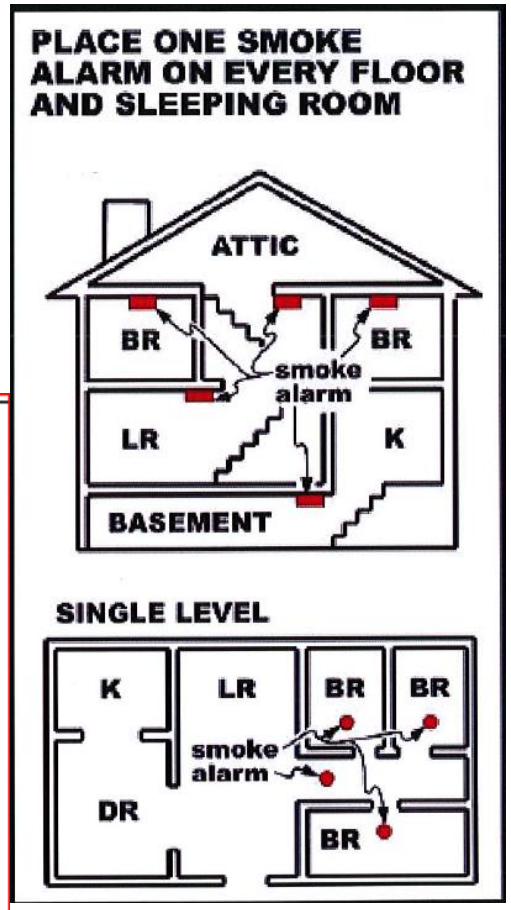
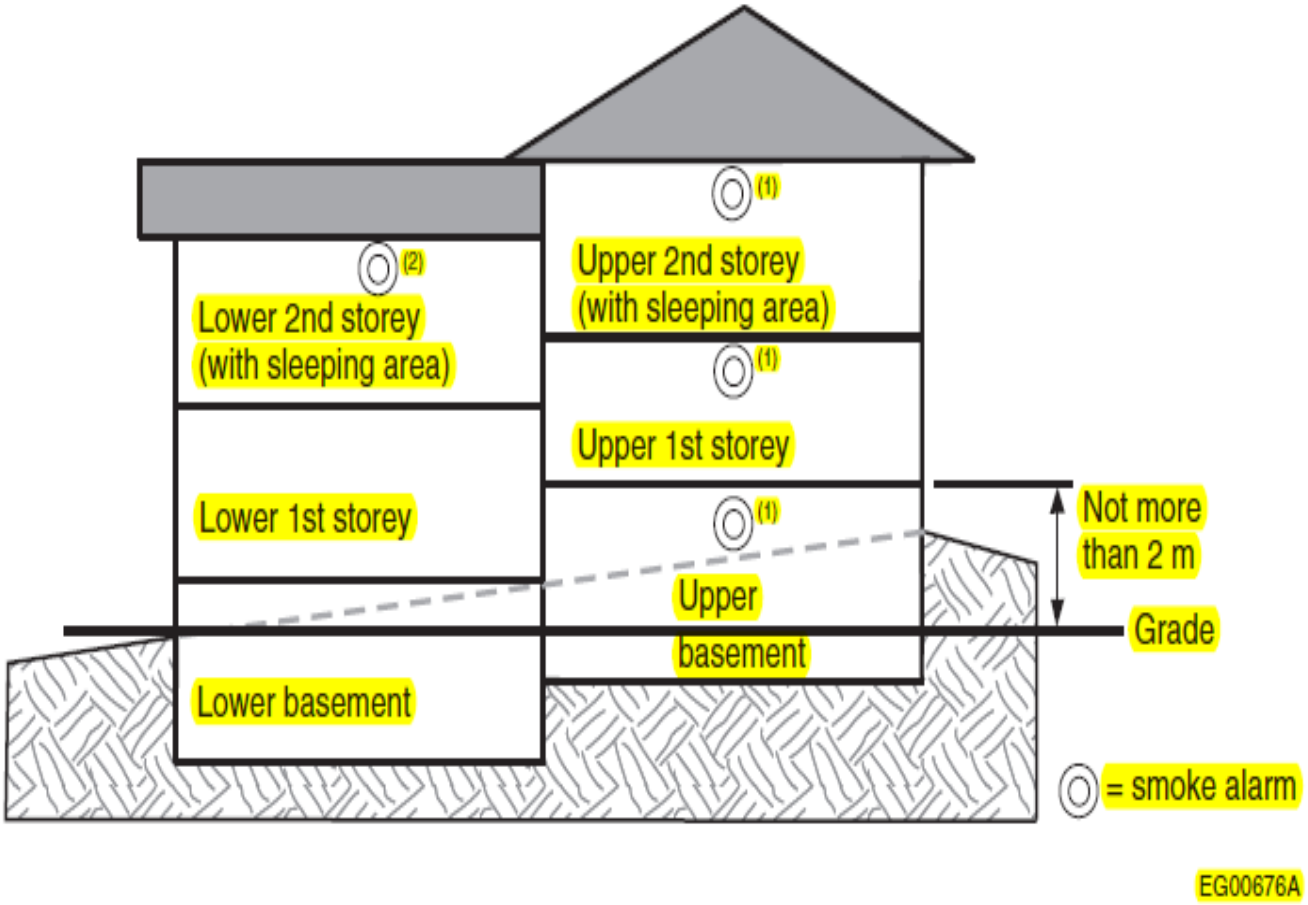
Smoke Alarms





