

## Wood Burning Stoves

### **BEFORE YOU INSTALL YOUR WOOD BURNING STOVE**

The proper installation of a wood stove is critical to the safety of your family. With solid fuel heat you are bringing a dangerous element into the living area of your home. To avoid disaster you must pay constant attention to safety practices beginning with the proper installation of the stove. There are no short cuts. You must follow all of the guidelines to have a safe installation.

Begin by checking with the local fire and building departments. There may be local requirements that must be followed if you plan to put a wood stove in your home. Next, check with your insurance company. They may also have standards that must be met in your installation. The next important step is in the selection of the stove. If you select a stove that has been listed by a recognized testing agency, the stove label of that agency will have installation instructions.

When installing a listed stove follow the specific instructions for that stove rather than the general instructions contained in this publication.

There are many good stoves on the market that may not have been listed by a testing agency, because the manufacturer has not submitted the stove for testing. These stoves can be installed safely by following the nationally recognized standards for safe installation contained in this pamphlet.

### **Floor Protection:**

The floor beneath your stove should be protected from both heat and embers from the stove. The floor protection should extend twelve inches to the sides and rear of the stove and at least eighteen inches to the front or the side the stove is fired from. The type of floor protection needed depends on the length of the stove's legs.

<b>Length of Legs</b>	<b>Type of Floor Protection</b>
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<b>18 inches or more</b>	<b>A layer of 24 gage sheet metal</b>
<b>6 to 18 inches</b>	<b>A layer of 1/4 inch asbestos millboard covered with a layer of 24 gage sheet metal</b>
<b>6 inches or less</b>	<b>Use four inches of hollow masonry laid to provide air circulation through the masonry. The masonry should be covered by a layer of 24 gage sheet metal</b>

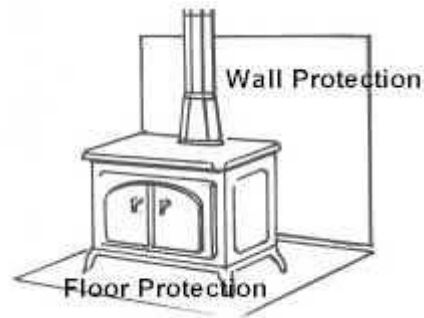
**Distance From Walls:**

The table below lists the minimum safe clearance between your stove and any combustible walls to the sides and rear of the stove. In the table a RADIANT STOVE is a unit similar to the original Franklin stove. This stove heats by radiating heat from the surface of the stove into the room. A CIRCULATING STOVE has a jacket around the firebox. This stove provides heat by the movement of heated air from between the jacket and firebox into the room. The surface of a circulating stove is cooler and the stove requires less clearance than a radiant stove. All distances in the table should be measured from the outer surface of the stove to the original wall surface.

<b>Minimum Distances From Combustible Walls and Ceilings</b>			
<b>Type of Protection</b>	<b>Type of Stove</b>		<b>Stove Pipe</b>
	<b>Radiant</b>	<b>Circulating</b>	
<b>No Protection</b>	<b>36 in.</b>	<b>12 in.</b>	<b>18 in.</b>
<b>1/4 inch asbestos mill board* spaced out one inch</b>	<b>18 in.</b>	<b>6 in.</b>	<b>12 in.</b>
<b>28 gage sheet metal spaced out one inch</b>	<b>12 in.</b>	<b>4 in.</b>	<b>9 in.</b>
<b>28 gage sheet metal over 1/8 inch asbestos mill board* spaced out one inch</b>	<b>12 in.</b>	<b>4 in.</b>	<b>9 in.</b>

\* Spaced out one inch means that the wall protection should be spaced out from the original wall one inch on noncombustible spacers. An opening should be left at the top and bottom to permit air to circulate between the wall and wall protection.

\* Asbestos mill board is a soft insulation board -- not the same material as asbestos cement board.



## Stovepipe:

Stovepipe is used to connect the firebox of the stove to the chimney. Since the stovepipe will become very hot the clearances between it and the wall listed in the table (above) must be maintained. In addition to clearances, a safe stovepipe installation will conform to these points:

- It will not be less than 24 gage metal (the lower the number, the lower the gage).
- It should be the same size as the opening on the stove.
- It should be as short and straight as possible.
- It should enter the chimney at a higher level than it leaves the stove.
- Male sections of stovepipe should be fitted into the female sections so that the male section points down.
- Sections of stovepipe should be fastened together with sheet metal screws.
- Single wall stovepipe should never pass through an interior wall.
- Single wall stovepipe should not be used in attics or other concealed spaces.

