

SOLID-FUEL BURNING APPLIANCE PROVISIONS



This handout is based on RCW 19.27, known as the "Washington State Residential Code". The handout includes portions of the International Residential Code (IRC), and may include portions of other codes adopted by statute, publications, as well as Skamania Ordinance and policies. Any portion of this document presuming to give authority to violate, ignore or cancel the provisions of codes adopted by Skamania County shall not be valid.

Required Permits:

A Mechanical Permit is required for the installation of all wood and solid-fuel burning appliances including all wood stoves, pellet stoves, manufactured fireplaces, fireplace inserts, or any other solid-fuel-burning appliance. A wood-burning appliance or fireplace installed without a permit or inspections is a code violation and may invalidate your fire insurance policy.

Mobile/Manufactured Homes

An alteration/installation permit must be obtained from the Washington State Department of Labor and Industries (L&I) Mobile Home Divisions 1-800-705-1411 Option 3 or email FAS1@lno.com. Inspections of these installations shall be by L&I

Certified Appliances

R303.10.3 Solid Fuel Burning Devices. No new or used solid fuel burning device shall be installed in new or existing buildings unless such device is United States Environmental Protection Agency (EPA) certified or exempt from certification by the EPA and complies with RCW 70.94.011, 70.94.450, 70.94.453, and 70.94.457.

Exceptions:

- *Wood cook stoves*
- *Antique wood heaters manufactured prior to 1940*

The most current list of approved appliances is available at <https://www.epa.gov/sites/production/files/documents/certifiedwood.pdf>

The list of EPA Certified Wood Heaters contains information about wood heaters that are in compliance with the New Source Performance Standard for New Residential Wood Heaters under the Clean Air Act.

In addition to being certified, the International Mechanical Code (IMC) requires that all appliances be "listed" by Underwriters Laboratory (UL), International Code Council (ICC), or any other nationally recognized testing agency.

General Installation Requirements

THE MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL BE FOLLOWED AND SUPERSEDES THE BELOW INFORMATION

Solid fuel burning appliances and fireplaces shall be provided with tight fitting metal or ceramic glass doors, and:

- A source from outside the structure of primary combustion air, connected to the appliance as per manufacturer's specification. The air inlet shall originate at a point below the fire box. The duct shall be 4 inches (102 mm) or greater in diameter, not exceed 20 feet (6096mm) in length, and be installed as per manufacturer's instructions; or
- The appliance and manufacturer's recommended combustion air supply, as an installed unit, shall be certified by an independent testing laboratory to have passed Test No. 11-Negative Pressure Test, Section 12.3, of ULC S627-M1984 "Space Heaters for Use with Solid Fuels," modified as follows:
 - Negative pressure of 8 Pascal shall be initially established with the chamber sealed and the air supply, if not directly connected to the appliance, closed off.
 - The air supply, if not directly connected to the appliance, shall then be opened.
 - The maximum allowable air exchange rate from chamber leakage and intentional air supply for the unit (appliance with combustion air supply) in the test chamber is 3.5 air changes per hour, or 28 cfm (cubic feet of air per minute) (0.0132 m³/s), whichever is less.

Exception:

Combustion air may be supplied to the room in which the solid fuel-burning appliance is located in lieu of direct ducting, provided that one of the following conditions is met:

- *The solid fuel-burning appliance is part of a central heating plant and installed in an unconditioned space in conformance with the International Mechanical Code; or*
- *The solid fuel-burning appliance is installed in existing construction directly on a concrete floor or surrounded by masonry materials as in a fireplace. The combustion air terminus shall be located as close*

Chimneys

Chimneys shall be constructed of masonry in accordance with Chapter 10 of the International Residential Code (IRC) requirements, or shall be approved factory-built assemblies listed or approved by UL, ICC, or another recognized agency for use with wood-burning or other solid-fuel-burning appliances. The listed or approved chimney assemblies shall be installed in accordance with their listings. The required clearances from the chimney to combustibles will be indicated on each section of chimney. The minimum clearance for a masonry chimney is 2" to any combustible material. **NOTE:** Metal liners installed within masonry chimneys or relined chimneys shall be approved, listed materials and installed in accordance with the listing. The chimney shall terminate at a point not less than 2' above any portion of a structure within a 10' radius of the chimney.

