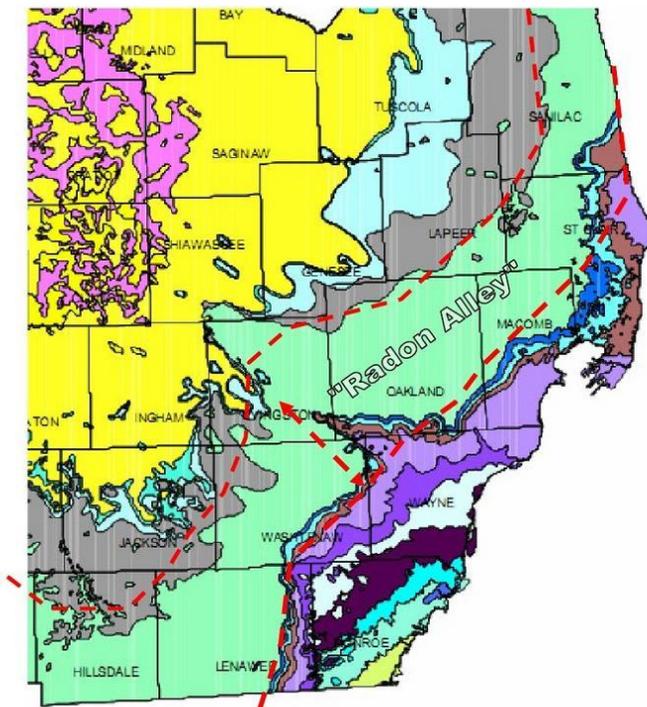
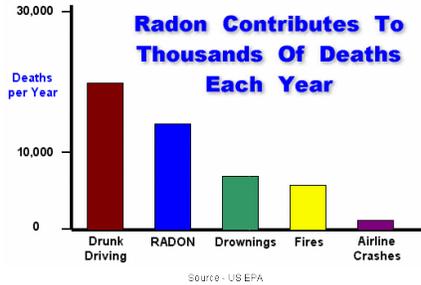


Radon

Radon is produced underground by granite bedrock and possibly in lesser amounts by other types of bedrock. The radon migrates through subsurface groundwater, rock and soil and into basements through cracks, seams, sump pumps and concrete/block pores. The radon gas decays into daughter dust products such as lead and polonium that can be inhaled. The decay of these radioactive byproducts release ionizing radiation, which can cause lung cancer.

The highest range of radon risk in southeast Michigan generally correlates with an arc-shaped geologic formation (light green) extending from Port Huron and continuing west to southwest through Romeo, north Pontiac, Novi, Brighton, Ann Arbor and continuing down through the Hillsdale region. However, the unpredictable combination of various subsurface factors and building conditions can result in elevated levels of Radon anywhere in Michigan.





According to American Lung Association data, the following is an example of the radon test fail rates for selected municipalities:

- Allen Park 32%
- Ann Arbor 44%
- Bloomfield Hills 32%
- Brighton 64%
- Flint 27%
- Howell 25%
- Northville 30%
- Novi 28%
- Pontiac 22%
- Rochester Hills 27%
- Romeo 52%
- Saline 60%
- St. Clair 20%
- Wixom 52%

The following areas were ranked by the American Lung Association as the top radon hazard locations (with a sufficient testing sample size):

1. Dexter
2. Saline
3. Whitmore Lake
4. South Lyon
5. Washington Township/Romeo
6. Milford/New Hudson
7. Brighton
8. Clarkston
9. Oxford
10. Bloomfield Township

Questions about Radon:

How does radon get into your home?

Radon is a radioactive gas. It comes from the natural decay of uranium that is found in nearly all soils. It typically moves up through the ground to the air above and into your home through cracks and other holes in the foundation. Your home

traps radon inside, where it can build up. Any home may have a radon problem. This means new and old homes, well-sealed and drafty homes, and homes with or without basements. Radon from soil gas is the main cause of radon problems. Sometimes radon enters the home through well water (see www.epa.gov/radon/rnwater.html).

What is the average level of radon found in homes in the U.S.?

Based on a national residential radon survey completed in 1991, the average indoor radon level is about 1.3 picocuries per liter (pCi/L) in air in the United States. The average outdoor level is about 0.4 pCi/L.

Are radon measurements accurate and reliable?

EPA has maintained the position that radon measurement systems provide practical and affordable measurements that can give consumers the information they need about the radon level in their home in order to make a decision about whether to fix their home. Since EPA based this position on studies conducted earlier, we decided, in consultation with Office of Inspector General (OIG).

Are we sure that radon is a health risk?

