

**ANSI/ASHRAE/ICC/USGBC/IES Addendum aa 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®

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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

Addendum aa improves the charging language of the Section 6.3.1.1 that was previously modified by Addendum bj by specifying terms for irrigated landscape during the initial establishment period. Section 6.3.1.2 is deleted because it does not provide the intended requirements, and Sections 6.3.1.2.1 and 6.3.1.2.2 are renumbered and modified.

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 aa to Standard 189.1-2020

Revise Section 6.3.1.1 as shown. (Note: This addendum incorporates changes made to the standard by previously published Addendum bj, which can be downloaded at www.ashrae.org/technical-resources/standards-and-guidelines/standards-addenda.)

~~**6.3.1.1 Irrigation Limitations.** Not more than 40% of the improved landscape area shall be irrigated. Sixty percent of the *improved landscape* area shall not be irrigated except during the *landscape establishment period* by a temporary irrigation system. The temporary irrigation system shall not be an in-ground system and shall be removed from the site after the *landscape establishment period*.~~

Exception to 6.3.1.1: The following areas shall be subtracted from the *improved landscape* area prior to calculation of the areas allowed to be irrigated:

- ~~1. Dedicated sports fields~~ Dedicated athletic fields, golf courses, and driving ranges.
2. Areas dedicated for production of food for human consumption
- ~~3. Burial grounds~~
4. Landscape areas irrigated solely with *alternate on-site sources of water*
- ~~5. Areas dedicated to plants with an annual ET_c of 15 in. (380 mm) or less, other than turfgrass, where average annual rainfall is less than 12 in. (300 mm).~~
- ~~6. Irrigation applied only during the *landscape establishment period*.~~

Delete Section 6.3.1.2 in its entirety, except for subsections.

~~**6.3.1.2 Irrigation.** For landscaped areas, not greater than one-third of *improved landscape* area is allowed to be irrigated with *potable water*. The area of dedicated athletic fields shall be excluded from the calculation of the *improved landscape* for schools, *residential* common areas, and public recreational facilities. All other irrigation shall be provided from alternate sources of water.~~

~~**Exception to 6.3.1.2:** *Potable water* is allowed to be used on such newly installed landscape for the *landscape establishment period*. The amount of *potable water* allowed to be applied to the newly planted areas during the *landscape establishment period* shall not exceed 70% of ET_o for *turfgrass* and 55% of ET_o for other plantings.~~

Renumber and modify Sections 6.3.1.2.1 and 6.3.1.2.2 as shown.

~~**6.3.1.2.1**~~ **6.3.1.2 Irrigation System Design.** The design of the irrigation system shall be performed by an accredited or certified irrigation professional and shall be in accordance with the following:

- Irrigation systems
 - shall be based on *hydrozones*. *Turfgrass* areas shall be on their own *irrigation stations*.
 - shall have backflow prevention in accordance with the plumbing code.
 - [JO] shall have a master valve on municipally supplied water sources that allows pressurization of the irrigation mainline only when irrigation is scheduled.
 - [JO] shall have a flow sensor and monitoring equipment that will shut off the control valve if the flow exceeds normal flow from an *irrigation station*.

5. shall prevent piping from draining between irrigation events.
- b. Irrigation emission devices shall comply with ASABE/ICC 802, *Landscape Irrigation Sprinkler and Emitter Standard*.
- c. Irrigation sprinklers
 1. shall not spray water directly on buildings or *hardscape* area.
 2. shall have matched precipitation rate nozzles within an *irrigation station*.
 3. shall be prohibited on landscape areas having any dimension less than 4 ft (1.2 m).
 4. shall have an application rate less than or equal to 0.75 in. (19 mm) per hour on slopes greater than 1 unit vertical in 4 units horizontal.
 5. shall be limited to use with *turfgrass* or *ground cover* areas with vegetation maintained at 8 in. (200 mm) or less in height.
 6. where of the pop-up configuration, shall have a pop-up height of not less than 4 in (100 mm).
- d. Microirrigation zones
 1. shall be equipped with pressure regulators, filters, and flush assemblies.
 2. shall have indicators that allow confirmation of operation by visual inspection.
 3. drip emitters shall be of pressure-compensating type.

6.3.1.2.2-6.3.1.3 Irrigation System Controls. Where any irrigation system for the project site uses an *automatic* controller, the system shall be controlled by a qualifying *smart controller* that uses *evapotranspiration (ET)* and weather data to adjust irrigation schedules and complies with the minimum requirements. Alternatively, the system shall be controlled by an on-site rain or moisture sensor that automatically shuts off the system after a predetermined amount of rainfall or sensed moisture in the soil. Qualifying *smart controllers* shall be *labeled* according to USEPA *Water-Sense Specification for Weather-Based Irrigation Controllers* or tested in accordance with Irrigation Association SWAT Climatologically Based Controllers, 8th Testing Protocol. *Smart controllers* that use *ET* data shall provide the following irrigation amounts:

- *Irrigation adequacy*—80% minimum *ETc*
- *Irrigation excess*—not to exceed 10% of *ETc*

~~**Exception to 6.3.1.2.2:** A temporary irrigation systems used exclusively for the establishment of new landscape shall be exempt from this requirement. Temporary irrigation systems shall be removed or permanently disabled at such time as the *landscape establishment period* has expired.~~

~~**6.3.1.2.2.1**~~The following settings and schedule for the irrigation control system shall be posted on or adjacent to the controller:

- a. Precipitation rate of each *irrigation station*
- b. *Plant* factors for each *hydrozone*
- c. Soil type
- d. Rain sensor settings
- e. Soil moisture sensor settings, where installed
- f. Peak demand schedule, including run times, cycle starts, and soak times
- g. Maximum runtimes to prevent water runoff

~~**Exception to 6.3.1.3:** Temporary irrigation systems used exclusively for the *landscape establishment period*.~~

~~**Delete section 6.3.1.2.3 in its entirety.**~~

~~**6.3.1.2.3 Irrigation of Rainfall ET_c Compatible Plants and Native Plants.** In ground irrigation systems serving *rainfall ET_c compatible plants* or *native plants* using *potable water* or off-site treated *reclaimed water* are prohibited. After the *landscape establishment period* of *rainfall ET_c compatible plants* and *native plants*, the irrigation system using *potable water* or *reclaimed water* shall be permanently disabled or removed from the site.~~

~~**Exception to 6.3.1.2.3:** Areas identified by Section 6.3.1.1, Exception 5.~~

**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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