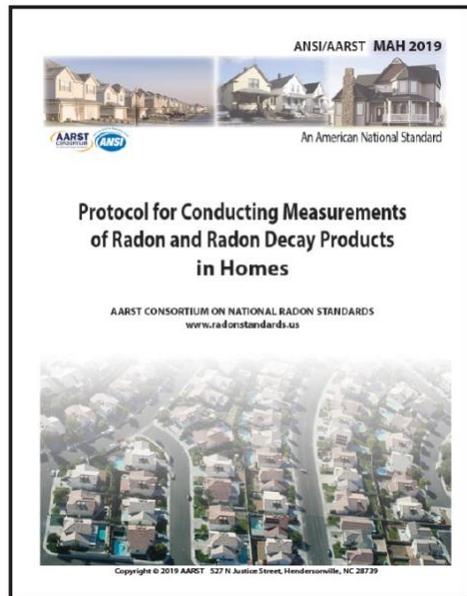


Harmonization and Update effort for
MAH, MAMF and MALB Measurement Standards
Continuous maintenance efforts to improve these standards are currently ongoing.



MAH Updates 6/22 Read me

These proposed revisions include updates to two testing provisions and guidance based on test results. The proposed revisions are applicable to the following ANSI/AARST publication:

- MAH 2019 (measurement in homes)

Latest published versions of those standards are available for comparison at www.standards.aarst.org where all ANSI/AARST standards can be found for review at no charge and for purchase.

The current mitigation standards committee roster (consensus body) can be linked to from www.standards.aarst.org/public-review. The current work project includes (1) harmonization, where possible, for all portions of these documents to read the same for the same tasks; (2) update based on new experiences, and (3) renderings that are more conducive to stakeholders who are involved in compliance assessment.

Public Review: MAH Updates 6-22
COMMENT DEADLINE: August 1st, 2022

REQUESTED PROCESS AND FORM FOR FORMAL PUBLIC REVIEW COMMENTS

Submittals (MS Word preferred) may be attached by email to StandardsAssist@gmail.com

- 1) Do not submit marked-up or highlighted copies of the entire document.
 - 2) If a new provision is proposed, text of the proposed provision must be submitted in writing. If modification of a provision is proposed, the proposed text must be submitted utilizing the strikeout/underline format.
 - 3) For substantiating statements: Be brief. Provide abstract of lengthy substantiation. (If appropriate, full text may be enclosed for project committee reference.)
-

REQUESTED FORMAT

Title of Public Review Draft: **MAH Updates 3-22**

- **Name:** _____ **Affiliation:** _____
 - **Clause or Subclause:** _____
 - **Comment/Recommendation:** _____
 - **Substantiating Statements:** _____
- Check here if your comment is supportive in nature and does not require substantive changes in the current proposal in order to resolve your comment.

Repeat the five bullet items above for each comment.

Requested registration of your contact information and copyright release.

ONE TIME REGISTRATION CONTACT INFORMATION AND COPYRIGHT RELEASE

NOTE: AARST Consortium on National Radon Standards encourages original commentary on its standards. Commenters that choose to submit comments without an author's signature (due to difficulties in timeliness, proximity or other) shall be deemed to have done so at their sole discretion and have thereby acknowledged and accepted the copyright release herein. If commenters submit comments authored by others, those comments must also be accompanied by a signed copyright release from the author of the original comment. The original comment author and representing commenters may be asked to engage in dialog supporting their position.

Name: _____ Affiliation: _____
Address: _____ City: _____ State: _____ Zip: _____
Telephone: _____ Fax: _____ E-mail: _____

Copyright Release:

I hereby grant the AARST National Radon Standards Consortium the non-exclusive royalty rights, including non-exclusive royalty rights in copyright, in my proposals and I understand that I acquire no rights in publication of this standard in which my proposals in this or other similar analogous form is used. I hereby attest that I have the authority and am empowered to grant this copyright release.

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PLEASE SHIP TO: StandardsAssist@gmail.com Commenters are responsible for informing the standards assistant staff a when changing contact information or other preferences.

Notice regarding unresolved objections: While each committee seeks to resolve objections, please notify the committee responsible for an action or inaction if you desire to recirculate any unresolved objections to the committee for further consideration. Notice of right to appeal. (See Bylaws for the AARST Consortium on National Radon Standards - Operating Procedures for Appeals available at www.radonstandards.us, Standards Forum, Bylaws): (2.1) Persons or representatives who have materially affected interests and who have been or will be adversely affected by any substantive or procedural action or inaction by AARST Consortium on National Radon Standards committee(s), committee participant(s), or AARST have the right to appeal; (3.1) Appeals shall first be directed to the committee responsible for the action or inaction.

AARST Consortium on National Radon Standards

Website: www.standards.aarst.org

Email: StandardsAssist@gmail.com

527 N Justice Street, Hendersonville, NC 28739

The Consortium Consensus Process

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.

