

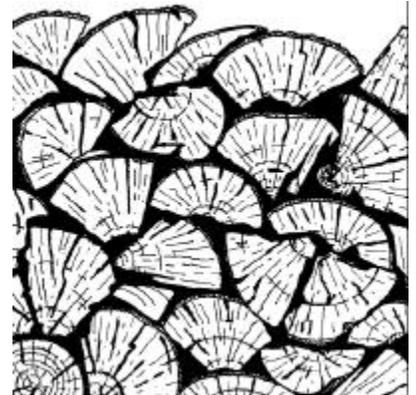
## #11 Purchasing, Processing and Seasoning Wood

### USE DRY WOOD

When it comes to operating your woodburning appliance safely and efficiently, the fuel you burn can be as important as the way you burn it. Whether you cut your own wood or buy it from a firewood supplier, it's important to use properly aged wood.

Wet wood will burn more slowly than dry wood, because more energy is needed to vaporize the water (see WISE fact sheet #7, Operating Your Appliance ...Safely). If the wood is too wet, you'll get more smoke than fire! The need to boil excess water out of the wood will lower combustion temperatures and lead to a dirty and inefficient fire.

The optimum moisture content for firewood ranges from 18 to 25 per cent by weight. To dry properly, wood should be aged for at least six months. Pieces of properly aged wood will have large cracks in the ends.



### WHAT KIND OF WOOD?

Different types of wood have different heating properties. Hardwoods are usually more dense than softwoods. A piece of hardwood will be heavier than a similarly sized piece of softwood, and will contain more energy. Hardwoods include the broad-leaved trees like maple, oak, beech and birch. Softwoods are conifers like pine, spruce and cedar.

Most species of wood can make good firewood if the logs are dry and the appliance is operated properly so the fire burns cleanly. With hardwood, you need less wood, and the wood produces longer-lasting coals. However, hardwood is usually more expensive. If softwood is properly seasoned and used in a well-maintained, properly operated appliance, it should burn well.

### Fuels to Avoid

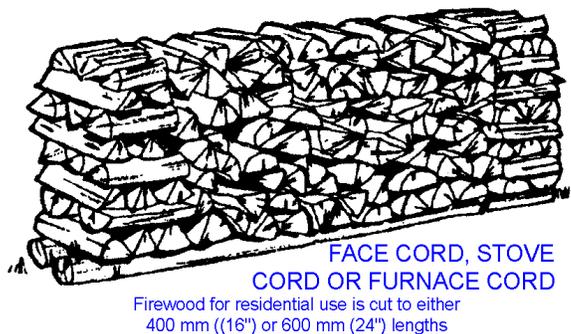
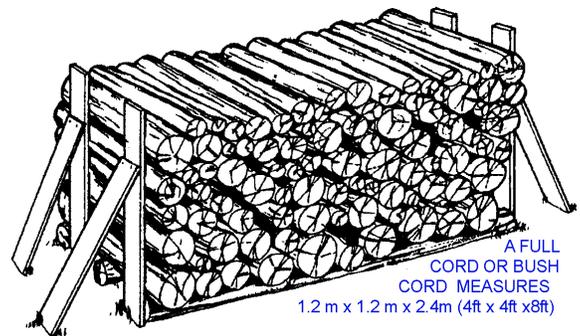
Only clean, untreated and uncoated wood should be burned in residential appliances. Chemical wood preservatives can produce unhealthy emissions when they are burned. One of the main preservatives used by industry contains a form of arsenic. Many paints contain lead and other heavy metals which, when vaporized during combustion, produce environmentally harmful emissions. These chemicals can interfere with the operation of catalytic combustors. Also, the handling of treated woods can be dangerous to the user.

- **Salt-water driftwood** should also be avoided because the salt content can attack steel in the same way that it attacks the steel bodies of cars.
- **Old railway ties** are soaked in commercial creosote preservative which produces a violent, smoky fire when burned.
- **Salvaged fuels**, with the exception of wooden packing crates and skids, should be avoided because of the risk that they have been impregnated with unknown chemicals.

*Treated wood is no treat! Do not use wood that has been treated with chemical preservatives, because it can release harmful pollutants into the air and the chemicals may attack and corrode your appliance.  
Also avoid salt-water driftwood and railroad ties.*

## DON'T GET BURNED BUYING FIREWOOD

Firewood is measured and sold in volume units called "cords". A cord measures 1.2 by 1.2 m by 2.4 m (4 ft. by 4 ft. by 8 ft.) and has a gross volume of 3.5 cubic metres (128 cubic feet). This is the only official, legal definition of a cord. Because of the spaces between the pieces of firewood, a cord does not contain 128 cubic feet of solid wood. The amount of solid wood in a cord depends on the average diameter of the pieces and on their form. A cord of straight pieces contains more solid wood than a cord of twisted wood. A cord made up of large pieces with smaller pieces to fill gaps usually has the greatest amount of solid wood. Normally, a cord of split wood is assumed to have about 80 to 90 cubic feet of solid wood. It is possible to pile split wood so that the solid content is considerably less than the average.



Many firewood dealers sell what they call "face cords" or "stove cords". These are generally stacks of wood that are 4 ft. high and 8 ft. long, but made up of pieces of wood sized for a stove or fireplace. Usually a face cord is equal to one-third of a cord, i.e., the pieces of wood are 16 in. long but it can vary from dealer to dealer.

If you want to buy firewood, shop around first. Ask friends and neighbors to recommend good suppliers, and check with a local WETT certified professional as well. If possible, go to the dealers' yards. Take a tape and measure the average length of the sticks. No matter how the dealer prices the wood - by cord, face cord or stove cord - ask for the precise measurements used.

