



**BSR/ASHRAE/IES Addendum p
to ANSI/ASHRAE/IES Standard 90.1-2025**

Public Review Draft

**Proposed Addendum p to
Standard 90.1-2025, Energy Standard
for Sites and Buildings Except Low-
Rise Residential Buildings**

**First Public Review (August 2026)
(Draft Shows Proposed Changes to Current Standard)**

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(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

This proposed revision to ASHRAE Standard 90.1 addresses the need for improved clarity and consistency within the thermal bridging Section 5.5.5.4, Opaque Wall and Vertical Fenestration Intersection. The current language in this section has led to varied interpretations, and this update intends to provide clearer guidance to users of the standard.

The most significant clarification is the rewording of item (b), which is now identified as an alternative compliance path to item (a). This change is intended to eliminate ambiguity and ensure that all compliance options are clearly understood. Drawings in Informative Appendix K were revised for clarity.

Since the changes are for clarity, there is no cost impact.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~striketrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard 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 changes.]

Addendum p to 90.1-2025

Update Section 5.5.5.4 with the following updates:

5.5.5.4 Opaque Wall and Vertical Fenestration Intersection. *Vertical fenestration shall be installed such that thermal bridges are minimized at the interface between the vertical fenestration and the wall assembly in accordance with one or more of the following:*

a. Vertical Alignment. *~~For vertical fenestration,~~ The plane of the outermost glazing layer of the vertical fenestration shall be vertically aligned with the insulation as follows:*

i. Assembly with Continuous Insulation. *Where the wall assembly has continuous insulation, the plane of the outermost glazing layer shall be vertically aligned within the thickness of or within 2 in. (50 mm) of either face of the continuous insulation layer.*

(Informative Note: See Informative Appendix K, Figures K-6[a] and K-6[b].)

ii. Assembly with Only Cavity Insulation. *~~For vertical fenestration,~~ ~~w~~Where continuous insulation is not present, the outermost glazing layer shall be vertically aligned within the thickness of the wall insulation layer and not more than 2 in. (50 mm) from the exterior side of the outermost insulation layer. (Informative Note: See Informative Appendix K, Figure K-6[c].)*

b. Thermal Continuity. Where the requirements of item (a) above are not met, materials shall be installed from the edge of the frame of the *vertical fenestration* to the *opaque wall* insulation. Such materials shall have one or more of the following properties:

- i. A thermal resistance of R-3.0 (RSI 0.53) or greater;
 - ii. Wood having a thickness of 1.5 in. (38 mm) or greater;
 - iii. A thermal conductivity not greater than 3.0 Btu·in/h·ft²·°F (0.43 W/m·K).
- ~~e. Intersections between vertical fenestration and opaque walls where the surfaces of the rough opening located between the edge of the frame of the vertical fenestration and the opaque wall insulation shall be~~
- ~~1. covered with a material having an R-value not less than R-3, or~~
 - ~~2. covered with wood framing not less than 1.5 in. thick, or~~
 - ~~3. covered with a material having a thermal conductivity of not more than 3.0 Btu·in/ h·ft²·°F.~~
- Informative Note:* See Informative Appendix K, Figures K-6(d), ~~and K-6(e), and K-6(f).~~

