Indoor Environments 2025 Radon & Vapor Intrusion Symposium Fort Worth, Texas October 27, 2025

Updates: MW-RN and MS-QA Standards

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ANSI/AARST MW-RN 2020

An Approved American National Standard

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

AARST CONSORTIUM ON NATIONAL RADON STANDARDS

2025 changes: Radon in water sampling

for implementation in 2026

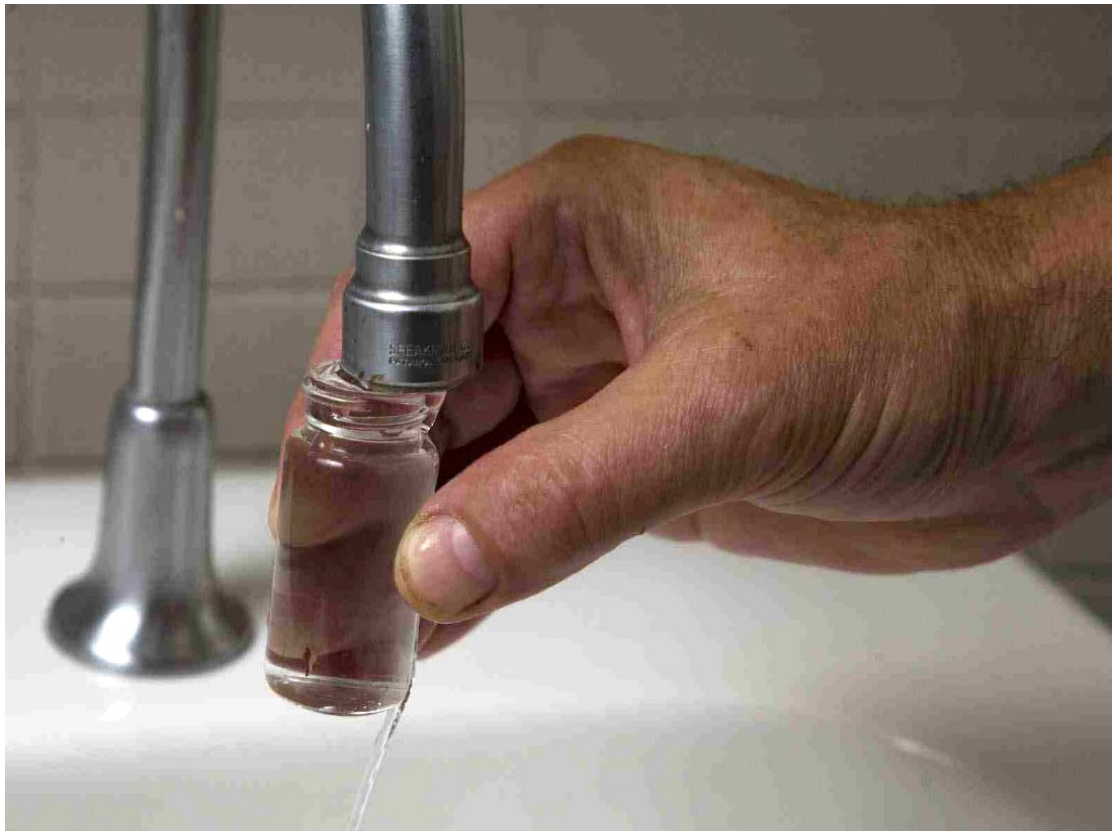
The two most common sample collection methods emphasized

