

A **PASSIVE RADON REDUCTION SYSTEM** will reduce indoor radon levels. However, reduction below 4.0 picocuries per liter of air (pCi/L) may not occur. (The U.S. Environmental Protection Agency's action level is 4.0 pCi/L.)



BE SURE! TEST YOUR HOME FOR RADON. Activation of your Passive Radon Reduction System is simple and cost effective, if the system is initially installed correctly.

GUIDELINES FOR RADON TESTING

IEMA has guidelines for testing your home. The "Guidelines for Home Environment Radon Measurements" summarizes radon testing protocols for individuals wanting to test their home environment for radon. Because of the unique nature of real estate transactions, IEMA has designed special protocols for radon testing in real estate transactions. If you expect to be selling your house in the near future, we recommend that you request the IEMA fact sheet "Radon Testing Guidelines for Real Estate Transactions." Both of these documents can be ordered from IEMA or can be found on our website www.radon.illinois.gov.



TEST LIKE THE PROFESSIONALS DO.

Test in each lowest structural area suitable for occupancy. For instance, if your house includes a basement, an area over a slab, and an area over a crawlspace, TEST in at least one room in each area. The **HIGHEST** radon level in your house **MAY NOT** be in your basement!



For additional information about radon in your county and a list of Professional Mitigation Licensees who service your area call the IEMA-Division of Nuclear Safety Radon Program at

1 (800) 325-1245
TDD: (217) 782-6023

or visit online at www.radon.illinois.gov

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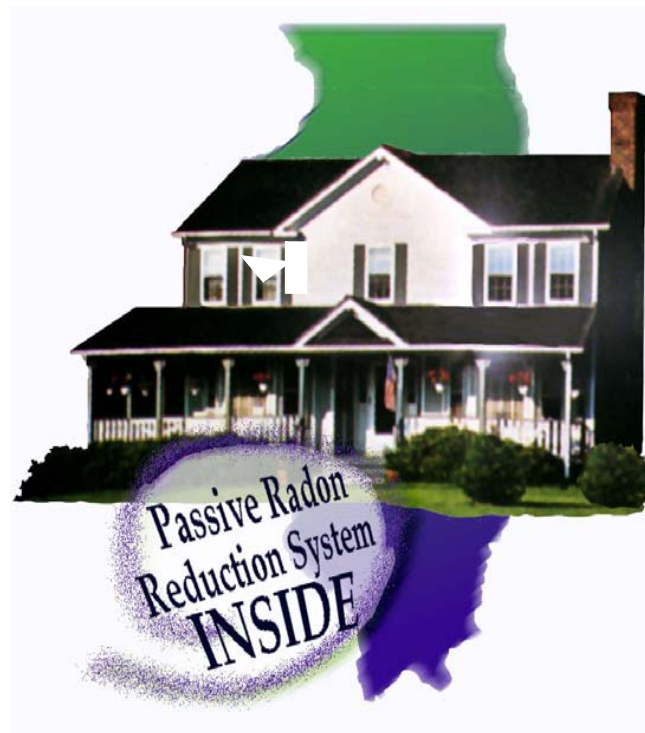
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Illinois Emergency Management Agency
Andrew Velasquez III, Director



Passive Radon Reduction Systems

In New Residential Construction



IEMA

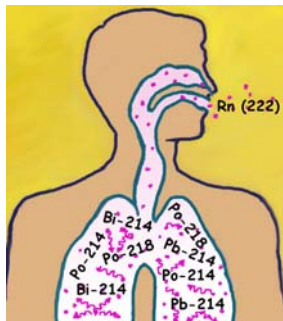




Radon is a colorless, odorless, radioactive gas. You can't see it, feel it, smell it, or taste it. Radon comes from the radioactive decay of naturally occurring uranium in the soil.

Radioactive decay is **NOT** like biological decay. When radioactive decay occurs, the original element (uranium, in this case) is called the **parent** and the new element that is created is called its **decay product**. If the decay product is also radioactive, it will decay, creating another element, and so on ... The sequence of consecutive elements formed by radioactive decay is called a **decay series** or **decay chain**.

In the uranium (U-238) decay series, radon (Rn-222) is the only gaseous element. Inhalation is the exposure pathway. Once in the lungs, residual radon rapidly decays to polonium-218 (Po-218), lead-214 (Pb-214), bismuth-214 (Bi-214), and polonium-214 (Po-214). These decay products comprise the primary mechanism for lung cell damage that may result in the development of lung cancer.



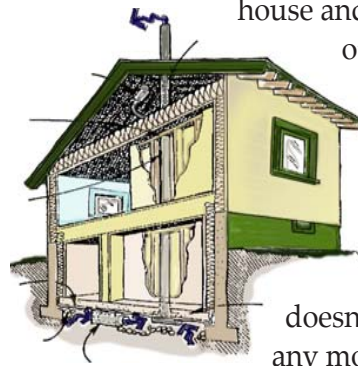
The Surgeon General has warned that radon is the second leading cause of lung cancer in the U.S.

A PASSIVE RADON REDUCTION SYSTEM helps reduce indoor radon levels and is cost effective, if it is installed correctly. **COMPARE:**

Passive Radon Reduction System in new residential construction	\$ 350 – 500
Activation of the Passive Radon Reduction System, if your radon test is 4.0 pCi/L or more	\$ 250 – 400
Estimated cost totals	\$ 600 – 900
Retrofitting an existing house with an active radon reduction system	\$1000-1800
Cost savings	\$ 400 - 900

How Radon Enters A House

Most radon enters a house because of air pressure and temperature differences between the home and the outside air. When air is vented from a building by natural or powered ventilation, radon is drawn in from the surrounding soil through openings between the house and the soil. In addition,



other soil gases and moisture enter the home through these openings too. People often tell us, "We love our radon reduction system because our basement doesn't smell like a basement any more."

Preserving Health Benefits and Cost Savings

A builder is not required to be licensed to install a PASSIVE radon reduction system. **HOWEVER**, activation of a passive system requires a licensed Professional Mitigator.

If a passive system is not installed in accordance with the applicable requirements for active systems, *32 Illinois Administrative Code 422*, the health benefits and cost savings of the passive installation may be lost. Upon activation, the mitigation installation must meet all of Illinois' requirements for active radon reduction systems.

If you are just now planning your new house, tell your architect or contractor that you want a Passive Radon Reduction System designed into your house plan.

Components of Passive Radon Reduction Systems

Detailed installation instructions are available from IEMA. Briefly described, key components of passive radon reduction systems are:

- Central internal location
- Gas permeable sub floor preparation
- Ground cover (6 mil polyethylene)
- Enhancement of system function by sealing openings between the house and soil
- 3-inch, Schedule 40 PVC pipe and fittings
- Space allowance for the installation of a fan during activation
- Power source in case activation is required
- Discharge at least 12 inches above the highest eave of the roof and 10 feet from windows and other openings