Check how the wood is stacked for aging: to dry properly, wood should be stacked in long rows so that the sun and wind can get at it. If the wood is piled in a big heap, it won't dry properly, no matter how long it's been cut. Look for cracks in the ends of pieces: generally the bigger the cracks, the drier it is. Check whether the wood is hardwood or softwood.

Only experience will tell you how much wood you need for a winter's supply. You'd probably need about four to six cords per year to heat a medium-sized modern house exclusively with wood. As long as it's stored properly, firewood will keep for more than a year, so you may want to buy a little extra. When your wood is delivered, store it in single rows in an open area; make sure it's covered and raised off the ground.

***FIREWOOD SEASONING** Firewood seasons more quickly when the tops of the stacks are covered. Drying sheds, plywood, old steel roofing or plastic sheets can be used for cover.*

## **DOING IT YOURSELF**

For many people, one of the best things about heating with wood is that you can supply the fuel yourself. Fall, winter and early spring are good times to cut and split wood: it's easy to get around in the woods, there are no leaves to get in the way, and you'll have at least six months to dry the wood before the next heating season.

*If you cut your own wood, do it safely.*

- Never cut trees by yourself.
- Avoid cutting on really windy days.
- Wear proper safety equipment when cutting and splitting wood: a hard hat, steel-toed boots, eye protection and thick clothes.

Cut wood into lengths that will fit easily into your appliance. Then split it and stack it in single rows in an open area; the bottom layer should be stacked on rails or boards so that it is not in contact with the ground. Let the wood air dry under cover. Plastic sheeting, plywood or metal roofing can be used as a cover, as long as the sides of the stack are left open to allow air to flow around the pieces.

## **THE MOMENT OF TRUTH**

We'll assume that like most wood burners you don't own a woodlot or a pickup truck. You've decided to buy wood from a dealer, and are waiting for the truck to arrive. Once the truck arrives, things move fast, so remember...

- Wood can't be measured in a big jumbled pile. If it's stacked in the truck, use your tape measure and check that you're getting what you paid for. If the wood is piled

loosely in the truck, stack it on the ground. If the dealer refuses to cooperate, you're taking your chances.

- The dealer should be able to tell you what's in the load. Most dealers know what they're selling, so listen carefully. Pick up some pieces at random and try to size up the mix.

- If possible, buy your firewood in the spring and let it dry. If you buy in the fall, be sure the wood is dry. Look for the tell-tale pattern of cracks or "checks" on the ends of individual pieces. These will be numerous if the wood is dry. There should be no signs of mould or rot.

- Stove wood and fireplace wood aren't necessarily the same thing. If you live in a city, you're probably paying a premium, so you should get the wood in a form you can use. Unsplit logs might burn OK in a fireplace, but you'll have to split them for a stove or furnace. Sixteen-inch (400 mm) lengths are common, but there's also plenty of 20-inch (500 mm) wood on the market for furnaces. It won't work well in a fireplace. Older fireplaces might require 12-inch (300 mm) lengths.

- Store the wood under cover: it will stay dry and you'll avoid a lot of mess and trouble.

- Pay by cheque rather than handing over cash. This is your last line of defense if a closer inspection shows that you didn't get what you paid for. Few established businesses need cash to survive - even on a Saturday.

- Exercise your resolve. You didn't commit to buying anything unseen. If you're not completely satisfied, don't accept delivery. Refusing delivery will be a lot less trouble than living with a load of poor-quality fuel.

### You Might Need...

- boots and gloves
- a tape measure
- covered storage
- a chequebook
- steely resolve

### You Shouldn't Need...

- cash
- a huge splitting maul
- a chainsaw
- a drying kiln
- a field guide to the trees of the forest

*This fact sheet is intended only to provide an introduction to the topic of "Purchasing, Processing and Seasoning Wood" not a "how to" manual! Be sure to consult a WETT certified professional for more detailed information and explanations.*

## The WISE Fact sheet Series

1. Is Your Wood Heat Installation Safe?
2. Space Heating With Wood
3. Appliance and Flue Pipe Clearances
4. Reducing Clearances With Heat Shields
5. Chimneys
6. Flue Pipes
7. Operating Your Appliance ...Safely
8. Maintaining Your Heating System
9. Fireplaces
10. Fireplace Inserts
11. Purchasing, Processing and Seasoning Wood
12. Central Heating With Wood

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## Wood Energy Technical Training (WETT)

The Wood Energy Technical Training Inc is a non-profit, educational institution established in 1988. Provincial affiliates of WETT Inc are dedicated to chimney and venting system safety, and to the elimination of residential chimney fires, carbon monoxide intrusion and other chimney related hazards that result in the loss of lives and property. WETT devotes its resources to educating the public, chimney service professionals, and other fire prevention specialists about the prevention and correction of chimney and venting system hazards.

WETT has developed a training and certification program for wood heat appliance installers, inspectors, chimney sweeps and other professionals called the "Wood Energy Technical Training" (WETT) program. Be sure that any wood heat professional you consult is WETT certified. Look for the WETT logo, it's your best guarantee of reliable advice. For additional information, contact:

*Wood Energy Technical Training Inc* at 1-888-358-9388 or fax at 1-416-968-6818 or email at [info@wettinc.ca](mailto:info@wettinc.ca)

The local British Columbia affiliate is the Wood Energy Technicians of British Columbia, aptly named "*WETBC*". They can be reached at [zigi@shaw.ca](mailto:zigi@shaw.ca) or phone/fax is 1-604-941-4172. Our web site is at [www.wetbc.ca](http://www.wetbc.ca)

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