



## INFORMATION BULLETIN

### PORTABLE APPLIANCE AND FAN EFFECTS ON BUILDINGS

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#### Topic

BC Safety Authority is advising homeowners/occupants that portable air conditioning units, clothes driers or circulating fans continuously exhausting warm inside air to the outside without sufficient fresh air being brought in to replace it, may create conditions leading to carbon monoxide accumulation inside a building.

**Note:** fuel burning appliances also include: wood or oil burning

#### Important Information

This condition is known as “depressurization” and occurs when inside air is exhausted faster than outside fresh air can come in. Natural draft fuel burning appliances such as furnaces and water heaters, rely on pressure differentials created between the ambient air in the building and the hot flue gases to move products of combustion from the burner through the vent to the vent exhaust outside a building. Excessive depressurization reduces the pressure differential that moves the exhaust gases in a vent and will cause a natural draft appliance to vent back into the building, potentially spilling poisonous carbon monoxide (a product of combustion) into the home. It is important to treat the home as a complete system dependent on several factors such as ambient temperature, building design, and building tightness. For example, opening a window on an upper floor could potentially cause warm air to rise from the lower part in the building creating a chimney effect within the dwelling and resulting in depressurization.

Section 8.6 of the CSA B149.1 Installation Code addresses conditions created by exhaust fans, air-supply fans, circulating fans and fireplaces:

*When it is determined that the operation of another **appliance** or other **equipment**, including an exhaust fan, **air-supply** fan, or circulating fan, adversely affects the venting, combustion, or burning characteristics of a gas **appliance**, either the condition shall be corrected (the exhausted air being replaced) or the fuel supply to the affected **appliance** shall be discontinued.*

Natural draft gas equipment draws ambient air from the building for combustion and venting. Outside air is therefore required to replace the air used for combustion and air removed from the building by air conditioning, circulating fans or other appliances, in order for natural draft gas appliances to operate and vent safely. Homeowners/occupants need to verify there is an adequate, functioning fresh air supply in place for all fuel burning equipment. Special consideration needs to be applied when renovations/upgrades such as new windows, additional insulation, draft-sealing, or installation of a large kitchen exhaust fan, clothes dryer, built in vacuum cleaner or bathroom fan(s) have taken place and which could impact air flow into or out of a building. Portable fans/equipment can also exhaust inside air without providing outside air replacement. If there is any uncertainty, it is recommended you contact a licensed gas contractor in your area to assist in determining the safe operation of your gas appliances.



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BC Safety Authority recommends the installation and use of carbon monoxide detectors which provide a warning of carbon monoxide buildup. Look for a detector that is listed with the Canadian Standards Association (CSA) or the Underwriters Laboratory of Canada (ULC). Check the expiry date on detectors as they need to be replaced periodically. Detectors are a good safety back up; however, they are not a substitute for regular maintenance, and validation of correct operating conditions of decorative, heating and cooling equipment.

BC Safety Authority website contains information about the dangers of carbon monoxide poisoning in the following link: <http://www.safetyauthority.ca/carbon-monoxide>

A handwritten signature in black ink, appearing to read "Brad Wyatt".

Brad Wyatt  
Provincial Safety Manager - Gas

**References:**

*Safety Standards Act*  
Gas Safety Regulation  
Safety Standards General Regulation  
CSA B149.1 - Natural gas and propane installation code

For more information about British Columbia Safety Authority, please visit our website at:  
[www.safetyauthority.ca](http://www.safetyauthority.ca)