

# ADDENDA

**ASHRAE/IES Addendum cs to  
ANSI/ASHRAE/IES Standard 90.1-2022**

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

Approved by ASHRAE and by the Illuminating Engineering Society on March 12, 2026. This is an informative addendum and was therefore not submitted for ANSI approval.

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

*Normative Appendix G, "Performance Rating Method," utilizes building performance factors (BPFs) to establish compliance. BPFs represent the improvement in regulated energy use between a current edition of the standard and the Appendix G baseline (approximately equal to Standard 90.1-2004). In order for a project to comply, the regulated energy use of the proposed design must not exceed the regulated energy use of the baseline design multiplied by the applicable BPF. Because BPFs are derived from prototype building models, projects with energy end uses that deviate significantly from the prototype may face challenges in meeting the target, even if the building is energy efficient. Developing performance factors for each individual end use, rather than a single BPF for all regulated loads combined, helps normalize for the difference in end-use allocation in the prototype model compared to a particular project and establishes a fairer compliance target.*

*For example, if a BPF value is heavily influenced by heating energy savings where heating energy was reduced by ~75% between 2004 and 2025, while other end uses improved by a significantly lower margin, a proposed building design where heating accounts for a smaller percentage of the overall energy use due to high internal gains may struggle to achieve the magnitude of overall energy savings needed for compliance. With the proposed end-use-specific BPF approach, the 75% reduction would apply only to the small heating energy load, minimizing its impact on the compliance target.*

*Addendum cs adds an informative Appendix that allows projects to utilize end-use-specific performance factors (EUPFs), when approved by the jurisdiction, in lieu of single building-level BPFs.*

*The appendix includes changes to Sections 3 and 4 and Normative Appendix G for using the EUPFs in conjunction with energy cost, site energy, source energy, and carbon emissions metrics in lieu of BPFs. It also provides an example of how a jurisdiction would amend Standard 90.1 language to adopt the EUPFs. The example shows the proper changes using strikeout and underline markup. Conversion factors used for different metrics are aligned with Tables I4-1 and I5-1 for carbon emissions, site energy, source energy and energy cost. EUPFs included in the appendix are derived from the same prototype models as the BPFs.*

*The information included in this appendix improves the usability of Normative Appendix G by allowing jurisdictions greater flexibility in applying Appendix G.*

*This addendum impacts an optional performance path in the standard designed to provide increased flexibility and therefore was not subjected to cost-effectiveness analysis.*

**Informative 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 cs to Standard 90.1-2022

### **Modify Section 4.2.1.1. informative notes as shown (I-P and SI).**

#### **4.2.1.1 New Buildings.**

[ . . . ]

#### **Informative Notes:**

1.  $PBP_{nre}$  = proposed building performance, no renewable energy.
2.  $PBP_{pre}$  = proposed building performance, prescriptive renewable energy.
3. PRE = prescriptive renewable energy.
4. See Informative Appendix I for using other metrics, including *site energy*, *source energy*, and carbon emissions, in conjunction with the Normative Appendix G *Performance Rating Method* when approved by the *rating authority*.
5. See Informative Appendix O for using end-use performance factors (EUPFs) instead of BPFs in conjunction with the Normative Appendix G *Performance Rating Method* when approved by the *rating authority*.

**Modify Section G1.2.2 informative notes as shown (I-P and SI).**

[ . . . ]

**Informative Notes:**

1. Neither the *proposed building performance* nor the *baseline building performance* are predictions of actual *energy* consumption or costs for the *proposed design* after *construction*. Actual experience will differ from these calculations due to variations such as occupancy, *building* operation and maintenance, weather, *energy* use not covered by this procedure, changes in *energy* rates between design of the *building* and occupancy, and the precision of the calculation tool.
2. See Informative Appendix I for using other metrics, including site *energy*, source *energy*, and carbon emissions, in conjunction with the Normative Appendix G *Performance Rating Method* when approved by the *rating authority*.
3. See Informative Appendix O for using end-use performance factors (EUPFs) instead of BPFs in conjunction with the Normative Appendix G *Performance Rating Method* when approved by the *rating authority*.

