ADDENDA

ANSI/ASHRAE/IES Addendum a 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 October 30, 2020, and by the Illuminating Engineering Society on October 7, 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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 ISSN 1041-2336

Approved American National Standard
www.ansi.org

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b. participation in the next review of the Standard,
c. offering constructive criticism for improving the Standard, or
d. permission to reprint portions of the Standard.

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FOREWORD

Addendum a to ASHRAE/IES Standard 90.1-2019 establishes minimum fan efficacy requirements for low-power ventilation fans. Additionally, this addendum establishes Standard 62.2 as the reference for determining the minimum ventilation rates for nontransient dwelling units, in accordance with the scope of ASHRAE Standards 62.2 and 62.1.

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 a to Standard 90.1-2019

Add new Section 6.5.3.7 as shown (I-P units).

6.5.3.7 Low Power Fans. Fans that are not covered by Section 6.5.3.6 and having a *fan nameplate electrical input power* of less than 180 W or having a motor *nameplate horsepower* less than 1/12 hp shall meet the fan efficacy requirements of Table 6.5.3.7 at one or more rating points.

Exceptions to 6.5.3.7:

1. Fans in *space*-conditioning *equipment*.
2. Intermittently operating dryer exhaust duct power ventilators, domestic range hoods, and domestic range booster fans.
3. Fans in radon mitigation systems.
4. Fans not covered within the scope of the test methods referenced in Table 6.5.3.7.5. Ceiling fans regulated under 10 CFR 430 Appendix U.

[. . .]

Add new Section 6.5.3.7 (SI units).

6.5.3.7 Low Power Fans. Fans that are not covered by Section 6.5.3.6 and having a *fan nameplate electrical input power* of less than 180 W, or having a motor *nameplate horsepower* less than 62.1 W, shall meet the fan efficacy requirements of Table 6.5.3.7 at one or more rating points.

Exceptions to 6.5.3.7:

1. Fans in *space*-conditioning *equipment*.
2. Intermittently operating dryer exhaust duct power ventilators, domestic range hoods, and domestic range booster fans.
3. Fans in radon mitigation systems.
4. Fans not covered within the scope of the test methods referenced in Table 6.5.3.7.5. Ceiling fans regulated under 10 CFR 430 Appendix U.

[. . .]

Modify Section 6.5.3.8 as shown (I-P and SI units).

6.5.3.~~7~~8 Ventilation Design. The required minimum *outdoor air* rate is the larger of the minimum *outdoor air* rate or the minimum exhaust air rate required by Standard 62.1, Standard 62.2, Standard 170, or applicable codes or accreditation standards. *Outdoor air ventilation systems* shall comply with one of the following:

a. Design minimum *system outdoor air* provided shall not exceed 135% of the required minimum *outdoor air* rate.
b. Dampers, *ductwork*, and *controls* shall be provided that allow the *system* to supply no more than the required minimum *outdoor air* rate with a single *set-point* adjustment.
c. The *system* includes exhaust air *energy* recovery complying with Section 6.5.6.1.

Table 6.5.3.7 Minimum Fan Efficacy for Low-Power Fans

System Type	Minimum Fan Efficacy [a, b], cfm/W	Test Method and Rating Conditions
HRV [c], ERV [d], or other system with exhaust air energy recovery	1.2	CAN/CSA 439-18
Transfer fans; in-line [e] supply or exhaust fan	3.8	ASHRAE Standard 51
Other exhaust fan, <90 cfm	2.8	
Other exhaust fan, ≥90 cfm and ≤200 cfm	3.5	
Other exhaust fan, >200 cfm	4.0	

a. Fan efficacy is the volumetric fan airflow rate divided by total fan motor electrical input power at a specified static pressure difference.
b. Fans shall be tested in accordance with the referenced test method. Fan efficacy shall be reported in the product listing or shall be derived from the fan motor electrical input power and airflow values reported in the product listing or on the label. Fan efficacy for fully ducted HRV or ERV, balanced, and in-line fans shall be determined at a static pressure difference not less than 0.2 in. of water for each airstream. Fan efficacy for other ducted fan systems shall be determined at a static pressure difference not less than 0.1 in. of water.
c. A heat recovery ventilator (HRV) is a mechanically powered ventilating device with separate intake and exhaust airstreams and a heat exchanger to transfer a portion of the sensible energy, heat, from one airstream to the other.
d. An energy recovery ventilator (ERV) is a mechanically powered ventilating device with separate intake and exhaust airstreams and a heat exchanger to transfer a portion of the total energy, heat and moisture, from one airstream to the other.
e. An in-line fan is an exhaust or supply fan installed with ductwork on both the fan inlet and outlet.

Table 6.5.3.7 Minimum Fan Efficacy for Low-Power Fans

System Type	Minimum Fan Efficacy [a, b], cfm/W (L/s/W)	Test Method and Rating Conditions
HRV [c], ERV [d], or other system with exhaust air energy recovery	0.57	CAN/CSA 439-18
Transfer fans; in-line [e] supply or exhaust fan	1.8	ASHRAE Standard 51
Other exhaust fan, <42.5 L/s	1.3	
Other exhaust fan, ≥42.5 L/s and ≤94.4 L/s	1.7	
Other exhaust fan, >94.4 L/s	1.9	

a. Fan efficacy is the volumetric fan airflow rate divided by total fan motor electrical input power at a specified static pressure difference.
b. Fans shall be tested in accordance with the referenced test method. Fan efficacy shall be reported in the product listing or shall be derived from the fan motor electrical input power and airflow values reported in the product listing or on the label. Fan efficacy for fully ducted HRV or ERV, balanced, and in-line fans shall be determined at a static pressure difference not less than 50 Pa for each airstream. Fan efficacy for other ducted fan systems shall be determined at a static pressure difference not less than 25 Pa.
c. A heat recovery ventilator (HRV) is a mechanically powered ventilating device with separate intake and exhaust airstreams and a heat exchanger to transfer a portion of the sensible energy, heat, from one airstream to the other.
d. An energy recovery ventilator (ERV) is a mechanically powered ventilating device with separate intake and exhaust airstreams and a heat exchanger to transfer a portion of the total energy, heat and moisture, from one airstream to the other.
e. An in-line fan is an exhaust or supply fan installed with ductwork on both the fan inlet and outlet.

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

12. NORMATIVE REFERENCES

Reference	Title
ASHRAE **~~1791 Tullie Circle, NE, Atlanta, GA 30329~~** **180 Technology Parkway NW** **Peachtree Corners, GA 30092**	
ANSI/ASHRAE Standard 51-2016	Laboratory Methods Of Testing Fans For Certified Aerodynamic Performance Rating
ANSI/ASHRAE Standard 62.2-2019	Ventilation and Acceptable Indoor Air Quality in Residential Buildings

Modify references to old section numbering as follows (I-P and SI units).

6.3.2 Criteria [. . .]

r. The system shall comply with the demand control ventilation requirements in Section 6.4.3.8 and the ventilation design requirements in Section 6.5.3.~~7~~8.

[. . .]

Exceptions to 11.5.2(d):

1. [. . .]
2. Where the minimum *outdoor air* intake flow in the proposed design is provided in excess of the amount required by Section 6.5.3.~~7~~8, the baseline building design shall be modeled to reflect the minimum amount required by Section 6.5.3.~~7~~8.

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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