

## Errata for the 2018 Washington State Energy Code-Commercial (First Printing)

April 30, 2020

Replace Section C402.1.5.2, page 33, with the following:

**C402.1.5.2 SHGC rate calculations.** Fenestration SHGC values for individual components and/or fenestration are permitted to exceed the SHGC values in Table C402.4 and/or the maximum allowable fenestration areas in Section C402.4.1 where the proposed total SHGCxA is less than the allowable total SHGCxA as determined by Equation 4-3.

$$\text{Proposed Total SHGCxA} \leq \text{Allowable Total SHGCxA} \quad (\text{Equation 4-3})$$

Where:

<b>Proposed Total SHGCxA</b>	=	SHGCxA-glaz-prop + SHGCxA sky-prop
<b>Allowable Total SHGCxA</b>	=	SHGCxA-glaz-allow + SHGCxA-sky-allow
<b>SHGCxA-glaz-prop</b>	=	Sum of (proposed SHGC x proposed area) for each distinct vertical fenestration type
<b>SHGCxA-sky-prop</b>	=	Sum of (proposed SHGC x proposed area) for each distinct skylight type
<b>SHGCxA-glaz-allow</b>	=	Sum of (code maximum vertical fenestration SHGC from Table C402.4, or Section C402.4.1.3 if applicable, x proposed area) for each distinct vertical fenestration type, not to exceed the code maximum area
<b>SHGCxA-sky-allow</b>	=	Sum of (code maximum skylight SHGC from Table C402.4 x proposed area) for each distinct skylight type, not to exceed the code maximum area

If the proposed vertical fenestration area does not exceed the Vertical Fenestration Area allowed, the target area for each vertical fenestration type shall equal the proposed area. If the proposed vertical fenestration area exceeds the Vertical Fenestration Area allowed, the target area of each vertical fenestration element shall be reduced in the base envelope design by the same percentage and the net area of each above-grade wall type increased proportionately by the same percentage so that the total vertical fenestration area is exactly equal to the Vertical Fenestration Area allowed.

If the proposed skylight area does not exceed the Allowable Skylight Area from Section C402.4.1, the target area shall equal the proposed area. If the proposed skylight area exceeds the Allowable Skylight Area from Section C402.4.1, the area of each skylight element shall be reduced in the base envelope design by the same percentage and the net area of each roof type increased proportionately by the same percentage so that the total skylight area is exactly equal to the allowed percentage per Section C402.3.1 of the gross roof area.

**Add the following missing sections to page CE-36:**

**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.

**Update the section references in Section C403.1; replace missing “data center” in Exception 1:**

**C403.1 General.** Mechanical systems and equipment serving heating, cooling, ventilating, and other needs shall comply with this section.

**Exceptions:**

1. Energy using equipment used by a manufacturing, industrial or commercial process other than for conditioning spaces or maintaining comfort and amenities for the occupants and not otherwise regulated by C403.3.2, Tables C403.3.2(1) through (12) inclusive, C403.7.7, C403.9.2.1, C403.10.3, C403.11.2, C403.11.3, C404.2, Table C404.2, C405.8, and C410. Data center and computer room HVAC equipment is not covered by this exception.
2. *Data center systems* are exempt from Sections C403.4 and C403.5.

**Add the missing “Replace” in Section C403.1.3:**

**C403.1.3 Data centers.** *Data center systems* shall comply with Sections 6 and 8 of ASHRAE Standard 90.4, with the following changes:

1. Replace design MLC in ASHRAE Standard 90.4 Table 6.2.1.1 “Maximum Design Mechanical Load Component (Design MLC)” with the following per applicable climate zone:
 

Zone 4C Design MLC = 0.22	Zone 5B Design MLC = 0.24
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2. Replace annualized MLC values of Table 6.2.1.2 “Maximum Annualized Mechanical Load Component (Annualized MLC)” in ASHRAE Standard 90.4 with the following per applicable climate zone:
 

Zone 4C Annual MLC = 0.18	Zone 5B Annual MLC = 0.17
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**Correct Exception 2 for Section C403.9.2.1:**

**C403.9.2.1 Heat recovery for service water heating.** Condenser heat recovery shall be installed for heating or reheating of service hot water provided the facility operates 24 hours a day, the total installed heat capacity of water cooled systems exceeds 1,500,000 Btu/hr of heat rejection, and the design service water heating load exceeds 250,000 Btu/hr.

The required heat recovery system shall have the capacity to provide the smaller of:

1. Sixty percent of the peak heat rejection load at design conditions; or
2. The preheating required to raise the peak service hot water draw to 85°F (29°C).

**Exceptions:**

1. Facilities that employ condenser heat recovery for space heating or reheat purposes with a heat recovery design exceeding 30 percent of the peak water-cooled condenser load at design conditions.
  2. Facilities that provide 60 percent of their service water heating from site recovered energy.
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**Correct Exception 1 for Section C408.1**

**C408.1 General.** A building commissioning process led by a *certified commissioning professional* and functional testing requirements shall be completed for mechanical systems in Section C403; service water heating systems in Section C404; controlled receptacle and lighting control systems in Section C405; equipment, appliance and systems installed to comply with Section C406 or C407; energy metering in Section C409; and refrigeration systems in Section C410.

**Exception:** Buildings, or portions thereof, which are exempt from Sections C408.2 through C408.7 may be excluded from the commissioning process.

1. Mechanical systems are exempt from the commissioning process where the installed total mechanical equipment capacity is less than 240,000 Btu/h cooling capacity and less than 300,000 Btu/h heating capacity.
  2. Service water heating systems are exempt from the commissioning process in buildings where the largest service water heating system capacity is less than 200,000 Btu/h and where there are no pools or permanent spas.
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**General section reference updates:**

Section C403.3.5.1: the references to C403.7.6.1 should be C403.7.6

Section C403.5.3.5: the reference to C403.7.9 should be C403.7.8

Section C403.10.2.2: the reference to C403.2.8 should be C403.10.1

Section C403.10.2.3: the reference to C403.2.8 should be C403.10.1

Table C407.2: the comment for C403.4.8 should read "See C403.7.4"

Appendix A, Section A103.1: the last line should reference footnote i