



Town of Bar Harbor
Planning & Code Enforcement

Effective July 1, 2021 the State of Maine and the Town of Bar Harbor have adopted the **2015 International Energy Conservation Code (IECC)**

The attached resources have been compiled to assist with new construction and compliance.

Please contact the **Planning and Code Enforcement Department** with questions at:
207-288-3329



Site or Plot Plan Requirements

All applications for a permit shall be accompanied by a plan that includes:

- All items accurately drawn to scale
- Actual dimensions and distances
- Actual shape and dimensions of the lot for which a permit is sought
- The location and size of all buildings, structures, water bodies, and other significant features currently existing on the lot
- The location of new buildings, structures, or portions thereof to be constructed
- Building design plans for new structures
- The existing and intended use of each building or structure
- The location of soils test pits, subsurface sewage disposal system, parking lots, driveways, signs, buffer strips and private wells as applicable
- Such other information as may be reasonably required by the Code Enforcement Officer to provide for the administration and enforcement of the Land Use Ordinance

E-911 Address Requirements

An E-911 address (issued by the Assessor's Office, 288-3320) is required on all residential dwellings in accordance with the following:

- An E-911 address must be posted on a dwelling if the dwelling is visible from the public way
- An E-911 address must be posted at the end of the driveway and visible from both directions if the dwelling is not visible from the public way

Energy Code Requirements (2015 IECC)

Construction Document Requirements (R103.2)

Construction documents shall be drawn to scale upon suitable material; electronic media documents are permitted. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed, and show in sufficient detail pertinent data and features of the building, systems and equipment. The building's thermal envelope shall be represented on the construction documents.

1. Insulation materials and R-values
2. Fenestration U-factors and solar heat gain coefficients (SHGC)
3. Area-weighted U-factor and SHGC calculations
4. Mechanical and service water heating system equipment types, sizes, and efficiencies
5. Equipment and system controls
6. Duct sealing, duct and pipe insulation and location
7. Air sealing details
8. Building Thermal Envelope Depiction
9. Compliance path method (R401.2)



Required Inspections for Residential Buildings

The following list outlines the required inspections, after a permit is obtained, throughout the process of a residential building project. Please contact the Code Enforcement office with questions or to schedule your inspection. Please provide at least 48 hours' notice for inspection requests.

Phone: 207-288-3329

Hours: Monday – Friday 8:30am – 5pm

Building Inspections:

Foundation:

Pre-pour footing(s): Forms in place prior to pouring of concrete

Pre-pour wall(s): Rebar in place both horizontal and vertical if needed

Pre-pour slab(s): Drainage is in place, damp-proofing or waterproofing of walls has been applied, radon provisions have been made and fill or base material is in place and covered with vapor retarder. If insulation is required beneath slab, it shall be in place prior to this inspection.

Note: Exterior foundation insulation may require an additional inspection

Rough-in:

Framing: All framing complete, electrical (see electrical section), plumbing and mechanical (see plumbing section) rough-ins complete. Vertical penetrations sealed. Prior to placement of insulation.

Insulation: Prior to covering or concealing any insulating material. This may take more than one inspection depending on products and methods being used. The installer certification for blown or sprayed insulation shall be submitted at this time or prior to issuance of a Certificate of Occupancy.

Fire-Resistance: Where fire-resistance-rated construction or separation is required between dwelling units or dwelling units and garages. Inspection shall be conducted prior to fasteners and joints being taped or finished.

Final:

Final Inspection: ALL work complete and the site has been permanently stabilized. This inspection must be done prior to occupying the home per Maine Uniform Building & Energy Code, Section R110 Certificate of Occupancy and the Town of Bar Harbor Land Use Ordinance, Section 125-80: Certificate of Occupancy.

Electrical Inspections:

- Meter: Review meter, meter base, service drop and grounding.
- Rough-In: Framing completed, rough-ins complete. Prior to placement of insulation.
- Final Inspection: ALL work must comply with the National Electrical Code 1990 (NFPA 70) and the Town of Bar Harbor Code, Chapter 70 Electrical Installations.