Multiple Venting

Venting of more than one appliance into a single chimney flue is not a recommended procedure.

However, the code does allow multiple venting provided that the following requirements are complied with:

- Appliances that are connected to common venting systems shall be located on the same floor of the dwelling.
- Inlets to common venting systems shall be offset such that no portion of an inlet is opposite another inlet.
- Connectors serving appliances operating under a natural draft shall not be connected to any portion of a mechanical draft system operating under positive pressure.
- A solid-fuel burning appliance or fireplace shall not connect to a chimney passageway venting another appliance.
- Any gas-burning appliance is vented above the other appliance.

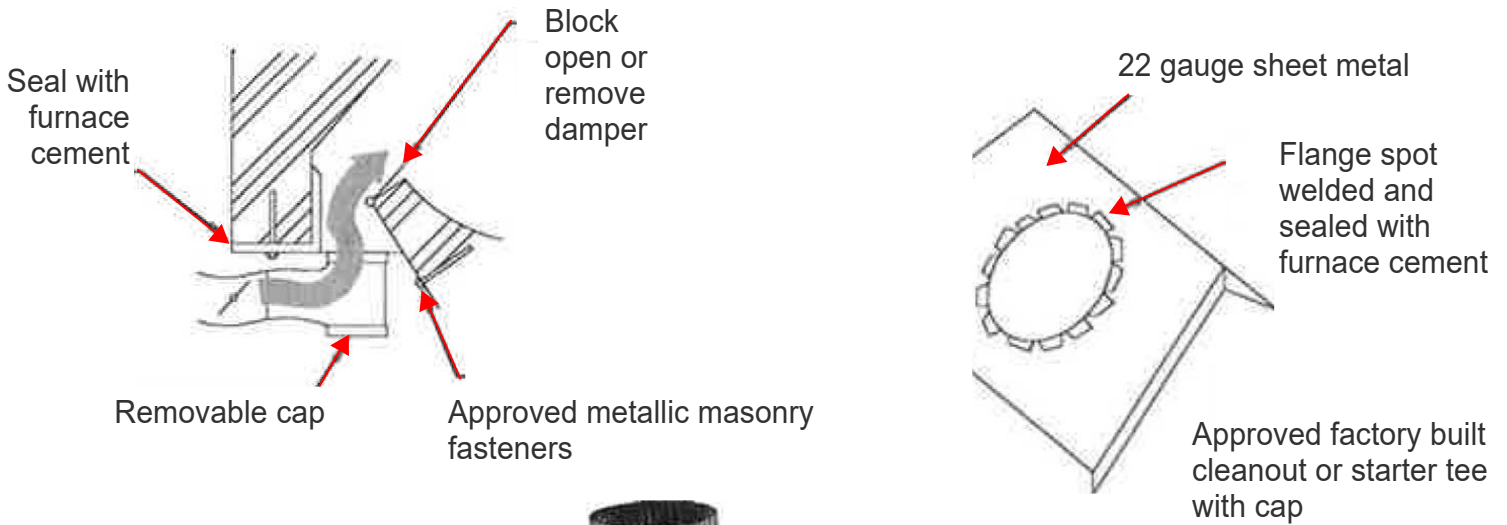
Existing Fireplaces and Chimneys

There are acceptable methods of connecting a wood burning or other solid-fuel burning appliance to a masonry fireplace. **However, it is never permissible to simply seal off the front of the firebox and run a vent connector into the firebox, terminating it there.** See the example of an approved connection in Figure 1 below.

