

WAC 51-11C-40100 Section C401—General.

C401.1 Scope. The provisions in this chapter are applicable to commercial buildings and their building sites.

C401.2 Application. Commercial buildings shall comply with the fossil fuel compliance path according to Section C401.3, or with one of the following:

1. Prescriptive compliance. The prescriptive compliance option requires compliance with Sections C402 through C406, and Sections C408, C409, C410, C411, and C412.

2. Total building performance. The total building performance option requires compliance with Section C407.

3. When adopted by the local jurisdiction, the requirements of Appendix F, Outcome-Based Energy Budget, Sections C408, C409, C410, C411, C412 and any specific sections in Table C407.2 as determined by the local jurisdiction. The Proposed Total UA of the proposed building shall be no more than 20 percent higher than the Allowed Total UA as defined in Section C402.1.5.

C401.2.1 Application to existing buildings. Additions, alterations, repairs, and changes of space conditioning, occupancy, or use to existing buildings shall comply with Chapter 5.

C401.2.2 Application to process equipment. Energy using equipment used by a manufacturing, industrial, or commercial process other than for conditioning spaces or maintaining comfort and amenities for the occupants shall comply with Section C401.3.1 Item 2, C403.3.2, Tables C403.3.2(1) through (16) inclusive, Sections C403.3.4.1 through C403.3.4.3, C403.7.7, C403.9.2.1, C403.10.3, C403.11.2, C403.11.3, Table C404.2, and Sections C405.8, C410, and C412.

C401.3 Fossil fuel compliance path. Buildings complying with the fossil fuel compliance path shall comply with the prescriptive compliance path of this code as defined in Item 1 of Section C401.2, and as modified by this Section C401.3.

C401.3.1 Modification of code requirements. For use of this compliance path only, the following changes shall be made to this code:

1. **Section C403.1.4 - Space heating.** Strike the phrase "... or fossil fuel combustion ..." from the first sentence of Section C403.1.4.

2. **Section C404.2.1 - Service water heating.** Revise the first sentence of Section C404.2.1 to read: "Service hot water shall be provided by fossil fuel water heating equipment, electric air-source heat pump water heating equipment, electric resistance water heating equipment, or a combination of these equipment types meeting the requirements of this section."

3. **Section C406.2.5 - Renewable energy.** When determining renewable energy credits in Equation 4-17 of Section C406.2.5, strike the phrase "... limited to 50 percent of the required credits in Section C406.1" in the definition of the factor AEC_{RRa} .

4. **Table C406.2 - Efficiency measure credits.** Use Table C406.2(2) credit values in place of Table C406.2(1) credit values.

C401.3.2 Fossil fuel equipment. Fossil fuel combustion appliances are permitted for HVAC heating, and shall comply with the applicable efficiency standards referenced in Section C403.3.3.2. Fossil fuel combustion appliances are permitted for service water heating, and shall comply with applicable efficiency standards referenced in Table C404.2.

C401.3.3 Additional efficiency credits. The number of additional efficiency credits required by Table C406.1 shall be increased by the number required in Table C401.3.3, modified as permitted in this section, and is in addition to the energy efficiency credits and load management credits required by Section C406.

EXCEPTION: The required number of space heating additional efficiency credits are permitted to be reduced in the following instances:

1. Low energy spaces in accordance with Section C402.1.1.1 and equipment buildings in accordance with Section C402.1.2 that are served by space heating systems shall comply with sufficient measures from Table C406.2(1) or Table C406.2(2) to achieve a minimum of 50 percent of the efficiency credits required for new construction by Table C401.3.3, modified as permitted in this section.
2. Building additions that have less than 1,000 square feet of conditioned floor area and that comply with sufficient measures from Table C406.2(1) or Table C406.2(2) to achieve a minimum of 50 percent of the additional efficiency credits required for additions by Table C401.3.3, modified as permitted in this section.
3. Semi-heated spaces in accordance with Section C402.1.1.2 that comply with sufficient measures from Table C406.2(1) or Table C406.2(2) to achieve a minimum of 50 percent of the space heating additional efficiency credits required by Table C401.3.3, modified as permitted in this section.
4. Unconditioned spaces, open parking garages and unheated enclosed parking garages are not required to achieve the additional efficiency credits for space heating required by Table C401.3.3.

**TABLE C401.3.3
ADDITIONAL CREDITS REQUIRED**

Measure Title	Applicable Section	Occupancy Group					
		Group R-1	Group R-2	Group B	Group E	Group M	All Other
New building - Additional efficiency credits required for space heating systems using the fossil fuel pathway	C401.3.3.1	7	24	101	38	111	56
New building - Additional efficiency credits required for service water heating systems using the fossil fuel pathway	C401.3.3.2	198	212	27	17	79	107
Building additions - Additional efficiency credits required for space heating systems using the fossil fuel pathway	C401.3.3.1	4	12	51	19	56	28
Building additions - Additional efficiency credits required for service water heating systems using the fossil fuel pathway	C401.3.3.2	99	106	14	9	40	54

C401.3.3.1 HVAC credit modification. The number of HVAC heating energy efficiency credits required by Table C401.3.3 is permitted to be decreased according to the following equation:

$$CR = A \times (C - B) / D$$

Where:

- CR = Additional credits required, rounded to the nearest whole number.
- A = Baseline HVAC heating credits from Table C401.3.3.
- B = Installed fossil fuel space heating capacity in kBtu/h of appliances that comply with any of the exceptions to Section C403.1.4.
- C = Total installed fossil fuel space heating capacity in kBtu/h of all HVAC heating appliances.
- D = Total capacity in kBtu/h of all types of space heating appliances.

