## ADDENDA

ANSI/ASHRAE/IES Addendum k to ANSI/ASHRAE/IES Standard 90.2-2018

# High-Performance Energy Design of Residential Buildings

Approved by ASHRAE and the American National Standards Institute on September 29, 2023, and by the Illuminating Engineering Society on September 25, 2023.

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).

The latest edition of an ASHRAE Standard may be purchased on the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 180 Technology Parkway NW, Peachtree Corners, GA 30092. E-mail: orders@ashrae.org. Fax: 678-539-2129. Telephone: 404-636-8400 (worldwide), or toll free 1-800-527-4723 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/permissions.

© 2023 ASHRAE ISSN 1041-2336







© ASHRAE. Per international copyright law, additional reproduction, distribution, or transmission in either print or digital form is not permitted without ASHRAE's prior written permission.

ASHRAE Standard Project Committee 90.2 Cognizant TC: 7.6 Systems Energy Utilization

SPLS Liaison: Charles Barnaby · ASHRAE Staff Liaison: Emily Toto · IES Liaison: Mark Lien

David Goldstein\* Chair Vishal Garg\* Abdullah Siddigui\* Vrushali Mendon\*, Vice-Chair Sivakumar Gopalnarayanan\* Mihir Shah Philip Agee\* Michael Jouaneh\* Prateek M. Shrestha Bryan Ahee\* Michael Lubliner\* Wayne Stoppelmoor\* Robert Berry\* Christopher Mathis\* Bruce Swiecicki\* Wesley Davis\* Simon Pallin\* Mike Topitzhofer James Earley Ted Wayne\* Alice Rosenberg\* Philip Fairey\* Steven Rosenstock\* Theresa Weston\*

#### **ASHRAE STANDARDS COMMITTEE 2023–2024**

Jonathan Humble, Chair Gwelen Paliaga Jay A. Kohler Karl L. Peterman Douglas D. Fick, Vice-Chair Paul A. Lindahl, Jr. Kelley P. Cramm James D. Lutz Justin M. Prosser Abdel K. Darwich Julie Majurin David Robin Drake H. Erbe Lawrence C. Markel Christopher J. Seeton Patricia Graef Margaret M. Mathison Paolo M. Tronville Kenneth A. Monroe Douglas Tucker Jaap Hogeling William F. Walter Jennifer A. Isenbeck Daniel H. Nall Susanna S. Hanson, BOD ExO Phillip A. Johnson Philip J. Naughton Gerald J. Kettler Kathleen Owen Ashish Rakheja, CO

#### **SPECIAL NOTE**

This American National Standard (ANS) is a national voluntary consensus Standard developed under the auspices of ASHRAE. *Consensus* is defined by the American National Standards Institute (ANSI), of which ASHRAE is a member and which has approved this Standard as an ANS, as "substantial agreement reached by directly and materially affected interest categories. This signifies the concurrence of more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that an effort be made toward their resolution." Compliance with this Standard is voluntary until and unless a legal jurisdiction makes compliance mandatory through legislation.

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

ASHRAE Standards are prepared by a Project Committee appointed specifically for the purpose of writing the Standard. The Project Committee Chair and Vice-Chair must be members of ASHRAE; while other committee members may or may not be ASHRAE members, all must be technically qualified in the subject area of the Standard. Every effort is made to balance the concerned interests on all Project Committees.

The Senior Manager of Standards of ASHRAE should be contacted for

a. interpretation of the contents of this Standard,

Nathalie Faubert\*

- b. participation in the next review of the Standard,
- c. offering constructive criticism for improving the Standard, or
- d. permission to reprint portions of the Standard.

#### **DISCLAIMER**

ASHRAE uses its best efforts to promulgate Standards and Guidelines for the benefit of the public in light of available information and accepted industry practices. However, ASHRAE does not guarantee, certify, or assure the safety or performance of any products, components, or systems tested, installed, or operated in accordance with ASHRAE's Standards or Guidelines or that any tests conducted under its Standards or Guidelines will be nonhazardous or free from risk.

#### ASHRAE INDUSTRIAL ADVERTISING POLICY ON STANDARDS

ASHRAE Standards and Guidelines are established to assist industry and the public by offering a uniform method of testing for rating purposes, by suggesting safe practices in designing and installing equipment, by providing proper definitions of this equipment, and by providing other information that may serve to guide the industry. The creation of ASHRAE Standards and Guidelines is determined by the need for them, and conformance to them is completely voluntary.

In referring to this Standard or Guideline and in marking of equipment and in advertising, no claim shall be made, either stated or implied, that the product has been approved by ASHRAE.

Aniruddh Roy\*

\* Denotes members of voting status when the document was approved for publication

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

#### **FOREWORD**

Addendum k updates normative references in Section 10 to reflect the latest versions of each publication.

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

#### Addendum k to Standard 90.2-2018

Modify Section 10 as shown. (Note: The table below reflects changes previously made by Addenda a and d to ANSI/ASHRAE/IES Standard 90.2-2018, which can be downloaded at www.ashrae.org/addenda.)