9.10.19. Smoke Alarms 3.2.4.21.

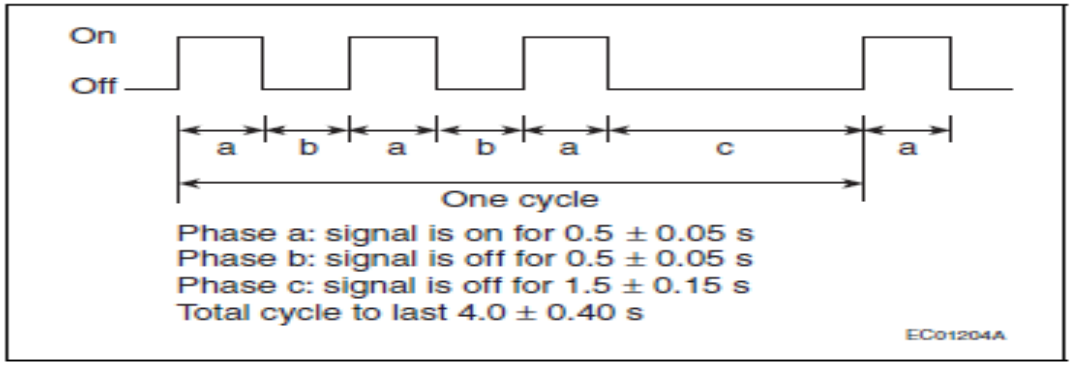
*Smoke Alarm shall be installed in each bedroom.
*Location between sleeping rooms and reminder of the storey. e.g.”Hallway”
*No 5 meters maximum
*Referencing CAN/ULC-S553-02 and CAN/ULC-S531-02
*In addition to permanent connection with power supply, battery Backup is required for 7 days normal operation followed By 4 minutes of alarm.
*Hush button is required.

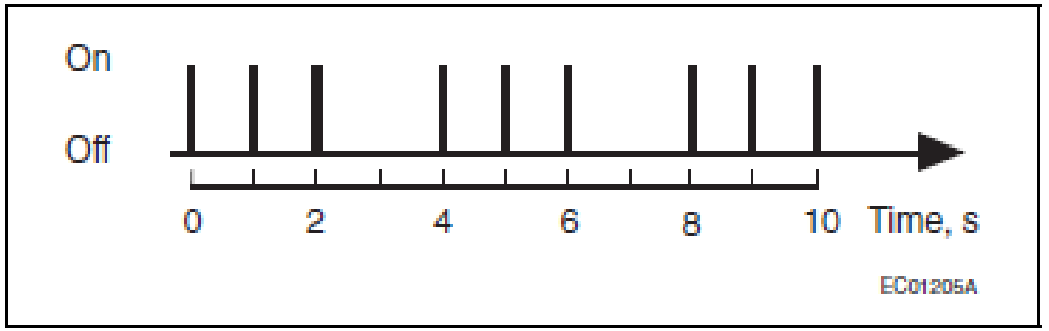
Smoke Alarms (3.2.4.21.) (9.10.19)

*Smoke Alarm Signal: 3-pulse phase followed by an off phase

*If single stroke bells are used: the bell struck three times at a rate of one stroke per second followed by an interval of 2 s of silence.

Combined temporal pattern and voice relay is permitted





Exit Signs (3.4.5.1)

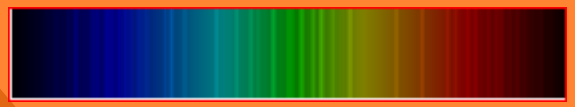
- Language independent.
- Internationally recognized.
- Continuously illuminated.
- Two Standards referenced ; ULC-S572 (not electrically powered) and CSA C22.2 No.141 (electrically powered)

