

AMENDATORY SECTION (Amending WSR 24-03-084, filed 1/16/24,
effective 3/15/24)

OPTION 1

(Option 1 improves thresholds 10% and removes CZ 5 H/ERV requirement from Standard Reference Design)

WAC 51-11R-40520 Section R405.2—~~Performance based~~Simulated
building performance compliance. R405.2 ~~Performance based~~
Simulated building performance compliance. Compliance based on
(~~total~~) simulated building performance requires that a
(~~proposed design meet~~) building comply with all of the
following:

1. The requirements of the sections indicated within Table R405.2.
2. For structures less than 1,500 square feet of conditioned floor area, the annual site energy consumption shall be less than or equal to (~~64~~) (58) percent of the annual site energy consumption of the *standard reference design*.

3. For structures 1,500 to 5,000 square feet of conditioned floor area, the annual site energy consumption shall be no more than ((47)) (42) percent of the *standard reference design*.

4. For structures over 5,000 square feet of conditioned floor area, the annual site energy consumption shall be no more than ((41)) (37) percent of the *standard reference design*.

5. For structures serving Group R-2 occupancies, the annual site energy consumption shall be less than or equal to ((61)) (55) percent of the annual site energy consumption of the *standard reference design*. See Section R401.1 and *residential building* in Section R202 for Group R-2 scope.

Energy use derived from simulation analysis shall be expressed in Btu per square foot of *conditioned floor area* per year.

TABLE R405.2

((~~MANDATORY COMPLIANCE MEASURES FOR TOTAL~~))

REQUIREMENTS FOR SIMULATED BUILDING PERFORMANCE

Section ^a	Title	Comments
General		
R401.3	Certificate	
Envelope		
R402.1.1	Vapor retarder	

Section ^a	Title	Comments
<u>R402.2.2</u>	<u>Attic knee wall</u>	
R402.2.3	Eave baffle	
R402.2.4.1	Access hatches and doors	
<u>R402.2.9</u>	<u>Slab-on-grade floor</u>	
<u>R402.4.5</u>	<u>Combustion air openings</u>	
<u>R402.4.6</u>	<u>Fireplaces</u>	
(R402.4) <u>R402.5</u>	Air leakage	
(R402.5) <u>R402.6</u>	Maximum fenestration <i>U</i> -factor	
<u>R402.7</u>	<u>Roof solar reflectance and thermal emittance</u>	
Systems		
R403.1	Controls	
<u>R403.2</u>	<u>Hot water boiler temperature reset</u>	
R403.3	((Ducts)) <u>Duct systems</u>	Except for (R403.3.2 and R403.3.3) <u>R403.3.2.2</u>
R403.4	Mechanical system piping insulation	
R403.5 ((-1	Heated water circulation and temperature maintenance system)) <u>Service hot water systems</u>	
(R403.5.3	Drain water heat recovery units))	
R403.6	Mechanical ventilation	<u>Except for R403.6.1</u>
R403.7	Equipment sizing and efficiency rating	<u>Except for R403.7.1</u>
R403.8	Systems serving multiple dwelling units	
<u>R403.9.2</u>	Snow <u>and ice</u> melt system controls	
R403.10	Energy consumption of pools and spas	
R403.11	Portable spas	

Section ^a	Title	Comments
R403.12	Residential pools and permanent residential spas	
Electrical Power and Lighting		
R404.1	Lighting equipment	
R404.2	Interior lighting controls	
<u>R404.5</u>	<u>Electric readiness</u>	

^a Reference to a code section includes all the relative subsections except as indicated in the table.

OPTION 2

(Option 1 improves thresholds 8% but makes no other changes within this section)

WAC 51-11R-40520 Section R405.2—~~Performance based~~Simulated
building performance compliance. R405.2 ~~Performance based~~

Simulated building performance compliance. Compliance based on

((total)) simulated building performance requires that a

((proposed design meet)) building comply with all of the

following:

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

2. For structures less than 1,500 square feet of conditioned floor area, the annual site energy consumption shall

be less than or equal to ((64)) (59) percent of the annual site energy consumption of the *standard reference design*.

