

When to Consider a Radon Fan Replacement for Your St. Louis Home

Recognizing the Signs of a Failing Radon Fan

Living in the St. Louis area, I have seen plenty of basements with radon mitigation systems that were installed years ago and then forgotten. A radon mitigation system is not a set-it-and-forget-it appliance. The fan motor that pulls the radon-laden soil gas from under your slab and vents it above the roofline works hard, day and night. Over time, the fan capacitor can weaken, bearings can wear, and the whole radon fan can start losing its pull. When that happens, you may not notice anything at first, but your indoor radon levels can creep back up. A radon fan replacement is not something most homeowners think about until the system starts making noise or the manometer shows a lower reading.

The first clue often comes from the U-tube manometer mounted on the system pipe. That little column of colored liquid is your system's pulse. If the liquid levels are even, or if the difference between the two sides is smaller than what it was when the system was new, the radon fan is not creating enough negative pressure under the slab. That pressure differential is what keeps radon from seeping through cracks and gaps. A drop in that reading means the fan motor is losing efficiency. In my experience, this is the most reliable early warning. The second clue is noise. A healthy radon pump hums quietly. If you start hearing rattling, grinding, or a humming that changes pitch, the fan motor bearings may be failing. Do not ignore it. A failing fan can stop entirely, and then your radon levels can climb quickly.

Why Sub-Slab Depressurization Depends on the Fan

Most radon mitigation systems in St. Louis homes use a method called sub-slab depressurization. A pipe runs from a hole drilled through the basement floor up to the fan, which is usually mounted in the attic or on an outside wall. The fan pulls air from beneath the slab, creating a vacuum that draws soil gas away from the foundation and vents it safely outside. The heart of that system is the radon fan. When the fan starts to fail, the vacuum weakens. In some cases, the fan may still run but move much less air. I have tested systems where the fan capacitor was so degraded that the fan barely turned, yet the homeowner assumed everything was fine because the fan was still spinning. A visual check is not enough. You need to measure the pressure difference with a manometer and, ideally, test the air with a radon test kit to confirm the system is working.

There are two main types of fans used in residential radon systems. The CRP fan is a common choice because it is designed specifically for radon mitigation. It handles the corrosive soil gases and temperature extremes better than a general-purpose fan. But even a CRP fan wears

out. The fan motor is sealed, so you cannot just oil it or replace a bearing. When the motor goes, the whole fan must be swapped. That is where a professional [radon fan replacement](#) becomes necessary. Some homeowners try to replace a radon fan themselves, but I have seen too many DIY jobs that ended up with undersized fans, wrong voltage, or improper venting. A radon mitigation system must meet EPA and ANSI standards to be reliable, and those standards cover the fan selection, installation, and testing.

Testing Your System After a Fan Replacement

After a radon fan replacement, you should always verify that the system is working correctly. The simplest way is to check the U-tube manometer. The two liquid columns should show a clear difference, usually an inch or more of water column, depending on the system design. If the manometer shows no difference, either the fan is not running or there is a blockage in the pipe. I have seen cases where a bird or debris had clogged the vent pipe, and the fan was running but moving no air. A manometer catch that problem right away.

Beyond the manometer, a radon test kit will tell you if the system is actually reducing radon to safe levels. The most common test kit is a charcoal canister, which you leave in the lowest livable area for a few days and then mail to a lab. Some homeowners prefer a continuous radon monitor, which gives real-time readings and can detect short-term spikes. Both types are approved by the EPA and ANSI. If your test comes back above 4 picocuries per liter, the system needs adjustment. That could mean a fan replacement with a more powerful unit, or it could mean sealing additional cracks in the foundation. In St. Louis, we have clay soils that can shift and create new pathways for radon, so even a well-maintained system can need occasional upgrades.

How to Know When It Is Time for a Fan Replacement

There is no fixed lifespan for a radon fan, but I generally see them last between five and ten years. Factors like how many hours the fan runs, the temperature of the attic, and the corrosiveness of the soil gas all affect longevity. If your system is more than seven years old and you notice the manometer reading dropping, or if your home inspection report from a company like AmeriSpec flagged the fan as aging, it is worth planning a fan replacement before the fan fails completely. Waiting until the fan stops entirely can mean days or weeks of elevated radon exposure while you arrange the repair.

Some homeowners call a radon professional only after a real estate transaction triggers a radon test. That is when companies like National Radon Defense or a local home inspection service like AmeriSpec find high levels. If the mitigation system is already in place but not working, a radon fan replacement is usually the fix. I have worked with Air Sense Environmental on several such jobs, and they always start by verifying the existing fan with a manometer and

a radon test kit before deciding on the replacement. That is the right approach. Do not assume a new fan will solve everything. Check the system first.

Cost and Value of a Fan Replacement

A radon fan replacement is not cheap, but it is far less expensive than a whole new mitigation system. The fan itself costs between a few hundred and several hundred dollars, depending on the model and whether you need a CRP fan or a standard radon pump. Labor adds to that, but a professional replacement usually takes a few hours. If you hire a company listed on HomeAdvisor or a local specialist like Air Sense Environmental, you get the benefit of experience. They will also inspect the vent pipe, check the seal around the slab penetration, and verify the system meets current code. That peace of mind is worth the cost.

One thing I often tell homeowners is that a radon fan replacement is an opportunity to upgrade. Older fans were sometimes not as efficient as the models available today. Newer CRP fans use less electricity and move more air. If your system uses a UFFI (urea formaldehyde foam insulation) pipe sealant that has degraded, the replacement technician can reseal the pipe penetration. That alone can improve system performance. I have seen cases where a simple fan replacement and reseal cut radon levels in half. The investment pays for itself in better health and a safer home.

Choosing the Right Professional

Not every handyman or HVAC contractor knows radon systems. Radon mitigation is a specialized field with its own EPA and ANSI standards. When you need a radon fan replacement, look for a company that focuses on radon work, not just general home repairs. In St. Louis, Air Sense Environmental does exactly that. They inspect, repair, and replace fans for existing systems. They also carry the right fans, manometers, and radon test kits. A general contractor might install a fan that works for six months and then fails because it was not rated for continuous operation with corrosive gas. Do not take that risk. A proper radon fan replacement done by a specialist will keep your sub-slab depressurization system running for years.

If you are buying a home with a radon system, include a professional inspection in your offer. A home inspector from AmeriSpec can flag obvious problems, but a radon specialist will measure the actual pressure difference and run a radon test kit. If the system fails, you can negotiate for a fan replacement before closing. That is a common scenario in St. Louis real estate. Sellers often do not realize their radon fan has failed because the system is silent, and the manometer is tucked away in a corner. A buyer's radon test reveals the issue, and a fan replacement becomes part of the transaction. I have seen that happen many times.

Final Thoughts on Maintaining Your Radon System

A radon mitigation system is a long-term investment in your family's health. The fan is the only moving part, and it will eventually need attention. Do not wait for a failed fan to force your hand. Check your manometer monthly. Listen for changes in the fan's sound. If you have a continuous radon monitor, watch for trends. When the time comes for a radon fan replacement, hire someone who knows radon. The extra cost is small compared to the risk of living with high radon levels. And if you live in St. Louis, you have local experts like Air Sense Environmental who can do the job right. Keep your system healthy, and it will keep your home safe.