Everything You Need to Know About Firewood

For Peak Efficiency and Convenience

Good firewood makes wood burning a pleasure. Bad firewood ruins the experience. Whether you burn wood in a fireplace, stove or furnace, good quality firewood is the key to convenience, efficiency and safety. Wet wood and pieces that are not the right size and shape for your wood burner can be frustrating, burn inefficiently and deposit creosote that can fuel a dangerous chimney fire. Good planning, seasoning and storage of the firewood supply are essential to successful wood burning.

How to tell if wood is dry enough

You could buy a wood moisture meter, but you don't really need one. They are expensive and with a little practice you can judge the moisture content of firewood accurately enough to tell green from seasoned. Here are five ways to judge firewood moisture. Use them all.

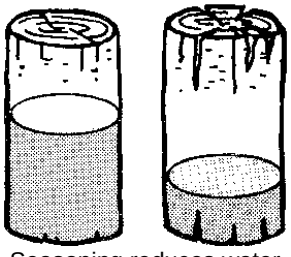
- Checks or cracks in the end grain can be an indication of dryness, but may not be a reliable indicator. Some wet wood has checks and some dry wood has tiny checks.
- The wood tends to darken from white or cream colour to grey or yellow as it dries.
- Bang two pieces of firewood together. Dry wood sounds hollow, while wet pieces sound solid and dull.
- Dry wood is much lighter in weight than wet wood of the same species.
- Split a piece of wood. If the freshly exposed surface feels cool and damp, the wood is too wet to burn. Dry wood feels warm to the touch.
- If in doubt, burn some. Dry wood ignites and burns easily; wet wood is hard to light and hisses in the fire.

How to dry (season) firewood

Wood takes longer to dry than you might think. When a tree is felled, its moisture content can be as high as 50% by weight. To burn properly, wood should be between 15 and 20%, so a lot of water must evaporate out of each piece.

These are the factors that affect firewood drying time:

- Species - very hard woods like maple and oak take a long time to dry, while softer woods like poplar dry faster
- Split or not - split pieces dry faster than unsplit
- Piece size - smaller pieces dry faster than large pieces
- Climate - wood dries faster in hot, dry climates, and slower in wet maritime climates
- Drying conditions - wood dries faster when stacked in single rows in the open exposed to sun and wind



Seasoning reduces water content from as much as 50% to between 15 and 20%

All these factors mean no one can say how long your firewood will take to dry, except that it is probably longer than you think. Under ideal conditions, hardwoods like maple and oak could dry in as little as a year, but if conditions are less than perfect, two years is normally needed. Softer woods like poplar can dry adequately in as little as a single summer, if conditions are perfect. If you can't stack your wood to season out in the open, you might need to plan on giving it two years to dry.

After the firewood has dried in the warm sun and summer breezes, move it to winter storage. The area should be dry and fully sheltered from rain and snow. Ideally, this area is close to, but not inside the house. Large amounts of wood should not be stored inside houses because of the risk of mould growth, which can contaminate the indoor air with spores. However, a small amount of wood stored inside can give it time to warm to room temperature before burning.

Some experienced wood burners stack their wood in the open away from the house for the summer to dry, then move it into winter storage in the fall. Others stack it directly into a woodshed from which they draw it as necessary throughout the winter. Either approach can work, but note that wood dries more slowly in a woodshed than it does in single 'windrows' out in the open. One approach is to build a two-sided woodshed, with enough space for a full year's firewood on each side. Although this approach calls for some expense and planning, it is a good way to ensure you always have dry firewood to burn.

Measuring firewood quantity and comparing prices

The first challenge in buying firewood is to measure quantity so you can compare prices. The cord is the standard unit of measurement for firewood. A cord measures 4 x 4 x 8 feet. Some people insist that wood must only be sold in 4 x 4 x 8 foot units, or full cords. But this is impractical because no one burns four foot firewood.

As a result, many dealers sell fractions of cords, often called "face cords", "stove cords" or "furnace cords", which are piles of wood 4 feet high and 8 feet long and as wide as the length of the individual pieces, usually between 12 and 20 inches.

The price of firewood sold in different fractions of cords can be compared by calculating the volume of wood sold as a unit and comparing its cost per full cord. A full cord of wood has a volume of 128 cubic feet. Note that, as with many other products, the cheapest price isn't necessarily the best deal. Firewood that is perfect for your firebox in both piece length, thickness and dryness may be worth a little more to you.

Tips on buying good firewood

Ask friends and neighbours who burn wood for recommendations on reliable suppliers. Shop around and select the dealer who seems most reliable and comes with the best recommendations. Do not order wood by phone. Go to the storage area to inspect the wood and take a tape measure to check piece length and pile size.

Look for wood that is clean. Sand and mud on firewood makes it less desirable. Make sure the pieces are split small enough for your appliance; you don't want to have to re-split it all.

