



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

Public Review Draft

Proposed Addendum at to Standard 90.1-2019, Energy Standard for Buildings Except Low-Rise Residential Buildings

**First Public Review (November 2021)
(Draft Shows Proposed Changes to Current Standard)**

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ASHRAE, 180 Technology Parkway NW, Peachtree Corners, GA 30092

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(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

Simply put, the use of an undefined “additions” term in the alterations definition is a point of unnecessary confusion. This CMP clarifies that a defined addition is not an alteration. This CMP is intended to be the 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 Sub-Section.

X.1.1 – Scope

Section x specifies requirements for the x.

X.1.2 – New Buildings

xxxxx installed in new buildings shall comply with the requirements of section usually 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. And yes, 5 rather than 4, as 4 is administrative, and 5 thru 9 are technical.

X.1.6 – Section Specific Scoping

At this point we would have any sectional specific scoping, for example in Envelope we have the definition of space conditioning categories.

This addendum does not add any new criteria and therefore was not subject to a cost effectiveness review.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~striketrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum at to 90.1-2019

Modify the standard as follows (IP 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

5.1.2.1 5.1.6.1

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

5.1.2.2 5.1.6.2

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

5.1.2.3 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 5.1.2.3

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.

5.1.4.1 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.”

5.1.4.2 5.1.5.2 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*.

6.1.1.1 6.1.2 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

6.1.1.2 6.1.3 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 6.1.1.2 6.1.3

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*.

6.1.1.3 6.1.4 Alterations to Heating, Ventilating, Air Conditioning, and Refrigeration in Existing Buildings Systems and Equipment

6.1.1.3.1 6.1.4.1

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

a. ...

6.1.1.3.2 6.1.4.2

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

6.1.1.3.3 6.1.4.3

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

6.1.1.3.4 6.1.4.4

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

6.1.1.3.5 6.1.4.5

New and replacement *pipng* shall comply with Section 6.4.4.1.

Exceptions to 6.1.1.3.5 6.1.4.5

Compliance shall not be required

...

6.1.2 6.1.5 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 *pipng* 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 Addition 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 ~~t~~ ~~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 W/ft² or 0.85 Btu/ft² (2.7W/m²) 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 ft² (1000 m²).
5. ~~Alterations that do not include additions.~~