#### 10. NORMATIVE REFERENCES

Source	Title
Air-Conditioning Contractors of America (ACC 2800 Shirlington Road, Suite 300-1520 Belle View Arlington, VA 22206-22307	
ANSI/ACCA 5 QI-2015	HVAC Quality Installation Specification
ANSI/ACCA 9 QIVP-2016	HVAC Quality Installation Verification Protocols
ANSI/ACCA 1 Manual D-2016	Residential Duct Systems
ANSI/ACCA 2 Manual J-2016	ACCA Manual J, HVAC Residential Load Calculations, 8th Edition
ANSI/ACCA 3 Manual S-2014	ACCA Manual S, Residential Heating and Cooling Equipment Selection
ANSI/ACCA 10 Manual SPS-2010 (RA2017)	Swimming Pools and Spas
ANSI/ACCA 11 Manual Zr <del>-2012</del> -2018	Residential Zoning 2012-Systems
American Society of Mechanical Engineers (AS Two Park Avenue New York, NY 10016-5990	
ASME A112.18.1 <del>-2012</del> /CSA B125.1-12 <u>-2018</u> (RA2017)	Plumbing Supply Fittings
ASHRAE 180 Technology Parkway Peachtree Corners, GA 30092	
20152019 ASHRAE Handbook	ASHRAE Handbook—HVAC Applications
ANSI/ASHRAE Standard 55-2017-2020	Thermal Environmental Conditions for Human Occupancy
ANSI/ASHRAE Standard 62.1-2016-2022	Ventilation for Acceptable Indoor Air Quality
ANSI/ASHRAE Standard 62.2-2016-2022	Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings
ANSI/ASHRAE/IES Standard 90.1-2019-2022	Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings
ANSI/ASHRAE Standard 124-2007 (RA 2016)	Method of Testing for Rating Combination Space-Heating and Water-Heating Applications
ANSI/ASHRAE Standard 140 <del>-2017-2020</del>	Standard-Method of Test for Evaluating Building Performance Simulation Software the Evaluation of Building Energy Analysis Computer Programs
ANSI/ASHRAE Standard 169-2013	Climatic Data for Building Design Standards

Source	Title
ASTM International 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959	
ASTM E779-19	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization
ASTM E1827 <del>-2017</del> -2022	Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door
ASTM E3158-18	Standard Test Method for Measuring the Air Leakage Rate of Large or Multizone Building
Building Owners and Managers Association Inte 1101 15th Street, NW Suite 800 Washington, DC 20005	rnational (BOMA)
ANSI/BOMA Z65.4 <del>-2010</del> -2023	Multi- <u>Family Unit and Hospitality Properties Residential Buildings</u> : Standard Methods of Measurement
California Energy Commission 1516 Ninth Street Sacramento, CA 95814	
2019 CA Title 24 Part 6 JA8	2019 Building Energy Efficiency Standards Joint Appendix 8
Home Innovation Research Labs 400 Prince George's Blvd. Upper Marlboro, MD 20774	
ANSI Z765-2021	Square Footage—Method for Calculating
IEEE Standards Association 501 Hoes Lane, 3rd Floor Piscataway, NJ 08855	
IEEE 515.1-2012	Standard for the Testing, Design, Installation, and Maintenance of Electrical Resistance Trace Heating for Commercial Applications
International Code Council (ICC) 4051 Flossmoor Road Country Club Hills, IL 60478	
IECC- <del>2018</del> -2021	International Energy Conservation Code
National Association of Home Builders (NAHB) 400 Prince George's Boulevard Upper Marlboro, MD 20774	
ANSI Z765-2003	Square Footage Method for Calculating
National Fenestration Rating Council (NFRC) 6305 Ivy Lane, Suite 140 Greenbelt, MD 20770-6323	
ANSI/NFRC 100 <del>-2017</del> <u>-2020</u>	Procedure for Determining Fenestration Product U-Factors
ANSI/NFRC 200 <del>-2017</del> -2020	Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence
Residential Energy Services Network, Inc. (RES) 4867 Patina Court Oceanside, CA 92057	NET)
ANSI/RESNET/ICC 301 <del>-2019</del> -2022	Standard for the Calculation and Labeling of the Energy Performance of Dwelling and Sleeping Units using an Energy Rating Index—including ANSI/RESNET/ICC 380-2019 Addendum A 2019 and Addendum B 2020 Addendum b (CO2 Index)

Source	Title
ANSI/RESNET/ICC 380 <del>-2019</del> -2022	Standard for Testing Airtightness of Building, Dwelling Unit, and Sleeping Unit Enclosures; Airtightness of Heating and Cooling Air Distribution Systems; and Airflow of Mechanical Ventilation Systems
Underwriters Laboratories 750 Anthony Trail Northbrook, IL 60062	
UL 515	Standard for Electrical Resistance Trace Heating for Commercial Applications <u>. 2nd Ed.</u>

© ASHRAE. Per international copyright law, additional reproduction, distribution, or transmission in either print or digital form is not permitted without ASHRAE's prior written permission.

### 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.

#### ASHRAE · 180 Technology Parkway · Peachtree Corners, GA 30092 · www.ashrae.org

#### **About ASHRAE**

Founded in 1894, ASHRAE is a global professional society committed to serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration, and their allied fields.

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.

To stay current with this and other ASHRAE Standards and Guidelines, visit www.ashrae.org/standards, and connect on LinkedIn, Facebook, Twitter, and YouTube.

#### Visit the ASHRAE Bookstore

ASHRAE offers its Standards and Guidelines in print, as immediately downloadable PDFs, and via ASHRAE Digital Collections, which provides online access with automatic updates as well as historical versions of publications. Selected Standards and Guidelines are also offered in redline versions that indicate the changes made between the active Standard or Guideline and its previous version. For more information, visit the Standards and Guidelines section of the ASHRAE Bookstore at www.ashrae.org/bookstore.

#### **IMPORTANT NOTICES ABOUT THIS STANDARD**

To ensure that you have all of the approved addenda, errata, and interpretations for this Standard, visit www.ashrae.org/standards to download them free of charge.

Addenda, errata, and interpretations for ASHRAE Standards and Guidelines are no longer distributed with copies of the Standards and Guidelines. ASHRAE provides these addenda, errata, and interpretations only in electronic form to promote more sustainable use of resources.