

CDR BULLETIN

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Carbon Monoxide

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By Mike Showalter

About the Author

Michael Showalter is the founder and president of CDR. He is also a licensed real estate broker and a former general contractor

Contact CDR

206-232-9075
3047 78th Avenue SE
Suite 204
Mercer Island, WA 98040

In December, 2006, a major storm struck Washington State leaving many homes without electricity for up to 2 weeks during a period of cold weather. Ineffective and toxic heat sources were used inside buildings with inadequate ventilation.

Over one thousand persons were admitted to hospital emergency rooms and 8 died. As a result, Washington State passed Senate Bill 5561 providing for carbon monoxide alarms in residential housing as follows:

1. On or before January 1, 2011 all newly constructed residential buildings (apartments and single family dwellings) must be equipped with carbon monoxide alarms.
2. On or before January 1, 2013 all buildings classified as residential must be equipped with carbon monoxide alarms.
3. Any home sold on or after July 26, 2009 must be fitted with carbon monoxide alarms and the home may not be legally occupied until so equipped. Single family dwellings (existing and owner-occupied) prior to July 26, 2009 are exempted.

4. Tenants occupying rental premises are responsible for maintenance of the carbon monoxide alarm, including battery replacement.

Wash. Rev. Code Ann. § 19.27.530 – Carbon monoxide alarms. Requires carbon monoxide alarms to be installed in dwelling units built or manufactured in the state; requires the seller of any owner-occupied single-family residence to equip the resident with carbon monoxide alarms before the buyer or any other person may legally occupy the residence; allows the building code council to exempt categories of residential buildings if it determines that requiring carbon monoxide alarms are unnecessary to protect the welfare of the occupants.

Following is an informative article written by K.R. Tremblay Jr. on common sources of carbon monoxide in homes.

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Common Sources of CO in Homes: Preventing Carbon Monoxide Problems

by K.R. Tremblay Jr. ¹ (7/06)

Accumulation of combustion gases can occur when a blocked chimney, rusted heat exchanger or broken chimney connector pipe (flue) prevents combustion gases from being exhausted from the home. CO also can enter the home from an idling car or from a lawnmower or generator engine operating in the garage.

Another source for CO is backdrafting. When ventilation equipment, such as a range-top vent fan, is used in a tightly sealed home, reverse air flow can occur in chimneys and flues. An operating fireplace also can interact with the flue dynamics of other heating appliances. Again, backdrafting may result.

Other common sources of CO include unvented, fuel-burning space heaters (especially if malfunctioning) and indoor use of a charcoal barbecue grill. CO is produced by gas stoves and ranges and can become a problem with prolonged, improper operation -- for example, if these appliances are used to heat the home. Flame color does not necessarily indicate CO production. However, a change in the gas flame's color can indicate a CO problem. If a blue flame becomes yellow, CO often is increased.

While larger combustion appliances are designed to be connected to a flue or chimney to exhaust combustion byproducts, some smaller appliances are designed to be operated indoors without a flue. Appliances designed as supplemental or decorative heaters (including most unvented gas fireplaces) are not designed for continuous use. To avoid excessive exposure to pollutants, never use these appliances for more than four hours at a time.

When operating unvented combustion appliances, such as portable space heaters and stoves, follow safe practices. Besides observing fire safety rules, make sure the burner is properly adjusted and there is good ventilation. Never use these items in a closed room. Keep doors open throughout the house, and open a window for fresh air. Never use outdoor appliances such as barbecue grills or construction heaters indoors. Do not use appliances such as ovens and clothes dryers to heat the house.

Inspect heating equipment. To reduce the chances of backdrafting in furnaces, fireplaces and similar equipment, make sure flues and chimneys are not blocked. Inspect metal flues for rust. In furnaces, check the heat exchanger for rust and cracks. Soot also is a sign of combustion leakage. When using exhaust fans, open a nearby window or door to provide replacement air.

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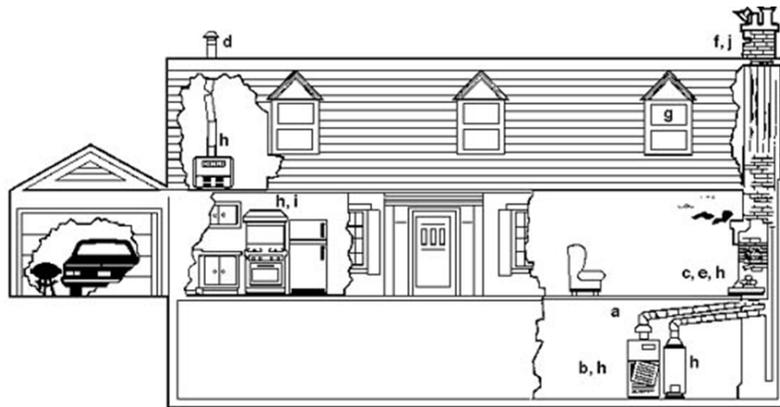


Figure 1: Sources of and clues to a possible carbon monoxide problem.

CO clues you can see:

- a. Rusting or water streaking on vent/chimney.
- b. Loose or missing furnace panel.
- c. Sooting.
- d. Loose or disconnected vent/chimney connections.
- e. Debris or soot falling from chimney, fireplace or appliance.
- f. Loose masonry on chimney.
- g. Moisture inside of windows.

CO clues you cannot see:

- h. Internal appliance damage or malfunctioning components.
- i. Improper burner adjustment.
- j. Hidden blockage or damage in chimney.

Only a trained service technician can detect hidden problems and correct these conditions!

Warnings:

- * Never leave a car running in a garage, even with the garage door open.
- * Never burn charcoal in houses, tents, vehicles or garages.
- * Never install or service combustion appliances without proper knowledge, skills and tools.
- * Never use a gas range, oven or dryer for heating.
- * Never operate unvented gas-burning appliances in a closed room or in a room in which you are sleeping.

¹ Colorado State University Extension housing specialist and professor, design and merchandising. 6/00. Revised 7/06.