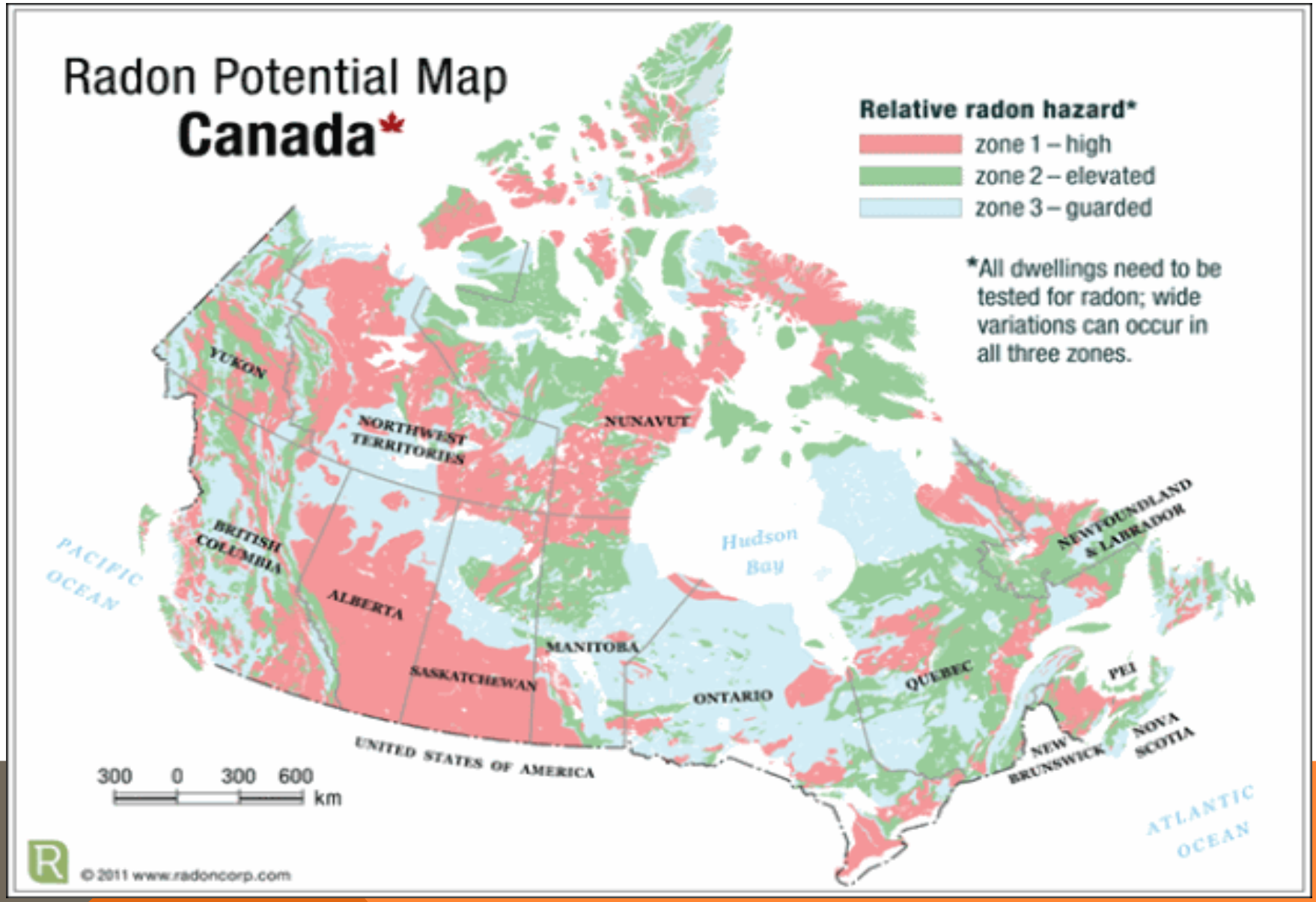
Green Pictograms conforming to ISO standards.

