RADON

What is Radon Gas?

Radon is a naturally occurring colourless, odourless, tasteless, radioactive gas that is released when uranium breaks down in soils and rocks. Radon released from the ground into outdoor air gets diluted and is therefore not harmful. However, radon can be a problem in indoor settings, where it can build up and pose a risk to your health.

How Radon Gets into Your Home

The air pressure inside your home is usually lower than in the soil surrounding the foundation. This difference in pressure draws air and other gases, including radon, from the soil into your home.

Radon can seep into your home through any opening that is in contact with the ground. It can move through cracks in the foundation, gaps around pipes, floor drains, and window casements. This can happen in both new and old homes.

In general, radon levels are highest in the lowest levels of a building, such as a basement. Radon levels can vary greatly from house to house because the accumulation of indoor radon depends on several factors, including how much uranium is naturally in the soil of the region, how much the foundation of the home was sealed during its construction, and how much ventilation occurs in the home.

Radon concentration levels will vary from one house to another, even if they are similar designs and next door to each other. The only way to be sure of the radon level in your home is to test.

Affects Of Exposure to Radon Gas

Long term exposure to high levels of radon can cause lung cancer.

Radon gas breaks down to form radioactive elements that can be inhaled into the lungs. In the lungs, radon continues to breakdown, creating radioactive particles that release small bursts of energy. This energy is absorbed by nearby lung tissue, damaging the lung cells. When cells are damaged, they have the potential to result in cancer when they reproduce.

The risk of developing lung cancer depends on how much radon is in the indoor air, as well as how long the exposure is. Short-term exposure to radon does not pose a significant risk.

Radon Levels in Canada

Uranium is a common element found everywhere in the earth's crust, as a result radon gas can be found in almost all homes in Canada. Concentrations differ greatly across the country, but are usually higher in areas where there is a higher amount of uranium in underlying rock and soil.

Radon in British Columbia

Due to geological factors, some areas in British Columbia have naturally higher surface levels of radon than others. Many of these areas are in the Interior and Northern parts of the province. However, indoor radon accumulation can vary widely from building to building, even in the same neighborhood. Even if you live in an area with generally lower levels of radon, it is still recommended to test your home for radon.

Testing Your Home's Radon Levels

Health Canada recommends that all homes be tested for radon levels.

You can hire a qualified tester to do the test, or you can use a do-it-yourself test kit. You can buy radon test kits on the Internet or from home improvement stores. You can also contact your provincial environmental office for advice. There are short-term and long-term tests available.

Both measure radon levels in the air. But Health Canada only recommends the use of the long-term test.

- The short-term test kit stays in your home or office for 2 to 90 days. Radon levels vary daily and from season to season. So, you may want to follow up the first short-term test with a second test.
- The long-term test kit stays in your home or office for more than 90 days. A long-term test will give more accurate results.

Health Canada recommends placing the test kit in your home on the lowest level that you regularly use.

Radon Regulations

Public awareness of the long term affect of exposure to Radon gas is relatively new in Canada. Many homes in Canada do not have a Radon system and homeowners are not aware of, nor do they test for Radon levels in their home.

Although there is currently no federal regulation that governs an acceptable level of radon in Canadian homes, Health Canada, in partnership with the provinces and territories, has developed a guideline. The current Canadian guideline for radon in indoor air for dwellings is 200 becquerels per cubic metre (200 Bq/m3).

In British Columbia, December 2014, new requirements for protection from soil gases become effective. BC Building Code requires “a radon rough-in be installed”. This is the installation of a radon vent pipe which extends through, and terminates outside, the building.

The BCBC is a design and construction code that does not apply post-occupancy.

More information on-line

Radon (bccdc.ca)

Radon Gas | Environmental & Seasonal Health | IH (interiorhealth.ca)

b14-07_new_radon_rough-in_requirements.pdf (gov.bc.ca)

Guide for Radon Measurements in Residential Dwellings (Homes):

https://www.canada.ca/en/health-canada/services/publications/health-risks-safety/guide-radon-measurements-residential-dwellings.html