C401.3.3.2 Service water heating credit modification. The number of service water heating energy efficiency credits required by Table

C401.3.3 is permitted to be decreased according to the following equation:

$$CR = A \times (C - B) / D$$

Where:

- CR = Additional credits required, rounded to the nearest whole number.
- A = Baseline credits from Table C401.3.3.
- B = Installed service water heating appliances capacity in kBTU/h of service water heating appliances that comply with any of the exceptions to Section C404.2.1.
- C = Total installed fossil fuel service water heating capacity in kBTU/h of all service water heating appliances.
- D = Total capacity in kBTU/h of all types of service water heating appliances.

C401.3.4 Renewable energy credit limit. No more than 80 percent of the efficiency credits required by Sections C401.3.3.1 and C401.3.3.2 are permitted to be renewable energy credits defined in Section C406.2.5.

C401.3.5 Discrete area-weighting of additional required credits. In addition to the area-weighted credit requirements in Section C406.1.2, where a building includes multiple occupancies, the additional required credits per Table C401.3.3 shall be determined separately for each occupancy group. Additional required credits shall be prorated on an area-weighted basis for each occupancy group in the same manner as required project credits per Section C406.1.

1. Where a single space heating or service water heating system serves multiple occupancies, the number of additional required credits shall be prorated on an area-weighted basis for each occupancy served.

2. Additional required credits for envelope systems shall be prorated on an area-weighted basis for all occupancies.

3. Occupancies are permitted to be subdivided into discrete areas, with required and achieved credits for each area prorated on an area-weighted basis as required for the occupancy group.

C401.3.6 Electrification readiness. Additionally, the following provisions shall be required for new construction for each fossil fuel space heating or service water heating appliance installed:

1. Provide a spare electrical branch circuit conduit to the location of a future replacement heat pump appliance to support an equivalent heating capacity.

2. Provide spare electrical service entrance conduits for the purpose of upgrading the main electrical service to support all heat pump appliances throughout the building.

3. The main electrical room has sufficient space to accommodate increasing the main electrical service's size to support all heat pump appliances throughout the building.

4. Additional accommodations for the equipment comprised of transformer(s) and other equipment necessary to support an electrical service upgrade. These accommodations shall include adequate space on the site. If the equipment is located in a transformer vault, that vault must include not only the space to support electrical service upgrade but also include accommodations for additional cooling for larger transformer(s).

C401.4 Thermal envelope certificate. A permanent thermal envelope certificate shall be completed by an *approved* party. Such certificate shall be posted on a wall in the space where the space conditioning equipment is located, a utility room or other *approved* location. If located on an electrical panel, the certificate shall not cover or obstruct the visibility of the circuit directory label, service disconnect label, or other required labels. A copy of the certificate shall also be included in the construction files for the project. The certificate shall include:

1. R-values of insulation installed in or on ceilings, roofs, walls, foundations and slabs, crawlspace walls and floors, and ducts outside *conditioned spaces*.

2. U-factors and *solar heat gain coefficients* (SHGC) of fenestration.

3. Results from any building envelope air leakage testing performed on the building.

Where there is more than one value for any component of the building envelope, the certificate shall indicate the area-weighted average value where available. If the area-weighted average is not available, the certificate shall list each value that applies to 10 percent or more of the total component area.

[Statutory Authority: RCW 19.27A.045 and chapter 19.27A RCW. WSR 24-16-147, § 51-11C-40100, filed 8/7/24, effective 9/7/24. Statutory Authority: RCW 19.27A.020, 19.27A.025, 19.27A.160, chapters 19.27A and 19.27 RCW. WSR 24-03-085, § 51-11C-40100, filed 1/16/24, effective 3/15/24; WSR 22-14-091, 23-12-101, and 23-20-021, § 51-11C-40100, filed 7/1/22, 6/7/23, and 9/25/23, effective 3/15/24. Statutory Authority: RCW 19.27A.020, 19.27A.025, 19.27A.160 and chapter 19.27 RCW. WSR 19-24-040, § 51-11C-40100, filed 11/26/19, effective 7/1/20. Statutory Authority: RCW 19.27A.025, 19.27A.045, 19.27A.160, and 19.27.074. WSR 16-24-070, § 51-11C-40100, filed 12/6/16, effective 5/1/17; WSR 16-13-089, § 51-11C-40100, filed 6/15/16, effective 7/16/16. Statutory Authority: RCW 19.27A.025, 19.27A.160, and 19.27.074. WSR 16-03-072, § 51-11C-40100, 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-40100, filed 2/1/13, effective 7/1/13.]