

Why a Radon Retest Matters After Mitigation in St. Louis

If you live in St. Louis and you have already tested your home for radon, you might think the job is done. But radon levels are not static. They shift with weather, changes in the ground, and even with how your heating system runs. That is why a radon retest is not just a box to check. It is the only reliable way to know whether your mitigation work actually held up.

I have spent years around radon testing and mitigation, and I have seen too many homeowners assume a single good result means permanent safety. In reality, radon is a gas that moves through soil pores, and its path into a home can change as the ground settles, as cracks form in a foundation, or as a mitigation system ages. A radon retest catches those changes before they become a health problem.

Why Radon Levels Fluctuate

Radon comes from the natural decay of uranium in soil and rock. The gas moves upward through the ground and enters buildings through openings in the foundation. In St. Louis, the geology includes glacial till and river sediments that can produce moderate to high radon potential. But even within a single neighborhood, one house can read 2 pCi/L while a neighbor reads 8 pCi/L. That is because radon entry depends on local soil permeability, foundation cracks, and how the house handles air pressure.

Seasonal changes matter a lot. During winter, homes are closed up, and the stack effect draws more soil gas inside. Summer can bring higher humidity and different pressure patterns. A short-term radon test done in mild spring weather might show a safe reading, but the same house could exceed the EPA action level in January. That is why the EPA recommends testing every two years, and why a [radon retest](#) after any major renovation or mitigation is even more important.

What Happens During a Radon Retest

A radon retest uses the same methods as the initial test. The most common option for homeowners is a charcoal canister test, which you leave in the lowest livable area for two to seven days and then mail to a lab. It is simple, inexpensive, and gives a snapshot. But snapshots have limits. If you want a more complete picture, you can use a continuous radon monitor, which records levels hourly and can show daily swings. For a retest after mitigation, I usually recommend starting with a charcoal canister test because it is straightforward and widely available through state programs and private labs.

You can also order a long-term radon test, which stays in place for three to twelve months. That gives you an annual average, which is closer to what your actual exposure would be. But if you are checking whether a new radon mitigation system is working, a short-term test is usually enough, as long as you run it during normal living conditions.

After Mitigation: Why the Retest Is Critical

Imagine you hire a contractor to install a radon mitigation system. They put in a sub-slab depressurization system, which is the most common method for homes with a basement or a slab foundation. It works by creating a vacuum beneath the concrete using a radon fan, which pulls soil gas away from the house and vents it above the roofline. The contractor shows you a manometer reading that proves the fan is pulling suction. Everything looks good.

But does that mean radon levels inside your home dropped to a safe level? Not automatically. The manometer shows system pressure, not indoor air quality. The only way to know if the system is actually protecting your family is to run a radon retest. I have seen systems that looked perfect on paper but failed because of a hidden air leak in the return duct, a blocked vent, or a fan that was undersized for the soil conditions. A retest catches those issues.

Air Sense Environmental, a local St. Louis company that specializes in radon testing and mitigation, often includes a retest as part of their standard service. They know that installing equipment is only half the job. The real measure of success is whether the indoor level stays below the EPA action level of 4 pCi/L. Without a retest, you are guessing.

What the Numbers Mean

The EPA action level is 4 picoCuries per liter (pCi/L). That is the threshold at which the EPA recommends mitigation. But that number is not a bright line between safe and dangerous. The EPA itself says there is no safe level of radon. The risk of lung cancer increases linearly with exposure. So even a reading of 2 pCi/L carries some risk, and reducing it further is always worthwhile.

When you get your retest results, compare them to the original test. If the level dropped below 4 pCi/L, the mitigation worked. If it stayed above, you need to troubleshoot. Sometimes the fix is simple, like sealing a crack in the foundation with a quality sealant or adjusting the radon fan speed. Other times the problem is more complex, such as a need for additional soil suction points or an air exchanger to balance indoor pressure.

The National Radon Program at Iowa State University has studied radon mitigation for decades. They recommend that any mitigation system be tested within thirty days of installation and again during the next heating season. That second retest is especially

important because conditions change. A system that works in September may not keep up in January.

Radon-Resistant New Construction and Builder's Risk

If you are building a new home in St. Louis, you can include radon-resistant new construction features from the start. These include a gravel layer under the slab, a vapor barrier, a sealed sump or vent pipe that can be capped or connected to a fan later, and a radon fan rough-in. The cost of adding these during construction is minimal, maybe a few hundred dollars. Retrofitting a system later costs much more.

But even radon-resistant features need to be tested. I have seen newly built homes with passive vent pipes that did nothing because the soil below the slab was too tight for natural soil suction. The only way to know is to test. And if you are a builder or a contractor, you should include a radon retest in your home inspection checklist. It protects the homeowner and reduces your Builder's Risk exposure.

How Often Should You Retest?

The EPA recommends testing every two years. That is a good baseline. But you should also retest after any major structural change, such as finishing a basement, adding an addition, or replacing a furnace or air conditioner. Changes to the HVAC system can alter air pressure patterns and affect radon entry. The same goes for any event that disturbs the soil around your foundation, like excavation, drainage work, or even heavy rain that saturates the ground.

Routine maintenance of your radon mitigation system also matters. Check the manometer monthly. If the reading drops, the fan may be failing or a vent pipe may be blocked. Replace the radon fan every five to ten years, depending on the model. And after any repair or fan replacement, run a radon retest to confirm the system still works.

Real-World Example

A few years ago I worked with a family in south St. Louis County. Their initial test showed 6.2 pCi/L. They hired a contractor to install sub-slab depressurization with a Radalink continuous monitor for ongoing tracking. After installation, the monitor showed levels around 1.5 pCi/L for the first three weeks. Everyone was happy. But two months later, during a cold snap, the monitor spiked to 4.8 pCi/L. A radon retest with a charcoal canister confirmed the increase. The problem turned out to be a partially blocked vent pipe where snow had drifted over the outlet. Clearing the snow and adding a taller vent cap solved it. Without the retest and the continuous monitor, they would have gone through the whole winter assuming the system was fine.

That story illustrates why a single test is never the end of the story. Radon is a dynamic gas, and your home is a dynamic system. A radon retest is the only way to keep up.

Final Thoughts

If you already have a radon mitigation system in your St. Louis home, do not let it run unmonitored for years. Schedule a radon retest at least every two years, and after any significant change to your home or the system itself. The test is inexpensive, the lab analysis is fast, and the peace of mind is real. Companies like Air Sense Environmental make it easy by offering both testing and mitigation services, but you can also order a test kit online through the National Radon Program or your state health department.

Radon is the second leading cause of lung cancer in the United States. It is invisible, odorless, and tasteless. But it is also measurable and fixable. A simple retest is the difference between assuming you are safe and knowing you are safe.