
7.8**Radon Report**

- A. Background. One common constituent of soil and rock is the unstable element uranium. One of the decay products of uranium is radon, a colorless, odorless gas. Under certain natural conditions, the radon gas can enter surface soils and become part of the “soil gas” environment, which then can enter the air, including air inside of buildings. When soil gas that contains radon enters a building, radon and its decay products are either directly inhaled, or attached to dust on walls, floors and in the air, which then can be inhaled. These decay products then undergo further decay, resulting in the release of subatomic alpha particles. This alpha particle radiation can cause mutations in lung tissue which can lead to lung cancer. The risk of contracting lung cancer from radon increases with an increase in the concentration of radon in the air that is breathed by building occupants. EPA recommends mitigation for residences with radon concentrations at or above 4 picocuries per liter of air (pCi/L). Please see EPA Radon Map on the Environmental Resource Page located on the Section 232 Program website.
- B. General Requirements
1. Radon Report.
 - a. The radon report is required for all mortgage insurance applications, unless an exception listed in Section 7.8.B.3 applies.
 - b. The radon report shall be included in the application, or early commencement requests, as applicable.
 - c. Contents. The radon report shall include the results of any testing performed, the details of any recommended mitigation, and the timing of any such mitigation. An amended radon report must be issued if the testing and/or mitigation must occur after application submittal according to the requirements below. The radon report must be signed and certified as to its compliance with the requirements of this section by a Radon Professional.

2. Radon Professional.
 - a. All testing and mitigation must be performed under the direct supervision of a Radon Professional, in accordance with the protocols referenced in this section.
 - b. Radon Certification/License of the Radon Professional is required as follows:
 - i. Certification from either the American Association of Radon Scientists and Technologists (AARST) National Radon Proficiency Program (NRPP) or the National Radon Safety Board (NRSB); and
 - ii. Certification/License from the state in which the testing or mitigation work is being conducted, if the state has this requirement.
 - c. Exceptions to Radon Report.
 - i. A Radon Professional may conclude that neither testing nor mitigation is necessary based on a physical inspection of the property, the characteristics of the buildings, and other valid justifications. An example of a valid justification is having only a garage on the surface level that is open to the air and is fully ventilated. Any such justifications as to why neither testing nor mitigation is necessary must be provided by the Radon Professional (signed letter) and documented in the Environmental Report. Any waiver requests submitted for this section (7.8.) must be made in accordance with this exception. Requests for waiver of this section 7.8 that do not meet the requirements of this exception will not be granted.
 - ii. A radon report is not required for applications that are categorically excluded under 24 CFR 50.19(b) (21) (see 7.1.A.5, above).
 - iii. Applicants are encouraged to test for radon even if a radon report is not required per the exceptions above. Any such testing must follow the testing protocols and resident notification protocols below, and must then be incorporated within a radon report as described within this section. If the results of such testing indicate levels of radon above the threshold for unacceptability, mitigation as described in this section is required, with the mitigation requirements for Section 223(a)(7) projects the same as those for 223(f) projects.
 - d. Testing Protocols.
 - i. Radon testing must follow the protocols set by the American Association of Radon Scientists and Technologists, Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings (ANSI-AARST MALB-2014, or most recent edition) (Please see ORCF Environmental Resource Page located on the Section 232 Program website). Applicant has the option to test 25% of ground level units/rooms in each building (sampling). If any of the sampled units/rooms is tested above the 4.0 picocuries per liter (4.0 pCi/L), then they have two options:
 1. Mitigation in 100% ground level units/rooms or

3. Section 223(f) and Non-Excepted Section 223(a)(7).
 - a. All Section 223(f) and non-excepted 223(a)(7) projects must be tested for radon in accordance with 7.8.B.4, above. Testing must be performed no earlier than 1 year prior to application submission.
 - b. Mitigation. See requirements at 7.8.B.6. If estimated costs exceed the allowable cost for the Section 223(f) program, the application cannot be approved but may be considered under the substantial rehabilitation program.

4. Substantial Rehabilitation and Conversions. (Applies to all Radon Zones)
 - a. Testing prior to substantial rehabilitation or conversion.
 - i. Early testing not feasible. For some proposals, such as a conversion of an existing building from non-residential to residential, the building envelope may change to such an extent that early testing would not be appropriate and in some cases not possible. If this is the case, proceed directly to mitigation as discussed at Section 7.8.D.2.
 - ii. Early testing when feasible.
 1. Must be performed no earlier than 1 year prior to application submission in accordance with 7.8.B.4.
 2. If test results are below the threshold, no mitigation is required.
 3. If test results are at or above the threshold, mitigation must be built into the project design per Section 7.8.D.2.a.
 - b. Mitigation.
 - i. If mitigation is built into project design, it must be conducted in accordance with the requirements at 7.8.B.6.
 - ii. If mitigation is not built into project design, after construction is complete but prior to Final Closing, radon testing must be conducted. If testing results are above the threshold, retrofit pursuant to the requirements at 7.8.B.6 is required.

5. New Construction.
 - a. Radon resistant construction is required for all radon zones.
 - b. Radon Zone 1:
 - i. Construction Requirements: All new construction in Radon Zone 1 must meet all of the requirements of ASTM E1465-08a for installation of passive systems.
 - ii. Post-construction testing is required prior to Final Closing. If testing results are above the threshold, conversion from a passive system to a fan-powered system is required.
 - c. Radon Zones 2 and 3:
 - i. Construction requirements.
 1. Gas permeable layer. The gas permeable layer must meet all of the requirements of ASTM E1465-08a, Section 6.4.
 2. Ground cover. The concrete slabs and plastic membranes that seal the top of the gas permeable layer must meet all of the requirements of ASTM E 1465-08a, Section 6.2.

3. Foundation walls. Foundation walls must meet all of the requirements of ASTM E1465-08a, Section 6.3.
 - ii. Post construction testing is required, except as provided at 7.8.B.3.
 1. Radon testing must be performed after construction is complete, but prior to Final Closing.
 2. If testing results are above the threshold, retrofit based on the applicable standard at 7.8.B.6 is required, with installation of a passive system. If testing results remain above threshold, a fan-powered system is required.