RADON & OTHER SOIL GAS CONTROL IN BUILDINGS

The 2024 British Columbia Building Code (BCBC) requires a Soil Gas Control System (radon rough in) be installed for all conditioned spaces in buildings that have a wall, roof or floor assembly in contact with the ground.

This soil gas control system shall consist of an air barrier between the ground and any conditioned space as well as a subfloor depressurization system consisting of a material or materials that will allow effective depressurization of the entire underfloor space and includes the depressurization layer and a vent pipe terminated to the exterior of the building.

DRAWINGS

The 2024 Building Code requires the vent pipe to terminate to the exterior of the building and due to the limited permitted locations where this pipe can terminate (see below), the exterior location of the vent pipe shall be indicated on the permit drawings where other than a through roof termination is anticipated.

AIR BARRIER

Wall, ceiling, and floor assemblies separating conditioned space from unconditioned space or from the ground shall be constructed to include an air barrier system that will provide a continuous barrier to air leakage.

All joints or material changes in the air barrier system shall be sealed to prevent air leakage.

Where polyethylene sheet is used to provide airtightness in the air barrier system, it shall conform to CAN/CGSB-51.34-M

SUBFLOOR DEPRESSURIZATION LAYER

Floors-on-ground shall include the installation of a contiguous gas-permeable layer between the air barrier system and the ground consisting of a material or materials that allow effective depressurization of that space or not less than 100 mm of coarse clean granular material containing not more than 10% of material that would pass a 4 mm sieve. Acceptable materials include proprietary below slab gas collection systems (CCMC Canada Registered) or approximately 3/8” clear crushed stone or similar sized pea gravel.

VENT PIPE MATERIALS AND INSTALLATION

The Vent pipe for the soil gas depressurization system shall:

- Consist of minimum 4” pipe and fittings in accordance with CAN/CGSB 149.11 7.1.3
- Pipe materials shall be minimum Sch. 40 above ground and conform to one of the following standards: ASTM F891, CSA B181.1, ASTM F628 or CSA B182.1 (SDR 35 used below ground only) or be suitable for the environment.
- Be Sealed to air barrier material.
- Have inlet(s) at center of slab to allow depressurization that will permit connection to all areas below slab (pipes stubbed through footings, footing cut outs, etc. are acceptable means to achieve connectivity to all areas).
- Have pipe installed to facilitate a future connection to fan/blower (cannot be completely concealed in wall for entire run to exterior).
- Where in conditioned space must be surrounded by conditioned space (not just insulated + not permitted in exterior walls).
- Insulated when installed in unconditioned spaces.
- Considered the same as DWV for the purposes of pipe protection and penetration of fire separations.
- Clearly labelled with the word RADON every 1.8 m and every change in direction.
- Installed to prevent accumulation of moisture (horizontal runs shall be minimized) and have a 10mm vermin mesh at the exterior termination point.

Continued next page:

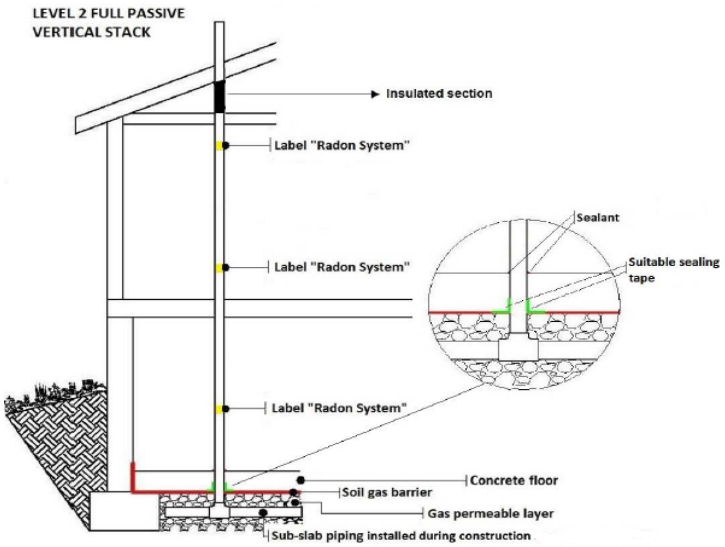
- Terminate outside building and no less than 1.8m from property line and:

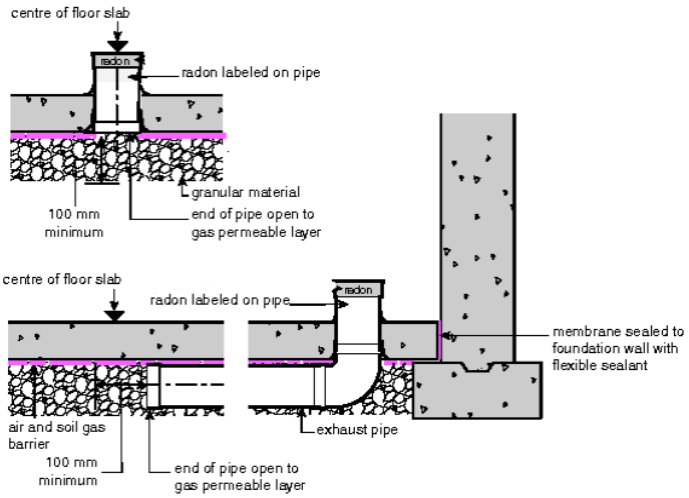
Table 7.2.4.6 — Minimum passive radon stack termination clearances for roof top discharge

Location	Minimum dimension (m)
Vertical clearance above the roof at the point of penetration	0.30
Vertical clearance above windows or doors	0.60
Vertical clearance above mechanical air supply inlet (air intake)	0.90
Horizontal clearance from windows, doors or mechanical air supply inlet	3
Clearance horizontally from a vertical wall that extends above the roof penetrated	3

Table 7.3.4.3 — Clearance distances for active radon reduction systems

Locations	Suggested clearances (m)	Required minimal clearances (m)
Clearance to a mechanical air supply inlet	3	2
Clearance to permanently closed window	1	0.60
Clearance to a openable window	2	2
Clearance from a door that may be opened	2	1
Clearance to outside corner	0.30	0.30
Clearance to inside corner	0.30	0.30
Clearance above paved sidewalk or paved driveway located on public property	2	2
Clearance above grade, veranda, porch, deck, or balcony	1	0.30
Vertical Clearance below soffits or from any attic venting component	1	1
Horizontal clearance from an area directly below the discharge where there is a risk of injury from ice fall	2	1





For further information contact the Building Division at Building@campbellriver.ca or 250-286-5757