NOTE: Wood stoves may be connected to existing metal fireplace chimneys only if the listing for that specific chimney allows it. (MOST DO NOT)

FIGURE 1
Connecting to an existing chimney

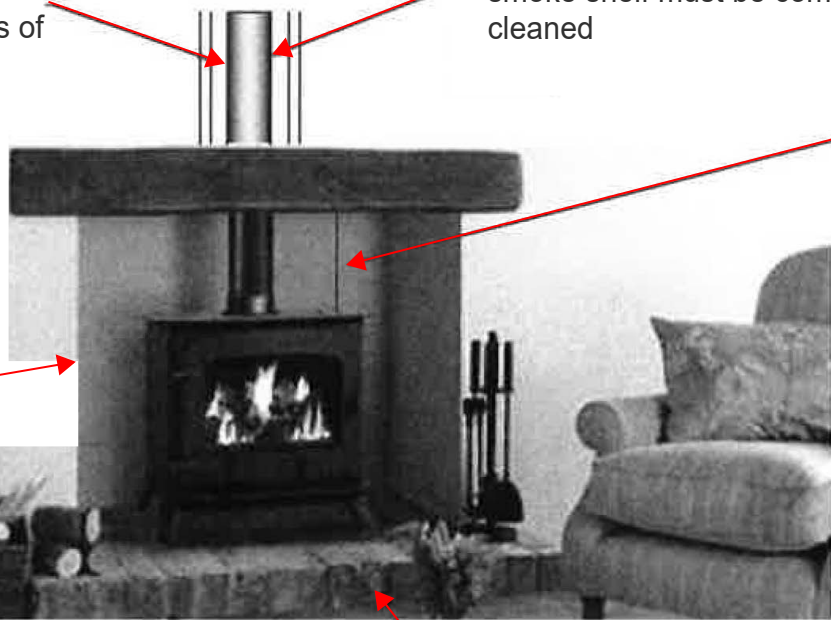
The unit you choose shall be installed per the manufacturer's instructions for that location.
Alterations shall not be approved. Alterations not per manufacturing will void your warranty.



Size of tee equal to or larger than stove outlet

Minimum clearance of 2 inches between combustible framing/ finishes and heat producing portions of the appliance

Existing chimney and liner must be in good condition. Flue and smoke shelf must be completely cleaned



Minimum clearance from wood stove to mantle per manufacturer's instructions

Minimum 36 inch clearance between the appliance and unprotected combustibles

Non-combustible hearth extension minimum 3/8" thickness. Minimum hearth slab thickness is 4 inches.

Hearth and Floor Coverings

Unless the appliance listing indicates otherwise, the following shall apply:

- The hearth slab shall extend at least 18" in front of the opening side of the appliance. Floor protection shall extend 8" beyond the sides and rear of the appliance. NOTE: Manufacturer's installation instructions shall be followed for every installation.
- The floor area directly beneath the appliance shall be protected and the minimum clearance from the bottom of the appliance to the floor protection shall be 6" unless a different clearance is specified for a listed appliance.
- The hearth slab and floor protection shall consist of not less than $\frac{3}{4}$ " thick asbestos, concrete, hollow metal, stone, tile or other approved noncombustible material. Combustible floor coverings shall not encroach into the required hearth area. Minimum hearth slab thickness is 4".

Connection to factory-built fireplace flue

A different appliance shall not be connected to a flue serving a factory-built fireplace unless the appliance is specifically listed for such an installation. The connection shall be made in conformance with the appliance manufacturer's instructions.

Required Inspections

All wood burning appliances require at least one inspection to assure that it is installed in accordance with the listing requirements and the manufacturer's installation instructions. Upon inspection, all manufacturer's installation instructions shall be with the installed unit and available to the Building Inspector. Do not cover up any portions prior to inspection. We will not approve the inspection without the instructions.

Wood Burning Responsibilities in Washington State

- You must observe burn bans. Do not use a fireplace or existing uncertified woodstove during a burn ban unless it is your only source of heat.
- You can burn only manufactured logs or wood seasoned at least one year.
- You cannot burn plastic, foil or any other garbage.
- You must operate your woodstove or fireplace correctly in accordance with its listing.
- You must maintain your woodstove or fireplace in good safe working condition.

