

Public Review Draft

Proposed Addendum ai to Standard 189.1-2017

Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings

First Public Review Draft (August 2019)
(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.

© July 15, 2019 ASHRAE. This draft is covered under ASHRAE copyright. Permission to reproduce or redistribute all or any part of this document must be obtained from the ASHRAE Manager of Standards, 1791 Tullie Circle, NE, Atlanta, GA 30329. Phone: 404-636-8400, Ext. 1125. Fax: 404-321-5478. E-mail: standards.section@ashrae.org.

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



© 2019 ASHRAE

This draft is covered under ASHRAE copyright. The appearance of any technical data or editorial material in this publication document does not constitute endorsement, warranty, or guaranty by ASHRAE of any product, service, process, procedure, design or the like and ASHRAE expressly disclaims such. Permission to republish or redistribute must be obtained from the MOS.

(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

Section 7.5.3 in ASHRAE Standard 90.1 sets the efficiency of “high capacity” service hot water equipment at 0.90 E_t . While federal minimums and boiler markets have advanced since this provision was introduced into Standard 90.1, this provision has not been updated. Additionally, the commercial committee voted to approve a proposal for the 2021 IECC that updates the high-capacity service hot water efficiency requirement from 0.90 to 0.92 E_t , effectively raising the base code above Standard 189.1.

The underlying requirement from Standard 90.1 has an additional issue in that it is restricted to gas equipment. Addendum ai addresses this issue. It raises the efficiency requirements for gas-fired equipment and adds efficiency requirements for electric equipment. The proposed addendum would set gas efficiency requirements at 0.92 E_t . This improvement can be met without making major technology shifts since achieving the 0.90 E_t already required in 189.1-2017 typically involved the use of condensing technology. Of the 2,782 listed boilers that meet the 1,000,000 Btu/h threshold, 852 meet the existing 90% requirement and 792 meet a requirement of 92% E_t , so market availability will not be a significant limitation. The efficiency levels for other equipment types provide a similar level of increased efficiency over 90.1. The required COP of 2.0 for larger heat pump water heaters is based on a Washington state proposal.

Like Standard 90.1, this addendum maintains an exception for renewable energy, but with an additional option of utilizing waste heat recovery. A second exception is also proposed to preclude double-counting renewable energy used to meet other requirements.

[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 ai to 189.1-2017

Add new Section 7.4.4.2 and renumber subsequent sections

7.4.4.2 Buildings with High-Capacity Service Water-Heating Systems. This section supersedes ANSI/ASHRAE/IES Standard 90.1, Section 7.5.3. New buildings with service water-heating systems with a total installed water-heating input capacity of 1,000,000 Btu/h (300 kW) or greater shall have fuel-burning water-heating equipment with a minimum rated efficiency of 0.92 E_t or 0.92 UEF, or electric water heating equipment with a minimum rated efficiency of 2.4 UEF or 2.0 COP. Multiple units of water-heating equipment are allowed to meet this requirement based on an input-capacity-weighted average of rated efficiency.

© 2019 ASHRAE

This draft is covered under ASHRAE copyright. The appearance of any technical data or editorial material in this publication document does not constitute endorsement, warranty, or guaranty by ASHRAE of any product, service, process, procedure, design or the like and ASHRAE expressly disclaims such. Permission to republish or redistribute must be obtained from the MOS.

Exceptions:

1. Buildings provided with any combination of *on-site renewable energy systems* or waste heat recovery systems capable of providing not less than 25 percent of the total water heating load, not including *on-site renewable energy system* capacity used for compliance with any other section of this Standard.
2. Water heaters installed in individual dwelling units.

7.4.4.23 Insulation for Spa Pools

...