Plumbing Inspections:

- Pre-Pour Slab: Any in-slab plumbing prior to pouring concrete. If any plumbing piping, radiant heat, etc. will be in the slab this inspection needs to be done prior to being covered with concrete.
- Rough-In: Framing completed, plumbing, and mechanical (dryer vent, bath/kitchen exhaust fan(s), heating lines) rough-ins complete. Prior to placement of insulation.
- Final Inspection: ALL work complete and the site has been permanently stabilized. This inspection must be done prior to occupying the home per Maine Uniform Building & Energy Code, Section R110 Certificate of Occupancy and the Town of Bar Harbor Land Use Ordinance, Section 125-80: Certificate of Occupancy.

Subsurface Wastewater (Septic) System Inspections:

- Scarification: Scarifying the original soils, removing all tree stumps, roots, rocks, etc.
"Pre-Grub" Includes extensions on the plan and the bed. Review mix of clean fill, course sandy gravel.
- Bottom of Bed: Fill added up to grade of bottom of the bed elevation. Review of fill.
- Top of Bed: Prior to covering system. All system components installed, including stone, pipes or proprietary devices, tanks, hay, filter fabric, and fill beneath and beside of the disposal area. Must include any curtain drains, diversion ditches, berms or other measures outlined on the design to improve the function of the system.
- Final: Cover with clean fill as noted on the plan including the extensions. Covered with clean loam, seed and/or mulch all soil disturbed areas.

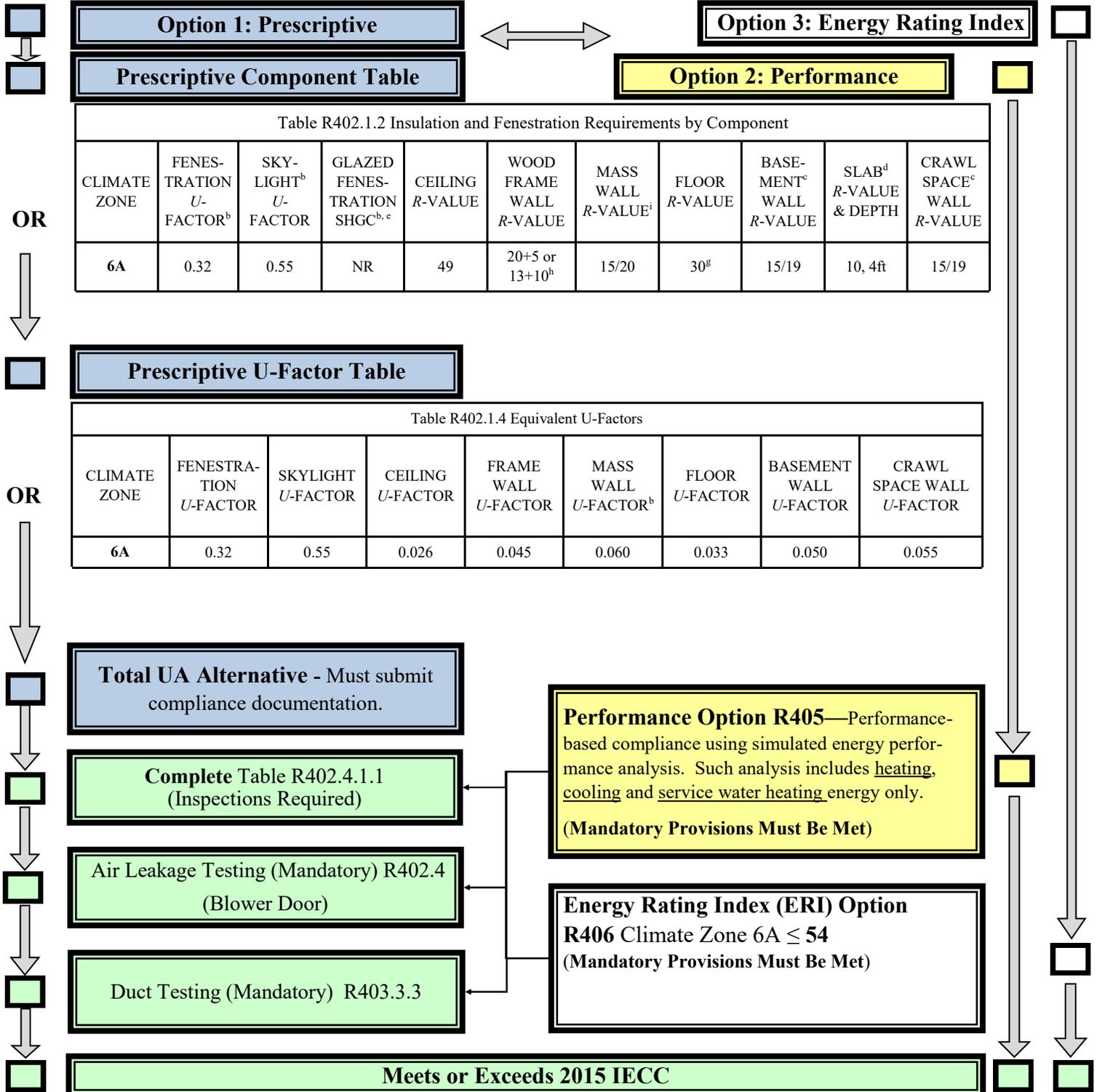
Energy Code Inspections (2015 IECC as of 7/1/21)

