RADON 101:
MINNESOTA
SCHOOLS
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RADON OVERVIEW

- Naturally occurring radioactive gas
- Radon comes from the natural decay of uranium, which is found in soil & rock all over the U.S.

HOW RADON ENTERS A BUILDING

- Radon from soil can enter through cracks, holes, and vents.
- Radon from water can enter through plumbing. 
- Radon from gas and ventilation systems also play a role.

- Monitoring and mitigation strategies are essential to maintain a safe indoor environment.
• Known carcinogen
• 2nd leading cause of lung cancer deaths behind smoking
• Risk of getting lung cancer from radon
  • Level of radon
  • Duration of exposure
  • Other risk factors

HEALTH AFFECTS

RADON RISKS

How serious a problem is radon in Minnesota?

High radon levels exist in every state in the US. In Minnesota, **one in three homes has radon** levels that pose a significant health risk, and nearly 80% of the counties are rated High Radon Zones.

**ZONE 1:**
• >4 pCi/L

**ZONE 2:**
• 2 -< 4 pCi/L

Some factors that further contribute to Minnesota's high radon levels include:
• Minnesota’s geology produces an ongoing supply of radon.
• Minnesota's climate affects how our homes are built and operate.

Sources: [http://www.health.state.mn.us/rdp/radon/radonfactsheet.pdf](http://www.health.state.mn.us/rdp/radon/radonfactsheet.pdf)
EXPOSURE: Children

SOURCES

• Home is likely most significant source

• For most, the second largest source is their school

SCHOOL RADON TESTING RECOMMENDATIONS

REQUIRED?
No, but strongly recommended. Most likely will be required via legislation in future.

FREQUENCY
Every 5 years. After major renovations. After HVAC changes.

TYPE OF TESTING
All frequently occupied rooms in contact with the ground. Short-term detectors. Long-term detectors.

REPORTING*
Report radon results to school board. Submit results to MDH. *MN only.

Lowest Location in Contact with Soil
TESTING

≥4 picocuries per liter (pCi/L) = follow up testing
Elevated rooms must be mitigated
Use certified radon testing devices
Appropriate QA/QC devices included in sampling strategy

SCHOOL OPERATIONAL AND MAINTENANCE CHALLENGES

- VENTILATION RATES: Indoor Air Quality, Less Outside Air
- UNOCCUPIED SETBACKS: Night Setbacks, Building Parking
- ENERGY SAVING STRATEGIES: Heating and Cooling Performance Contracts, Commissioning
- BUILDING PRESSURIZATION: Positive Pressurization, Building Controls and System Coordination
- CONSTRUCTION COSTS: 20% of the Increased Construction Costs Over the Last 20 Years are due to Mandates

RADON SYSTEM DESIGN

• What is Being Required is States
• Active vs Passive
• Sumps and Pits
Companies completing radon measurements and construction must:

- Certify each person placing or retrieving radon devices
- Licensed Mitigation Companies and System Installers
- Quality Assurance Officer and SOPs
- Quality Assurance Plan that follows AARST MAURO 14, “Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings”

*SCHOOLS NOT REQUIRED TO BE LICENSED TO TEST*
RADON CONTACTS

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QUESTIONS AND ANSWERS

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