

Home Building Basics: What Licensed Builders Need to Know About Radon

HCRA TECHNICAL BRIEF
OCTOBER 2025



INTRODUCTION

The Home Construction Regulatory Authority (HCRA) licenses and regulates the people and companies who build and sell new homes in Ontario. By holding licensed builders to professional standards for competence and conduct, the HCRA gives homebuyers confidence when making one of the biggest purchases of their lives – a new home.

In addition to licensing, the HCRA protects new home buyers by providing educational resources to support informed decision-making. We also work to strengthen the homebuilding industry by helping builders stay current with technical knowledge and evolving requirements.

New Ontario Building Code requirements that came into effect on April 1, 2025, and updates to Tarion's Construction Performance Guidelines (CPG) now address soil gas and radon mitigation. In response, the HCRA and Tarion have developed this educational brief, with input from industry experts, to help licensees implement these changes.

DISCLAIMER: This educational resource supports your implementation of the current Ontario Building Code and other legal and regulatory requirements as a licensed builder in Ontario. The HCRA and Tarion have consulted with municipal building officials, licensees, and industry experts to find consensus on these requirements. We recommend that you contact your municipality to ensure clarity regarding local requirements.

Always consult the most current version of the Code for accurate information and guidance. This is a living document that will continue to be updated, if any clarification or guidance from MMAH is publicly released.



CONTENTS

ABOUT RADON	1
2024 ONTARIO BUILDING CODE REQUIREMENTS	2
ONTARIO NEW HOME WARRANTY REQUIREMENTS	5
WORKING WITH YOUR MUNICIPALITY	6
ADDITIONAL EDUCATIONAL RESOURCES	7
ACKNOWLEDGEMENTS	7





ABOUT RADON

Radon is a radioactive gas formed by the breakdown of uranium in soil, rock, and groundwater. It is colourless, odourless, and tasteless, making it undetectable without specialized testing. Radon provisions were added to the National Building Code in 2010. With increased public awareness of radon risks in the built environment, the 2024 Ontario Building Code has been updated to improve health and safety measures for homeowners.

Overview of Radon Levels Across Ontario

- Radon concentrations vary widely across Ontario, with some regions experiencing higher levels due to geological formations.
- Radon is measured in becquerels per meters cubed (Bq/m³).
- The [Health Canada Radon Map](#) shows areas with high, elevated, and guarded radon hazards. Being in a high-risk area does not mean guaranteed radon in the home and being in a low-risk area does not guarantee you will have low radon in your home.
- Two homes beside each other, built the same way, can have completely different radon results.
- For more information about radon levels in Ontario, [view the recent Canada-wide study](#).

2024 ONTARIO BUILDING CODE REQUIREMENTS

A copy of the 2024 Ontario Building Code that came into effect April 1, 2025 can be requested from the [Ontario Ministry of Municipal Affairs and Housing](#).

The Code requires that wall, floor and roof assemblies separating interior conditioned space from the ground control the ingress of water, moisture, and soil gas.

This document applies to new homes within the scope of Part 9 and outlines requirements for floor assemblies only, specifically, non-structural concrete floor slabs that are not exposed to hydrostatic pressure and are placed on granular fill in accordance with 9.16.2.

This document does not include requirements for foundation wall and underground roof assemblies to control the ingress of water, moisture, and soil gas. For information on these requirements, please refer to the Code.

The 2024 Code requires every new home where a wall, roof, and floor assembly is in contact with the ground to have a soil gas rough-in pipe, as specified in subsection 9.13.4. The rough-in pipe will allow an active radon mitigation system to be added with more ease and speed if the need arises due to high radon levels in the home.

Additionally, subsection 9.25.3 addresses the air barrier, which is now required to extend throughout the basement, including under the slab (previously, separately referred to as the soil gas barrier). The Code no longer refers to the basement slab as an air barrier, therefore at a minimum, 6 mil polyethylene sheets are required as an air barrier under the slab. Any penetration to the air barrier must be sealed properly to maintain the integrity and continuity of the barrier (electric boxes, sump pits, backwater valve, etc.). This is an important measure to ensure radon cannot enter the house through gaps in the air barrier.

The Code identifies three exposure risk areas with respect to radon:

- There are three “designated areas” outlined in article 9.1.1.7 (Elliott Lake, Township of Faraday, Township of Hyman). Here, buildings are required to be designed and constructed so that the annual concentration of radon does not exceed 200 Bq/m³.
- In areas of the province where radon gas is “known to be a problem” as indicated in article 9.13.4.1.(3), and as identified by the local municipality or Public Health Unit, buildings are required to be designed and constructed to meet the radon limitations in article 9.1.1.7.
- In all “other areas” of the province, the Code prescribes minimum requirements for the leakage of soil gas from the ground into the building as indicated in subsection 9.13.4.

