

How to Approach a 4.0 pCi/L Radon Fix in Your York County Home

If you have tested your home for radon and the result came back at 4.0 pCi/L, you are standing at an important decision point. That number is the EPA action level, the threshold where they recommend taking steps to reduce the gas. But what does a 4.0 pCi/L radon fix actually involve? How urgent is it, and what should you expect from a mitigation system? Having worked on radon issues in Pennsylvania for years, I can tell you that the answer is not always the same for every house, but there is a clear path forward.

Radon is a soil gas that seeps into buildings through cracks in the basement slab, gaps around pipes, and other radon entry points. In York County, the geology makes elevated levels fairly common. Many homeowners discover a reading at or above 4.0 pCi/L during a real estate transaction or after a routine test. The good news is that a properly designed radon mitigation system can reliably bring that number down, often to well below 2.0 pCi/L. The key is understanding what you are fixing and how to do it right.

What the EPA Action Level Means

The EPA did not pick 4.0 pCi/L out of thin air. It is a practical compromise between health risk and the cost of mitigation. At that level, the lifetime risk of lung cancer from radon exposure is roughly equivalent to the risk of dying in a car crash. That is not a trivial risk, but it is also not a reason to panic. The EPA recommends fixing your home, but they do not set a legal requirement. For homeowners, a [4.0 pCi/L radon fix](#) is a smart health investment, not an emergency evacuation.

That said, waiting is not wise either. Radon levels can fluctuate with weather, season, and changes to your home structure. A single test at 4.0 pCi/L might be the average, or it might be the low end of a wider range. A continuous radon monitor can give you a better picture of daily variation. But if your initial radon test kit showed 4.0 pCi/L or higher, the next step is to plan a mitigation strategy.

The Most Common Fix: Sub-Slab Depressurization

For homes with a basement, the most effective approach is sub-slab depressurization. This involves drilling a hole through the basement slab, digging out a small pit below, and running a pipe from that pit up through the roof. A radon fan installed in the attic or outside creates suction under the slab, pulling soil gas away from the house and venting it safely above the roofline. The system also includes a manometer, a U-tube gauge that shows whether the fan is working. If the manometer reads zero, you know something is wrong.



In some older homes, a passive vent pipe was installed during construction as part of radon-resistant construction. That pipe relies on natural air pressure differences to draw radon out. In many cases, it is not strong enough to handle 4.0 pCi/L readings. Adding a fan to that passive pipe can turn it into an active system, often at a lower cost than starting from scratch. A mitigation contractor can assess whether your existing pipe is usable or if a new sub-slab system is needed.

Sealing Cracks and Other Entry Points

While sub-slab depressurization handles the main source, sealing cracks in the basement slab and foundation walls reduces the workload on the fan. Caulk and hydraulic cement work well for small gaps. Larger openings around utility lines may need expandable foam or a polyurethane sealant. This step alone will not fix a 4.0 pCi/L reading, but it is a necessary part of a complete radon mitigation system. Without sealing, the fan has to work harder to maintain negative pressure under the slab, and you might see less reduction in indoor radon levels.

One trade-off: sealing cracks can trap moisture, so in very damp basements you may need a dehumidifier or a drain tile system. Every house is a little different, which is why a one-size-fits-all approach rarely works. A good contractor will test the soil permeability, check for existing drainage issues, and design the system accordingly.

What About Activated Carbon Filters?

You might see products that use activated carbon filters to absorb radon. These are typically point-of-use devices for water, not for air. For airborne radon, carbon filtration is not effective at the whole-house level. The volume of air is too large, and the carbon beds would need to be enormous and replaced frequently. Stick with sub-slab depressurization or, for homes without a basement, a crawlspace or slab-on-grade system. Activated carbon filters have their place in water treatment, but they are not part of a standard 4.0 pCi/L radon fix.

Testing Before and After

Before you install anything, do a long-term radon test kit placement. At least 90 days is ideal, because short-term tests can miss seasonal spikes. After the system is running, a post-mitigation test confirms the fix worked. Many contractors include this in their service, or you can order a test from the Pennsylvania Health Department or a certified lab. The goal is to get below 4.0 pCi/L, ideally under 2.0 pCi/L. If the post-mitigation test still shows elevated levels, the contractor should revisit the system design.

A continuous radon monitor is handy for ongoing peace of mind. It plugs into a wall and logs hourly readings. Some models connect to your phone. If you see a reading climb back above 4.0 pCi/L months later, it could mean the fan is failing or a new crack has opened. Catching that early is much cheaper than a second full mitigation.

Working with a Mitigation Contractor

Not every handyman knows radon. Look for a mitigation contractor certified by the National Radon Proficiency Program or your state's Health Department. They should carry liability insurance and provide a written estimate. In York County, several reputable companies have experience with local soil conditions. Ask about the specific brand of radon fan they use, the warranty on the fan and labor, and whether they will perform a post-mitigation test.

Beware of contractors who promise to eliminate radon completely. No system can guarantee zero radon. A good system can reduce it by 90% or more, but natural variation means occasional spikes are possible. The goal is to keep the long-term average well below 4.0 pCi/L.



Is a 4.0 pCi/L Radon Fix Worth the Cost?

In my experience, yes. The cost of a typical sub-slab depressurization system in Pennsylvania ranges from about \$800 to \$2,500, depending on the complexity of the install. That is a small price compared to the potential health costs of long-term exposure. Radon is the second leading cause of lung cancer after smoking, and it is the leading cause among non-smokers. Reducing your level from 4.0 pCi/L to 2.0 pCi/L cuts your risk roughly in half.

For renters, the situation is trickier. You cannot install a radon mitigation system in a home you do not own. But you can request that your landlord test and fix the issue. In Pennsylvania, landlords are not required by law to mitigate radon, but many will act if you show them a test result at 4.0 pCi/L or higher. The Health Department can provide guidance on how to approach this conversation.

One last thought: do not mistake a single low reading for a clean bill of health. Radon levels change. If you have never tested, buy a radon test kit from a hardware store or online. They cost about \$15 to \$30. It is the cheapest insurance you can buy for your indoor air quality. And

if the result comes back at 4.0 pCi/L or above, you now know exactly what to do: pursue a 4.0 pCi/L radon fix that fits your home, your budget, and your peace of mind.