

Prescriptive R-Values

Roofing: Non-Residential

The chart below lists the prescriptive R-values for the eight (8) climate zones within the United States. The list includes ASHRAE energy standards; ICC codes; and green building programs' requirements for non-residential roofs where the insulation is entirely above the deck. This is intended to be a general reference guide for construction professionals to compare the Prescriptive R-value required under these codes, standards and programs. Please consult the program materials directly for more information.

(Insulation entirely above deck – all continuous insulation)

Non-Residential Steel Frame	ASHRAE 90.1 2007 & 2010	ASHRAE 189.1 2009	LEED NC 2009	2009 IECC	2012 IECC Includes Group R	IgCC	Green Globes
CZ1	15	20	ASHRAE 90.1 2007 plus 10%	15 Group R: 20	20	2012 IECC plus 10%	15
CZ2	20	25		20	20		15
CZ3	20	25		20	20		20
CZ4	20	25		20	25		20
CZ5	20	25		20	25		20
CZ6	20	30		20	30		20
CZ7	20	35		25	35		20
CZ8	20	35		25	35		30

ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers

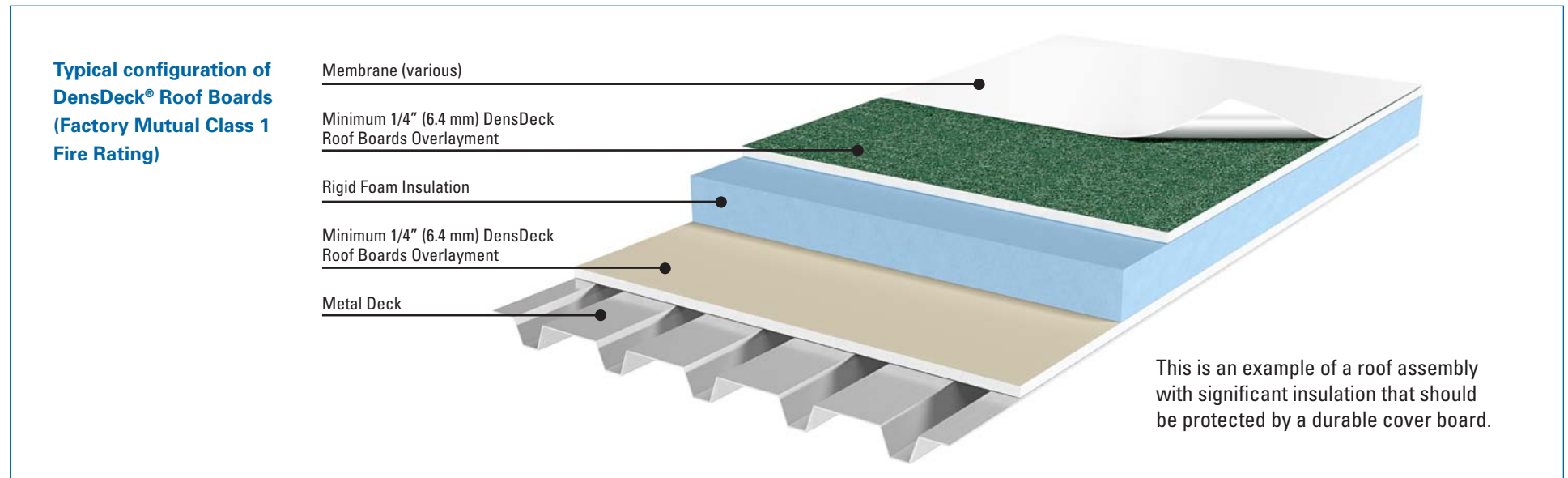
IECC International Energy Conservation Code

IgCC International Green Construction Code

LEED® Leadership in Energy and Environmental Design, a U.S. Green Building Council program

Green Globes Program operated by the Green Building Initiative in the U.S. and Canada

Note: Prescriptive methods are one means of compliance. Software tradeoffs and performance (computer modeling) are also paths for compliance. They provide alternatives to prescriptive path.



