

Are the radon detectors themselves dangerous or do they contain toxic substances?

No. Radon detectors do not pose a health risk.

How long should a radon test be conducted?

Because there are so many variables that affect radon, including weather, local soil and rock type, building type and construction materials, the longer the radon test is carried out the more accurate the result. The Nova Scotia Department of Environment and Labour recommends testing be carried out over a period of at least three months and, if possible, in the coolest months of the year. During the heating season ventilation is lowest and radon levels are usually at their highest. For accurate results, carefully follow the instructions included with your test unit.

Where in the building should I perform the test?

The highest radon concentration is most likely to occur in basements and lower floors, especially if those areas have poor ventilation. A radon test should be carried out in lower level rooms of dwellings where the occupants spend the most time, such as bedrooms or living rooms.

How can radon levels in a dwelling be reduced?

Increasing the ventilation and closing entry points, especially on the ground floor, may reduce the indoor radon levels. However, the reduction may only be small and additional methods of radon reduction may be required, particularly if the initial radon level was very high.

Where can radon detectors be obtained?

Contact your local retailer of home safety equipment for information.

Who pays to reduce radon in a home or dwelling if radon levels exceed the guideline?

Building owners are responsible for fixing their home or dwelling if they are found to have radon levels above the Canadian guideline. It is recommended that the radon level in a home or dwelling be reduced to the guideline, and lower if practical.

What about radon in drinking water? Should I have my water checked?

There is no Canadian guideline for radon in drinking water. It has generally been concluded that the risk from radon in drinking water is insignificant compared with the risk from radon in indoor air. If you are concerned, you can have your drinking water tested for radon by a private laboratory here in Nova Scotia.

Two laboratories in Nova Scotia that test for radon in drinking water:
QEII Health Sciences Chemistry Laboratory in Halifax: 902-473-8466
Maxxam Analytics, Halifax: 902-420-0203

More information on radon can be found on the Web at:
http://www.hc-sc.gc.ca/iyh-vsv/environ/radon_e.html.
<http://www.rpii.ie/radon/index.html>
<http://www.epa.gov/radon/>

To obtain other publications in this series, or to find out more, please contact the Nova Scotia Department of Environment and Labour at 902-424-5300 (toll free: 1-877-9ENVIRO) or visit us at <http://www.gov.ns.ca/enla/>.

Other brochures in this series:
Understanding Radon in Nova Scotia's Indoor Air
Radon in Nova Scotia's Drinking Water

Radon Testing in Nova Scotia: *Guidelines and Resources*



What is radon?

Radon is a radioactive gas that is formed when uranium breaks down naturally. It has no colour, odour, or taste. Radon is slowly released from the ground, water, and some building materials that contain very small amounts of uranium, such as concrete, bricks, tiles and gyproc. When radon is released to outdoor air, it is diluted by the atmosphere and is not a concern. However, in enclosed spaces, like dwellings, it can sometimes accumulate to high levels.

What are the health effects of radon?

The only known health risk associated with exposure to high levels of radon in indoor air is an increased lifetime risk of developing lung cancer. This is because radiation from inhaled radon gas can damage cells in the lungs. The effects depend on the levels of radon and how long a person is exposed to these levels. The Canadian guideline is based on an exposure period of about 70 years spent in a dwelling that contains elevated levels of radon 75% of that time.

Exposure to radon and tobacco use together can significantly increase your risk of lung cancer, however, not using tobacco products remains the most effective way to reduce the risk of lung cancer.

