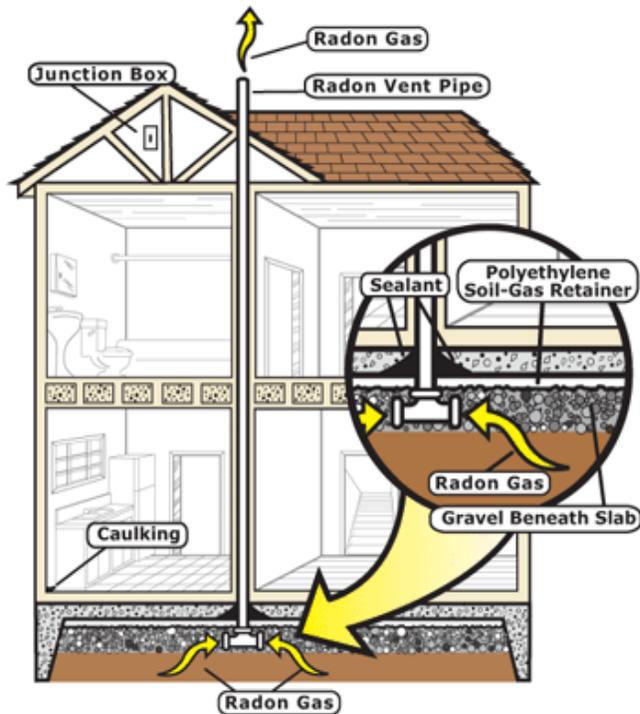


## Builders: Basic Techniques

All of the techniques and materials described below are commonly used in home construction. No special skills or materials are required when adding radon-resistant features as a new home is being built.

While the techniques may vary for different house foundations and building site requirements, the five basic features that builders should include to prevent radon from entering a home are:



**Gravel:** Use a 4-inch layer of clean, coarse gravel below the “slab,” also called the foundation. This layer of gravel allows the soil gases, including radon, that occur naturally in the soil to move freely underneath the house. Builders call this the “air flow layer” or “gas permeable layer” because the loose gravel allows the gases to circulate.

**NOTE:** In some regions of the country, gravel may be too expensive or unnecessary. Alternatives are allowed, such as a perforated pipe or a collection mat.

**Plastic Sheeting or Vapor Retarder:** Place heavy duty plastic sheeting (6 mil. polyethylene) or a vapor retarder on top of the gravel to prevent the soil gases from entering the house. The sheeting also keeps the concrete from clogging the gravel layer when the slab is poured.

**A Vent Pipe:** Run a 3 or 4-inch solid PVC Schedule 40 pipe, like the ones commonly used for plumbing, vertically from the gravel layer (stuffed up when the slab is poured) through the house’s conditioned space and roof to safely vent radon and other soil gases outside above the house. Although serving a different purpose, this vent pipe is similar to the drain waste vent (DWV) installed by the plumber. This pipe should be labeled “Radon System.” Your plumber or a certified radon professional can do this.

**Sealing and Caulking:** Seal all openings, cracks, and crevices in the concrete foundation floor (including the slab perimeter crack) and walls with polyurethane caulk to prevent radon and other soil gases from entering the home.

**Junction Box:** Install an electrical junction box (outlet) in the attic for use with a vent fan, should, after testing for radon, a more robust system be needed.

More information on radon-resistant construction can be found in the EPA guidebook, “Building Radon Out”: <http://www.epa.gov/radon/pdfs/buildradonout.pdf>.