts for one fourth of all lumber produced and used in North America. Douglas fir is used in lumber, plywood, house logs and posts, as well as firewood and fencing. Douglas fir trees are also a popular choice for Christmas trees.

- [True Fir Trees](#) – This page published by the Oregon State University is a guide to identifying fir trees of the Pacific Northwest. Descriptions are included for The Pacific Silver Fir, grand fir, California red fir, noble fir, and white fir.
- [Douglas fir](#) – The Utah State University provides a quick resource guide to the Douglas fir.

Hemlock

The Eastern hemlock is not a top choice in the use of construction as the wood is full of knots. A popular ornamental tree in landscaping, the wood from the hemlock is used as pulpwood or in the construction of railroad ties.

- [Hemlock Woolly: Endangers the Future of Hemlocks \(PDF\)](#) - This report details the threat to hemlock trees in Tennessee and throughout the US from the Hemlock Woolly.
- [Interior Woodwork in Houses \(PDF\)](#) – In the discussion of choosing the proper wood for interior woodwork material, this report compares hemlock with other wood choices.

Pine

White pine wood is a popular choice for many construction projects from crafts to home construction. Pine wood is inexpensive, readily available, ranges from clear to knotty, and is a favorite choice for cabinetry, woodworking projects of all types and furniture.

- [Eastern White Pine](#) – This page describes the qualities that make pine such a popular choice of wood in construction.
- [White Pine \(Pinus strobus\)](#) – This website includes the history of white pine use throughout the United States.

Redwood

Two of the three species of redwood trees are found in California. The coast redwoods and sequoias are found along the Pacific coast of the United States and a smaller dawn redwood is a native of China.

- [Coast Redwoods](#) - At one time coast redwoods were found throughout the northern hemisphere. After centuries of change, only a four hundred and fifty mile strip remains worldwide.
- [Giant Sequoias of California](#) – This site has some good pictures of these massive redwood trees as well as information about the parks where these trees now stand.

Spruce

There are over 35 species of spruce trees throughout the world making it a popular and easily accessible wood for construction. Spruce wood use may range from wooden crate construction to indoor construction use in housing or furniture projects.

- [Spruce Tree Descriptions](#) - This page gives a brief description of several species of spruce trees.
- [Red Spruce](#) – Red spruce, black spruce and white spruce are all nearly identical in characteristics and use and are often collectively referred to as eastern spruce.

Hardwoods

Ash

Ash has the ability to be bent into a wide variety of shapes and is resistant to breaking or splintering under pressure. One of the most popular uses for this wood is in the making of baseball bats.

- [White Ash \(PDF\)](#) – This wood is unique in its ability to be bent and shaped more easily than other woods.

Balsa

Balsa wood is a lightweight durable wood used primarily in hobby applications such as model planes, and craft competitions. Balsa wood is harvested in Ecuador with over ninety percent of balsa trees being harvested from the jungles of South America.

- [Balsa Wood \(PDF\)](#) – This PDF identifies the three types of grain in balsa wood and gives tips for cutting this lightweight wood to reduce the chance of slippage while achieving a clean cut.
- [Balsa Wood](#)- This page shares information concerning the use of balsa wood in the construction of test bridges, rafts, and even an airplane during WWII.

Beech

Beech trees often grow in groves through root suckers. The requirement beech trees have for healthy soil meant vast groves of beech were often cleared out for farmland and American beech is hard to grow from nursery stock.

- [Beech \(PDF\)](#) – As part of the Perdue University, *Hardwood Lumber, and Veneer Series*, this document provides information concerning the workability, strength, and grading of beech wood in commercial use.
- [Selecting Hardwood Furniture \(PDF\)](#) – This PDF document includes beech as one of the common hardwoods used in the construction of home furnishings.

Birch

Birch trees are found across most of the northern United States and Canada. Numerous cross-streaks and a thin papery bark make this one of the most easily recognizable hardwood trees.

- [Birch Tree Identification](#) – This page provides characteristics and description for identifying birch trees.
- [Kitchen Cabinets Made from Alaskan Birch \(PDF\)](#) – This report analyzes the potential market growth for kitchen cabinets made from Alaskan hardwood, especially Alaskan birch.

