

ADDENDA

**ANSI/ASHRAE/IES Addendum g to
ANSI/ASHRAE/IES Standard 90.2-2018**

Energy Efficient Design of Low-Rise Residential Buildings

Approved by the ASHRAE Standards Committee on June 22, 2024, by the Illuminating Engineering Society on March 15, 2024, and by the American National Standards Institute on July 23, 2024.

This addendum was approved by a Standing Standard Project Committee (SSPC) for which the Standards 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. Instructions for how to submit a change can be found on the ASHRAE® website (<https://www.ashrae.org/continuous-maintenance>).

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ISSN 1041-2336



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FOREWORD

ANSI/ASHRAE/IES Standard 90.2's title, purpose, and scope (TPS) was revised in June 2022 to position Standard 90.2 as a leadership standard. The underlying goal of "energy efficiency" was replaced with "energy performance" as defined below. This change provides a broader lens for considering the balance between saving energy and enhancing indoor environmental quality.

energy performance: measurable result(s) related to energy efficiency, energy use, and/or energy consumption, evaluated against organizational goals and other performance factors such as the indoor environment.
(Informative Note: Adapted from ISO Standard 50001:2018)

Following this TPS change, the Standards 62.2/90.2 Advanced Ventilation and IAQ Work Group (WG) was organized to identify and align advanced IAQ opportunities that could integrate with Standard 90.2's, whole-building, leadership standard approach (since 62.2 is a minimum standard). The WG met monthly between September 2020 and January 2021 and employed the U.S. Environmental Protection Agency's Indoor airPLUS v2 program as a framework. Addendum g reflects the thirteen recommended additions and/or edits to Standard 90.2 by the WG.

While Addendum g was pending, SSPC 62.2 released an addendum to the Standard 62.2-2022 (Addendum a) that provides a ventilation rate reduction credit when air is delivered with a qualified filter (i.e., MERV 13). By referencing Standard 62.2-2022 with Addendum a, an energy performance standard such as Standard 90.2 can achieve dual goals of IEQ/IAQ and energy efficiency.

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

Addendum g to Standard 90.2-2018

Modify Section 7 as shown.

7.3 Indoor Environmental Quality

7.3.1 Buildings shall be thermally conditioned in accordance with ANSI/ASHRAE Standard 55.

7.3.2 ~~Dwelling units shall be mechanically ventilated in accordance with~~ meet all requirements of ANSI/ASHRAE Standard 62.2 except as modified by Section 7.3 of this standard. Common spaces of multifamily residential buildings shall be mechanically ventilated in accordance with ANSI/ASHRAE Standard 62.1.

7.3.3 Buildings shall be illuminated in accordance with Section 7.5.

7.3.4 Filtration and Air Cleaning

7.3.4.1 Prior to being supplied to an occupiable space through ducts, air shall pass through a filter having a designated minimum efficiency of MERV 13 or better when tested in accordance with ANSI/ASHRAE Standard 52.2 or equivalent.

All filter access panels shall be equipped with gaskets or comparable sealing mechanisms and shall fit snugly against the exposed edge of the installed filter when closed to prevent bypass.

Informative Note: A MERV 13 or equivalent filter can be used to meet the particle reduction factor (PRF) requirements in Standard 62.2, Section 4, to achieve the ventilation rate reduction credit.

7.3.4.2 All electronic air cleaners (i.e., electrostatic, ionizers, and ultraviolet lamps) shall meet UL Standard 2998.

7.3.5 Garages. Detached single-family dwellings, duplexes, and townhouses with attached garages shall meet the requirement listed in Section 7.3.5.1 or 7.3.5.2.

7.3.5.1 Verify that the garage-to-house enclosure boundary can maintain a leakage air less than or equal to 0.15 cfm₅₀/ft² (0.071 L/s) of enclosure boundary area. There shall be two pressure differential tests to make this determination:

- a. With both house and garage at a pressure difference of 50 Pa with respect to the outdoors, measure the house cfm₅₀ (m³/s₅₀) leakage rate.

