

Office of Radiological Health

RADON BULLETIN

ORH-754: Tamper Resistance and other Good Practices for Radon Testing
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The Commonwealth of Virginia's radon statutes require compliance with USEPA guidance. Specifically, **Virginia Code § 32.1-229.01.B** states:

“Radon professionals listed as proficient pursuant to subsection A shall comply with the radon mitigation and testing standards outlined in the Environmental Protection Agency's publication, EPA 402-R-92-003, as revised, or the American Society for Testing and Materials (ASTM International) Standard, E-2121-02, or any other radon testing and mitigation standards accepted by the Environmental Protection Agency and the Board.”

When a radon professional attempts to test a residence as part of a real estate transaction, it is prudent to employ techniques to prevent intentional interference or manipulation of the test results. A hostile party may attempt to violate closed house conditions, cover the testing device or move it to a low background area in an effort to produce an artificially low test result. **Tamper resistant techniques are discussed in EPA document: 402-R-92-003 “Protocols for Radon and Radon Decay Measurements in Homes,” Section 3.5.** The entire document may be found and downloaded here: http://www.epa.gov/radon/pdfs/homes_protocols.pdf

Suggested tamper resistant techniques for passive devices:

- Detectors can be placed in containers that allow air to enter and leave, but prevent unauthorized access to the devices. These containers can be secured to their surroundings so that they cannot be easily moved. Cages, radon permeable bags or custom designed lock boxes may be used for this purpose.
- Whenever possible, devices should not be placed on flat surfaces but instead hung or placed to prevent them from being easily covered with a foreign object (like a towel) in an attempt to impede air flow through the device.

Suggested tamper resistant techniques for active continuous monitor devices:

- Use devices with motion or tilt detectors that may indicate if a device is moved during the test period.
- In addition to measuring the radon concentration each hour, a device that also monitors the temperature, barometric pressure, humidity, or carbon dioxide levels may be used to discover a violation of closed house protocols or other abnormal manipulation of the indoor air.
- Use small fragile stick-up devices mounted vertically on the detector that will easily break off if covered with an unauthorized object.

Suggested tamper resistant techniques for all radon testing devices:

- Use security barriers such as tape or labels that cannot be resealed to ensure that windows in the testing room are not opened, devices are not moved during the testing period, or both.
- Make occasional random, unannounced visual inspection(s) during testing periods to look for obvious violations of closed-house conditions.
- Include in the standard test documentation a non-interference agreement signed by the parties involved in the transaction.

Other good practices to ensure test validity:

- Use only radon test devices that have been approved for use by either the National Radon Safety Board (www.nrsb.org) or the National Radon Proficiency Program (www.nrpp.info).
- Only use electronic test devices that have been calibrated as recommended by the manufacturer.
- Test devices should be placed a minimum of 20 inches off the floor and at least 3 feet away from doors, windows or other possible openings to the outdoors.
- Do not place test devices near open sumps or exposed soil or bedrock.
- Test devices should not be placed directly on building materials made from natural rock (ex. granite counter top or fireplace hearth) because some of these materials may produce their own radioactive emissions.
- Test devices should be placed and retrieved only by testers who are currently certified by either the NRSB or NRPP. The person retrieving the test device should verify that closed house conditions were maintained and that the device was not moved or otherwise interfered with during the testing period.
- Maintain an adequate Quality Assurance (QA) program. See **EPA document: 402-R-92-003 “Protocols for Radon and Radon Decay Measurements in Homes,” Section 4.4.**

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