



BUILDING IN ALASKA

Woodstoves: A Safety Checklist

EEM-01350

To protect your family and property, woodstoves must be properly installed and operated. This checklist was developed so that you can review the most important points before you start that first fire in your new woodstove.

CHECKLIST

Installation:

- Read your owner's manual and follow the recommendations and guidelines.
- Make sure the woodstove is not too large for the area it is heating.
- Make sure the stove does not have missing parts or large cracks that make it unsafe to use.
- Some kind of fire protection material must be used to cover the floor and walls that are close to the stove. Follow building codes and manufacturer's literature for safe installation. These sources will tell you what materials to use and how to install them.
- The stove should have legs at least 4 inches high or the unit should be placed on masonry blocks with the holes to the sides to allow air circulation under the stove. Securing the stove to the floor is advisable in seismic risk areas.
- Run a duct from the outside of the building to very near the woodstove to provide combustion air for the heating unit and minimize cold air infiltration to your home.
- For clearance requirements, refer to local building codes and manufacturer's literature. If none are provided in your area or with your stove, consider a 36-inch minimum distance to any wall from the stove.
- All open front woodstoves should have a screen.



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Chimney Installation:

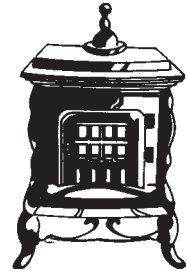
- Do not reduce the stove pipe diameter between the stove and the chimney flue. Follow manufacturer's specifications.
- Avoid connecting more than one heating device to a single chimney flue because poisonous gases or sparks may pass from one appliance out the other.
- A single wall chimney pipe needs 18 inches of clearance to combustibles. Metalbestos or triple wall chimney pipes and masonry chimneys need 2-inches of clearance to combustible materials. If you insulate around the chimney, increase minimum recommended clearances and insulate with mineral wool (rock wool) or other non-combustible insulation. Fiber glass insulation is non-combustible but is held together with a resin that vaporizes at 250°F, so is not an approved material.
- Keep combustible forms of polyurethane, styro-foam, cellulose or other insulation away from chimney pipes.
- Install a damper on your chimney pipe, even if your stove is equipped with one, so that you can control a chimney fire.
- If using a single wall stove pipe, each joint should be secured with at least 3 metal screws. A severe chimney fire can blow unsecured joints apart.
- The chimney should extend at least 2 feet higher than any point of the roof within 10 feet of the chimney pipe. It is extremely important to maintain a minimum of a 2-inch clearance between the chimney and combustibles (i.e., support frames and insulation).



- Use an insulated metal chimney which is approved by Underwriter's Laboratories or the Alaska D.E.C., where a masonry chimney is not available or practical.

Operations and Maintenance:

- If using an airtight stove, open the intake damper fully before you open the door. Hot, unburned fuel gases can burn explosively if air is introduced too quickly.
- Never burn coal and wood in the same stove, unless it is designed to do so. Since coal generates a higher heat, coal stoves are constructed differently.
- Burn dry, well seasoned wood, which has dried at least one year. This will reduce creosote deposits, and provide more heat output. Two drying seasons are recommended for hardwoods, such as birch and aspen.
- If burning artificial logs, never poke or burn more than one at a time. They contain up to 60% wax or sterno and will burn extremely fast if broken up. This will damage your stove and may cause a house fire.
- Keep all wood, paper, matches or other combustibles away from the woodstove or chimney pipe.
- When you reload a woodstove or start a fire, let it burn with dampers wide open for five minutes. This will burn out creosote deposits in the chimney. Do not start a hot fire if there is an 1/8-inch or more thick layer of creosote in the chimney pipe.
- Never use flammable or combustible liquids to kindle or rekindle a fire!
- Use a metal container with tight fitting lid for ash disposal.
- The building or fire inspector should approve the installation.
- The company insuring the building should be notified of the installation.



WOOD STOVE SAFETY ISSUES

Stoves must be set up and used with great care to avoid serious fire hazards. Safe chimneys are absolutely essential. Flue walls must be sound as occasional chimney fires are almost inevitable when burning wood or soft coal. Safe placement of stoves and proper vent connection are also important.

Unlined single brick chimneys found in many older homes are especially hazardous. This type of chimney often was not very safe when it was built and certainly should be suspect now. Mortar in the joints probably has broken down and some bricks may be cracked. The combined action of weather and hot gases causes these conditions most often near the chimney top. However, cracks and openings commonly develop well below the roof in tinder-dry attics. Masonry chimneys also increase risk from collapse during earthquakes.

