BSR/ASHRAE/IES Addendum aj
to ANSI/ASHRAE/IES Standard 90.1-2022

Public Review Draft

Proposed Addendum aj to Standard 90.1-2022, Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings

Second Public Review (November 2024)
(Draft Shows Proposed Independent Substantive Changes to Previous Public Review Draft)

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FOREWORD

This independent substantive change is in response to comments. There are two changes:

1. The text in Section 6.5.6.4.1 has been modified to make it clear that supplemental heat can operate as long as 100% of the recovered heat is used at that moment.
2. A definition for thermodynamic heat recovery, which uses a refrigerant circuit for exhaust air energy recovery, has been added, and that method has been added as an option in Section 6.5.6.4.2

[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]

Addendum aj to 90.1-2022

Modify Section 6.5.6.4 as follows (IP and SI units):

Add a definition to Section 3.2

heat pump exhaust air energy recovery: Energy recovery based on reversible heat pump technology that employs exhaust air as a heat source or sink by diverting the exhaust air to the DX coil before it is ejected outdoors by means of an additional DX coil integrated in the main refrigerant circuit or a dedicated refrigerant circuit to optimize the free cooling or free heating mode.

6.5.6.4 Energy Recovery for Indoor Pools

6.5.6.4.1 Dehumidification Energy Recovery. Space dehumidification systems using mechanically cooled *indoor pool dehumidifiers* where the total surface area of indoor *pool* water heated to 94ºF (34ºC) or less, is greater than 400 ft^2 (37 m^2), shall be capable of and configured to use condenser heat for *pool* water heating or natatorium space heating. Other equipment for heating indoor *pool* water to 94ºF (34ºC) or less, or for natatorium space heating shall not be used until 100 percent of the available condenser heat rejection energy is being used. ~~consumed.~~

6.5.6.4.2 Exhaust Air Energy Recovery. Ventilation systems for spaces where the design exhaust airflow is greater than the values in Table 6.5.6.4 for the indoor dry bulb air design temperature shall employ an exhaust air energy recovery system that complies with the following:
1. Has energy recovery of at least 50% when calculated at design conditions as the change in the dry-bulb temperature of the outdoor air supply divided by the difference between the outdoor air and entering exhaust air dry-bulb temperatures, expressed as a percentage, or uses *heat pump exhaust air energy recovery*.
2. Does not transfer moisture to the outdoor airstream in the A and C climate zones.

3. Is capable of managing condensate from the exhaust air stream in the A and C climate zones.

Note: Moisture transfer to the outdoor airstream is permitted in Climate Zone 7, Climate Zone 8, and all B climate zones.