



Getting the **Most** out of **Your** **Wood Stove**

*A message from the District of Houston and
the BVLD Airshed Management Society*

Heating with wood **efficiently** means getting **maximum heat** from your firewood. Maximum heat will minimize smoke. Here are some suggestions to help you get the most out of your wood stove.

Efficiency Depends on Good Fuel

Efficient, safe and convenient wood heating is impossible with unseasoned wet (green) wood.

- Properly seasoned wood has **less than 20 percent water** by weight; moisture in freshly cut can range from 35 to 70 percent.
- Firewood that is cut, split and stacked in the spring will be ready for burning the following winter; drying may take longer for very dense wood such as birch, alder or oak.
- When properly seasoned, each piece will have deep cracks in its end grain and will tend to have a dark grey colour.
- Wood should be outside in an open area to dry; never store unseasoned wood in your basement because it can support the growth of unhealthy molds.
- Firewood should be cut shorter than your stove's firebox to make loading easier; pieces should be in a variety of sizes; a range between 75 mm (3 inches) and 150 mm (6 inches) is suitable for most modern wood stoves.

The higher the moisture content, the more energy is consumed heating and boiling the moisture rather than burning the wood. Energy is wasted and the result can be a smoky fire. Wet wood produces an inefficient fire that is slow to start and difficult to keep going.

DID YOU KNOW?

Moisture meters and videos on efficient wood stove operations can be borrowed free of charge from your community library.

Air Quality Advisories and Local Bylaws

During winter months, Houston suffers from air quality advisories as a result of high concentrations of air pollution called particulate matter. This type of pollution has serious health impacts on some members of our community, especially the very old and the very young.

To improve air quality and protect public health, the District of Houston has adopted a bylaw to reduce smoke from wood burning appliances. We prefer education over enforcement.

Burn Smaller, Hotter Fires

Most of the energy in burning wood is released as a bright flame. The best fire is one that is hot, with no smell of smoke indoors and very little smoke visible outside. **If there is dark, smelly smoke coming from your chimney, it means that the firewood is not burning completely.**

Never burn household garbage, painted or treated wood, plastics, rubber or saltwater driftwood.

Avoid Slow, Smouldering Fires

People sometimes stuff their stoves with wood and burn the wood very slowly overnight. This is one of the worst things to do. Smouldering fires are inefficient and dangerous—smouldering wastes wood and deposits creosote in the chimney, which can lead to a chimney fire.

With seasoned firewood, careful fuel loading and proper air settings, it is usually possible to burn overnight without smouldering.

Kindling a New Fire

The first stage of the fire is usually the smokiest, because the cool wood, the boiling water within the wood and the cool air inside the stove take heat away from the flames. During this stage, all air inlets of the stove should be opened fully in order to create a flow of air to make the hot flame.

Although it might appear that this initial burning lets too much heat go up the chimney, it is a necessary part of building an efficient fire. The extra heat “primes” the chimney to produce an upward draft and also helps to keep the flue liner clean by loosening creosote deposits that have built up from previous fires. This initial burning also drives moisture out of the firewood and ignites the smoke that is being released from the wood.

Buy into Advanced Technology

Dense smoke coming from your chimney may indicate bigger problems. If your wood stove is more than 10 years old, you should consider replacing it with a new model that uses advanced technology. Older stoves can release between 40 and 80 grams of smoke per hour; new certified models produce only 2 to 5 grams per hour. This means **as much as a 90 percent reduction in creosote buildup**, making the new stoves much safer than conventional models.

When used properly, new modern units burn so efficiently that they require up to **one third less wood** and produce virtually no smoke. The best choices are appliances that are labelled for safety and environmental performance by recognized testing and certification agencies according to Canadian or U.S. standards, which are accepted in Canada. *The District of Houston, the Ministry of Environment and the Airshed Management Society are currently developing a Wood Stove Exchange Program.*

Safety First

The smell of smoke in a home typically means that its wood-burning system is venting improperly. This is not only a fire hazard – it could also lead to carbon monoxide poisoning.

Make sure that your wood stove and chimney are professionally installed and inspected by a technician certified under the Wood Energy Technical Training (WETT) program. These technicians will ensure that your stove and chimney meet the requirements under the building codes. Once installed, your stove and chimney should be cleaned and maintained on a regular basis.

For More Information

BVLD Airshed Management Society (AMS)

Clean air solutions we can all *live* with...

847-1672 www.cleanairplan.ca



Free publications are available from **BC Min. of Env't** 847-7260
Natural Resources Canada, **Natural Resources Canada**
Smithers Public Library, local wood burning appliance retailers, the Ministry of Environment (MOE) 1-800-387-2000
and the BVLD AMS. www.burnitsmart.org

District of Houston

845-2238 or visit www.houston.ca



Adapted from the Natural Resources Canada publication of the same name by *Footprint Environmental Strategies*, Smithers BC.