RDK04, RDK04-3, RDN04, RDN04-3 FAQ's

Q: What is radon?
A: Radon is a radioactive gas. It is colorless, odorless, tasteless, and chemically inert. Unless you test for it, there is no way to know how much is present. Radon is formed by the natural radioactive decay of uranium in rock, soil, and water. Naturally existing, low levels of uranium occur widely in Earth's crust. Once produced, radon moves through the ground to the air above. Some remains below the surface and dissolves in water that collects and flows under the ground's surface. When radiation from radon is measured directly, the amount is usually expressed in picocuries per liter of air (pCi/L).

Q: What is the recommended action level for Radon?
A: 4 pCi/L. No level of radon exposure is always safe. However, the EPA recommends homes be fixed if an occupant's long-term exposure will average 4 picocuries per liter (pCi/L) or higher.

Q: What is a "picocurie" (pCi)?
A: A pCi is a measure of the rate of radioactive decay of radon.

Q: What is a "working level" (WL)?
A: A level of 0.02 WL is usually equal to about 4 pCi/L in a typical home.

Q: How often is indoor radon a problem?
A: Nearly one out of every 15 homes has a radon level the EPA considers to be elevated—4 pCi/L or greater. The U.S. average radon-in-air level in single family homes is 1.3 pCi/L. Because most people spend as much as 90 percent of their time indoors, indoor exposure to radon is an important concern.

Q: How does radon get into a building?
A: Most indoor radon comes into the building from the soil or rock beneath it. Radon and other gases rise through the soil and get trapped under the building. The trapped gases build up pressure. Air pressure inside homes is usually lower than the pressure in the soil. Most of the gas moves through cracks and other openings. Once inside, the radon can become trapped and concentrated.

Openings which commonly allow easy flow of the gases in include the following:

- Cracks in floors and walls
- Gaps in suspended floors
- Openings around sump pumps and drains
- Cavities in walls
- Joints in construction materials
- Gaps around utility penetrations (pipes and wires)
- Crawl spaces that open directly into the building

Trace amounts of uranium are sometimes incorporated into materials used in construction. These include, but are not limited to concrete, brick, granite, and drywall. Though these materials have the potential to produce radon, they are rarely the main cause of an elevated radon level in a building.

Outdoor air that is drawn into a building can also contribute to the indoor radon level. The average outdoor air level is about 0.4 pCi/L, but it can be higher in some areas.

While radon problems may be more common in some geographic areas, any home may have an elevated radon level. New and old homes, well-sealed and drafty homes, and homes with or without basements can have a problem.

Q: Can the radon level in a building's air be predicted?
A: Indoor radon levels vary from building to building. Do not rely on radon test results taken in other buildings in the neighborhood—even ones next door—to estimate the radon level in your building.

Q: What is a radon mitigation system?
A: A radon mitigation system is any system or steps designed to reduce radon concentrations in the indoor air of a building.
The EPA recommends that you take action to reduce your home's indoor radon levels if your radon test result is 4 pCi/L or higher.

Q: What are the benefits of radon mitigation?
A: The primary benefit is reducing the risk of developing lung cancer. Standard radon reduction systems are usually effective within 24 hours and maintain low levels as long as the fan is operating. Another potential benefit of these systems is reduced infiltration of moist soil air with the radon, which may reduce the humidity level in the basement of the home.

Q: What can be done to reduce radon in a home?
A: Your house type will affect the kind of radon reduction system that will work best. Houses are generally categorized according to their foundation design. For example: basement, slab-on-grade (concrete poured at ground level), or crawlspace (a shallow unfinished space under the first floor). Some houses have more than one foundation design feature. For instance, it is common to have a basement under part of the house and to have a slab-on-grade or crawlspace under the rest of the house. In these situations a combination of radon reduction techniques may be needed to reduce radon levels to below 4 pCi/L.
In many cases, simple systems using underground pipes and an exhaust fan may be used to reduce radon. Such systems are called "sub-slab depressurization," and do not require major changes to your home. These systems remove radon gas from below the concrete floor and the foundation before it can enter the home. Similar systems can also be installed in houses with crawl spaces.

Sealing cracks and other openings in the floors and walls is a basic part of most approaches to radon reduction. Sealing does two things, it limits the flow of radon into your home and it reduces the loss of conditioned air, thereby making other radon reduction techniques more effective and cost-efficient. The EPA does not recommend the use of sealing alone to reduce radon because, by itself, sealing has not been shown to lower radon levels significantly or consistently. It is difficult to identify and permanently seal the places where radon is entering. Normal settling of your house opens new entry routes and reopens old ones.

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