



**BSR/ASHRAE/ASHE Addendum b
to ANSI/ASHRAE/ASHE Standard 189.3-2017**

Public Review Draft

Proposed Addendum b to Standard 189.3-2017, Design, Construction, and Operation of Sustainable High-Performance Health Care Facilities

**Second Public Review (October 2020)
(Draft shows Proposed Independent Substantive Changes
to Previous Public Review Draft)**

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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

This addendum is part of the continuous maintenance process to maintain coordination within ASHRAE standards. This addendum reflects the committee's continuing efforts to identify revisions necessary to align the standard with the latest addenda of ANSI/ASHRAE/USGBC/IES Standard 189.1, along with recent publication of other standards that are referenced by this standard.

Significant changes include the following:

- *In Section 3, "Definitions, Abbreviations, and Acronyms," revised definition for residential health facility added specialized outpatient facility based on coordination with the Facility Guidelines Institute*
- *In Section 7, "Energy Efficiency," Mandatory Provisions language was updated, an exception was provided in the On-Site Renewable Energy Systems section, an exception to Fault Detection and Diagnostics was added, Prescriptive Option language was updated, new Table 7.4.1.1 addressing Renewable Energy Requirement was provided, and Performance Option language and exceptions to Annual Energy Cost and Annual Carbon Dioxide Equivalent (CO_{2e}) were modified.*
- *In Section 8, "Indoor Environmental Quality (IEQ)," an informative note was provided for Section 8.3.1.2, "Outdoor Air Delivery Monitoring."*
- *In Section 10, "Construction and Plans for Operation," an exception was added related to indoor environmental quality.*
- *Editorial Note: Future editions of the standard will incorporate the section numbering of ASHRAE Standard 189.1 and the related International Green Construction Code. For example, "Mandatory Provisions" in Section 6 will be titled 6.3 (601.3), "Mandatory Provisions."*
- *This ISC includes changes to Table 7.5.1 based on public review feedback. Additional building types have been added to align with Table 7.4.1.1 building types, as well as updating the Building Performance Factor for all building types to coordinate with ANSI/ASHRAE/IES Standard 90.1-2019.*

Note: The draft of Addendum b that was used for the First Publication Public Review is replaced in its entirety by this Second Independent Substantive Changes Public Review Draft. Substantive changes to the First Public Review Draft and related changes to Standard 189.3-2017 are indicated by **blue-colored text** with **underlining** (for additions) and **strikethrough** (for deletions). **Only these changes in blue are open to comment.** Editorial comments are **not open for comment**. Other sections of Standard 189.3-2017 that are unchanged are also **not open for comment**.

Addendum b to Standard 189.3-2017

Modify Section 3 as shown. The remainder of Section 3 is unchanged.

3. DEFINITIONS, ABBREVIATIONS, AND ACRONYMS

[...]

3.2 Definitions

[...]

residential health ~~care~~ facility: a facility, building, or portion of a building that provides housing and services for a nursing home or hospice for a resident or group of residents.

[...]

specialized outpatient facility: any of the following facility types: outpatient surgical, endoscopy, infusion,

renal dialysis, freestanding emergency departments, and imaging facilities with Class 2 and Class 3 imaging rooms.

Modify Section 4 as shown. The remainder of Section 4 is unchanged.

4. ADMINISTRATION AND ENFORCEMENT

[...]

4.2 Requirements Determined by Jurisdiction. Jurisdictions shall comply with Section 4.2 of ANSI/ASHRAE/USGBC/IES Standard 189.1-2017 and Addendum r to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017.

Renumber all subsequent subsections accordingly.

[...]

Modify Section 6 as shown. The remainder of Section 6 is unchanged.

6. WATER USE EFFICIENCY

[...]

6.3.2.3 HVAC Systems and Equipment

Exception to 6.3.2.3(d~~e~~): Air-conditioning units greater than 65,000 Btu/h (19 kW) with a sensible heat ratio of 0.80 or greater.

