

TABLE 5.5-2 Building Envelope Requirements For Climate Zone 2 (A, B)*

Opaque Elements	Nonresidential		Residential		Semiheated	
	Assembly Maximum	Insulation Min. R-Value	Assembly Maximum	Insulation Min. R-Value	Assembly Maximum	Insulation Min. R-Value
<i>Roofs</i>						
Insulation Entirely above Deck	U-0.048	R-20.0 c.i.	U-0.048	R-20.0 c.i.	U-0.218	R-3.8 c.i.
Metal Building	U-0.065	R-19.0	U-0.065	R-19.0	U-0.167	R-6.0
Attic and Other	U-0.027	R-38.0	U-0.027	R-38.0	U-0.081	R-13.0
<i>Walls, Above-Grade</i>						
Mass	U-0.151 ^a	R5.7 c.i. ^a	U-0.123	R-7.6 c.i.	U-0.580	NR
Metal Building	U-0.113	R-13.0	U-0.113	R-13.0	U-0.184	R-6.0
Steel-Framed	U-0.124	R-13.0	U-0.064	R-13.0 + R-7.5 c.i.	U-0.124	R-13.0
Wood-Framed and Other	U-0.089	R-13.0	U-0.089	R-13.0	U-0.089	R-13.0
<i>Walls, Below-Grade</i>						
Below-Grade Wall	C-1.140	NR	C-1.140	NR	C-1.140	NR
<i>Floors</i>						
Mass	U-0.107	R-6.3 c.i.	U-0.087	R-8.3 c.i.	U-0.322	NR
Steel-Joist	U-0.052	R-19.0	U-0.052	R-19.0	U-0.069	R-13.0
Wood-Framed and Other	U-0.051	R-19.0	U-0.033	R-30.0	U-0.066	R-13.0
<i>Slab-On-Grade Floors</i>						
Unheated	F-0.730	NR	F-0.730	NR	F-0.730	NR
Heated	F-1.020	R-7.5 for 12 in.	F-1.020	R-7.5 for 12 in.	F-1.020	R-7.5 for 12 in.
<i>Opaque Doors</i>						
Swinging	U-0.700		U-0.700		U-0.700	
Nonswinging	U-1.450		U-0.500		U-1.450	
Fenestration	Assembly Max. U	Assembly Max. SHGC	Assembly Max. U	Assembly Max. SHGC	Assembly Max. U	Assembly Max. SHGC
<i>Vertical Glazing, 0%–40% of Wall</i>						
Nonmetal framing (all) ^b	U-0.75		U-0.75		U-1.20	
Metal framing (curtainwall/storefront) ^c	U-0.70	SHGC-0.25 all	U-0.70	SHGC-0.25 all	U-1.20	SHGC-NR all
Metal framing (entrance door) ^c	U-1.10		U-1.10		U-1.20	
Metal framing (all other) ^c	U-0.75		U-0.75		U-1.20	
<i>Skylight with Curb, Glass, % of Roof</i>						
0%–2.0%	U _{all} -1.98	SHGC _{all} -0.36	U _{all} -1.98	SHGC _{all} -0.19	U _{all} -1.98	SHGC _{all} -NR
2.1%–5.0%	U _{all} -1.98	SHGC _{all} -0.19	U _{all} -1.98	SHGC _{all} -0.19	U _{all} -1.98	SHGC _{all} -NR
<i>Skylight with Curb, Plastic, % of Roof</i>						
0%–2.0%	U _{all} -1.90	SHGC _{all} -0.39	U _{all} -1.90	SHGC _{all} -0.27	U _{all} -1.90	SHGC _{all} -NR
2.1%–5.0%	U _{all} -1.90	SHGC _{all} -0.34	U _{all} -1.90	SHGC _{all} -0.27	U _{all} -1.90	SHGC _{all} -NR
<i>Skylight without Curb, All, % of Roof</i>						
0%–2.0%	U _{all} -1.36	SHGC _{all} -0.36	U _{all} -1.36	SHGC _{all} -0.19	U _{all} -1.36	SHGC _{all} -NR
2.1%–5.0%	U _{all} -1.36	SHGC _{all} -0.19	U _{all} -1.36	SHGC _{all} -0.19	U _{all} -1.36	SHGC _{all} -NR

*The following definitions apply: c.i. = continuous insulation (see Section 3.2), NR = no (insulation) requirement.

^aException to Section A3.1.3.1 applies.

^bNonmetal framing includes framing materials other than metal with or without metal reinforcing or cladding.

^cMetal framing includes metal framing with or without thermal break. The "all other" subcategory includes operable windows, fixed windows, and non-entrance doors.

TABLE 5.5-3 Building Envelope Requirements For Climate Zone 2 (A, B)*

Opaque Elements	Assembly Maximum
<i>Roofs</i>	
Insulation Entirely above Deck	U-0.048
Metal Building	U-0.065
Attic and Other	U-0.027
<i>Walls, Above-Grade</i>	
Mass	U-0.123
Metal Building	U-0.113
Steel-Framed	U-0.084
Wood-Framed and Other	U-0.089
<i>Walls, Below-Grade</i>	
Below-Grade Wall	C-1.140
<i>Floors</i>	
Mass	U-0.107
Steel-Joist	U-0.052
Wood-Framed and Other	U-0.051
<i>Slab-On-Grade Floors</i>	
Unheated	F-0.730
Heated	F-0.900
<i>Opaque Doors</i>	
Swinging	U-0.700
Nonswinging	U-1.450
Fenestration	Assembly Max. U
<i>Vertical Glazing, 0%–40% of Wall</i>	
Nonmetal framing (all) ^b	U-0.65
Metal framing (curtainwall/storefront) ^c	U-0.60
Metal framing (entrance door) ^c	U-0.90
Metal framing (all other) ^c	U-0.65
<i>Skylight with Curb, Glass, % of Roof</i>	
0%–2.0%	U _{all} -1.17
2.1%–5.0%	U _{all} -1.17
<i>Skylight with Curb, Plastic, % of Roof</i>	
0%–2.0%	U _{all} -1.30
2.1%–5.0%	U _{all} -1.30
<i>Skylight without Curb, All, % of Roof</i>	
0%–2.0%	U _{all} -0.69
2.1%–5.0%	U _{all} -0.69

*The following definitions apply: c.i. = continuous insulation (see Section 3.2), NR = no (insulation) requirement.

^bNonmetal framing includes framing materials other than metal with or without metal reinforcing or cladding.

^cMetal framing includes metal framing with or without thermal break.

Exceptions:

- a. For assemblies significantly different from those in Appendix A, calculations shall be performed in accordance with the procedures required in Appendix A.
- b. For multiple assemblies within a single space-conditioning zone, compliance shall be shown for either (1) each assembly or (2) a single representative assembly.