



| v3 - LEED 2008

Combustion venting

EQc2 | Possible 2 points

Glossary

Intent

Minimize the leakage of combustion gases into the occupied space of the home.

Requirements

Prerequisites

2.1 Basic combustion venting measures. Meet all the following requirements.

1. No unvented combustion appliances (e.g., decorative logs) are allowed.
2. A carbon monoxide (CO) monitor must be installed on each floor.
3. All fireplaces and woodstoves must have doors.
4. Space and water heating equipment that involves combustion must meet one of the following.
 - Space heating systems in homes located in IECC-2007 climate zone 1 or 2 are exempt.

- i. it must be designed and installed with closed combustion (i.e., sealed supply air and exhaust ducting);
- ii. it must be designed and installed with power-vented exhaust; or
- iii. it must be located in a detached utility building or open-air facility.

Credits

2.2 Enhanced combustion venting measures (maximum 2 points). Install no fireplace or woodstove, or design and install a fireplace or woodstove according to the requirements in **Table 1**.

Table 1 Fireplace and Stove Combustion-Venting Requirements

Fireplace or stove	Enhanced combustion-venting measures	
	Better practice (1 point)	Best practice (2 points)
None	See 'best practice'.	Granted automatically.
Masonry wood-burning fireplace	Install masonry heater as defined by American Society for Testing and Materials Standard E-1602 and International Building Code 2112.1.	Meet requirement for 'better practice', and conduct back-draft potential test to ensure $\Delta P \leq 5$ Pascals (see "conducting a back-draft potential test" below).
Factory-built wood-burning fireplace	Install equipment listed by approved safety testing facility (e.g., UL, CSA, ETJ) that either is EPA certified or meets the following: equipment with catalytic combustor must emit less than 4.1 g/hr of particulate matter, and equipment without catalytic combustor must emit less than 7.5 g/hr of particulate matter.	Meet requirement for better practice, and conduct back-draft potential test to ensure $\Delta P \leq 5$ Pascals (see "Conducting a Back-Draft Potential Test," below).
Woodstove and fireplace insert	Install equipment listed by approved safety testing facility that either is EPA certified or meets following requirement: equipment with catalytic combustor must emit less than 4.1 g/hr of particulate matter, and equipment without catalytic combustor must emit less than 7.5 g/hr of particulate matter.	Meet requirement for better practice, and conduct back-draft potential test to ensure $\Delta P \leq 5$ Pascals (see "conducting a back-draft potential test" below).
Natural gas, propane, or alcohol stove	Install equipment listed by approved safety testing facility that is power-vented or direct-vented and has permanently fixed glass front or gasketed door.	Meet requirement for better practice, and include electronic (not standing) pilot.
Pellet stove	Install equipment that is either EPA certified or listed by approved safety testing facility to have met requirements of ASTM E 1509-04, "Standard Specification for Room Heaters, Pellet Fuel-Burning Type."	Meet requirement for better practice, and include power venting or direct venting.

Conducting a back-draft potential test

Using the results from a blower-door test, measure the pressure difference created by the presence of a chimney-vented appliance. To ensure a limited risk of back-drafting, the pressure difference (ΔP) must be less than or equal to 5 Pascals, where

$$\Delta P = (Q/C)^{1/n} \text{ (must be } \leq 5 \text{ Pascals)}$$

and Q is equal to the sum of the rated exhaust provided by the two biggest exhaust appliances in the home, and C and n are both constants produced by the blower-door test results.