[...]

Modify Section 7 as shown. The remainder of Section 7 is unchanged.

7. ENERGY EFFICIENCY

[...]

7.3 Mandatory Provisions. When a requirement is provided below, it supersedes the requirement in Standard 189.1. For all other criteria, the building project shall comply with the requirements of Standard 189.1.

~~**7.3.1 General.** Building projects shall be designed to comply with Sections 5.4, 6.4, 7.4, 8.4, 9.4, and 10.4 of Standard 90.1.~~

7.3.1 On-site Renewable Energy Systems

Exceptions to 7.3.1:

4. Building projects that include both:

a. designs showing allocated space and pathways for future installation of on-site photovoltaic systems with a rated capacity of not less than 2 W/ft^2 (22 W/m^2) multiplied by the horizontal projection of the gross roof area over conditioned spaces and semi-heated spaces, and

b. installation of associated electrical infrastructure sized and routed to support the full capacity of the future on-site photovoltaic systems, including electrical equipment and conduit to the future space where the systems are located.

The building gross roof area used for calculation shall be as stated in Section 7.3.2.

~~**7.3.4 Peak Load Reduction. Automated Demand Response.** Peak load reduction capabilities of Standard 189.1 shall not be required.~~

7.3.5 Fault Detection and Diagnostics (FDD):

Exceptions to 7.3.5:

6. Exam rooms, treatment rooms, patient rooms, and resident rooms in healthcare facilities.

7.4 Prescriptive Option. When a requirement is provided below, it supersedes the requirement in Standard 189.1. For all other criteria, the building project shall comply with the requirements of Standard 189.1.

~~7.4.1 General Comprehensive Prescriptive Requirements.~~ When a requirement is provided below, it supersedes the requirement in Standard 189.1. For all other criteria, the building project shall comply with the requirements of Standard 189.1.

Table 7.4.1.1 Renewable Energy Requirement

Building Type	Standard Renewables Approach		Alternate Renewables Approach	
	kBtu/ft²-year	kW/m²-year	kBtu/ft²-year	kW/m²-year
Hospital	40	126	36	113
Residential Health Facility ^a	22	68	20	62
Specialized Outpatient Facility	38	120	34	107
General Outpatient Facility	14	44	13	40

a. Exception: Applicable for new construction only.

[...]

7.4.3.45 Zone Controls. Zone controls shall be provided in accordance with Section 6.5.2.1 of Standard 90.1.

Exception to 7.4.3.45: Ventilation as required to comply with Standard 170.

~~7.4.53.36.1 Fan System Power Limitation.~~ **7.4.53.36.1 Fan System Power Limitation.** Systems shall have fan power limitations as specified in Standard 90.1, Section 6.5.3.1.

7.4.3.67 Exhaust Air Energy Recovery. Each fan system shall have an energy recovery system when the system’s supply airflow rate exceeds the value listed in Standard 90.1, Table 6.5.6.1.

Exception to 7.4.3.67: Exhaust air energy recovery shall not be required for systems or portions thereof that handle hazardous exhaust air, as defined in Standard 170, Section 6.3.2.

[...]

7.5 Performance Option

7.5.1 Annual Energy Cost

a. ~~For a new building project, the proposed building performance cost index shall be determined in accordance with~~ Follow Standard 189.1, Section 7.5.1, “Annual Energy Cost” ~~with the baseline~~ except that building performance factor (BPF) shall be taken from Table 7.5.2A1, below.

b. **Exception to 7.5.1:** For a major renovation, addition, or alteration building project, as defined by Section 4.2, that is not served in whole or in part by a district energy plant, calculate proposed building performance in accordance with ANSI/ASHRAE/IES Standard 90.1, Normative Appendix G, and Standard 189.3, the building project shall have an annual energy cost equal to or less than that achieved by compliance with the applicable Sections 6.3, 7.3, 7.4, and 8.3, which shall supersede Standard 90.1, Normative Appendix G requirements as defined by Section 4.2.

e. ~~Comparisons shall be made using Standard 90.1, Normative Appendix G.~~

7.5.2 Annual Carbon Dioxide Equivalent (CO₂e). Follow Standard 189.1, Section 7.5.2, “Annual Carbon Dioxide Equivalent (CO₂e).” except that PCI target shall be determined in accordance with Standard 189.3, Section 7.5.1, “Annual Energy Cost.”

