

FOUNDATIONS RADON ABATEMENT

Radon can be dangerous but it does not occur everywhere. It is a function of local geology and only testing in a completed home can determine if measures need to be taken to reduce indoor concentrations. In regions where it is a known hazard, steps must be taken before pouring a structural or basement slab - steps that can be completed if testing confirms the problem.

Intro to Radon
Abatement

INTRO TO RADON ABATEMENT

Radon is a naturally occurring radioactive gas that is known to cause cancer in high doses. The risk associated with radon in residences remains uncertain, but the Environmental Protection Agency has recommended that every existing home be tested for radon and that action be taken if the test shows radon concentrations greater than 4.0 picocuries/liter of air.

Critical
Construction
Details

Check Local Sources

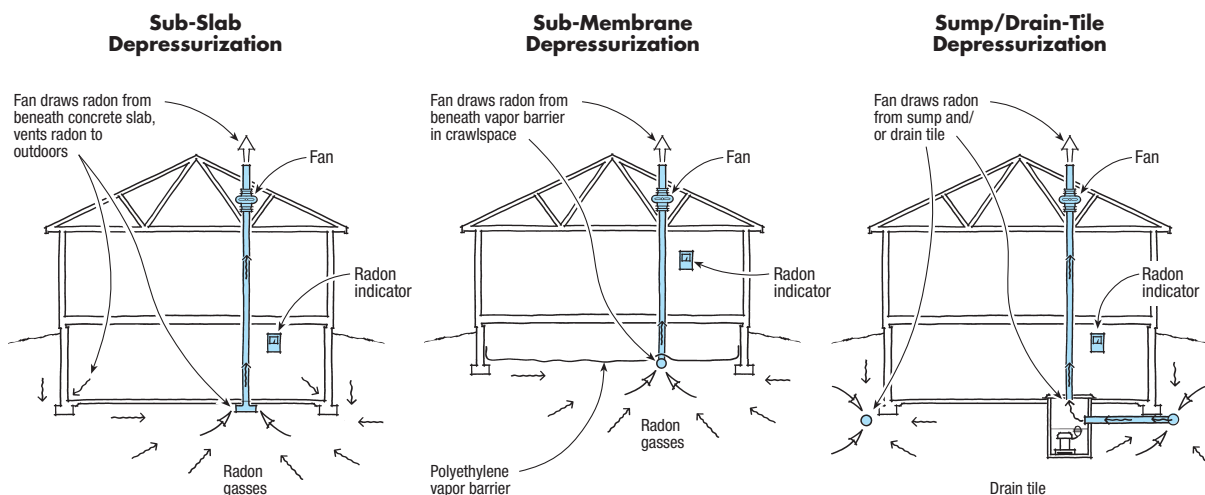
The EPA also recommends that new homes be built with radon resistant elements (**Radon Elimination Strategies**, below). This recommendation has been adopted as a requirement by some codes. These precautions are more important in areas where higher concentrations of radioactive materials are present in local rock. Check with state public health and environmental agencies about testing and risks in your area.

Subslab Poly

The EPA-recommended details for radon abatement call for poly to be placed above the gravel subbase and below the slab. Placing concrete directly on plastic can contribute to slab cracking due to uneven shrinkage and curling. For that reason, consider putting a layer of damp compacted sand above the poly before placing the concrete see **Subslab Vapor Barriers** in Subgrade and Subbase).

CRITICAL CONSTRUCTION DETAILS

FIGURE: RADON ELIMINATION STRATEGIES



Different strategies for venting radon are required for different foundations: Houses with basements (left), houses with crawlspaces (center), and basements or slabs with sump chambers (right).

The EPA recommends the following system to prevent radon from entering basements and to conduct radon from below the slab to the outdoors:

Critical Construction Details

- **Subslab:** Place gas-permeable layer (4-in. layer of clean gravel).
- **In basements:** Plastic sheeting should be placed on top of gravel sub-base and under slab.
- **In crawlspaces:** The sheeting is placed over the crawlspace floor.
- **Seal and caulk** all cracks, joints, or penetrations.
- **Use 3- or 4-in. PVC vent stack** from sub-slab to above roof. Mark this clearly so plumbers won't mistake it for a drain vent.
- **In attics:** Supply a junction box for power in case homeowners choose to install a powered vent fan.