

ADDENDA

**ANSI/ASHRAE/IES Addendum bt to
ANSI/ASHRAE/IES Standard 90.1-2019**

Energy Standard for Buildings Except Low-Rise Residential Buildings

Approved by ASHRAE and the American National Standards Institute on June 30, 2022, and by the Illuminating Engineering Society on June 10, 2022.

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 (<https://www.ashrae.org/continuous-maintenance>).

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FOREWORD

Addendum bt makes three changes to the standard.

- a. *Section G3.1.3.5 now clarifies that hot-water pumps in the baseline should not be modeled as running when there is no heating load on any of the coils served by the associated hot-water loop. For example, in a multifamily building with PTAC system in the baseline, the baseline hot-water pumps should run only when any of the apartments require heating and not during the entire year.*
- b. *Similarly, Section 3.1.3.10 now specifies that the chilled-water pumps should not be modeled as running when there is no load on the chilled-water loop.*
- c. *Section G3.1.3.19 now clarifies how to determine preheat coil set point for baseline Systems 5 through 8 in cases where zones served by the system have different heating temperature set points.*

Addendum bt impacts an optional performance path in the standard designed to provide increased flexibility and therefore was not subjected to cost effectiveness analysis.

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

Addendum bt to Standard 90.1-2019

Modify Normative Appendix G as shown (I-P and SI).

G3.1.3 System-Specific Baseline HVAC System Requirements. Baseline *HVAC systems* shall conform with provisions in this section, where applicable, to the specified baseline *system* types, as indicated in section headings.

[. . .]

G3.1.3.5 Hot-Water Pumps (Systems 1, 5, 7, 11, and 12). The *baseline building design* hot-water pump power shall be 19 W/gpm (300 W·s/L). The pumping *system* shall be modeled as primary-only with continuous variable flow and a minimum of 25% of the design flow rate. Hot-water pumps shall only be enabled when a load exists on the associated hot-water loop. Hot-water *systems* serving 120,000 ft² (11,000 m²) or more shall be modeled with variable-speed drives, and *systems* serving less than 120,000 ft² (11,000 m²) shall be modeled as riding the pump curve.

[. . .]

G3.1.3.10 Chilled-Water Pumps (Systems 7, 8, 11, 12, and 13). Chilled-water *systems* shall be modeled as primary/secondary *systems* with constant-flow primary loop and variable-flow secondary loop. For *systems* with cooling capacity of 300 tons (1055 kW) or more, the secondary pump shall be modeled with variable-speed drives and a minimum flow of 25% of the design flow rate. Chilled-water pumps shall only be enabled when a load exists on the associated chilled-water loop. For *systems* with less than 300 tons (1055 kW) cooling capacity, the secondary pump shall be modeled as riding the pump curve. The baseline *building design* constant-volume primary pump power shall be modeled as 9 W/gpm (140 W·s/L), and the variable-flow secondary pump power shall be modeled as 13 W/gpm (210 W·s/L) at *design conditions*. For *computer room systems* using *System 11* with an integrated *fluid economizer*, the baseline *building design* primary chilled-water pump power shall be increased by 3 W/gpm (48 W·s/L) for flow associated with the *fluid economizer*.

[. . .]

G3.1.3.19 Preheat Coils (Systems 5 through 8). The baseline *system* shall be modeled with a preheat coil controlled to a fixed *set point* 20°F (11°C) less than the maximum design room-heating temperature set point of the HVAC zones served by the system.

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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