



Building Division Bulletin

Soil Gas Mitigation Program

Soil gases occur naturally in our physical environment. One of these intrusive gases which has been causing concern across the Province is radon.

The Municipality of Central Elgin is proactively addressing radon gas in new buildings and additions through its Soil Gas Mitigation Program. This program applies to all building permits applied for after February 29, 2016.

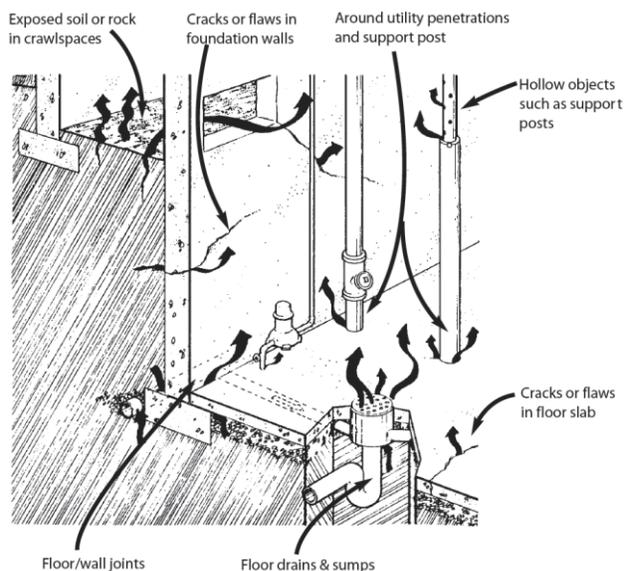
What is Radon Gas?

Radon is a colourless, odourless and tasteless gas that is formed naturally by the radioactive breakdown of uranium contained in soil, rock and water. Radon usually escapes from the ground into the air where it mixes with fresh air resulting in concentrations too low to be of concern. However, when radon enters an enclosed space, such as a building, it can accumulate to higher concentrations. Radon has been associated with an increased risk of developing lung cancer. The level of risk depends on the concentration of radon and the length of exposure.

How can Radon Enter your Home?

Air buoyancy and wind pressure induces a phenomenon known as Stack Affect into buildings which creates a negative pressure indoors. This Stack Affect can act to draw these gases into our homes where they are in contact with the soil through cracks and gaps around penetrations.

Radon is heavier than air and therefore tends to collect in basements, particularly in the winter months when windows and doors are kept closed. The amount of radon in a home will depend on many factors such as soil characteristics, construction type, condition of foundation and occupant lifestyle to name a few. This makes it very difficult to predict the levels in any one home. The concentration can vary dramatically from one home to another.



The only way to determine whether your home has high radon levels is to test for it.



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Radon Gas in Central Elgin

According to the results from residential surveys completed by Health Canada, 7.6% of 92 randomly tested buildings within Elgin County exceeded Canada's recommended guideline for radon gas of 200 Bq/m³. This level of test failure has prompted the implementation of a Soil Gas Mitigation Program.

New Homes and Additions in Central Elgin

The Soil Gas Mitigation Program has been implemented in accordance with the Ontario Building Code Regulations. The following options, as outlined in the Ontario Building Code, for soil gas mitigation are available for owners and/or builders to utilize:

Option #1: Radon Ready

- ✓ Provide a minimum 100mm (4") of granular fill under the basement floor slab
- ✓ Rough-in a soil gas pipe in accordance with Supplementary Standard SB-9
- ✓ Mandatory radon gas testing

This option will provide for the future connection of an extraction system should it become necessary.

Option #2: Radon Barrier

- ✓ Provide a minimum 100mm (4") of granular fill under the basement floor slab
- ✓ Provide a soil gas barrier on exterior foundation walls in accordance with Supplementary Standard SB-9
- ✓ Provide a soil gas barrier under the basement floor slab in accordance with Supplementary Standard SB-9
- ✓ Voluntary radon gas testing

This option will provide a barrier to soil gas ingress

Option #3: Radon Extraction

- ✓ Provide a minimum 100mm (4") of granular fill under the basement floor slab
- ✓ Provide a soil gas pipe in accordance with Supplementary Standard SB-9
- ✓ Provide an active sub-slab depressurization system in accordance with Supplementary Standard SB-9
- ✓ Voluntary radon gas testing

This option will remove soil gases from under the floor slab before they can enter the home.

Building permit applications and details shall clearly indicate the chosen option.

