

(Effective until July 1, 2020)

**WAC 51-11C-40231 Section C402.4.1—Maximum area.**

**C402.4.1 Maximum area.** The vertical fenestration area (not including opaque doors and opaque spandrel panels) shall not exceed 30 percent of the gross above-grade wall area. The skylight area shall not exceed 5 percent of the gross roof area.

**C402.4.1.1 Increased vertical fenestration area with daylight responsive controls.** A maximum of 40 percent of the gross above-grade wall area shall be permitted to be vertical fenestration for the purpose of prescriptive compliance with Section C402.1.4 or for the component performance alternative in Section C402.1.5, provided all of the following requirements are met:

1. In buildings not greater than two stories above grade, no less than 50 percent of the conditioned floor area is within a *daylight zone*.

2. In buildings three or more stories above grade, not less than 25 percent of the net floor area is within a *daylight zone*.

3. *Daylight responsive controls* complying with Section C405.2.4.1 are installed in daylight zones.

4. Visible transmittance (VT) of vertical fenestration is greater than or equal to 1.1 times solar heat gain coefficient (SHGC).

EXCEPTION: Fenestration that is outside the scope of NFRC 200 is not required to comply with Item 4.

**C402.4.1.2 Reserved.**

**C402.4.1.3 Increased vertical fenestration area with high-performance fenestration.** The vertical fenestration area (not including opaque doors and opaque spandrel panels) is permitted to exceed 30 percent but shall not exceed 40 percent of the gross above grade wall area, for the purpose of prescriptive compliance with Section C402.1.3 provided that each of the following conditions are met:

1. The vertical fenestration shall have the following U-factors:

a. Nonmetal framing (all) = 0.28

b. Metal framing (fixed) = 0.34

c. Metal framing (operable) = 0.36

d. Metal framing (entrance doors) = 0.60

2. The SHGC of the vertical fenestration shall be less than or equal to 0.35, adjusted for projection factor in compliance with C402.4.3.

An area-weighted average shall be permitted to satisfy the *U*-factor requirement for each fenestration product category listed in Item 1 of this section. Individual fenestration products from different fenestration product categories shall not be combined in calculating the area-weighted average *U*-factor.

The compliance path described in this section is not permitted to be used for the total building performance compliance path in Section C407. The compliance path described in this section is permitted to be used for the component performance alternative in Section C402.1.5, provided that the requirements of Section C402.1.5 are met.

**C402.4.1.4 Increased vertical fenestration area with high-performance mechanical systems.** The vertical fenestration area (not including opaque doors and opaque spandrel panels) is permitted to exceed 30 percent but shall not exceed 40 percent of the gross above-grade wall area, for the purpose of prescriptive compliance with Section C402.1.4 or for the component performance alternative in Section C402.1.5, pro-

vided that the mechanical system complies with all requirements of Section C403.6 Dedicated outdoor air systems (DOAS) without utilizing the exceptions to Section C403.6. This increased glazing fraction is not permitted to be used to establish the reference case for the Total Building Performance compliance path in Section C407.

[Statutory Authority: RCW 19.27A.025, 19.27A.160, and 19.27.074. WSR 16-03-072, § 51-11C-40231, filed 1/19/16, effective 7/1/16. Statutory Authority: RCW 19.27A.025, 19.27A.045, and 19.27.074. WSR 13-23-096, § 51-11C-40231, filed 11/20/13, effective 4/1/14. Statutory Authority: RCW 19.27A.020, 19.27A.025 and chapters 19.27 and 34.05 RCW. WSR 13-04-056, § 51-11C-40231, filed 2/1/13, effective 7/1/13.]

**(Effective July 1, 2020)**

**WAC 51-11C-40231 Section C402.4.1—Maximum area.**

**C402.4.1 Maximum area.** The total building vertical fenestration area (not including opaque doors and opaque spandrel panels) shall not exceed 30 percent of the total building gross above-grade wall area. The skylight area shall not exceed 5 percent of the total building gross roof area (skylight-to-roof ratio).

For buildings with more than one *space conditioning category*, compliance with the maximum allowed window-to-wall ratio and skylight-to-roof ratio shall be demonstrated separately for each *space conditioning category*. Interior partition ceiling, wall, fenestration and floor areas that separate space conditioning areas shall not be applied to the window-to-wall ratio and skylight-to-roof ratio calculations.

**C402.4.1.1 Vertical fenestration maximum area with high performance alternates.** For buildings that comply with Section C402.4.1.1.1 or C402.4.1.1.2, the total building vertical fenestration area is permitted to exceed 30 percent but shall not exceed 40 percent of the gross above grade wall area for the purpose of prescriptive compliance with Section C402.1.4.

When determining compliance using the component performance alternative in accordance with Section C402.1.5, the total building vertical fenestration area allowed in Equation 4-2 is 40 percent of the above grade wall area for buildings that comply with the vertical fenestration alternates described in this section.

**C402.4.1.1.1 Optimized daylighting.** All of the following requirements shall be met:

1. Not less than 50 percent of the total conditioned floor area in the building is within a *daylight zone* that includes *daylight responsive controls* complying with Section C405.2.4.1.

2. Visible transmittance (VT) of all *vertical fenestration* in the building is greater than or equal to 1.1 times the required solar heat gain coefficient (SHGC) in accordance with Section C402.4, or 0.50, whichever is greater. It shall be permitted to demonstrate compliance based on the area weighted average VT being greater than or equal to the area weighted average of the minimum VT requirements.

EXCEPTION: Fenestration that is outside the scope of NFRC 200 is not required to comply with Item 2.

**C402.4.1.1.2 High-performance fenestration.** All of the following requirements shall be met:

1. All *vertical fenestration* in the building shall comply with the following *U*-factors:

a. *U*-factor for Class AW windows rated in accordance with AAMA/CSA101/I.S.2/A440, vertical curtain walls and site-built fenestration products (fixed) = 0.34

b. *U*-factor for Class AW windows rated in accordance with AAMA/CSA101/I.S.2/A440, vertical curtain walls and site-built fenestration products (operable) = 0.36

c. Entrance doors = 0.60

d. *U*-factor for all other vertical fenestration = 0.28

2. The SHGC of the vertical fenestration shall be less than or equal to 0.35, adjusted for projection factor in compliance with C402.4.3.

An area-weighted average shall be permitted to satisfy the *U*-factor requirement for each fenestration product category listed in Item 1 of this section. Individual fenestration products from different fenestration product categories shall not be combined in calculating the area-weighted average *U*-factor.

[Statutory Authority: RCW 19.27A.020, 19.27A.025, 19.27A.160 and chapter 19.27 RCW. WSR 19-24-040, § 51-11C-40231, filed 11/26/19, effective 7/1/20. Statutory Authority: RCW 19.27A.025, 19.27A.160, and 19.27.074. WSR 16-03-072, § 51-11C-40231, filed 1/19/16, effective 7/1/16. Statutory Authority: RCW 19.27A.025, 19.27A.045, and 19.27.074. WSR 13-23-096, § 51-11C-40231, filed 11/20/13, effective 4/1/14. Statutory Authority: RCW 19.27A.020, 19.27A.025 and chapters 19.27 and 34.05 RCW. WSR 13-04-056, § 51-11C-40231, filed 2/1/13, effective 7/1/13.]