

Non-Residential Minimum R-Value Insulation Requirements

The International Energy Conservation Code (IECC) and American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 90.1 set specific R-value requirements for non-residential buildings to enhance energy efficiency. These requirements vary based on climate zones and building types, focusing on insulation levels for roofs to minimize thermal energy loss. Compliance with the required building code ensures reduced energy consumption and improved occupant comfort, while contributing towards potential sustainability goals. The information provided below is for reference purposes only and should be validated for its current accuracy prior to use.

Insulation Entirely Above Roof Deck – 2021 International Energy Conservation Code (IECC)

STATE	APPLICABLE CODE	ASHRAE ZONE	MINIMUM R-VALUE
Alabama (AL)	2021 International Building Code	2	25
		3	25
Alaska (AK)	No State-Wide Energy Code - Refer to Local Code	5	30
		6	30
		7	35
		8	35
Arizona (AZ)	No State-Wide Energy Code Refer to Local Code	2	25
		3	25
		4	30
Arkansas (AR)	2014 Arkansas Energy Code	5	30
		3	25
		4	30
California (CA)	2022 California Energy Code	3	25
		4	30
		5	30
Colorado (CO)	2021 International Energy Conservation Code	6	30
		4	30
		5	30
Connecticut (CT)	2022 Connecticut State Building Code	7	35
Delaware (DE)	Delaware Building Energy Codes	5	30
District of Columbia (DC)	2017 District of Columbia Energy Conservation Code	4	30
Florida (FL)	2023 Florida Building Code, Energy Conservation	1	25
		2	25
Georgia (GA)	2015 International Energy Conservation Code	2	25
		3	25
Hawaii (HI)	Hawaii State Energy Code	1	25
Idaho (ID)	2020 Idaho Energy Conservation Code	5	30
		6	30
Illinois (IL)	2021 Illinois Energy Conservation Code	4	30
		5	30
Indiana (IN)	2018 International Energy Conservation Code	4	30
		5	30
Iowa (IA)	2012 International Energy Conservation Code	5	30
		6	30
Kansas (KS)	No State-Wide Energy Code - Refer to Local Code	4	30
		5	30
Kentucky (KY)	2012 International Energy Conservation Code	4	30
Louisiana (LA)	Louisiana State Uniform Construction Code	2	25
		3	30
Maine (ME)	Maine Uniform Building and Energy Code	6	30
		7	35

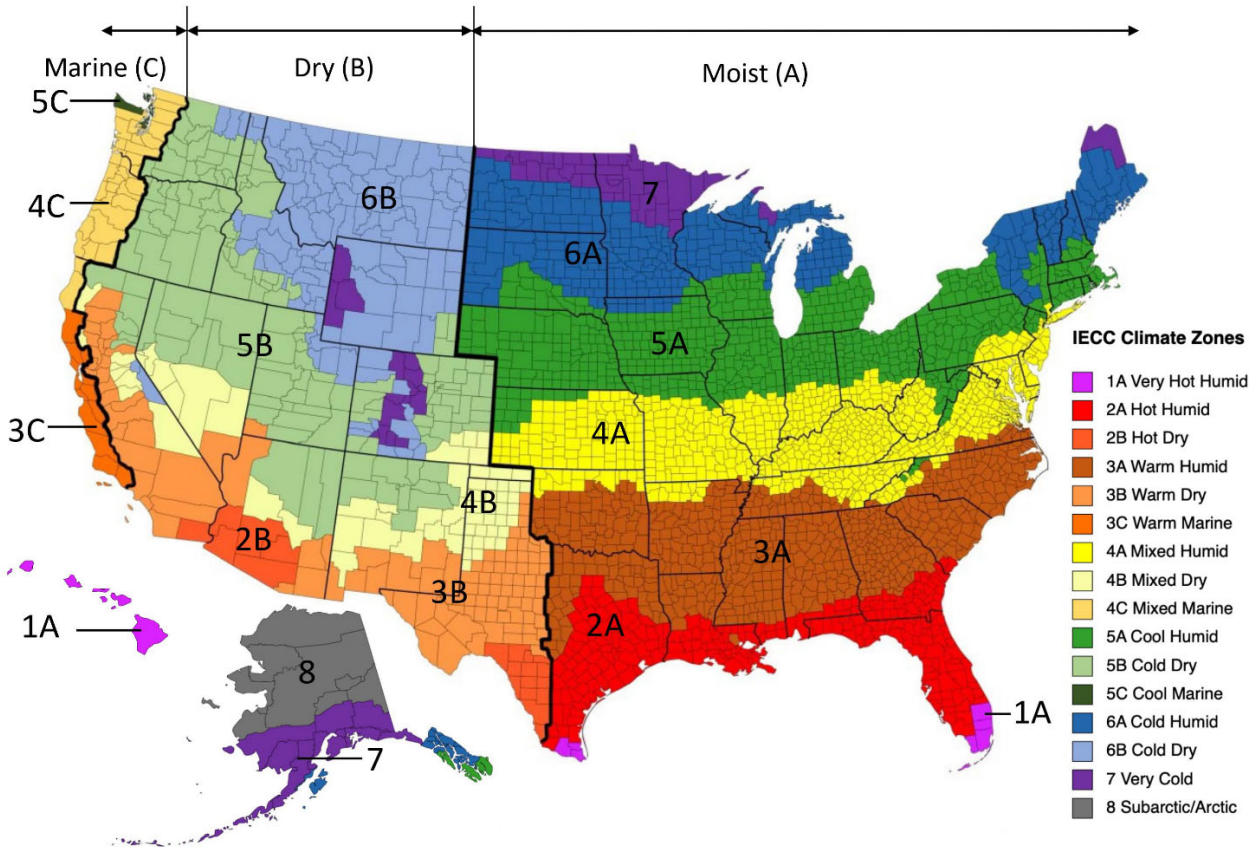
Maryland (MD)	Maryland Building Performance Standards	4	30
		5	30
Massachusetts (MA)	2020 Massachusetts Energy Code	5	30
Michigan (MI)	2015 Michigan Energy Code	5	30
		6	30
		7	35
Minnesota (MN)	2024 Minnesota Energy Code	5	30
		6	30
		7	35
Mississippi (MS)	No State-Wide Energy Code - Refer to Local Code	2	25
		3	25
Missouri (MO)	No State-Wide Energy Code - Refer to Local Code	3	25
		4	30
		5	30
Montana (MT)	2021 International Energy Conservation Code	6	30
Nebraska (NE)	2018 International Energy Conservation Code	5	30
Nevada (NV)	2021 International Energy Conservation Code	3	25
		4	30
		5	30
New Hampshire (NH)	New Hampshire State Building Code	5	30
		6	30
New Jersey (NJ)	Uniform Construction Code	4	30
		5	30
New Mexico (NM)	2018 International Energy Conservation Code	3	25
		4	30
		5	30
New York (NY)	2020 Energy Conservation Construction Code of New York State	4	30
		5	30
		6	30
North Carolina (NC)	2018 North Carolina State Energy Conservation Code	3	25
		4	30
		5	30
North Dakota (ND)	No State-Wide Energy Code - Refer to Local Code	6	30
		7	35
Ohio (OH)	2017 Ohio Energy Code	4	30
		5	30
Oklahoma (OK)	Oklahoma Uniform Building Code	3	15
		4	15
Oregon (OR)	2021 Oregon Energy Efficiency Specialty Code	4	30
		5	30
Pennsylvania (PA)	2018 International Energy Conservation Code	4	30
		5	30
Rhode Island (RI)	Rhode Island Energy Conservation Code	5	30
South Carolina (SC)	2009 International Energy Conservation Code	2	25
		3	25
South Dakota (SD)	No State-Wide Energy Code - Refer to Local Code	5	30
		6	30
Tennessee (TN)	2018 International Energy Conservation Code	3	25
		4	25
Texas (TX)	2015 International Energy Conservation Code	1	25
		2	25
		3	25
		4	30
Utah (UT)	2021 Utah State Energy Conservation Code	3	25
		5	30
		6	30

