

Product Information Bulletin 358

Radon Guard Insulation - Installation Instructions

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Radon Guard® Insulation Installation Instructions

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Radon Guard® insulation is a patented sub-slab depressurization panel that can be used as a component in radon mitigation systems for all types of building construction.

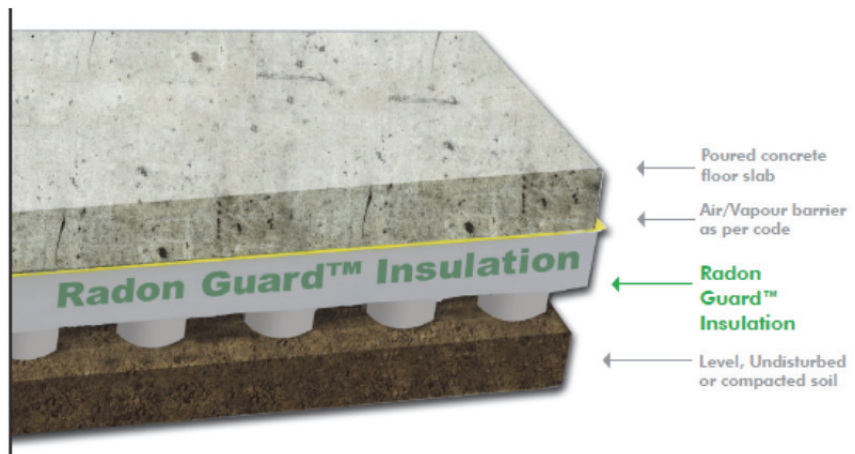
Radon Guard insulation provides the following key features in a properly designed radon mitigation system:

1. The interconnected channels on the underside of **Radon Guard** insulation direct soil gas movement between the ground and the air barrier system (soil gas barrier) to a vent pipe in slab on ground applications as required by Subsection 9.13.4. of the National Building Code of Canada 2010 and 2015 (NBC 2010 and 2015).
2. The vent pipe installed through the **Radon Guard** insulation panel connects to a radon gas mitigation system as per applicable code vent radon gas.
3. As a rigid insulation, **Radon Guard** insulation provides an insulation layer beneath the concrete slab to meet building code energy efficiency requirements.

CCMC Evaluation Report 13698-R confirms that **Radon Guard** Insulation is a code compliant replacement for a 100 mm (4 in) thick layer of clean granular fill material as required by code.

How does **Radon Guard** insulation work?

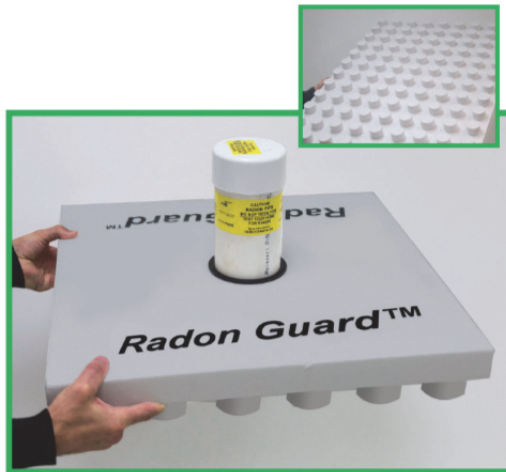
Radon Guard insulation panels are installed with the interconnected channels facing down. This creates a space for radon gas to move to the vent pipe. The radon gas can then be removed when the vent pipe is attached to a mitigation system.



Tools and Equipment Required

The following tools and equipment will be required for installation:

- Tape measure
- Utility knife, saw, or hot wire
- Straightedge
- Cordless drill with 102 mm (4 in) diameter hole saw.
- Caulk gun



Recommended Installation Requirements

Completed installations of **Radon Guard** insulation panels, regardless of thickness chosen to achieve required RSI/R-value, will result in the top surface of the **Radon Guard** insulation panels sitting even with the top of the footings within the building footprint.

The following steps are recommended to achieve this placement.

1. In order to vent radon gas from under your concrete slab, the radon vent installed through the **Radon Guard** insulation panel must influence every square foot of sub-slab area.
2. If footings create segmented zones within the slab area, either the segmented zones must be linked for ventilation by way of placing pipe through footings to connect ventilation areas beneath the **Radon Guard** panels, or more than 1 radon gas vent will be required within the footprint of the building to ventilate segmented areas.
3. Once footings are in place and concrete forms have been removed, all required sub-slab utility and drainage lines (sewer, electrical etc.) must be installed.
4. Measure the total thickness of **Radon Guard** panel you have chosen. Ensure the clearance from the underside of panel pedestals to the top surface of the **Radon Guard** insulation will be level with the top of footings. For example, if 114 mm (4.5 in) thick **Radon Guard** panels are used ensure there is a 114 mm (4.5 in) void space between ground surface/top of utility lines to the top of footings.
5. If there is not enough void space, excavation will be required to maintain clearance to the top of the **Radon Guard** panel. If there is more void space than required then backfill will need to be placed to bring grade up to provide required clearance. Backfill material can be any variety of clay, sand, gravel, pit run – but NOT organic materials like loam or top soil.
NOTE: Based upon geotechnical engineer's assessment of site conditions, placing a lightweight nonwoven geotextile over entire ground surface may be recommended.
6. Place **Radon Guard** panels within the footing perimeter with the flat side up (i.e., pedestals down). Align the **Radon Guard** panels side by side and touching, in any pattern desired. Cover the entire under-slab area within the perimeter footings. Trim panels to fit odd sizes and penetrations with a utility knife, saw, or hot wire. Use non-expanding aerosol foam to fill large joints if desired. A tight-fitting assembly will ensure no concrete waste. It is not required to tape or bond **Radon Guard** panels together.
7. Install vent stack by cutting 102 mm (4 in) diameter circular hole within any **Radon Guard** panel and placing pipe collar (e.g., 1pex DWV pipe adapter collar) directly through the **Radon Guard** panel. Insert 102 mm (4 in) PVC pipe section into the collar. Ensure airway to the underside of **Radon Guard** panel is open and not blocked. Cap top of pipe to ensure no debris enters during construction, and ensure pipe is clearly labelled **RADON VENT PIPE** as per building code requirement. As per local building code requirement, the radon vent pipe must be located such that it will allow for the effective depressurization of the entire sub-slab area.
8. Once all **Radon Guard** insulation panels are in place, cover the entire surface area with a soil gas barrier, sealing at lap joints, as well as around all penetrations and panel edges at footings or exterior wall as per manufacturer and local building code requirements. Subsection 9.25.3. of the NBC 2010 and 2015 provides soil gas barrier requirements to minimize ingress of soil gas into the interior of the building.