

# ANSI/ASHRAE/ICC/USGBC/IES Addendum ar to ANSI/ASHRAE/ICC/USGBC/IES Standard 189.1-2017

# 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 July 6, 2020; by the International Code Council on June 1, 2020; by the U.S. Green Building Council on June 3, 2020; and by the Illuminating Engineering Society on July 1, 2020.

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- b. participation in the next review of the Standard,
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## FOREWORD

*Addendum ar adds to Standard 189.1 core definitions used to administer the International Codes. They will improve alignment of the technical content of the International Green Construction Code (Standard 189.1) with the other I-Codes. The I-code definitions for “approved,” “approved agency,” and “approved source” are modified slightly to reference the Authority Having Jurisdiction (AHJ) as the approving authority versus the code official; these are technically synonymous.*

*The definition for “approved” is needed to give guidance to users of the IgCC and Standard 189.1. “Approved” is specified in Standard 189.1 in Section 10.3.1.2.2(b). The new term also enables each instance in which “approved by the AHJ” is used in the text to be shortened to “approved” as shown in this addendum.*

*The definitions for “approved agency,” “approved source,” “listed,” and “labeled” are needed to give guidance to users of the IgCC and Standard 189.1, as these terms had been used throughout the standard without having been assigned a specific meaning.*

**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 189.1-2017

**Add the following definition to Section 3.2 as shown (I-P and SI units).**

#### 3.2 Definitions

**approved:** acceptable to the *authority having jurisdiction*.

**approved agency:** an established and recognized agency that is regularly engaged in conducting tests, furnishing inspection services, or furnishing product certification where such agency has been *approved*.

**approved source:** an independent person, firm, or corporation, *approved by the authority having jurisdiction*, who is competent and experienced in the application of engineering principles to materials, methods, or systems analyses.

**labeled:** equipment, materials, or products to which has been affixed a label, seal, symbol, or other identifying mark of a nationally recognized testing laboratory, *approved agency*, or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material, or product meets identified standards or has been tested and found suitable for a specified purpose.

**listed:** equipment, materials, products, or services included in a list published by an *approved organization* and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product, or service meets identified standards or has been tested and found suitable for a specified purpose.

**Modify Section 3.1 as shown (I-P and SI units).**

**3.1 General.** Certain terms, abbreviations, and acronyms are defined in this section for the purposes of this standard. These definitions are applicable to all sections of this standard.

Terms that are not defined herein, but that are defined in standards that are referenced herein (**Informative Note:** e.g., ANSI/ASHRAE/IES Standard 90.1), shall have the meanings as defined in those standards.

Other terms that are not defined shall have their ordinarily accepted meanings within the context in which they are used. Ordinarily accepted meanings shall be based on American stan-

Standard English language usage, as documented in an approved unabridged dictionary ~~accepted by the authority having jurisdiction.~~

**Modify Section 3.2 as shown (I-P and SI units).**

**commissioning (Cx) provider:** an approved entity, identified by the *owner* ~~and approved by the AHJ~~, who manages the commissioning team to implement the building *commissioning process*.

**Informative Note:** This entity is sometimes known as a “commissioning authority,” “CxA,” or ~~“approved agency approved agency.”~~ See *commissioning (Cx) process*.

**Modify Exception 5.3.7.2.1(2) as shown (I-P and SI units).**

**5.3.7.2.1 Minimum Number of Spaces.** Bicycle parking *spaces* shall be provided for at least 5% of the *occupant load* of each building but not less than two parking *spaces*. Occupants who are nonambulatory, under restraint, or under custodial care need not be included in the total *occupant load* for the building. *Building projects with dwelling units* shall be provided with at least 0.5 bicycle parking *spaces* per bedroom for each building but not less than two parking *spaces*.

**Exceptions to 5.3.7.2.1:**

1. *Building projects with dwelling units* that provide each unit with a private garage or private, locked storage *space* of sufficient size to store a bicycle.
2. The number of bicycle parking *spaces* shall be allowed to be reduced ~~subject to AHJ approval of a~~ where a transportation plan, prepared by a registered design professional, that demonstrates the likelihood that building occupants will use public transportation and/or walk to the building project site has been approved.

**Modify Section 5.3.7.3 as shown (I-P and SI units).**

**5.3.7.3 Site Vehicle Provisions.** Where on-site vehicle parking is provided for a building that has a building *occupant load* greater than 100, at least one of the following shall be provided:

- a. **Provisions for preferred parking spaces.** Not less than 5% of the parking spaces provided shall be designated as preferred parking for vehicles that meet both the minimum greenhouse gas and air pollution scores as required for USEPA SmartWay designation. Where calculation of the parking spaces yields a fraction, such fractions shall be rounded up to the next whole number. Preferred parking spaces shall be located on the shortest route of travel from the parking facility to a *building entrance* but shall not take precedence over parking spaces that are required to be accessible for individuals with disabilities. Where buildings have multiple entrances with adjacent parking, parking spaces shall be dispersed and located near the entrances. Such parking spaces shall be provided with approved signage ~~approved by the AHJ~~ that specifies the permitted use.

**Modify Exceptions 6.3.2.4(a) and 6.3.2.4(c) as shown (I-P and SI units).**

**6.3.2.4 Roofs**

- a. The use of *potable water* or *reclaimed water* for *roof spray* systems to thermally condition the *roof* shall be prohibited.

**Exception to 6.3.2.4(a):** Where approved ~~approved by the authority having jurisdiction (AHJ)~~, on-site treated *reclaimed water* may be used for *roof spray* systems.