**Insert new Informative Appendix O as shown (I-P and SI). (Note: Normally, all of the following text would be underlined per the normal markup rules for addenda. The normal markup is omitted here to preserve the identical markup that is part of the content of the appendix.)**

**(This appendix 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.)**

**INFORMATIVE APPENDIX O  
USING END-USE PERFORMANCE FACTORS IN CONJUNCTION WITH  
APPENDIX G PERFORMANCE RATING METHOD WHEN APPROVED BY  
THE RATING AUTHORITY**

**O1. GENERAL**

This informative appendix describes changes to Section 3, Section 4, and Normative Appendix G for using end-use performance factors (EUPFs) in conjunction with energy cost, site energy, source energy and carbon emissions metrics instead of building performance factors (BPFs) that may be adopted by the *rating authority* for the Normative Appendix G *Performance Rating Method*. It also includes an example of how a jurisdiction would amend ASHRAE/IES Standard 90.1 language to adopt the site energy EUPFs with the changes shown using ~~strikeout~~ and underline.

**Notes:**

1. Tables O1-1 through O1-9, O2-1 through O2-9, O3-1 through O3-9, and O4-1 through O4-9, referenced in this appendix, can be accessed online at [www.ashrae.org/xxxxx](http://www.ashrae.org/xxxxx).
2. BPFs in Normative Appendix G are derived from prototype building models and reflect the minimum overall improvement in the regulated end uses in the proposed design relative to the baseline design that a project must meet to comply. Using performance factors for each individual end use as described in this appendix, rather than using a single BPF for all regulated end uses combined, helps normalize for the difference in end use allocation between the prototype models and a particular project and establish a fairer compliance target. EUPFs included in this appendix are derived from the same prototype buildings models as the BPFs in the Normative Appendix G. Conversion factors used for different metrics are aligned with Tables I4-1 and I5-1 for carbon emissions, site energy, source energy, and energy cost.

**O2. CHANGES TO SECTION 3**

If a metric other than *energy* cost is selected, replace references to “*energy* cost” with the selected metric (*site energy* use, source *energy* use, or carbon emissions) in the definitions of *baseline building performance* and *proposed building performance* in Section 3.2.

**O3. CHANGES TO SECTION 4**

- a. Replace all references to “energy cost” in Section 4.2.1.1 with the selected metric, such as “site energy,” “source energy,” or “carbon emissions,” as appropriate, throughout.

- b. Replace all references to “Performance Cost Index” in Section 4.2.1.1 with “Performance Index (site energy),” “Performance Index (source energy),” or “Performance Index (carbon emissions),” as appropriate throughout.
- c. For energy cost, replace Table 4.2.1.1 with Tables O1-1 through O1-9.
- d. For site energy, replace Table 4.2.1.1 with Tables O2-1 through O2-9.
- e. For carbon emissions, replace Table 4.2.1.1 with Tables O3-1 through O3-9.
- f. For source energy, replace Table 4.2.1.1 with Tables O4-1 to O4-9.
- g. Add the following informative note to Section 4.2.1.1 below the tables: **Informative Note:** “Other regulated” category includes *regulated energy use* of systems and components that are not explicitly included in the table, such as transformers.
- h. Modify the equation in Section 4.2.1.1 as follows:

$$PCI_i = \frac{[BBUECBUEU + (BPF \times BBREC) \sum (EUPF_i \times BREU_i) - PRE]}{BBP}$$

- i. Modify the nomenclature in Section 4.2.1.1 as follows, referencing the appropriate set of tables based on the selected metric:

- BUEU = baseline building unregulated energy use for the [selected metric]
- EUPF<sub>i</sub>-BPF = end-use performance factor [selected metric] for regulated end-use “i” from the EUPF tables (Tables O1-1 through O1-9, Tables O2-1 through O2-9, Tables O3-1 through O3-9, or Tables O4-1 through O4-9) for the appropriate building type and climate zone. ~~building performance factor from Table 4.2.1.1.~~ For building area types not listed in Table 4.2.1.1, use “All others.” Where a building has multiple building area types, the required EUPF<sub>i</sub>-BPF shall be equal to the area-weighted average of the building area types based on their gross floor area. Where a project includes an existing building and an addition, the required EUPF<sub>i</sub>-BPF shall be equal to the area-weighted average, based on the gross floor area, of the existing building. EUPF<sub>i</sub>-BPF determined as described in Section 4.2.1.3 and the addition EUPF<sub>i</sub>-BPF from ~~Table 4.2.1.1~~ the EUPF tables for the appropriate building type and climate zone.
- ~~BBREC~~ = ~~baseline building regulated energy cost, the portion of the annual energy cost of a baseline building design that is due to regulated energy use~~
- BREU<sub>i</sub> = baseline regulated energy end use, the portion of the annual [selected metric] of a baseline building design that is due to regulated energy end-use “i”

