

# Radon-resistant Construction for Builders

Energy fact sheet

## Protect – the occupants in the home you’re building against the threat of radon gas.

### Add value to your home by installing a healthy anti-radon system.

Building radon-resistant features into your new home costs only \$100-\$300 for an average home. If the home buyer does find high radon levels, making the passive system active is less expensive for them.

### How does radon get into homes?

Radon seeps into homes through cracks and other holes in the floor. Any home may have a radon problem – new or old, well-sealed or drafty, with or without basements.

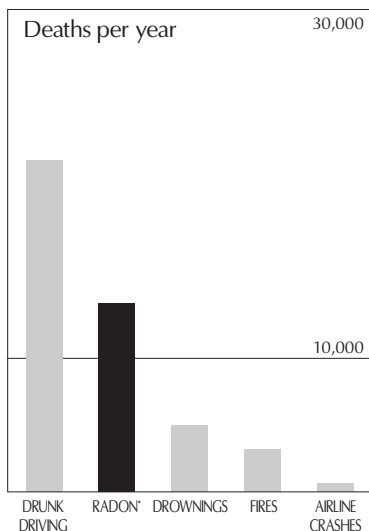
Nearly 1 out of every 15 homes in the U.S. is estimated to have elevated radon levels. While radon may be more common in some areas, at least one home in every county in the U.S. has been found to have elevated radon levels.

### Radon-resistant construction improves indoor air quality.

Radon-resistant construction can control radon in homes in the event that there are elevated levels of this gas. In addition to controlling radon in the home, radon-resistant construction is good building practice by reducing moisture levels and all the associated problems with increased moisture in the home.

### Radon is estimated to cause thousands of cancer deaths in the U.S. each year.

Radon is a radioactive gas that has been identified by the U.S. Surgeon General as the second leading cause of lung cancer after smoking.



*\*According to the U.S. EPA, radon is estimated to cause about 14,000 deaths per year; however, this number could range from 7,000 to 30,000 deaths per year. The numbers of deaths from other causes are taken from 1990 National Safety Council reports.*

### What is radon?

Radon is a cancer-causing, radioactive gas that is found in soils all over the United States. Although you can't see, smell or taste radon, it can become concentrated at dangerous levels in any building - homes, offices, and schools. But people are most likely to get the greatest exposure at home because that's where most time is spent.

### Testing for radon.

Educate the homeowner that although their home is radon resistant it is recommended to test the home after it is built.

Low-cost "do-it-yourself" radon test kits can be obtained through the mail, in hardware stores and other retail outlets. Purchase a test kit that displays the phrase "Meets EPA Requirements" or "EPA listed." If desired, a trained contractor can be hired to do the testing. Make certain they are an EPA-qualified radon tester.

### What if high levels are found?

Since you have already installed the basics of a radon mitigation system, it is relatively inexpensive and easy for the homeowner to make it active.

## Radon-resistant construction benefits the home builder and the home owner.

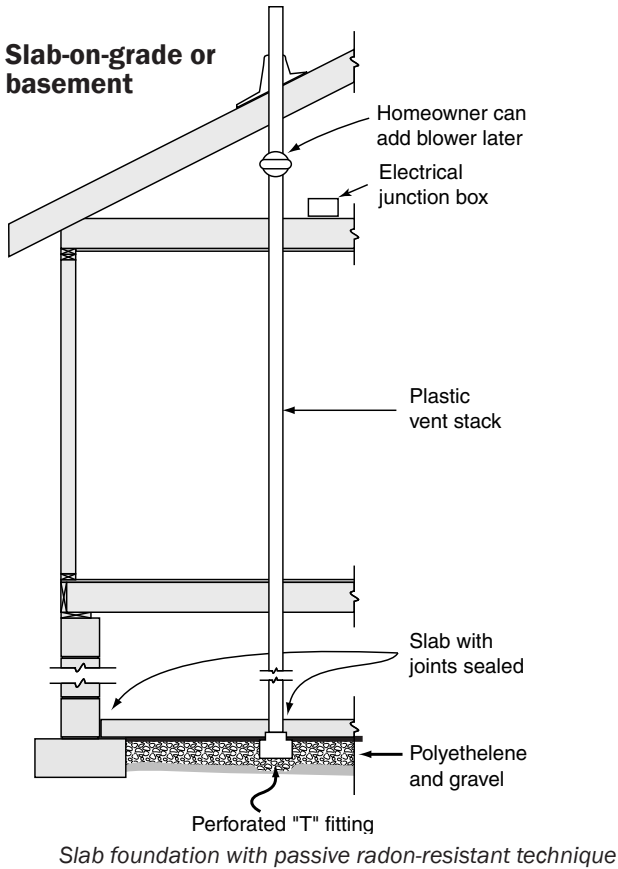
Home builders benefit :

- Increased marketability and positioning as a builder that supports good building practice.
- Fewer callbacks for moisture related problems.

Home owners benefit:

- If radon is detected, a passive system can be upgraded to an active system with little effort.
- Improved resale value of the home.
- Improved indoor air quality and assurance that your family is protected from the health threats posed by radon.

## Slab-on-grade or basement



## The passive concept

A perforated "T" fitting is attached to a vertical plastic vent stack that penetrates the roof. The "T" is buried in the gravel under the foundation slab and gases can slowly percolate through the "T" and out the stack.

## The active concept

If unacceptable levels of radon are discovered once the homeowners test, inform them that a fan can be added to generate suction to pull gases out through the stack.

## Slab-on-grade or basement

- Use a 4-6" gravel base.
- Install continuous layer of 6-mil polyethylene.
- Stub in "T" below polyethylene that protrudes through polyethylene and extends above poured floor height.
- Pour slab or basement floor.
- Seal slab joints with caulk.

## Crawl space

- Install sealed, continuous layer of 6-mil polyethylene.
- Install "T" below polyethylene that protrudes through polyethylene.

## All foundations

- Install a vertical 3-inch PVC pipe from the foundation to the roof through an interior wall.
- Connect the "T" to the vertical 3-inch PVC pipe for passive mitigation.
- Have electrician stub-in junction box in attic.
- Label PVC pipe "**RADON**" "↑" so that future plumbing work will not be tied into the stack.

For more information: [www.southface.org](http://www.southface.org)

## Crawl space

