



ADDENDA

**ANSI/ASHRAE Addendum j to
ANSI/ASHRAE Standard 62.2-2013**

Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings

Approved by the ASHRAE Standards Committee on June 27, 2015; by the ASHRAE Technology Council on July 1, 2015; and by the American National Standards Institute on July 2, 2015.

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ASHRAE obtains consensus through participation of its national and international members, associated societies, and public review.

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FOREWORD

To date, no multifamily home of even 2+ units has been able to obtain credit for any infiltration. This addendum allows horizontally attached single-family homes to take a reduced infiltration credit, proportional to the percentage of exterior surface area that is not common. Fire-rated common walls typically have similar airtightness to other exterior walls, so this is a reasonable approximation of the effect of infiltration on attached housing.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~striking through~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum j to Standard 62.2-2013

Revise Section 4.1.2 as shown.

4.1.2 Infiltration Credit. If a blower door test has been done then a credit for estimated infiltration may be taken using the following procedure. Horizontally attached single-family dwelling units shall be permitted to utilize a blower door test result that includes common walls to take this credit, subject to the reduction factor, A_{ext} , in Equation 4.6.

Effective Annual Average Infiltration Rate (Q_{inf}). Effective Annual Average Infiltration Rate (Q_{inf}) shall be calculated using the normalized leakage calculated from measurements of envelope leakage using either ASTM E779¹ or CGSB 149.10.² The authority having jurisdiction may approve other means of calculating effective leakage area (ELA), such as the RESNET Mortgage Industry National Home Energy Systems Standard.³

ASTM Procedure. To calculate the ELA from ASTM E779,¹ the leakage area for pressurization and depressurization (using a 4 Pa reference pressure) shall be averaged using Equation 4.2:

$$ELA = (L_{press} + L_{depress})/2 \quad (4.2)$$

where

ELA = effective leakage area, ft² (m²)

L_{press} = leakage area from pressurization, ft² (m²)

$L_{depress}$ = leakage area from depressurization, ft² (m²)

CGSB Procedure. To calculate the ELA from CGSB 149.10,² the following modifications to the test procedure must be made: 1) all vents and intentional openings must be in the same configuration as specified in ASTM E779¹ (i.e., HVAC dampers and registers should be in the normal operating position, fireplace and other dampers should be closed unless they are required for test operation), 2) height and floor

area must be reported consistently with the definitions of this standard, and 3) the leakage area as calculated from the CGSB procedure must be converted using Equation 4.3:

$$ELA = 0.61 \cdot (0.4)^{n-0.5} \cdot L_{cgsb} \quad (4.3)$$

where

n = exponent measured from the CGSB 149.10²

L_{cgsb} = CGSB leakage area, as modified above, ft² (m²)

Normalized Leakage. Normalized leakage shall be calculated using Equation 4.4:

$$NL = 1000 \cdot \frac{ELA}{A_{floor}} \cdot \left[\frac{H}{H_r} \right]^z \quad (4.4)$$

where

NL = normalized leakage

ELA = effective leakage area, ft² (m²)

A_{floor} = floor area of residence, ft² (m²)

H = vertical distance between the lowest and highest above-grade points within the pressure boundary, ft (m)

H_r = reference height, 8.2 ft (2.5 m)

z = 0.4 for the purpose of calculating the Effective Annual Infiltration Rate below

Effective Annual Average Infiltration Rate (Q_{inf}). Effective Annual Average Infiltration Rate (Q_{inf}) shall be calculated using Equation 4.5a or Equation 4.5b:

$$Q_{inf}(\text{cfm}) = \frac{NL \cdot \text{wsf} \cdot A_{floor}}{7.3} \quad (\text{I-P}) \quad (4.5a)$$

where

NL = normalized leakage

wsf = weather and shielding factor from Normative Appendix B

A_{floor} = floor area of residence, ft²

$$Q_{inf}(\text{L/s}) = \frac{NL \cdot \text{wsf} \cdot A_{floor}}{1.44} \quad (\text{SI}) \quad (4.5b)$$

where

NL = normalized leakage

wsf = weather and shielding factor from Normative Appendix B

A_{floor} = floor area of residence, m²

Required Mechanical Ventilation Rate (Q_{fan}). Required Mechanical Ventilation Rate (Q_{fan}) shall be calculated using Equation 4.6:

$$Q_{fan} = Q_{tot} - (Q_{inf} \cdot A_{ext}) \quad (4.6)$$

where

Q_{fan} = required mechanical ventilation rate, cfm (L/s)

Q_{tot} = total required ventilation rate, cfm (L/s)

- Q_{inf} = may be no greater than $2/3 \cdot Q_{tot}$ (see Normative Appendix A for exceptions for existing buildings and Section 8.2.1 for multifamily buildings.)
- A_{ext} = 1 for single-family detached homes, or the ratio of exterior envelope surface area that is not attached to garages or other dwelling units to total envelope surface area for single-family attached homes

POLICY STATEMENT DEFINING ASHRAE'S CONCERN FOR THE ENVIRONMENTAL IMPACT OF ITS ACTIVITIES

ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the standards and guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive technical committee structure, continue to generate up-to-date standards and guidelines where appropriate and adopt, recommend, and promote those new and revised standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating standards and guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.

