

ADDENDA

**ANSI/ASHRAE/IES Addendum df to
ANSI/ASHRAE/IES Standard 90.1-2022**

Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings

Approved by ASHRAE Standards committee on November 21, 2025; by the American National Standards Institute on December 16, 2025; and by the Illuminating Engineering Society on December 3, 2025.

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FOREWORD

Addendum df updates envelope modeling rules for Section 12 budget design to reflect the current prescriptive requirements in Section 5.

Informative 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 df to Standard 90.1-2022

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

[...]

12.2 Compliance. The proposed *building* design shall comply with all of the following:

- a. Sections 4.2.3, 4.2.4, 5.2.1, 6.2.1, 7.2.1, 8.2.1, 9.2.1, and 10.2.1.

[...]

12.7 Submittals

[...]

12.7.3 Completion Requirements. Completion requirements shall be in compliance with Sections 5.7-~~3~~, 6.7.3, 7.7.3, 8.7.3, 9.7.3, and 10.7.3.

[...]

Table 12.5.1 Modeling Requirements for Calculating Design Energy Cost and Energy Cost Budget

Proposed Design (Column A) Design Energy Cost (DEC)	Budget Building Design (Column B) Energy Cost Budget (ECB)
[...]	
5. Building Envelope	
[...]	<p>The <i>budget building design</i> shall have identical <i>conditioned floor area</i> and identical exterior dimensions and <i>orientations</i> as the <i>proposed design</i>, except as follows:</p> <ol style="list-style-type: none"> <i>Opaque assemblies</i>, such as <i>roof, floors, doors, and walls</i>, shall be modeled as having the same <i>heat capacity</i> as the <i>proposed design</i> but with the minimum <i>U-factor</i> required in Section 5.5 for new <i>buildings</i> or additions and Section 5.1.4 for <i>alterations</i>. Where <i>linear thermal bridges</i> and <i>point thermal bridges</i>, as identified in Sections 5.5.5.1 through 5.5.5.5, are included in the <i>proposed design</i>, they shall be modeled by adjusting the <i>U-factor</i> of the parent assembly in accordance with the default values in Section A10. If the <i>proposed design</i> does not have <i>linear thermal bridges</i> and <i>point thermal bridges</i>, as identified in Sections 5.5.5.1 through 5.5.5.5, they shall not be modeled in the <i>budget building design</i>. If the balcony length in the <i>proposed design</i> exceeds the maximum allowed by Sections 5.5.5.2.2, the area shall be reduced proportionally for each balcony until the limit set in Sections 5.5.5.2.2 is met. The exterior <i>roof surfaces</i> shall be modeled with a solar reflectance and thermal <i>emittance</i> as required in Section 5.5.3.1.4(a). All other <i>roofs</i>, including <i>roofs</i> exempted from the requirements in Section 5.5.3.1.4, shall be modeled the same as the <i>proposed design</i>. The <i>above-grade wall surfaces</i> of <i>buildings</i> shall be modeled with a solar reflectance and thermal <i>emittance</i> as required in Section 5.5.3.2.2 and 5.5.3.2.2(a). All other <i>above-grade walls</i>, including those exempt from the requirements in Section 5.5.3.2.2, shall be modeled the same as the <i>proposed design</i>. No shading projections are to be modeled; <i>fenestration</i> shall be assumed to be flush with the <i>wall</i> or <i>roof</i>. If the <i>fenestration area</i> for new <i>buildings</i> or additions exceeds the maximum allowed by Section 5.5.4.2, the area shall be reduced proportionally along each exposure until the limit set in Section 5.5.4.2 is met. If the <i>vertical fenestration area</i> facing west or east of the <i>proposed design</i> exceeds the area limit set in Section 5.5.4.5 then the <i>energy cost budget</i> shall be generated by simulating the <i>budget building design</i> with its actual <i>orientation</i> and again after rotating the entire <i>budget building design</i> 90, 180, and 270 degrees and then averaging the results. <i>Fenestration U-factor, SHGC, and VT</i> shall be equal to the criteria from Tables 5.5-0 through 5.5-8 for the appropriate climate, and the <i>SHGC</i> shall be equal to the criteria from Tables 5.5-0 through 5.5-8 for the appropriate climate. For portions of those tables where there are no <i>SHGC</i> requirements, the <i>SHGC</i> shall be equal to that determined in accordance with Section C3.6(d). For portions of those tables where there are no <i>VT</i> requirements, the <i>VT</i> shall be equal to that determined in accordance with Section C3.6(d). The <i>fenestration</i> model for <i>building envelope alterations</i> shall reflect the limitations on area, <i>U-factor</i>, and <i>SHGC</i> as described in Section 5.1.4. <i>Skylights</i> shall be included in each <i>thermal block</i> when as required by Section 5.5.4.2.3. <p>Exception: When trade offs are made between an <i>addition</i> and an <i>existing building</i>, as described in the exception to Section 4.2.1.2, the <i>building envelope</i> assumptions for the <i>existing building</i> in the <i>budget building design</i> shall reflect existing conditions prior to any revisions that are part of this permit.</p>
[...]	

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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.

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