Submerged Bottle

- Emphasized as best method

  Why?
- Water does not come in contact with air or bubbles

2025 changes: Radon in water sampling
for implementation in 2026



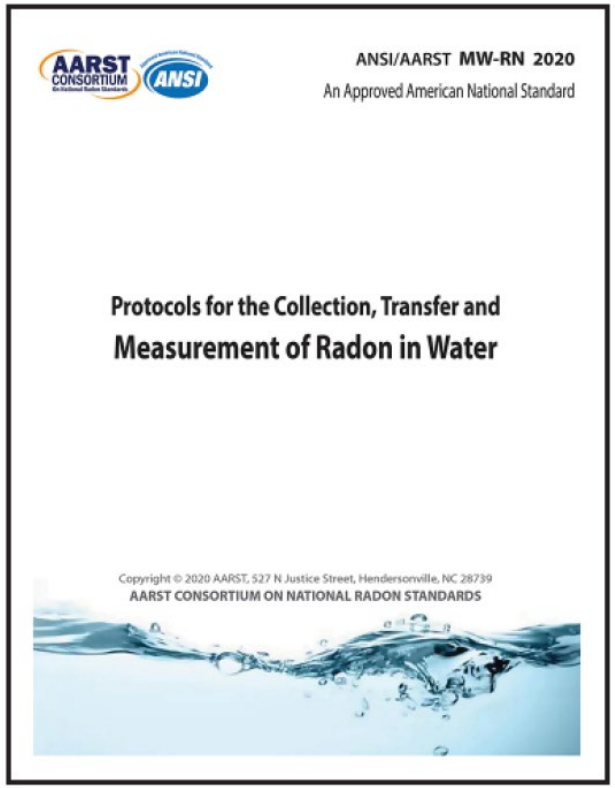
Direct fill from a faucet allowed

- not recommended best method
- requires training/proficiency

2025 changes: Radon in water sampling
for implementation in 2026

- Water sample kits sold to homeowners and other untrained individuals for the submerged bottle and direct fill collection methods shall include instructions equivalent instructions to those in Section 3.

- Forms for homeowners and other untrained individuals shall be provided with test kits that are consistent with content described in Section 4 for documenting the water collection event



2025 changes: Radon in water sampling

Simple To Read Instructions

(a) Remove the screw cap from the bottle.

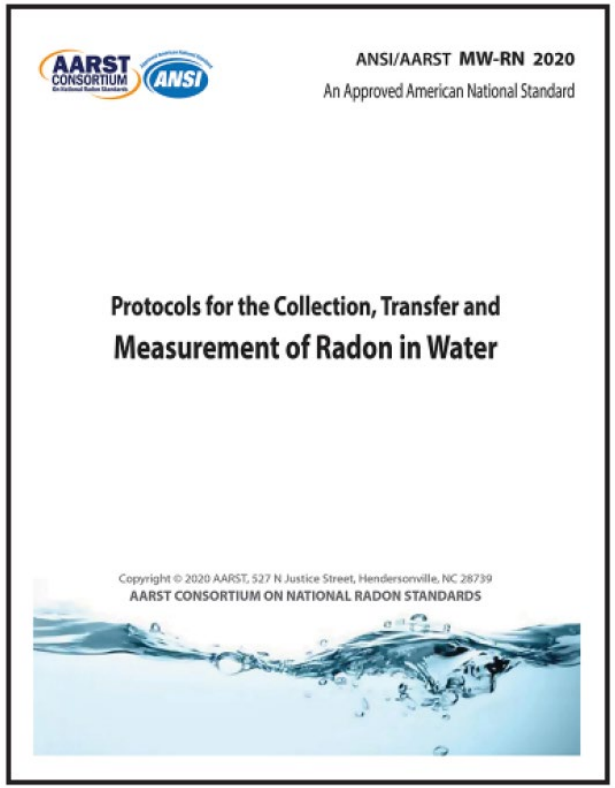
(b) Filling the bottle

1 Tilt and slide the open end of the bottle 1/2 inch (1-2 cm) under the faucet spout. The water must flow gently against the sides of the bottle and not splash or create bubbles.

2 Once mostly full, hold the bottle completely upright and let it overflow for 10 to 15 seconds.

3 Then slide the bottle away from the water stream, making sure there is a slight “bulge” of water standing above the rim of the bottle.

(c) Quickly confirm the slight “bulge” of water. Then position the cap on the bottle and tighten it.



