

Radon Testing Protocols for Iowa Child Care Centers

TEST PLACEMENT

1. Which rooms in a child care center should be tested for radon?

Test the lowest level program room or space the children will use (except bathrooms, laundry and kitchen) regardless of contact with the soil.

Test every level in contact with the soil in every program room or space the children will use (except bathrooms, laundry and kitchen).

If the results are below the 4.0 pCi/L threshold, there is no need to test program space directly above the level tested.

Note: If any program room or space extends beyond the tested lower level and that space is in contact with the soil, additional testing of this space is required as well. Example: split levels or partial basements that are not as large as the lower tested area.

2. Which areas do NOT need to be tested for radon?

Kitchens, storage areas, laundry areas and bathrooms do not need to be tested.

3. If the entire basement is used as a storage area and is not used by children, does it need to be tested?

No.

4. What about buildings with crawlspaces?

If the building has a crawlspace, program room or space the children will use above the crawlspace should be tested. The crawlspace itself does not need to be tested.

5. If a program area has tested below the threshold and is not in contact with the soil, is it necessary to test the space directly above that area?

No

6. How many tests should be used in each program area?

Due to the potential complexity of construction of child care centers, each room should be tested with a separate device. Most short-term tests cover up to 2000 ft². Classroom/program areas under 2000 ft² will need only one device. If the room is over 2000 ft², additional devices will need to be used.

7. In a room over 2000 ft² which requires the use of two devices, how should the devices be placed?

If two devices are used, divide the room in half, and place each device in the center of each half.

8. When should testing be conducted?

Testing should be conducted during weekdays when heating, ventilation, and air conditioning (HVAC) systems are operating normally. This approach has the important advantage of measuring radon levels under typical weekday conditions for that child care center and also eliminates the burden of weekend testing and non-routine adjustments to the HVAC systems.

Winter months, November through April, are the best time to test in Iowa because closed-building conditions can be easily maintained, windows and exterior doors are more likely to be closed and the heating system is more likely to be operating, resulting in the reduced intake of outside air.

Testing should *not* be conducted during unusual weather events. Severe rainstorms, snowstorms, and periods of unusually high winds (> 30 mph) or rapidly changing barometric pressure are predicted during the testing period. These events can affect the level of radon in a building and skew test results.

9. Is there other guidance on testing procedures?

- The test device should be placed at least; 20 inches to 7 feet above the floor (general breathing zone), 1 foot from exterior walls, 3 feet from doors or windows and 4 inches from all other objects.
- Do NOT move the radon test device after it has been placed.
- Do not test for radon in a kitchen, bathroom, or hallway.
- The device should not be placed in direct sunlight.
- The device should not be placed near drafts caused by sources such as furnaces, boilers, fireplaces, vents, or appliances.
- All short term radon tests must remain in place for a minimum of 48 hours. Long term tests shall remain in place for at least 90 days or longer.
- Closed-building conditions must be maintained for 12 hours before testing and throughout the test period (48+ hours). This means that all windows and doors to the outside should be kept closed for the entire test (with the exception of when people are leaving or entering). The HVAC system shall be to the normal heating, cooling, or ventilation cycle, appropriate for the time of year.
- Be sure to follow the conditions and special instructions on each test kit.

TEST RESULTS

1. What if the test is above 4.0 pCi/L?

If a childcare center has a test reading above 4.0 pCi/L from a short-term test-kit, it is recommended to conduct additional testing.

- a) If the result of the initial test is 4.0-7.9 pCi/L, it is recommended to conduct a long-term test using an alpha track detector or by a measurement specialist using a continuous radon monitor or electret.
- b) If the result of the initial test is greater than or equal to 8.0 pCi/L, it is recommended to conduct a follow-up short-term test.

If the center has multiple classrooms and only a few results are above 4.0 pCi/L, only those with radon levels above 4.0 piC/L need to be re-tested.

NOTE: The decision to mitigate should *not* be made based on one elevated result. Follow-up testing should always be done prior to installing a mitigation system.

2. What other conditions require retesting?

Any type of remodeling, HVAC work, or structural and/or air handling work should be followed by retesting the program room or space for radon after the work has been completely finished.

MITIGATION

Per IDPH Administrative Rules, only licensed radon mitigation specialists are permitted to install radon mitigation systems. For a listing of licensed radon mitigation specialists, consult the list located on IDPH's Radon Program website: <http://idph.iowa.gov/radon/fix>.

1. If a child care center already has a mitigation system installed and it is working properly, is testing necessary?

Yes. To ensure that the system is functioning properly and that levels remain below 4.0 pCi/L, continued at least every 2 years. Retesting should also be done if there are any renovations or additions to the building or changes in the HVAC system. In addition, mitigation contractors should have provided an operating manual when the system was installed, as well as their contact information and company name.

2. Is there a method to make sure that the system is functioning properly?

Yes. Each mitigation system is equipped with a manometer. The manometer shows the level of suction created by the fan on the system. A properly functioning fan will show an uneven level of liquid on the two sides, showing that pressure is entering the tube. If the levels are even, review the installation manual provided by the installer for next steps or contact the installer for assistance. The installer contact information should be on a sticker near the manometer.



ADDITIONAL INFORMATION

Test kits can be purchased locally at many county health departments, hardware and home improvement stores or by calling Iowa's Radon Hotline: 1-800-383-5992 which is managed by the American Lung Association. The IDPH maintains a list of approved radon testing labs that can sell test kits in Iowa which can also be contacted to purchase a kit. The list can be found at www.idph.iowa.gov/radon/test under the Find a Specialist section.

A list of professional measurement specialists certified in the state of Iowa that can also conduct the testing can be found at www.idph.iowa.gov/radon/test.

OTHER RESOURCES

- DHS Child Care Licensing Information:
<http://ccmis.dhs.state.ia.us/providerportal/LicensedProviderInfo.aspx>
- Iowa Department of Public Health (IDPH) Radon Program: <http://idph.iowa.gov/radon>
- US Environmental Protection Agency: www.epa.gov/radon
- American Lung Association: www.lung.org/radon
- Centers for Disease Control (CDC): https://www.cdc.gov/nceh/radiation/brochure/profile_radon.htm

Iowa Administrative Code 441--109(237A) CHILD CARE CENTERS109.11(7) *Environmental hazards*

b. Within one year of being issued an initial or renewal license, centers operating in facilities that are at ground level, use a basement area as program space, or have a basement beneath the program area shall have radon testing performed as prescribed by the state department of public health at 641—Chapter 43. Testing shall be required if test kits are available from the local health department or the Iowa Radon Coalition. Retesting shall be accomplished at least every two years from the date of the initial measurement if test kits are available from the local health department or the Iowa Radon Coalition. If testing determines confirmed radon gas levels in excess of 4.0 picocurie per liter, a plan using radon mitigation procedures established by the state department of public health shall be developed with and approved by the state department of public health prior to a full license being issued.