Required Inspections (R104.2):

1. Foundation: Inspections associated with footings and foundations shall verify compliance with the code as to R-value, location, thickness, depth of burial and protection of insulation as required by the code and approved plans and specifications.
2. Framing Rough-in: Inspections at framing and rough-in shall be made before application of interior finish and shall verify compliance with the code as to types of insulation and corresponding R-values and their correct location and proper installation; fenestration properties (U-factors and solar heat gain coefficients (SHGC)) and proper installation; air leakage controls; approved plans and specifications.
3. Plumbing Rough-in: Inspections at plumbing rough-in shall verify compliance as required by the code; approved plans and specifications as to types of insulation and corresponding R-values and protection; required controls; and required heat traps.
4. Mechanical Rough-in: Inspections at mechanical rough-in shall verify compliance as required and approved plans and specifications as to installed HVAC equipment type and size, required controls, system insulation and corresponding R-value, system air leakage control, programmable thermostats, dampers, whole-house ventilation, and minimum fan efficiency.
5. Final Inspection: The building shall have a final inspection and shall not be occupied until approved. The final inspection shall include verification of the installation of all required building systems, equipment and controls and their proper operation and the required number of high-efficacy lamps and fixtures. Blower door and duct leakage testing, by a certified third-party, shall be conducted prior to final inspection. Permanent energy code certificate must be mounted at time of inspection.

2015 IECC Residential Compliance Path Options—Climate Zone 6A (Bar Harbor, ME)

In Accordance with the 2015 International Energy Conservation Code, Projects shall comply with one of following: **Option 1 (Prescriptive)**—R401 through R404, **Option 2 (Performance)**—R405 (w/ Mandatory items in sections R401 thru R404, or **Option 3 (Energy Rating Index)**—R406 Energy Rating Index (ERI).*



*NOTE: This document is only a guide for meeting IECC 2015, contact the Code Enforcement office for further guidance: 207-288-3329

