

(Effective until July 1, 2020)

WAC 51-11R-40211 Table R402.1.1—Insulation and fenestration requirements by component.

**TABLE R402.1.1
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT^a**

Climate Zone	Fenestration U-Factor ^b	Skylight ^b U-Factor	Glazed Fenestration SHGC ^{b, e}	Ceiling R-Value ^k	Wood Frame Wall ^{g, m, n} R-Value	Mass Wall R-Value ⁱ	Floor R-Value	Below-Grade ^{c, m} Wall R-Value	Slab ^d R-Value & Depth
5 and Marine 4	0.30	0.50	NR	49	21 int	21/ 21	30	10/15/ 21int+TB	10, 2 ft

- For SI: 1 foot = 304.8 mm, ci = continuous insulation, int = intermediate framing.
- ^a R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the compressed R-value of the insulation from Appendix Table A101.4 shall not be less than the R-value specified in the table.
- ^b The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
- ^c "10/15/21+TB" means R-10 continuous insulation on the exterior of the wall, or R-15 on the continuous insulation on the interior of the wall, or R-21 cavity insulation plus a thermal break between the slab and the basement wall at the interior of the basement wall. "10/15/21+TB" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the wall. "TB" means thermal break between floor slab and basement wall.
- ^d R-10 continuous insulation is required under heated slab on grade floors. See R402.2.9.1.
- ^e There are no SHGC requirements in the Marine Zone.
- ^f Reserved.
- ^g Reserved.
- ^h Reserved.
- ⁱ The second R-value applies when more than half the insulation is on the interior of the mass wall.
- ^j Reserved.
- ^k For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R-38.
- ^l Reserved.
- ^m Int. (intermediate framing) denotes standard framing 16 inches on center with headers insulated with a minimum of R-10 insulation.
- ⁿ Log and solid timber walls with a minimum average thickness of 3.5 inches are exempt from this insulation requirement.

[Statutory Authority: RCW 19.27A.025, 19.27A.045, 19.27A.160, and 19.27.074. WSR 17-10-063, § 51-11R-40211, filed 5/2/17, effective 6/2/17. Statutory Authority: RCW 19.27A.020, 19.27A.045, 19.27A.160, and 19.27.074. WSR 16-02-127, § 51-11R-40211, filed 1/6/16, effective 7/1/16. Statutory Authority: RCW 19.27A.025, 19.27A.045, and 19.27.074. WSR 13-20-121, § 51-11R-40211, filed 10/1/13, effective 11/1/13. Statutory Authority: RCW 19.27A.020, 19.27A.045 and chapters 19.27 and 34.05 RCW. WSR 13-04-055, § 51-11R-40211, filed 2/1/13, effective 7/1/13.]

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Climate Zone	Fenestration U-Factor ^b	Skylight ^b U-Factor	Ceiling R-Value ^e	Wood Frame Wall ^{g, h} R-Value	Floor R-Value	Below-Grade ^{c, h} Wall R-Value	Slab ^{d, f} R-Value & Depth
5 and Marine 4	0.30	0.50	49	21 int	30	10/15/ 21int+5TB	10, 2 ft

- For SI: 1 foot = 304.8 mm, ci = continuous insulation, int = intermediate framing.
- ^a R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the compressed R-value of the insulation from Appendix Table A101.4 shall not be less than the R-value specified in the table.
- ^b The fenestration U-factor column excludes skylights.
- ^c "10/15/21+5TB" means R-10 continuous insulation on the exterior of the wall, or R-15 on the continuous insulation on the interior of the wall, or R-21 cavity insulation plus a thermal break between the slab and the basement wall at the interior of the basement wall. "10/15/21+5TB" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the wall. "TB" means R-5 thermal break between floor slab and basement wall.
- ^d R-10 continuous insulation is required under heated slab on grade floors. See Section R402.2.9.1.

^e For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R38 if the full insulation depth extends over the top plate of the exterior wall.

^f R-7.5 continuous insulation installed over an existing slab is deemed to be equivalent to the required perimeter slab insulation when applied to existing slabs complying with Section R503.1.1. If foam plastic is used, it shall meet the requirements for thermal barriers protecting foam plastics.

^g For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for *climate zone 5* of ICC 400.

^h Int. (intermediate framing) denotes framing and insulation as described in Section A103.2.2 including standard framing 16 inches on center, 78 percent of the wall cavity insulated and headers insulated with a minimum of R-10 insulation.

[Statutory Authority: RCW 19.27A.020, 19.27A.045, 19.27A.160 and chapter 19.27 RCW. WSR 20-01-047, § 51-11R-40211, filed 12/9/19, effective 7/1/20. Statutory Authority: RCW 19.27A.025, 19.27A.045, 19.27A.160, and 19.27.074. WSR 17-10-063, § 51-11R-40211, filed 5/2/17, effective 6/2/17. Statutory Authority: RCW 19.27A.020, 19.27A.045, 19.27A.160, and 19.27.074. WSR 16-02-127, § 51-11R-40211, filed 1/6/16, effective 7/1/16. Statutory Authority: RCW 19.27A.025, 19.27A.045, and 19.27.074. WSR 13-20-121, § 51-11R-40211, filed 10/1/13, effective 11/1/13. Statutory Authority: RCW 19.27A.020, 19.27A.045 and chapters 19.27 and 34.05 RCW. WSR 13-04-055, § 51-11R-40211, filed 2/1/13, effective 7/1/13.]