

VENTLESS GAS FIREPLACES

Ventless gas fireplaces have become increasingly common over the last several years for a number of reasons. They are attractive, inexpensive, easy to install, and extremely fuel-efficient. However, all unvented gas appliances emit water vapor and combustion gasses into the living space. Combustion does not occur without producing byproducts, the most common of which are CO (Carbon Monoxide), CO₂ (Carbon Dioxide), and water vapor. All of these are undesirable in an indoor environment and in some cases can be deadly.

The gas appliance industry stands behind these products. Installation is permitted in the vast majority of U.S. states and they are widely used in Europe. Since 1980, oxygen depletion sensors (ODS) have been required in these units. These are designed to shut the appliance off when oxygen levels fall below 18.5% (ambient air contains 20.9% O). However, building scientists are harshly critical of the gas industry's safety claims. According to Greg Traynor, a researcher with the Lawrence Berkeley National Laboratory, there is little correlation between oxygen depletion and pollutant concentrations. "There's no way you're ever going to get the ODS to go off unless you have a way oversized heater in a tiny room," he says.

By designing out the flue, manufacturers of unvented gas appliances are assuming that the burners are foolproof and cannot possibly be poorly adjusted, improperly installed, or damaged. These units are commonly sold at home improvement stores and are frequently (usually?) installed without a permit or the benefit of municipal inspection. Changes in burner configuration, fuel composition, burner adjustment, and/or altitude can all lead to substantial increases in CO production. In the instance where a burner becomes poorly tuned, CO concentrations can reach dangerous levels long before the ODS turns the heater off.

In vented appliances, the venting system is designed to isolate occupants from combustion byproducts and remove these wastes to the exterior, even in the event of total burner failure. Nevertheless, there are hundreds of deaths and thousands of non-fatal CO poisonings in the U.S. every year because of burner and/or vent malfunctions. In a ventless appliance, the only safety factor protecting the occupant is the ODS.

Even benign gasses can create problems if they are not adequately vented. For example, a typical shower produces about 300 grams per hour of water vapor. Normally, showers are not used for a full hour and all local building codes require some sort of ventilation to remove this moisture. Consumption of 10,000 BTUH (a very small gas fireplace) produces 400 grams of water vapor per hour, and the fireplace is quite likely to burn for longer than an hour. This is significant, especially if there is a humidifier in the home. It can foster the development of mildew and mold and create significant health issues for the occupants.

In my opinion, ventless fireplaces create a significant hazard in the home and should not be permitted. Remember, even in a perfect combustion scenario, byproducts are produced and these are not substances that should be introduced into an indoor environment. For further information I suggest that you visit the website listed below.

www.quinlangasfireplaces.com