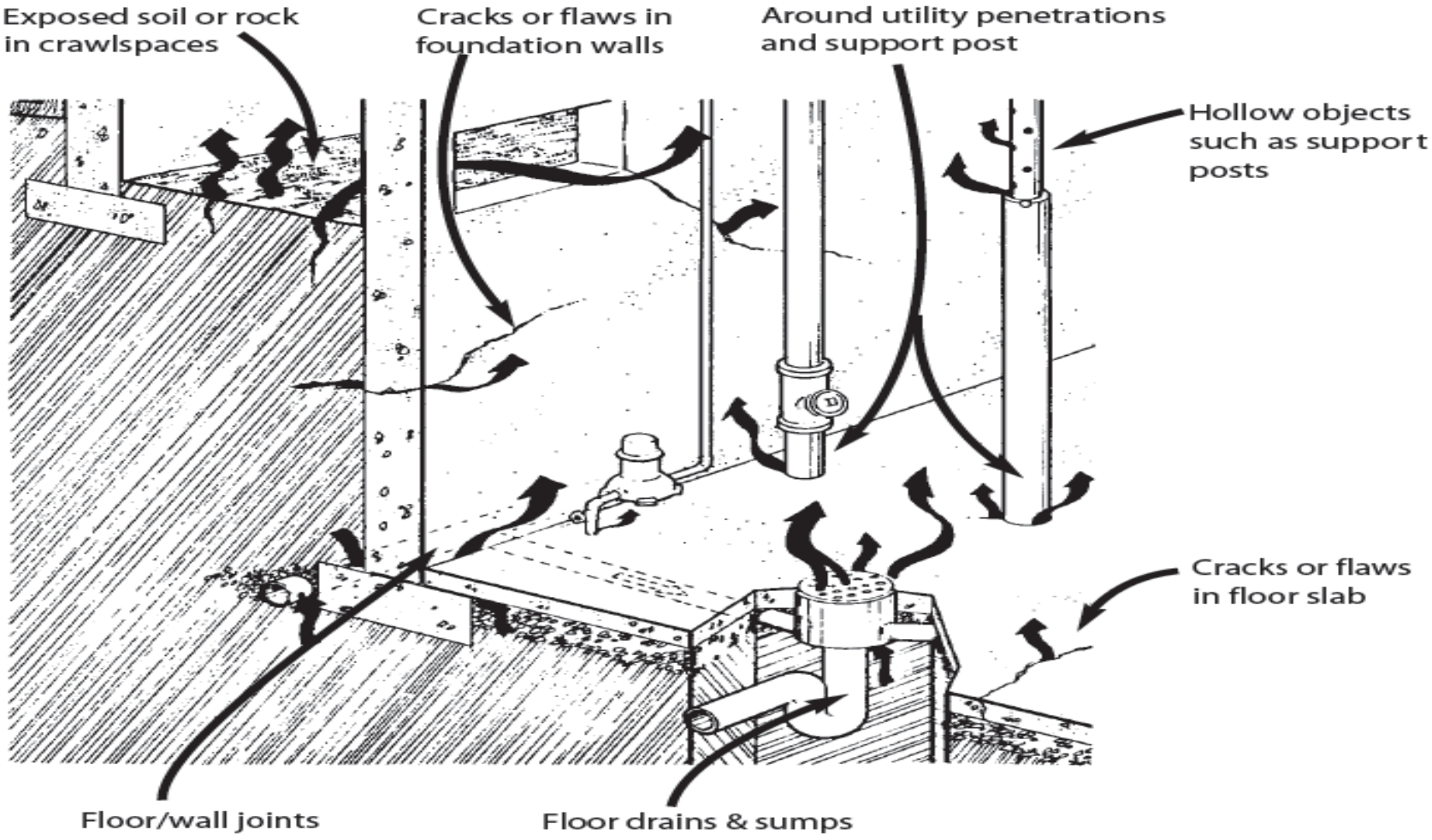
Soil Gases

Radon is a colourless, odourless, radioactive gas that occurs naturally as a result of the decay of radium known to enter dwelling units and buildings by infiltration into basements and crawl spaces.

- Health Canada estimates 1900 lung cancer death per year are related to radon.
- We spend more time indoors, including basements.
- Tighter buildings
- Some geographical areas are known for high risk of radon in the ground.
- Heath Canada reduced the Canadian action level from 800 Bq/m3 to 200 Bq/m3 (international standard)




Radon Potential Map
Canada*
Relative radon hazard*
zone 1 – high
zone 2 – elevated
zone 3 – guarded
*All dwellings need to be tested for radon; wide variations can occur in all three zones.
YUKON
NORTHWEST TERRITORIES
NUNAVUT
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
NEWFOUNDLAND & LABRADOR
PEI
NOVA SCOTIA
NEW BRUNSWICK
Hudson Bay
PACIFIC OCEAN
ATLANTIC OCEAN
UNITED STATES OF AMERICA
300 0 300 600
km
© 2011 www.radoncorp.com



How Radon can enter homes

Radon Code References

Part 3 Buildings

Section 5.4 Air Leakage

5.4.1.1. Required Resistance to Air Leakage

e) minimize the ingress of airborne radon from the ground

Section 6.2 Design and Installation

6.2.1.1. Good Engineering Practice

i) EPA 625/R-92/016, “Radon Prevention in the Design and Construction of Schools and Other Large Buildings.”

Part 9 Buildings

Subsection 9.13.4 Soil Gas Control

9.13.4.2(2)(3) **--**Soil Gas Ingress**--**

9.13.4.3(2)(c)iii & 9.13.4.3(3)(b)iii **–**Subfloor Depressurization system**--**

9.32.3.8(8) **--** protection against depressurization**--**

Sentence 9.13.4.2.(1), which requires the installation of an air barrier system, addresses the protection from all soil gases, while the remainder of Article 9.13.4.2. along with Article 9.13.4.3., which require the provision of the means to depressurize the space between the air barrier and the ground, specifically address the capability to mitigate high radon concentrations in the future, should this become necessary.

Radon

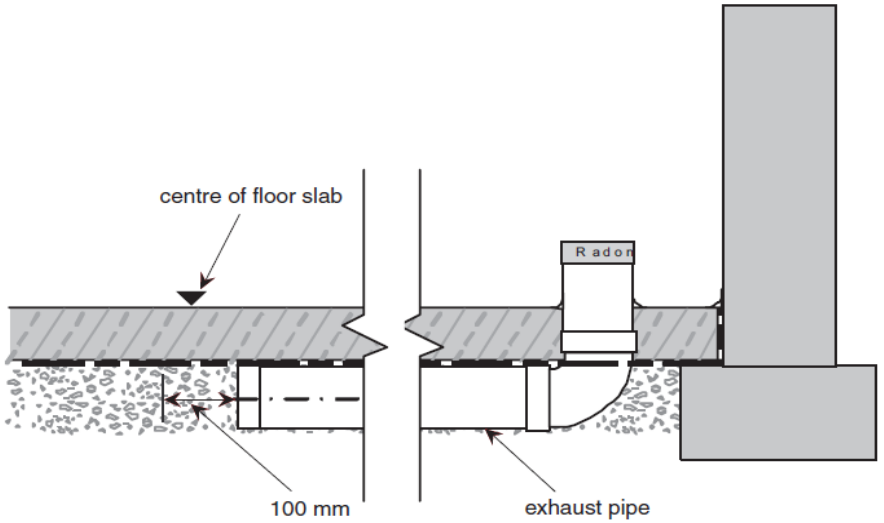
9.13.4.3. Providing for the Rough-in for a Subfloor Depressurization System