Mandatory Requirements - 2015 IECC Code Synopsis*

R401.3	Certificate	A permanent certificate shall be completed and posted on or in the electrical distribution panel by the builder or registered design professional. The certificate shall not cover or obstruct required labels.
R402.4	Air Leakage	Building thermal envelope shall be constructed to limit air leakage in accordance with requirements of Section R402.4.1 through R402.4.4. The building thermal envelope shall comply with Sections R402.4.1.1 and R402.4.1.2. Complete required inspections on Table R402.4.1.1—Air Barrier and Insulation Installation . Air sealing methods between dissimilar materials shall allow for differential expansion and contraction. The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding 3 air changes per hour (at 50 Pascals). A signed written report of the test results, by a recognized party, shall be provided to the Code Official.
R403.1	Controls	Each heating and cooling system shall be provided with its own thermostat and where the primary heating system is a forced-air furnace at least one thermostat shall be capable of controlling the heating and cooling system on a daily schedule. Initial heating temperature set point shall be no higher than 70°F and cooling no lower than 78°F.
R403.1.2	Heat Pump	Controls shall prevent the operation of supplementary electric-resistance heat when the heat pump compressor is capable of meeting the heating load.
R403.3.2	Duct Sealing	Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with the IMC or IRC as applicable.
R403.3.3	Duct Testing	Tightness of these elements <i>shall be verified with a duct blaster test</i> when any portion of the duct system is located outside the building thermal envelope. Post construction: Total leakage shall be less than or equal to 4% of conditioned floor area (CFA). Rough in: “With air handler installed” Total leakage shall be less than or equal to 4% CFA. “Without air handler”, shall be less than or equal to 3% CFA.
R403.3.5	Building Cavities	Building framing cavities shall not be used as ducts or plenums.
R403.4	Mech. System Piping Insulation	Mechanical system piping capable of carrying fluids above 105°F or below 55°F shall be insulated to a minimum of R-3 .
R403.5.1	Circulating hot water systems	Circulating hot water systems shall be provided with an automatic or readily accessible manual switch that can turn off the hot-water circulating pump when the system is not in use.
R403.6	Mechanical Ventilation	The building shall be provided with ventilation (<i>exhaust or whole-house ventilation system</i>) that meets the requirements of the IRC or IMC. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating. Whole-house mechanical ventilation systems shall meet the efficacy requirements of Table 403.6.1, <i>which are the same levels as the current Energy Star® fan specifications</i> .
R403.7	Equipment Sizing	Heating and cooling equipment shall be sized in accordance with ACCA Manual-S based on building loads calculated in accordance with ACCA Manual J.
R403.8	Multi-dwelling units	Systems serving multiple dwelling units shall comply with Sections C403 and C404 of the IECC- Commercial provisions in lieu of Section R403.
R403.9	Snow melt systems controls	When supplied through energy service to the building, automatic controls shall be provided that are capable of shutting off the system when the pavement temperature is above 50°F and an automatic or manual control shall be provided that will allow shutoff when the outdoor temperature is above 40°F.
R403.10	Pools & Inground permanently installed spas	All heaters shall be equipped with an on-off switch mounted outside the heater. Gas-fired heaters shall not be equipped with constant burning pilot lights. Time switches shall be provided that can automatically turn off and on heaters and pumps on a preset schedule. Heated pools and inground permanently installed spas shall be provided with a vapor-retardant cover.
R403.11	Portable Spas	Energy consumption of electric-powered portable spas shall be controlled by the requirements of APSP-14.
R404.1	Lighting Equipment	A minimum of 75% of lamps in permanently installed lighting fixtures shall be high-efficiency lamps or a minimum of 75% of permanently installed lighting fixtures shall contain only high-efficiency lamps.
R404.1.1	Fueling Equipment	Fuel gas lighting systems shall not have continuous burning pilot lights.

