



**BSR/ASHRAE/IES Addendum g
to ANSI/ASHRAE/IES Standard 90.2-2024**

Public Review Draft

Proposed Addendum g to Standard 90.2-2024, High-Performance Energy Design of Residential Buildings

**First Public Review (October 2026)
(Draft Shows Proposed Changes to Current Standard)**

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FOREWORD

This proposal makes the following changes to air leakage testing requirements:

- Remove ACH₅₀ as an allowable testing metric and threshold for compliance. The ACH metric penalizes smaller footprints/multi-family units due to volume-to-surface-area ratios and does not appropriately scale with the size of a building or dwelling unit. The CFM₅₀/ft² of enclosure more appropriately assesses the requirement based on building or dwelling unit enclosure, regardless of geometric makeup or design. Users are now accustomed to CFM₅₀/ft² and are not reliant on ACH₅₀ calculations. Language requiring the reporting of dwelling unit enclosure area or building thermal envelope area was added to section C 1.5.2.
- Makes changes to air leakage testing requirements provision that allows buildings to exceed the maximum air leakage target by up to 15% before applying corrective measures and retesting to demonstrate compliance
- Removes a duplicative air leakage requirement in 6.2.1. The requirement and test threshold was, at one time, different than the value at 7.1.2. Since these are now the same, the section for the air leakage requirement in 6.2.1 has been updated to reference 7.1.2.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~striketrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum g to 90.2-2024

Modify Section 3.2 as follows

3.2	Abbreviations and Acronyms
...	
ach₅₀	air changes per hour at 50 pa
...	

Modify Section 6.2.1 as follows

6.2.1 Maximum Envelope Air Leakage. The *building or dwelling unit* shall have a tested air leakage rate in accordance with section 7.1.2, no greater than 3 ach₅₀ or 0.15 cfm₅₀/ft² (0.75 L/s·m²) of dwelling-unit enclosure area or building thermal envelope area, as appropriate, at a pressure differential of 0.2 in. of water (50 Pa).

Modify Section 7.2.1 as follows

7.1.2 Building Thermal Envelope Air Leakage. The *building thermal envelope* shall have a tested air leakage rate not greater than ~~either 3.0 ach₅₀ or~~ 0.15 cfm₅₀/ft² (0.75 L/s·m²) of *dwelling-unit enclosure area or building thermal envelope area*, as appropriate, at a pressure differential of 0.2 in. of water (50 Pa).

Modify Normative Appendix C Section C1.3 as follows:

C1.3 Single-Dwelling-Unit Buildings. *Buildings* comprising a single *dwelling unit* shall be tested with a single fan pressurization test and represent the leakage rate for the entire structure. Where the tested leakage rate exceeds the maximum air leakage rate indicated in 7.1.2 ~~115% of the design target~~, diagnostics shall be performed to identify corrective air-leakage sealing measures necessary to achieve compliance. These corrective measures shall be applied and the *building* retested for compliance

Modify Normative Appendix C Section C1.4.1 as follows:

C1.4.1 Dwelling-Unit Testing. Where multiple *dwelling units* or other *spaces* are contained within one *building thermal envelope*, each unit shall be considered an individual testing unit, and the *building* air leakage rate shall be the weighted average of all tested unit results, weighted by each tested unit's enclosure area as follows:

- Where *buildings* have fewer than eight (8) total dwelling or sleeping testing units, each unit shall be tested.
- Where *buildings* have eight (8) or more dwelling or sleeping testing units, the greater of seven (7) units or 20% of the testing units in the *building* shall be tested, including a top-floor unit, a middle-floor unit, a ground-floor unit, and a unit with the largest *dwelling unit enclosure area*. For each tested unit that exceeds the maximum air leakage rate indicated in 7.1.2 ~~115% of the target air leakage rate~~, an additional three (3) units shall be tested, comprising a mixture of testing-unit types and locations within the *building*.
- Common areas with not less than one exterior wall in the *building thermal envelope* shall be tested and included in the weighted average.

Exception to (c): Corridors, *stairwells*, and enclosed *spaces* having a *conditioned floor area* not greater than 1500 ft² (139 m²).

Where any of the tested units exceeds the maximum air leakage rate indicated in 7.1.2 ~~115% of the design target leakage rate~~, diagnostics shall be performed on the noncompliant units to identify corrective air-leakage sealing measures necessary to achieve compliance. A new sampling of untested units shall be tested in accordance with Section C1.4.1(b)

Modify Appendix C Section C1.5.2 as follows

C1.5.2 Air leakage results shall be reported as ~~ach₅₀ or~~ as cfm₅₀/ft² (1.0 L/s·m²) of *dwelling-unit enclosure area or building thermal envelope area*, as appropriate, at a pressure differential of 0.2 in. of water (50 Pa). The tested *dwelling-unit enclosure area* or *building thermal envelope area* shall be reported. The conditioned volume (CV) of the building or building portion shall be calculated by taking the conditioned floor area per ANSI Z765³³ or BOMA Z65.4³⁴ and multiplying by the average ceiling height.

If the ceiling is not finished, the height of the lower portion of the floor joist/rafter shall be used to determine average ceiling height. The value of ach₅₀ shall be calculated using the following equation:

$$\text{ach}_{50} = 60 \times \text{cfm}_{50} / \text{CV (ft}^3\text{)}$$

$$\text{ach}_{50} = (3600 \times \text{L/s}) / \text{CV (L)}$$