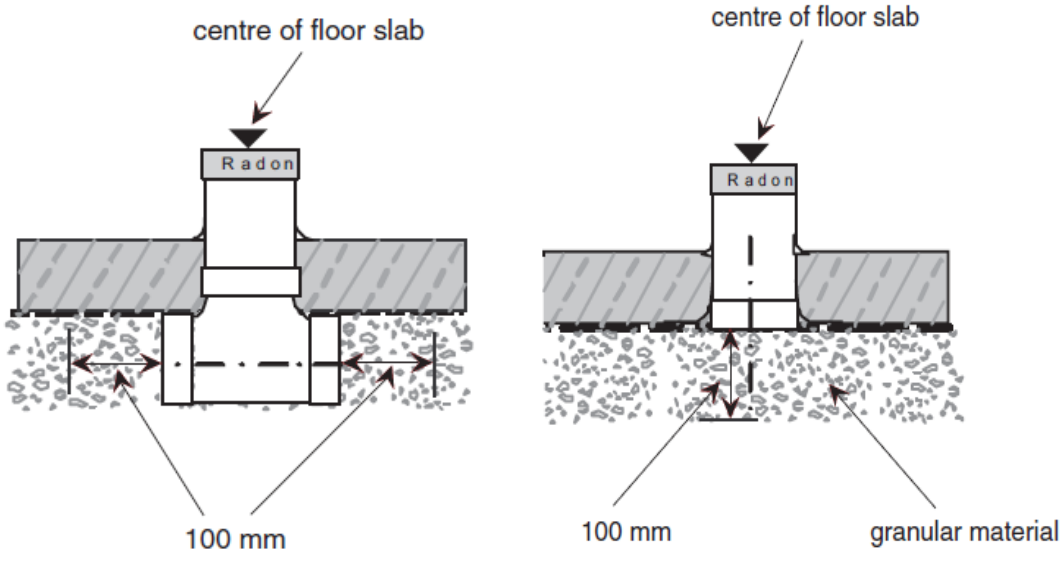
a) a gas-permeable layer, an inlet and an outlet as described in Sentence (2), or
b) clean granular material and a pipe as described in Sentence (3).

Sentence (2) describes the criteria for subfloor depressurization systems using performance-oriented language, while Sentence (3) describes one particular acceptable solution using more prescriptive language.

Radon

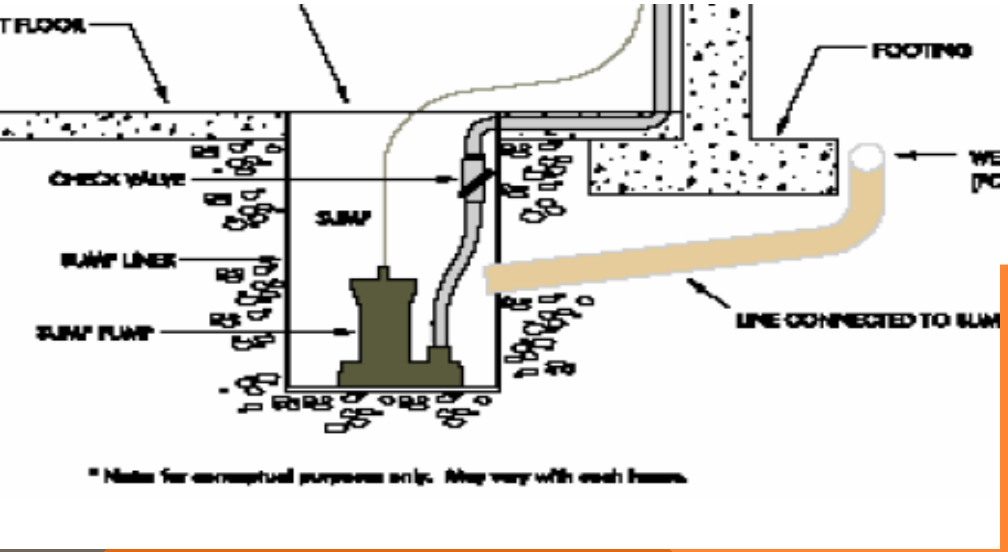
9.13.4.3. Providing for the Rough-in for a Subfloor Depressurization System b) clean granular material and a pipe as described in Sentence (3).

