

ADDENDA

**ANSI/ASHRAE/IES Addendum bz 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 April 29, 2022, and by the Illuminating Engineering Society on April 27, 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 bz adds language to specify the sensible energy recovery ratio requirement for systems that require only sensible heating energy recovery. (For systems that do not provide humidification, there is no heating energy benefit due to latent energy recovery.)

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

Addendum bz to Standard 90.1-2019

Modify the standard as shown (I-P and SI).

6.5.6 Energy Recovery

6.5.6.1 Exhaust Air Energy Recovery

6.5.6.1.1 Nontransient Dwelling Units. *Nontransient dwelling units* shall be provided with outdoor air energy recovery ventilation systems. For *nontransient dwelling units*, *energy recovery systems* shall result in an *enthalpy recovery ratio* of at least 50% at the cooling design condition ~~and at least 60% at heating design condition.~~

At the heating design condition, energy recovery performance shall be as follows:

- a. Where active humidification is provided to spaces served by the system, energy recovery systems shall result in an enthalpy recovery ratio of at least 60%.
- b. Where active humidification is not provided to spaces served by the system, energy recovery systems shall result in a sensible energy recovery ratio of at least 60%.

The *energy recovery system* shall provide the required *enthalpy recovery ratio or sensible energy recovery ratio* at both heating and cooling *design conditions*, unless one mode is not required for the climate zone by the exceptions below.

Exceptions to 6.5.6.1.1:

1. Nontransient dwelling units in Climate Zone 3C.
2. Nontransient dwelling units with no more than 500 ft² (46 m²) of conditioned floor area in Climate Zone 0, 1, 2, 3, 4C, and 5C.
3. ~~Energy recovery performance~~ Enthalpy recovery ratio requirements at heating design condition in Climate Zones 0, 1, and 2.
4. ~~Enthalpy recovery ratio~~ Enthalpy recovery ratio requirements at cooling design condition in Climate Zones 4, 5, 6, 7, 8.

6.5.6.1.2 Spaces Other than Nontransient Dwelling Units. Each fan *system* serving spaces other than *nontransient dwelling units* shall have an *energy recovery system* where the design supply fan airflow rate exceeds the value listed in Tables 6.5.6.1.2-1 and 6.5.6.1.2-2, based on the climate zone and percentage of *outdoor air* at design airflow conditions. Table 6.5.6.1.2-1 shall be used for all *ventilation systems* that operate less than 8000 hours per year, and Table 6.5.6.1.2-2 shall be used for all *ventilation systems* that operate 8000 or more hours per year.

Exceptions to 6.5.6.1.2:

1. Laboratory *systems* meeting Section 6.5.7.3.
2. *Systems* serving *spaces* that are not cooled and that are heated to less than 60°F (16°C).
3. Heating energy recovery where more than 60% of the *outdoor air* heating energy is provided from *site-recovered energy* or *on-site renewable energy* in Climate Zones 5 through 8.
4. *Energy recovery performance* requirements at heating design condition in Climate Zones 0, 1, and 2.
5. *Enthalpy recovery ratio* requirements at cooling design condition in Climate Zones 3C, 4C, 5B, 5C, 6B, 7, and 8.

6. Where the sum of the airflow rates exhausted and relieved within 20 ft (6 m) of each other is less than 75% of the design outdoor airflow rate, excluding exhaust air that is
 - a. used for another *energy recovery system*,
 - b. not allowed by ASHRAE/ASHE Standard 170 for use in *energy recovery systems* with leakage potential, or
 - c. of Class 4 as defined in ASHRAE Standard 62.1.
7. *Systems* in Climate Zones 0 through 4 requiring dehumidification that employ *series energy recovery* and have a minimum SERR of 0.40.
8. *Systems* expected to operate less than 20 hours per week at the *outdoor air* percentage covered by Table 6.5.6.1.2-1.
9. *Indoor pool dehumidifiers* meeting Section 6.5.6.4.

6.5.6.1.2.1 Minimum Enthalpy Recovery Ratio. *Energy recovery systems* required by this section shall result in an *enthalpy recovery ratio* of at least 50% at the cooling design condition. ~~A 50% *enthalpy recovery ratio* shall mean a change in the enthalpy of the *outdoor air* supply equal to 50% of the difference between the *outdoor air* and entering exhaust air enthalpies at *design conditions*.~~

At the heating design condition, energy recovery performance shall be as follows:

- a. Where active humidification is provided to *spaces* served by the *system*, *energy recovery systems* shall result in an *enthalpy recovery ratio* of at least 50%.
- b. Where active humidification is not provided to *spaces* served by the *system*, *energy recovery systems* shall result in a *sensible energy recovery ratio* of at least 50%.

The *energy recovery system* shall provide the required *enthalpy recovery ratio* or *sensible energy recovery ratio* at both heating and cooling *design conditions*, unless one mode is not required for the climate zone by the exceptions to Section 6.5.6.1.2 below.

[...]

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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