Fireplaces and older model stoves, when fired vigorously from day to day, are usually not as hazardous as the controlled burning stoves common today. Soot and creosote did not build up as small accumulations may have ignited and burned safely. Heavy chimney deposits, once ignited, burn intensely at dangerously high temperatures.

Present day building codes and insurance underwriters encourage safe chimney design. Masonry flues are lined with fireclay at least $\frac{5}{8}$ -inch thick or some other approved material. All wood beams, joists, and studs must be kept at least 2 inches away from masonry enclosing a flue. Approved, factory-built chimneys, when correctly installed, are also acceptable.

Chimney fires are possible in all but the cleanest chimneys. A safe installation and extra care will help prevent fire, but accept the idea that there could be a fire and be prepared to handle it. Make certain everyone in the house is familiar with the warning signs of a chimney fire (sucking sounds, a loud roar, and shaking pipes). All adults should know

how and when to use a fire extinguisher. Place the fire emergency phone stickers on every phone (available at your nearest fire station). If you think you have a chimney fire:

1. Call the fire Department immediately, before doing anything else.
2. Cut off the fire's air supply by closing all dampers on the woodstove and/or chimney pipe.
3. Get everyone out of the house and put them to work watching for sparks or signs of fire on the roof or nearby.
4. Keep a Class 1A:10BC dry chemical fire extinguisher handy. If the house catches on fire, try to extinguish it if it is safe to do so. Stand back 6 to 8 feet and direct the nozzle to the base of the flames.

Stoves, flues and chimneys should be kept clean. If a chimney has a build-up of $\frac{1}{4}$ -inch of creosote, a chimney fire hazard exists. Chimneys serving airtight stoves should be checked frequently, as total blockage has occurred less than 72 hours after installation. Chimney cleaning should be accomplished by a mechanical means. Flue brushes with extendible poles are available for about \$25 from most heating dealers. Do not use chemical cleaners, because they can cause corrosion on metal chimneys and sometimes start intense fires caused by accelerated oxidation.

Make sure all ashes are completely dead before you throw them out. Ashes make excellent sidewalk de-icers, and soil enhancement. This is **not** the case however, for coal ashes.

Most fire departments will inspect your stove and chimney. Many chimney sweep businesses provided free chimney inspection services as well. For more information on proper installation and maintenance of your wood burning stove, order a copy of the pamphlet entitled *Wood Stove Safety*, published by the Fairbanks Fire Department.

BACKDRAFTING

Research indicates that backdrafting problems are widespread and may pose a health hazard. In addition to backdrafting, many houses suffer spillage during the start-up of furnaces and water heaters.

Incidents of chimney spillage are becoming more frequent and hazardous. The spillage occurs when chimneys interact with other parts of the house.

Three factors are making houses more prone to pressure-induced spillage: tighter building envelopes; increased exhaust capacity; and, unusually weak chimney draft.

Before a house is occupied, a test should be conducted to see if the exhaust appliances are capable of depressurizing the house to unsafe levels. The simplest approach is to turn on all the fans and fireplaces. Then time the duration of spillage when the stove is started up. A smoke pencil or lighter flame can be used to detect spillage. If spillage continues for more than 30 seconds, you have a chimney venting problem. Try to avoid testing on windy days.

AHFC Research Information Center

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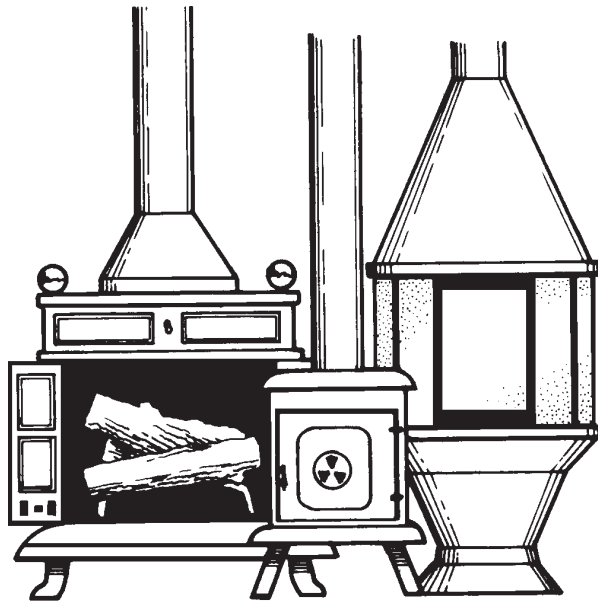
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