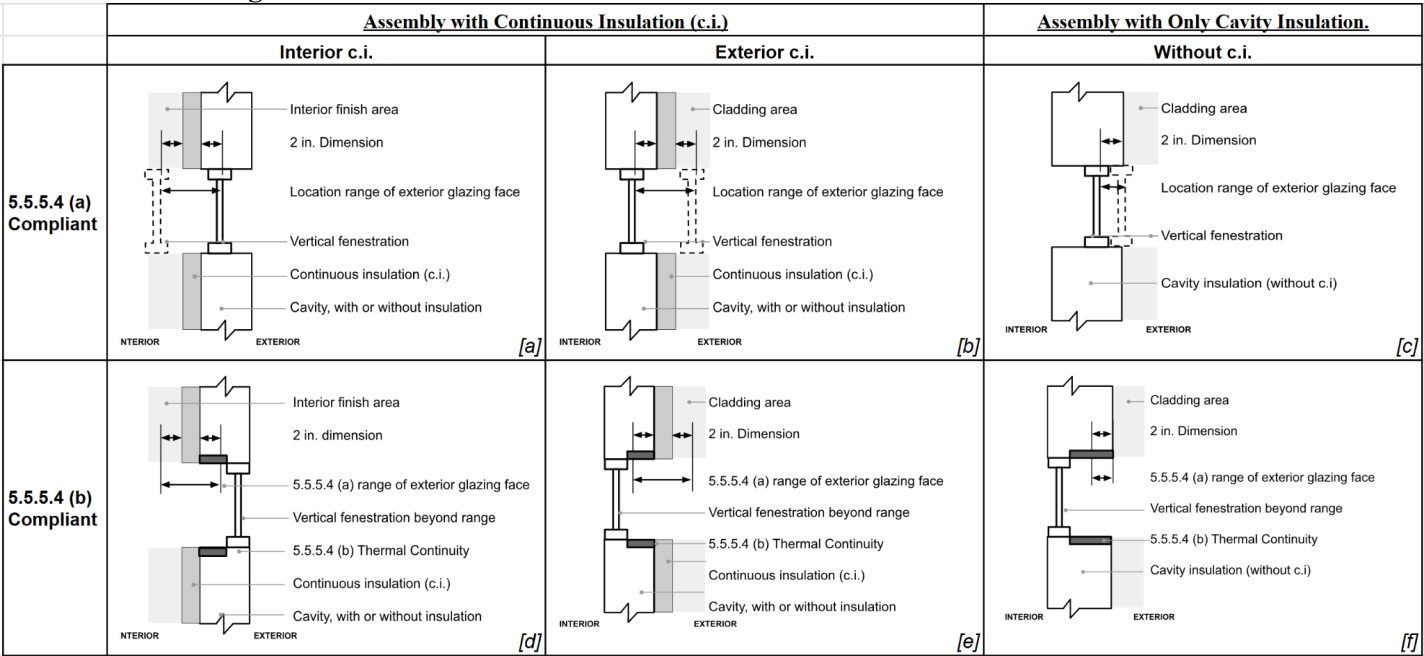
~~d. c. Spandrel Framing Systems.~~ Where ~~Intersections between vertical fenestration and opaque spandrels are~~ in a shared *fenestration* framing system, ~~the framing system shall have include~~ a thermal break ~~having with~~ a thermal conductivity of ~~not greater than 3.6 Btu·in/ h·ft²·°F (0.52 W/m·K) or less.~~

Exception to 5.5.5.4: Intersections between *vertical fenestration* and uninsulated *opaque walls*.

[...]

Update Figure K-6 in Appendix K by removing the old figure and replace with new image;

Figure K-6



Remove existing Figure K-6 (below)

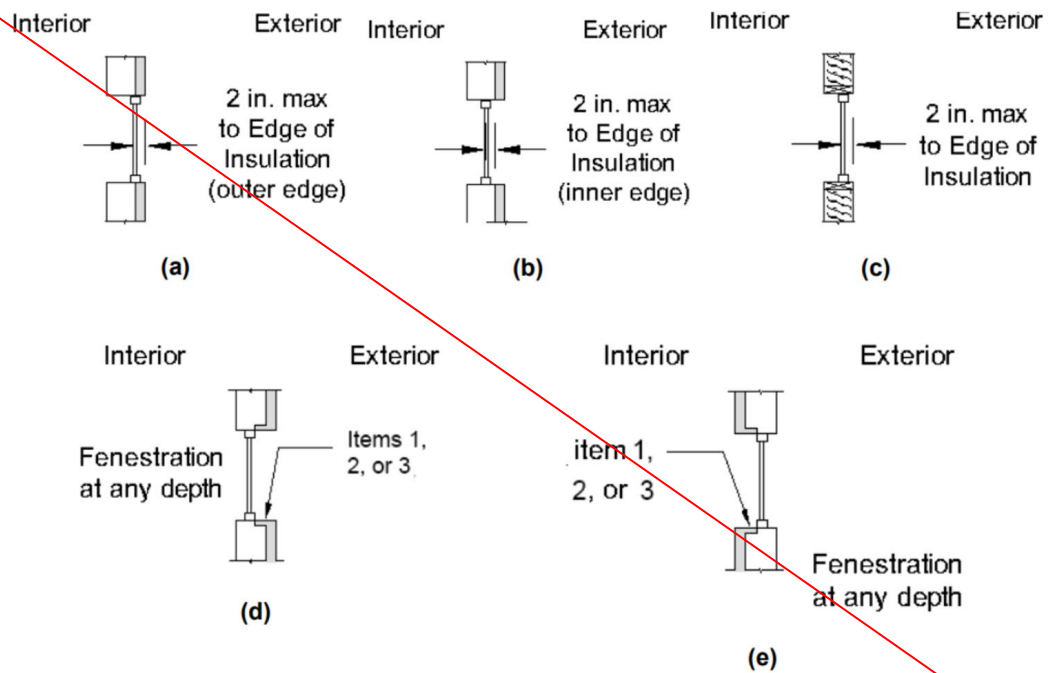


Figure K-6

- a. *Fenestration and continuous insulation* (Section 5.5.5.4[a])
- b. *Fenestration and continuous insulation* (Section 5.5.5.4[a])
- c. *Fenestration and no continuous insulation* (Section 5.5.5.4[b])
- d. *Insulation between fenestration and wall* (Section 5.5.5.4[c], Items [1], [2], or [3])
- e. *Insulation between fenestration and wall* (Section 5.5.5.4[c], Items [1], [2], or [3])