



ANSI/AARST MW-RN 2020
An Approved American National Standard

Protocols for the Collection, Transfer and Measurement of Radon in Water

Copyright © 2020 AARST, 527 N Justice Street, Hendersonville, NC 28739
AARST CONSORTIUM ON NATIONAL RADON STANDARDS



Introduction and Scope Summary

This standard of practice contains minimum requirements and guidance for measuring radon in water that enters a building through groundwater supplies for determining if mitigation is necessary to protect current and future occupants of dwellings and other buildings. This standard includes procedures for the collection and transport of water samples, as well as protocols for the quantitative transfer of the sample to a measurement device to determine radon concentrations in water.

Radon is the leading cause of lung cancer among nonsmokers and the second leading cause of lung cancer in the general population.¹ Elevated concentrations of radon in water can increase radon concentrations in indoor air. While an increased cancer risk may exist with ingestion of drinking water containing radionuclides over extended periods (e.g., decades), the risk from typical levels of waterborne radon is much lower than the risk from breathing indoor air containing ≥ 4 pCi/L (150 Bq/m³). Radon in U.S. homes causes approximately 21,000 lung cancer deaths each year.² Be it at home, work or school, an individual's exposure to radon gas combines over time to increase the risk of preventable lung cancer.

In 1999, with publication of BEIR VI², the National Academy of Science confirmed that any exposure to radiation, including any concentration of radon, carries risk. In 2009, the World Health Organization's WHO Handbook on Indoor Radon confirmed the association between indoor radon exposure and lung cancer, even at the relatively low radon concentrations found in residential buildings.¹

Designation of this standard: MW-RN

As used for catalogue identification, "MW-RN" stands for "Measurement of Water for Radon."

Normative References

ANSI/AARST MS-QA, Standard for Radon Measurement Systems Quality Assurance

The Consensus Process and Continuous Maintenance of Standards

The consensus process developed for the AARST Consortium on National Radon Standards and as accredited to meet essential requirements for American National Standards by the American National Standards Institute (ANSI) has been applied throughout the process of approving this document.

This standard is under continuous maintenance by the AARST Consortium on National Radon Standards for which the Executive Stakeholder Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. Updated addenda and change request forms and instructions may be obtained in electronic form from at www.standards.aarst.org/public-review

AARST Consortium on National Radon Standards

Email: StandardsAssist@gmail.com Website: www.standards.aarst.org

527 N Justice Street, Hendersonville, NC 28739

Notice of right to appeal: (See Bylaws for the AARST Consortium on National Radon Standards available at www.standards.aarst.org/public-review.) Section 2.1 of Operating Procedures for Appeals (Appendix B) states:

¹ World Health Organization, "WHO Handbook on Indoor Radon: A Public Health Perspective" 2009

² National Academy of Sciences, "Biological Effects of Ionizing Radiation" (BEIR VI Report) 1999