Public Review Draft

Proposed Addendum w to Standard 189.1-2017

Standard for the Design of High-Performance Green Buildings

Except Low-Rise Residential Buildings

Second Public Review (June 2020)
(Draft Shows Proposed Changes to Current Standard)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHRAE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(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 adds a jurisdictional option for new buildings with less than 100,000 ft^2 of conditioned floor area that are not high-rise to have air tightness verified through whole building air leakage testing. It also updates references to Standard 90.1 to reflect the 2019 version of that standard.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (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 w to 189.1-2017

Add new definitions in Section 3 as follows:

High-rise building: A building with an occupied floor located more than 75 feet (23 m) above the lowest level of fire department vehicle access.

Revise Table 4.2 as follows:

INFORMATIVE TABLE 4.2
REQUIREMENTS DETERMINED BY THE JURISDICTION

SECTION	SECTION TITLE OR DESCRIPTION AND DIRECTIVES	Jurisdictional Requirement
10.3.1.3.5	Building Envelope Airtightness Testing	No

Revise Section 7.3.1.2 as follows:

7.3.1.2 ~~Continuous Air Barrier~~ Air Leakage. The exceptions to the requirement for a *continuous air barrier* in ANSI/ASHRAE/ IES Standard 90.1, Section 5.4.3.1, for specific climate zones and constructions shall not apply. Whole-building pressurization testing shall be conducted in accordance with ASTM E779, ASTM E1827, ASTM E3158, CAN/CGSB-149.10, CAN/CGSB-149.15, or ISO 9972. ~~The testing criteria of Section 10.3.1.3.5(a) shall supersede ANSI/ASHRAE/IES Standard 90.1, Section 5.4.3.1.3(a).~~

Replace Section 10.3.1.3.5 as follows:

~~**10.3.1.3.5 Building Envelope Airtightness.** *Building envelope* airtightness shall comply with ANSI/ASHRAE/IES Standard 90.1, with the following modifications and additions. Air leakage *verification* shall be in accordance with ANSI/ASHRAE/IES Standard 90.1, Section 5.9.2.2:~~

~~a. When implementing the testing option in ANSI/ASHRAE/ IES Standard 90.1, Sections.9.2.2(b) and 5.4.3.1.3(a), whole-building pressurization testing shall meet the following requirements:~~

~~1. It shall be conducted in accordance with ASTM E779, ASTM E1827, CAN/CGSB-149.10, CAN/CGSB-149.15, ISO 9972, or equivalent standard by an independent third party.~~

~~2. The measured air leakage rate of the building envelope shall not exceed 0.25 cfm/ft² (1.25 L/s·m²) under a pressure differential of 0.3 in. of water (75 Pa), with this air leakage rate normalized by the sum of the above- and below-grade building envelope areas of the conditioned and semiheated space.~~

~~3. Section 5.4.3.1.3(a), Exception (1), is not allowed.~~

~~4. Section 5..4.3.1.3(a), Exception (2), is allowed where the measured air leakage rate exceeds 0.25 cfm/ft² (1.25 L/s m²) but does not exceed 0.40 cfm/ft² (2.0 L/s·m²).~~

~~b .When implementing the verification program option in ANSI/ASHRAE/IES Standard 90.1, Section 5.9.2.2(a), the air barrier design review shall be performed by an independent third party.~~

[JO] 10.3.1.3.5 Building Envelope Airtightness Testing. The requirements in this section supersede the requirements in ANSI/ASHRAE Standard 90.1, Section 5.4.3.1.1.

a. For new buildings with a *gross conditioned floor area* of 100,000 ft² (10,000 m²) or less and that are not *high-rise buildings*, an independent third party shall perform whole-building pressurization testing in accordance with ASTM E779, ASTM E1827, ASTM E3158, CAN/CGSB-149.10, CAN/CGSB-149.15, or ISO 9972.
    1) The measured air leakage rate of the building, normalized by the sum of the above-grade and below-grade *building envelope* areas of *conditioned space* and *semiheated space* shall not exceed 0.25 cfm/ft² (1.25L/s m²) under a pressure differential of 0.3 in. of water (75 Pa).
        Exception: Where the measured air leakage rate is between 0.25 cfm/ft² (1.25 L/s m²) and 0.40 cfm/ft² (2.0 L/s m²), an independent third party shall perform a diagnostic evaluation, perform a visual inspection, prepare a report of corrective actions and submit the report in accordance with Exception 2 to Section 5.4.3.1.1 of Standard 90.1.
    2) Where the measured air leakage rate exceeds 0.40 cfm/ft² (2.0 L/s m²), an independent third party shall perform corrective action and repeat the whole-building pressurization testing described in (a) above until the measured air leakage rate complies with the requirements in item 1.

b. For *high-rise buildings*, buildings greater than 100,000 ft² (10,000 m²) of *gross conditioned floor area*, and existing buildings, an independent third party shall perform either the whole building pressurization testing described in (a) above or shall verify the design and installation of the *continuous air barrier* in accordance with ANSI/ASHRAE Standard 90.1, Section 5.9.1.2

Modify Section 11 (Normative References) by inserting the following references under ASTM:

ASTM E3158-18, Standard Test Method for Measuring the Air Leakage Rate of a Large or Multizone Building, 10.3.1.3.5

Notes to reviewers:

- Addendum ao, published on the ASHRAE website, changed section number for continuous air barrier from 7.3.1.1 to 7.3.1.2
- Addendum ac, published on the ASHRAE website, added the new definition *gross conditioned floor area*, also used here.