2021 IECC Compliance Guide to Homes in Maine

Instructions

1. Using the climate zone map, match the jurisdiction to the appropriate IECC climate zone. Use the simplified table of IECC building envelope requirements (below) to determine the basic prescriptive requirements for the thermal envelope associated with the jurisdiction. Be sure to check the actual Table R402.1.3 in the IRC to read all footnotes.

2. Use the "Outline of 2021 IECC Requirements" printed on the back of this sheet as a reference for our Summary of important IECC requirements. Be sure to read and understand the actual IECC to construct the building according to the full requirements of the IECC and other applicable code requirements.

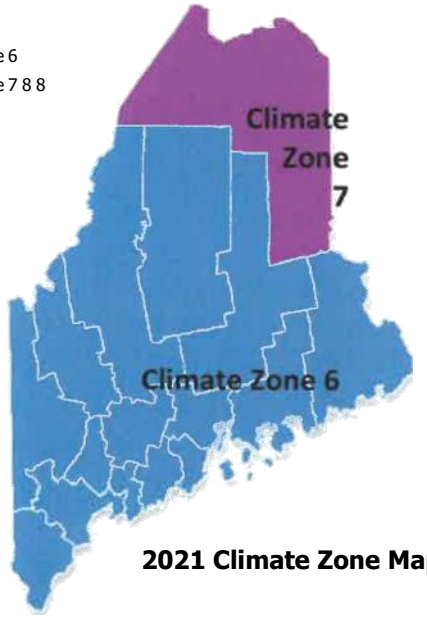
The 2021 International Energy Conservation Code

The 2021 IECC was developed by the International Code Council (ICC) and the free Basic, Digital Code is currently available to view, from a desktop computer, on the ICC website at https://codes.iccsafe.org. The Maine State Fire Marshall's Web Site has a complete list of all MUBEC codes and listed amendments in their Rules of Chapters found at https://www.maine.gov/dps/fmo/. The IECC is part of Maine's complete MUBEC building codes and is **law for the entire state.** Some towns may adopt a Stretch Code, so be sure to check with your local Authority Having Jurisdiction (AHJ). Users of this guide are strongly advised to obtain a copy of the IECC and all of Maine's MUBEC codes to refer to for any questions and further details on compliance.

Limitations

This guide is an energy code compliance aid for Maine based upon the simple prescriptive option of the 2021 IECC. It does not provide a guarantee for meeting the IECC. This guide is not designed to reflect the actual energy code, with amendments, if any, adopted in Maine and does not, therefore, provide a guarantee for meeting the state energy code. For details on the energy code adopted by Maine, including how it may differ from the I ECC, please verify with the Maine Fire Office.

Climate Zone 6
Climate Zone 7 8 8



2021 Climate Zone Map

		Windows			Insulation				Foundation		
		fenestration U-Factor	Skylight U-Factor	Glazed Fenestration SHGC	Ceiling R-Value	Wood Frame Wall R-Value	Mass Wall R-Value	Floor R-Value	Basement Wall R-Value	Slab R-Value & Depth	Crawl Space wall R-Value
2015	Zone 6	.32	.55	NR	49	20+5 ci 13 +10ci	15/20	30	15/19	10, 4ft	15/19
	Zone 7	.32	.55	NR	49	20+5 or 13+10	19/21	38	15/19	10, 4ft	15/19
2021	**zone 6**	0.3	0.55	NR	60	30 or 20+5 ci 13+10ci 0+20ci	15/20	30	15ci or 19, or 13+5 ci	10ci, 4ft	15ci or 19, 13+ 5ci

Highlights of 2021 IECC Requirements

Be sure to read and understand the complete MUBEC Codes for yourself
electronic copies can be found at www.maine.gov/dps/fmo/building-codes

R401.3 Certificate - A permanent certificate shall be completed by the builder or other approved party and posted inside the building. The certificate shall indicate the following:

1. The predominant -values of insulation
2. U-factors of fenestration and the solar heat gain coefficient (SHGC of fenestration.)
3. The results from any required duct system and building envelope air leakage testing performed on the building
4. The types, sizes and efficiencies of heating, cooling and service water-heating equipment.
5. Where on-site photovoltaic panel systems array capacity, inverter efficiency, panel tilt and orientation
6. For buildings where an Energy Rating Index score is determined in accordance with Section R406
7. The code edition under which the structure was permitted, and the compliance path used.

