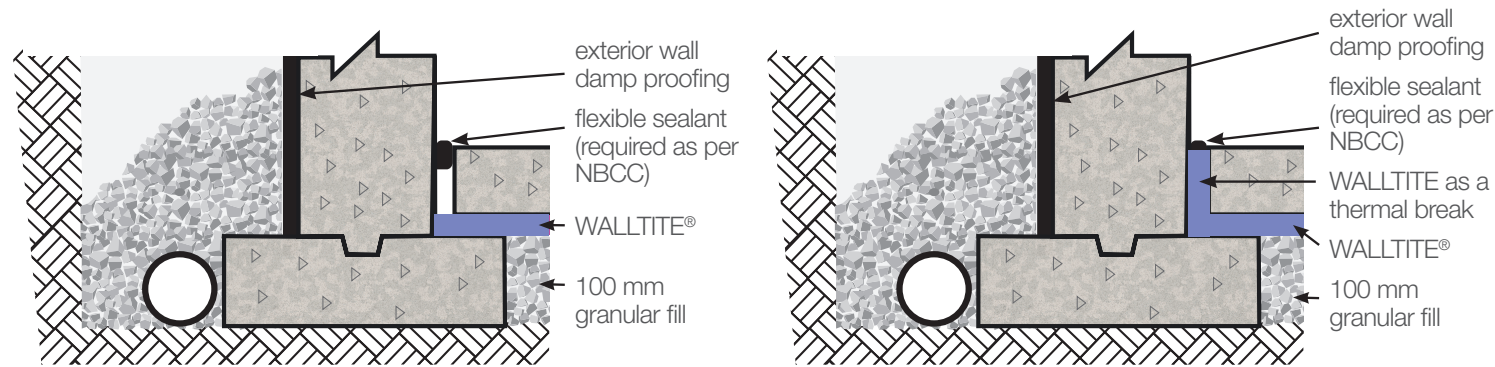


# A Preventative Solution

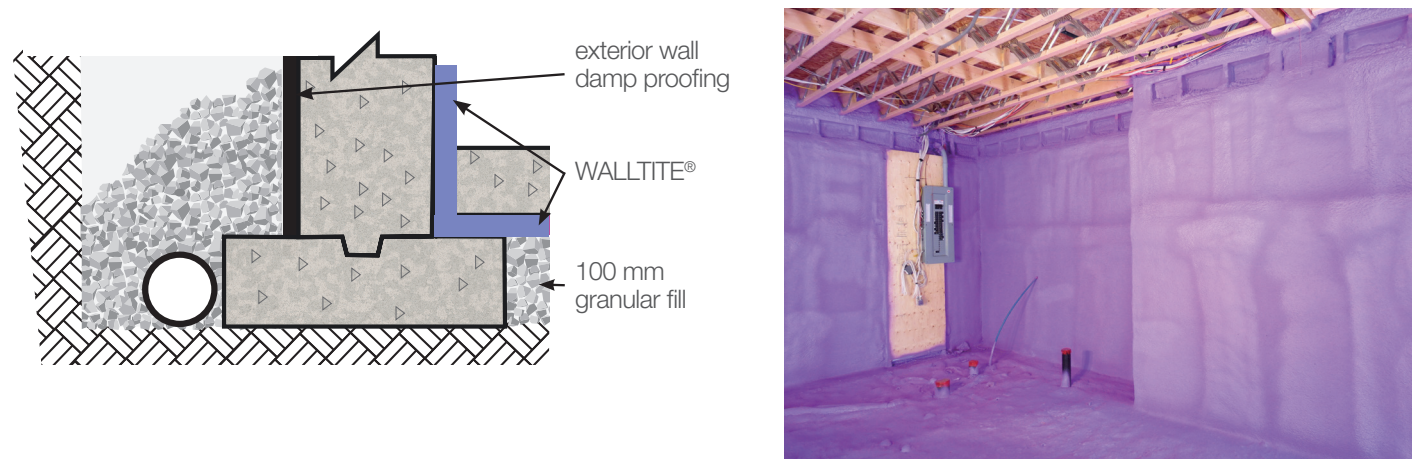
## TYPICAL BASEMENT FLOOR TO FOUNDATION WALL JUNCTION COMPLYING WITH BUILDING CODE SEALING REQUIREMENTS



Currently the National Building Code of Canada (NBCC) requires wall, roof and floor assemblies separating the building (conditioned space) from the ground to be protected by an air barrier system to address the protection from soil gas ingress. WALLTITE meets the requirements of an air barrier material.

Morrison Hershfield, an independent engineering firm, has provided their opinion that WALLTITE can be part of an air barrier system and soil gas control system for foundation walls and floors-on-ground. In addition, WALLTITE provides effective resistance to air infiltration and exfiltration to satisfy air barrier system properties in Sections 5.4 and 9.25.3 of the NBCC. Sealing the joint between the foundation wall and slab with a flexible sealant provides additional control of air leakage to satisfy the requirements of Sentence 9.25.3.6(5).

