ANSI/ASHRAE/ICC/USGBC/IES Addendum o 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 the ASHRAE Standards Committee on July 31, 2020; by the ASHRAE Board of Directors on August 10, 2020; by the International Code Council on July 24, 2020; by the U.S. Green Building Council and Illuminating Engineering Society on July 23, 2020; and by the American National Standards Institute on September 1, 2020.

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. Instructions for how to submit a change can be found on the ASHRAE® website (www.ashrae.org/continuous-maintenance).

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 ISSN 1041-2336

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,
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.

(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 o identifies a number of requirements from Section 5 as being appropriate for local jurisdictions to consider excluding from their adopting ordinances.

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

Addendum o to Standard 189.1-2017

Modify Table 4.2 as shown. (Note: Table 4.2 was previously added to the standard by Addendum p and further modified by Addenda bp, q, r, s, t, ab, and bg.)

Table 4.2 Requirements Determined by the Jurisdiction

Section	Section Title or Description and Directives	Jurisdictional Requirement
5.3.5.2	Mitigation of Heat Island Effect, Walls	☐No
5.3.6	Reduction of Light Pollution	☐No
5.3.7.2.2	Bicycle Parking, Location	☐No
5.3.7.2.3	Bicycle Parking, Horizontal Parking Racks	☐No
5.3.7.2.5	Bicycle Parking, Security and Visibility	☐No
5.3.8.1	Building Site Waste Management – Diversion Percentage	☐75% ☐50%
6.3.1.2.1(a)(3)	Irrigation System Design, Master Valve	☐No
6.3.1.2.1(a)(4)	Irrigation System Design, Flow Sensors	☐No
6.3.3	Special Water Features	☐No
6.3.4.2	Consumption Data Collection	☐No
6.3.4.3	Data Storage and Retrieval	☐No
6.3.8	Dual Water Supply Plumbing	☐No
7.4.2.1	Building Envelope Requirements	☐No
7.4.2.2	Single-Rafter Roof Insulation	☐No
7.4.2.3	High Speed Doors	☐No
7.4.2.6	Permanent Projections	☐No
7.4.2.9	Orientation	☐No
7.4.3.2	Ventilation Controls for Densely Occupied Spaces	☐No
7.4.3.4	Economizers	☐No
7.4.3.5	Zone Controls	☐No
7.4.3.7	Exhaust Air Energy Recovery	☐No
7.4.3.8	Kitchen Exhaust Systems	☐No
7.4.4.2	Insulation for Spa Pools	☐No
7.4.6.2	Occupancy Sensor Controls with Multilevel Switching or Dimming.	☐No
7.4.6.3	Automatic Controls for Egress and Security Lighting	☐No

Table 4.2 Requirements Determined by the Jurisdiction

Section	Section Title or Description and Directives	Jurisdictional Requirement
7.4.7.2	Supermarket Heat Recovery	☐No
7.4.7.4	Programmable Thermostats	☐No
7.4.7.5	Refrigerated Display Cases	☐No
8.3.1.3(b)	*Outdoor Air* Ozone Removal	☐No
8.3.1.4.2	Exfiltration	☐No
8.3.3.4	Interior Sound Reverberation	☐No
8.4.1.3	Shading for Offices	☐No
9.3.1.2	Total Waste	☐No
10.3.1.5.b	IAQ Construction Management b. (flush-out)	☐No
10.3.1.8	Construction Activity Pollution Prevention: Protection of Occupied Areas	☐No
10.3.2.3	Service Life Plan	☐No
10.3.2.4.2	Transportation Management Plan: Owner Occupied Building Projects or Portions of Building Projects	☐No
10.3.2.4.3	Transportation Management Plan: Building Tenant	☐No

Modify Section 5.3.3.2 as shown.

5.3.3 Plants

5.3.3.1 Invasive Plants. *Invasive plants* shall be removed from the *building project site* and destroyed or disposed of in a land fill. *Invasive plants* shall not be planted on the *building project site*.