Exception to 7.5.2: A major renovation, addition, or alteration building project, as defined by Section 4.2.

7.5.2 ~~For a new building project, demonstrate that the proposed design shall have an annual CO₂e is equal to or less than the annual CO₂e of the baseline building performance rating. The proposed design shall have an~~

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annual CO₂e equal to or less than the annual CO₂e of the baseline building design multiplied by one minus the percentage reduction in the building performance factor target determined from Table 7.5.2A using the performance rating method in Standard 90.1, Normative Appendix G. To determine the annual CO₂e for each energy source in the baseline building design and proposed design, the energy consumption shall be multiplied by the CO₂e emission factors from Standard 189.1, Table 7.5.2B.

Table 7.5.12A Energy Cost and CO₂e Building Performance Factors (BPF)

Building Area Type	Climate Zone																
	1A	1B	2A	2B	3A	3B	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
Healthcare/Hospital	0.64 0.60	0.56 0.60	0.60 0.58	0.56 0.54	0.60 0.56	0.56 0.55	0.54 0.55	0.57 0.55	0.53 0.54	0.55 0.54	0.59 0.57	0.52	0.55 0.54	0.57	0.52	0.56 0.57	0.56 0.57
Residential Healthcare Facility	0.73 0.68	0.73 0.70	0.71 0.66	0.69 0.66	0.74 0.69	0.73 0.68	0.68 0.59	0.78 0.74	0.81 0.76	0.81 0.74	0.76 0.70	0.80 0.73	0.81 0.75	0.76 0.68	0.79 0.71	0.74 0.68	0.80 0.72
Specialized Outpatient Facility	0.60	0.60	0.58	0.54	0.56	0.55	0.55	0.55	0.54	0.54	0.57	0.52	0.54	0.57	0.52	0.57	0.57
General Outpatient Facility	0.52	0.57	0.50	0.56	0.53	0.56	0.48	0.51	0.52	0.49	0.51	0.51	0.49	0.52	0.51	0.49	0.51

7.5.3 Zero Energy Performance Index

Exception to 7.5.3: A major renovation, addition, or alteration building project, as defined by Section 4.2.

Modify Section 8 as shown. The remainder of Section 8 is unchanged.

8. INDOOR ENVIRONMENTAL QUALITY (IEQ)

[...]

Exceptions to 8.3.1.2.2:

2. Dedicated outdoor air-conditioning units and direct-expansion-based air-conditioning units serving a residential health care facility delivering a constant rate of conditioned ventilation air.

Informative Note: The unnumbered exception to Section 8.3.1.2.2 in Standard 189.1 also applies and for the purpose of this document is considered Exception 1.

[...]

Exceptions to 8.3.1.10:

2. All rooms in hospitals. All rooms in health care occupancies subject to automatic control of HVAC and lighting as required in Sections 7 and 8.

Informative Note: The unnumbered exception to Section 8.3.1.10~~7~~ in Standard 189.1 also applies and for the purpose of this document is considered Exception 1.

[...]