*NOTE: The above excerpts do not encompass the entire 2015 IECC and are provided only as a synopsis of code fundamentals for residential energy efficiency. Refer to the code language and contact the Code Enforcement office for further guidance: 207-288-3329

2015 IECC Air Barrier and Insulation Installation Table 402.4.1.1*

		BUILDER	FRAMER	ELECTRICIAN	PLUMBER	HVAC	INSULATION	DRYWALL
COMPONENT	AIR BARRIER CRITERIA / INSULATION INSTALLATION CRITERIA							
General Requirements	A continuous air barrier shall be installed in the building envelope.	X	X				X	X
	The exterior thermal envelope contains a continuous air barrier.	X	X				X	X
	Breaks or joints in the air barrier shall be sealed.	X	X	X	X	X	X	
	Air-permeable insulation shall not be used as a sealing material.	X		X	X	X	X	
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed.	X	X				X	
	Access openings, drop down stair or knee wall doors to unconditioned attic spaces shall be sealed.	X					X	
	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.	X	X				X	X
Walls	The junction of the foundation and sill plate shall be sealed.	X	X					
	The junction of the top plate and top of exterior walls shall be sealed.	X	X				X	X
	Knee walls shall be sealed.	X	X				X	
	Cavities within corners and headers of framed walls shall be insulated by completely filling the cavity with a material having thermal resistance of R-3 per inch minimum.	X	X				X	
	Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.	X	X				X	
Windows, skylights and doors	The space between window/door jambs and framing and skylights and framing shall be sealed.	X					X	
Rim joists	Rim joists shall include the air barrier.	X	X				X	
	Rim joists shall be insulated.	X					X	
Floors (including above-garage and cantilevered floors)	The air barrier shall be installed at any exposed edge of insulation.	X	X				X	
	Insulation shall be installed to maintain permanent contact with underside of subfloor decking or floor framing cavity insulation shall be permitted to be in contact with top side of sheathing, or continuous insulation installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.	X					X	
Crawl space walls	Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	X					X	
	Where provided instead of floor insulation, insulation shall be permanently attached to the crawlspace walls.	X					X	
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.	X		X	X	X	X	
Narrow cavities	Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space.	X					X	
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.	X					X	
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be sealed to the drywall.	X	X					
	Recessed light fixtures installed in the building thermal envelope shall air tight and IC rated.	X	X					
Plumbing and wiring	Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.	X					X	
Shower/tub on exterior wall	The air barrier installed at exterior walls adjacent to showers and tubs shall separate them from the shower and tubs.	X			X		X	
	Exterior walls adjacent to showers and tubs shall be insulated.	X			X		X	
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical or communication boxes or air sealed boxes shall be installed.	X	X				X	
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall.	X				X		
Concealed sprinklers	When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.	X			X			

*NOTE: This document is intended solely to help demonstrate the air leakage and insulation provisions of table 402.4.1.1 of the 2015 IECC. It does not cover all air sealing/insulation locations or techniques. Trade responsibilities are decided by the builder, this document identifies the most common trade to line item. Refer to the code language and consult the Code Enforcement office for further advisement: 207-288-3329

Building Thermal Envelope R-values (R402.1.2)

	Climate Zone 6	
	2009 IECC	2015 IECC
Windows	U-0.35	U-0.32
Skylights	U-0.60	U-0.55
Ceilings	R-38	R-49
Wood-frame walls	R-20 or 13+5	R-20+5 or 13+10
Mass walls	R-15/19	R-15/ 20
Floors	R-30	R-30
Basement walls	R-15/19	R-15/19
Crawlspace walls	R-10/13	R-15/19
Slab-on-grade	R-10, 4 ft	R-10, 4 ft

Bar Harbor Climate Zone

Envelope air leakage verification:

- Mandatory blower door testing (3 ACH50)

Ventilation:

- The IRC requires whole-house mechanical ventilation
- The IECC contains minimum fan efficacy rates
- Mandatory Combustion Air Test

Duct leakage testing:

- Maximum total duct leakage rate reduced from 12 to 4 cfm per 100 sqft
- Elimination of “leakage to outdoors” option

Lighting:

- Increase from 50% to 75% high-efficacy lighting

Compliance paths:

- New compliance path option – Energy Rating Index (ERI) Compliance Alternative