- j. Delete the following paragraph from Section 4.2.1.1: “Regulated energy cost shall be calculated by multiplying the total energy cost by the ratio of regulated energy use to total energy use for each fuel type. Unregulated energy cost shall be calculated by subtracting regulated energy cost from total energy cost.”
- k. Delete Informative Notes 4 and 5 from Section 4.2.1.1.
- l. Modify Section 4.2.1.3(c)(1) as follows, referencing the set of EUPF tables appropriate for the selected metric:
  - 1. Alterations that meet the criteria in Section G3.1.4(a) shall use the EUPFs-BPF from the EUPF tables for the appropriate building type and climate zone for the following end uses: interior lighting, exterior lighting, service water heating, refrigeration equipment (regulated), elevators and escalators, other regulated. EUPFs for all other end uses shall be multiplied by 1-05-1.10.
  - 2. All other alterations modeled following Section G3.3 shall use EUPF-BPF = 1 for all end uses.

#### 04. CHANGES TO NORMATIVE APPENDIX G

- a. Replace references to “energy cost” with references to the selected metric, such as “site energy,” “source energy,” or “carbon emissions,” as appropriate, in Sections G1.2.2, G1.3.2, G2.1, G2.4.2, and G2.5 section headings and bodies.
- b. Modify Section G1.3.2(a) as follows referencing the appropriate set of tables based on the selected metric:
  - a. The simulation program used, the version of the simulation program, and the results of the energy analysis including the calculated values for the baseline building unregulated [selected metric]-energy cost (BBUECBUEU), baseline building regulated energy cost [selected metric] use for each regulated end use included in Tables 4.2.1.X-1 through Table 4.2.1.X-9 (BBRECBREU), building [selected metric] end-use performance factors (BPF-EUPF<sub>i</sub>), baseline

*building performance*, the *proposed building performance*, Performance Cost-Index (PCI), and Performance Cost-Index Target (PCI<sub>t</sub>).

- c. Remove Section G1.3.2(n).
- d. Modify Section G1.3.2(p) to replace “cost savings” with [selected metric] savings.
- e. Modify Section G2.4.2 to remove the first sentence and the informative note. Add the following to the first paragraph: The proposed design [selected metric] and the baseline design [selected metric] shall be determined using the conversion factors in Table I4-1.
- f. Replace all references to “Performance Cost Index” in Appendix G with “Performance Index” as appropriate.

## 05. SITE ENERGY-USE LANGUAGE EXAMPLE

This section illustrates changes to Sections 3, 4, and Normative Appendix G that would be made by jurisdictions adopting the EUPF method using the *site energy* metric in conjunction with the Normative Appendix G Performance Rating Method. Example changes are illustrated with ~~strike through~~ and underline.

**Table 4.2.1.1 Building Performance Factor (BPF)**

| Building Area Type   | Climate Zone |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                      | 0A           | 0B   | 1A   | 1B   | 2A   | 2B   | 3A   | 3B   | 3C   | 4A   | 4B   | 4C   | 5A   | 5B   | 5C   | 6A   | 6B   | 7    | 8    |
| Multifamily          | 0.69         | 0.68 | 0.71 | 0.70 | 0.72 | 0.72 | 0.71 | 0.76 | 0.63 | 0.69 | 0.76 | 0.71 | 0.66 | 0.72 | 0.71 | 0.65 | 0.67 | 0.65 | 0.67 |
| Health care/hospital | 0.69         | 0.69 | 0.70 | 0.68 | 0.67 | 0.65 | 0.65 | 0.66 | 0.64 | 0.64 | 0.66 | 0.63 | 0.67 | 0.65 | 0.65 | 0.66 | 0.67 | 0.68 | 0.70 |
| Hotel/motel          | 0.66         | 0.66 | 0.69 | 0.65 | 0.65 | 0.64 | 0.64 | 0.65 | 0.65 | 0.63 | 0.65 | 0.63 | 0.62 | 0.63 | 0.62 | 0.61 | 0.62 | 0.59 | 0.58 |
| Office               | 0.54         | 0.54 | 0.53 | 0.52 | 0.52 | 0.52 | 0.50 | 0.54 | 0.48 | 0.48 | 0.53 | 0.48 | 0.49 | 0.52 | 0.48 | 0.48 | 0.49 | 0.46 | 0.48 |
| Restaurant           | 0.62         | 0.59 | 0.57 | 0.57 | 0.57 | 0.53 | 0.57 | 0.53 | 0.51 | 0.55 | 0.54 | 0.54 | 0.57 | 0.56 | 0.55 | 0.59 | 0.58 | 0.61 | 0.64 |
| Retail               | 0.51         | 0.49 | 0.48 | 0.48 | 0.44 | 0.43 | 0.43 | 0.43 | 0.44 | 0.42 | 0.43 | 0.46 | 0.43 | 0.42 | 0.47 | 0.43 | 0.43 | 0.41 | 0.44 |
| School               | 0.52         | 0.57 | 0.57 | 0.56 | 0.52 | 0.53 | 0.52 | 0.49 | 0.50 | 0.46 | 0.47 | 0.47 | 0.47 | 0.46 | 0.46 | 0.46 | 0.44 | 0.45 | 0.45 |
| Warehouse            | 0.26         | 0.26 | 0.22 | 0.25 | 0.21 | 0.22 | 0.25 | 0.21 | 0.19 | 0.25 | 0.22 | 0.22 | 0.28 | 0.24 | 0.22 | 0.31 | 0.28 | 0.29 | 0.32 |
| All others           | 0.62         | 0.60 | 0.62 | 0.59 | 0.55 | 0.51 | 0.53 | 0.52 | 0.55 | 0.53 | 0.52 | 0.55 | 0.53 | 0.53 | 0.56 | 0.54 | 0.54 | 0.54 | 0.54 |