[ . . . ]

**Exception to 6.3.2.4(c):** Where approved ~~approved by the AHJ~~, onsite treated *reclaimed water* may be used for vegetated *roof irrigation* systems during and after the vegetation establishment period.

**Modify Exception 7.4.6.1.1.(d)(2) as shown (I-P and SI units).**

**Exception to 7.4.6.1.1(d)(2):** Other merchandise categories included in Retail Areas 2 through 4 where ~~the authority having jurisdiction has approved~~ the documented need for additional lighting power based on visual inspection, contrast, or other critical display has been approved.

**Modify Section 8.3.3.2.3.4 as shown (I-P and SI units).**

**8.3.3.2.3.4 Inspection.** Construction of acoustical items required in Sections 8.3.3.2.3 through 8.3.3.2.3.3 shall be visually inspected by an ~~approved agency~~ approved agency.

**Modify Section 8.3.3.3.2.1 as shown (I-P and SI units).**

**8.3.3.3.2.1 Inspection.** Construction of acoustical items required in Section 8.3.3.3.2 shall be visually inspected by an ~~approved agency~~ approved agency.

**Modify Section 8.4.1.1.3 as shown (I-P and SI units).**

**8.4.1.1.3 Skylight Optical Diffusion Characteristics.** *Skylights* used to comply with Section 8.4.1.1.1 shall have a glazing material or diffuser that has a measured haze value greater than 90% when tested according to ASTM D1003 or other approved test method ~~approved by the AHJ~~.

**Modify Exception 8.4.1.3(2) as shown (I-P and SI units).**

**Exceptions to 8.4.1.3:**

1. Facades facing within 45 degrees of true north in the northern hemisphere or facades facing 45 degrees from true south in the southern hemisphere.
2. Translucent panels and glazing systems with a measured haze value greater than 90% when tested according to ASTM D1003 or other approved test method ~~approved by the AHJ~~, and that are entirely 8 ft (2.5 m) above the floor do not require external shading devices.

**Modify Section 9.5.1.2 as shown (I-P and SI units).**

**9.5.1.2 Procedure.** [ . . . ]

- e. The estimate of structural system material quantities shall be verified by a registered design professional or other ~~approved source~~ approved source.

**Modify Section 9.5.1.3 as shown (I-P and SI units).**

**9.5.1.3 Reporting.** A report that includes a description of the building alternatives and their physical differences shall be prepared and shall comply with the reporting requirements stated in ASTM E2921. The name and address of the registered design professional or other ~~approved source~~ approved source verifying structural system material quantities shall be included. A critical review shall be performed by an external expert independent of those performing the *LCA*.

**Modify Section 10.3.1.1 as shown (I-P and SI units).**

**10.3.1.1 Building Systems FPT.** *Functional and performance testing* shall be performed on all building systems specifically referenced in this section using generally accepted engineering standards where such standards are approved ~~acceptable to the authority having jurisdiction (AHJ)~~.

**Modify Section 10.3.1.1.2.1.3 as shown (I-P and SI units).**

**10.3.1.1.2.1.3 Property Line Sound.** Testing shall be performed at the locations and times of day or night that are estimated to most likely result in failure and shall be performed with all equipment operating under normal 100% load operation. If daytime test results comply with the nighttime requirements, nighttime testing is not required. The testing shall be in accordance with ANSI/ASA S1.13. The testing results shall comply with the property line noise levels in Table 8.3.3.5.2. ~~At the discretion of the AHJ~~ Where approved, noise that is not created on the source property need not be included in the reported test results.

**Modify Section 10.3.1.2 as shown (I-P and SI units).**

**10.3.1.2 Building Project Commissioning (Cx) Process.** The *Cx process* shall be performed in accordance with this section using ANSI/ASHRAE/IES Standard 202 or other gen-

~~erally accepted engineering standards acceptable to the AHJ where such standards are approved.~~  
The *Cx provider* shall verify that a *Cx process* has been incorporated into the design phases of the project and that commissioning shall be incorporated into the *construction documents*. The *Cx process* documents that the building and its commissioned components, assemblies, and systems comply with the *owner's project requirements (OPR)*. The project requirements, including *OPR*, *BoD*, design and construction record documentation, training plans and records, O&M plans and procedures, and *Cx reports* shall be assembled in a systems manual that provides information for building operating and maintenance staff.

***Modify Informative Appendix I as shown (I-P and SI units).***

**12.6 Record Documents.** Record documents should be provided to the *owner* upon project completion. The record documents should be accessible to the building operations and maintenance personnel, be included in the systems manual, and include all of the following:

- a. ~~Approved~~ *Approved construction documents*, including record plans and specifications.
- b. ~~Approved submittals~~ *Submittals* and coordination drawings. This documentation should show the actual locations of equipment, systems, and assemblies, such as piping, ductwork, valves, controls, access panels, electrical equipment, plumbing equipment, lighting and other operating components and systems. The record documents should particularly note equipment locations that are concealed or are installed in locations other than those indicated on the *approved construction documents*.
- c. Engineering and institutional control information for *sites* that have previously been a *brownfield* or that have required environmental corrective action, remediation, or restoration at the federal, state, or local level.

**12.7 Systems Manual.** A systems manual should be provided by an *owner* for use in building operations training. The systems manual should be made accessible to building operations and maintenance (O&M) personnel and should be updated and maintained by an *owner* for the life of the building.

A systems manual should include the following:

- a. Facility design and *construction documents*, including the following:
  1. *OPR* and *BoD*
  2. Construction record documents, including drawings, specifications, and ~~approved~~ submittals

**POLICY STATEMENT DEFINING ASHRAE'S CONCERN  
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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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### **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](http://www.iccsafe.org).

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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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