## Masonry Chimneys:

If a wood stove is to be used with an existing masonry chimney, several precautions must be observed.

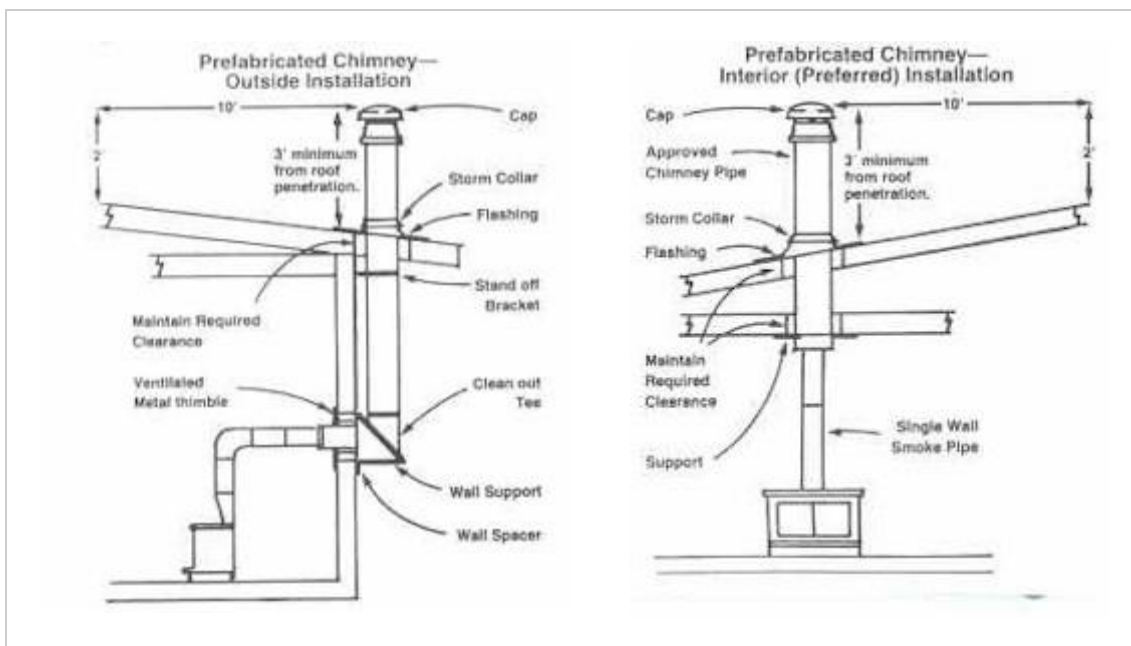
The chimney must be completely inspected by a qualified person. If there is any deterioration of the liner, the chimney cannot be used. Repair of existing chimneys can be expensive. Some people install a new factory built metal chimney rather than try to recondition the old masonry one.

Be sure all unused openings have been properly sealed. Don't be surprised by an old flue opening that has been paneled over.

If a single wall pipe is connected to the masonry chimney, it must pass through a ventilated thimble. The thimble must provide at least 18 inches of clearance between the stovepipe and combustible wall materials.

The single wall pipe must extend to, but not beyond the chimney liner. The thimble (not the stovepipe) should be cemented in place with special furnace cement.

### Factory Built Chimneys:



The homeowner who has a substandard masonry chimney or none at all may choose from several factory built chimneys. The desirability of one type of factory built chimney over another should be discussed with the dealer or contractor prior to purchase. The most important thing to remember is that the chimney must be able to withstand the high temperatures created by a solid fuel fire. Use only a chimney that has been tested and found to be safe by a recognized testing agency. Complete installation instructions are

provided with each listed chimney. These instructions must be closely followed to insure the safety of the completed project.

The two most common types of factory built installations are illustrated above. The critical points of this type of installation are where the chimney passes through the ceiling and the roof or where it passes through the outside wall of the house. It is essential that proper components be used at these points to maintain the required clearances.

To prevent downdrafts and fire from sparks, chimney height must be at least two (2) feet above any roof surface within 10 feet horizontally.

