

# Radon-Resistant New Construction

## Why Should You Build Homes with Radon-Resistant Techniques?

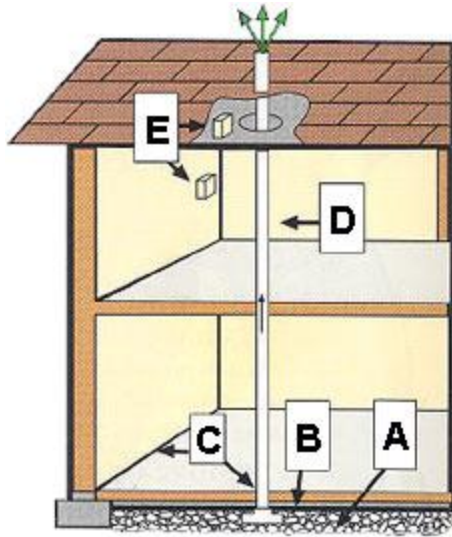
### They Make Homes Safer from Radon!

- These construction techniques help block radon from entering the home. The occupants will benefit from lower radon levels in their new home.
- They are easy to upgrade when there is a need to increase the radon reduction.
- If high radon levels are found, the techniques allow for easy and inexpensive installation of a fan for increased radon reduction in the home. Every new home should be tested for radon by the homeowner after occupancy.
- They are cost-effective for home buyers
- It is more cost-effective to include radon-resistant techniques while building a home, rather than installing a radon reduction system in an existing home.
- For example:
  - The cost to a builder of including radon reducing features in a new home during construction can vary widely. Many builders routinely include these features in some of their homes. The cost to the builder of including these features is typically less than the cost to mitigate the home after construction.
- Some construction companies successfully use this as a marketing advantage.
- They may improve the home's energy-efficiency
- Radon-resistant construction techniques are consistent with state-of-the-art energy-efficient construction. When using these techniques, follow the Model Energy Code (or other applicable energy codes) for weatherization, which will result in energy savings and lower utility bills.

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## What are Radon-resistant construction techniques?

The techniques may vary for different foundations and site requirements, but the basic elements are:



**A. Gas Permeable Layer**

This layer is placed beneath the slab or flooring system to allow the soil gas to move freely underneath the house. In many cases, the material used is a 4-inch layer of clean gravel.

**B. Plastic Sheeting**

Plastic sheeting is placed on top of the gas permeable layer and under the slab to help prevent the soil gas from entering the home. In crawlspaces, the sheeting is placed over the crawlspace floor.

**C. Sealing and Caulking**

All openings in the concrete foundation floor are sealed to reduce soil gas entry into the home.

**D. Vent Pipe**

A 3- or 4-inch gas-tight or PVC pipe (commonly used for plumbing) runs from the gas permeable layer through the house to the roof to safely vent radon and other soil gases above the house.

**E. Junction Box**

An electrical junction box is installed in case an electric venting fan is needed later.

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***How Many Homes Are Built With Radon-Reducing Features?***

Based on an annual home builder survey conducted by the National Association of Home Builders (NAHB) Research Center:

- 5.8% of approximately 1,124,000 single-family detached homes built during 2001 incorporated radon-reducing features, which translates to about 65,000 homes. This

brings the cumulative total of single-family detached homes built with radon-reducing features since 1990 to over one million homes.

- 11.7% of approximately 255,000 single-family detached homes built in Zone 1 (homes with high radon potential) during 2001 incorporated radon-reducing features, which translates to nearly 30,000 homes. This brings the cumulative total of single-family detached homes built in Zone 1 with radon-reducing features since 1990 to over 600,000 thousand.\*

\* These results exclude homes built on pier-style foundations.