Prescriptive R-Values



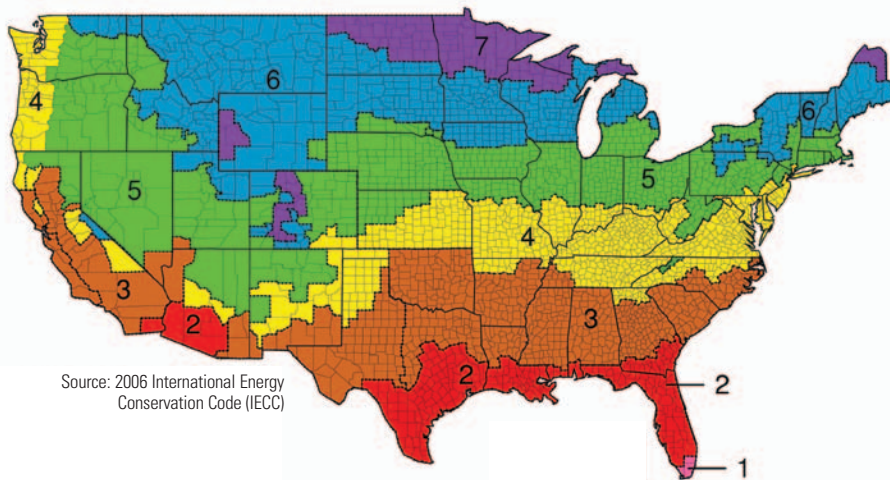
Walls

The chart below lists the prescriptive R-values and continuous insulation (ci) required for the eight (8) climate zones within the United States. The list includes the ASHRAE energy standards; ICC codes; and green building programs' requirements for exterior walls. This is intended to be a general reference guide for construction professionals to compare the Prescriptive R-value required for non-residential steel framed construction of building envelopes. Please consult the program materials directly for more information.

Non Residential Steel Frame	ASHRAE 90.1 2007 & 2010	ASHRAE 189.1 2009	LEED NC 2009	2009 IECC	2012 IECC	IGCC	Green Globes	
Climate Zone 1 (HI, Miami)	13	13+5ci	ASHRAE 90.1 2007 plus 10%	13 Group R: 13	13+5ci Group R: 13+5ci	2012 IECC plus 10%	13	ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers IECC International Energy Conservation Code IgCC International Green Construction Code LEED® Leadership in Energy and Environmental Design, a U.S. Green Building Council program Green Globes Program operated by the Green Building Initiative in the U.S. and Canada
CZ2 (Hou, NO)	13	13+5ci		13 Group R: 13+7.5ci	13+5ci Group R: 13+7.5ci		13	
CZ3 (ATL, Dallas, LA)	13+3.8ci	13+5ci		13+3.8ci Group R: 13+7.5ci	13+7.5ci Group R: 13+7.5ci		13+3.8ci	
CZ4 (DC, Phil, Sea)	13+7.5ci	13+10ci		13+7.5 Group R: 13+7.5ci	13+7.5 Group R: 13+7.5ci		13+7.5ci	
CZ5 (Bos, Chi, Den)	13+7.5ci	13+10ci		13+7.5ci Group R: 13+7.5ci	13+7.5ci Group R: 13+7.5ci		13+7.5ci	
CZ6 (ME, Minn)	13+7.5ci	13+10ci		13+7.5ci Group R: 13+7.5ci	13+7.5ci Group R: 13+7.5ci		13+7.5ci	
CZ7 (Duluth, S. Ak)	13+7.5ci	13+10ci		13+7.5ci Group R: 13+15.6ci	13+7.5ci Group R: 13+15.6ci		13+7.5ci	
CZ8 (North Alaska)	13+7.5ci	13+10ci		13+7.5ci Group R: 13+18.8ci	13+7.5ci Group R: 13+17.5ci		13+21.6ci	

Note: Prescriptive values are different by types of buildings, framing materials, and if it is residential construction. This table is nonresidential, metal framed construction.

Air Infiltration: Air infiltration rate will vary between ACH 7 in CZ 1 to ACH 2-3 in CZ 7 depending on the program and version.



Source: 2006 International Energy Conservation Code (IECC)

Climate Zones

Zone 1 includes:
Hawaii, Guam, Puerto Rico, and the Virgin Islands

All of Alaska in **Zone 7** except for the following Boroughs in **Zone 8**:
Bethel Northwest Arctic
Dillingham Southeast Fairbanks
Fairbanks N. Star Wade Hampton
Nome Yukon-Koyukuk
North Slope

Using a gypsum sheathing, like DensGlass® fiberglass mat gypsum panels, adds a stable substrate, and fire and mold resistance to high-performance exterior wall assemblies.