

Public Review Draft

Proposed Addendum au to Standard 189.1-2017

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

First Public Review (February 2020)
(Draft Shows Proposed Changes to Current Standard)

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



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Foreword

The US Department of Energy issued new energy conservation standards for many types of commercial and industrial pumps in January 2016 that go into effect on January 27, 2020. The metric used by DOE is the Pump Energy Index (PEI), and the maximum allowed value for all pumps covered by this rule is 1.0. Pumps with PEIs of 1.0 or less comply with the standard. Based on data shown in the DOE final rule, high efficiency pumps with PEI values less than 0.97 are currently available.

ASHRAE Standard 90.1 has incorporated changes based on the DOE updates, including a new Section 10.4.6, a new Table 10.8-6, and additions to the definitions section. Similar changes are now proposed to align Standard 189.1 with the new DOE and 90.1 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 ~~striking through~~ (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 au to 189.1-2017

Add new definition to Section 3.2 Definitions

Pump Energy Index (PEI): The ratio of the pump energy rating of a given pump type and model divided by the pump energy rating of the same pump type and characteristics minimally compliant with U.S. regulations

Modify the following sections in Section 7 as follows:

7.4.1.1.2 Alternate Renewables Approach: Reduced On-Site Renewable Energy Systems and Higher-Efficiency Equipment. *Building projects* complying with this approach shall comply with the applicable equipment efficiency requirements in Normative Appendix B, the water-heating efficiency requirements in Section 7.4.4.1, equipment efficiency requirements in Section 7.4.7.1, ~~and~~ the applicable ENERGY STAR® requirements in Section 7.4.7.3.2, and the applicable pump efficiency requirements in Section 7.4.7.6 and shall contain *on-site renewable energy systems* that provide the annual energy production equivalent of not less than 4.0 kBtu/ft² (13 kWh/m²) multiplied by the horizontal projection of the *gross roof area* in feet squared (meters squared) for single-story buildings, and not less than 7.0 kBtu/ft² (22 kWh/m²) multiplied by the horizontal projection of the *gross roof area* in feet squared (meters squared) for all other

buildings. The annual energy production shall be the combined sum of all *on-site renewable energy systems*. For equipment listed in Section 7.4.7.3.2 that are also contained in Normative Appendix B, the installed equipment shall comply by meeting or exceeding both requirements. Documentation shall be provided to the *AHJ* that indicates that the *RECs* associated with the *on-site renewable energy system* will be retained and retired by the *owner*. Where the building *owner* does not have ownership of the *RECs* associated with the *on-site renewable energy system*, the *owner* shall obtain and retire an equal or greater quantity of *RECs*.

...

7.4.3.1 Minimum Equipment Efficiencies for the Alternate Renewables Approach. All *building projects* complying with the Alternate Renewables Approach in Section 7.4.1.1.2 shall comply with the applicable equipment efficiency requirements in Normative Appendix B and the applicable ENERGY STAR requirements in Section 7.4.7.3.2. Where equipment efficiency is not defined/listed in Normative Appendix B or in Section 7.4.7.3.2 or in Section 7.4.7.6, the equipment shall meet the minimum efficiency requirements defined/listed in ANSI/ASHRAE/IES Standard 90.1. Specifically, this applies to the following products in ANSI/ASHRAE/IES Standard 90.1:

...

7.4.7.1 Equipment Efficiency for the Alternate Renewables Approach. All *building projects* complying with the Alternate Renewables Approach in Section 7.4.1.1.2 shall comply with the applicable equipment efficiency requirements in Normative Appendix B, ~~and~~ the applicable ENERGY STAR requirements in Section 7.4.7.3.2 and the pump efficiency requirements in Section 7.4.7.6.

...

Add new section in Section 7 as follows:

7.4.7.6 Pump Efficiency. In buildings complying with the Alternate Renewables Approach in Section 7.4.1.1.2, all pumps subject to the requirements of Section 10.4.6 of ASHRAE 90.1 shall have a maximum *Pump Energy Index* no greater than 0.97.

FOR REFERENCE ONLY

Note to reviewers: Section 7.4.1.1 is also modified by addendum b and addendum j. Addendum b has been published on the ASHRAE website. Modifications that reflect the combined impact of addendum b, addendum j, and this addendum, but which do not appear explicitly in either, are shown below in strikethrough/underline. This section is not open for review; it is included for reference only.

7.4.1.1 Renewable Energy Systems. The adjusted renewable energy provided to the project shall be equal to or greater than the *gross conditioned and semi-heated floor areas* of the *building project* in feet squared (meters squared) multiplied by the renewable energy requirement from Table 7.4.1.1. For allocations to multiple tenants within a *building project*, the requirements shall be assigned to each tenant based on the total square footage (square meters) of *gross conditioned and semi-heated floor area* of each tenant space.

Building projects complying with the Alternate Renewables Approach shall comply with the applicable equipment efficiency requirements in Normative Appendix B, the water-heating efficiency requirements in Section 7.4.4.1, equipment efficiency requirements in Section 7.4.7.1, the applicable ENERGY STAR® requirements in Section 7.4.7.3.2, and the applicable pump efficiency requirements in Section 7.4.7.6. For equipment listed in Section 7.4.7.3.2 that are also contained in Normative Appendix B, the installed equipment shall comply by meeting or exceeding both requirements. ~~Section 7.4.1.1.2~~ The Alternate Renewables Approach shall apply only to *building projects* where the sum of the *gross conditioned and semi-heated floor areas* of the *building project* are less than 25,000 ft² (2300 m²).