ADDENDA

ANSI/ASHRAE Addendum e to
ANSI/ASHRAE Standard 90.4-2019

Energy Standard for Data Centers

Approved by ASHRAE and the American National Standards Institute on October 30, 2020.

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 e adds language to Section 11 intended to clarify how compliance with Standard 90.4 can be achieved through the use of shared systems.

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

Addendum e to Standard 90.4-2019

Modify Section 11.3 as shown.

11.2 Use of Shared *Systems*. Where~~When~~ existing or proposed mechanical and/or electrical *systems* are intended to routinely support the *data center* and other *spaces* (i.e., *spaces* that do or do not meet the definition of a *data center*), the *data center* or *data center addition* may document its compliance using the Annualized *Energy* Performance Method (as described in Sections 6.5 and 8.3). The shared *systems'* future total hourly loads must be determined for a typical year (using TMY3 weather data) to determine what fraction of the total shared *systems'* capacity (for each hour of the typical year) will be used by the *data center* or *data center addition*. The total shared *system* input *energy* is multiplied by the *data center* or *data center addition's* fraction of total *system* capacity for each hour to determine the *data center* or *data center addition's* input *energy* used to show compliance. ~~When spaces covered by ANSI/ASHRAE/IES Standard 90.1 jointly share *systems* with *data centers*, compliance can be demonstrated through the use of the modeling rules in ANSI/ASHRAE/IES Standard 90.1, Section 11, "Energy Cost Budget Method."~~

Informative Notes:

1. Shared mechanical *systems* serving *data centers* and other *spaces* (within the scope of ANSI/ASHRAE/IES Standard 90.1) may or may not be required to provide economizer savings to the non-*data center spaces*. ANSI/ASHRAE Standard 90.4 will not affect that requirement or require that economizer capacity be provided for the portion of a shared *system* serving a *data center* or *data center addition* that otherwise meets ANSI/ASHRAE Standard 90.4 annual *energy* performance targets when calculated as described above.
2. Recovered heat from a *data center* that routinely shares a mechanical *system* with non-*data center spaces* can reduce the *energy* use of non-*data center spaces* that are designed to accept the recovered heat. If the heat required by the non-*data center spaces* is significant, such a relationship can provide *energy* savings far beyond the savings that would be brought by applying an economizer to the *data center addition*.
3. Where spaces covered by ANSI/ASHRAE/IES Standard 90.1 jointly share systems with a data center or data center addition, compliance can be demonstrated through the use of the modeling rules in ANSI/ASHRAE/IES Standard 90.1, Section 11, "Energy Cost Budget Method."

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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