Several collection methods moved to an Appendix

Upright funnel— Immersed bottle method

Upright funnel—Bottle method

Several collection methods moved to an Appendix

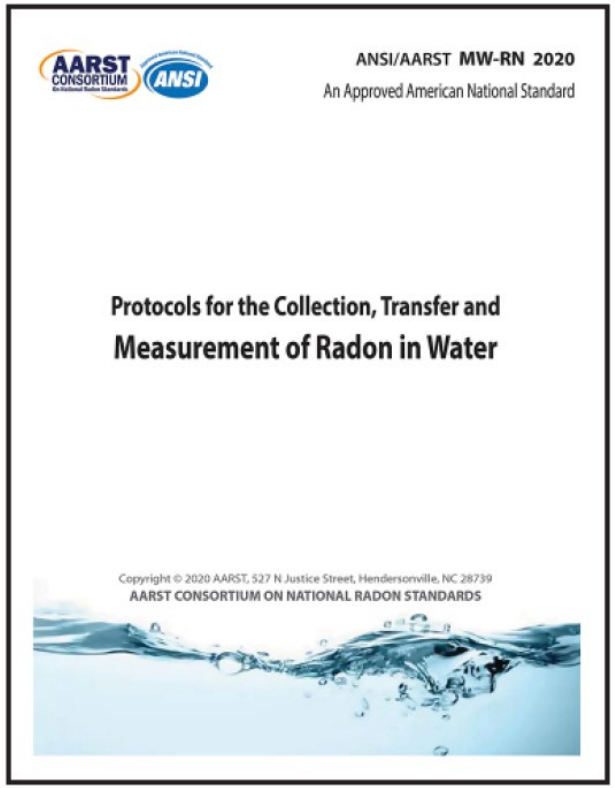
Filled bowl or small bucket—Syringe method

Upright funnel—Syringe method

More changes: Radon in water sampling

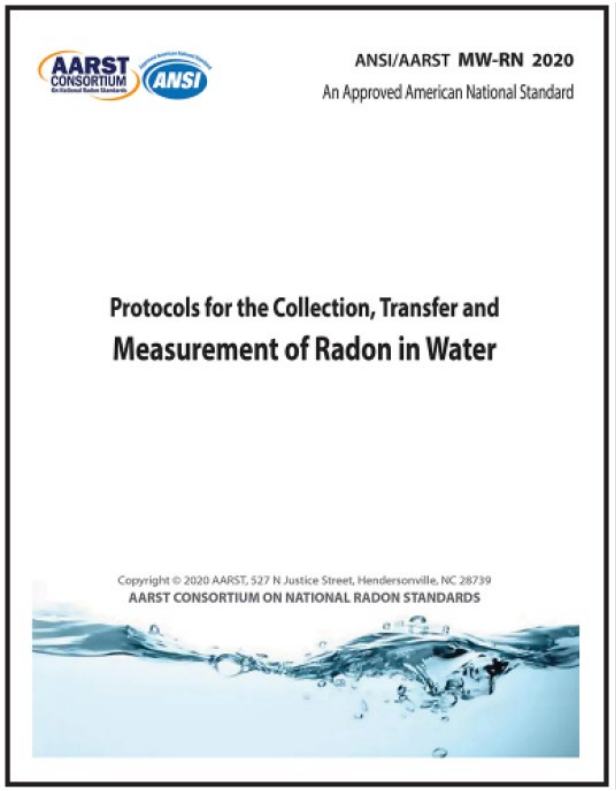
- The higher test result shall be regarded as correct for making mitigation decisions unless the lower result is confirmed by additional testing initiated within 1 year

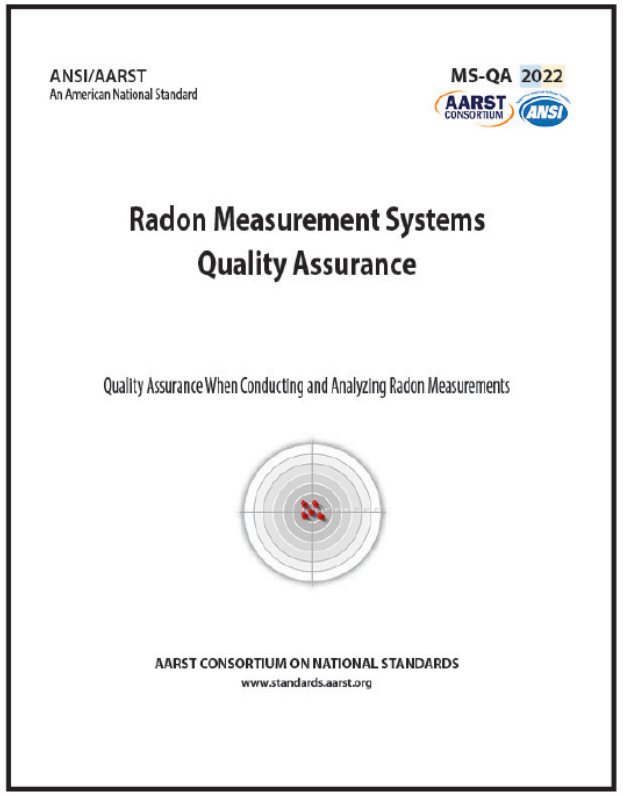
- After installation and with ongoing maintenance and monitoring events, the procedure shall include testing both the source water prior to water treatment and the mitigated water after all water treatment equipment



