

(Effective until March 15, 2024)

WAC 51-11C-40211 Section C402.1.1—Low energy buildings.

C402.1.1 Low energy buildings, semi-heated buildings and greenhouses. Low energy buildings shall comply with Section C402.1.1.1. Semi-heated buildings and spaces shall comply with Section C402.1.1.2. Greenhouses shall comply with Section C402.1.1.3.

C402.1.1.1 Low energy buildings. The following buildings, or portions thereof, separated from the remainder of the building by *building thermal envelope* assemblies complying with this code shall be exempt from all thermal envelope provision of this code:

1. Those that are heated and/or cooled with a peak design rate of energy usage less than $3.4 \text{ Btu/h} \times \text{ft}^2$ (10.7 W/m^2) or 1.0 watt/ft^2 (10.7 W/m^2) of floor area for space conditioning purposes.
2. Those that do not contain *conditioned space*.
3. Unstaffed equipment shelters or cabinets used solely for personal wireless service facilities.

C402.1.1.2 Semi-heated buildings and spaces. The building envelope of *semi-heated* buildings, or portions thereof, shall comply with the same requirements as that for conditioned spaces in Section C402, except as modified by this section. The total installed output capacity of mechanical space conditioning systems serving a *semi-heated* building or space shall comply with Section C202. Building envelope assemblies separating conditioned space from *semi-heated space* shall comply with exterior envelope insulation requirements. *Semi-heated spaces* heated by mechanical systems that do not include electric resistance heating equipment are not required to comply with the opaque wall insulation provisions of Section C402.2.3 for walls that separate *semi-heated* spaces from the exterior or low energy spaces. *Semi-heated spaces* shall be calculated separately from other conditioned spaces for compliance purposes. Opaque walls in *semi-heated* spaces shall be calculated as fully code compliant opaque walls for both the target and proposed for the Target UA calculations for Component Performance compliance per Section C402.1.5, and for the Standard Reference Design for Total Building Performance compliance per Section C407. The capacity of heat trace temperature maintenance systems complying with Section C404.7.2 that are provided for freeze protection of piping and equipment only shall not be included in the total installed output capacity of mechanical space conditioning systems.

EXCEPTION: Building or space may comply as semi-heated when served by one or more of the following system alternatives:
1. Electric infrared heating equipment for localized heating applications.
2. Heat pumps with cooling capacity permanently disabled, as preapproved by the jurisdiction.

C402.1.1.3 Greenhouses. *Greenhouse* structures or areas that comply with all of the following shall be exempt from the building envelope requirements of this code:

1. Exterior opaque envelope assemblies complying with Sections C402.2 and C402.4.4.

EXCEPTION: Low energy greenhouses that comply with Section C402.1.1.1.

2. Interior partition building thermal envelope assemblies that separate the *greenhouse* from conditioned space complying with Sections C402.2, C402.4.3 and C402.4.4.

3. Nonopaque envelope assemblies complying with the thermal envelope requirements in Table C402.1.1.3. The *U*-factor for the nonopaque roof shall be for the roof assembly or a roof that includes the assembly and an internal curtain system.

EXCEPTION: Unheated greenhouses.

4. No mechanical cooling is provided.

5. For heated greenhouses, heating is provided by a radiant heating system, a condensing natural gas-fired or condensing propane-fired heating system, or a heat pump with cooling capacity permanently disabled as preapproved by the jurisdiction.

**Table C402.1.1.3
Non-Opaque Thermal Envelope Maximum
Requirements**

Component U-Factor BTU/h-ft²-°F	Climate Zone 5 and Marine 4
Non-opaque roof	0.5
Non-opaque SEW wall	0.7
Non-opaque N wall	0.6

[Statutory Authority: RCW 19.27A.025, 19.27A.045 and chapter 19.27 RCW. WSR 20-21-080, § 51-11C-40211, 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-40211, 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-40211, filed 12/6/16, effective 5/1/17. Statutory Authority: RCW 19.27A.025, 19.27A.160, and 19.27.074. WSR 16-03-072, § 51-11C-40211, 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-40211, filed 2/1/13, effective 7/1/13.]

