



ADDENDA

**ANSI/ASHRAE Addendum b 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 b clarifies exactly how credit can be taken for renewables. The renewables credit is limited to 5% of the IT load in order to encourage renewable energy while still requiring energy efficient mechanical and electrical systems.

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 b to Standard 90.4-2019

Modify Section 11.2 as shown. (Note: Equations, though not underlined, are new text.)

11.2 Compliance. Compliance with Section 11 shall be demonstrated by complying with all of the following conditions:

[. . .]

- d. The sum of the calculated values of the *annualized MLC* value and the *design ELC* minus the OR Credit shall be equal to or less than the maximum overall *systems* design value. (The sum of the *annualized MLC* value and the *design ELC* value create an overall *systems* design value.)

OR Credit = lesser of 0.05 or

$$\frac{\sum N = 25, 50, 75, 100 \text{OnsiteRenewables}_N}{\sum N = 25, 50, 75, 100 \text{DataCenterITE}_N}$$

OnsiteRenewables_N (kWh) = total annual energy that is produced onsite by renewable energy systems and that is consumed onsite, modeled at a constant ITE load of N% of the design ITE load. Onsite renewables can only be included in the Annualized MLC calculation if the data center owner owns the onsite renewable energy system or has signed a contractual agreement to purchase energy generated by the onsite renewable energy system for at least 10 years. Existing onsite renewables shall not be credited for Standard 90.4 compliance if they have previously received credit under Standard 90.4 or any other energy standard.

DataCenterITE_N (kWh) = total annual energy consumed by the ITE at a constant ITE load of N% of the design ITE load. (Informative Note: For example, DataCenterITE₅₀ for a design ITE load of 1000 kW = 1000 kW × 8760 h × 0.5 = 4,380,000 kWh. ITE energy does not include UPS losses but does include server fan energy.)

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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