Radon Gas Testing in Existing Homes

Although all new construction may not be subject to mandatory radon testing in accordance with the Ontario Building Code, Health Canada recommends that all buildings be tested for radon gas. In existing homes, where construction is not proposed and individuals wish to have their



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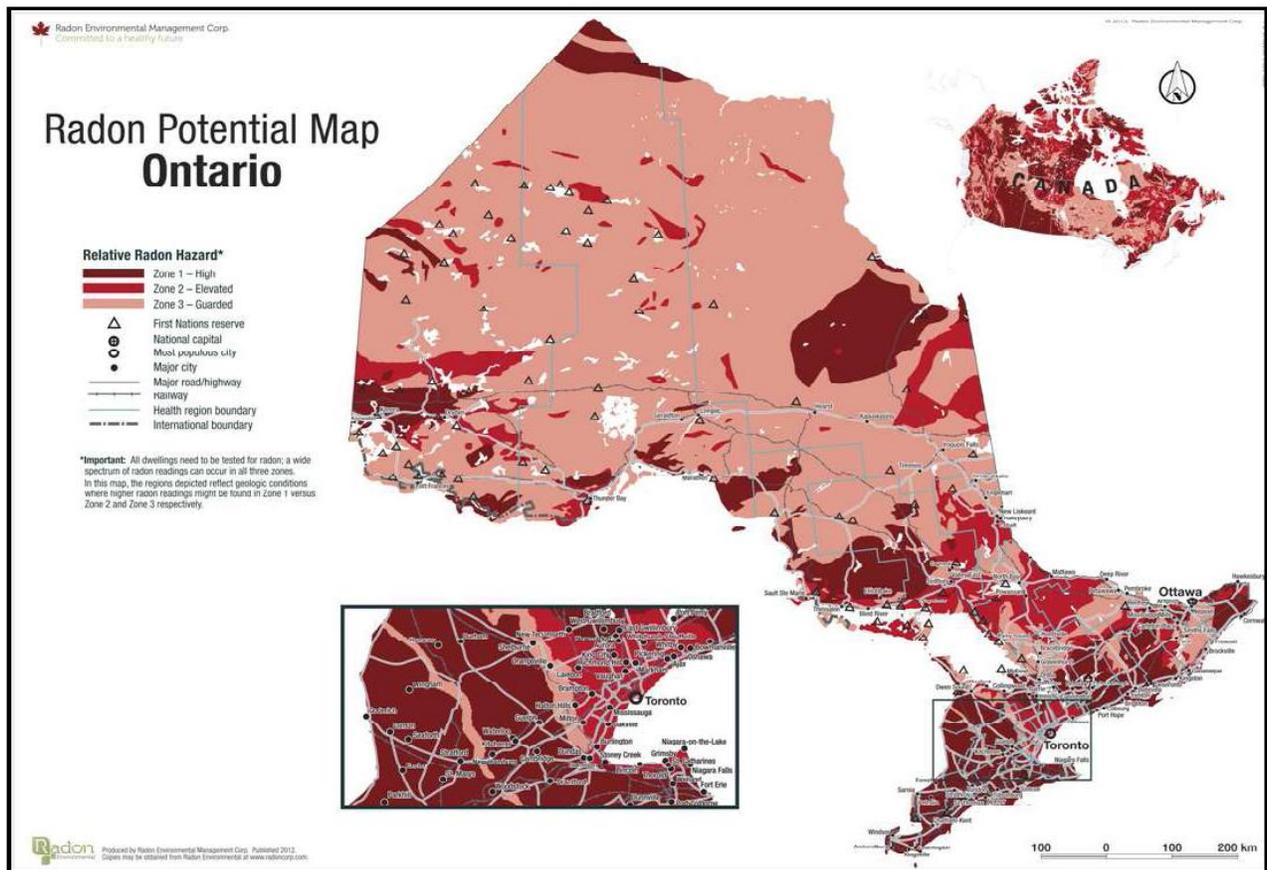
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homes tested for radon, test kits can be purchased voluntarily through certified agencies. A list of certified agencies can be found at www.centralelgin.org. Health Canada recommends that radon gas testing consist of a long-term test (minimum 91 days) carried out by a certified professional during the winter season. This means that the test must begin between November 15th and February 15th.

Where a **mandatory** test result exceeds 200 becquerels per cubic metre (Bq/m³), the builder will be responsible for remediation work.

Where a **voluntary** test result exceeds 200 Bq/m³, the home owner may contact the builder and/or Tarion to discuss next steps.

For more information about radon visit Health Canada's website at: healthcanada.gc.ca/radon



Radon Potential Map: www.radoncorp.com