

SOLID-FUEL BURNING APPLIANCE PROVISIONS



2015 CODE

This handout is based on RCW 19.27, known as the "Washington State Building Code". The handout includes portions of the International Codes, and may include portions of other codes adopted by statute, publications, as well as Klickitat County Ordinance and policies.

If your property is located in the National Scenic Area, the Columbia River Gorge Commission requires you to comply with all National Scenic Area regulations. They can be contacted at (509) 493-3323.

Required Permits

A Mechanical permit is required for the installation of all wood and solid fuel burning appliances including all wood 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 Home Installation

An alteration/Installation Permit must be obtained from the Washington State Department of Labor and Industries Mobile Home Divisions (360-902-5218).

Certified Appliances

R303.9.3 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 certified or exempt from certification by the United States Environmental Protection Agency and conforms with RCW 70.94.011, 70.94.450, 70.94.453, and 70.94.457.

Exceptions:

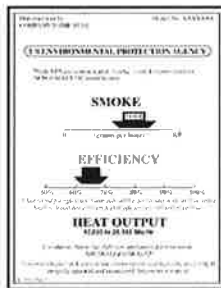
1. Wood cook stoves.
2. Antique wood heaters manufactured prior to 1940.
- 3.

The most current list of approved appliances is available at

<http://www.epa.gov/Compliance/resources/publications/monitoring/cao/woodstoves/certifiedwood.pdf>

It is illegal to install an uncertified wood stove or insert in Washington State. It is also illegal to sell, give away or exchange an uncertified solid-fuel-burning device unless for scrap.

Example of tag:



Temporary Wood Stove Label



Permanent Wood Stove Label

The list of EPA Certified Wood Heaters contains information about wood heaters that are in compliance with the "2015 New Source Performance Standard (NSPS) for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces at 40 CFR Part 60 (Subpart AAA)".

Listed Appliances

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.

Wood burning appliances tested by these agencies have been tested under extreme conditions and are approved for installation with specifications for distances to combustible materials. These specified distances are related to the actual tested heat radiation capabilities of the unit. All woodstoves, fireplaces and other mechanical equipment shall be installed in full accordance with its listing and the manufacturer's installation instructions.

General Installation Requirements

R1006.2 Solid fuel burning appliances and fireplaces. Solid fuel burning appliances and fireplaces shall be provided with fitting metal or ceramic glass doors, and:

1. 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 or greater in diameter, not exceed 20 feet in length, and be installed as per manufacturer's instructions; or
2. 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), 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:

1. 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
2. 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 to the solid fuel burning appliance as possible and shall be provided with a barometric damper or equivalent. The combustion air source shall be specified by the manufacturer or no less than 4 inches in diameter or the equivalent in area as approved.

Chimneys

Chimneys shall be constructed of masonry in accordance with Chapter 10 of the International Residential Code 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 clearance 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.

Chimney Height Termination

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 2.

Note: Wood stoves may be connected to existing metal fireplace chimneys **only** if the listing for that specific chimney allows it (most do not).

Hearth and Floor Coverings

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

- The hearth slab shall extend at least 16" in front of the opening side of the appliance. Floor protection shall extend 8" beyond the sides and rear of the appliance.
- 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 lesser clearance is specified for a listed appliance.
- The hearth slab and floor protection shall consist of not less than 3/8" thick asbestos, concrete, hollow metal, stone, tile or other approved noncombustible materials. 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.

Wood-burning Responsibilities in Washington State

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

Figure 2 – Connection to an Existing Chimney

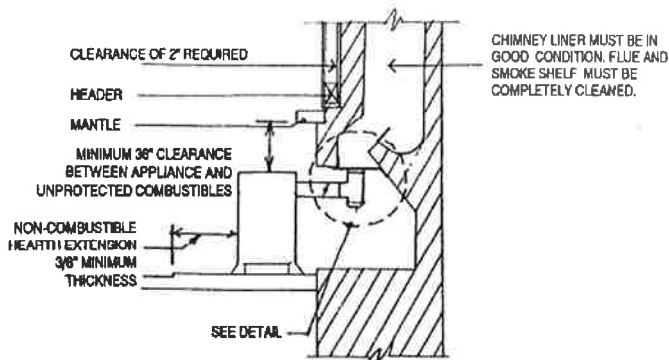
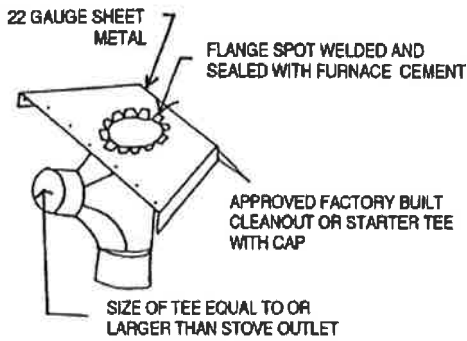
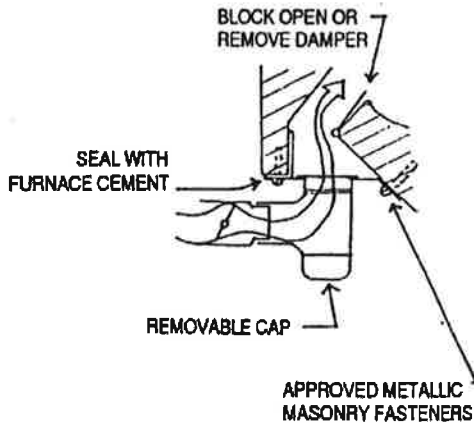


