



PICK A VENT, ANY VENT

Residential heating appliances come in numerous configurations, operating on any one of a number of fuel choices, so it should not come as a surprise that chimney and venting options are as varied as the systems that they support. Although some venting solutions may look similar, their performance can be quite different, so it pays to do your research to ensure that the system you select is appropriate for the task and appliance that you are working with.

Chimney and venting systems for residential heating appliances are not a “one-size-fits-all” scenario. Consideration of the fuel used and the type of appliance dictate the allowable type, size and configuration. Always check the appliance manufacturer’s instructions for the venting requirements.

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FUEL: GAS (NATURAL GAS OR LP)

When venting residential gas equipment, several appliance categories come into play. Category I (natural draft) appliances typically use aluminum venting systems known as Type B vent, or flexible chimney liner. Appliances in this category include gas furnaces, water heaters, space heaters, pool heaters, etc.

High-efficiency natural draft appliances fall into Category II. These run with lower temperatures through the vent and often under positive pressure, but tend to create a highly acidic environment. Category II appliances require special gas vent systems that are certified to ULC S-636. Furnaces and water heaters are sometimes permitted to use plastic piping systems, while boilers or smaller appliances, like tankless water heaters, make use of AL29-4C stainless steel.

Any direct-vent appliance will require a “balanced flue” system that both brings in combustion air, and expels flue gases. These appliances require specifically listed vent systems that must be individually tested and listed with each appliance.



FUEL: OIL

Oil appliances run higher temperatures through the vent system than gas systems. Also, the nature of the fuel is more acidic and corrosive, so these appliances are going to require a stainless steel venting system. Type A vents are double-wall, insulated chimney systems that use stainless steel on both the inner liner and the outer casing. These high-temperature systems are rated up to 1,000°F. Alternatively, certain appliances may be listed for use with a Type L vent. L-vent for oil applications can be characterized as “B vent with a stainless steel inner liner” (a standard B vent uses an aluminum inner liner, suitable for the lower temperatures produced by gas appliances).

When venting an oil-fired appliance into an existing masonry chimney, a stainless steel rigid or flexible chimney liner is appropriate. Type 304 or 316 grade stainless is highly recommended, due to the corrosive nature of higher-efficiency oil burners in today’s market.



FUEL: WOOD

Wood-burning appliances represent the toughest test for residential venting systems because they operate at extremely high temperatures (up to 2,100°F) and produce highly corrosive flue conditions that can lead to a build-up of creosote, a highly flammable substance.

Most wood-burning systems call for an all-fuel chimney system certified to ULC S-629. Appliances in this range include free-standing wood stoves, boilers, ovens or central heating systems. All-fuel systems are similar to the high-temperature A-vent chimneys used with oil-fired equipment, except they must be tested to more rigorous safety certification testing and are typically insulated with two-inches of insulation, rather than the one-inch of insulation for A-vent.

Built-in fireplaces are permitted to use either all-fuel (ULC S-629) systems, or specifically listed Type A vent – which must be individually tested and listed with each appliance.

When venting a wood-fired appliance into an existing masonry chimney, a stainless steel rigid or flexible chimney liner is appropriate.



FUEL: BIO FUELS: PELLET/CORN/ETC.

Pellet and corn stoves have become increasingly popular, as they may represent a lower-cost alternative energy solution to fossil fuels. These systems run low temperatures through the vent system, but produce highly corrosive flue gases (especially corn stoves). The appliances tend to be fan-assisted – so they are under positive pressure and the vent systems must be leak-proof.

Pellet pipe systems are double-wall vents made with a stainless steel inner liner and tend to use gasketing and/or silicone sealant at the joints to seal the system and prevent leakage of the “fly-ash” produced by burning wood-pellets. Corn and multi-fuel stoves are encouraged to use systems built with more corrosion-resistant stainless steel (eg. AL29-4C).

When venting a bio-fuel appliance into an existing masonry chimney, a stainless steel rigid or flexible chimney liner is appropriate.



RENEWABLE ENERGY Although most people immediately identify the sun and wind as renewable energy resources, did you know that wood should be included on that list as well? With proper forest management, trees used for wood energy can be re-grown, meaning they can be used without depleting the earth.



CARBON NEUTRAL Wood burning is carbon neutral. While trees are alive, they absorb carbon dioxide from the air. A tree that falls and decays in the forest will give up its carbon to the air as carbon dioxide. The wood burned in a wood stove gives up its carbon in the same manner.

CREOSOTE BUILD UP

Smoke rising through the chimney may condense and build up on the cooler inside walls forming a substance known as creosote. This volatile substance can ignite and burn in the chimney. Chimneys and vents for wood stoves and inserts should be inspected at least annually and cleaned as required.

Upon initial installation, and in the first year of use, get familiar with how clean the appliance burns the wood, and inspect the chimney liner frequently for the amount of deposition on the inner wall. This will determine how often cleaning will be required.