Radon in water sampling and QA

- Before publishing in 2026, there will be more changes to MW-RN (mostly editorial)
- Example: MW-RN defers to MS-QA for related quality assurance



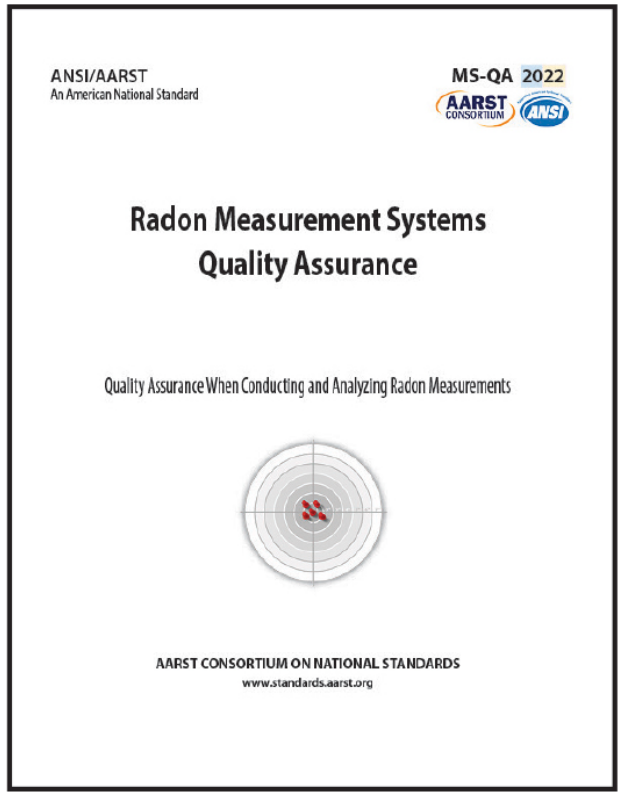


2026 changes: MS-QA update

- 3.3.2 QC checks need to be identified to the laboratory. Details reported to the lab must emulate typical test duration and test conditions.

  (Otherwise, automated systems will invalidate the measurement)
- Double blinds are still allowed

- 4.2.1 CRM Comparison Checks
  MUST check before re-introducing a device back into company's measurement device system

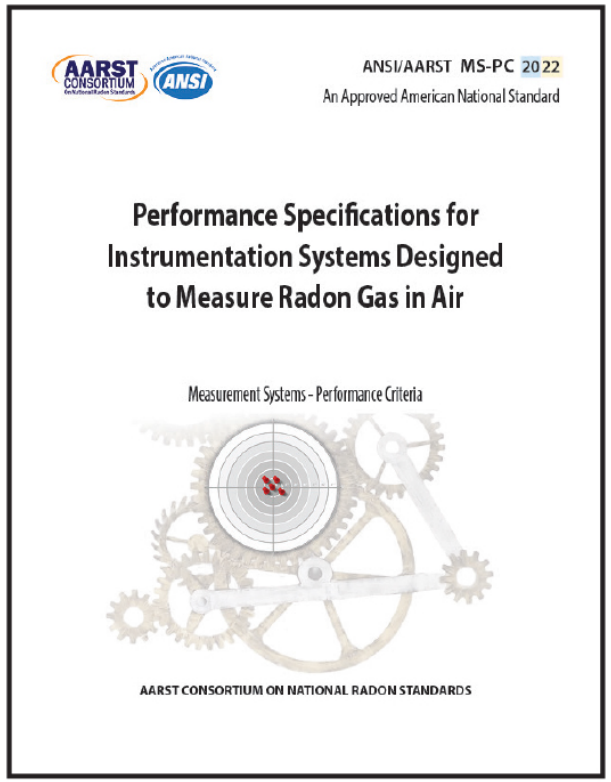


2026 changes to explore: MS-PC update

- Do any consumer grade devices meet the *precision* & *accuracy* requirements in Section 7?

