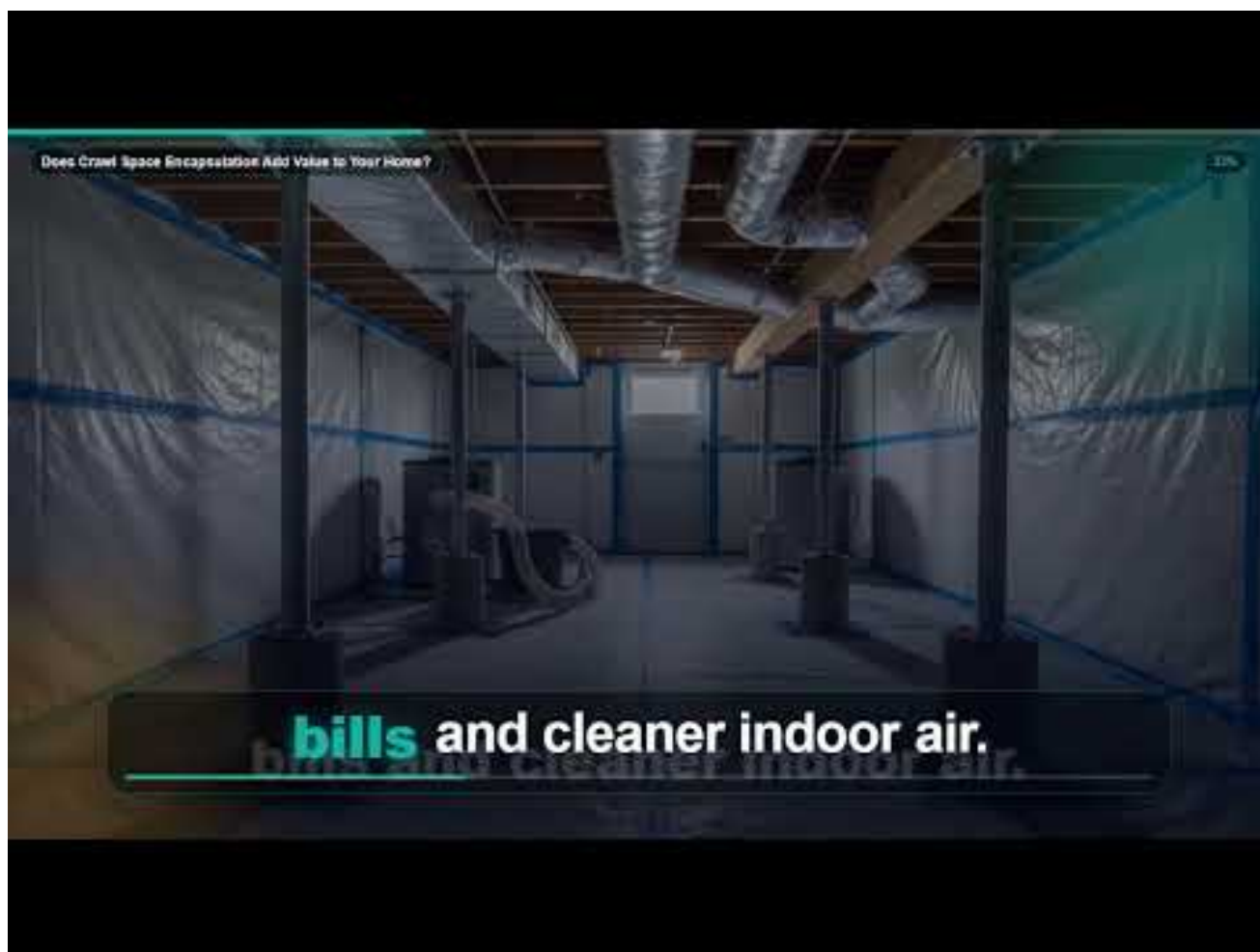


Why Radon Retest Verification Matters After Mitigation

The Gap Between Installation and Confidence

I have spent years working with homeowners in the St. Louis area who thought that once a radon mitigation system was installed, the problem was solved for good. That belief is understandable. You pay for a system, you see the contractor drill a hole in your slab, you hear the radon fan humming in the basement, and you assume the radon gas is gone. But the reality is more nuanced. A system that is installed well on paper might still underperform if the soil conditions shift, if the fan is undersized, or if the sub-slab depressurization path is blocked by debris or moisture. That is where radon retest verification becomes essential.

I remember a job in a split-level home in Webster Groves where the initial post-mitigation test showed levels well below the EPA action guideline of 4 pCi/L. The homeowner was relieved. Three months later, they called back because their continuous radon monitor was showing elevated readings during a rainy spell. We ran a new radon measurement and found the level had crept back up to 3.8 pCi/L. The system was still running, but the soil suction radon path had been compromised by a water-saturated zone under the slab. Without that retest, they would have spent the next year breathing levels that were borderline actionable. That is the practical value of a structured radon retest verification process.



What Radon Retest Verification Actually Covers

[Radon retest verification](#) is not the same as a simple follow-up test. It is a deliberate, documented process that compares the results of a post-mitigation test against the baseline readings taken before the radon system installation. The goal is to confirm that the radon reduction achieved meets the expected performance standard, usually a level below 4 pCi/L and ideally a reduction of at least 75 to 90 percent from the original reading. This process follows ANSI standards for radon measurement, which specify detector placement, test duration, and closed-building conditions.

