RADON GAS / CO

RADON GAS

It is estimated that about 20,000 deaths annually, in the U.S.; and 2,000 in Canada, are caused by radon gas poisoning. Radon gas, an invisible, odorless and tasteless gas, occurs naturally in the environment – it is the product of decay of uranium and it is measured in units called **picocuries per liter (pCi/l).** It seeps up through rock and soil and enters a house through cracks in the foundation, around water and sewer pipes and floor drains, or in well water. In the U.S., the EPA (Environmental Protection Agency) has set the "action level" at **4 pCi/l**. In Canada, Health and Welfare has set the "action level" at **20 pCi/l**. *If you have a concern your Bulldog® Home Inspector can perform a radon test in addition to the visual inspection.*

There are many detectors available to test for radon gas. Most common, for "**short term"** testing – a minimum of **48 hours** – are charcoal canisters which absorb radon from the air to determine the presence of radon. A **"long term"** test, **90 days** or more, provides a more accurate reading.

Radon is more of a concern in finished basements with a living space. In the upper levels of the house (due to greater ventilation), the gas diffuses. Remedies usually involve minor construction and no special containment or decontamination procedures.

MEASURES TO FIX THE PROBLEM:

- **SEAL LARGE CRACKS IN THE BASEMENT FLOOR AND WALLS; SLABS ON GRADE; AND GAPS AROUND PIPES**
- **PRESSURIZING BASEMENTS OR CRAWL SPACES BY ADDING PIPES BELOW THE BASEMENT SLAB TO CARRY THE GAS AWAY**
- **MECHANICAL VENTILATION TO DISSIPATE THE RADON GAS OUTDOORS**

CARBON MONOXIDE

Annually about 200 people die due to accidental carbon monoxide (CO) poisoning; another 500 are treated in hospital emergency rooms; and many more are not accounted for, since many of the symptoms – dizziness, nausea, vomiting and fatigue – are mistaken for the flu. These symptoms stem from toxic products known as Aldehydes. Aldehydes have an acrid odor and are produced along with CO.

LEVELS OF CO—ppm (parts per million):*

12,800	can cause death in one to three minutes
1,500	can cause nausea within 20 minutes and death within one hour
800	serious health consequences and death within two hours
400	frontal headaches within one to two hours and fatal within three hours
50	maximum exposure in a eight hour period
9	typical indoor air quality

** levels according to the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)*

The source of the CO is usually faulty fuel-burning (any combustible fuel such as oil, gas, propane, wood or coal) appliance such as a furnace, water heater, space heater, wood stove, gas range, or gas dryer. The best way to minimize the risk of poisoning is through proper maintenance of those appliances. But an essential backup is a CO detector that monitors the air constantly.

- heat exchanger cracks alone do not produce CO – CO is produced in the combustion process. CO is produced when there is not enough air supplied to a combustion appliance – or when there is insufficient or restricted air openings into the space in which the appliance is located.
- properly adjusted equipment will produce very little CO – regardless of the amount, it is important to have the CO properly vented outside the dwelling. Weather-tight houses and the increased use of exhaust fans, can create a negative pressure within the home thus contributing to the problem.

