Radon Testing After Earthquakes

Alaska Division of Geological & Geophysical Surveys

What is Radon?

Radon is a naturally occurring radioactive gas released in rock, soil, and water from the natural decay of uranium.

While levels in outdoor air pose a relatively low threat to human health, **radon can accumulate to dangerous levels inside buildings.** You can't see, smell, or taste it, but an elevated radon level may cause serious health effects.

See reverse for more information about the health effects of radon and where to get a radon test kit.

Earthquakes *May* Affect Radon Levels

Earthquakes do not create radon, but damage caused by an earthquake may create pathways for (existing) radon to find its way into your home.

Ground Shaking Disturbs the Earth

Strong ground shaking can stress soil, potentially resulting in a loss of soil strength. Loss of strength can cause earth materials to settle and sometimes fail outright, damaging structures.

Different Geologic Materials React Differently to Shaking

The type of material through which an earthquake wave moves affects the wave speed. Certain soils such as sands, muds, silts, and artificial fills slow down earthquake waves and amplify earthquake shaking. If these materials are saturated with water the shaking can be made worse.

Test for Radon After an Earthquake to be Safe

Following strong ground shaking, it is likely that earth materials (particularly sands, muds, silts, and fills) have been disturbed. Even if your home displays no obvious signs of structural damage, the underlying soils may have shifted.

Even if you have tested for radon in the past, it's a good idea to conduct a radon test following an earthquake or any time you suspect your home has experienced structural damage. Even small cracks and gaps can let radon in.

Following the M 7.1 November 30, 2018 earthquake in Anchorage, Vine Road in Wasilla collapsed. The bog soils on which the road was built amplified shaking from the earthquake, causing extensive damage to the road. Photo: Alaska Division of Geological & Geophysical Surveys.

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Radon Health Risks

Exposure to radon is the second leading cause of lung cancer in the United States and the number one cause among non-smokers. The U.S. Environmental Protection Agency (EPA) estimates that radon causes more than 20,000 lung cancer deaths in the country each year. Only smoking causes more lung cancer deaths. If you smoke and your home has radon, your risk of lung cancer can be higher. In fact, **the EPA and the U.S. Surgeon General urge all Americans to protect their health by testing their homes, schools, and other buildings for radon.**

Testing for radon

Because we can't see, smell, or taste radon, it's easy to forget that it may be a problem in any home in Alaska. It's also important to remember that just because your neighbor's house does not have an elevated level of radon does not mean that your house will have a low radon level.

The only way to know if this dangerous gas is collecting in your home is to test and confirm your home's level is under the EPA action level of 4 pico-Curies per liter (pCi/L).

You can test for radon with a short-term (typically 48–96 hours), or long-term test (up to a year). Tests conducted longer than 90 days are preferred. If the radon test results are needed quickly, the averaged results of two short-term tests (less than 90 days) can be used in deciding whether to mitigate.

The American Association of Radon Scientists and Technologists recommends homeowners retest every five years or after events that may change the airflow or structure of the house, such as significant earthquakes and renovations.

Radon test kits are available in hardware stores and other retail outlets, and for purchase online from the National Radon Program Services (sosradon.org/purchase-kits). Radon service providers will also conduct testing for you.

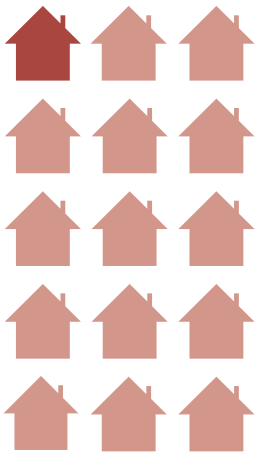
Can I prevent radon from entering my home?

Houses can be built to resist radon gas from seeping in. Simple building and venting techniques will reduce the chance of high radon levels building up.

In pre-existing homes, or homes that have experienced structural damage, some radon problems may be fixed with easy solutions. Larger problems may require the help of a mitigation contractor.

Solutions for addressing radon include sealing cracks and installing special pipes to draw radon away from your home.

1 out of 15 U.S. homes have high radon levels*



**According to the Centers for Disease Control and Prevention*

Alaska Radon Hotline
800-478-8324

Resources:

maps.dggs.alaska.gov/radon

uaf.edu/ces/foodhealth/radon

See DGGS Information Circular 82 for more information about radon in Alaska: doi.org/10.14509/30163

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