EPA already has a wealth of scientific data on the relationship between radon exposure and the development of lung cancer. The scientific experts agree that the occupational miner data is a very solid base from which to estimate risk of lung cancer deaths annually. While residential radon epidemiology studies will improve what we know about radon, they will not supersede the occupational data. Health authorities like the Centers for Disease Control (CDC), the Surgeon General, the American Lung Association, the American Medical Association, and others agree that we know enough now to recommend radon testing and to encourage public action when levels are above 4 pCi/L. The most comprehensive of these efforts has been the National Academy of Science's Biological Effects of Ionizing Radiation (BEIR VI) Report (see www.epa.gov/radon/beirvi.html). This report reinforces that radon is the second-leading cause of lung cancer and is a serious public health problem. As in the case of cigarette smoking, it would probably take many years and rigorous scientific research to produce the composite data needed to make an even more definitive conclusion.

What is Radon?

Radon is a gaseous radioactive element having the symbol Rn, the atomic number 86, an atomic weight of 222, a melting point of -71°C, a boiling point of -62°C, and (depending on the source, there are between 20 and 25 isotopes of radon - 20 cited in the chemical summary, 25 listed in the table of isotopes); it is an extremely toxic, colorless gas; it can be condensed to a transparent liquid and to an opaque, glowing solid; it is derived from the radioactive decay of radium and is used in cancer treatment, as a tracer in leak detection, and in radiography. (From the word radium, the substance from which it is derived.)

Explain working levels (WL) and picocuries per liter of air (pCi/L).

Your radon test results may be reported in either picocuries per liter of air (pCi/L) or working levels (WL). If your test result is in pCi/L, EPA recommends you fix your home if the radon level is 4 pCi/L or higher. If the test result is in WL, EPA recommends you fix the home if the working level is 0.016 WL or higher. Some states require WL results to be converted to pCi/L to minimize confusion.

Are Radon Mitigators required to be licensed in the State of Michigan?

No. Radon testers and mitigators (radon reduction contractors) are not licensed or regulated in Michigan. However, there are two national organizations that offer radon measurement and mitigation certification, and if you choose to hire a professional to assist you, you are encouraged to hire a certified individual.

The two national organizations are the National Environmental Health Association (NEHA) and the National Radon Safety Board (NRSB). The DEQ Indoor Radon Program or your local health department can provide you with lists of measurement and mitigation service providers certified by these organizations, or you can visit the organization websites for the most complete and up-to-date information:

National Radon Proficiency Program: <http://www.nrpp.info/>

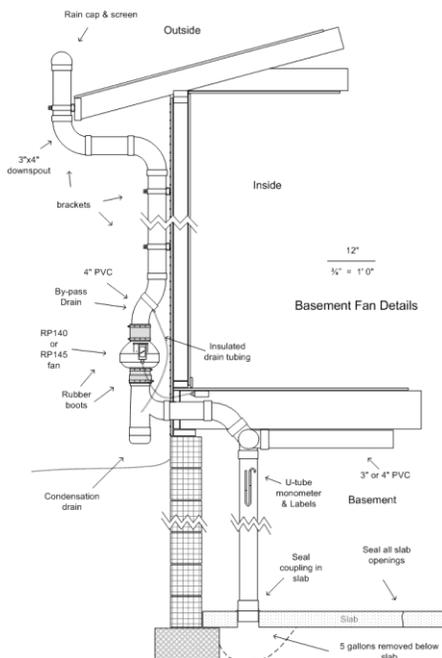
National Radon Safety Board: <http://www.nrsb.org/>

The DEQ has no regulatory authority over mitigators, and does not conduct audits or inspect their work. This presents a "Buyer Beware" situation. As with any other

home improvement, you are encouraged to choose a radon contractor with care. Get more than one estimate, ask for references, and compare proposals, not only with each other, but also with the existing standards or guidelines. (Choosing an individual certified by NEHA or the NRSB helps assure that the person is trained and knowledgeable, but you should dig deeper to ensure that he/she is the right person for the job.)

The EPA Consumer's Guide to Radon Reduction provides more information about selecting a contractor, and the Radon Mitigation Standards offer detail about installing safe and affordable radon mitigation systems. Both documents can be found online at the EPA radon publications website or they can be obtained from your local health department. Copies are also available by calling the Michigan Indoor Radon Program at 800-RADON GAS/800-723-6642.

Example of Radon Mitigation Systems:



Helpful links:

Michigan DEQ – Radon: http://michigan.gov/deq/0,4561,7-135-3312_4120_4196-10497--,00.html

EPA – Radon: <http://www.epa.gov/radon>

Radon Mitigation Professionals:

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Jamey J. Gelina
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Fax: (800) 207-5685
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