Modify Section 3 as follows:

*baseline building performance*: the annual site energy use ~~energy cost~~ for a *building design* intended for use as a baseline for rating above-standard design or when using the *Performance Rating Method* as an alternative path for minimum standard compliance in accordance with Section 4.2.1.1.

*proposed building performance*: the annual site energy use ~~energy cost~~ calculated for a *proposed design*.

Modify Section 4.2.1.1 as follows:

[ . . . ]

$$PCI_t = [BBUEC + (BPF \times BBREC) \sum (EUPF_i \times BREU_i) - PRE] / BBP$$

where

PCI = Performance Cost-Index (site energy) calculated in accordance with Section G1.2.2  
 BBUEC = baseline *building unregulated site energy cost*, the portion of the annual site energy cost of a *baseline building design* that is due to *unregulated energy use*.

EUPF<sub>i</sub> BPF = *building performance factor* from Table 4.2.1.1. end-use performance factor (site energy) for regulated end use “i” from Tables O2-1 through O2-9 for the appropriate building type and climate zone. For *building area types* not listed in Table 4.2.1.1-Tables O2-1 through O2-9, use “All others.” Where a *building* has multiple *building area types*, the required EUPF<sub>i</sub> BPF shall be equal to the area-weighted average of the *building area types* based on their *gross floor area*. Where a project includes an *existing building* and an *addition*, the required EUPF<sub>i</sub> BPF shall be equal to the area-weighted average, based on the *gross floor area*, of the *existing building* EUPF<sub>i</sub> BPF determined as described in Section 4.2.1.3 and the *addition* EUPF<sub>i</sub> BPF from Tables 4.2.1.1-1 through 4.2.1.1-9.

BREU<sub>i</sub> BBREC = *baseline building regulated energy cost*, the portion of the annual energy cost site

|                    |   |   |
|--------------------|---|---|
|                    |   | <u>energy of a baseline building design that is due to regulated energy end-use “i”</u>   |
| PRE                | = | $PBP_{nre} - PBP_{pre}$   |
| PBP                | = | <u>proposed building performance, including the reduced, annual <del>purchased</del> <u>site energy cost</u> associated with all <u>on-site renewable energy generation systems</u></u>   |
| PBP <sub>nre</sub> | = | <u>proposed building performance without any credit for reduced annual <u>site energy cost</u> from <u>on-site renewable energy generation systems</u></u>  |
| PBP <sub>pre</sub> | = | <u>proposed building performance, excluding any renewable energy system in the proposed design and including an <u>on-site renewable energy system</u> that meets but does not exceed the requirements of Section 10.5.1.1 modeled following the requirements for a <u>budget building design</u> in Table 12.5.1, row 15</u> |
| BBP                | = | <u>baseline building performance</u>  |

~~Regulated energy cost shall be calculated by multiplying the total energy cost by the ratio of regulated energy use to total energy use for each fuel type. Unregulated energy cost shall be calculated by subtracting regulated energy cost from total energy cost.~~

**Informative Note:** “Other regulated” category includes regulated energy use of systems and components that are not explicitly included in the table, such as transformers.

