

(Effective until March 15, 2024)

**WAC 51-11R-40520 Section R405.2—Mandatory requirements.**

**R405.2 Mandatory requirements.** Compliance with this section requires compliance with those sections shown in Table R405.2. All supply and return ducts not completely inside the *building thermal envelope* shall be insulated to a minimum of R-8.

**TABLE R405.2  
MANDATORY COMPLIANCE MEASURES FOR SIMULATED PERFORMANCE ALTERNATIVE**

<b>Section</b>	<b>Title</b>	<b>Comments</b>
<b>General</b>		
R401.3	Certificate	
<b>Envelope</b>		
R402.4	Air leakage	
R402.5	Maximum fenestration <i>U</i> -factor	
<b>Systems</b>		
R403.1	Controls	
R403.1.2	Heat pump supplemental heat	
R403.3.2	Sealing	
R403.3.1	Insulation	
R403.3.3	Duct testing	
R403.3.4	Duct leakage	
R403.3.5	Building cavities	
R403.4	Mechanical system piping insulation	
R403.5.1	Heated water circulation and temperature maintenance system	
R403.6	Mechanical ventilation	
R403.7	Equipment sizing and efficiency rating	
R403.8	Systems serving multiple dwelling units	
R403.9	Snow melt system controls	
R403.10	Pool and permanent spa energy consumption	
R403.11	Portable spas	
<b>Electrical Power and Lighting</b>		
R404.1	Lighting equipment	
R404.1.1	Lighting equipment	
R404.2	Electric readiness	
<b>Other Requirements</b>		
R406	Additional energy efficiency requirements	

[Statutory Authority: RCW 19.27A.045 and chapter 19.27A RCW. WSR 22-10-094, § 51-11R-40520, filed 5/3/22, effective 6/3/22. Statutory Authority: RCW 19.27A.020, 19.27A.045, 19.27A.160 and chapter 19.27 RCW. WSR 20-01-047, § 51-11R-40520, filed 12/9/19, effective 7/1/20.

Statutory Authority: RCW 19.27A.020, 19.27A.045 and chapters 19.27 and 34.05 RCW. WSR 13-04-055, § 51-11R-40520, filed 2/1/13, effective 7/1/13.]

**(Effective March 15, 2024)**

**WAC 51-11R-40520 Section R405.2—Performance based compliance.**

**R405.2 Performance based compliance.** Compliance based on total building performance requires the following:

1. The requirements of the sections indicated within Table R405.2(1).

2. For structures less than 1,500 square feet of conditioned floor area, the annual carbon emissions shall be less than or equal to 64 percent of the annual carbon emissions of the *standard reference design*.

3. For structures 1,500 to 5,000 square feet of conditioned floor area, the annual carbon emissions shall be no more than 47 percent of the *standard reference design*.

4. For structures over 5,000 square feet of conditioned floor area, the annual carbon emissions shall be no more than 41 percent of the *standard reference design*.

5. For structures serving Group R-2 occupancies, the annual carbon emissions shall be less than or equal to 61 percent of the annual energy consumption of the *standard reference design*. See Section R401.1 and *residential building* in Section R202 for Group R-2 scope.

Carbon emissions for both the *standard reference design* and the *proposed design* shall be calculated using Table R405.2(2). Energy use derived from simulation analysis shall be expressed in pounds of carbon per square foot of *conditioned floor area*.

**TABLE R405.2(1)  
MANDATORY COMPLIANCE MEASURES FOR TOTAL BUILDING PERFORMANCE**

<b>Section<sup>a</sup></b>	<b>Title</b>	<b>Comments</b>
<b>General</b>		
R401.3	Certificate	
<b>Envelope</b>		
R402.1.1	Vapor retarder	
R402.2.3	Eave baffle	
R402.2.4.1	Access hatches and doors	
R402.2.10.1	Crawlspace wall insulation installations	
R402.4	Air leakage	
R402.5	Maximum fenestration <i>U</i> -factor	
<b>Systems</b>		
R403.1	Controls	
R403.3	Ducts	Except for R403.3.2 and R403.3.3
R403.4	Mechanical system piping insulation	

Section <sup>a</sup>	Title	Comments
R403.5.1	Heated water circulation and temperature maintenance system	
R403.5.3	Drain water heat recovery units	
R403.5.7	Heat pump water heating	
R403.6	Mechanical ventilation	
R403.7	Equipment sizing and efficiency rating	
R403.8	Systems serving multiple dwelling units	
R403.9	Snow melt system controls	
R403.10	Energy consumption of pools and spas	
R403.11	Portable spas	
R403.12	Residential pools and permanent residential spas	
R403.13	Heat pump space heating	
<b>Electrical Power and Lighting</b>		
R404.1	Lighting equipment	
R404.2	Interior lighting controls	

<sup>a</sup> Reference to a code section includes all the relative subsections except as indicated in the table.

**TABLE R405.2 (2)**  
**CARBON EMISSIONS FACTORS**

Type	CO <sub>2</sub> e (lb/unit)	Unit
Electricity	0.44	kWh
Natural gas	11.7	Therm
Oil	19.2	Gallon
Propane	10.5	Gallon
Other <sup>a</sup>	195.00	mmBtu
On-site renewable energy	0.00	

<sup>a</sup> District energy systems may use alternative emission factors supported by calculations *approved* by the *code official*.

[Statutory Authority: RCW 19.27A.020, 19.27A.045, 19.27A.160, and chapter 19.27A RCW. WSR 23-02-060, 23-12-102, and 23-20-022, § 51-11R-40520, filed 1/3/23, 6/7/23, and 9/25/23, effective 3/15/24. Statutory Authority: RCW 19.27A.045 and chapter 19.27A RCW. WSR 22-10-094, § 51-11R-40520, filed 5/3/22, effective 6/3/22. Statutory Authority: RCW 19.27A.020, 19.27A.045, 19.27A.160 and chapter 19.27 RCW. WSR 20-01-047, § 51-11R-40520, filed 12/9/19, effective 7/1/20. Statutory Authority: RCW 19.27A.020, 19.27A.045 and chapters 19.27 and 34.05 RCW. WSR 13-04-055, § 51-11R-40520, filed 2/1/13, effective 7/1/13.]