

Choosing the Right Radon Reduction System for Your Metro East Home

If you have tested your home for radon and found elevated levels, you are already past the first step. The next question is what to do about it. A radon reduction system is not a one-size-fits-all product. The right choice depends on your home's foundation type, soil conditions, and how the house was built. In the Metro East area, places like Belleville IL, Edwardsville IL, and O'Fallon IL, homes sit on a mix of clay, loam, and rock, which affects how radon moves through the ground and into your living space.

Before you get into equipment and installation methods, you need a solid radon test. Two common tools are the charcoal canister, which you send to a lab after a few days, and the continuous radon monitor, which gives hourly readings over a longer period. A continuous monitor is more useful for deciding on a system because it shows daily swings. Radon levels can spike during storms or when the ground freezes, so a single short test might miss the worst of it. For a home in Metro East, I usually recommend at least a 90-day test with a continuous monitor before choosing a radon reduction system.

Once you have the data, the next step is understanding your foundation. Most homes in this region have basements or slab-on-grade construction. For a basement, a common approach is sub-slab depressurization. This involves drilling a small hole through the basement floor, pulling soil gas from below the slab, and venting it above the roofline with a radon fan. The fan creates negative pressure under the slab, so radon is drawn away from the house instead of seeping through cracks. That is the core of an active radon system.

An active radon system uses a fan to maintain constant suction. The most reliable fans for this job come from companies like RadonAway or Scurion. Both make in-line fans designed to run continuously for years. A RadonAway fan, for example, might draw 30 to 50 watts and move air at around 200 cubic feet per minute. That is enough to handle most homes. But the fan is only part of the picture. You also need a manometer, a U-tube gauge that shows whether the system is pulling properly. If the manometer reads zero, the suction has been lost, and radon might be coming back in. Homeowners should check the manometer every month or two, especially after heavy rain or snowmelt.

Some homes in the Metro East area are built with a passive radon system already in place. This is common in radon-resistant new construction, especially in areas that fall under an EPA radon zone 1 or 2. A passive system has the vent pipe and the sub-slab collection layer, but no fan. It relies on natural pressure differences and stack effect to draw soil gas upward. In many cases, a passive system works well enough to keep levels below the EPA action guideline of

4.0 pCi/L. But if tests show levels above that, you can convert a passive system to an active one by adding a fan. That is usually cheaper than installing a whole new system from scratch.

For homes without a basement, slab-on-grade construction, the approach is similar but the details differ. The [radon reduction system](#) still uses soil suction, but the pipe goes through the slab near the interior of the house, often in a closet or utility room. If the house has a crawlspace, you might need crawlspace ventilation instead. A crawlspace that is not ventilated can trap radon, which then seeps into the living space above. Ventilating the crawlspace with a small fan that exhausts to the outside can lower radon levels significantly. In some cases, sealing cracks in the slab or foundation walls helps, but sealing alone is rarely enough. Radon can enter through tiny openings that you cannot see, and sealing them all is impractical. A mechanical radon reduction system is more reliable.

One decision homeowners face is whether to install the system themselves or hire a professional. I have seen both work, but the stakes are high. A poorly installed system can make radon worse by pulling soil gas from under the slab and then leaking it back into the house through a bad joint. Air Sense Environmental, which serves Belleville IL, Edwardsville IL, and O'Fallon IL, does this kind of work regularly. Their crews know the local soil and housing stock. They also know which permits and building codes apply, which can save you headaches later. For a do-it-yourselfer, the main challenges are choosing the right fan size, sealing the pipe connections, and making sure the exhaust exits above the roofline. If the exhaust is too low, radon can re-enter through windows or attic vents.

Another factor is the age of your home. Older houses often have more cracks in the foundation and less airtightness, so they need a stronger system. Newer homes, especially those built with radon-resistant new construction techniques, already have a layer of gravel or a vapor barrier under the slab. That makes it easier for a radon reduction system to pull from a large area. In either case, the system should include a manometer so you can monitor performance. I have seen homeowners ignore the manometer for years, only to find out the fan had burned out and radon levels had crept back up.

Cost is another consideration. A basic active system with a RadonAway fan, pipe, and manometer might run between \$800 and \$1,500 installed. If the house needs more extensive work, like adding a sub-slab collection layer or sealing major cracks, the price goes up. A passive system is cheaper upfront but may not bring levels low enough. The choice between an active and passive radon system comes down to your test results and your budget. If your levels are close to the guideline, a passive system might suffice. If they are several times the guideline, you need active suction.

I should also mention that a radon reduction system is not a set-it-and-forget-it device. You need to test again after installation to confirm it works. A follow-up radon test, using either a

charcoal canister or a continuous radon monitor, will tell you whether the system is doing its job. Ideally, you want levels under 2.0 pCi/L, which is the target many mitigation professionals aim for. The EPA says anything under 4.0 is acceptable, but lower is always better, especially if you have children or spend a lot of time in the basement.

In the Metro East area, the soil is often heavy clay, which can trap radon and release it slowly. That means a system might take a few weeks to reach full effectiveness. Do not panic if the first test after installation shows a moderate number. Give it time, and then retest. Also, keep an eye on the manometer. If it shows a loss of suction, check for a blocked pipe, a frozen vent, or a broken fan. Most fan failures happen in the first year, so warranties matter. RadonAway and Scurion both offer multi-year warranties on their fans, which is a sign of quality.

To sum up the practical steps: test with a continuous radon monitor for at least 90 days, choose between an active and passive system based on your levels and foundation, install it properly with a manometer, and retest after installation. If you live in Belleville IL, Edwardsville IL, or O'Fallon IL, you have local experts like Air Sense Environmental who know the area and can help. A well-designed radon reduction system is one of the most effective ways to protect your family from the second leading cause of lung cancer. It is worth doing right.