(Effective March 15, 2024)

WAC 51-11C-40211 Section C402.1.1—Low energy buildings.

C402.1.1 Low energy buildings, semi-heated buildings and greenhouses. Low energy buildings shall comply with Section C402.1.1.1. Semi-heated buildings and spaces shall comply with Section C402.1.1.2. Greenhouses shall comply with Section C402.1.1.3.

C402.1.1.1 Low energy buildings. The following buildings, or enclosed portions thereof, separated from the remainder of the building by *building thermal envelope* assemblies complying with this code shall be exempt from all thermal envelope provision of this code:

1. Those that are heated and/or cooled with a peak design rate of energy usage less than 3.4 Btu/h × ft² (10.7 W/m²) or 1.0 watt/ft² (10.7 W/m²) of floor area for space conditioning purposes.
2. Those that do not contain *conditioned space*.
3. Unstaffed equipment shelters or cabinets used solely for personal wireless service facilities.

C402.1.1.2 Semi-heated buildings and spaces. The building envelope of *semi-heated* buildings, or portions thereof, shall comply with the same requirements as that for conditioned spaces in Section C402, except as modified by this section. The total installed output capacity of mechanical space conditioning systems serving a *semi-heated* building or space shall comply with Section C202. Building envelope assemblies separating conditioned space from *semi-heated space* shall comply with

exterior envelope insulation requirements. *Semi-heated spaces* are not required to comply with the opaque wall insulation provisions of Section C402.2.3 for walls that separate *semi-heated spaces* from the exterior or low energy spaces. Fenestration that forms part of the *building thermal envelope* enclosing semi-heated spaces shall comply with Section C402.4. *Semi-heated spaces* shall be calculated separately from other conditioned spaces for compliance purposes.

Opaque walls in *semi-heated spaces* shall be calculated as fully code compliant opaque walls for both the target and proposed for the Target UA calculations for Component Performance compliance per Section C402.1.5, and for the Baseline Building Design for Total Building Performance compliance per Section C407. The capacity of heat trace temperature maintenance systems complying with Section C404.7.2 that are provided for freeze protection of piping and equipment only shall not be included in the total installed output capacity of mechanical space conditioning systems.

EXCEPTION: Provided the total installed heating output capacity of mechanical space conditioning does not exceed the criteria for semi-heated space as defined in Section C202, a semi-heated building or space may comply with this section when served by heat pumps without electric resistance back up and connected to a heating only thermostat.

C402.1.1.3 Greenhouses. *Greenhouse* structures or areas that comply with all of the following shall be exempt from the building envelope requirements of this code:

1. Exterior opaque envelope assemblies complying with Sections C402.2 and C402.4.4.

EXCEPTION: Low energy greenhouses that comply with Section C402.1.1.1.

2. Interior partition building thermal envelope assemblies that separate the *greenhouse* from conditioned space complying with Sections C402.2, C402.4.3 and C402.4.4.

3. Fenestration assemblies complying with the thermal envelope requirements in Table C402.1.1.3. The *U*-factor for the skylight shall be for the roof assembly or a roof that includes the assembly and an internal curtain system.

EXCEPTION: Unheated *greenhouses*.

4. No mechanical cooling is provided.

5. For heated greenhouses, heating is provided by a radiant heating system, a condensing natural gas-fired or condensing propane-fired heating system, or a heat pump with cooling capacity permanently disabled as preapproved by the jurisdiction.

**Table C402.1.1.3
Fenestration Thermal Envelope Maximum Requirements**

Component	<i>U</i> -Factor BTU/h-ft ² -°F
Skylights	0.5
Vertical fenestration	0.6

[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-40211, 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-40211, 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-40211, 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-40211, filed 12/6/16, effective

5/1/17. Statutory Authority: RCW 19.27A.025, 19.27A.160, and 19.27.074. WSR 16-03-072, § 51-11C-40211, 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-40211, filed 2/1/13, effective 7/1/13.]