

# WOOD ENERGY

*Alaska's Renewable Energy Resource*

Heating your Home with Wood

## Choosing the Right Wood-burning Appliance for You

### Non-Catalytic Wood Stoves

Non-catalytic woodstoves are the most popular and least expensive EPA-certified stove sold in Alaska. They have a heavily insulated firebox constructed from durable materials and a large baffle system that introduces preheated air into the combustion chamber. These stoves hold the wood smoke and gases released during burning longer. The smoke and gases are heated to high temperatures creating a secondary burn of these elements, reducing heat loss and smoke released up the chimney. While a non-catalytic woodstove cannot match the long, even heat output of a catalytic stove, they produce a roaring fire that is enjoyable to watch. Slightly less efficient, they utilize internal features that create a good environment for complete combustion.



Non-catalytic wood stove

#### Advantages:

- Efficient use of wood, low emissions and reduced creosote deposits.
- Least expensive modern wood stove.
- Easy to operate and maintain.
- Can use wood fuels such as bio-bricks and bio-logs.

#### Disadvantages:

- Operate most efficiently with short hot fires, will not sustain an "overnight" burn.
- Baffles and other internal features do degrade over time and will need to be replaced.

### Clean, Efficient Wood Stoves

All stoves manufactured after 1991 are required to meet EPA set particulate emission levels and receive certification from an EPA-accredited laboratory. All EPA-certified stoves have a permanent label on the back indicating this certification and listing emission levels of the stove.



Manufacturers of wood stoves took two approaches to meet these limits. Catalytic stoves can release up to 4.1 grams/hour of particulate; non-catalytic stoves are allowed emissions up to 7.5 gram/hour. Although emission controls came about to reduce the health impacts of wood smoke, a smoky fire is a wasteful fire, resulting in more fuel burned to keep space heated. Low emissions are an indication of more complete combustions so each burn provides the most heat for your wood fuel and efforts.

Both non-catalytic and catalytic stove types provide clean and efficient use of wood energy, they simply use different combustion technologies to achieve their emission goals.