Continuous Maintenance

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.

User Tools: User tools are posted online (www.standards.aarst.org/public-review) as they become available (such as templates for field notices, inspection forms, interpretations and approved addenda updates across time).

Notices

Notice of right to appeal: Bylaws for the AARST Consortium on National Radon Standards are available at www.standards.aarst.org/public-review. Section 2.1 of Operating Procedures for Appeals (Appendix B) states, "Persons or representatives who have materially affected interests and who have been or will be adversely affected by any substantive or procedural action or inaction by AARST Consortium on National Radon Standards committee(s), committee participant(s), or AARST have the right to appeal; (3.1) Appeals shall first be directed to the committee responsible for the action or inaction."

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Proposed Maintenance Updates for MAH 06/22

Protocol for Conducting Measurements of Radon and Radon Decay Products in Homes

Commentary/Rationale: The proposed revision to Section 6.1.2 was observed to achieve virtually the same goal while allowing more practical application in the field.

6.0 CONDUCTING THE TEST

6.1.2 *Where closed-building conditions did not occur prior to the test*

Where closed-building conditions were not maintained for twelve hours prior to deployment, as required in Section 4, the radon testing shall be conducted with one of the following options:

- a) The testing is postponed until at least 12 hours of closed-building conditions have been maintained prior to initiating the test; or
- ~~b) The test period is extended to 4 days or more after closed-building conditions are initiated;~~
- b) The test period extends not less than 72 hours after closed-building conditions are initiated;

Commentary/Rationale: The proposed revisions to Section 7.2.2 b) seek to harmonize with current content in ANSI/AARST radon measurement standards MAMF and MALB.

From MAH

7.2 When Two Test Results Disagree

7.2.2 *Where test results disagree on exceeding the action level*

When one test result is above the *action level* and the other test result is below the *action level*:

b) *Not acceptable*

If the higher test result is more than twice the lower test result,

1. For two *collocated* (side-by-side) tests conducted at the same time, a repeated *collocated* test for this location is required ~~to obtain a valid measurement.~~
- ~~2. For two tests conducted in the same location but at different times, obtaining confirmation on whether *mitigation* is warranted requires additional testing.~~

~~Exception—Additional testing is not required when the cause for the discrepancy can be proven or when it is decided to proceed with *mitigation*.~~

~~Note 1—While decisions to mitigate at any time are not prohibited, comprehensive testing aids confidence that decisions are not being made based on a faulty test device or unexpected conditions.~~

~~Note 2—Tests conducted under heating season conditions are more likely to provide a clear characterization of potential radon hazards.~~

~~Note 3—Longer test durations reduce the chance that short-lived temporary conditions in weather or building operations have adversely influenced test results.~~

2. For two *short-term* detectors deployed at different times in the same location, obtaining confirmation on whether or not *mitigation* is warranted requires additional testing unless it is decided to proceed with *mitigation*.

