



OWNER/OPERATOR INFORMATION SHEET

Preventing Air Pollution from: Residential Woodburning

Did you know...

The inhalable particle pollution from one woodstove is equivalent to the particle pollution emitted from 3,000 gas furnaces producing the same amount of heat per unit.

—California Air Resources Board

What is pollution prevention?

Pollution prevention is the use of materials, processes or practices that reduce or eliminate pollution or waste at the source. It includes improved operating practices like materials substitution, process and equipment modifications, and energy and wastewater conservation.

Why should I be concerned about air pollution from residential woodburning?

- Smoke resulting from improperly burned wood contains many chemical substances that are considered harmful. These include: carbon monoxide, nitrogen oxides, and volatile organic compounds (VOC), some of which also may be hazardous air pollutants (HAPs).
- HAPs are an important component of wood smoke. A group of HAPs known as polycyclic organic matter includes benzo(a)pyrene, which may cause cancer.
- Particle pollution in smoke can damage lung tissue and lead to serious respiratory problems when breathed in high concentrations. In low concentrations, particle pollution in wood smoke can harm the health of children, the elderly, and those with existing respiratory diseases.

How can I reduce the pollution from my woodstove, fireplace, or fireplace insert ?

Consider Cleaner Heating Fuels

- In your fireplace only, burn manufactured fireplace logs, which are made of sawdust and wax. These logs burn slowly at high temperatures and produce less smoke.
- In your woodstove, burn manufactured, densified fuel, which is typically composed of compressed sawdust. This cleaner, low-moisture fuel produces over 20% less smoke than regular wood.
- Use a cleaner heating alternative such as gas, oil, propane, or electric heat. This will reduce your family's and neighbor's exposure to woodsmoke pollution and will heat your home more efficiently.

Heat More Efficiently

- Replace an old woodstove, fireplace insert, or fireplace with an EPA-certified woodstove or EPA-certified fireplace insert. Certified stoves use about one-third as much wood and circulate more heat into the home instead of out the flue. They emit 50% to 60% less pollution and some of the newest models are even more efficient (70+%). Wood pellet stoves are considered the most efficient

In most areas of the country, woodburning from fireplaces and woodstoves is the largest source of particle pollution generated by residential sources. It can contribute as much as 80% in the winter months.

—Olympic Region Clean Air Agency

stoves available with efficiency ratings exceeding 80%.

- Install a pellet stove, which uses compressed wood waste. It uses excess combustion air to make a fire burn hot and clean.
- Stop using your fireplace or install an EPA-certified woodburning fireplace insert, which burns fuel more efficiently compared to a fireplace, which may even cause heat loss from your home.

Change Operating Practices

- Burn only clean, dry, seasoned wood that has been split and dried for at least 6 months.
- Burn hardwood rather than softwoods. Hardwoods are denser and burn more slowly and evenly, which produces less smoke. Hardwoods also provide more heat energy.
- Burn densified logs, which are made of compressed sawdust. They burn longer, and emit 25-50% less pollution.
- Never burn garbage, trash, plastics, rubber, petroleum products, paints, solvents, charcoal/coal, or treated woods. Burning these materials can be toxic and extremely harmful to your family and neighbors. These toxins can also foul the catalytic combustor and flue.
- Burn small, hot fires instead of large smoldering fires.
- Use small pieces of wood and do not overload the appliance.
- Watch the chimney for smoke. Properly burning fires should give off only a wisp of white steam. The darker and thicker the smoke, the more pollutants the fire emits, and the more fuel it wastes.
- Do not burn wood when the air quality is poor.

Inspect and Maintain

- Have a professional inspect your wood heater and chimney on an annual basis. These inspections are essential to ensure safe and clean wood burning.
- Regularly clean your chimney to remove creosote buildup to reduce the chance of a chimney fire.

How can I get the most out of my investment in woodburning equipment?

- Select a stove that is certified clean-burning and tested to EPA standards, i.e., those sold after 1990.
- Make sure it's properly installed and inspected.
- Avoid smoldering fires by using proper burning techniques.
- Use only seasoned firewood, split to the right size for your stove or fireplace.
- Reduce your need for fuel: make your home more energy-efficient by weatherizing it.

What else can I do to reduce pollution from woodsmoke?

Help your community start a public awareness program to encourage cleaner woodburning practices, including information on the proper operation and maintenance of wood heaters, proper wood selection and use, the health effects of wood smoke, weatherization methods for homes, and determining the proper size of the heating equipment needed before purchase and professional installation. See the For Further Information section on the next page for where to find more information.

Burning garbage and other materials can be toxic and extremely harmful to the woodburning resident and neighbors. These toxics can also foul the catalytic combustor and flue.

*Significant levels of smoke pollutants leaking from fireplaces and stoves have been measured in some woodburning homes. **If you can smell smoke, there is a problem.** This is an important issue, particularly if a family member suffers from respiratory problems or heart disease.*





Did you know...

EPA-certified stoves can emit 50% to 60% less pollution than non-certified stoves. They can use 1/3 less wood as non-certified stoves and deposit less creosote in chimneys. This will save you energy, time, and money

For Further Information

- Olympic Region Clean Air Agency (ORCAA): www.orcaa.org
- Burn It Smart Campaign: www.burnitsmart.org/english/index.html
- Woodburning Handbook:
www.arb.ca.gov/cap/handbooks/wood_burning/wood_burning_handbook.pdf
- A Guide to Residential Wood Heating: www.fiprecan.ca/woodguide.pdf
- An Introduction to Home Heating with Wood:
www.canren.gc.ca/app/filerepository/07C50F2F71C04818B9D567D0A2706246.pdf
- Air Pollution from Wood-Burning Appliances and Fireplaces:
www.eere.energy.gov/consumerinfo/refbriefs/ja3.html
- Woodstoves and Fireplaces: www.ysaqmd.org/woodstv.htm
- About the Air: 2001 Clean Air Excellence Award Recipients:
www.deq.state.mi.us/documents/deq-aqd-newlt-April02.pdf
- Ecofire Details: www.enviroalternatives.com/firedetails.html

Placer County Air Pollution Control District in California has implemented a rebate program to encourage residents to replace high polluting non-EPA certified stoves with newer, cleaner-burning stoves such as an EPA Phase II certified woodstove, or a pellet stove or gas stove.

—Placer County Air Pollution Control District