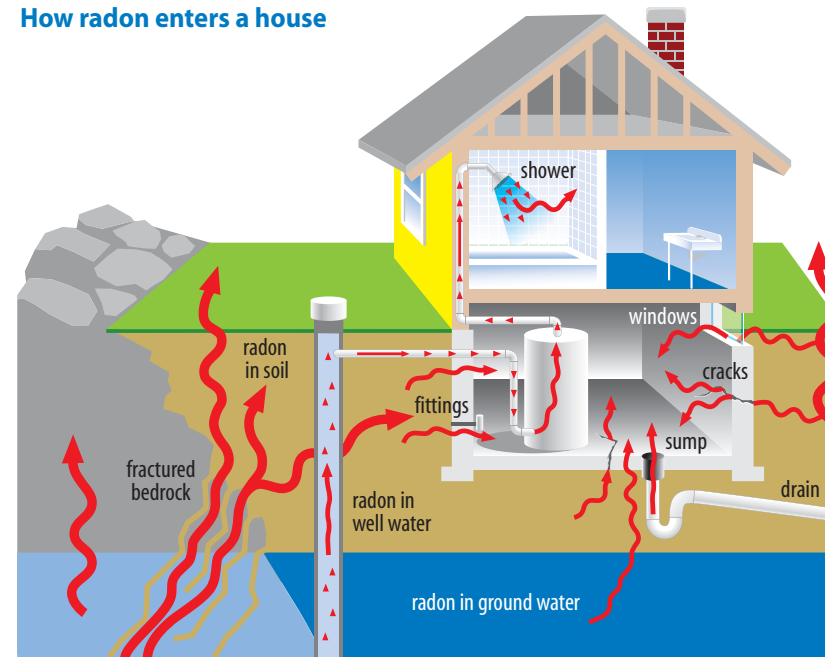
What is the current guideline for radon in indoor air?

The current guideline for radon in indoor air for dwellings is 200 Becquerels per cubic metre (200 Bq/m³). The Becquerel is a unit that describes one radioactive disintegration per second. Examples of dwellings are residential homes, or public buildings such as schools, hospitals, long-term-care residences and correctional facilities.

Workplaces are also subject to guidelines for radon. In Nova Scotia, workplaces are covered under the Occupational Health and Safety Regulations. For more information about radon levels in the workplace, please contact the Occupational Health and Safety Division of Environment and Labour.

Individual dwelling owners may wish to reduce radon levels as much as they reasonably can, using methods they find affordable and practical. However, the level in a dwelling should not be above the Canadian guideline of 200 Bq/m³.

How radon enters a house



How does radon enter the dwelling?

Because radon is a soil gas it can enter a dwelling through any opening that contacts the soil around or underneath the building. For example, it can seep in through cracks or holes in basement floors or walls, including openings for utility connections, and through hollow support posts. If there is radon in the dwelling's water supply, radon can also enter the space via running tap water. Both old and newer structures can have elevated levels of radon.

What is the difference between Bq/m³ and pCi/L?

Both these units are measurements of radioactivity. The international community uses the Becquerel per cubic metre of air, while the USA uses the Picocurie per litre to measure radon. One Bq/m³ is equivalent to approximately pCi/Lx37.

How can a building be tested for radon?

There are several methods that can be used to test a dwelling for radon. Here are some of the more common devices.

A. Charcoal Detectors: These detectors are exposed to the air in your dwelling for a period of up to seven days, then are sealed and sent for analysis. The cost of the detector and analysis is approximately \$50 - \$75.

B. Passive Alpha-Track Detectors: These devices are exposed to the air in a dwelling for periods of up to one year after which they must be returned to the laboratory for analysis. Cost of the detector and analysis is approximately \$75 - \$100.

C. Active Alpha-Track Detectors: Similar to the passive alpha-track detector this device provides an accurate measurement for periods of one to four weeks. These units must also be returned to a laboratory for analysis at a total cost of about \$75 - \$100.

D. Electret Ion Chamber (E-perm): These units come in two variations; one for short term tests (typically a few weeks) or long term (several weeks or months). These units are returned to a laboratory for analysis. Cost of these units is approximately \$75 - \$100.

E. Continuous Monitors: As the name implies these devices will measure radon over a period and report the results per hour. The results can be available in the home and the cost is usually more expensive than the other units.

Prices may vary, so it's best to shop around.

Who pays for radon testing in Nova Scotia?

Homeowners are responsible for the cost of radon testing in their own homes. The cost of testing in other dwellings is the responsibility of the dwelling owner.

Are the cheaper methods of measuring radon as good as the more expensive ones?

All of these devices will tell you whether you have radon in your home but you must follow the instructions that come with the detector. Because radon levels vary considerably over time, the longer the test period the more accurate the result.

After completing work to reduce radon levels in a dwelling should the air be retested?

Yes. To ensure that the radon levels in the dwelling have been lowered and meet the guideline a retest must be carried out.