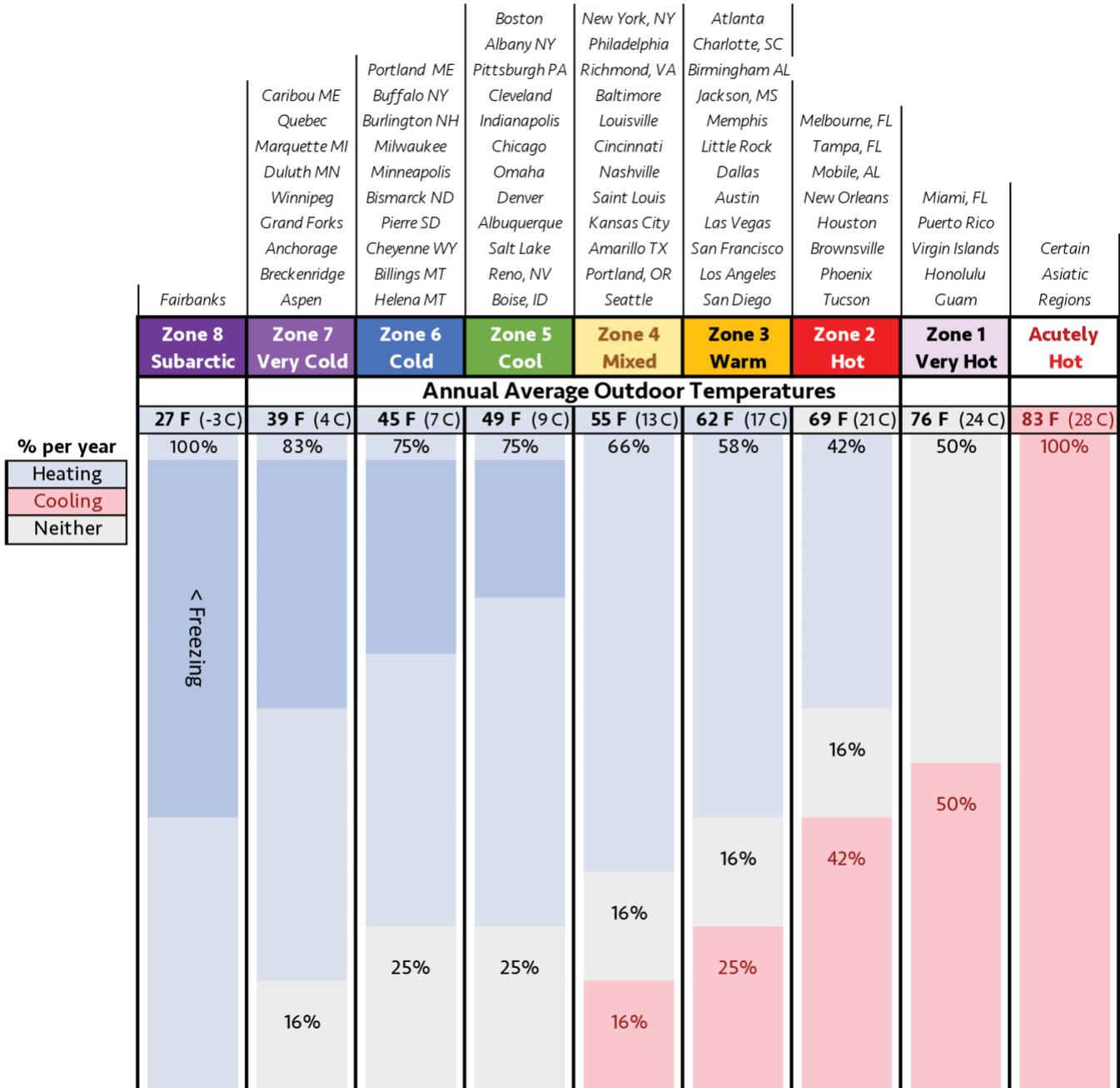
This degree of uncertainty requires a precautionary stance to include that the higher test result shall be regarded as correct for making *mitigation* decisions unless further testing indicates otherwise.

Test results to be regarded as a more representative reflection of occupant exposure to radon hazards shall be those that most closely align to the predominant normal occupied building operating condition for the location tested, as defined in Table 7.2.2 b).

Informational Table 7.2.2 b

Annual Average Building Operating Conditions

This table provides annual average outdoor temperatures for various climate zones and the building conditions, in terms of heating and cooling system activity, that occur in response to these outdoor temperatures.



Climate zone temperatures based 30-year averages published online (e.g., the National Centers for Environmental Information-NOAA) for a major city located within each climate zone. Zone classifications reflect ASHRAE standards 90.1 / 90.2 (The American Society of Heating, Refrigerating and Air-Conditioning Engineers) <https://www.ashrae.org>.

Commentary/Rationale: The proposed editorial commentary below this table results from harmonization with Section 7.2.2 b) that acknowledges climate zones where heating conditions might not be the predominant building operating condition.

8.5.9.2	Reporting Low Concentrations
EQUIVALENT STATEMENTS FOR THESE ADVISORIES SHALL BE INCLUDED IN THE REPORT	
<ul style="list-style-type: none">• Consider fixing the building if test results indicate radon concentrations greater than half the action level, (e.g., between 2 and 4 pCi/L).• Note that tests conducted when heating systems are active both day and night are more likely to provide a clear characterization of potential radon hazards. †	
<i>Advisories required regarding continued protection against long-term exposure to a radon hazard</i>	
<ul style="list-style-type: none">• Retest the building at least every 5 years or, to verify continued effectiveness of radon mitigation systems or efforts, at least every 2 years.• Retest in conjunction with any sale of new or existing buildings.• In addition, be certain to test again when any of the following circumstances occur:<ul style="list-style-type: none">✓ a new addition is constructed or alterations for building reconfiguration or rehabilitation occur;✓ a ground contact area not previously tested is occupied, or a home is newly occupied;✓ heating or cooling systems are significantly altered, resulting in changes to air pressures or pressure relationships;✓ ventilation is significantly altered by extensive weatherization, changes to mechanical systems or comparable procedures;✓ significant openings to soil occur due to:<ul style="list-style-type: none">— groundwater or slab surface water control systems that are altered or added (e.g., sumps, perimeter drain tile, shower/tub retrofits, etc.) or,— natural settlement causing major cracks to develop;✓ earthquakes, construction blasting, or formation of sink holes nearby; or✓ a mitigation system is altered, modified or repaired.	

† Note—Where appropriate, recommendations can include retesting within a year during a time that more closely aligns with the predominant normal occupied building operating condition, as described in informational Table 7.2.2.b. Recommendations can further include guidance on test durations for such testing that are longer than 2-7 days.