

# ADDENDA

**ANSI/ASHRAE/IES Addendum at to  
ANSI/ASHRAE/IES Standard 90.1-2019**

# **Energy Standard for Buildings Except Low-Rise Residential Buildings**

Approved by ASHRAE and the American National Standards Institute on January 27, 2022, and by the Illuminating Engineering Society on January 18, 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 (<https://www.ashrae.org/continuous-maintenance>).

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## FOREWORD

*Use of the undefined term “addition” in the definition of “alterations” is a point of unnecessary Addendum at clarifies that a defined addition is not an alteration. This is intended as a first step in aligning compliance paths for new construction, additions, and alterations across all sections of the document.*

*Additionally, the addendum sets up the same numbering system for all sections within the x.1 subsection:*

### **x.1.1 Scope**

*Section x specifies requirements for x.*

### **x.1.2, New Buildings**

*xxxxx installed in new buildings shall comply with the requirements of (usually) Section x.2, which all point to the compliance paths.*

### **x.1.3, Additions to Existing Buildings**

*This is where scope in the separate sections diverges, as building additions are treated differently in different sections.*

### **x.1.4, Alterations to Existing Buildings**

*This is where scope in the separate sections diverges, as building alterations are treated differently in different sections.*

### **x.1.5, Climate**

*Sections would all consistently point back to Section 5 rather than Section 4, as Section 4 is administrative and 5 through 9 are technical.*

### **x.1.6, Section-Specific Scoping**

*Any sectional-specific scoping would appear at this point; for example, a definition of “space conditioning categories” appears here in Section 5, “Envelope.”*

**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 at to Standard 90.1-2019**

**Modify the standard as shown (I-P and SI units).**

**alteration:** ~~a-replacement or addition to a building or its systems, equipment, or building assemblies;~~ routine maintenance, ~~repair~~ and service, a change in the building's use classification or ~~space conditioning category-category~~ shall not constitute an *alteration*.

[...]

## **4.2 Compliance**

[...]

**4.2.1.3 Alterations of Existing Buildings Assemblies, Systems, and Equipment.** ~~Alterations of existing buildings~~ assemblies, systems, and equipment shall comply with the provisions of Sections 4.2.2 through 4.2.5 and one of the following:

[...]

## **5.1 General**

**5.1.1 Scope.** Section 5 specifies requirements for the *building envelope*.

**5.1.2 New Buildings.** Building envelope components installed in new *buildings* shall comply with the requirements of Section 5.2.

**5.1.3 Additions to Existing Buildings.** Building envelope components installed in *additions* shall comply with the requirements of Section 5.2.

[ . . . ]

#### **5.1.2.5.1.6 Space Conditioning Categories**

**5.1.2.5.1.6.1** Separate *building envelope* requirements are specified for (a) *nonresidential conditioned* space, (b) residential conditioned space, and (c) semiheated space.

**5.1.2.5.1.6.2** The minimum *skylight* area requirements in Section 5.5.4.2.3 are also specified for *unconditioned spaces*.

**5.1.2.5.1.6.3** *Spaces* shall be assumed to be *conditioned spaces* and shall comply with the requirements for *conditioned spaces* at the time of *construction*, regardless of whether mechanical or electrical *equipment* is included in the *building permit* application or installed at that time.

**Exception to 5.1.2.6.3:** A *space* may be designated as either a *semiheated space* or an *unconditioned space* only if approved by the *building official*.

[ . . . ]

**5.1.3.5.1.4 Envelope Alterations to Building Envelopes.** *Alterations* to the *building envelope* shall comply with the requirements of Section 5.2 for insulation, air leakage, and *fenestration* applicable to those specific portions of the *building* that are being altered.

[ . . . ]

**5.1.4.5.1.5 Climate.** Determine the climate zone for the location. For U.S. locations, follow the procedure in Section ~~5.1.4.1~~ 5.1.5.1. For international locations, follow the procedure in Section 5.1.4.2 5.1.5.2.

**5.1.4.5.1.5.1 United States Locations.** For locations in the United States and its territories, use ASHRAE Standard 169, Table B-1, "U.S. Climate Zones by State and County," to determine the assigned climate zone and, where required, the assigned climate zone letter.

Exception to 5.1.4.1 If there are recorded historical climatic data available for a *construction site*, they may be used to determine compliance if approved by the *building official*.

**Informative Note:** Annex 1 (included at the end of this document) contains an extraction from ASHRAE Standard 169, Table B-1, "U.S. Climate Zones by State and County."

**5.1.4.25.1.5.2 International Locations.** For locations in Canada that are listed in ASHRAE Standard 169, Table A-5, "Canada Stations and Climate Zones," use this table to determine the required assigned climate zone number and, where required, the assigned climate zone letter.

[ . . . ]

## **6.1 General**

**6.1.1 Scope.** Section 6 specifies requirements for mechanical *equipment and systems*.

**6.1.1.46.1.2 New Buildings.** Mechanical *equipment and systems* serving the heating, cooling, ventilating, or refrigeration needs of new *buildings* shall comply with the requirements of this section as described in Section 6.2

**6.1.1.26.1.3 Additions to Existing Buildings.** Mechanical *equipment and systems* serving the heating, cooling, ventilating, or refrigeration needs of additions to *existing buildings* shall comply with the requirements of this section as described in Section 6.2.