It's important to note that every local Chief Building Official has the authority to interpret these requirements based on their individual municipality. While this document shares Code information, please contact your local building department to ensure that you are fully informed of your municipality's specific requirements.

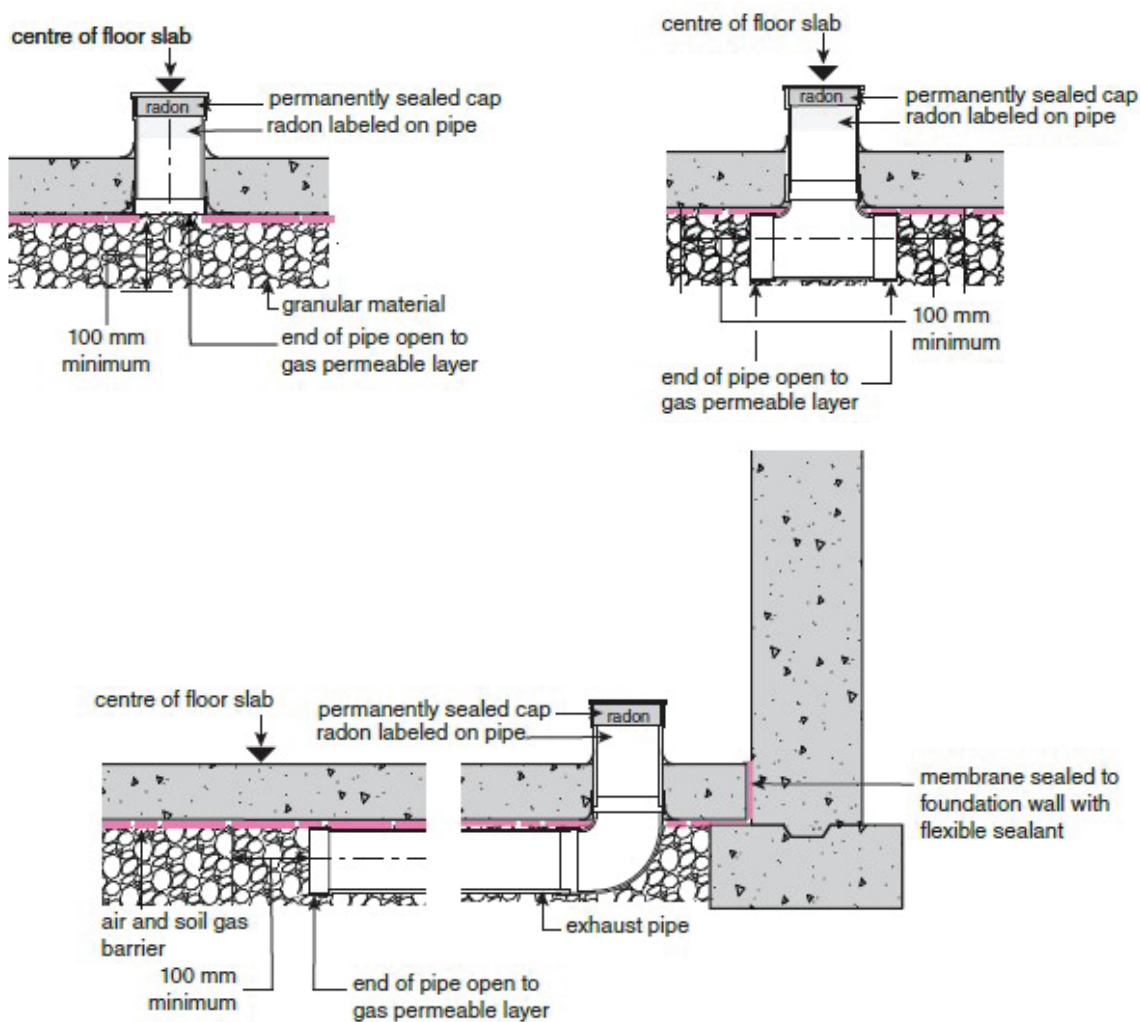
Rough-in Details

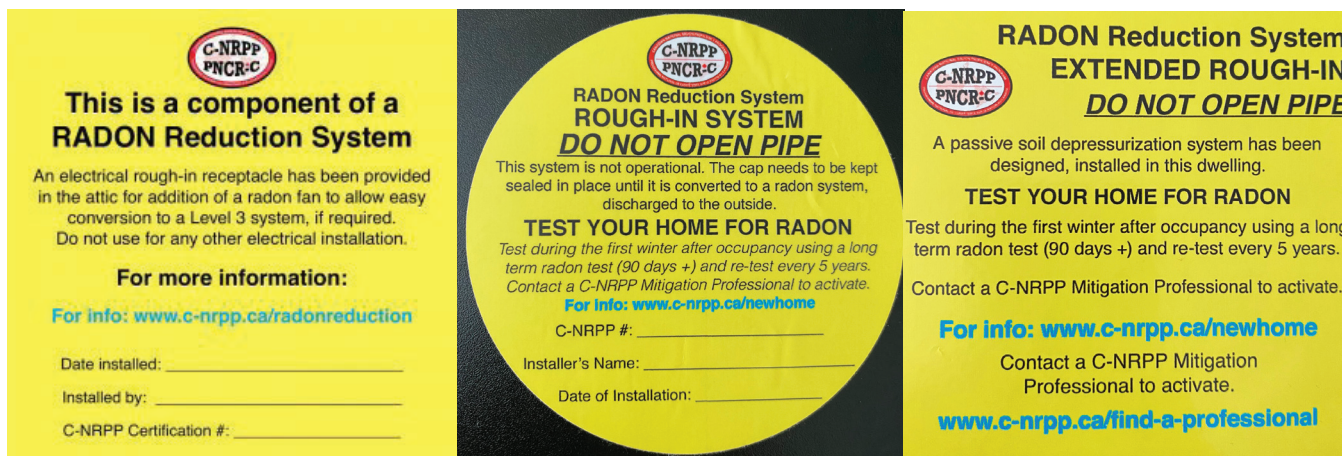
In general, requirements for the sub-slab rough-in pipe are:

- Rough-in pipe that is at least 4" (100mm) in diameter;
- Sealed to ensure integrity of air barrier (air barrier must be constructed in accordance with section 9.25.3 "Air Barriers" or MMAH Supplemental SB-9);
- Pipe must be clearly labelled to indicate the pipe should be used only for removal of radon;
- Under the floor, the pipe should be in no less than 4" (100mm) of granular material, and located at the center of the floor (pipe can be extended up through the floor at the sides of the room as long as the pipe below the floor would be drawing air from the center).

According to the Code, the pipe under the slab may be solid or perforated, however some municipalities may allow one and not the other. There are considerations for either option outlined in [CAN/CGSB-149.11](#).

Figure 1. Three rough-in options. Diagrams from the City of Hamilton.