Vermont (VT)	2024 Commercial Building Energy Standards	6	45
Virginia (VA)	2021 Virginia Energy Conservation Code	3	25
		4	30
		5	30
Washington (WA)	2021 Washington State Energy Code	4	38
		5	38
West Virginia (WV)	West Virginia State Building Code	4	30
		5	30
Wisconsin (WI)	2015 International Energy Conservation Codes	5	30
		6	30
Wyoming (WY)	No State-Wide Energy Code - Refer to Local Code	5	30
		6	30
		7	35
US TERRITORIES			
American Samoa	No State-Wide Energy Code - Refer to Local Code	1	25
Guam	2018 International Energy Conservation Code	1	25
Northern Mariana Islands	2018 International Energy Conservation Code	1	25
Puerto Rico	2018 Puerto Rico Energy Conservation Code	1	25
		2	25
Virgin Islands	2018 International Energy Conservation Code	1	25
NOTE:			
<ul style="list-style-type: none"> ▪ The zones and minimum R-Values listed in this table are based on the 2021 IECC and may change. Please reference the current building code of each state for additional information. ▪ Some states may adopt modified zone maps that differ from the ASHRAE map below. ▪ Values listed are for non-residential projects. 			

Minimum R-Value Requirements (Continuous Insulation Above Deck, Non-Residential)

Zone	IBC – IECC					ASHRAE 90.1			
	2009	2012	2015	2018	2021	2010	2013	2016	2019
0	-	-	-	-	20	-	-	25	25
1	15	20	20	20	20	15	20	20	20
2	20	20	25	25	25	20	25	25	25
3	20	20	25	25	25	20	25	25	25
4	20	25	30	30	30	20	30	30	30
5	20	25	30	30	30	20	30	30	30
6	20	30	30	30	30	20	30	30	30
7	25	35	30	35	35	20	35	35	35
8	25	35	35	35	35	20	35	35	35
NOTE: Data in table above extracted from the applicable version of the code document. See applicable documents for complete and most up to date information.									

This document is intended for reference use only. Validate project requirements with the local Authority Having Jurisdiction (AHJ) prior to use.



Map sourced from Building America Solution Center, climate zones per the 2021 International Energy Conservation Code (IECC)
See appropriate IECC codes and ASHRAE standards for county specific information.

Please consult the Elevate website for most up to date information. Please contact a Regional Technical Coordinator if you have specific questions related to this update.

Regards,



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