R402.2 Specific insulation requirements.

Ceilings with attics. — R-60 min insulation in the ceiling or attic, installing R-49 over 100 percent of the ceiling or attic area requiring insulation shall satisfy the R-60 wherever uncompressed insulation extends over the wall top plate at the eaves

Ceilings without attics. - This reduction of insulation, not less than R30, from the requirements of Section R402.1.3 shall be limited to 500 square feet (46 m) or 20 percent of the total insulated ceiling area, whichever is less.

Access hatches and doors. - Access hatches and doors from conditioned to unconditioned spaces such as attics and crawl spaces shall be insulated to the same R-value required for the wall or ceiling in which they are installed. All hatches and doors shall be weatherstripped.

Steel-frame ceilings - walls and floors
Shall comply with table R402.2.6

Floors. - Installation shall be installed to maintain permanent contact with the underside of the subfloor decking and be air sealed. See R402.2.7 for multiple compliance paths.

Basement walls - shall be insulated from the top of the basement wall down to 10 feet (3048 mm) below grade or to the basement floor, whichever is less. See exception in section R402.2.8

Slab-on-grade floors. - Slab-on-grade floors shall be insulated R-10 from the top of the slab and extend downward 4' on the outside or inside of the foundation wall. Below grade insulation by any combination of vertical insulation, insulation extending under the slab or insulation extending out from the building. The top edge of the insulation installed between the exterior wall and the edge of the interior slab shall be permitted to be cut at a 45deg

Heated Slab-on-grade — R-5 shall be installed below the full heated slab in addition to the required R-value for slabs

R402.3 Fenestrations

Window, door and skylight - U-factors and SHGCs must be determined by an accredited, independent laboratory, and labeled and certified by the manufacturer, in accordance with a National Fenestration Rating Council (NFRC) rating. Products without an NFRC label must use the default values in **IECC** section R303.1.3. See www.nfrc.org for more details on the NFRC rating system.
Windows, skylights, and sliding glass doors must also be labeled in a manner to show that they meet the IECC's air infiltration requirements.

R402.4 Air leakage

Testing -The building or dwelling unit shall be tested for air leakage. A written report of the results of the test shall be signed by the party conducting the test. Where required by CEO testing shall be done by an approved third party. Testing shall comply with R402.4.1.2

Leakage Rate - The building or dwelling shall have an air leakage rate not exceeding 3.0 air changes per hour.

R403.1 Controls - Temperature controls must be installed, including a programmable thermostat where required.

R403.3 Ducts

Ducts outside the Thermal Envelope - Supply and Return ducts shall be insulated R-8 for 3" diameter and greater and R-6 smaller than 3" diameter.

Ducts buried within ceiling insulations - Supply and return shall not be less than R-8. R-19 must be maintained above and below duct at all times.

Sealing - Ducts, air handlers and filter boxes shall be sealed.

Duct testing - Ducts shall be pressure tested, exception for ducts associated with stand-alone ventilation systems.

R403.4 Mechanical system piping insulation - Mechanical System Piping with Fluids > 105deg and < 55deg shall be insulated no less than R-3

R403.5.2 Hot water piping - Hot water piping shall have insulation not less than R-3 when: $^{3}/_{4}$" and larger, outside conditioned space, from water heater to distribution, under slab, buried or part of recirculation system.

R403.6 Mechanical Ventilation - Shall be provided with ventilation that complies with M1505 of IRC.
Testing — Mechanical ventilation shall be tested and verified.

R403.7 Equipment sizing and efficiency rating - HVAC system must be properly sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J or other approved methodologies. New or replacement heating and cooling equipment must meet or exceed federal minimum efficiency requirements for geographic location in which it is installed.

R404.1 Lighting equipment-All permanently installed lighting fixtures shall contain only high-efficacy lighting sources.

R404.2 Interior lighting controls — Permanently installed fixtures shall be controlled with either a dimmer, an occupancy sensor or control built into fixture. Exceptions: Bathrooms, Hallways, exterior lighting, lighting designed for safety or security.