### **Mobile Homes:**

Wood stoves installed in mobile homes require special measures of precaution. Use only stoves and chimney parts tested and labeled for mobile home use. Follow the approved instructions for each.

## **BURNING WOOD IN YOUR WOOD BURNING STOVE SAFELY**

### **Firing Your Stove:**

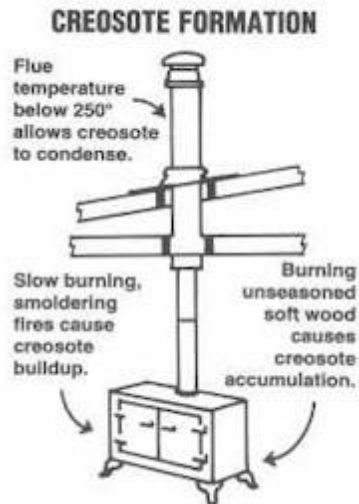
Some ash left over from the last fire can be desirable, since it acts as a heat reflector in the bottom of the stove.

Crumple a small amount of paper and place it in the fire chamber. Over the paper place kindling wood and a few pieces of small fuel wood. Be sure the damper is open, then light the paper. Once the wood begins to burn well and a good draft has been created, larger pieces of wood may be added.

### Never:

- Use flammable liquids to light a fire
- Store flammable liquids in an area where a stove is being used
- Burn trash, large amounts of paper or small twigs
- "Over Fire" so that stove pipe becomes "Red Hot"
- Leave the doors open or screen off except to fuel the fire
- Dry clothing closer than three feet to the stove

## Chimney Fires:



A chimney fire can be a frightening and dangerous experience. A chimney fire may produce loud crackling, rumbling or roaring noises and a red hot stove pipe. These fires can spread to the building itself, causing serious loss and endangering the lives of your family.

Chimney fires are caused when CREOSOTE, normal by-product of burning wood, collects on the inside of the chimney and is ignited. The causes of creosote buildup are listed here.

## Chimney Fires:

These steps will help limit creosote buildup.

- Burn only dry, seasoned wood.
- Avoid slow burning smoky fires.
- Have your chimney inspected and if necessary, cleaned periodically.

If you do have a chimney fire, in spite of your precautions, do these things:<

- Call the fire department and get everyone out of the house.
- Close the stove door, draft opening and damper to cut off air to the fire.
- Never throw water on a hot stove.

A chimney fire may damage parts of the chimney or stove pipe. Be sure to have an inspection made of your entire system before you use it again

***\*NEVER leave small children in a room where a wood stove is in use.***

### **Selecting Wood To Burn:**

One important factor in preventing creosote buildup is using only dry, seasoned wood. To be seasoned, wood must have been cut and dried six to twelve months or longer depending on the kind of wood. If you cut your own wood, cut well in advance of the time of use. Give the wood time to dry and become seasoned before use.

If you buy the wood you will be using--shop around. Buy the driest wood you can find. Dry wood looks and feels different than green wood. A stick of dry wood weighs less. The end of the stick may have cracks radiating from the center. Green wood does not have this appearance.

Remember that dry wood is not only safer to burn, it is also more economical because it produces more useable heat.

### **Chimney Cleaning:**

Chimney cleaning is a fact of life for the wood burner. If you burn wood, the formation of some creosote is unavoidable. Your chimney should be cleaned when creosote at any point reaches 1/4 inch. The only way to tell when this point is reached is to inspect your chimney. How often you should conduct an inspection varies according to many factors. To begin, make your inspections fairly often. After a time, experience will tell you how often your flue needs to be inspected and cleaned. If you want to become your own chimney sweep, start with the correct tools. Makeshift equipment may damage your chimney. For those who are not inclined to perform the inspection and cleaning chore themselves, professional chimney sweeps are available in most areas. Next to proper installation, proper cleaning is the most important wood stove fire safety rule.

### **Ashes:**

Dispose of ashes carefully. Place them in a metal container with a tight fitting lid. Set container only on a non-combustible surface.

### **Added Precautions:**

For the greatest measures of safety for yourself and your family, you should install one or more approved smoke detectors. Each family should also practice a fire escape plan with two ways out of every room in the house.

This information is reprinted from The State of Ohio, Department of Commerce, Division of State Fire Marshall.