

ADDENDA

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

Energy Standard for Buildings Except Low-Rise Residential Buildings

Approved by the ASHRAE Standards Committee on June 25, 2022; by the ASHRAE Board of Directors on June 29, 2022; by the Illuminating Engineering Society on June 17, 2022; and by the American National Standards Institute on July 29, 2022.

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FOREWORD

Electrical monitoring devices give building owners the tools to evaluate energy usage of their building and allow them to make operational decisions to save energy. Breakdowns and trending data enable building owners to evaluate systems, determine whether equipment is working efficiently or as intended, and evaluate tenant energy usage. Electrical monitoring serves as a tool for assessing whether systems should be reduced based on utility costs over time. Addendum bq includes clarification of the exceptions with a focus on the 10% exception.

Refrigeration is a new category added to be separately metered. In retail space (especially in the food service sector), refrigeration can account for close to 20% of the energy use in a building (per EPA). For commercial or residential buildings, the consumption is below 7%. Based on the 10% exception, these buildings would not require to separately meter refrigeration.

Electrical vehicle stations, renewables, domestic and service water system pumps, and horizontal and vertical transportation systems were reviewed to be separately metered, but they either fall outside the standard's scope or typically are not 10% of the energy use in a building.

There is no direct energy savings measurement from metering or a way to measure cost effectiveness. Rather, it is a tool that is added during construction that helps owners understand their energy usage and gives users the ability to monitor for and troubleshoot system failures and identify energy-wasting loads to reduce energy consumption of the building.

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

Addendum bq to Standard 90.1-2019

Modify Section 8 as shown (I-P and SI).

8.4.3 Electrical Energy Monitoring

8.4.3.1 Monitoring. Measurement devices shall be installed in new *buildings* to monitor the electrical *energy* use for each of the following separately:

- a. Total electrical *energy*
- b. *HVAC systems*
- c. Interior lighting
- d. Exterior lighting
- e. Receptacle circuits
- f. Refrigeration systems

[. . .]

Exception to 8.4.3.1: ~~Up to 10% of the load for each of the~~ Where the design load of any of the categories (b) through (ef) are less than 10% of the whole-building load, these categories shall be allowed to be ~~from other electrical loads~~ combined with other categories.

8.4.3.2 Recording and Reporting. The electrical *energy* use for all loads specified in Section 8.4.3.1 shall be recorded a minimum of every 15 minutes and reported at least hourly, daily, monthly, and annually. The data for each tenant *space* shall be made available to that tenant. In *buildings* with a digital *control system* installed to comply with Section 6.4.3.10, the *energy* use data shall be transmitted to the digital *control system* and graphically displayed. The *system* shall be capable of maintaining all data collected for a minimum of 36 months.

Exceptions to 8.4.3.1 and 8.4.3.2:

1. *Buildings* less than 25,000 ft².
2. Individual tenant *spaces* less than 10,000 ft².
3. *Dwelling units*.
4. *Residential buildings* with less than 10,000 ft² of common area.
5. ~~Critical and Equipment and life-safety~~ branches of NEC NFPA 70 Article 517.

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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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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