When I work with a homeowner on a retest, I always ask about any changes made to the house since the system was installed. Have they finished the basement? Sealed a crawlspace vent? Added a sump pump that might have disturbed the soil near the suction point? These factors can affect the system performance. A thorough radon retest verification accounts for those changes. It is not just a number on a screen. It is a snapshot of how the system performs under real occupancy conditions.

Common Misconceptions About Post-Mitigation Testing

One of the most persistent myths I hear is that a single short-term test after installation is enough to verify the system forever. That is not how radon gas behaves. Soil moisture, barometric pressure, and seasonal temperature swings all influence the pressure differential that drives soil suction radon systems. A test run in July might look great, but the same system in January, with the ground frozen and the furnace running, could produce different results.

Another misconception is that the radon detector used for the initial post-mitigation test is sufficient for all future retests. In reality, a continuous radon monitor provides a much richer data set than a single charcoal canister because it records hourly fluctuations. That data can reveal short-term spikes that a passive device might miss. For a serious radon retest verification, especially in a house where someone spends a lot of time in the basement, I recommend using a continuous monitor for at least 48 hours. It gives you a curve, not just a point.

When to Schedule a Radon Retest

There is no universal rule, but I advise homeowners to perform a radon retest verification at three specific times. First, within 30 to 90 days after the initial radon system installation, before you accept the job as complete. That gives the soil and the system time to reach a stable operating condition. Second, after any major renovation that involves the foundation or the floor slab. Third, after a significant weather event like a flood or an extended drought that could change soil compaction or moisture levels near the suction point.

Beyond those triggers, I recommend an annual radon retest simply as a matter of good indoor air quality practice. The EPA itself recommends testing every two years, but in the St. Louis radon context, where the geology is a mix of limestone and glacial till with variable permeability, annual checks are a safer bet. The cost of a radon measurement kit is trivial compared to the health risk of undetected exposure.

The Role of the Mitigation Contractor

A responsible radon mitigation company will not just install a system and walk away. Air Sense Environmental, for example, includes a post-mitigation test as part of their standard radon system installation service. But the homeowner should also take ownership of the radon retest verification process. You are the one who lives in the house. You notice when the basement smells musty or when the radon fan sounds different. Your observations matter.

I have seen cases where a homeowner called us because the radon fan was vibrating louder than usual. We went out and found that a small animal had built a nest in the exhaust pipe, partially blocking the airflow. A simple retest showed the system was still working, but the

blockage had reduced the suction pressure. Without that call and the subsequent radon retest verification, the system might have failed silently over time.



How to Interpret Retest Results

When you get the results of a retest, look at the average level first. If it is below 4 pCi/L and at least 75 percent lower than the original reading, the system is performing as intended. But also look at the range. Did the level spike during certain hours? Was it consistently low or did it bounce around? A continuous radon monitor report will show you the high and low values. If the spikes are brief and the average is low, the system is likely fine. If the average is low but the spikes are frequent and high, you might have an intermittent pathway that needs attention.

I also tell homeowners to compare the retest results to the post-mitigation test results from the original installation. If the numbers are climbing over time, even if they are still below the action level, that is a trend worth investigating. It could mean the sub-slab depressurization system is gradually losing effectiveness due to soil settling or corrosion of the suction pipe. Early detection through radon retest verification can save you from a full system replacement down the road.

The Bigger Picture: Radon Risk Assessment

Radon mitigation is not a one-time event. It is a long-term component of your home's indoor air quality management. The EPA estimates that radon gas causes more than 20,000 lung cancer deaths per year in the United States. That risk is cumulative. The longer you go without a retest, the longer you are betting that nothing has changed in your home's soil dynamics or your system's mechanical integrity.

In the St. Louis radon market, where homes often have basements and crawl spaces that are prone to radon entry, a disciplined approach to radon retest verification is not overkill. It is the difference between assuming you are safe and knowing you are safe. Every mitigation system I have ever installed has a maintenance schedule. The radon fan needs to be checked, the suction pit needs to stay clear of debris, and the system needs to be retested on a regular basis.

If you are reading this and wondering whether your own system needs a retest, the answer is probably yes. If it has been more than a year since your last post-mitigation test, or if you have made changes to your basement or foundation, schedule a radon measurement with a qualified technician. The process is straightforward. The peace of mind is worth the effort.

A Final Note on Professional Standards

The best radon retest verification follows ANSI standards for both the test protocol and the system performance evaluation. That means using a calibrated radon detector, following the correct placement guidelines (at least 20 inches from the floor and away from drafts), and running the test for the full duration specified by the device manufacturer. Cutting corners on

the retest defeats the purpose of having a system in the first place. A proper retest is a small investment in the health of everyone who lives in the house.

I have been in this field long enough to see the difference between a house that is truly protected and one that only looks protected on paper. The houses that stay safe are the ones where the homeowner treats radon retest verification as a routine part of home maintenance, not a one-off event. That mindset, combined with a well-designed radon reduction system, is the real foundation of long-term radon safety.