Figure 3 – Typical Woodstove Installation

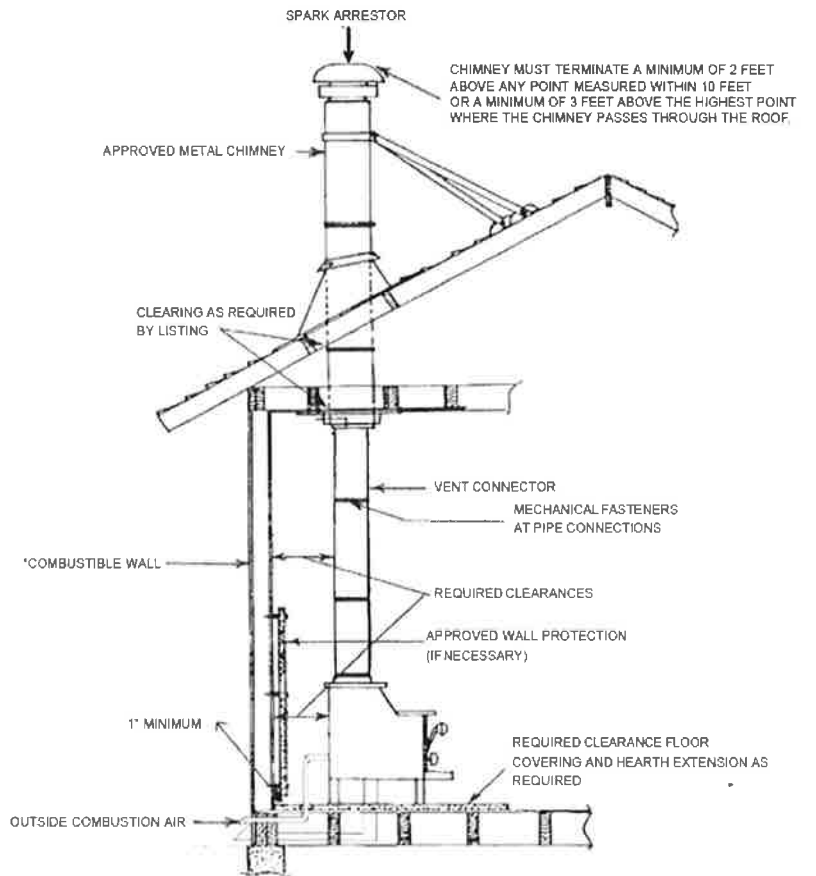
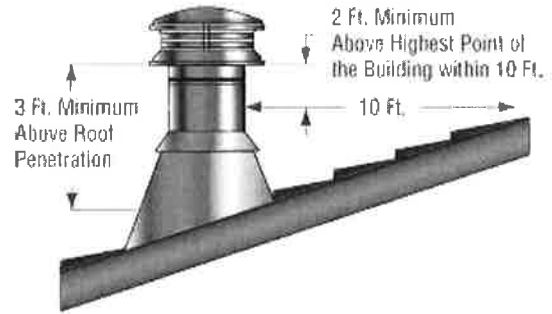
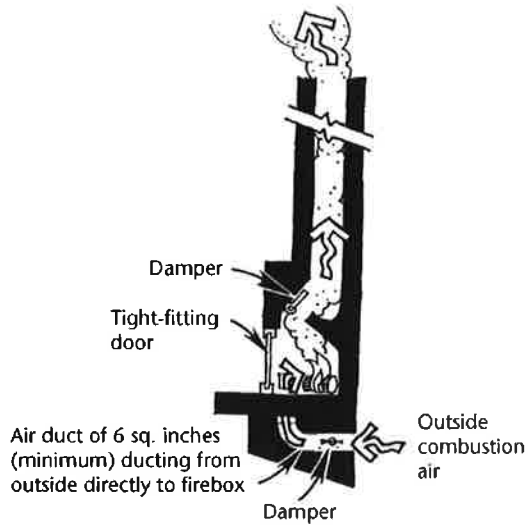


Figure 4 – Correctly Operating Fireplace with Outside Combustion Air



A list of both Certified and/or exempt appliances may be found at the following website:

<http://www.epa.gov/Compliance/resources/publications/monitoring/caa/woodstoves/certifiedwood.pdf>

Additional information regarding wood stoves and solid-fuel-burning appliances may be found at:

<http://www.epa.gov/burnwise/> or
http://www.ecy.wa.gov/programs/air/indoor_woodsmoke/wood_smoke_page.htm

For questions or clarification of items regarding woodstove or solid-fuel-burning appliances, please contact:

Klickitat County Building Department
228 W. Main Street, MS-CH-20
Goldendale, WA 98620
(800) 583-8078 or (509) 773-3706

Figure 5 – Correctly Operating Stove with Outside Combustion Air