## ALTERNATIVE SOLUTION\* BASEMENT FLOOR TO FOUNDATION WALL JUNCTION



\* Verify in advance with your local Authority Having Jurisdiction (AHJ) for compliance with building code requirements.



For more information on WALLTITE:

[www.walltite.com](http://www.walltite.com)  
1-866-474-3538

## BUILDING SAFE BASEMENTS

Protecting homes from ingress of radon and soil gases

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# Understanding Radon

## WHAT IS RADON?

Radon is one of many different types of soil gases. This gas is naturally formed by the breakdown of uranium in soil, rock and water that is then slowly released into the environment. Radon gas further breaks down to form radioactive particles that can be inhaled into the lungs. Since radon gas is colourless, odourless and tasteless it requires special equipment to be detected.

## WHERE IS RADON?

Radon exists in almost every house. No areas of the country are considered "radon free". Radon is typically in higher amounts in areas where high concentrations of uranium exist in underlying rock and soil. Concentrations vary significantly throughout Canada, with levels differing even between neighbouring houses.

## HOW DOES RADON ENTER THE HOUSE?

Radon enters through openings where the house is in contact with the soil. A house can act like a vacuum for underground gases. As a gas, radon seeps through cracks and gaps (e.g. around pipes and windows) in the foundation. Stack effect can draw radon into buildings. When air escapes from a house, it is replaced with outside air.

The replacement air can come from the ground surrounding the house and bring soil gases with it, such as radon.

Air leakage control minimizes the risk of soil gas/radon entry.

## WHEN IS RADON A CONCERN?

Generally, when radon is released from the ground it is diluted by fresh air; creating concentrations too low to be of concern. However, there is concern when radon enters enclosed spaces, like a house or basement, and reaches concentrations high enough to pose a health risk.

## WHY IS RADON A CONCERN?

When radon gas is inhaled it can lead to possible tissue damage within the respiratory tract and increase the risk of cancer. A Health Canada study (2012) estimates 16% of lung cancer deaths in Canada can be attributed to radon exposure.

WALLTITE applied to basement walls can help control entry of soil gases

WALLTITE® spray foam insulation/air barrier system can provide an airtight envelope and improve energy efficiency and comfort throughout your home.

WALLTITE provides insulation to both the foundation wall and under the floor slab

WALLTITE under slab can help control entry of soil gases

## ADDRESSING RADON GAS

Health Canada in 2007 revised the national guidelines for radon. Recommendations included:<sup>2</sup>

- Remedial measures should be undertaken in a dwelling whenever the average annual radon concentration exceeds 200 Bq/m<sup>3</sup> in the normal occupancy area.
- The higher the radon concentration, the sooner the remedial measures should be undertaken.
- When remedial action is taken, the radon level should be reduced to a value as low as possible.
- Construction of new dwellings should employ techniques that will minimize radon entry and facilitate post-construction radon removal, should this subsequently prove necessary.

WALLTITE, as part of an air barrier system, can reduce the risk of soil gas/radon entry.

## RADON GAS AND THE NATIONAL BUILDING CODE OF CANADA

The 2010 and 2015 National Building Code of Canada requires a rough-in for a subfloor depressurization system unless the space between the air barrier system and the ground is designed to be accessible for the future installation of a subfloor depressurization system.

## UNDERSTANDING THE CODES

There are variations in the requirements established by each province, municipality or authority having jurisdiction (AHJ) regarding the mitigation and control of soil gases including radon.

For example, where soil gas control is required, the 2012 Ontario Building Code requires for floors in contact with the ground, that a soil gas barrier be installed in accordance with Supplementary Standard SB-9, "Requirements for Soil Gas Control" or if the building has a single dwelling unit only, a subfloor depressurization system be installed according to Supplementary Standard SB-9, "Requirements for Soil Gas Control".

Certain municipalities may have specific Radon/Soil Gas Mitigation Programs that specify what measures are to be used. It is important for you to know and comply with the regulations required in your area.

There are variations in the requirements established by each province, municipality or authority having jurisdiction (AHJ) regarding the mitigation and treatment of radon gas.

<sup>1</sup> Sourced from "Revisiting Canada's Radon Guideline," David Suzuki Foundation, April 2015; originally cited in Health Canada, Cross-Canada Survey of Radon Concentrations in Homes Final Report (Ottawa: HC, 2012)

<sup>2</sup> Sourced from "Revisiting Canada's Radon Guideline," David Suzuki Foundation, April 2015; originally cited in Department of Health, "Indoor Air Quality Guideline for Radon," Canada Gazette Part I 141, no 23 (June 9, 2007)

### Sources Referenced:

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