3. For structures 1,500 to 5,000 square feet of conditioned floor area, the annual site energy consumption shall be no more than ((47)) (43) percent of the *standard reference design*.

4. For structures over 5,000 square feet of conditioned floor area, the annual site energy consumption shall be no more than ((41)) (38) percent of the *standard reference design*.

5. For structures serving Group R-2 occupancies, the annual site energy consumption shall be less than or equal to ((61)) (56) percent of the annual site energy consumption of the *standard reference design*. See Section R401.1 and *residential building* in Section R202 for Group R-2 scope.

Energy use derived from simulation analysis shall be expressed in Btu per square foot of *conditioned floor area* per year.

TABLE R405.2

((~~MANDATORY COMPLIANCE MEASURES FOR TOTAL~~))

REQUIREMENTS FOR SIMULATED BUILDING PERFORMANCE

Section ^a	Title	Comments
General		

Section ^a	Title	Comments
R401.3	Certificate	
Envelope		
R402.1.1	Vapor retarder	
<u>R402.2.2</u>	<u>Attic knee wall</u>	
R402.2.3	Eave baffle	
R402.2.4.1	Access hatches and doors	
<u>R402.2.9</u>	<u>Slab-on-grade floor</u>	
<u>R402.4.5</u>	<u>Combustion air openings</u>	
<u>R402.4.6</u>	<u>Fireplaces</u>	
((R402.4)) <u>R402.5</u>	Air leakage	
((R402.5)) <u>R402.6</u>	Maximum fenestration <i>U</i> -factor	
<u>R402.7</u>	<u>Roof solar reflectance and thermal emittance</u>	
Systems		
R403.1	Controls	
<u>R403.2</u>	<u>Hot water boiler temperature reset</u>	
R403.3	((Ducts)) <u>Duct systems</u>	Except for ((R403.3.2 and R403.3.3)) <u>R403.3.2.2</u>
R403.4	Mechanical system piping insulation	
R403.5 ((+))	Heated water circulation and temperature maintenance system)) <u>Service hot water systems</u>	
((R403.5.3))	Drain water heat recovery units))	
R403.6	Mechanical ventilation	
R403.7	Equipment sizing and efficiency rating	Except for <u>R403.7.1</u>
R403.8	Systems serving multiple dwelling units	
<u>R403.9.2</u>	Snow <u>and ice melt</u> system controls	
R403.10	Energy consumption of pools and spas	

Section ^a	Title	Comments
R403.11	Portable spas	
R403.12	Residential pools and permanent residential spas	
Electrical Power and Lighting		
R404.1	Lighting equipment	
R404.2	Interior lighting controls	
<u>R404.5</u>	<u>Electric readiness</u>	

^a Reference to a code section includes all the relative subsections except as indicated in the table.

OPTION 3

(The R405 values as proposed in Options 1 and 2 do not mirror the R406 change from 3 single-family home size categories to 10. PNNL has confirmed that it is possible to produce these values in time to submit them during the CR-102 public comment period. If placeholder code language is needed to convert the structure to R405 to mimic changes to R406, the following could be used.)

WAC 51-11R-40520 Section R405.2—~~Performance based~~Simulated building performance compliance. R405.2 ~~Performance based~~

Simulated building performance compliance. Compliance based on

~~((total))~~ *simulated building performance* requires that a

~~((proposed design meet))~~ building comply with all of the

following:

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

2. Reserved. ~~For structures less than 1,500 square feet of conditioned floor area, the annual site energy consumption shall be less than or equal to 64 percent of the annual site energy consumption of the standard reference design.~~

3. ~~For structures 1,500 to 5,000 square feet of conditioned floor area, the annual site energy consumption shall be no more than 47 percent of the standard reference design.~~ The annual site energy consumption of the proposed design shall be less than or equal to the corresponding percentage in Table R405.2(2) of the annual site energy consumption of the standard reference design.

