



**BSR/ASHRAE/IES Addendum i
to ANSI/ASHRAE/IES Standard 90.1-2019**

Public Review Draft

Proposed Addendum i to Standard 90.1-2019, Energy Standard for Buildings Except Low-Rise Residential Buildings

**First Public Review (June 2020)
(Draft Shows Proposed Changes to Current Standard)**

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FOREWORD

Foreword:

This addendum proposes a change to Section G3.1.2.10 Exhaust Air Heat Recovery to correct a mistake that was made when ASHRAE 90.1-2013 addendum bm was published. ASHRAE Standard 90.1 does not require systems serving laboratories to comply with prescriptive energy recovery requirements when laboratory exhaust is variable volume. This requirement was in 90.1-2004 and remains relatively unchanged in the current version of the Standard. Prior to the publication of addendum bm, Appendix G rules followed this requirement. The current wording in Appendix G would require a proposed laboratory design with variable flow exhaust and energy recovery to model both heat recovery and variable exhaust in the baseline HVAC system.

The proposed change aligns the baseline requirements of Appendix G with the requirements of laboratory systems from the 2004 version of 90.1.

This change does not change the cost-effectiveness of the standard.

Addendum i to 90.1-2019

Modify the standard as follows (IP and SI Units)

G3.1.2.10 Exhaust Air Energy Recovery

Individual fan *systems* that have both a design supply air capacity of 5000 cfm (2400 L/s) or greater and have a minimum design *outdoor air* supply of 70% or greater shall have an *energy recovery system* with at least 50% *enthalpy recovery ratio*. Fifty percent *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 return air at *design conditions*. Provision shall be made to bypass or *control* the heat recovery system to permit *air economizer* operation, where applicable.

Exceptions to G3.1.2.10

If any of these exceptions apply, exhaust air *energy* recovery shall not be included in the *baseline building design*:

1. *Systems* serving *spaces* that are not cooled and that are heated to less than 60°F (16°C).
2. *Systems* exhausting toxic, flammable, or corrosive fumes or paint or dust. This exception shall only be used if exhaust air *energy* recovery is not used in the *proposed design*.
3. Commercial kitchen hoods (grease) classified as Type 1 by NFPA 96. This exception shall only be used if exhaust air *energy* recovery is not used in the *proposed design*.
4. Heating *systems* in Climate Zones 0 through 3.
5. Cooling *systems* in Climate Zones 3C, 4C, 5B, 5C, 6B, 7, and 8.
6. Where the largest exhaust source is less than 75% of the design *outdoor airflow*. This exception shall only be used if exhaust air *energy* recovery is not used in the *proposed design*.
7. *Systems* requiring dehumidification that employ *energy* recovery in series with the cooling coil. This exception shall only be used if exhaust air *energy* recovery and series-style *energy* recovery coils are not

used in the *proposed design*.

8. Systems serving laboratory HVAC zones with a total laboratory exhaust volume greater than 15000 cfm (2400 L/s).
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