How to Test Your Home for Radon Before Choosing a Mitigation Plan

Radon is an invisible, odorless gas that can build up inside homes and pose a health risk. The only way to know if your home has high levels is to test for it. Testing is straightforward, but the results guide you on what mitigation steps, if any, you need. This article walks through the testing process step by step, with practical tips on what to watch for at each stage, so you can make an informed decision about radon mitigation.

Understanding Radon and Why Testing Matters

Radon comes from the natural decay of uranium in soil and rock. It seeps into a house through cracks in the foundation, gaps around pipes, and other openings. The gas can accumulate to unsafe levels, especially in lower floors like basements. The EPA has established an action level of 4 pCi/L (picocuries per liter of air). If your test shows a level at or above that, the agency recommends fixing the problem. Even levels between 2 and 4 pCi/L may warrant consideration of mitigation, especially if you spend a lot of time in the affected area.

Testing is the only reliable way to know your home's radon level. Without a test, you are guessing. And because radon levels can change over time or after renovations, periodic retesting is wise. The results will tell you whether you need a mitigation system and, if so, what type might work best for your home.

Step 1: Choose the Right Type of Test

There are two main types of radon tests: short-term and long-term. Short-term tests remain in your home for 2 to 90 days, depending on the device. Most homeowners start with a short-term test because it gives quick results. Common short-term devices include charcoal canisters, alpha-track detectors, and continuous radon monitors (which give hourly readings). Long-term tests run for more than 90 days and provide a more accurate picture of the annual average radon level, because they account for seasonal fluctuations.

View the location on Google Maps

What to watch for: If you need a fast answer, a short-term test is fine, but the result is a snapshot. For a mitigation decision, the EPA recommends either a long-term test or, if you use a short-term test, repeating it after the initial result. Many people start with a short-term test and, if the level is elevated, follow up with a long-term test before spending money on mitigation. That way you avoid acting on a single reading that might be unrepresentative.

Step 2: Select a Reliable Test Kit

You can buy a radon test kit online, at hardware stores, or through state radon programs. Look for a kit that is certified by the National Radon Proficiency Program (NRPP) or the National Radon Safety Board (NRSB). These certifications mean the lab follows proper procedures and the results are trustworthy. Some kits require you to mail the device to a lab after the test period; others give you a digital reading immediately.

What to watch for: Avoid test kits with past expiration dates, and check the kit's instructions for the recommended test duration. Cheaper kits may have shorter reporting windows. Also, some continuous monitors can be rented, which is a good option if you plan to test multiple rooms or repeat the test later.

Step 3: Prepare Your Home for the Test

Radon testing requires what are called closed-house conditions. This means you must keep all windows and exterior doors closed for at least 12 hours before starting the test and throughout the entire test period. The only exceptions are normal entry and exit. Do not run fans that bring in outside air, such as whole-house fans or window fans. If you have a heating or cooling system that draws air from outside, check whether it can be turned off or set to recirculate. The idea is to let radon accumulate naturally so the test measures what you actually breathe.

What to watch for: If you are testing in winter, closed-house conditions are easy to maintain. In mild weather, you might need to be more careful. Also, avoid testing during severe storms or high winds, because changes in air pressure can skew results. If you have a radon mitigation system already, turn it off 12 hours before the test and keep it off until the test ends.

Step 4: Place the Test Device Correctly

Where you put the test device matters a lot. Place it in the lowest livable area of the home, typically the basement or the first floor if there is no basement. The device should be at least 20 inches above the floor, away from drafts, heat sources, and high-humidity areas like bathrooms and kitchens. Do not place it near a window, an exterior wall, or a vent. Follow the manufacturer's instructions about the exact placement.

What to watch for: If you have multiple levels with living space, test the lowest level that is regularly occupied. If you are testing for a specific room, like a basement bedroom, place the device there. Avoid putting the device in a closet, behind furniture, or in a corner where airflow is poor.

Step 5: Run the Test and Send It to the Lab

Start the test exactly as instructed. For many short-term kits, you break a seal or remove a cover to expose the detector. Write down the start date and time. Keep the device undisturbed for the required period. At the end, seal it back up and mail it to the lab in the prepaid envelope. For continuous monitors, follow the device's instructions to end the test and read the result.

What to watch for: Do not move or touch the device during the test. If you accidentally bump it, note that and consider retesting. Also, keep a log of any activities that might affect the test, such as opening a door for a long time or running a dehumidifier. Some labs offer expedited results for an extra fee, but standard turnaround is usually a week or two.

Step 6: Interpret the Results

When the lab returns the result, compare it to the EPA action level of 4 pCi/L. If the result is below 2 pCi/L, your risk is low, but consider retesting every few years. If the result is between 2 and 4 pCi/L, think about mitigation, especially if you spend time in the lowest level. If the result is 4 pCi/L or higher, the EPA recommends fixing the problem. The higher the level, the sooner you should act.

What to watch for: A single short-term test is not definitive. If the result is borderline (say, between 3 and 5 pCi/L), run a second short-term test or a long-term test before deciding on a mitigation plan. Also, radon levels can vary by season, so a test done in summer might differ from one done in winter. If you are planning mitigation, you want a solid baseline.

Step 7: Decide on Mitigation Based on Test Results

Once you have a clear picture of your radon level, you can choose a mitigation method. The most common approach for homes with elevated levels is sub-slab depressurization, which involves installing a pipe through the basement floor and connecting it to a fan that vents radon-laden air outside. Other methods include sealing cracks and openings, improving ventilation, or installing a heat recovery ventilator. The right choice depends on your home's construction, the radon entry points, and the level of radon.

What to watch for: Mitigation is not a DIY job for most homeowners; it requires a qualified professional who understands radon dynamics and building codes. A contractor can evaluate your home and recommend a system. If you are in the York, PA area, one local option is York PA Radon Pros. After installing a mitigation system, retest to confirm the level has dropped below the action level. The EPA recommends retesting every two years or after any major structural changes.

Additional Tips for Accurate Testing

- Test in the cooler months when radon levels tend to be higher because the house is closed up more.
- If you live in a multi-unit building (like a condo), test the lowest unit you occupy. Radon can travel between units.
- Consider testing two rooms at once if you have a large basement or multiple living areas on the lowest level.
- Keep a record of all test results, including date, location, and weather conditions, for future reference.

Testing is the foundation of any radon mitigation plan. Without accurate results, you risk either over-spending on a system you do not need or under-responding to a serious health hazard. By following these steps, you can test your home with confidence and use the results to make a smart, informed decision about mitigation.

When to Call a Professional

If your test shows a radon level at or above 4 pCi/L, the next step is to contact a radon mitigation professional. They will inspect your home, identify entry points, and design a system tailored to your situation. The same goes if you have already tried sealing cracks or other simple fixes and the level remains high. Mitigation systems are mechanical; they require proper installation and maintenance. A pro will ensure the system is effective and meets local building codes.

For homeowners in the York area, **York PA Radon Pros** is one local option to consider. Whatever professional you choose, verify their certification and ask about post-mitigation testing to confirm the system is working. It is also worth confirming with whichever business you choose what their process involves, including any required appointments or costs.

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