



Kansas Radon Program
Engineering Extension • Kansas State University

Kansas Radon Program

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Radon in Granite Countertops

- **Is there radon in granite countertops?**

Granite is a natural mineral formed by the earth's geological processes. It is quarried and processed to produce commercial products such as countertops. It is possible for any granite sample to contain varying concentrations of uranium that can produce radon gas, a source of alpha and beta particles and gamma rays. Some granite used for countertops may contribute variably to indoor radon levels. At this time, EPA does not believe sufficient data exist to conclude that the types of granite commonly used in countertops are significantly increasing indoor radon levels. However, the total number of variables associated with radon release from granite countertops makes predicting the health risk in a particular home very difficult. Variables include 1) total surface area of the granite, 2) the total percentage of the granite made up of uranium, 3) are the exposed surfaces of the granite sealed or unsealed, and 4) what other radon sources are contributing to the total radon inside a dwelling. EPA estimates that radon from soil underneath a house contributes 95% or more of all indoor radon. As such, while any granite in a home may contribute some very small percentage of indoor radon, the US EPA recommends testing the total indoor radon level, and if necessary acting to reduce the amount of soil-produced radon gas as the primary means for indoor radon gas reduction.

- **How can I test for radon in granite countertops?** While a radon testing professional can test your home for radon, to EPA's knowledge, there is no agreed-upon method specifically for measuring radon or radiation from granite countertops. Direct measurements in a building of the gamma radiation or radon emanation from a material, such as granite, is not a reliable indicator of radon concentrations that will be in the air you breathe. Attempts to use such measurements for estimating risk are subject to large errors due to the:

- a) wide variability of radon emanation rates across the surface of granite.
- b) significant variability in ventilation rates from home to home and room to room.
- c) volume of space that the building material is contained in.

- **What should I do to address the radon risk in my home if I have granite countertops ?**

To reduce radon risk you should first test the air in your home to determine the radon level. This can be done using a test kits from a Kansas county extension office, or a retail outlet, or by hiring a nationally certified radon measurement professional. Follow test kit instructions and EPA guidance for test kit placement in your home. At the same time, perform another test in the room where the granite countertop or other suspect building material exists. You may also want to test in a highly occupied room, like your bedroom. (Use different rooms if these locations are

on the same floor.) Place the test devices at least 20 inches off the floor according to testing protocols and at least 20 inches away from the countertop or suspect material. If any of the test results are at or above the EPA recommended action levels retest these areas to confirm the initial results. You can find professionals listed at <http://www.kansasradonprogram.org/>

- **How can radon levels be reduced?** The best approach to reduce radon in the home is to install an active soil depressurization system (ASD) and reduce the entry of radon coming from the soil. We recommend using a qualified radon mitigation professional to design and install the appropriate radon reduction system. Only in extreme cases would removal of the granite be necessary to reduce the radon concentration, assuming appropriate measurements confirm it as the significant source. It is far more effective in terms of risk reduction to take steps to mitigate radon concentrations throughout the home. The cost of such mitigation would likely be much less than the cost of replacing kitchen countertops and would very likely result in a much greater overall risk reduction.

- **Are there regulations or research addressing granite in countertops concerns?** There are currently no regulations concerning radiation levels in countertops. EPA is aware of a few studies that are inconclusive in determining what level, if any, of radon is generally coming from granite countertops. EPA will continue to monitor and analyze the evolving research on this issue and will update its recommendations as appropriate.

- To learn more about radon, read the Citizen's Guide at www.epa.gov/radon/pubs/citguide.html

- **Sources**
 1. Indoor Air Quality Frequently Asked Questions. U.S. EPA
<http://www.epa.gov/iaq/index.html>
 2. Position Statement - Granite Countertops and Radon Gas. from the Science and Technical Committee of the American Association of Radon Scientists and Technologists (AARST) August 4, 2008
 3. Letter to the Editor - The New York Times August 1, 2008. Richard Toohey, PhD, CHP President, Health Physics Society
 4. Radiation from Granite Countertops. Health Physics Society