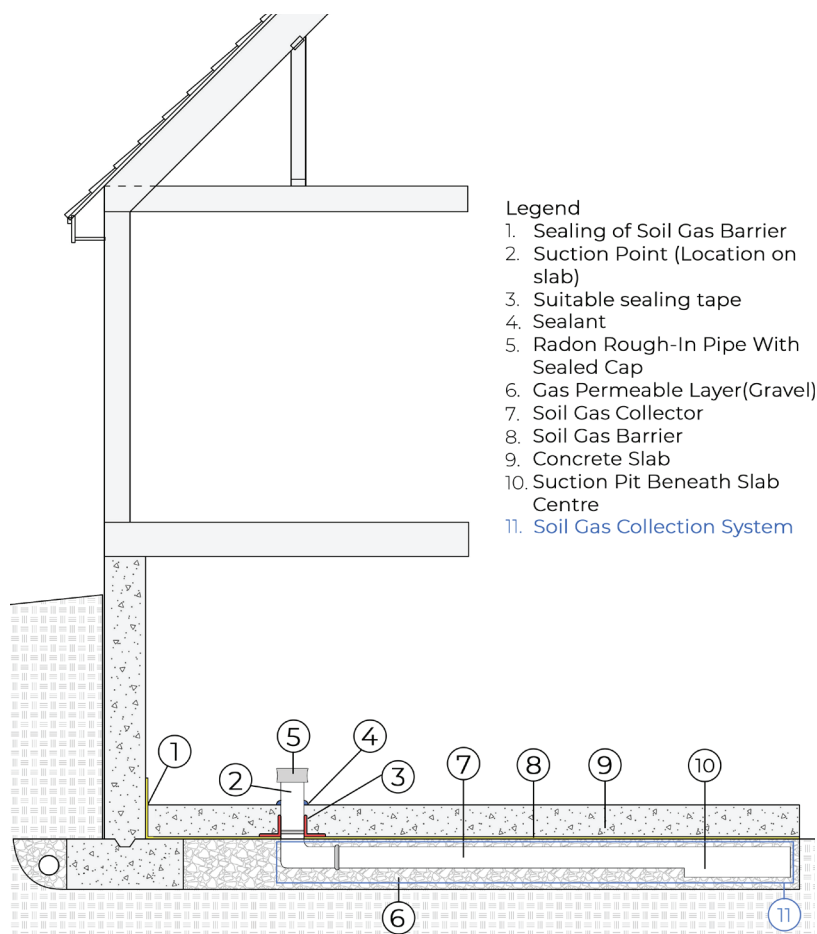




Examples of radon system labels that can be ordered for free from C-NRPP.

Figure 2. Cross-section of a house with a rough-in pipe extending from centre of slab to wall-adjacent.

Note: This is just one acceptable example of a soil gas barrier option.



Testing

The Code does not prescribe radon testing by builders to demonstrate compliance with the radon limit. The local municipality should be contacted to determine local testing requirements, but it is also up to the discretion of the homeowner to check the levels in their own home.

Radon is covered under the statutory warranty, provided by the builder and backed by Tarion, so that any time within the first seven years from the possession date, the home should not have radon levels higher than 200 Bq/m³ (see next section for more details around the warranty).

The new requirement for a rough-in radon system offers a more straightforward option if a full system is required in the future to achieve the radon limit.

In areas where there is a higher risk/chance of radon in the home due to the geographical factors, it may be worth considering adding a longer rough-in pipe that goes to the outside of the house so that only a fan needs to be added to make the system active.

Note: *If you are unsure of your municipality's designation or radon requirements, please check with your local building department to clarify before preparing permits on your new builds.*

ONTARIO NEW HOME WARRANTY REQUIREMENTS

Your Obligations to Your Homeowner

Ontario's statutory new home warranty (provided by the builder and backed by Tarion) covers homes with radon levels in excess of 200 Bq/m³ regardless of its geographic location. This coverage falls under "environmentally harmful substances or hazards" in the Ontario New Home Warranties Plan Act.

If a homeowner shows long-term test results (i.e. 91 days or more) for radon levels above 200 Bq/m³, and the home is less than 7 years old then the builder is required, at a minimum, to install a mitigation system that brings the radon level below 200 Bq/m³ to fulfill the new home warranty requirements. The current coverage is \$50,000 for homes who have a signed Agreement of Purchase and Sale after February 1, 2021. For more information you can consult some Tarion resources:

- [Eight quick facts about radon](#)
- [How your new home warranty protects you against the dangers of radon gas](#)

A standard 91 days or more test should be conducted by the homeowner with a purchased test kit, or by a [C-NRPP certified professional](#). Action should be taken if the radon level in the home is above 200 Bq/m³ on average over the 91 days.

Builders can choose to add a system themselves or hire radon mitigation experts.



WORKING WITH YOUR MUNICIPALITY

Note: On June 5, 2025, the Ontario government passed Bill 17: Protect Ontario by Building Faster and Smarter. The impacts of this new legislation could change how you work with your local municipality. Please bookmark this document, as the HCRA may update any information in this document that could support you in working with your local building department.

With the updated Code, your local municipalities may alter their processes. For example, there may be additional inspections that must be completed. Many municipalities have already informed the HCRA that they will require an additional inspection for the soil gas barrier, which would be the sheet of poly before the concrete is poured. There will also be an inspection of the radon rough-in pipe, which may occur at the same time as the underground plumbing inspection.

When submitting plans, builders must provide details, either as a note in the foundation drawing or as a separate drawing, describing the radon rough-in pipe to ensure the sizing, placement, and methodology is accurate before the permit is provided.

In all cases, it is always best to consult your local building department to discuss the approach that you have in mind and clarify what may or may not be allowed.



ADDITIONAL EDUCATIONAL RESOURCES

Training Ontario Course: Radon Mitigation

Building Knowledge Canada Radon Webinar

Canadian Association of Consulting Energy Advisors - Radon Webinar

Resources for Building Officials From Ontario Building Officials Association:
Part 9 - The House - Building Envelope

ACKNOWLEDGEMENTS

We would like to thank the following organizations for their providing technical peer reviews of this document: Tarion, the C-NRPP certified team at Doug Tarry Homes, Building Knowledge Canada, PHBI/Training Ontario, Owens Corning, National Research Council, and members of the Ontario Building Officials Association, Ontario Large Municipalities Chief Building Officials, and the OBOA's Building Code Advisory Services.



hcraontario.ca