Table 7.2 Kitchen Range Hood Airflow Rates (cfm) and ASTM E3087 Capture Efficiency (CE) Ratings According to Kitchen Range Fuel Type

<u>Hood Over Electric Range</u>	<u>Hood Over Combustion Range</u>
<u>65% CE or 160 cfm</u>	<u>80% CE or 250 cfm</u>

b. With the house at a pressure difference of 50 Pa with respect to the outdoors, and with all garage apertures open to the outdoors, measure the house (m^3/s_{50}) leakage rate.

To comply with this provision, the difference between the (b) test measurement and the (a) test measurement divided by the garage-to-house enclosure boundary area shall meet the $0.15 \text{ cfm}_{50}/\text{ft}^2$ (0.071 L/s) criteria.

7.3.5.2 A local mechanical exhaust system that is vented directly outdoors shall be installed in the garage to deliver a minimum flow rate of 100 cfm ($170 \text{ m}^3/\text{h}$). The system shall meet the requirements of ANSI/ASHRAE Standard 62.2, Sections 5.3 and 5.3.2.

7.3.6 Material Emissions Dwellings. Material emissions dwellings shall be constructed with materials meeting the requirements of Sections 6.1 through 6.7.

Informative Note: Guidance from the U.S. Environmental Protection Agency on identifying products that are compliant with these specifications, including the identification of product certification and labeling programs that are acceptable, may be found at www.epa.gov/sites/default/files/2017-01/documents/how_to_find_compliant_low_emission_products_508.pdf.

7.3.7 Radon. Dwellings shall meet the requirements of Section 2.2, “Radon-Resistant Construction,” of Indoor airPLUS New Construction (IAP-NC) Specifications Version 2.

7.3.8 Kitchen Exhaust Hood Capture. Kitchen range hoods and microwave range hoods shall meet or exceed either the minimum airflow or the minimum capture efficiency in accordance with Table 7-2. Capture efficiency ratings shall be determined in accordance with ASTM E3087.

Add new Section 9.2.3 as shown.

9.2.3 Indoor Environmental Quality. All mechanical ventilation system equipment manufacturers’ installation and maintenance instructions shall be either attached to the subject equipment or provided to the homeowner. All calculations, tests, and adjustments required by Section 7.3 shall be recorded and provided to the *authority having jurisdiction* and the homeowner. The contact information of any person performing such calculations, checks, test, or adjustments shall be provided to the occupant.

Modify Section 10 as shown.

<u>Reference</u>	<u>Title</u>
[...]	
ASTM International 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959	
ASTM E779-10	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization
ASTM E1827-2011	Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door
<u>ASTM E3087-18</u>	<u>Standard Test Method for Measuring Capture Efficiency of Domestic Range Hoods</u>
ASHRAE 1791 Tullie Circle, NE Atlanta, GA 30329	
2015 ASHRAE Handbook	ASHRAE Handbook—HVAC Applications
<u>ANSI/ASHRAE Standard 52.2-2017</u>	<u>Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size</u>
ANSI/ASHRAE Standard 55-2013	Thermal Environmental Conditions for Human Occupancy
ANSI/ASHRAE Standard 62.1-2016	Ventilation for Acceptable Indoor Air Quality

Reference	Title
ANSI/ASHRAE Standard 62.2- 2016 <u>2022</u> with <u>Addendum a</u>	Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings
[. . .]	
Underwriters Laboratories 750 Anthony Trail Northbrook, IL 60062	
UL 515	Standard for Electrical Resistance Trace Heating for Commercial Applications
<u>UL 2998 (2020)</u>	<u>Environmental Claim Validation Procedure (ECVP) for Zero Ozone Emissions from Air Cleaners</u>

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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.

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As an industry leader in research, standards writing, publishing, certification, and continuing education, ASHRAE and its members are dedicated to promoting a healthy and sustainable built environment for all, through strategic partnerships with organizations in the HVAC&R community and across related industries.

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