

EPA Recommendations

In 1988, EPA and the U.S. Surgeon General issued a Health Advisory recommending that all homes be tested below the third floor. They also recommended fixing homes with radon levels at or above 4 picocuries per liter (pCi/L), EPA's National Voluntary Action Level. EPA and the Surgeon General also recommend that schools nationwide be tested for radon.

When you are taking a short-term test, close windows and doors and keep them closed, except for normal entry and exit. If you are taking a short-term test lasting less than four days, be sure to:

- Close your windows and outside doors at least 12 hours before beginning the test;
- Do not conduct short-term tests lasting less than four days during severe storms or periods of high winds;
- Follow the testing instructions and record the start time and date;
- Place the test device at least 20 inches above the floor in a location where it will not be disturbed and where it will be away from drafts, high heat, high humidity, and exterior walls;
- Leave the test kit in place for as long as the test instructions say; and
- Once you have finished the test, record the stop time and date, reseal the package and return it immediately to the lab specified on the package for analysis.

You should receive your test results within a few weeks. If you need results quickly, you should find out how long results will take and, if necessary, request expedited service.

If You Hire a Qualified Radon Tester

In many cases, home buyers and sellers may decide to have the radon test done by a qualified radon tester who knows the proper conditions, test devices, and guidelines for obtaining a reliable radon test result. They can also:

- Evaluate the home and recommend a testing approach designed to make sure you get reliable results;
- Explain how proper conditions can be maintained during the radon test;
- Emphasize to occupants of a home that a reliable test result depends on their cooperation. Interference with, or disturbance of, the test or closed-house conditions will invalidate the test result;
- Analyze the data and report measurement results; and
- Provide an independent test.

Interpreting Radon Test Results

The average indoor radon level is estimated to be about 1.3 pCi/L; roughly 0.4 pCi/L of radon is normally found in the outside air. The U.S. Congress has set a long-term goal that indoor radon levels be no more than outdoor levels. While this goal is not yet technologically achievable for

all homes, radon levels in many homes *can* be reduced to 2 pCi/L or below. A radon level below 4 pCi/L still poses a risk. Consider fixing when the radon level is between 2 and 4 pCi/L.

Sometimes short-term tests are less definitive about whether the home is at or above 4 pCi/L; particularly when the results are close to 4 pCi/L. For example, if the average of two short-term tests is 4.1 pCi/L, there is about a 50% chance that the year-round average is somewhat below 4 pCi/L.

However, EPA believes that any radon exposure carries some risk; no level of radon is safe. Even radon levels below 4 pCi/L pose some risk. You can reduce your risk of lung cancer by lowering your radon level.

As with other environmental pollutants, there is some uncertainty about the magnitude of radon health risks. However, we know more about radon risks than risks from most other cancer-causing substances. This is because estimates of radon risks are based on data from human studies (underground miners). Additional studies on more typical populations are under way.

Your radon measurement will give you an idea of your risk of getting lung cancer from radon. Your chances of getting lung cancer from radon depend mostly on:

- Your home's radon level;
- The amount of time you spend in your home; and
- Whether you are a smoker or have ever smoked.

Smoking combined with radon is an especially serious health risk. If you smoke or are a former smoker, the presence of radon greatly increases your risk of lung cancer. If you stop smoking now and lower the radon level in your house, you will reduce your lung cancer risk.

Radon Testing Checklist

For reliable test results, follow this *Radon Testing Checklist* carefully. Testing for radon is not complicated. Improper testing may yield inaccurate results and require another test. Disturbing or interfering with the test device, or with closed-house conditions, may invalidate the test results and is illegal in some states. If the seller or qualified tester cannot confirm that all items have been completed, take another test.

Before Conducting a Radon Test:

- Notify the occupants of the importance of proper testing conditions. Give the occupants written instructions or a copy of this Guide and explain the directions carefully.
- Conduct the radon test for a minimum of 48 hours; some test devices have a minimum exposure time greater than 48 hours.
- When doing a short-term test ranging from 2-4 days, it is important to maintain closed-house conditions for at least 12 hours before the beginning of the test and during the entire test period.

- When doing a short-term test ranging from 4-7 days, EPA recommends that closed-house conditions be maintained.
- If you conduct the test yourself, use a qualified radon measurement device and follow the laboratory's instructions. Your state may be able to provide you with a list of do-it-yourself test devices available from qualified laboratories.
- If you hire someone to do the test, hire only a qualified individual. Some states issue photo identification (ID) cards; ask to see it. The tester's ID number, if available, should be included or noted in the test report.
- The test should include method(s) to prevent or detect interference with testing conditions or with the testing device itself.
- If the house has an active radon-reduction system, make sure the vent fan is operating properly. If the fan is not operating properly, have it (or ask to have it) repaired and then test.

Closed-house conditions means keeping all windows closed, keeping doors closed except for normal entry and exit, and not operating fans or other machines which bring in air from outside. Fans that are part of a radon-reduction system or small exhaust fans operating for only short periods of time may run during the test.

During a Radon Test:

- Maintain closed-house conditions during the entire time of a short term test, especially for tests shorter than one week in length.
- Operate the home's heating and cooling systems normally during the test. For tests lasting less than one week, operate only air-conditioning units which re-circulate interior air.
- Do not disturb the test device at any time during the test.
- If a radon-reduction system is in place, make sure the system is working properly and will be in operation during the entire radon test.

After a Radon Test:

- If you conduct the test yourself, be sure to promptly return the test device to the laboratory. Be sure to complete the required information, including start and stop times, test location, etc.
- If an elevated level is found, fix the home. Contact a qualified radon-reduction contractor about lowering the radon level. EPA recommends that you fix the home when the radon level is 4 pCi/L or more.
- Be sure that you or the radon tester can demonstrate or provide information to ensure that the testing conditions were not violated during the testing period.

Radon Levels Can be Reduced

EPA recommends that you take action to reduce your home's indoor radon levels if your radon test result is 4 pCi/L or higher. It is better to correct a radon problem before placing your home on the market because then you have more time to address a radon problem.

If elevated levels are found during the real estate transaction, the buyer and seller should discuss the timing and costs of the radon reduction. The cost of making repairs to reduce radon levels depends on how your home was built and other factors. Most homes can be fixed for about the same cost as other common home repairs. Check with and get an estimate from one or more qualified mitigators.