ANSI/ASHRAE/ICC/USGBC/IES Addendum v to ANSI/ASHRAE/ICC/USGBC/IES Standard 189.1-2023

Standard for the Design of High-Performance Green Buildings

Except Low-Rise Residential Buildings

The Complete Technical Content of the International Green Construction Code®

Approved by ASHRAE and the American National Standards Institute on December 31, 2025; by the International Code Council and Illuminating Engineering Society on November 17,2025; and by the U.S. Green Building Council on December 8, 2025.

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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 ISSN 1041-2336

SPECIAL NOTE

This American National Standard (ANS) is a national voluntary consensus Standard developed under the auspices of ASHRAE. *Consensus* is defined by the American National Standards Institute (ANSI), of which ASHRAE is a member and which has approved this Standard as an ANS, as "substantial agreement reached by directly and materially affected interest categories. This signifies the concurrence of more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that an effort be made toward their resolution." Compliance with this Standard is voluntary until and unless a legal jurisdiction makes compliance mandatory through legislation.

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.

The Senior Manager of Standards of ASHRAE should be contacted for

a. interpretation of the contents of this Standard,
b. participation in the next review of the Standard,
c. offering constructive criticism for improving the Standard, or
d. permission to reprint portions of the Standard.

(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

Addendum v deletes the material emissions modeling option from Section 8 and the corresponding Normative Appendix C. The project committee is not aware of the emissions modeling method being used by anyone but received feedback from key individuals in the field of emissions testing and modeling that, while well-established calculation methods exist to perform this modeling, the method is not practical given that product manufacturers don't want to share the measured VOC emission factors necessary to do the modeling. Also, many designers lack sufficient knowledge to implement the modeling. Finally, users of the standard can obtain definitive answers regarding the acceptability of interior product emissions via the material emissions reporting path in Section 8.6.1.

This addendum has no impact on the cost of compliance or the stringency of the standard.

Informative Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum v to Standard 189.1-2023

Modify Section 8.6 as shown.

[. . .]

8.6 Material Emissions. The *building project* shall comply with ~~either~~ Section 8.6.1 ~~or Section 8.6.2~~.

[. . .]

Delete Section 8.6.2 as shown.

[. . .]

~~**8.6.2 Materials Emissions Modeling.** The emissions of all the materials listed below and used inside of the *weatherproofing system* and applied on-site shall be modeled for individual VOC concentrations. The sum of each individual VOC concentration from the materials listed below shall be shown to be in compliance with the limits as listed in CDPH/EHLB/Standard Method, Section 4.3, and shall be compared to 100% of its corresponding listed limit. In addition, the modeling for the building shall include, at a minimum, the criteria listed in Normative Appendix C of this standard. Emissions of materials used for modeling VOC concentrations shall be obtained in accordance with the testing procedures of CDPH/EHLB/Standard Method unless otherwise noted below.~~

~~a. Tile, strip, panel, and plank products, including vinyl composition tile, resilient floor tile, linoleum tile, wood floor strips, parquet flooring, laminated flooring, and modular carpet tile~~
~~b. Sheet and roll goods, including broadloom carpet, sheet vinyl, sheet linoleum, carpet cushion, wallcovering, and other fabric~~
~~c. Rigid panel products, including gypsum board, other wall paneling, insulation board, oriented strand board, medium density fiber board, wood structural panel, acoustical ceiling tiles, and particleboard~~
~~d. Insulation products~~
~~e. Containerized products, including adhesives, sealants, paints, other coatings, primers, and other "wet" products~~
~~f. Cabinets, shelves, and worksurfaces that are permanently attached to the building before occupancy. Emissions of these items shall be obtained in accordance with the ANSI/BIFMA M7.1~~
~~g. New office furniture systems and seating installed prior to initial occupancy. Emissions of these items shall be obtained in accordance with the BIFMA M7.1.~~

~~**Exception to 8.6.2:** Salvaged materials that have not been refurbished or refinished within one year prior to installation.~~

[. . .]

Delete Normative Appendix C as shown.

~~**(This is a normative appendix and is part of this standard.)**~~

~~NORMATIVE APPENDIX C~~
~~BUILDING CONCENTRATIONS~~

~~C1. BUILDING CONCENTRATIONS~~

~~Building concentrations shall be estimated based on the following parameters and criteria:~~

~~a. Laboratory-measured volatile organic compound (VOC) emission factors and actual surface area of all materials as described in (b) below.~~
~~b. At minimum, those materials listed in Section 8.6.2(a) through (g) to be installed shall be modeled.~~
~~c. The actual building parameters for volume, average weekly minimum ventilation rate, and ventilated volume fraction for the building being modeled shall be used.~~
~~d. Standard building scenarios or modeling from similar buildings shall not be allowed.~~
~~e. Average weekly minimum air change rates shall be calculated based on the *minimum outdoor airflow* and hours of operation for the specific building being modeled.~~
~~f. Steady-state conditions with respect to emission rates and building ventilation may be assumed.~~
~~g. Zero *outdoor air* concentrations, perfect mixing within the building, and no net losses of VOCs from air due to other effects such as irreversible or net sorption on surfaces (i.e., net sink effects) and chemical reactions may be assumed.~~
~~h. All assumptions shall be clearly stated in the design documents.~~
~~i. The estimated building concentration C_{Bi} (µg/m^3) of each target VOC shall be calculated using Equation 2 of CDPH/EHLB/Standard Method, as shown below. Estimated building concentrations of individual target VOCs with multiple sources shall be added to establish a single total estimated building concentration for individual target VOCs.~~

$$C_{Bi} = (EF_{Ai} \times A_B)/(V_B \times a_B \times 0.9)$$

~~where~~

~~EF_{Ai} = area specific emission rate or emission factor at 96 hours after placing a test specimen in the chamber (14 days total exposure time), µg/m^2-h~~

~~A_B = exposed surface area of the installed material in the building, m^2~~

~~V_B = building volume, m^3~~

~~a_B = average weekly minimum air change rate, 1/h~~

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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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.

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.

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12/25