

**INTERPRETATION IC 90.1-2016-12 OF
ANSI/ASHRAE/IES STANDARD 90.1-2016
Energy Standard for Buildings Except Low-Rise Residential Buildings**

Date Approved: October 12, 2019

Request from: Roger Hedrick, NORESCO, 2540 Frontier Ave., Boulder, CO 80301.

Reference: This request for interpretation refers to the requirements presented in ANSI/ASHRAE/IES Standard 90.1-2016, Appendix G Section G3.1, Baseline 5.c, regarding vertical fenestration area.

Background: For *building* area types included in Table G3.1.1-1, *vertical fenestration areas* for new *buildings* and additions shall equal that in Table G3.1.1-1 based on the area of gross *above-grade walls* that separate *conditioned spaces* and *semiheated spaces* from the exterior. . . . The *vertical fenestration* shall be distributed on each face of the *building* in the same proportion as in the *proposed design*.

Compliance with this requirement means that the total vertical fenestration area for a building area type is calculated by multiplying the total area of gross above grade walls (I assume this is a typo and the intent is “total gross area”) by the percentage (misabeled as area) of window for that building area type from Table G3.1.1-1. Then the percentage of the total vertical fenestration area on each face of the proposed building design must be calculated, and used to distribute the total fenestration area (calculated above) in the baseline model.

This process may be problematic in some cases.

Interpretation No.1: In a building with zero vertical fenestration area in the proposed design, it is not clear how the fenestration area is to be distributed in the baseline. My interpretation is that the percentage of fenestration area in the proposed design is equal on each face, and that the baseline must have the total area equally divided among each face and that the vertical fenestration area on each face is independent of the wall area on each face.

Question No.1: Is this interpretation correct?

Answer No.1: No

Comments: Since the language is ambiguous for the case of a building with no windows, your interpretation is one of two approaches that are valid. The other approach would have fenestration areas as an equal percentage of the above grade wall area on each façade. Note also that the reference to “area of gross above-grade walls” in the Section G3.1, Baseline 5.c is intentional and not a typo.

Interpretation No.2: In a building with significantly different wall areas on each face, for example, 45% each on the north and south face and 5% each on the east and west faces, and zero fenestration in the proposed design, or worse, fenestration only on a small face, e.g., on the east

in this example, the process described above may result in vertical fenestration area assigned to a face which exceeds the wall area. My interpretation is that the entire face must then be fenestration with the remaining vertical fenestration area distributed on the other faces as in 1.

Question No.2: Is this interpretation correct?

Answer No.2: Yes