Do not buy randomly piled wood. Only stacked cords can be counted. Either measure the piled wood before delivery or stack it (or have it stacked) at home before paying so you can measure it and confirm that you get the volume you pay for.

If possible, get the wood in spring and stack it in your own yard so you can control the seasoning process.

What are the best tree species for firewood?

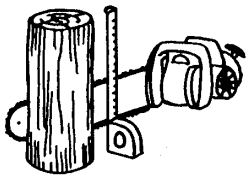
All wood is chemically similar, regardless of species. It is mostly the density and moisture content that influence its behaviour in the fire and its value as firewood. Dense hardwoods have a higher energy content per cord and so release more heat per firebox load. They also produce long-lasting fires and coal beds. Softer woods are less dense, burn faster and do not produce a long-lasting coal bed.

Coniferous trees like pine and spruce are less desirable as firewood, and not just because of their low density. Their bark contains a sticky resin that gets all over your hands, gloves and clothes.

Traditionally, hardwoods were the preferred firewood because leaky old cast iron stoves wouldn't hold a fire built from softer woods overnight. With modern stoves, however, softer woods make excellent fuel for spring and fall use and harder woods are best in the coldest part of winter. Those who heat with wood in the coldest parts of Canada have only low-density species like spruce, pine and aspen to burn and they still manage to stay warm. The newer advanced technology wood stoves, fireplaces and furnaces can function well with a wider variety of wood species because of their better control of the combustion process than older conventional stoves.

Piece Length

The length of the pieces must be suitable for your appliance. Pieces should be at least 3 inches shorter than the fire box width or depth or loading will be a nightmare. Even if a firebox is big enough to take firewood as long as 20 inches, shorter pieces are usually more desirable for ease of handling and fire maintenance. Good quality firewood is a consistent length. Lengths varying more than 2 inches are a sign of poor quality and may cause problems in loading the appliance. For convenient handling and stoking in most wood stoves, firewood is best cut into pieces 14 to 18 inches long.



Good quality firewood varies in length less than two inches

Piece Diameter

Most commercial firewood is not split small enough for effective fire building and maintenance. Big firewood pieces tend to smoulder longer when placed in the fire, whereas smaller pieces ignite quickly. Small pieces are better for small fires in mild weather. Even in cold weather each load should be made up of a few small pieces that will ignite quickly and some larger pieces that will burn steadily for several hours. For most stoves, the wood should be split to a variety of sizes ranging from 3 inches to 6 inches measured across the largest cross section. Larger stoves heating larger areas can use slightly larger pieces. Expect to pay more for wood that is split smaller and into a variety of sizes.

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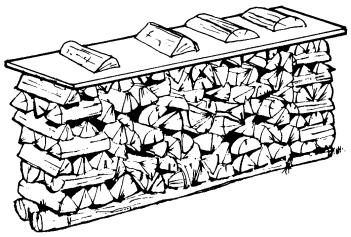
Splitting Firewood

Whether you hand split using a heavy axe called a maul, or a hydraulic splitter, processing firewood is a lot of work. Splitting by hand can be made a lot easier by mounting an old tire on your splitting block. An ATV tire works well for splitting kindling and a full-sized car tire is better for splitting bigger blocks. Cut the bead of the tire to make some tabs and screw them securely to your splitting block. The pieces stay in place after splitting, which means a lot less bending to pick the pieces off the ground.

Stacking Tips



Drying is quickest when wood is stacked up on rails out in the open with the top covered

Stack the wood in separate rows in an open location where the summer sun can warm it and breezes can carry away the moisture. Do not stack unseasoned wood tightly in an unvented storage area.

Do not allow firewood to lie on the ground for more than a few of days before stacking. Mould and rot can set in quickly. Stack the wood up off the ground on poles, lumber rails or pallets. The top of the pile should be covered to keep off rain, but do not cover the sides.

Why is there no standard price for firewood?

Here are some of the factors that can affect the price of firewood:

- Energy content: Very soft woods like poplar have about half the energy content per cord of very hardwoods like oak, so they should cost about half as much per cord. However, processing, transportation and storage costs are the same regardless of species, so you probably won't find poplar for sale as firewood.
- Location: Because of shipping and storage costs, firewood sold in urban areas can cost at least double the purchase price in rural areas.
- Dryness: Fully-seasoned firewood (if you can find it) usually costs more than green, unseasoned wood because it has been stored for longer.
- Piece size: Firewood processed in shorter lengths and split smaller usually costs more because of the additional handling involved.
- Amount purchased: A bag of firewood purchased at a convenience store will cost more per cord equivalent than the purchase of a full cord or more.
- Delivered or not: Delivered wood is more expensive than wood you load, transport and stack yourself, especially if it is stacked by the supplier.

For all these reasons, firewood can range in price from less than $200 for the equivalent of a full cord to more than $400. Paying a little extra to get good quality seasoned firewood that is the right length and split properly is a good investment because of increased convenience and efficient burning.