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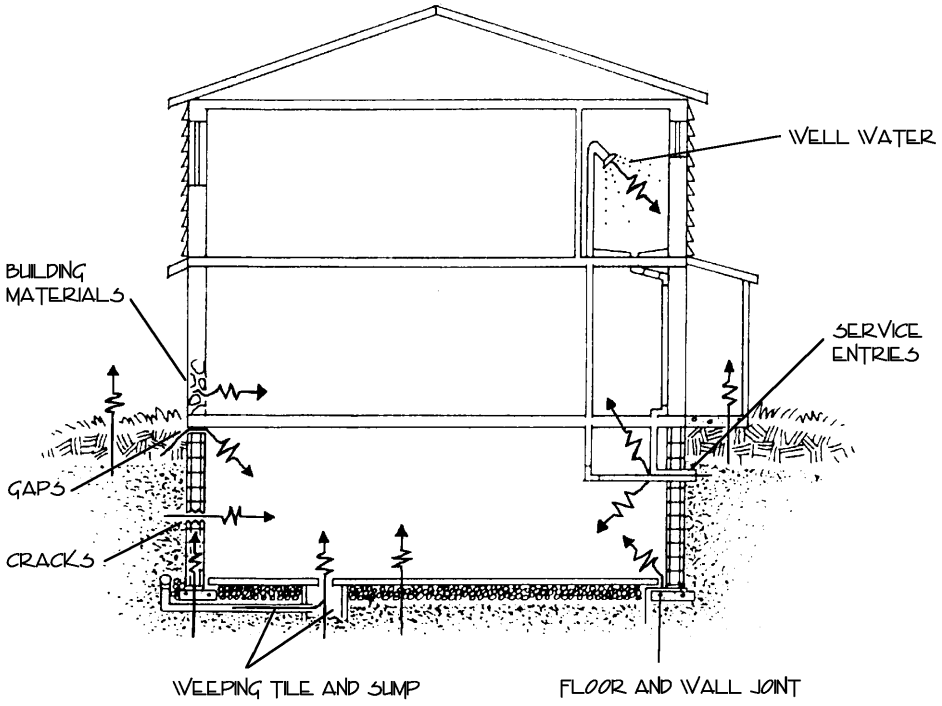
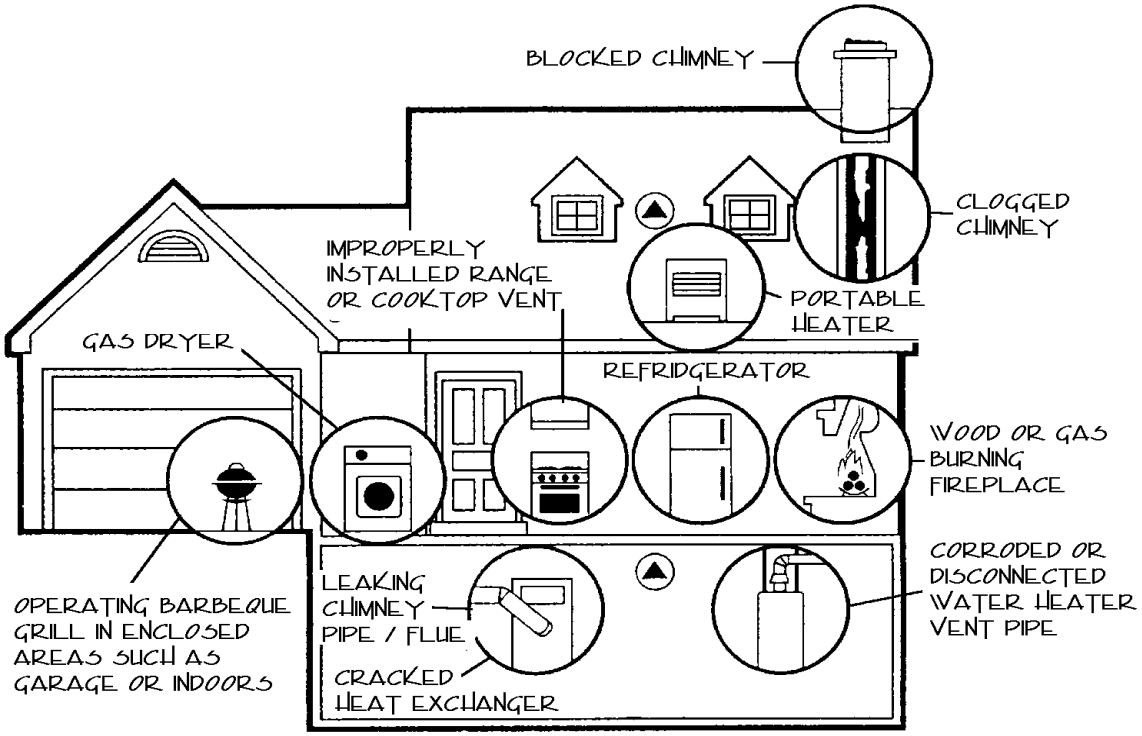


Common paths by which radon gas enters a house



Potential carbon monoxide (CO) sources in the home