

## Chapter 9: Fireplaces and Wood Stoves

[V402.1] To ensure indoor air quality and reduce heat loss, the Washington State Ventilation and Indoor Air Quality (VIAQ) Code places installation requirements on all solid fuel combustion appliances including:

- All wood stoves, including cook stoves.
- Pellet stoves.
- Fireplaces.
- Masonry heaters (must have Washington State Department of Ecology approval).

### **Combustion Air**

In order to prevent backdrafting, an adequate supply of combustion air must be supplied to each solid fuel combustion appliance (see Figure 9-1).

[V402.2b1] Combustion air must:

- Come from outside the building structure.
- Originate from a point below the firebox.
- Enter through a minimum 4-inch diameter duct (minimally 6 square inches for fireplaces) less than 20 feet in length.
- Be directly connected to the appliance (see Figure 9-1).

**Exceptions:** Combustion air may be supplied to the room in which the solid fuel combustion appliance is located rather than directly to the appliance when either:

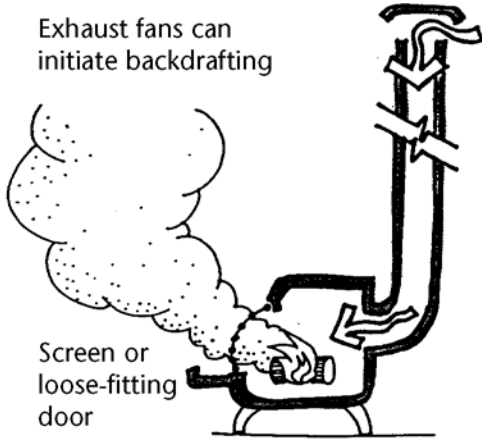
- The appliance is part of a central heating system installed in an unconditioned space in accordance with the International Mechanical Code (IMC).
- Or the appliance is installed in existing construction directly on a concrete floor or surrounded by masonry as in a fireplace.

## Backdrafting

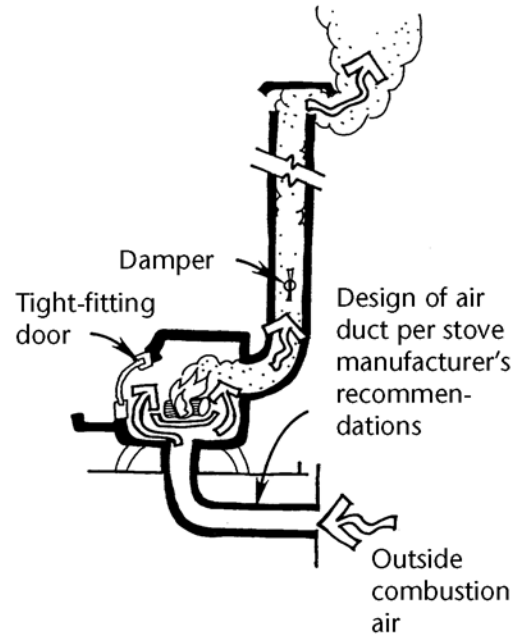
Caused by reduced air pressure relative to outside

Wind can initiate backdrafting

Exhaust fans can initiate backdrafting



## Correctly Operating Stove with Outside Combustion Air



## Correctly Operating Fireplace with Outside Combustion Air

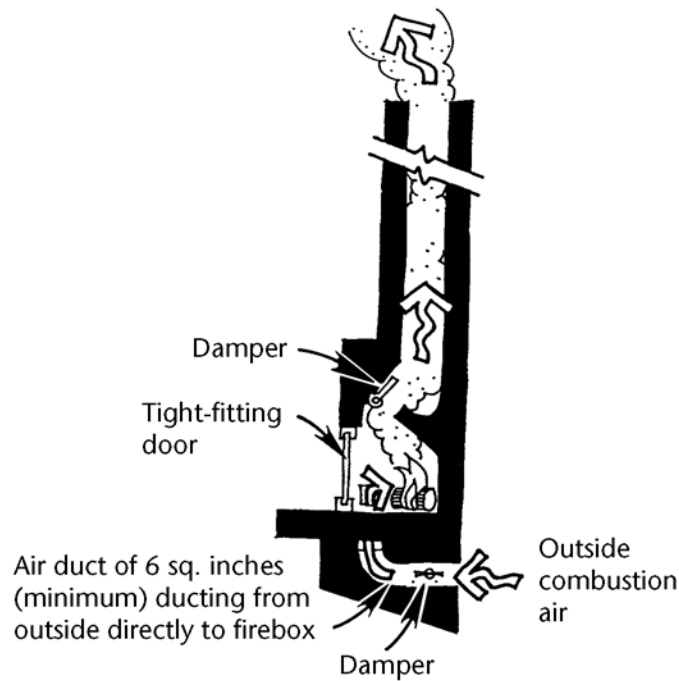


Figure 9-1

Site-built fireplaces may use a flue draft induction fan instead of doors.

**In addition:** Alternative methods of providing combustion air (using manufacturer's specifications) are allowed if the unit and combustion air supply have been certified. They must have passed a test specified by the VIAQ (see VIAQ 504.2.2) and the test must have been done by an independent lab.

### **Tight-Fitting Doors**

[V402.2a,3c,  
402.4b]

All solid fuel burning appliances, fireplaces, and masonry heaters must have tight-fitting ceramic glass or metal doors.

**Exception:** Site-built fireplaces may use a flue draft induction fan instead of doors.

*Note: Although a flue draft induction fan will minimize potential backdrafting glass doors are also recommended to prevent heat loss when the fireplace is not in use.*

### **Flue Dampers**

[V402.3a]

Fireplaces must have a tight-fitting flue damper.

**Exception:** Fireplaces with gas logs must be installed in accordance with IMC.

