



Radon

Information Sheet

Scientific Background

Radon-222 is a noble gas produced by radioactive decay of radium-226, which is widely distributed in uranium-containing soils and rocks. The radon readily escapes from the soil or rock and enters surrounding water or air. The most important pathway for human exposure is through the permeation of underlying soil gas into buildings, although indoor radon can also come from water. Radon gets through cracks in the foundation or walls, construction joints, gaps in suspected floors or around service pipes, cavities inside the wall, or the water supply.



Radon gas decays into radioactive particles that can get trapped in your lungs when you breathe. As they break down further, these particles release small bursts of energy that can damage lung tissue and lead to lung cancer. Environmental Protection Agency (EPA) estimates that out of a total of 146,000 lung cancer deaths nationally in 1995, 21,100 (14.4%) were radon related. Among non-smokers, an estimated 26% were radon related. Smokers are a higher risk from radon.

Reference: EPA 402-R-03-003 (www.epa.gov)

Discovery

Most homes in Middle Tennessee have elevated levels of radon.

The only way to know if you and your family are at risk is to test for Radon. If the levels in your home are 4 picocuries per liter (pCi/L) or higher, then you should fix it. Tests are simple, and are usually done by the homeowner. The kits for both air and water can be acquired from most local building supply stores. Be sure to use one that is EPA approved. Radon in the air is breathable and thereby, more critical; however, Radon in the water can be ingested or inhaled when it is released into the air.



You simply follow the directions on the package for sampling, and then mail it into the lab for analysis. Initially, you should use a short-term test (2-3 days) and the follow-up with a long-term (90 days) test if high levels are detected. Levels less than 4pCi/L can still cause a health risk, and if possible, should be lowered.

Reference: EPA K02-006 (www.epa.gov)

For professional radon testing: www.epa.gov/radon/proficiency.html

Fixing the Problem

Radon reduction systems work and they are not too costly (\$1,200 avg). Some reduction systems can reduce levels in your home by up to 99%; even very high levels can be reduced to acceptable levels. Radon-resistant construction techniques should also be used.



The most common, and fairly inexpensive, system is a soil suction radon reduction system that uses a vent pipe and fan, which pulls radon from beneath the house and vents it to the outside. Devices that remove the radon at the water's point-of-entry into the house are the best.

Air reduction: www.epa.gov/radon/pubs and Water: www.epa.gov/safewater/radon.html