

WAC 51-11C-61015 Section A101.5—Building materials.

A101.5 Building materials. Default R-values used for building materials shall be as shown in Table A101.5.

**Table A101.5
Default R-values for Building Materials**

Material	Nominal Size (in.)	Actual Size (in.)	R-Value (Heat Capacity^c)
Air cavity (unventilated), between metal studs at 16 inches on center ^a	-	-	0.79
Air cavity (unventilated), all other depths and framing materials ¹	-	-	0.91
Airfilm, exterior surfaces ^b	-	-	0.17
Airfilm, interior horizontal surfaces, heat flow up ^b	-	-	0.61
Airfilm, interior horizontal surfaces, heat flow down ^b	-	-	0.92
Airfilm, interior vertical surfaces ^b	-	-	0.68
Brick at R-0.12/in. (face brick, 75% solid/25% core area, 130 lbs/ft ³)	4	3.5	0.32 (5.9)
Carpet and rubber pad	-	-	1.23
Concrete ^c at R-0.0625/in., heavyweight (144 lbs/ft ³)	-	2	0.13 (HC-4.8)
	-	4	0.25 (HC-9.6)
	-	6	0.38 (HC-14.4)
	-	8	0.50 (HC-19.2)
	-	10	0.63 (HC-24.0)
	-	12	0.75 (HC-28.8)
Concrete masonry units, solid grouted, lightweight (95 lbs/ft ³)	6	-	0.80 (HC-11.4)
Concrete masonry units, solid grouted, normal weight (135 lbs/ft ³)	6	-	0.51 (HC-13.2)
Concrete masonry units, partly grouted, lightweight (95 lbs/ft ³)	6	-	1.33 (HC-6.7)
Concrete masonry units, partly grouted, normal weight (135 lbs/ft ³)	6	-	0.82 (HC-9.0)
Concrete masonry units, solid grouted, lightweight (95 lbs/ft ³)	8	-	1.05 (HC-15.5)
Concrete masonry units, solid grouted, normal weight (135 lbs/ft ³)	8	-	0.69 (HC-17.9)
Concrete masonry units, partly grouted, lightweight (95 lbs/ft ³)	8	-	1.44 (HC-9.6)
Concrete masonry units, partly grouted, normal weight (135 lbs/ft ³)	8	-	0.98 (HC-12.0)
Concrete masonry units, solid grouted, lightweight (95 lbs/ft ³)	10	-	1.30 (HC-19.7)
Concrete masonry units, solid grouted, normal weight (135 lbs/ft ³)	10	-	0.87 (HC-22.6)
Concrete masonry units, partly grouted, lightweight (95 lbs/ft ³)	10	-	1.61 (HC-11.9)
Concrete masonry units, partly grouted, normal weight (135 lbs/ft ³)	10	-	1.11 (HC-14.8)
Concrete masonry units, solid grouted, lightweight (95 lbs/ft ³)	12	-	1.53 (HC-23.9)
Concrete masonry units, solid grouted, normal weight (135 lbs/ft ³)	12	-	1.06 (HC-27.2)
Concrete masonry units, partly grouted, lightweight (95 lbs/ft ³)	12	-	1.75 (HC-14.2)
Concrete masonry units, partly grouted, normal weight (135 lbs/ft ³)	12	-	1.23 (HC-17.5)
Flooring, wood subfloor	-	0.75	0.94
Gypsum board	-	0.5	0.45
	-	0.625	0.56
Metal deck	-	-	0
Roofing, built-up	-	0.375	0.33
Sheathing, vegetable fiber board, 0.78 in.	-	0.78	2.06
Soil at R-0.104/in.	-	12	1.25

Material	Nominal Size (in.)	Actual Size (in.)	R-Value (Heat Capacity^c)
Steel, mild		1	0.0031807
Stucco	-	0.75	0.08

a There is no credit for cavities that are open to outside air.

b Air films do not apply to air cavities within an assembly.

c For heat capacity for concrete and concrete masonry materials with densities other than the values listed in Table A101.5, see Tables A103.3.7.1 (1) through (3) or Tables A3.1B and A3.1C in ASHRAE/IESNA Standard 90.1.

[Statutory Authority: RCW 19.27A.025, 19.27A.045, 19.27A.160 and 19.27.074. WSR 16-13-088, § 51-11C-61015, filed 6/15/16, effective 7/16/16. Statutory Authority: RCW 19.27A.025, 19.27A.160, and 19.27.074. WSR 16-03-072, § 51-11C-61015, 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-61015, filed 2/1/13, effective 7/1/13.]