

# Radon in Real Estate Transactions



All Minnesota homes can have dangerous levels of **radon gas** in them. Radon is a colorless, odorless and tasteless **radioactive gas** that can seep into homes from the earth. When inhaled, its radioactive particles can damage the cells that line the lungs. Long-term exposure to radon can lead to **lung cancer**. About 21,000 lung cancer deaths each year in the United States are caused by radon, making it a serious health concern for all Minnesotans.

It **does not matter if the home is old or new** and the only way to know how much radon gas has entered the home is to conduct a radon test. MDH estimates **2 in 5 homes built before 2010** and **1 in 5 homes built since 2010** exceed the 4.0 pCi/L action level.



In Minnesota, buyers and sellers in a real estate transaction are free to negotiate radon testing and reduction. Ultimately, it is up to the buyer to decide an acceptable level of radon risk in the home. Prospective buyers should keep in mind that it is inexpensive and easy to measure radon, and radon levels can be lowered at a reasonable cost. The MDH Radon Program website provides more detailed information on radon, including the MDH brochure "Keeping Your Home Safe from Radon."

The Minnesota Radon Awareness Act does not require radon testing or mitigation. However, many relocation companies and lending institutions, as well as home buyers, require a radon test when purchasing a house. The purpose of this publication is to educate and inform potential home buyers of the risks of radon exposure, and how to test for and reduce radon as part of real estate transactions.



## Disclosure Requirements

Effective January 1, 2014, the Minnesota Radon Awareness Act requires specific disclosure and education be provided to potential home buyers during residential real estate transactions in Minnesota. This publication is being provided by the seller in order to meet a requirement of the Act. In addition, **before signing a purchase agreement to sell or transfer residential real property**, the seller shall disclose in writing to the buyer any knowledge the seller has of radon concentrations in the dwelling.

The disclosure shall include:

1. whether a radon test or tests have occurred on the property;
2. the most current records and reports pertaining to radon concentrations within the dwelling;
3. a description of any radon concentrations, mitigation, or remediation;
4. information regarding the radon mitigation system, including system description and documentation, if such system has been installed in the dwelling; and
5. a radon warning statement

### Radon Warning Statement

"The Minnesota Department of Health strongly recommends that ALL homebuyers have an indoor radon test performed prior to purchase or taking occupancy, and recommends having the radon levels mitigated if elevated radon concentrations are found. Elevated radon concentrations can easily be reduced by a qualified, certified, or licensed, if applicable, radon mitigator.

Every buyer of any interest in residential real property is notified that the property may present exposure to dangerous levels of indoor radon gas that may place the occupants at risk of developing radon-induced lung cancer. Radon, a Class A human carcinogen, is the leading cause of lung cancer in nonsmokers and the second leading cause overall. The seller of any interest in residential real property is required to provide the buyer with any information on radon test results of the dwelling."

## Radon Facts

### How dangerous is radon?

Radon is the **number one cause of lung cancer in non-smokers** and the second leading cause of lung cancer overall, next to tobacco smoking. Thankfully, much of this risk can be prevented through testing and taking action to reduce high levels of radon gas when and where they are found. Your risk for lung cancer increases with higher levels of radon gas, prolonged exposure and whether or not you are a smoker.

### Where is your greatest exposure to radon?

Radon is present everywhere, and there is no known safe level. Your greatest exposure is where it can concentrate indoors and where you spend most of your time. For most Minnesotans, this is at home. Whether a home is old or new, well-sealed or drafty, with or without a basement, **any home can have high levels of radon**.



### Where does Radon come from?

Radon comes from the soil. It is produced by the natural decay of uranium and radium commonly found in nearly all soils in Minnesota. As a gas, radon moves freely through the soil and eventually into the air you breathe. Our homes tend to draw soil gases, including radon, into the structure.

### I have a new home, aren't radon levels reduced already?

Homes built in Minnesota since June 2009 are required to contain construction features that may limit radon entry. These features are known as passive Radon Resistant New Construction (RRNC). While these passive RRNC features may lower the amount of radon in newer homes, it does not guarantee low levels. It is recommended all new homes be tested for radon, and if elevated levels are found, these passive RRNC features can be easily and inexpensively activated with the addition of a radon fan in the attic. If you are buying a new home, ask if the home has any RRNC features and if the home has been tested.

### What is the recommended action based on my results?

If the average radon in the home is at or **above 4.0 pCi/L, the house should be fixed**. Consider fixing the home if radon levels are between 2 pCi/L and 3.9 pCi/L. While it isn't possible to reduce radon to zero, the best approach is to reduce the radon levels to as low as reasonably achievable. Any amount of radon, even below the recommended action level, carries some risk.

## How are radon tests conducted in real estate transactions?

Because of the unique nature of real estate transactions, involving multiple parties and financial interests, there are special protocols for radon testing.