When  $(PBP_{pre} - PBP)/BBP > 0.05$ , new buildings, additions to existing buildings, and/or alterations to existing buildings shall comply with the following:

$$PCI + [(PBP_{pre} - PBP)/BBP] - 0.05 < PCI_t$$

**Informative Notes:**

1.  $PBP_{nre}$  = proposed building performance, no renewable energy.
2.  $PBP_{pre}$  = proposed building performance, prescriptive renewable energy.
3. PRE = prescriptive renewable energy.
4. ~~See Informative Appendix I for using other metrics, including site energy, source energy, and carbon emissions, in conjunction with the Normative Appendix G Performance Rating Method when approved by the rating authority.~~
5. ~~See Informative Appendix O for using the end use performance factors (EUPFs) instead of the BPFs in conjunction with the Normative Appendix G Performance Rating Method when approved by the rating authority.~~

**Modify Section 4.2.1.3(c) as follows:**

[ . . . ]

- c. Normative Appendix G, “Performance Rating Method,” in accordance with Section 4.2.1.1 with the following modifications:
  1. Alterations that meet the criteria in Section G3.1.4(a) shall use the BPF-EUPFs from Table 4.2.1.1 Tables O2-1 through O2-9 for the following end uses: interior lighting, exterior lighting, service water heating, refrigeration equipment (regulated), elevators and escalators, other regulated. EUPFs for all other end uses shall be multiplied by 1.05-1.10.
  2. All other alterations modeled following Section G3.3 shall use BPF EUPF = 1 for all end uses.

**Modify Section G1.2.2 as follows:**

**G1.2.2** The performance of the proposed design is calculated in accordance with provisions of this appendix using the following formula:

$$\text{Performance Cost-Index} = \text{Proposed building performance}/\text{Baseline building performance}$$

Both the proposed building performance and the baseline building performance shall include all end-use load components within and associated with the building when calculating the Performance Cost-Site Energy Index.

**Modify Section G1.3.2(a) and G1.3.2(p) as follows:**

[ . . . ]

The following documentation shall be submitted to the rating authority:

- a. The simulation program used, the version of the simulation program, and the results of the energy analysis including the calculated values for the baseline building unregulated site energy cost (BBUEC), baseline building regulated site energy cost use for each regulated end use included in Tables O2-1 through O2-9 (BBREC-BEUE), building site energy end use performance factors (BPF-EUPF), baseline building

performance, the proposed building performance, Performance Cost-Index (PCI), and Performance Cost Index Target (PCI<sub>T</sub>).

[ . . . ]

n. ~~Purchased energy rates used in the simulations.~~

[ . . . ]

p. For any exceptional calculation methods employed, document the predicted energy savings by energy type, the site energy cost savings, a narrative explaining the exceptional calculation method performed and theoretical or empirical information supporting the accuracy of the method.

**Modify Section G2.4.2 as follows:**

**G2.4.2 Annual Energy Costs Site Energy.** ~~The design energy cost and baseline energy cost shall be determined using either actual rates for purchased energy or state average energy prices published by DOE's Energy Information Administration (EIA) for commercial building customers, but rates from different sources may not be mixed in the same project. The proposed design site energy and baseline design site energy shall be determined using the site energy conversion factors in Table I4-1.~~

Where on-site renewable energy or site-recovered energy is used, the baseline building design shall be based on the energy source used as the backup energy source, or the baseline system energy source in that category if no backup energy source has been specified, except where the baseline energy source is prescribed in Table G3.1.1-2 and G3.1.1-3. Where the proposed design includes on-site electricity generation systems other than on-site renewable energy systems, the baseline design shall include the same generation systems excluding its site-recovered energy.

**Informative Note:** ~~The above provision allows users to gain credit for features that yield load management benefits. Where such features are not present, users can simply use state average unit prices from EIA, which are updated annually and readily available on EIA's web site (<http://www.eia.gov>).~~

**Modify Section G2.5(c) as follows:**

[ . . . ]

e. The Performance Cost-Index calculated with and without the exception.

## **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.

**ASHRAE · 180 Technology Parkway · Peachtree Corners, GA 30092 · [www.ashrae.org](http://www.ashrae.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.

To stay current with this and other ASHRAE Standards and Guidelines, visit [www.ashrae.org/standards](http://www.ashrae.org/standards), and connect on LinkedIn, Facebook, Twitter, and YouTube.

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ASHRAE offers its Standards and Guidelines in print, as immediately downloadable PDFs, and via ASHRAE Digital Collections, which provides online access with automatic updates as well as historical versions of publications. Selected Standards and Guidelines are also offered in redline versions that indicate the changes made between the active Standard or Guideline and its previous edition. For more information, visit the Standards and Guidelines section of the ASHRAE Bookstore at [www.ashrae.org/bookstore](http://www.ashrae.org/bookstore).

### **IMPORTANT NOTICES ABOUT THIS STANDARD**

**To ensure that you have all of the approved addenda, errata, and interpretations for this Standard, visit [www.ashrae.org/standards](http://www.ashrae.org/standards) to download them free of charge.**

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