8.4 Prescriptive Option

8.4.12 Materials

8.4.12.1 Adhesives and Sealants

8.4.12.1.1 Emissions Requirements. Emissions shall be tested in accordance with CDPH/EHLB Standard Method V1.1 and shall meet the limit requirements therein. The determination of emissions shall be

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based on the minimum room volume, clear floor area, natural light, and window-area-to-floor-area ratio of a private patient room as prescribed in the FGI *Guidelines for Design and Construction of ~~Healthcare Facilities~~ Hospitals, Guidelines for Design and Construction of Outpatient Facilities*, or a resident room as prescribed in the FGI *Guidelines for Design and Construction of Residential Health, Care, and Support Facilities*, and provided outdoor air at a rate of 2.0 ach based on Standard 170, Table 7.1.

8.4.12.2 Paints and Coating

8.4.12.2.1 Emissions Requirements. Emissions shall be tested in accordance with CDPH/EHLB Standard Method V1.1 and shall meet the limit requirements therein. The determination of emissions shall be based on the minimum room volume clear floor area, natural light, and window-area-to-floor-area ratio of a private patient room as prescribed in the FGI *Guidelines for Design and Construction of ~~Healthcare Facilities~~ Hospitals, Guidelines for Design and Construction of Outpatient Facilities*, or a resident room as prescribed in the FGI *Guidelines for Design and Construction of Residential Health, Care, and Support Facilities*, and provided outdoor air at a rate of 2.0 ach based on Standard 170, Table 7.1.

8.4.12.3 Floor Covering Materials

8.4.12.3.1 Emissions Requirements. Emissions shall be tested in accordance with CDPH/EHLB Standard Method V1.1 and shall meet the limit requirements therein. The determination of emissions shall be based on the minimum room volume clear floor area, natural light, and window-area-to-floor-area ratio of a private patient room as prescribed in the FGI *Guidelines for Design and Construction of ~~Healthcare Facilities~~ Hospitals, Guidelines for Design and Construction of Outpatient Facilities*, or a resident room as prescribed in the FGI *Guidelines for Design and Construction of Residential Health, Care, and Support Facilities*, and provided outdoor air at a rate of 2.0 ach based on Standard 170, Table 7.1.

8.4.12.5 Furniture Systems and Seating

8.4.12.5.1 Office Furniture

8.4.12.5.2 Patient Room Furniture

8.4.12.5.2.1 Emission Requirements. Emissions shall be tested in accordance with CDPH/EHLB Standard Method V1.1 and shall meet the limit requirements therein. The determination of emissions shall meet the limit requirements therein. The determination of emissions shall be based on the minimum room volume, clear floor area, natural light, and window-area-to-floor-area ratio of a private patient room as prescribed in the FGI *Guidelines for Design and Construction of ~~Healthcare Facilities~~ Hospitals, Guidelines for Design and Construction of Outpatient Facilities*, or a resident room as prescribed in the FGI *Guidelines for Design and Construction of Residential Health, Care, and Support Facilities*, and provided outdoor air at a rate of 2.0 ach based on Standard 170, Table 7.1.

8.4.12.6 Ceiling and Wall Assemblies and Systems

8.4.12.6.1 Emission Requirements. Emissions shall be tested in accordance with CDPH/EHLB Standard Method V1.1 and shall meet the limit requirements therein. The determination of emissions shall meet the limit requirements therein. The determination of emissions shall be based on the minimum room volume, clear floor area, natural light, and window-area-to-floor-area ratio of a private patient room as prescribed in the FGI *Guidelines for Design and Construction of ~~Healthcare Facilities~~ Hospitals, Guidelines for Design and Construction of Outpatient Facilities*, or a resident room as prescribed in the FGI *Guidelines for Design and Construction of Residential Health, Care, and Support Facilities*, and provided outdoor air at a rate of 2.0 ach based on Standard 170, Table 7.1.

[...]

Modify Section 10 as shown. The remainder of Section 10 is unchanged.

10. INDOOR ENVIRONMENTAL QUALITY (IEQ)

[...]

10.3 Mandatory Provisions

10.3.1.2 Building Project Commissioning (Cx) Process. Commissioning shall comply with the provisions of Standard 189.1. See Informative Appendix J, Section J3, for additional information.