Harmonization effort for

SGM-SF, RMS-MF and RMS-LB Mitigation Standards

Continuous maintenance efforts to improve these standards are currently ongoing.

Read me

The attached proposed revision to Section 9.1 (post-mitigation functional evaluations) contains a variety of harmonized updates that speak to improved clarity and consistency in effective design for both radon and soil gas mitigation systems. The proposed harmonized revisions are applicable to replacing Section 9.1 in the following ANSI/AARST publications:

- SGM-SF 2017 rev12/20
- RMS-MF 2018 rev12/20
- RMS-LB 2018 rev12/20

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 conductive to stakeholders who are involved in compliance assessment.

Public Review: SF-MF-LB 9.1, *2-22 COMMENT*

DEADLINE: **March 20th, 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: **SF-MF-LB 9.1, *2-22***

- **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 <u>each</u> comment.

Requested registration of your contact information and copyright release.

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PLEASE FAX TO (913) 780-2090 or SHIP TO: *StandardsAssist@gmail.com* Commenters are responsible for informing the standards assistant staff a when changing contact information or other preferences.

Rationale/Commentary: This proposal replaces Section 9.1 in ANSI-AARST SGM-SF, RMS-MF and RMS-LB. It addresses needs for both radon and vapor intrusion mitigation efforts to evaluate the functional effectiveness of installed designs prior to post-mitigation testing of indoor air concentrations. Performance evaluations after installation are known to produce increased consistency in design effectiveness and the ability to often estimate effectiveness across differing seasons.

9.0 POST-MITIGATION

9.1 Functional Evaluations

Upon completion of the mitigation effort, as installed or augmented, actions prior to releasing the work product for post-*mitigation* testing of indoor or soil gas concentrations shall comply with all portions of Section 9.1.

9.1.1 *General*

Jobsite records shall be updated to include:

a. As-installed site plan diagrams or sketches that shall include key components of the mitigation system as they exist upon completion of the mitigation effort or alteration; and

b. Fan equipment model(s) and any building systems installed or altered to achieve *mitigation* goals.

9.1.2 *Non-ASD mitigation methods*

Once *mitigation* efforts that include Non-*ASD mitigation systems* or methods are complete, evaluations to validate functional performance shall be conducted as required in Section 12.

9.1.3 *ASD systems*

Once all sealing, piping and other components of the *ASD* system are complete, multiple lines of evidence relative to system performance shall be sought as required in a), b) and c) of this Section 9.1.3.

a) PFE

The air pressure differences between soil air and indoor air shall be measured for each targeted *soil gas collection plenum* addressed by each suction point and recorded in jobsite logs. Measurements, using a differential pressure gauge that is capable of reading 1/1000 inch water column (.25 Pa) differences in air pressure, shall be conducted and recorded in jobsite logs at locations that will best characterize:

1. The full expanse of the targeted *soil gas collection plenum(s);* or
2. As an alternative or supplement, other locations addressed where evidence suggests that large volumes of soil gas are susceptible to enter the building as a result of indoor air pressures.

Outdoor temperature and building operating conditions during this performance test, in accordance with related requirements in Section 5, shall be recorded in jobsite logs.

Exception: Where PFE test locations or test ports cannot be created due to building materials that are virtually irreplaceable, such as for historical preservation properties or where other unacceptable damage to building components may occur. The reason why shall be noted in jobsite logs and alternative locations or methods for verifying system effectiveness are permitted.

b) Whole System Vacuum

The vacuum within the *main trunk* duct piping on the negatively pressured side of the fan shall be measured and recorded in jobsite logs. If the measurement is outside of the manufacturer recommended operating range, further investigation is required with findings recorded in jobsite logs.

c) Other Pertinent Conditions

A description of other pertinent observations shall be recorded in Jobsite logs, to include:

1. A summary of materials and permeable conditions found under targeted slabs and actions taken to comply with requirements for suction pit size.
2. Identification of area targeted for mitigation compared to size of the full building footprint; and
3. Locations of any sizable, unclosed openings between soil and indoor air that could not be closed to restrict air movement between soil and indoor air.

9.1.4 *Vapor intrusion and ASD*

Where goals include mitigating chemical vapor intrusion, a report shall be provided to clients prior to release of the system for further evaluations and testing that includes:

a) Measured values and conditions observed as required in a), b) and c) of Section 9.1.3;
b) Measured values for *cfm* (m^3/min) rate of exhausted air; and
c) As-installed site plan diagrams or sketches and a comparison of the mitigated area relative to *COC* concentrations measured in soil.

9.1.4.1 Vapor Intrusion Test Ports

For systems intended to mitigate chemical *vapor intrusion (VI)*, test ports for future PFE and soil gas sampling shall be created and configured to result in permanent test ports that are prominently documented in the OM&M manual. The test ports shall comply with a) and b) of this Section 9.1.4.1.

a) Physical properties

The test ports shall be:

1. accessible for future measurements without disassembly of building components or finishes;
2. installed to not present hazards such as tripping hazards to occupants;
3. installed after removing a portion of aggregate, packed fill or expansive soils that can often exist under a test port;
4. installed to retain functionality over time, such as by implementing hardware to allow easy access and closure of the test port in the future; and
5. sealed in a permanent, airtight manner at the opening between test port hardware and penetrations of a slab or soil gas retarder with a configuration that durably secures the test port in place.

Reviewer Note—This provision b of Section 9.1.4.1 is only applicable to AARST SGM-SF *(Soil Gas Mitigation in Existing Homes)*. A similar provision with greater elaboration applicable to AARST RMS-MF and AARST RMS-LB mitigation standards for larger buildings is scheduled for public review once it is more complete.

b) Test port locations

The test ports shall be:

1. located at distances remote from the *suction point* to best characterize the full expanse of the targeted *soil gas collection plenum(s)*, such as the most distant accessible slab locations;
2. installed at no less than three locations for any structure and include:
    a. at least one location for each indoor slab floor of the building to include each basement, upper slab, garage and other slab-on-grade area that is greater than 64 square feet (6 m^2); and
    b. at least one location for *soil gas collection plenum(s)* addressed by each slab and membrane suction point.