What can I do to best prepare my wood for burning?

Recent research in the Borough confirmed what many of us already know – dry wood is cleaner burning and safer to burn. If you cut, split, stack and protect your wood from precipitation for a few months during the summer, the chances are very good that you will be able to safely burn it in the coming winter.

The research* resulted in a surprise – the wood, when **properly prepared and stored under optimal conditions** during the summer months, took only six weeks to dry enough to burn safely. The key words are **"properly prepared and stored."**

Wood that is left unsplit, uncovered, and lying on the ground results in wet wood that may rot. Burning wet wood produces excessive smoke and PM2.5-sized particles, which disperse into the surrounding air, and then into our lungs and bloodstream, causing or making worse many kinds of health problems, from asthma to heart conditions.

Here are the guidelines for preparing wood for your solid fuel burning device (SFBD) such as a wood stove, masonry heater, outdoor hydronic heater or wood-burning boiler:

- Cut to stove length (two feet or shorter)
- Split the wood at least once
- Stack in a pile with air space between the pieces
- Store wood in a shed or cover only the top of the pile with a large piece of plywood or some waterproof tarp
- Allow sun and air to reach the sides of the wood pile to help dry the wood
- Season at least six weeks during the summer months
- If beginning after August 1st, wait to burn until the next summer
- When properly stored, more time is always better

*Research performed for Sierra Research by the Cold Climate Housing Research Center, March – August, 2010.

How can I tell if the wood is dry enough?

So you've cut your trees, bucked it up, split and stacked it, and it's been seasoning for six or more weeks. Ready to burn? As it turns out, there are some simple ways to answer this question:

- You know it was cut, split and stored properly for the right length of time
- You can see many "checks" (small, triangle-shaped splits in the ends of the wood) in the split logs
- The wood has a hollow sound when knocked together
- Using a good moisture meter you measure less than 20% moisture content consistently through the wood pile
- Weight

How do I burn wood so I can help keep our air clean?

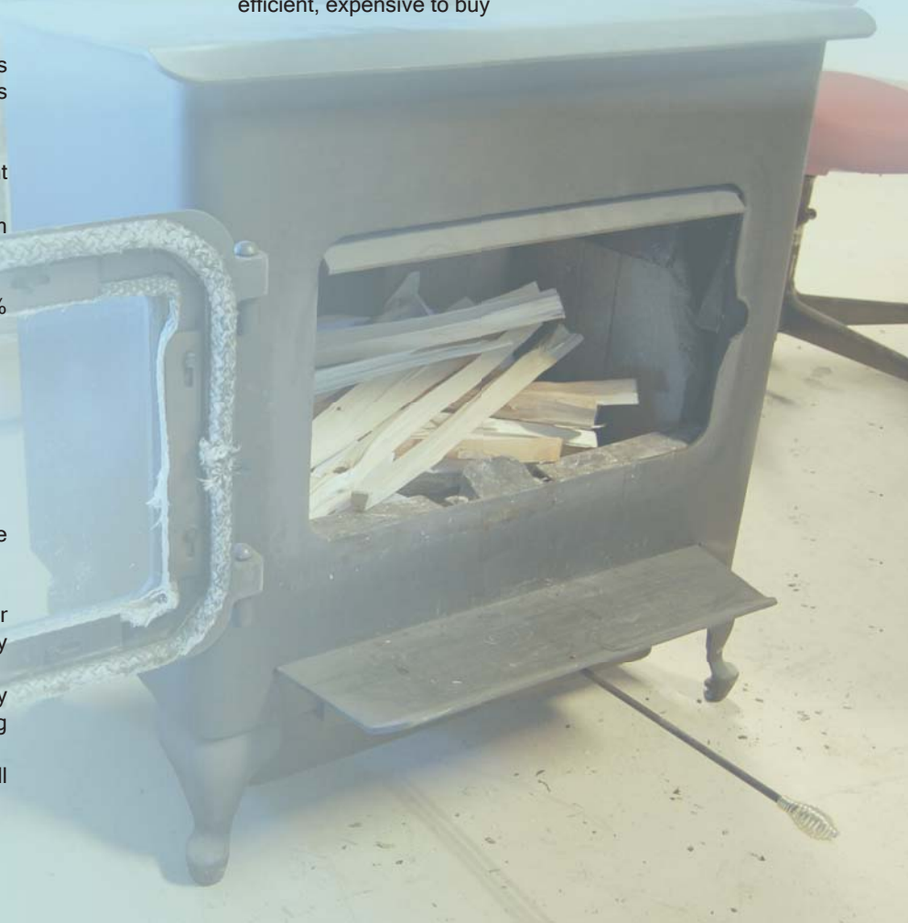
Reducing the number of particles your solid fuel burning device puts in the air is pretty simple. Follow these rules:

