



**BSR/ASHRAE/IES Addendum cl
to ANSI/ASHRAE/IES Standard 90.1-2016**

Public Review Draft

**Proposed Addendum cl to
Standard 90.1-2016, Energy
Standard for Buildings Except
Low-Rise Residential Buildings**

**Second Public Review Draft (May 2019)
(Draft Shows Proposed Independent Substantive
Changes to Previous Public Review Draft)**

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ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

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FOREWORD

This addendum corrects the reference that allows VAV budget systems to be modeled with constant volume zones due to minimum air change requirements (such as when required by a healthcare code) and aligns the minimum airflow requirements for VAV boxes in Section 11 with the requirements in Section 6.5.2.1.

This addendum impacts an optional performance path in the standard designed to provide increased flexibility and therefore was not subjected to cost effectiveness analysis.

[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 cl to 90.1-2016

Modify the standard as follows (IP and SI Units)

Table 11.5.2-1 Budget System Descriptions

System No.	System Type	Fan Control	Cooling Type	Heating Type
1	VAV with parallel fan-powered boxes ^a	VAV ^d	Chilled water ^e	Electric resistance
2	VAV with reheat ^b	VAV ^d	Chilled water ^e	Hot-water fossil fuel boiler ^f
3	Packaged VAV with parallel fan-powered boxes ^a	VAV ^d	Direct expansion ^c	Electric resistance
4	Packaged VAV with reheat ^b	VAV ^d	Direct expansion ^c	Hot-water fossil fuel boiler ^f
5	Two-pipe fan coil	Single- or two-speed fan ^{ij}	Chilled water ^e	Electric resistance
6	Water-source heat pump	Single- or two-speed fan ^{ij}	Direct expansion ^c	Electric heat pump and boiler ^g
7	Four-pipe fan-coil	Single- or two-speed fan ^{ij}	Chilled water ^e	Hot-water fossil fuel boiler ^f
8	Packaged terminal heat pump	Single-speed fan ⁱ	Direct expansion ^c	Electric heat pump ^h

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9	Packaged rooftop heat pump	Single- or two-speed fan ^{ij}	Direct expansion ^c	Electric heat pump ^h
10	<i>Packaged terminal air conditioner</i>	Single-speed fan ⁱ	Direct expansion	Hot-water <i>fossil fuel</i> boiler ^d
11	Packaged rooftop air conditioner	Single- or two-speed fan ^{ij}	Direct expansion	<i>Fossil fuel</i> furnace

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- b. **VAV with Reheat:** Minimum volume *set points* for VAV *reheat* boxes shall be the larger of the following: the minimum primary outdoor airflow rate required to meet the Simplified Procedure *ventilation* requirements of ASHRAE Standard 62.1 for the zone or the airflow rate required to comply with applicable codes or accreditation standards, including but not limited to pressure relationships or minimum air change rates. ~~30% of zone peak airflow or the minimum *ventilation* rate, whichever is larger, consistent with Exception 1(a) to Section 6.5.2.1.~~ The supply air temperature for cooling shall be *reset* higher by 5°F under the minimum cooling load conditions.

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