

RADON IN THE HOME

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What is radon and where does radon come from?

Radon is a naturally occurring radioactive gas that comes from naturally occurring uranium in the soil. It is colorless and odorless. The problem with radon in homes is that over time, the radon gas may accumulate in the lower levels, allowing it to build up to higher concentrations. Persons exposed to higher concentrations of radon may have a higher risk of developing lung cancer over time.

What is the risk from exposure to radon?

The Illinois Emergency Management Agency's (IEMA) website [What is Radon](#) states that the risk from being exposed to the 4 pCi/L action level of radon will result in about 7 deaths per 1000 persons.

The United States Environmental Protection Agency's (USEPA) [A Citizen's Guide to Radon](#) provides more detail about the risks from radon exposure. For non-smokers, the risk from exposure to 4 pCi/L will result in about 7 deaths per 1000 persons *over a lifetime*. Risk factors for smokers and other radon levels are also given.

Should I test my home for radon?

The United States Environmental Protection Agency and the Illinois Emergency Management Agency recommend that all homes be tested for radon.

What environmental factors can affect my readings?

Radon levels in the home may fluctuate greatly during the day and depending on the season. During periods of warm weather, open windows in the home provide ventilation, and frequent opening and closing of doors into the home will also affect the readings. High winds may also affect the radon levels.

How do I test my home for radon?

You may perform the test yourself, using the IEMA [Guidelines for Radon Measurements in the Home](#). Radon test kits may be available in some department stores, or can be obtained from a list maintained by [IEMA Radon Measurement Labs](#). If you prefer to have a professional perform the measurements for you, you should select someone from a list of licensed [Measurement Professionals](#) in your area.

Depending on the type of device, a radon test kit can provide a short-term or a long-term measurement. A short-term device takes between 2 days to 90 days to obtain a measurement. A long-term device will need to be in place for more than 90 days.

There are several devices to choose from to make the radon measurements. A long-term device will provide a better result for the average radon levels throughout the measurement period, whereas if a result is needed more quickly, such as for a real-

estate transaction, a short-term measurement device should be used. It is usually required to ensure the home is closed up for 12 hours prior to beginning the measurement for short-term devices.

Interpreting the Results

United States Environmental Protection Agency Guidelines

The USEPA's [A Citizen's Guide to Radon](#) recommends that a short-term test be performed first. If the first short-term test is higher than the 4 pCi/L action level but less than 8 pCi/L, either a second short-term test if results are needed quickly, or a long-term test for a better understanding of the year-round average should be performed. If the long-term result is 4 pCi/L or higher, the USEPA recommends that the home be fixed.

However, if the first short-term measurement is higher than 8 pCi/L, the USEPA guide states that a second short-term test should be performed immediately. If the average of the first and second short-term tests are 4 pCi/L or higher, the USEPA guide states that consideration should be given for fixing the home.

Illinois Emergency Management Agency Guidelines

Non-real estate transactions

The IEMA [Guidelines for Radon Measurements in the Home](#) are similar to the USEPA's guidelines. The state of Illinois has developed separate protocols for radon measurements depending on whether the home is part of a real-estate transaction, or if the home-owner simply wants to test their home.

If the homeowner simply wants to test their home and the home is not part of a real-estate transaction in Illinois, the IEMA recommends performing a short-term test in each of the lowest structural areas of the home. If the results are less than 4 pCi/L, then no further action is needed. But if the results are higher than 4 pCi/L but less than 9.9 pCi/L, the homeowner can either perform another short-term test or perform a long-term test. If the average of the short-term tests is higher than 4 pCi/L, the IEMA recommends reducing the radon level. If the first short-term results are higher than 10 pCi/L, the homeowner should perform another short-term test and reduce the radon levels if the results are in agreement with the first short-term tests.

The IEMA "strongly recommends that homeowners perform long-term tests (between 91 and 365 days) because long-term tests give a better estimate of the average year-round radon concentration in the home." A year-long test, such as with an alpha-track detector, will give the best results.

Illinois Real Estate Transactions

In Illinois, the [Illinois Radon Testing Guidelines for Real Estate Transactions](#) applies to homes involved in real-estate transactions. These tests are short-term tests. A homeowner may perform the measurements themselves, but in some cases the real-estate transaction may require that the tests be performed by a licensed radon

measurement professional. If the home is not yet for sale and the homeowner has a few months to perform the radon measurements, then they should use the [Guidelines for Radon Measurements in the Home](#).

Is a radon test required before selling or buying a home in Illinois?

Illinois Radon Awareness Act beginning January 1, 2008 – “requires that anyone buying a residential property in Illinois be provided with information about indoor radon exposure and the fact that radon is the leading cause of lung cancer among non-smokers, and is the second leading cause overall.”

The Illinois Property Disclosure Act requires that the “seller of a home disclose information if aware of unsafe concentrations of radon in the home. The act does not require that radon tests or remediation work be performed. However, lending institutions and buyers may request a radon test.”

How do I reduce radon levels in my home?

The USEPA’s [Consumer's Guide to Radon Reduction](#) is an excellent overview for homeowners who wish to reduce the radon levels in their home using a licensed contractor. It is important that the homeowner use an [IEMA licensed contractor](#) for installing radon reduction methods, since these methods require specialized knowledge to be effective. There are many ways to reduce radon levels depending on the type of home.

How much does it cost to reduce radon levels in a home?

According to the USEPA [Home Buyer’s and Seller’s Guide to Radon](#) , the average cost for a contractor to lower radon levels in a home can range from \$800 to about \$2500.

According to the IEMA, the average cost is \$800 to \$1200 for installation of an active radon mitigation system, and will cost about \$100 a year to run a fan.

Where can I get more information?

<http://www.epa.gov/iaq/pubs/insidest.html>

<http://www.radon.illinois.gov/>

<http://www.radon.illinois.gov/pdf/radontestguidelineforrealestate.pdf>

Illinois Radon Hotline 1-800-325-1245