- Be sure the wood is dry before you put it in the stove or boiler (this includes knocking off snow and/or letting the wood dry inside overnight)
- Start the fire using kindling (small, thin sticks) and gradually add larger pieces until the stove is burning hot and using your larger pieces
- Burn hot fires. It will keep your space just as warm and will produce many fewer PM2.5-sized particles
- Follow the manufacturer's instructions for the device.

What kind of solid fuel burning device should I choose?

There are many energy-efficient and low-emission options for Fairbanks. Here's a list of the options and the advantages/disadvantages of each:

- Catalytic cordwood stoves: lower emissions, more efficient (uses less fuel), more technical to operate, must replace catalytic converter every 4-8 years
- Non-catalytic cordwood stoves: good emissions unless damped down, slightly less efficient
- Cordwood boilers: can heat and supply hot water to a large house, most smolder much of the time (when heat is not needed), boilers installed in the Borough after June 11th, 2010 must be Phase II or better.
- Masonry Heaters: load once per day, lower emissions, more efficient, expensive to buy



What is "seasoned wood?"
Why does it matter if I use it?
Is there a good way to burn wood?
Why should I care?

For the past several decades, the Fairbanks North Star Borough leadership and staff have been trying to solve a crucial problem: the winter air in Fairbanks is sometimes too dirty. Our health – especially the health of our oldest and youngest residents – depends on figuring out what is causing the problem and how to solve it.

In June 2010, the Borough Assembly passed FNSB Ordinance 2010-28 and took a step toward reducing one of the most prevalent causes of poor winter air quality, wood smoke. The ordinance is simple, and focused on wood-burning. It includes:

- Borough residents living within the non-attainment area are now limited on the types of wood stoves and other solid fuel burning devices (SFBDs) they are allowed to install; however, there is a "grandfather clause" for SFBDs installed prior to June 11th, 2010.
- The Borough now has the authority to investigate and act upon complaints.
- Educational outreach is the key – residents need to know where the non-attainment areas are and what they can do to help solve the problem.

One of the biggest problems turns out to be small particles (PM2.5) in the air from burning wood and fuel oil. These mostly come from residents using wood stoves or wood-burning boilers. It's also a problem we can help solve ourselves.

In this brochure you will find guidelines that will help you burn better for cleaner air.

Glossary of Terms

Catalytic combustor - a device built into some wood stoves that causes the smoke to be burned, keeping it from going up the stack unused, this increases the efficiency of the stove and greatly reduces air pollution (http://extension.missouri.edu)

Check - cracks that appear in the ends of cut wood, these show that the wood is dry throughout the piece.

Cordwood - firewood that has been cut and stacked, traditionally in a unit called "cord" (128 cubic feet in four-foot lengths)

Non-attainment area - a locality where air pollution levels persistently exceed National Ambient Air Quality Standards, as defined by the EPA

Solid fuel burning device - a boiler or stove approved to burn a solid fuel (either as a primary or backup fuel) or any combination of solid fuel with liquid or gaseous fuel (www.epa.gov)

PM2.5 - a form of air pollution in which the particulate matter measures less than 2.5 microns in diameter; this size can be drawn into lungs and absorbed into the bloodstream, and so is a serious health concern

For more information about burning wood efficiently and effectively in the Fairbanks North Star Borough, contact:

Main phone 907.459.1008
Fax 907.459.1006
Email cdehaven@fnsb.us
www.fnsb.us/airquality/

Have an air quality concern?
Call 907.459.1312

For more information about safely and effectively burning wood, check out the Burnwise website at www.epa.gov/burnwise.

Burning Wisely:

Efficient Drying and Burning