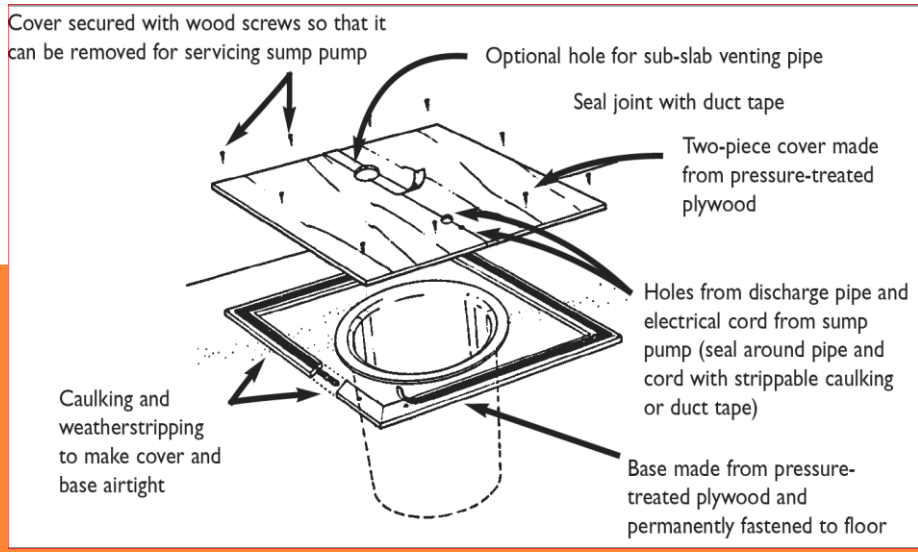


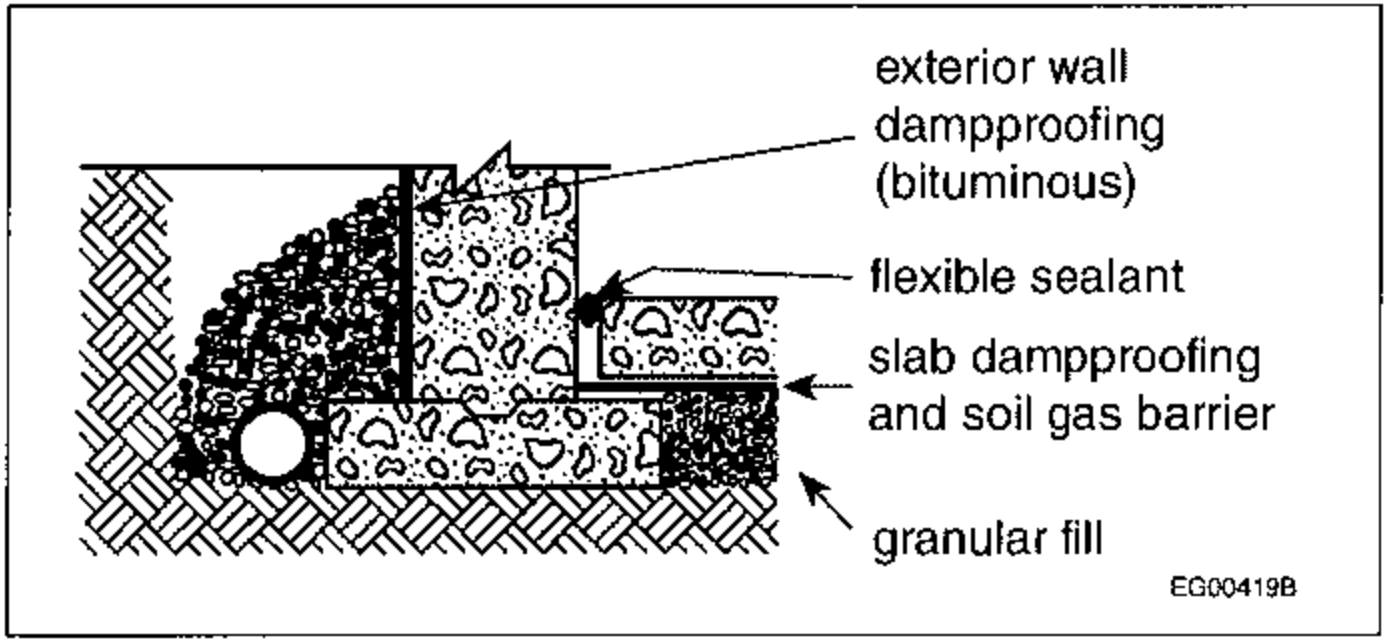


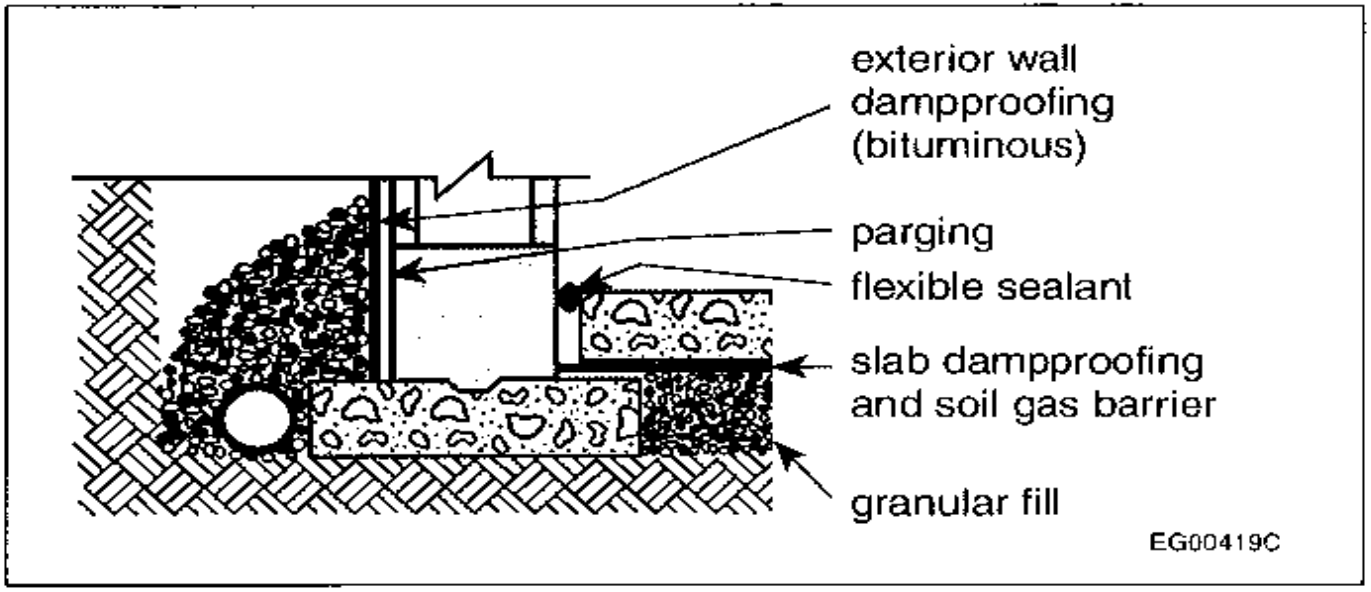
Radon

The principal method of resisting the ingress of all soil gases, a resistance which is required for all buildings, is to seal the interface between the soil and the occupied space, so far as is reasonably practicable. Sections 9.18. and 9.25. contain requirements for air and soil gas barriers in assemblies in contact with ground, including those in crawl spaces. Providing control joints to reduce cracking of foundation walls and airtight covers for sump pits (see Section 9.14.) are other measures that can help achieve this objective.






exterior wall
dampproofing
(bituminous)
flexible sealant
slab dampproofing
and soil gas barrier
granular fill
EG00419B


exterior wall
dampproofing
(bituminous)
parging
flexible sealant
slab dampproofing
and soil gas barrier
granular fill
EG00419C

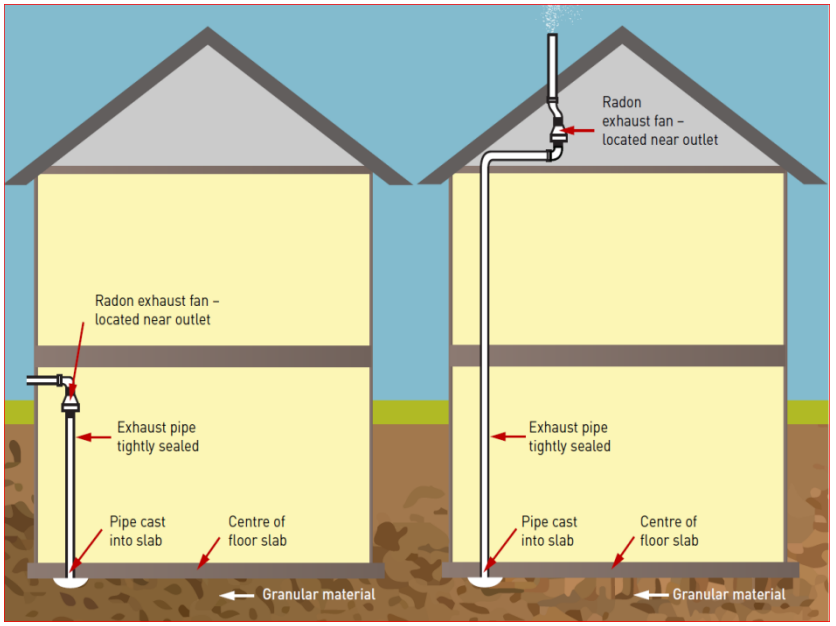
TESTING FOR RADON

Soil testing for radon is not recommended for determining whether a house should be built radon-resistant. Although soil testing can be done, it cannot rule out the possibility that radon could be a problem in the house you build. The 2010 National Building Code revisions included changes to improve protection against radon entry into the house such as a vapor barrier under the foundation slab, and a rough-in requirement for a future radon removal system. These revisions will improve overall indoor air quality and provide a less expensive radon reduction solution should the house have elevated levels of radon.

The two most common types of radon detectors used for testing houses are short term and long term detectors. The short term detectors are used for a period of 2-7 days, the long term detectors can be used for a period of 1 to 12 months. Since the radon concentration inside a house varies over time, measurements gathered over a longer period of time will give a more accurate indication of the radon level in a house. Health Canada recommends that houses be tested for a minimum of 3 months, ideally between September and April when windows and doors are typically kept closed.

