Generated by RES*check-Web* Software

Compliance Certificate

Project Bangor ADU1 - 010624

Energy Code:	**2021 IECC**
Location:	**Bangor, Maine**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Project SubType:	**None**
Conditioned Floor Area:	**638 ft2**
Glazing Area	**19%**
Climate Zone:	**6 (7930 HDD)**
Permit Date:	
Permit Number:	
All Electric	**false**
Is Renewable	**false**
Has Charger	**false**
Has Battery:	**false**
Has Heat Pump:	**false**

Construction Site: Owner/Agent: Designer/Contractor:

Compliance: Passes using UA trade-off

Compliance: **15.6% Better Than Code** Maximum UA: **96** Your UA: **81**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Ceiling: Cathedral Ceiling	754	60.0	0.0	0.018	0.024	14	18
Wall: Wood Frame, 24" o.c.	816	19.0	12.9	0.032	0.045	20	29
Door: Solid Door (under 50% glazing)	21			0.270	0.300	6	6
Window - Double Hung: Vinyl Frame	15			0.260	0.300	4	5
Window - Fixed: Vinyl Frame	6			0.260	0.300	2	2
Window - Double Hung: Vinyl Frame	135			0.260	0.300	35	41
Floor: Slab-On-Grade (Unheated) Insulation depth: 4.0' Insulation position: Fully Insulated (uniform R-value across perimeter and under slab)	98		10.0	0.360	0.360	0	0

Energy Credits

Description	Credits
Enhanced Envelope Performance Option - R408.2.1	1.0

Required: 1 Proposed: 1

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2021 IECC requirements in RES*check* Version : REScheck-Web and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Name - Title | Signature | Date

