

**ANSI/ASHRAE/ICC/USGBC/IES Addendum i 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 October 31, 2022; by the International Code Council on September 27, 2022; by the Illuminating Engineering Society on October 24, 2022; and by the U.S. Green Building Council on October 7, 2022.

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).

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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.

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FOREWORD

Water heaters can provide significant load shifting and energy storage capacity in many building types. ANSI/CTA-2045-B standardizes the socket and communications protocol for heat-pump water heaters so they can communicate with the electricity grid and other demand-response signal providers. In addition, 2045-B adds control and communications requirements for mixing valves in heat-pump water heaters to enable them to provide greater storage capacity to support increased load shifting. Versions of this standard are included in codes or other requirements in California, Oregon, and Washington.

This addendum also adds a definition of demand responsive control to ensure its consistent use throughout the standard. This addendum requires controls that may increase costs. It has the potential to reduce load on the electric grid at peak periods and save in utility bills by reducing peak-load electric costs.

Addendum i adds requirements for demand responsive controls that enable electric water heaters to provide electric load shifting and energy storage capacity in many building types. It has the potential to reduce load on the electric grid at peak periods and save in utility bills by reducing peak load electric costs. In response to comments, the ISC proposes to add the definition of demand response signal, to add the use of an “approved” standard, to add new exceptions to the control requirements, and to delay the effective date of a newer control standard. Table 7.3.4 addresses the appropriate controls needed based on the electric storage water heater’s manufacturing date.

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 i to Standard 189.1-2020

Modify Section 3 as shown.

demand responsive control: a control capable of receiving and automatically responding to a demand response signal.

demand response signal: a signal that indicates a price or a request to modify electricity consumption for a limited time period.

Modify Section 7.3.4 as shown.

7.3.4 Automated Demand Response. Where a demand response (DR) program is available to the ~~building project,~~ the building controls shall be designed with automated (DR) infrastructure capable of receiving DR requests from the utility, electrical system operator, or third-party DR program provider and demand responsive controls capable of automatically implementing load adjustments to the HVAC, and lighting, and water heating systems.

[. . .]

Add new Section 7.3.4.4 as shown.

7.3.4.4 Demand Responsive Water Heating Electric storage water heaters with a rated water storage volume of 40 to 120 gal (150 to 450 L) and a nameplate input rating equal to or less than 12 kW shall be provided with controls that meet the requirements in Table 7.3.4 or an equivalent approved standard.

Exceptions to 7.3.4.4:

1. Water heaters that provide a hot-water delivery temperature of 180°F (82°C) or greater.
2. Water heaters that comply with Section IV, Part HLW or Section X of the ASME Boiler and Pressure Vessel Code.
3. Water heaters that use three-phase electric power.

Table 7.3.4 Electric Storage Water Heater Controls

<u>Equipment Type</u>	<u>Controls</u>	
	<u>Manufactured before 7/1/2025</u>	<u>Manufactured on or after 7/1/2025</u>
<u>Electric storage water heaters</u>	<u>ANSI/CTA-2045-B Level 1 and also capable of initiating water heating to meet the temperature set point in response to a <i>demand response signal</i></u>	<u>ANSI/CTA-2045-B Level 2, except all related requirements for "Price Stream Communication" functionality</u>

Modify Section 11 Normative as shown.

<u>Reference</u>	<u>Section</u>
American National Standards Institute (ANSI) 25 West 43rd Street New York, NY 20036, United States 1-212-642-4900; www.ansi.org	
<u>ANSI/CTA-2045-B 2021</u> <u>Modular Communications Interface for Energy Management</u>	<u>7.3.4.4</u>

**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.

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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.

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