**Exception to 6.1.1.26.1.3:** When HVACR to an *addition* is provided by existing HVACR *systems and equipment*, such *existing systems and equipment* shall not be required to comply with this standard. However, any new *systems or equipment* installed must comply with specific requirements applicable to those *systems and equipment*.

**6.1.1.36.1.4 Alterations to Heating, Ventilating, Air-Conditioning, and Refrigeration in Existing Buildings Systems and Equipment**

**6.1.1.3.16.1.4.1** New HVACR *equipment* as a direct replacement of existing HVACR *equipment* shall comply with the following sections as applicable for the *equipment* being replaced: [ . . . ]

**6.1.1.3.26.1.4.2** New cooling *systems* installed to serve previously uncooled *spaces* shall comply with this section as described in Section 6.2.

**6.1.1.3.36.1.4.3** *Alterations* to existing cooling *systems* shall not decrease economizer capability unless the *system* complies with Section 6.5.1.

**6.1.1.3.46.1.4.4** New and replacement *ductwork* shall comply with Sections 6.4.4.1 and 6.4.4.2.

**6.1.1.3.56.1.4.5** New and replacement *piping* shall comply with Section 6.4.4.1.

**Exceptions to 6.1.1.3.56.1.4.5:** Compliance shall not be required [ . . . ]

**6.1.26.1.5 Climate.** Climate zones shall be determined in accordance with Section ~~5.1.4~~ 5.1.5.

[...]

## 7.1 General

**7.1.1 Service Water-Heating Scope.** Section 7 specifies requirements for Service water-heating systems and equipment.

~~7.1.1.1~~ **7.1.2 New Buildings.** *Service water-heating systems and equipment shall comply with the requirements of this section as described in Section 7.2.*

~~7.1.1.2~~ **7.1.3 Additions to Existing Buildings.** *Service water-heating systems and equipment shall comply with the requirements of this Section 7.2.*

**Exception to 7.1.1.2/7.1.3:** When the *service water heating* to an *addition* is provided by existing *service water-heating systems and equipment*, such *systems and equipment* shall not be required to comply with this standard. However, any new *systems or equipment* installed must comply with specific requirements applicable to those *systems and equipment*.

~~7.1.1.3~~ **7.1.4 Alterations to Existing Buildings Service Water-Heating Systems and Equipment.** *Building service water-heating equipment installed as a direct replacement for existing building service water-heating equipment shall comply with the requirements of Section 7 applicable to the equipment being replaced. New and replacement piping shall comply with Section 7.4.3.*

**Exception to 7.1.1.3/7.1.4:** Compliance shall not be required where there is insufficient *space* or access to meet these requirements.

[...]

## 8.1 General

**8.1.1 Scope.** This section applies to all *building power distribution systems* and only to *equipment* described below.

**8.1.2 New Buildings.** *Equipment installed in new buildings shall comply with the requirements of this Section 8.2.*

**8.1.3 Additions to Existing Buildings.** *Equipment installed in additions to existing buildings shall comply with the requirements of this Section 8.2.*

**8.1.4 Alterations to Existing Buildings Building Power Distribution Systems and Equipment**

**Exception to 8.1.4:** Compliance shall not be required for the relocation or reuse of existing equipment at the same site.

**8.1.4.1 Alterations to building service equipment or and systems** shall comply with the requirements of this Section 8 as applicable to those specific portions of the *building* and its *systems* that are being altered.

**8.1.4.2** Any new *equipment* subject to the requirements of this Section 8 that is installed in conjunction with the alterations as a direct replacement of *existing equipment* shall comply with the specific requirements applicable to that *equipment*.

[...]

## 10.1 General

**10.1.1 Scope.** This section applies ~~only to other equipment as described below in Section 10.4.~~

~~10.1.1.1~~ **10.1.2 New Buildings.** *Other equipment installed in new buildings shall comply with the requirements of this Section 10.2.*

~~10.1.1.2~~ **10.1.3 Additions to Existing Buildings.** *Other equipment installed in additions to existing buildings shall comply with the requirements of this Section 10.2.*

~~10.1.1.3~~ **10.1.4 Alterations to Existing Buildings Building Service Equipment.** *Alterations to other building service equipment or systems shall comply with the requirements of this Section 10.2 as applicable to those specific portions of the building and its systems that are being altered.*

~~10.1.1.3.1~~ **10.1.4.1** Any new *equipment* subject to the requirements of this Section 10 that is installed in conjunction with the *alterations* as a direct replacement of *existing equipment or control devices* shall comply with the specific requirements applicable to that *equipment or control devices*.

**Exception to 10.1.1.3.1 10.1.4.1:** Compliance shall not be required for the relocation or reuse of *existing equipment*.

**10.1.5 Climate.** *Climate zones shall be determined in accordance with Section 5.1.5.*

[...]

**10.5.1.1 On-Site Renewable Energy.** The building site shall have equipment for *on-site renewable energy* with a rated capacity of not less than  $0.25 \text{ W/ft}^2$  or  $0.85 \text{ Btu/ft}^2$  ( $2.7 \text{ W/m}^2$ ) multiplied by the sum of the *gross conditioned floor area* for all floors up to the three (3) largest floors.

**Exceptions to 10.5.1.1:**

[ ... ]

4. New construction or *additions* in which the sum of the *gross conditioned floor area* of the three largest floors of the new construction or *addition* is less than  $10,000 \text{ ft}^2$  ( $1000 \text{ m}^2$ ).
5. ~~Alterations that do not include additions.~~

## **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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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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