

ADDENDA

**ANSI/ASHRAE/IES Addendum aw 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 January 21, 2022, and by the Illuminating Engineering Society on January 18, 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 aw adds the minimum energy efficiency requirements from 42 U.S.C. 6295(ff)(6)(C)(ii) for large-diameter ceiling fans to ASHRAE/IES Standard 90.1 and is consistent with the federal standards.

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 aw to Standard 90.1-2019

Modify Section 3.2 as shown (I-P and SI).

ceiling fan energy index (CFEI): the ratio of the electric input power of a reference *ceiling fan* to the electric input power of the actual *ceiling fan* as calculated per AMCA 208 with the following modifications to the calculations for the reference fan: using an airflow constant (Q_0) of 26,500. cfm (12.507 m³/s), a pressure constant (P_0) of 0.002700 in. of water (0.6719 Pa), and a fan *efficiency* constant (η_0) of 42%.

Modify Section 3.3 as shown (I-P and SI).

CFEI ceiling fan energy index

Modify Section 6 as shown (I-P and SI).

6.4.1.1 Minimum Equipment Efficiencies—Listed Equipment—Standard Rating and Operating Conditions. *Equipment* shown in Tables 6.8.1-1 through 6.8.1-~~21~~²⁰ shall have a minimum performance at the specified rating conditions when tested in accordance with the specified test procedure. Where multiple rating conditions or performance requirements are provided, the *equipment* shall satisfy all stated requirements unless otherwise exempted by footnotes in the table. *Equipment* covered under the Federal Energy Policy Act of 1992 (EPACT) shall have no minimum *efficiency* requirements for operation at minimum capacity or other than standard rating conditions. *Equipment* used to provide *service water-heating* functions as part of a combination *system* shall satisfy all stated requirements for the appropriate *space* heating or cooling category.

Tables are as follows:

[. . .]

u. Table 6.8.1-21, “Ceiling Fan *Efficiency* Requirements”

[. . .]

~~**6.4.1.3 Ceiling Fans.** Large-diameter ceiling fans shall be rated in accordance with 10 CFR 430 Appendix U or AMCA 230. The following data shall be provided:~~

- a. ~~Blade span (blade tip diameter)~~
- b. ~~Rated airflow and power consumption at the maximum speed~~

~~**Informative Note:** See Informative Appendix F for the U.S. Department of Energy requirements for US applications.~~

~~**6.4.1.3.1** The data provided shall meet one of the following requirements:~~

- a. ~~It is determined by an independent laboratory.~~
- b. ~~It is included in a database published by USDOE.~~
- e. ~~It is certified under a program meeting the requirements of Section 6.4.1.5.~~

~~**Exception to 6.4.1.3.1:** Ceiling fans not covered in the scope of 10 CFR Part 430.~~

Table 6.8.1-21 Ceiling Fan Efficiency Requirements^a

Equipment Type	Size Category	Minimum Efficiency^b	Test Procedure^c
<u>Large-diameter ceiling fan for applications outside the U.S.</u>	Blade span >84.5 in. (2.15 m)	<u>CFEI ≥ 1.00 at high (maximum) speed; and</u> <u>CFEI > 1.31 at 40% of high speed or the nearest speed that is not less than 40% of high speed</u>	<u>10 CFR 430 Appendix U or AMCA Standard 230 and AMCA Standard 208</u>

a. The minimum *efficiency* requirements at both high speed and 40% of maximum speed must be met or exceeded to comply with this standard.

b. *Ceiling fans* are regulated in the U.S. as consumer products under 10 CFR 430. For U.S. applications of large-diameter ceiling fans, refer to Informative Appendix F, Table F-6, for the U.S. DOE minimum *efficiency* requirements.

c. Section 12 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.

Add the following table to Appendix F (I-P and SI).

Table F-6 Ceiling Fan Efficiency Requirements for U.S. Applications (see 10 CFR 430)

Equipment Type	Size Category	Minimum Efficiency	Test Procedure
<u>Large-diameter ceiling fan</u>	Blade span >84.5 in. (2.15 m)	<u>CFEI > 1.00 at high (maximum) speed; and</u> <u>CFEI > 1.31 at 40% of high speed or the nearest speed that is not less than 40% of high speed</u>	<u>10 CFR 430 Appendix U</u>

Modify Section 12 as shown (I-P and SI).

12. NORMATIVE REFERENCES

Reference	Title
[...]	
Air Movement and Control Association International (AMCA) 30 West University Drive, Arlington Heights, IL 60004-1806	
ANSI/AMCA Standard 230-15 <u>with errata</u>	Laboratory Methods of Testing Air Circulating Fans for Rating and Certification
[...]	
U.S. Department of Energy (DOE) 1000 Independence Avenue, SW, Washington, DC 20585	
10 CFR Part 430, App U	<u>Uniform Test Method for Measuring the Energy Consumption of Ceiling Fans</u>
[...]	

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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.

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