4. ~~For structures over 5,000 square feet of conditioned floor area, the annual site energy consumption shall be no more than 41 percent of the standard reference design.~~

5. ~~For structures serving Group R-2 occupancies, the annual site energy consumption shall be less than or equal to 61 percent of the annual site energy consumption of the standard reference design.~~

4. See Section R401.1 and *residential building* in Section R202 for Group R-2 scope.

Energy use derived from simulation analysis shall be expressed in Btu per square foot of *conditioned floor area* per year.

TABLE R405.2(1)

((~~MANDATORY COMPLIANCE MEASURES FOR TOTAL~~))

REQUIREMENTS FOR SIMULATED BUILDING PERFORMANCE

Section^a	Title	Comments
General		
R401.3	Certificate	
Envelope		
R402.1.1	Vapor retarder	
<u>R402.2.2</u>	<u>Attic knee wall</u>	
R402.2.3	Eave baffle	
R402.2.4.1	Access hatches and doors	
<u>R402.2.9</u>	<u>Slab-on-grade floor</u>	
<u>R402.4.5</u>	<u>Combustion air openings</u>	
<u>R402.4.6</u>	<u>Fireplaces</u>	
((R402.4)) <u>R402.5</u>	Air leakage	
((R402.5)) <u>R402.6</u>	Maximum fenestration <i>U</i> -factor	
<u>R402.7</u>	<u>Roof solar reflectance and thermal emittance</u>	
Systems		
R403.1	Controls	
<u>R403.2</u>	<u>Hot water boiler temperature reset</u>	
R403.3	((Ducts)) <u>Duct systems</u>	Except for ((R403.3.2 and R403.3.3)) <u>R403.3.2.2</u>
R403.4	Mechanical system piping insulation	

Section ^a	Title	Comments
R403.5 ((-1	Heated water circulation and temperature maintenance system)) <u>Service hot water systems</u>	
((R403.5.3	Drain water heat recovery units))	
R403.6	Mechanical ventilation	
R403.7	Equipment sizing and efficiency rating	<u>Except for R403.7.1</u>
R403.8	Systems serving multiple dwelling units	
R403.9.2	Snow and ice melt system controls	
R403.10	Energy consumption of pools and spas	
R403.11	Portable spas	
R403.12	Residential pools and permanent residential spas	
Electrical Power and Lighting		
R404.1	Lighting equipment	
R404.2	Interior lighting controls	
<u>R404.5</u>	<u>Electric readiness</u>	

^a Reference to a code section includes all the relative subsections except as indicated in the table.

TABLE R405.2(2)
MAXIMUM ANNUAL SITE ENERGY CONSUMPTION OF PROPOSED DESIGN
RELATIVE TO STANDARD REFERENCE DESIGN

<u>Dwelling Unit Size (ft²)</u>										<u>Group R-2</u>
<u><1,500</u>	<u>1,500-1,749</u>	<u>1,750-1,999</u>	<u>2,000-2,249</u>	<u>2,249-2,499</u>	<u>2,500-2,749</u>	<u>2,750-2,999</u>	<u>3,000-3,249</u>	<u>3,250-3,499</u>	<u>≥3,500</u>	
<u>59%</u>	<u>54%</u>	<u>49%</u>	<u>44%</u>	<u>44%</u>	<u>42%</u>	<u>42%</u>	<u>41%</u>	<u>39%</u>	<u>37%</u>	<u>56%</u>

[Statutory Authority: RCW 19.27A.020, 19.27A.045, 19.27A.160, and chapter 19.27A RCW. WSR 24-03-084, § 51-11R-40520, filed 1/16/24, effective 3/15/24; 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.]