

When Your Radon Fan Goes Quiet: A Guide to Radon Fan Replacement

If you own a home with a radon mitigation system, you probably do not think about it much. That is the point. A properly installed system runs in the background, keeping soil gases out of your living space. But when that system starts acting up, you notice. The manometer drops. The reading on the continuous radon monitor creeps up. And you start wondering whether you need a radon fan replacement.

I have spent years working with these systems in St. Louis, and I have seen every kind of fan failure you can imagine. Some are obvious. Others are subtle enough that a homeowner lives with poor performance for months before realizing something is wrong. The good news is that most fan problems are straightforward to diagnose, and a timely radon fan replacement can restore your system to full effectiveness quickly.

How a Radon Mitigation System Actually Works

Before we talk about replacing a fan, it helps to understand what the fan does. In a standard sub-slab depressurization system, a radon fan creates negative pressure beneath the concrete slab. That pressure difference pulls soil gases out from under the house and vents them above the roofline, where they dilute harmlessly. The fan is the heart of the system. Without it pulling properly, the whole setup is just ductwork.

The fan itself is usually a small, efficient unit designed for continuous operation. You might hear it called a radon pump or a CRP fan, depending on the brand. It draws very little power, but it runs 24 hours a day, 365 days a year. That kind of duty cycle eventually takes a toll. Fan motors wear out. Fan capacitors fail. Bearings dry up. And when that happens, the fan either stops entirely or starts making noise that tells you it is struggling.

Signs You Might Need a Fan Replacement

Not every odd sound means you need a new fan. But there are a few clear indicators that your radon fan is nearing the end of its service life.

Manometer reading is zero or near zero. The U-tube manometer on your system shows the pressure difference the fan is creating. If the liquid levels are even, the fan is not running or the system has a major leak. A small drop might just mean a dirty fan blade or a partial blockage, but a flat reading usually points to a dead fan motor or a failed fan capacitor.

Strange noises. A healthy radon fan hums quietly. If you hear rattling, grinding, or a high-pitched whine, the bearings are likely failing. That noise will only get worse, and the fan will

stop completely before long.

Radon levels are climbing. This is the one that gets people's attention. If you run a radon test kit, whether a charcoal canister for a quick check or a continuous radon monitor for long-term data, and the results are higher than they used to be, your fan may not be pulling enough suction. It could also mean a new crack in the slab or shifted soil, but a failing fan is a common culprit.

The fan runs but the airflow feels weak. You can sometimes feel the air moving at the vent termination outside. If the air stream is noticeably weaker than it used to be, the fan motor may be losing RPMs. That is a classic sign that the fan is on its way out.

What Happens During a Radon Fan Replacement

If you decide to proceed with a [radon fan replacement](#), the process is fairly quick for someone who knows what they are doing. But it is not a job I recommend for the average homeowner. The system involves electrical connections, sealed duct joints, and proper mounting to avoid vibration noise. A bad installation can cause more problems than the original failure.

I have worked with Air Sense Environmental on many of these jobs. Their approach is methodical. First, they confirm the fan is actually the problem by checking the manometer and testing the electrical supply to the fan motor. Sometimes the fan capacitor is blown, which is an easy fix. But if the motor itself is shot, replacement is the only option.

The old fan gets disconnected, the ductwork is inspected for damage or debris, and the new fan is installed with fresh couplings and vibration isolators. Then the system is tested to make sure it pulls the right pressure. A good installer will also check the U-tube manometer to confirm it is reading correctly, because a stuck manometer can make a good fan look bad.

Choosing the Right Replacement Fan

Not all radon fans are the same. The right choice depends on the size of your home, the soil conditions under the slab, and the specific layout of your system. A fan that is too small will not pull enough suction. A fan that is too large can create excessive noise or even cause the system to draw moisture from the soil, which leads to condensation problems in the ductwork.

Most residential systems use a CRP fan, which is a brand-name line of fans designed specifically for radon mitigation. These are reliable and widely available. But there are other good options. The key is to match the fan's performance curve to the static pressure your system requires. That sounds technical, but it is exactly the kind of detail a qualified technician checks before installing a new fan.

If you are dealing with a home that was built with UFFI (urea-formaldehyde foam insulation) in the walls, the situation is a bit different. UFFI homes sometimes need extra care because the insulation can off-gas when disturbed. A radon fan replacement in that context should be done with minimal disruption to the existing ductwork, and the new fan should be selected to handle any additional resistance from the insulation.

Why You Should Test After a Fan Replacement

Once the new fan is running, you want to confirm it is working. That means running a radon test. A short-term test with a charcoal canister can give you a quick answer, but I prefer a continuous radon monitor for at least a few days after the replacement. The continuous monitor logs hourly readings, so you can see whether the levels are stable and below the EPA action level of 4 pCi/L.

The EPA recommends testing every two years, but if you have just replaced a fan, test right away. That gives you a baseline for the new system. If something is off, you catch it early.

Working with a Professional

I have seen homeowners try to replace a radon fan themselves and end up with a system that performs worse than before. The electrical work is one risk. The other is that they buy a fan that does not match the system's requirements. A fan that is too powerful can actually pull soil gases through cracks in the slab that were previously sealed, which defeats the purpose of the system.

National Radon Defense has a network of certified contractors who know the local soil conditions and building codes. In St. Louis, the geology varies from clay to limestone, and that affects how a sub-slab depressurization system performs. A contractor who understands those nuances will choose a fan that works with the local conditions, not against them.

HomeAdvisor and AmeriSpec also list radon mitigation professionals, but I always recommend asking specifically about experience with fan replacement. Not every general contractor has the specialized knowledge to work on these systems. Look for someone who can show you the manometer reading before and after the job.

Maintaining Your New Fan

Once you have a fresh fan in place, a little maintenance goes a long way. Check the manometer once a month. If the reading changes by more than a quarter inch, investigate. Keep the vent termination clear of leaves, snow, or bird nests. And listen. A fan that sounds different probably is different. Catching a problem early can prevent a full system failure.

Radon fan replacement is not something you deal with every year. But when the time comes, getting it done right protects your indoor air quality and your peace of mind. A working system is invisible. A broken one is impossible to ignore.