### Continuous Radon Monitor (CRM)

*Fastest*

Test is completed by a certified contractor with a calibrated CRM for a minimum of 48 hours.

Test report is analyzed to ensure that it is a valid test.



### Simultaneous Short-term Testing

*Second fastest*

Two short-term test kits are used at the same time, placed 6-12 inches apart, for a minimum of 48 hours.

Test kits are sent to the lab for analysis.

The two test results are averaged to get the radon level.



### Sequential Short-Term Testing

*Slowest*

One short-term test is performed for a minimum of 48 hours.

Test kit is sent to lab for analysis.

Another short-term kit is used in the same place as the first, started right after the first test is taken down. Test is performed for a minimum of 48 hours.

Test kit is sent to the lab for analysis.

The two test results are averaged to get the radon level.

## Radon Testing

### House conditions when testing

Be aware that any test lasting less than three months requires closed-house conditions.

**Closed-house Conditions:** Mean keeping all windows and doors closed, except for normal entry and exit.

**Before Testing:** Begin closed-house conditions at least 12 hours before the start of the radon test.

**During Testing:** Maintain closed-house conditions during the entire duration of the short term test. Operate home heating or cooling systems normally during the test.

### Where the test should be conducted

Any radon test conducted for a real estate transaction needs to be placed in the lowest livable area of the home suitable for occupancy. In Minnesota, this is typically in the basement, whether it is finished or unfinished.

The test kit should be placed:

- two to six feet above the floor
- at least three feet from exterior walls
- four inches away from other objects
- in a location where it won't be disturbed
- not in enclosed areas
- not in areas of high heat or humidity

If the house has multiple foundation types, it is recommended that each of these be tested. For instance, if the house has one or more of the following foundation types--basement, crawl space, slab-on-grade--a test should be performed in the basement and in at least one room over the crawlspace and one room with a slab-on-grade area.

## Who should conduct radon testing in real estate transactions?

All radon tests should be conducted in accordance with national radon measurement protocols, by a certified and MDH-listed professional. This ensures the test was conducted properly, in the correct location, and under appropriate building conditions. A list of these radon measurement professionals can be found at MDH's Radon web site. A seller may have previously conducted testing in a property. If the test result is at or above the action level, the home should be mitigated.

## Radon Mitigation

### Lowering radon in existing homes – Radon Mitigation

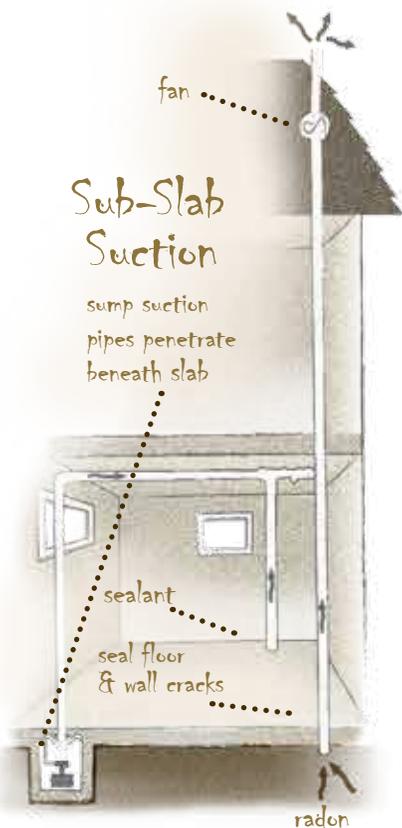
When elevated levels of radon are found, they should be mitigated. Elevated radon concentrations can be easily reduced by a nationally certified and MDH-listed radon mitigation professional. A list of these radon mitigation professionals can be found at MDH's Radon web site.

Radon mitigation is the process or system used to reduce radon concentrations in the breathing zones of occupied buildings. The goal of a radon mitigation system is to reduce the indoor radon levels to below the EPA action level of 4.0 pCi/L. A quality radon reduction (mitigation) system is often able to reduce the annual average radon level to below 2.0 pCi/L

Active sub-slab suction (also called sub-slab depressurization, or SSD) is the most common and usually the most reliable type of system because it draws radon-filled air from beneath the house and vents it outside. There are standards of practice that need to be followed for the installation of these systems. More information on radon mitigation can be found at the MDH Radon website.

### After a radon reduction system is installed

Perform an independent short-term test to ensure that the reduction system is effective. Make sure the radon system is operating during the entire test. Once a confirmatory radon test shows low levels of radon in the home, be sure to retest the house every two years to confirm continued radon reduction.



**Contact the MDH Radon Program if you are uncertain about anything regarding radon testing or mitigation.**

The MDH Radon Program can provide:

- Information about radon health effects, radon testing and radon mitigation;
- Names of trained, certified and MDH-listed radon professionals;

### MDH Radon Program

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