The potential for high levels of radon infiltration is very difficult to evaluate prior to construction and thus a radon problem may only become apparent once the building is completed and occupied. Therefore various sections of Part 9 require the application of certain radon exclusion measures in all dwellings.

Responsibility to test for radon rests with the building owner.



Examples of installed Radon ventilation Systems

More on Radon ...

- CMHC Guide
  http://www.cmhc-schl.gc.ca/odpub/pdf/61945.pdf

- Health Canada - Environmental and Workplace Health
  http://www.hc-sc.gc.ca/ewh-semt/radiation/radon/index-eng.php

Regional and Federal Contacts:

Alberta 780-495-2626 and/or

Radon_ABNT@hc-sc.gc.ab

Secondary Suites in the 2014 Alberta Building Code

Section 9.37 Secondary Suites has been removed. Information for *secondary suites* is now dispersed throughout Part 9. Most of the requirements for *secondary suites* remains the same, but there are changes, such as:

- carbon monoxide detectors interconnection 9.32.3.9.(7)
- ceiling heights
- stairs in a garage for a house with a *secondary suite*
- etc

Changes to Part 9 (highlights)

Section 9.5. Design of Areas and Spaces	Includes doorway sizes and Table 9.5.5.1.
Section 9.6. Glass	Formerly Doors
Section 9.7. Windows, Doors and Skylights	Formerly Windows and Skylights
Section 9.8 Stairs, Ramps, Handrails and Guards	Many changes. Service stairs removed from Tables. Secondary suites, garages, rectangular treads, angular treads, nosings . . .
Section 9.9. Means of Egress	Egress from Bedrooms is now found in Subsection 9.9.10. Window wells clearance change
Section 9.10. Fire Protection	Many changes. Commissioning of buildings item added, items under Part 3 Jurisdiction added, smoke-tight barriers added, penetration of fire separation new sentences, Location of Fuel-fired Appliances, . . .
Subsection 9.10.11. Firewalls Not Required	Changes. Secondary suites also included
Subsection 9.10.12. Prevention of Fire Spread at Exterior Walls and between Storeys	Changes to exterior walls meeting at an angle, protection of soffits
Subsection 9.10.14. Spatial Separation Between Buildings. Subsection 9.10.15. Spatial Separation Between Houses	Minor changes to Limiting Distance and Fire Department Response, changes to exposing building face, new Table, new sentences
Subsection 9.10.16. Fire Blocks	Replaces 9.10.16. Fire Stops. *Fire Blocks* term is defined.
Subsection 9.10.18 Alarm and Detection Systems	Changes, sentence added
Subsection 9.10.19. Smoke Alarms	Changes. All bedrooms and sleeping areas . . .
Subsection 9.10.22. Fire Protection for Gas, Propane and Electric Cooktops and Ovens	The term *cooktop* replaces the term *range*
Subsection 9.13. Dampproofing, Waterproofing and Soil Gas Control	Soil gas control introduced. Article 9.13.2.6. Moisture Protection for Interior Finishes added
Subsection 9.13.4. Soil Gas Control added	New subsection. Includes Rough-in for Subfloor Depressurization System requirements
Section 9.14. Drainage	9.14.5.2. Sump Pits – required to be air-tight
Subsection 9.15.4. Foundation Walls	Changes. Lateral support, ICF, new Tables
Subsection 9.16.2. Material Beneath Floors	Changes
Subsection 9.18.6. Ground Cover	9.18.6.2. Ground Cover in Heated Crawl Spaces changes
Subsection 9.19.2. Access	545 mm to 500 mm change
Article 9.20.17.4. Lintels over Openings in LB ICF	Changes. Openings.
Table 9.23.3.4. Nailing for Framing	Minor changes. Changes to Table 9.23.3.4. New tables
Subsection 9.23.6. Anchorage	Changes
Subsection 9.23.9. Floor Joists	Changes to 9.23.9.8. Support of Walls
Subsection 9.23.13. Bracing to Resist Lateral Loads Due to Wind and Earthquake	New Subsection.
Subsection 9.25.2. Thermal Insulation	Note the Date 01 May 2016 re: Section 9.36
Subsection 9.25.3. Air Barrier Systems	Changes to requirements – floors-on ground etc
Subsection 9.25.4. Vapour Barriers	Changes to requirements
Subsection 9.25.5. Properties and Position of Materials in the Building Envelope.	New Subsection
Subsection 9.27.4. Caulking	Changed to 9.27.4. Sealants. Minor changes added
Subsection 9.27.8. Asbestos-Cement Shingles and sheets	Removed
Section 9.32. Ventilation	Changes. Secondary Suites included, protection against depressurization, interconnection of co alarms in secondary suites . . .
Section 9.33. Heating and Air Conditioning	Minor changes
Article 9.34.1.5. Wiring and Cables	Changes
Article 9.35.2.2. Garage Floors	Changes
Section 9.36 Energy Efficiency	New Section