

**ANSI/ASHRAE/ICC/USGBC/IES Addendum ar to
ANSI/ASHRAE/ICC/USGBC/IES Standard 189.1-2020**

Standard for the Design of High-Performance Green Buildings

**Except Low-Rise
Residential Buildings**

The Complete Technical Content of the International Green Construction Code®

Approved by ASHRAE and the American National Standards Institute on April 28, 2023; by the International Code Council on March 23, 2023; by U.S. Green Building Council on March 29, 2023; and by the Illuminating Engineering Society on April 5, 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 (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, 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 Standing Standard Project Committee 189.1

Cognizant TC: 2.8 Building Environmental Impacts and Sustainability

SPLS Liaison: Jay Kohler · ASHRAE Staff Liaisons: Thomas Loxley

ICC Liaison: Mike Pfeiffer · IES Liaison: Mark Lien · USGBC Liaison: Wes Sullens

Katherine Hammack*, <i>Chair</i>	Thomas Culp*	Thomas Lawrence	Matthew Setzekorn
Charles Eley*, <i>Co-Vice Chair</i>	David Delaquila	Richard Lord	Terry Sharp
Josh Jacobs*, <i>Co-Vice Chair</i>	Greg Eades*	Mark Malkin	Kent Sovocool*
Michael Jouaneh*, <i>Co-Vice Chair</i>	Jim Edelson*	Jonathan McHugh*	Dennis Stanke
Lawrence Schoen*, <i>Co-Vice Chair</i>	Anthony Floyd*	Susan McLaughlin*	Wayne Stoppelmoor*
Bryan Ahee	Ellen Franconi	Erik Miller-Klein	Christine Subasic*
Costas Balaras	Robert Goo	Brittany C. Moser*	Kyle Thompson
Weibly Bowles	Gregg Gress*	Saber K. Nikkho	John Topmiller
Jeff Bradley*	Thomas Hogarth*	Thomas Pape*	Martha VanGeem*
Frank Burns	Donald Horn*	Tien Peng	Scott West*
Julie Chandler	Jonathan Humble	Andrew Persily	Theresa Weston*
Glen Clapper	Greg Johnson	Rock Ridolfi	Ted Williams*
Ernest Conrad*	Jack Karlin	Steven Rosenstock*	Daniel Whittet
Dru Crawley	Gerald Kettler	Aniruddh Roy	Joe Winters*
John Cross*	Andrew Klein	Brent Rutherford	Jian Zhang*
Michael Cudahy*	Vladimir Kochkin	Michael Schmeida	

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

ASHRAE STANDARDS COMMITTEE 2022–2023

Susanna S. Hanson, <i>Chair</i>	Phillip A. Johnson	Lawrence C. Markel	Christopher J. Seeton
Jonathan Humble, <i>Vice-Chair</i>	Srinivas Katipamula	Patrick C. Marks	Christian R. Taber
William P. Bahnfleth	Gerald J. Kettler	Margaret M. Mathison	Paolo M. Tronville
Thomas E. Cappellin	Jay A. Kohler	Kathleen Owen	William F. Walter
Douglas D. Fick	Cesar L. Lim	Gwelen Paliaga	Steven C. Sill, <i>BOD ExO</i>
Patricia Graef	Paul A. Lindahl, Jr.	Karl L. Peterman	Sarah E. Maston, <i>CO</i>
Jaap Hogeling	James D. Lutz	Justin M. Prosser	
Jennifer A. Isenbeck	Julie Majurinv	David Robin	

Connor Barbaree, *Senior Manager of Standards*

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

- interpretation of the contents of this Standard,
- participation in the next review of the Standard,
- offering constructive criticism for improving the Standard, or
- 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.

(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 ar updates a list of tables from ASHRAE/IES Standard 90.1-2022 that are required for compliance with this section, and adds two new Tables from ASHRAE/IES 90.1-2022 to the list.

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

Addendum ar to Standard 189.1-2020

Modify Section 7.4.3.1 as shown.

7.4.3.1 Minimum Equipment Efficiencies for the Alternate Renewables Approach. All *building projects* complying with the Alternate Renewables Approach in Section 7.4.1.1 and Table 7.4.1.1 shall comply with the applicable equipment efficiency requirements in Normative Appendix B and the applicable ENERGY STAR requirements in Section 7.4.7.3.2. Where equipment efficiency is not defined/listed in Normative Appendix B or in Section 7.4.7.3.2 or 7.4.7.6, the equipment shall meet the minimum efficiency requirements defined/listed in ANSI/ASHRAE/IES Standard 90.1. Specifically, this applies to the following products in ANSI/ASHRAE/IES Standard 90.1:

- a. Table 6.8.1-3, “~~Water-Liquid~~-Chilling Packages—Minimum Efficiency Requirements”
- b. Table 6.8.1-10, “Floor-Mounted Air Conditioners and Condensing Units Serving Computer Rooms—Minimum Efficiency Requirements”
- c. Table 6.8.1-11, “Commercial Refrigerators, Commercial Freezers, and Refrigeration—Minimum Efficiency Requirements”
- d. Table 6.8.1-12, “Vapor-Compression-Based Indoor Pool Dehumidifiers—Minimum Efficiency Requirements”
- e. Table 6.8.1-13, “Electrically Operated DX-DOAS Units, Single-Package and Remote Condenser, without Energy Recovery—Minimum Efficiency Requirements”
- f. Table 6.8.1-14, “Electrically Operated DX-DOAS Units, Single-Package and Remote Condenser, with Energy Recovery—Minimum Efficiency Requirements”
- g. Table 6.8.1-15, “Electrically Operated Water-Source Heat Pumps—Minimum Efficiency Requirements”
- h. Table 6.8.1-16, “Heat-Pump and Heat Recovery Water-Chilling Packages—Minimum Efficiency Requirements”
- ~~g.i.~~ Table 10.8-1, “Minimum Nominal Full-Load Efficiency for NEMA Design A, NEMA Design B, and IEC Design N Motors (Excluding Fire Pump Electric Motors) at 60 Hz” ~~(NEMA MG 1)~~
- ~~h.j.~~ Table 10.8-2, “Minimum Nominal Full-Load Efficiency for NEMA Design C and IEC Design H Motors at 60 Hz” ~~(NEMA MG 1)~~
- ~~i.k.~~ Table 10.8-3, “Minimum Average Full-Load Efficiency for Polyphase Small Electric Motors”
- ~~j.l.~~ Table 10.8-4, “Minimum Average Full-Load Efficiency for Capacitor-Start Capacitor-Run and Capacitor-Start Induction-Run Small Electric Motors”
- ~~k.m.~~ Table 10.8-5, “Minimum Nominal Full-Load Efficiency for Fire Pump Electric Motors”

**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.

Standard 189.1 and the International Green Construction Code

Standard 189.1 serves as the complete technical content of the International Green Construction Code[®] (IgCC). The IgCC creates a regulatory framework for new and existing buildings, establishing minimum green requirements for buildings and complementing voluntary rating systems. For more information, visit www.iccsafe.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 edition. 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.