



Kansas Radon Program

Engineering Extension

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Encourage both buyers and sellers to test for Radon!

Results of a radon test from one house cannot predict results in another. Testing of radon levels in each home sold is the only way to provide a level of confidence about potential radon exposure to parties involved in a real estate transaction.

Radon and Real Estate Professionals

Radon as a real estate issue

Real estate professionals require a strong familiarity with radon in order to properly advise clients as to its application in buying and selling of homes. Radon, a naturally occurring soil gas that can infiltrate homes, is a known human carcinogen and is the second leading cause of lung cancer behind tobacco smoking. As such, many clients will want to know radon levels of the homes they are buying, in order to make the most fully informed decision possible. It is likely they will judge your knowledge and attitude concerning radon and it is possible that clients will walk away from a purchase if home radon testing (and if necessary radon reduction) is handled poorly. Knowledge about radon can help real estate professionals avoid potential problems.

As such, radon may provide a stumbling block in the sale or purchase of a home. It is therefore best to raise this issue with the buyer as soon as interest in a given home is expressed. This provides the buyer(s) the opportunity to ask any questions concerning radon and decide if radon testing is something desired. Getting a reliable test that satisfies both buyer and seller is not too difficult in most urban areas, but may be a challenge in rural areas of Kansas.

Is radon a problem in Kansas?

The results of a 1987–1988 Kansas Department of Health and Environment/U. S. Environmental Protection Agency radon survey of 2,031 homes indicated a statewide indoor radon average of 3.2 picocuries of radon per liter of air (pCi/L). More than 25 percent of the homes measured had short-term (two-day average) radon levels greater than 4 pCi/L, a level that warrants further action. In some areas of Kansas, the percentage of homes with test results more than 4 pCi/L exceeded 40 percent.

Currently, the Kansas Radon Program's database of radon tests conducted in Kansas has greater than 50,000 measurements. The average observed residential radon test in Kansas is currently 4.8 pCi/L, or in excess of the EPA's Action Level of 4.0 pCi/L. The

maximum reported radon value in Kansas to date is 260 pCi/L.

Radon testing during a real estate transaction

Buyers usually instigate the testing. If radon levels are unacceptably high (at or above the EPA guideline of 4 pCi/l or more), they want to know. The buyer may pay for the cost of the test, but often expects the seller to pay for the radon-reduction system, if necessary. The buyer may also want to know radon levels in an area of the home the seller might not otherwise test.

The seller or real estate agent can be held legally liable when either one knows the radon level in the house and fails to reveal, in a reasonable fashion, information that may be important to a buyer making decisions.

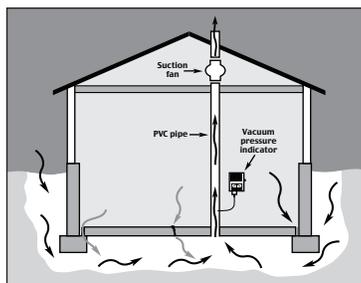
Kansas has adopted legislation related to radon contained in K.S.A. 58-3078a. As of July 1, 2009, all residential real property contracts in the state of Kansas will require the insertion of the following statement related to radon:

"Every buyer of residential real property is notified that the property may present exposure to dangerous concentrations of indoor radon gas that may place occupants at risk of developing radon-induced lung cancer. Radon, a class-A human carcinogen, is the leading cause of lung cancer in non-smokers and the second leading cause overall. Kansas law requires sellers to disclose any information known to the seller that shows elevated concentrations of radon gas in residential real property. The Kansas department of health and environment recommends all home-buyers have an indoor radon test performed prior to purchasing or taking occupancy of residential real property. All testing for radon should be conducted by a radon measurement technician. Elevated radon concentrations can be easily reduced by a radon mitigation technician. For additional information go to www.kansasradonprogram.org."

Radon testing should be conducted by a radon professional measurement specialist certified by the Kansas Department of Health

Surgeon General of the United States Health Advisory:

"Indoor radon gas is a national health problem. Radon causes thousands of deaths each year. Millions of homes have elevated radon levels. Most homes should be tested for radon. When elevated levels are confirmed, the problem should be corrected."



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and Environment (KDHE). The adoption of the Kansas Radon Certification Law, effective July 1, 2011, requires that all professional radon measurement and mitigation contractors, as well as all radon laboratories active in Kansas, be certified by KDHE. While the enabling statute for the Kansas Radon Certification Law allows non-certified individuals to perform radon testing for others without remuneration, houses involved in a real estate transaction are specifically excluded from this exception.

Any testing for radon during a real estate transaction should follow the protocols discussed in the EPA's Home Buyer's and Seller's Guide to Radon. **Sequential radon testing** is performed by placing a single-use short-term radon test kit in an appropriate location. Immediately following the collection of that test kit a second test kit of the same type is deployed. Results from the two test kits are averaged to determine the need for radon mitigation. **Simultaneous radon testing** is performed by placing two single-use short-term radon test kits in an appropriate location at the SAME TIME and using the averaged results of the two kits to determine the necessity of radon mitigation. The key to an accurate test is following test kit directions and the EPA radon measurement protocols. **Continuous radon monitor testing** is performed by a certified radon measurement professional for a minimum of 48 hours with an appropriate device that records hourly radon fluctuations and calculates an average for the time of the test.

A common misconception of many sellers is that radon problems are not easily fixable and therefore will lower home value. As such, there have been cases of tampering with measurement devices or test conditions to artificially achieve low-test results. However, surveys have shown that radon does not significantly influence the value of homes once mitigation systems are installed.

Radon mitigation during a real estate transaction

If a home being purchased is elevated for radon, it is typical for the seller to install a radon mitigation system to reduce the indoor radon level to less than 4 pCi/L. If the home your client is considering purchasing has an elevated radon level and the seller refuses to correct the radon issue,

there is no reason not to buy that house if it otherwise meets many or all of your other criteria. Typical radon mitigation costs much the same as other home repairs (from \$800 to \$2,000).

The standard type of radon mitigation (or reduction) is called **active soil depressurization (ASD)**, which is a complicated term for the process of creating a vacuum beneath the foundation of a home that is stronger than the vacuum generated by the house itself. The ASD system is composed of a vent shaft, suction fan and system monitor. The vent shaft extends through the foundation of the house into a small pit dug out by hand. This shaft is usually constructed of polyvinyl chloride (PVC) plastic pipe and is typically three to four inches in diameter. The shaft extends either up through the house and is exited through the roof, or it is routed to the outside of the house and vented above the eaves of home. The suction fan generates the vacuum that helps to draw the radon to the vent shaft and draws the gas up the shaft, venting it into the atmosphere above the home. The system monitor is typically a u-shaped manometer, which provides visual proof that the suction fan is indeed creating a vacuum. It should be noted that ASD radon reduction systems can be adapted to any type of housing foundation, including homes with basements, homes built on slabs, homes built over crawl spaces, or homes with mixed foundation types.

Additional information

The Kansas Radon Program can provide your area with a Radon for Real Estate Professionals half-day seminar, which is certified for 3 hours of continuing education hours for your real estate license. Contact the Kansas Radon Program for details and for scheduling. Lists of Kansas certified radon measurement and mitigation contractors can be found at

www.kansasradonprogram.org/contractors.

General information related to radon in Kansas can be found at

www.kansasradonprogram.org or by calling the Kansas Radon Program at 800.693.5343

EPA Document Site

For a list of all available EPA documents on radon and the Home Buyer's and Sellers' Guide in particular, go to the EPA's website at www.epa.gov/radon/pubs.