  - Consumer grade monitors are a huge segment of radon testing being performed now by owners

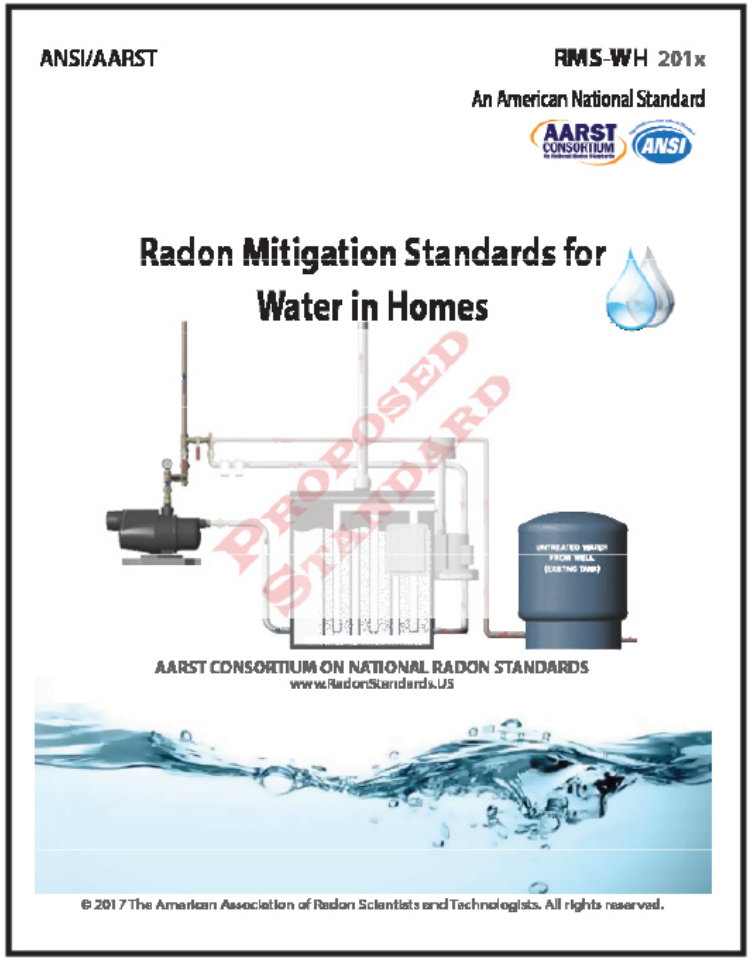
- Should we render clear requirements for these devices so that consumers and regulators have guidance on their usage?



Progress on Mitigation of Radon in Water

Watch for public reviews summer 2026

- We have a great group of experts.
- A lot of details still to decide but most topics have been touched on, to include:
  - Chemistry of water (very important)
  - System design relative water flow rates and volume of water needed
  - Plumbing (e.g., by-pass valves, exhaust, etc.)
  - Aeration Systems
  - GAC filtration
  - Health and Safety



OM&M for Radon in Water Mitigation

New Standard to publish 2026

- Requirements for information packets will include an operation, maintenance and monitoring plan (OM&M)

- The version provided in this standard will be drawn from the work done in a new standard (Long-Term Stewardship of Radon and soil gas hazards)

Progress on Mitigation of Radon in Water

Watch for public reviews summer 2026

- We will review common limits associated with mitigation methods. For example, aeration is usually needed for mitigating >5,000 pCi/L.

- And finally, we will review recommended MCL levels again. Different states and agencies have different action levels. MW-RN currently recommends 4,000 pCi/L.