

**(Effective until March 15, 2024)**

**WAC 51-11C-40310 Section C403.1—General.**

**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 Section C403.3.2, Tables C403.3.2 (1) through (12) inclusive, Sections 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.

**C403.1.1 HVAC total system performance ratio (HVAC TSPR).** For systems serving office, retail, library, and education occupancies and buildings, which are subject to the requirements of Section C403.3.5 without exceptions, the *HVAC total system performance ratio (HVAC TSPR)* of the *proposed design* HVAC system shall be more than or equal to the *HVAC TSPR* of the *standard reference design* as calculated according to Appendix D, Calculation of HVAC Total System Performance Ratio.

EXCEPTIONS: 1. Buildings with conditioned floor area less than 5,000 square feet.  
2. HVAC systems using district heating water, chilled water or steam.  
3. HVAC systems not included in Table D601.11.1.  
4. HVAC systems with chilled water supplied by absorption chillers, heat recovery chillers, water to water heat pumps, air to water heat pumps, or a combination of air and water cooled chillers on the same chilled water loop.  
5. HVAC systems served by heating water plants that include air to water or water to water heat pumps.  
6. Underfloor air distribution HVAC systems.  
7. Space conditioning systems that do not include *mechanical cooling*.  
8. Alterations to existing buildings that do not substantially replace the entire HVAC system.  
9. HVAC systems meeting all the requirements of the *standard reference design* HVAC system in Table D602.11, Standard Reference Design HVAC Systems.

**C403.1.2 Calculation of heating and cooling loads.** Design loads associated with heating, ventilating and air conditioning of the building shall be determined in accordance with the procedures described in AN-SI/ASHRAE/ACCA Standard 183 or by an *approved* equivalent computational procedure, using the design parameters specified in Chapter 3. Heating and cooling loads shall be adjusted to account for load reductions that are achieved where energy recovery systems are utilized in the HVAC system in accordance with the ASHRAE *HVAC Systems and Equipment Handbook* by an *approved* equivalent computational procedure.

**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 the applicable climate zone:

Zone 4C Design MLC = 0.22      Zone 5B Design MLC = 0.24

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

[Statutory Authority: RCW 19.27A.025, 19.27A.045 and chapter 19.27 RCW. WSR 20-21-080, § 51-11C-40310, filed 10/19/20, effective 2/1/21. Statutory Authority: RCW 19.27A.020, 19.27A.025, 19.27A.160 and chapter 19.27 RCW. WSR 19-24-040, § 51-11C-40310, 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-40310, filed 1/19/16, effective 7/1/16. Statutory Authority: RCW 19.27A.020, 19.27A.025 and chapters 19.27 and 34.05 RCW. WSR 13-04-056, § 51-11C-40310, filed 2/1/13, effective 7/1/13.]

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**WAC 51-11C-40310 Section C403.1—General.**

**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 are exempt from all Section C403 subsections except for Section C403.3.2, Tables C403.3.2 (I) through (L) inclusive, Sections C403.3.4.1, C403.3.4.2, C403.3.4.3, C403.7.7, C403.9.2.1, C403.10.3, C403.11.2, and C403.11.3, as applicable. 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.

**C403.1.1 HVAC total system performance ratio (HVAC TSPR).** For systems serving office (including medical office), retail, library, and education occupancies and buildings, which are subject to the requirements of Section C403.3.5 without exceptions, and the dwelling units and residential common areas within Group R-2 multi-family buildings, the *HVAC total system performance ratio (HVAC TSPR)* of the *proposed design* HVAC system shall be greater than or equal to the *HVAC TSPR* of the *standard reference design* as calculated according to Appendix D, Calculation of HVAC Total System Performance Ratio.

EXCEPTIONS: 1. Buildings where the sum of the *conditioned floor area* of office, retail, education, library and multifamily spaces is less than 5,000 square feet. Areas that are eligible for any of the exceptions below do not count towards the 5,000 square feet.  
2. HVAC systems using district heating water, chilled water or steam.  
3. HVAC systems connected to a *low-carbon district energy exchange system*.  
4. HVAC systems not included in Table D601.10.1.  
5. HVAC systems with chilled water supplied by absorption chillers, heat recovery chillers, water to water heat pumps, air to water heat pumps, or a combination of air and water cooled chillers on the same chilled water loop.  
6. HVAC systems included in Table D601.10.1 with parameters in Table D601.10.2 not identified as applicable to that HVAC system type.  
7. HVAC systems served by heating water plants that include air to water or water to water heat pumps.  
8. Underfloor air distribution and displacement ventilation HVAC systems.  
9. Space conditioning systems that do not include *mechanical cooling*.  
10. Alterations to existing buildings that do not substantially replace the entire HVAC system and are not serving initial build-out construction.  
11. HVAC systems meeting all the requirements of the *standard reference design* HVAC system in Table D602.11, Standard Reference Design HVAC Systems.  
12. Buildings or areas of medical office buildings that comply fully with ASHRAE Standard 170 including, but not limited to, surgical centers, or that are required by other applicable codes or standards to provide 24/7 air handling unit operation.  
13. HVAC systems serving the following areas and spaces:  
13.1. Laundry rooms.  
13.2. Elevator machine rooms.  
13.3. Mechanical and electrical rooms.  
13.4. Data centers and computer rooms.  
13.5. Laboratories with fume hoods.  
13.6. Locker rooms with more than two showers.  
13.7. Natatoriums and rooms with saunas.  
13.8. Restaurants and commercial kitchens with total cooking capacity greater than 100,000 Btu/h.  
13.9. Areas of buildings with commercial refrigeration equipment exceeding 100 kW of power input.  
13.10. Cafeterias and dining rooms.

**C403.1.2 Calculation of heating and cooling loads.** Design loads associated with heating, ventilating and air conditioning of the building shall be determined in accordance with the procedures described in ANSI/ASHRAE/ACCA Standard 183 or by an *approved* equivalent computational procedure, using the design parameters specified in Chapter 3. Heating and cooling loads shall be adjusted to account for load reductions that are achieved where energy recovery systems are utilized in the HVAC system in accordance with the ASHRAE *HVAC Systems and Equipment Handbook* by an *approved* equivalent computational procedure.

**C403.1.3 Data centers.** *Data center systems* shall comply with Sections 6 and 8 of ASHRAE Standard 90.4.

[Statutory Authority: RCW 19.27A.020, 19.27A.025, 19.27A.160 and chapters 19.27A and 19.27 RCW. WSR 22-14-091, 23-12-101, and 23-20-021, § 51-11C-40310, filed 7/1/22, 6/7/23, and 9/25/23, effective 3/15/24. Statutory Authority: RCW 19.27A.025, 19.27A.045 and chapter 19.27 RCW. WSR 20-21-080, § 51-11C-40310, filed 10/19/20, effective 2/1/21. Stat-

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