



Heating your Home with Wood

Choosing the Right Wood-burning Appliance for You

Catalytic Wood Stoves

Catalytic stoves use a catalyst to reduce the temperature at which smoke will catch fire. The technology works similar to the catalytic converter in your car. When wood burns, gases are released that contain particulates and other volatile organic materials that if not burned will carry heat up the chimney, depositing creosote on the way out. Ordinarily, temperatures must reach at least 1,000°F for these gases to ignite; however, the chemical coating of the converter acts as a catalyst and lowers ignition temperature to around 500°F. This more complete combustion of the wood enhances stove efficiency and significantly reduces air pollution and creosote deposits. All catalytic stoves have a lever-operated catalyst bypass damper that is opened for starting and reloading the stove. Because these stoves are slightly more complicated to operate, they are best suited to individuals who like technology and are prepared to operate and maintain their stove properly.



Catalytic wood stove

Advantages:

- Highly efficient; burn less wood than other stoves to produce equal heat
- Capable of producing a long, even heat output
- Very low emissions, less air pollution and fewer health impacts
- Reduced creosote deposits, lower risk of chimney fires

Disadvantages:

- Stoves are generally more expensive than non-catalytic wood stoves.
- Insert degrades over time and will need to be replaced; with care it can last up to six seasons.
- Insert can easily be contaminated and damaged by burning foreign material; burn only clean firewood, no compressed fuel such as bio-logs, etc.
- Stove requires more attention during operation than other wood burning options.

Clean, Efficient Wood Stoves

In February 2015, the U.S. Environmental Protection Agency (EPA) updated its clean air standards for residential wood heaters. The updates, based on improved wood heater technology, strengthen emissions standards for new stoves, and for the first time include previously unregulated new wood heaters. These new standards will not affect wood heaters already in use in homes, and emission standards will be phased in over the next five years for new stoves. For more information on the new Performance Standards, visit www2.epa.gov/residential-wood-heaters/fact-sheet-summary-requirements-woodstoves-and-pellet-stoves.



The current emission limit for certified catalytic wood stoves is 4.5 grams/hour; however, combustion technology has advanced so rapidly that many new stoves already meet limits established in the new standards. EPA-certified stoves have a permanent label on the back indicating this certification and listing emission levels of the stove. For a complete and current list of EPA-certified wood stoves, go to www2.epa.gov/sites/production/files/2013-08/documents/certified-wood.pdf.