5.3.3.2 Greenfield Sites

a. **More than 20% existing native or adapted plants:** Where more than 20% of the area of the predevelopment *site* has existing *native plants* or *adapted plants*, a minimum of 20% of the area of *native plants* or *adapted plants* shall be retained.

b. **Less than 20% existing native or adapted plants:**

1. Where 20% or less of the area of the predevelopment *site* has existing *native plants* or *adapted plants*, a minimum of 20% of the *site* shall be developed or retained as vegetated area. Such vegetated areas include bioretention facilities, rain gardens, filter strips, grass swales, vegetated level spreaders, constructed *wetlands*, planters, and open *space* with plantings.
2. A minimum of 60% of the vegetated area shall consist of *biodiverse planting* of *native plants* ~~and/or~~ or *adapted plants* other than *turfgrass*.

Exceptionto 5.3.3.2(b)(2): The following areas shall not be included in the calculations: dedicated sports fields, driving ranges, burial grounds, vegetated pavers, and the minimum fire lanes required by the jurisdiction.

Add "[JO]" following the section number to indicate that Section 5.3.5.2 is a jurisdictional option.

5.3.5.2 [JO] Walls. Above-grade building *walls* and retaining *walls* shall be shaded in accordance with this section. The building is allowed to be rotated up to 45 degrees to the nearest cardinal orientation for purposes of calculations and showing compliance. Compliance with this section shall be achieved through the use of shade-providing *plants*, manmade structures, existing buildings, hillsides, permanent *building projections*, *on-site renewable energy systems*, or a combination of these, using the following criteria:

Add "[JO]" following the section number to indicate that Section 5.3.6 is a jurisdictional option.

5.3.6 [JO] Reduction of Light Pollution. [. . .]

Add "[JO]" following the section numbers to indicate that Sections 5.3.7.2.2, 5.3.7.2.3, 5.3.7.2.4, and 5.3.7.2.5 are jurisdictional options:.

5.3.7.2.2 [JO] Location. Not fewer than two bicycle parking *spaces* shall be located within 50 ft (15.2 m) of, and be visible from, the *building entrance* being served. All other bicycle parking *spaces* shall be located inside the building, or the nearest point of the bicycle parking areas shall be within 50 ft (15.2 m) of the *building entrance* being served. Bicycle parking shall not obstruct pedestrian access to the building.

5.3.7.2.3 [JO] Horizontal Parking Racks. Horizontal bicycle parking racks shall provide a *space* for each bicycle that is not less than 18 in. (305 mm) in width and not less than 72 in. (1829 mm) in length. Each *space* shall provide at least two points of contact between the bicycle frame and rack. Each *space* shall have access to a clear exit pathway not less than 36 in. (914 mm) in width.

5.3.7.2.4 [JO] Ability to Lock. Each bicycle parking *space* shall be provided with a securely mounted rack or other facilities for locking or securing a bicycle. A rack shall allow the locking of the frame and the front or rear wheel of the bicycle to the rack using a U-shaped shackle lock.

5.3.7.2.5 [JO] Security and Visibility. All bicycle parking *spaces* shall be visible from the entrance being served; secured in a locker, cage, or room; or provided with valet service or security cameras. Signage shall be provided to identify parking that is not visible from the *building entrance*.

Add "[JO]" following the 90% diversion rate percentage in Section 5.3.8.1 to indicate that alternate values are provided as a jurisdictional option.

5.3.8.1 Building Site Waste Management Plan. A building *site* waste management plan shall be developed and implemented for excavated soil, rock, and land-clearing debris. Land-clearing debris is limited to stumps and vegetation. Diverted land-clearing debris and removed rock and soil shall not be sent to *sites* where development activity is prohibited by Section 5.3.1.2 or to *greenfields* other than those being used for agricultural purposes or being developed as part of a *building project*.

Not less than 90% [JO] of the land-clearing debris, excluding *invasive plant* materials, shall be diverted from disposal in landfills and incinerators other than waste-to-energy systems with an energy-recovery efficiency rate higher than 60%. Land-clearing debris calculations shall be based on either weight or volume but not both. Receipts or other documentation related to diversion shall be maintained through the course of construction.

The plan shall address all of the following:

a. Land-clearing debris, rock, and soil to be diverted from disposal by composting, recycling, or reuse
b. Waste materials that will be diverted on-site
c. The locations to which waste materials will be diverted off-site
d. Soils to be stockpiled for future use at any location
e. Woody waste to be used as fuel
f. The destruction and disposal of *invasive plant* materials
g. The methods of removal of any contaminated soils
h. The treatment of vegetation to comply with the rules of government-designated quarantine zones for invasive insect species

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.

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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.

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.

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