Cherry

The cherry tree serves as an ornamental, fruit-bearing tree that is also a source for a red wood popular in furniture construction. The autumn leaves and twigs of some species of cherry trees are potentially lethal if eaten.

- [Cherry Tree and Wood Identification](#) – This page provides pictures to aid in identifying cherry trees as well as cherry wood when used in construction or woodworking projects.
- [Black Cherry](#) – The heartwood of the black cherry tree is dark enough to be mistaken for mahogany unless closely examined.

Chestnut

At one time, the American chestnut tree was extensively found throughout the forests of eastern North America. It is now a rare finding to see a healthy mature chestnut tree. Restoration efforts include the introduction of blight resistant species and careful management in areas with a few environmental hazards as possible.

- [American chestnut Habitat & Restoration Efforts](#) – This page published by the *American Chestnut Cooperator's Foundation* summarizes the habitat of the American chestnut and restoration efforts needed to reestablish this threatened species of hardwood.
- [An Oral History of the American Chestnut in Appalachia \(PDF\)](#) – In Appalachia the American chestnut was long sought not only for the nuts it bears, but also as a source of wood for use in building and heating.

Dogwood

Dogwood has been used for treating fevers long before quinine became popular. The heavy wood from this tree becomes smooth and durable with use and has traditionally been used in the textile industry to make shuttles for weaving.

Elm

Once a sought after shade tree, Dutch elm disease has reduced the use of these trees in landscaping. This hardwood is often used in construction, flooring, veneer, mining timbers, firewood, and paper products.

- [American Elm](#) – This is a good fact sheet for homeowners or others interested in the management and use of this hardwood tree.
- [Engineering Disease Resistant American Elms](#) – This article highlights the efforts to engineer a disease resistant American Elm to replace the mature trees destroyed in the past fifty years by Dutch elm disease.

Hickory

Hickory trees are a species of deciduous hardwood found throughout North America. The hickory tree provides nuts as well as valuable hardwood for use in wood products of all types.

- All varieties of this hickory are used for nut production as well as lumber.
- [Shagbark Hickory Fact Sheet](#) – This fact sheet produced by the University of Maine, includes information on growth habits, seed description, distinguishing features, interesting features, relationship to wildlife, common problems, and landscape use.

Mahogany

Mahogany trees are a tropical hardwood typically found throughout Mexico, Central America and the Amazon rainforest. The large demand for this popular dark hardwood coupled with the slow growth habits of the Big Leaf mahogany has placed this tree on the endangered list.

- [Deforestation of Big Leaf Mahogany](#) – This page looks at the danger of deforestation of the Big Leaf Mahogany trees and includes photos of beautiful mahogany furniture showing why this hardwood is a popular choice for furniture production.
- [Natural History of Mahogany \(PDF\)](#) – This tropical hardwood can reach heights of one hundred and fifty feet.

Maple

Maple is a popular choice in furniture production. This hardwood can present some challenges in finishing, especially in the application of stains but it is well worth the effort.

- [Blotchy Maple](#) – This article addresses concerns in blotchy staining on maple. Included are some tips and techniques to increase a smoother stain application.
- [Red Maple](#) – This site gives a clear listing of the identifying characteristics of the red maple that thrives along the east coast of the United States.

Oak

Of nearly three hundred types of oak found worldwide, fifty types are found through the United States. This hard open grain wood is extremely durable and resistant to insect damage or rot.

- [Types and Characteristics of Oak](#) – This page is a good resource for types of oak and characteristics to consider when choosing oak for woodworking projects or construction.
- [Tips and Techniques for Oak finishes](#) – This article from the *American Woodworker*, provides step-by-step instruction for achieve a beautiful finish on oak wood.

Walnut

Walnut provides a hardwood with good grain, color, and it is easy to work with. Walnut has been a top choice for furniture, musical instruments, gunstocks, and veneers for decades.

- [Walnut Timber or Veneer](#) – This report from the extension service at *Ohio State University*, discusses the use of walnut trees as timber or veneer.
- [Black Walnut Toxicity](#) – Black walnut trees are a valuable source of lumber, however their roots put out a toxic substance that hinders the growth of many other plants and trees that are located nearby.