

What's the safest and most efficient method to store my wood?

Research confirms that dry wood is cleaner and safer to burn than wet wood. Burning wet wood is less efficient and produces excessive smoke. This leads to many kinds of health problems, including asthma and heart conditions. It also leads to build up of creosote in the chimney, which can result in a chimney fire.

To prepare wood to use in your wood burning device:

- **SPLIT** the wood in half at least once. Your wood should be less than two feet in length.
- **STACK** in a pile to allow for adequate air flow.
- **STORE** properly by covering the top of the wood pile to protect from rain and snow, leaving sides of the stack open to breathe. Store for six months to two years depending on your location, the weather, and type/species of wood. Store in an area with good exposure to the sun. If wood is prepared after August 1st, store until the following burn season.
- **SAVE** money, time, and our air. Burning dry wood means your fire burns hotter so you burn less wood.



Glossary of Terms

Catalytic wood stove - a wood stove with a catalytic combustor, which is a device that reignites otherwise wasted particles, thereby capturing energy that would otherwise go up the stack

Check -cracks that appear in the ends of wood, an indicator of dry wood

Solid Fuel Burning Device (SFB) - a device designed to burn wood, coal or any other nongaseous or non-liquefied fuels

Wood burning device - a device designed to burn wood for heating (i.e. wood stove, hydronic heater, masonry heater, fireplace or furnace)

PM_{2.5} - a form of particulate matter air pollution, typically resulting from incomplete combustion. The particles measure 2.5 microns in diameter or less and the particles are small enough to bypass the body's defense mechanisms, and lodge deep in the lungs, and even enter the bloodstream. It has been linked to significant health problems, including decreased lung function, aggravated asthma, irregular heartbeat and even premature death.

For more information about burning wood efficiently and effectively contact the Air Quality Division:

Interior/Fairbanks Phone 907.451.5172

Southcentral/Anchorage, Mat-Su, Phone 907.269.7695

Southeast/Juneau Phone 907.465.5176



Or visit www.burnwise.alaska.gov

Also, be sure to visit the US EPA Burn Wise website at: www.epa.gov/burnwise

SPLIT STACK STORE and SAVE!

Burn Wood Wisely

Improving Our Air

One of the biggest air quality health concerns in Alaska is breathing the small particles (called PM_{2.5} or fine particulate matter) floating in our air that are produced, in part, through burning wood. The health of our residents, especially our children and the elderly, depends on finding ways to reduce the amount of PM_{2.5} (wood smoke) pollution in our air.

While many people rely on burning wood to offset the high costs of energy in communities across the state, this approach is not necessarily a healthy one. In fact, it is a dangerous misconception that burning firewood is a source of clean fuel. While wood is a renewable energy source, wood smoke contains PM_{2.5} and has been linked to cancer and reproductive issues, such as infant mortality, low birth weight, lung disease, heart attack, stroke, and premature death.

Signs there could be a problem with your woodstove or firewood.

- If you can see smoke from the stack while burning - your firewood may be too wet or your stove may be burning inefficiently. There should be little to no visible smoke if you are burning correctly. If you see smoke, your money or hard work is going out the stack.
- If your woodstove has solid doors, it probably pre-dates 1990, and is not engineered to burn cleanly.
- If your wood-fired device requires frequent feedings, then it might not be operating as efficiently as it could.
- If there is smoke inside your home or leaving the chimney.
- If there are dusty conditions in your home when burning.
- If you or your family have watery eyes or stuffy noses.
- If you burn anything other than what the manufacturer designed the stove to burn.

For those who burn wood, this brochure will provide guidelines to help burn more cleanly and efficiently and protect air quality for all.



How dry does it need to be?

In order to burn efficiently, wood should be dried to 20% or less moisture content. Here are a few ways to check:

- Knock a log together with another log. Typically, the more hollow the sound, the drier the wood.
- Drier wood will feel considerably lighter, compared to a similarly sized, unseasoned piece of wood.
- Look for “checks” (or cracks) in the wood, which are a good indicator of dry wood.
- Verify its dryness using a moisture meter (available at local retailers).

Can I burn wood and still minimize air pollution?

YES! You can reduce the amount of PM_{2.5} your wood burning device puts into the air by following these simple guidelines:

- Follow the manufacturer’s instructions for the device.
- Burn only DRY wood. Be sure to knock off snow and let the wood dry inside overnight.
- Use kindling (small, thin sticks) to start the fire and gradually add larger pieces until the stove is burning hot.
- Allow the fire to burn hot. A smoldering fire reduces efficiency and produces more PM_{2.5}.

What are my options for wood burning devices?

| | PROS | CONS |
|--|---|--|
| EPA-Certified Catalytic Wood Stoves | Very low emissions, more efficient (uses less fuel than a non-EPA certified SFBD) | More technical to operate |
| EPA-Certified Non-Catalytic Wood Stoves | Low emissions (uses less fuel than a non-EPA certified SFBD) | Slightly less efficient |
| Pellet Fuel Burning Appliances | Very low emissions, more efficient than other SFBDs | Requires electricity |
| Masonry Heaters | Load once per day, lower emissions, more efficient | Expensive to purchase and install |
| Wood-Fired Boilers (also called hydronic heaters) | Can heat and supply hot water to a large house | Expensive to purchase and install, smolder when heat is not needed, increasing emissions |

NOTE: Some local communities’ have ordinances related to the wood fired heating devices and their use. Check with your local government before buying or installing a device.