

**ANSI/ASHRAE/ICC/USGBC/IES Addendum ck to
ANSI/ASHRAE/ICC/USGBC/IES Standard 189.1-2017**

Standard for the Design of High-Performance Green Buildings

Except Low-Rise Residential Buildings



Approved by the ASHRAE Standards Committee on June 23, 2018; by the ASHRAE Technology Council on June 27, 2018; by the International Code Council on June 25, 2018; by the USGBC Board of Directors on June 5, 2018; by the IES Board of Directors on May 30, 2018; and by the American National Standards Institute on June 28, 2018.

These addenda were 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. The change submittal form, instructions, and deadlines may be obtained in electronic form from the ASHRAE website (www.ashrae.org), or in paper form from the ASHRAE Senior Manager of Standards.

The latest edition of an ASHRAE Standard may be purchased on the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 1791 Tullie Circle, NE, Atlanta, GA 30329-2305, telephone: 404-636-8400 (worldwide), or toll free 1-800-527-4723 (for orders in the United States and Canada), or e-mail: orders@ashrae.org. For reprint permission, go to www.ashrae.org/permissions.

© 2018 ASHRAE

ISSN 1041-2336



ASHRAE Standard Project Committee 189.1
Cognizant TC: 2.8 Building Environmental Impacts and Sustainability
SPLS Liaison: Walter T Grondzik
ASHRAE Staff Liaison: Connor Barbaree
ICC Liaison: Mike Pfeiffer
IES Liaison: Mark Lien
USGBC Liaison: Wes Sullens

Andy Persily*, <i>Chair</i>	Mark Frankel	Molly McGuire*
Jennifer Dolin*, <i>Vice-Chair</i>	Barry Giles	Jonathan McHugh*
Charles Eley*, <i>Vice-Chair</i>	Susan Gitlin*	Adam McMillen
Jessica Gracie-Griffin*, <i>Vice-Chair</i>	Gregg Gress*	Brent Mecham
Larry Schoen*, <i>Vice-Chair</i>	Maureen Guttman	Gwelen Paliaga*
Mohamed Abdelrahim	Roger Hedrick*	Thomas Pape*
Anand Achari	Thomas Hogarth*	Teresa Rainey
Leon Alevantis	Donald Horn*	Steve Rosenstock*
Vinay Ananthachar	Johnathan Humble	Loren Ross
Costas Balaras*	Josh Jacobs	Michael Schmeida
Jeff Boldt*	Ksenija Janjic	David Shepherd
Susan Bronson	Michael Jouaneh*	Kent Sovocool*
Daryn Cline	Greg Johnson	Dennis Stanke*
Ernie Conrad*	Andrew Klein	Wayne Stoppelmoor*
Dru Crawley	Gary Klein	Christine Subasic
John Cribbs	Tom Lawrence*	Christian Taber
John Cross*	Neil Leslie*	Martha VanGeem*
Michael Cudahy*	Christine C. Locklear	Scott West*
Thomas Culp	Richard Lord	Daniel Whittet*
Craig Drumheller	Keith Madigan	Jason Wilen*
Jim Edelson*	David Madsen	Joe Winters*
Anthony Floyd*	Stephany Mason*	Jian Zhang
Sam Francis*	Merle McBride	

* Denotes voting member at time of publication

ASHRAE STANDARDS COMMITTEE 2017–2018

Steven J. Emmerich, <i>Chair</i>	Roger L. Hedrick	David Robin
Donald M. Brundage, <i>Vice-Chair</i>	Rick M. Heiden	Peter Simmonds
Niels Bidstrup	Jonathan Humble	Dennis A. Stanke
Michael D. Corbat	Srinivas Katipamula	Wayne H. Stoppelmoor, Jr.
Drury B. Crawley	Kwang Woo Kim	Richard T. Swierczyna
Julie M. Ferguson	Larry Kouma	Jack H. Zarour
Michael W. Gallagher	Arsen K. Melikov	Lawrence C. Markel, <i>BOD ExO</i>
Walter T. Grondzik	R. Lee Millies, Jr.	M. Ginger Scoggins, <i>CO</i>
Vinod P. Gupta	Karl L. Peterman	
Susanna S. Hanson	Erick A. Phelps	

Steven C. Ferguson, *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 ck adds an additional modeling requirement to Normative Appendix C for use when one is complying with the energy efficiency requirements via the Performance Option. The addendum requires that the energy consumption of thermal and electric storage systems to charge, discharge, and store energy be modeled in the proposed building design.

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 ck to Standard 189.1-2017

Modify Appendix C as shown.

C1.3 Energy Storage. Electric and thermal storage systems and ancillary energy consumption and charging, discharging, and standby losses associated with thermal and electric storage shall be modeled in the *proposed design*.

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.

