

(Effective until July 1, 2020)

WAC 51-11C-40214 Section C402.1.4—Assembly U-factor, C-factor, or F-factor-based method.

C402.1.4 Assembly U-factor, C-factor, or F-factor-based method. Building thermal envelope opaque assemblies intended to comply on an assembly U-, C-, or F-factor basis shall have a U-, C-, or F-factor not greater than that specified in Table C402.1.4. Commercial buildings or portions of commercial buildings enclosing Group R occupancies shall use the U-, C-, or F-factor from the "Group R" column of Table C402.1.4. Commercial buildings or portions of commercial buildings enclosing occupancies other than Group R shall use the U-, C-, or F-factor from the "All other" column of Table C402.1.4. The C-factor for the below-grade exterior walls of the building envelope, as required in accordance with Table C402.1.4, shall extend to the level of the lowest conditioned floor. Opaque swinging doors shall comply with Table C402.1.4 and opaque nonswinging doors shall comply with Table C402.1.3 or C402.1.4. The U-factors for typical construction assemblies are included in Appendix A. These values shall be used for all calculations. Where proposed construction assemblies are not represented in Appendix A, values shall be calculated in accordance with the ASHRAE *Handbook—Fundamentals* using the framing factors listed in Appendix A where applicable and shall include the thermal bridging effects of framing materials.

C402.1.4.1 Thermal resistance of cold-formed steel stud walls. U-factors of walls with cold-formed steel studs shall be permitted to be determined in accordance with Equation 4-1:

Equation 4-1:

$$U = 1/[R_s + (ER)]$$

Where:

- R_s** = The cumulative *R-value* of the wall components along the path of heat transfer, excluding the cavity insulation and steel studs.
- ER** = The effective *R-value* of the cavity insulation with steel studs.

[Statutory Authority: RCW 19.27A.025, 19.27A.045, 19.27A.160, and 19.27.074. WSR 16-24-070, § 51-11C-40214, 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-40214, 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-40214, filed 2/1/13, effective 7/1/13.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency.

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WAC 51-11C-40214 Section C402.1.4—Assembly U-factor, C-factor, or F-factor-based method.

C402.1.4 Assembly U-factor, C-factor, or F-factor-based method. Building thermal envelope opaque assemblies shall meet the requirements of

Section C402.2 based on the climate zone specified in Chapter 3. Building thermal envelope opaque assemblies intended to comply on an assembly *U*-, *C*-, or *F*-factor basis shall have a *U*-, *C*-, or *F*-factor not greater than that specified in Table C402.1.4. Commercial buildings or portions of commercial buildings enclosing Group R occupancies shall use the *U*-, *C*-, or *F*-factor from the "Group R" column of Table C402.1.4. Commercial buildings or portions of commercial buildings enclosing occupancies other than Group R shall use the *U*-, *C*-, or *F*-factor from the "All other" column of Table C402.1.4. The *U*-factors for typical construction assemblies are included in Appendix A. These values shall be used for all calculations. Where proposed construction assemblies are not represented in Appendix A, values shall be calculated in accordance with the ASHRAE *Handbook—Fundamentals* using the framing factors listed in Appendix A where applicable and shall include the thermal bridging effects of framing materials.

C402.1.4.1 Thermal resistance of cold-formed steel stud walls. *U*-factors of walls with cold-formed steel studs shall be permitted to be determined in accordance with Equation 4-1:

Equation 4-1:

$$U = 1/[R_s + (ER)]$$

Where:

- R_s* = The cumulative *R-value* of the wall components along the path of heat transfer, excluding the cavity insulation and steel studs.
- ER* = The effective *R-value* of the cavity insulation with steel studs.

[Statutory Authority: RCW 19.27A.020, 19.27A.025, 19.27A.160 and chapter 19.27 RCW. WSR 19-24-040, § 51-11C-40214, 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-40214, 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-40214, 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-40214, filed 2/1/13, effective 7/1/13.]

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