

Why a Radon Gas Test Should Be on Every St. Louis Homeowner's Checklist

If you own a home in St. Louis, you already know the city has a lot of character. But there is one thing most homeowners don't think about until they have to: radon. This colorless, odorless gas comes from the natural breakdown of uranium in soil. It seeps into basements and crawl spaces, and over time it can reach levels that pose a real health risk. The only way to know if your home is safe is to conduct a radon gas test.

I have spent years working in residential radon testing across Missouri, and I have seen the same pattern over and over. People buy a home, get it inspected, and the inspector mentions radon. The buyer nods, signs a paper, and moves on. Years later they find out their basement has an annual average radon concentration well above the action level set by the US EPA. By then, a lot of unnecessary exposure has already happened.

What a Radon Gas Test Actually Tells You

A [radon gas test](#) measures the concentration of radon in the air inside your home. The result is reported in picocuries per liter (pCi/L). The US EPA recommends action when the level hits 4.0 pCi/L or higher. But even between 2.0 and 4.0 pCi/L, the agency suggests considering a radon mitigation system. The test itself can be short or long, and the method you choose matters a lot.

There are two main categories of tests: passive and active. Passive tests include charcoal canisters and electret ion chamber devices. You set them out, leave them for a set period, then mail them to a lab. These are fine for a basic screening, but they have limitations. They can be thrown off by drafts, high humidity, or improper placement. An electret ion chamber is more stable than a charcoal canister, but it still only captures a snapshot.

Active tests use a continuous radon monitor. This device sits in your home for a minimum of 48 hours, sometimes longer, and takes readings every hour. It records fluctuations throughout the day. That matters because radon levels change with weather, barometric pressure, and how often doors and windows open. A continuous radon monitor gives you a much more reliable picture of your indoor air quality than a single canister left in a closet.

Why St. Louis Homes Are at Higher Risk

If you look at a radon map of Missouri, St. Louis and the surrounding counties sit in areas the US EPA classifies as Zone 1. That means the predicted average indoor radon level is above 4.0 pCi/L. The geology here includes limestone and shale formations that release radon more

readily than other soil types. That is not a guarantee every home has a problem, but it does mean a radon gas test should be part of any home inspection in the region.

I have tested homes in the same subdivision where one house came back at 1.5 pCi/L and the neighbor's came back at 8.2 pCi/L. Soil composition varies lot by lot. Foundation type matters too. Homes with basements, especially unfinished basements with exposed dirt or cracks in the slab, tend to have higher levels. Crawl spaces with porous walls also let radon in. The only way to know your situation is to measure it.

Short-Term Test vs. Long-Term Test

The most common approach is a short-term test. It runs from two to seven days and gives you a quick result. That is useful during a real estate transaction or if you are planning a renovation. But a short-term test has a downside. It can be influenced by a single weather event. A heavy rain or a sudden drop in temperature can skew the reading. If you get a borderline result, you may not know if it is accurate or just bad luck.

A long-term test runs for 90 days or more, often up to a year. It averages out seasonal changes and gives you a true annual average radon concentration. That is the number the US EPA uses for its health guidance. Long-term tests are more accurate for making decisions about radon reduction systems. But they require patience. If you are in the middle of buying a home, you do not have 90 days to wait.

In practice, most people start with a short-term test. If the result comes back close to or above the action level, then they follow up with a long-term test or a second short-term test to confirm. That is a sensible approach. It balances speed with accuracy.

How to Choose a Radon Detector

If you go the DIY route, you will find radon test kits at hardware stores and online. The most common type is a charcoal canister. It is cheap and easy to use, but it is also the most vulnerable to error. You have to place it in the lowest livable area of the home, keep windows and doors closed for 12 hours beforehand, and maintain closed conditions during the test. If someone opens a window for five minutes, the test is compromised.

For better reliability, hire a professional who uses a continuous radon monitor. These devices log data at set intervals and include tamper sensors. The technician can see if conditions were violated. They also account for temperature and humidity changes. When I perform residential radon testing, I use continuous monitors because they give clients confidence in the result.

There is also the electret ion chamber. This is a passive device but more sophisticated than a charcoal canister. It measures the voltage drop across an electrically charged plastic disk. It is

less affected by humidity and can be deployed for longer periods. Some professionals use them for long-term testing. They are a solid middle ground between a basic kit and an active monitor.

What Happens After the Test

If your radon gas test returns a level below 2.0 pCi/L, you are in good shape. No action needed. Between 2.0 and 4.0, the US EPA recommends considering a radon mitigation system. Above 4.0, you should take action as soon as practical. Mitigation usually involves installing a vent pipe and fan that draws radon from beneath the foundation and releases it outside. This is called sub-slab depressurization. It is the most common and effective method.

For new construction, radon resistant construction techniques can be built in from the start. That includes a gas-permeable layer under the slab, a vapor barrier, and a passive vent pipe that can later be fitted with a fan if needed. If you are building a home in St. Louis, I recommend asking your builder about these features. They cost very little upfront compared to retrofitting later.

If you already have a mitigation system in place, you should still test periodically. Fans can fail. Seals can degrade. The soil around the foundation can shift. I have tested homes that had a radon reduction system installed five years earlier, only to find the fan had stopped running and the level had climbed back up. A radon gas test every two years is cheap insurance.

Trusting the Right People

Not all radon testing services are the same. Some companies offer a test kit and a report but no interpretation. Others, like Air Sense Environmental, walk you through the results and explain your options. If your test comes back high, you need someone who can recommend a qualified mitigation contractor. A test without follow-up is just a piece of paper.

I have seen homeowners panic when they get a high result. They think they need to rip out their basement or move out immediately. That is not the case. Radon levels can be reduced reliably and affordably. The key is to test first, then act based on data. Do not guess. Do not assume. Measure.

The best time to test is right now. Radon does not take a break. It does not go away on its own. If you have never tested your home, or it has been more than two years, schedule a radon gas test. It takes a couple of days, and the peace of mind is worth it.