RES*check* Software Version : REScheck-Web

Inspection Checklist

Energy Code: 2021 IECC

Requirements: 0.0% were addressed directly in the RES*check* software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Pre-Inspection/Plan Review	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
103.1, 103.2 [PR1][1]	Construction drawings and documentation demonstrate energy code compliance for the building envelope. Thermal envelope and energy compliance path represented on construction documents.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
103.1, 103.2, 403.8 [PR3][1]	Construction drawings and documentation demonstrate energy code compliance for lighting and mechanical systems. Systems serving multiple dwelling units must demonstrate compliance with the IECC Commercial Provisions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
302.1, 403.7 [PR2][2]	Heating and cooling equipment is sized per ACCA Manual S based on loads calculated per ACCA Manual J or other methods approved by the code official.	Heating: Btu/hr____ Cooling: Btu/hr____	Heating: Btu/hr____ Cooling: Btu/hr____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.2 [FO1][1]	Slab edge insulation R-value.	R-____ ☐ Unheated ☐ Heated	R-____ ☐ Unheated ☐ Heated	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2, 402.2.10 [FO2][1]	Slab edge insulation installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.1.2 [FO3][1]	Slab edge insulation depth/length.	_____ ft	_____ ft	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2.1 [FO11][2]	A protective covering is installed to protect exposed exterior insulation and extends a minimum of 6 in. below grade.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.9 [FO12][2]	Snow and ice-melting system controls installed to shut off system when pavement temperature > 50F and no precipitation.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1, 402.3.4 [FR1][1]	Door U-factor.	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
402.1, 402.3.1, 402.3.3, 402.5 [FR2][1]	Glazing U-factor (area-weighted average).	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.1.3 [FR4][1]	U-factors of fenestration products are determined in accordance with the NFRC test procedure or taken from the default table.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.1.1 [FR23][1]	Air barrier and thermal barrier installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.3 [FR20][1]	Fenestration that is not site built is listed and labeled as meeting AAMA /WDMA/CSA 101/I.S.2/A440 or has infiltration rates per NFRC 400 that do not exceed code limits.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.5 [FR16][2]	IC-rated recessed lighting fixtures sealed at housing/interior finish and labeled to indicate ≤2.0 cfm leakage at 75 Pa.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.1 [FR12][1]	Supply and return ducts in attics insulated >= R-8 where duct is >= 3 inches in diameter and >= R-6 where < 3 inches.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.4 [FR13][1]	Ducts, air handlers and filter boxes are sealed with joints/seams compliant with International Mechanical Code or International Residential Code, as applicable.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.7 [FR15][3]	Building cavities are not used as ducts or plenums.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.4 [FR17][2]	HVAC piping conveying fluids above 105 ºF or chilled fluids below 55 ºF are insulated to ≥R-3.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.4.1 [FR24][1]	Protection of insulation on HVAC piping.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.6 [FR29][3]	Electrical and communication boxes installed in the thermal boundary of the envelope sealed to limit air leakage between conditioned and unconditioned spaces.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
403.5.2 [FR18][2]	Hot water pipes are insulated to ≥R-3.	R-_____	R-_____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.6 [FR19][2]	Automatic or gravity dampers are installed on all outdoor air intakes and exhausts for mechanical ventilation systems.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.6.1 [FR30][2]	Ventilation systems in climate zones 7 & 8 shall utilize heat or energy recovery			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.1 [IN13][2]	All installed insulation is labeled or the installed R-values provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.1, 402.2.5, 402.2.6 [IN3][1]	Wall insulation R-value. If this is a mass wall with at least ½ of the wall insulation on the wall exterior, the exterior insulation requirement applies (FR10).	R-_____ ☐ Wood ☐ Mass ☐ Steel	R-_____ ☐ Wood ☐ Mass ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2 [IN4][1]	Wall insulation is installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1, 402.2.1, 402.2.2, 402.2.6 [FI1][1]	Ceiling insulation R-value.	R-_____ ☐ Wood ☐ Steel	R-_____ ☐ Wood ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.1.1.1, 303.2 [FI2][1]	Ceiling insulation installed per manufacturer's instructions. Blown insulation marked every 300 ft².			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.2.3 [FI22][2]	Vented attics with air permeable insulation include baffle adjacent to soffit and eave vents that extends over insulation.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.2.4 [FI3][1]	Attic access hatch and door insulation ≥R-value of the adjacent assembly.	R-_____	R-_____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.1.3 [FI17][1]	Blower door test @ 50 Pa. <=5.0 ach in Climate Zones 1-2, and <=3.0 ach in Climate Zones 3-8.	ACH 50 =_____	ACH 50 =_____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.5 [FI27][1]	Ducts are pressure tested in accordance with ANEI/RESNET/ICC 380 or ASTME1554 to determine air leakage with either: Rough-in test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the system including the manufacturer's air handler enclosure if installed at time of test. Postconstruction test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the entire system including the manufacturer's air handler enclosure.	_____ cfm/100 ft²	_____ cfm/100 ft²	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.6 [FI4][1]	Duct tightness test result of <=4 cfm/100 ft2 across the system or <=3 cfm/100 ft2 without air handler @ 25 Pa. Duct tightness <= 8 cfm/100 ft2 for ducts within thermal envelope. For rough-in tests, verification may need to occur during Framing Inspection.	_____ cfm/100 ft²	_____ cfm/100 ft²	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.4.1 [FI24][1]	Air handler leakage designated by manufacturer at <=2% of design air flow.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.1.1 [FI9][2]	Programmable thermostats installed for control of primary heating and cooling systems and initially set by manufacturer to code specifications.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1 [FI11][2]	Circulating service hot water systems have automatic or accessible manual controls.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
403.2 [FI26][2]	Hot water boilers supplying heat through one- or two-pipe heating systems have automatic outdoor setback control to lower boiler water temperature based on outdoor temperature, indoor temperature or water temperature sensing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1.1 [FI28][2]	Heated water circulation systems have a circulation pump. The system return pipe is a dedicated return pipe or a cold water supply pipe. Gravity and thermos-syphon circulation systems are not present. Controls for circulating hot water system pumps start the pump with signal for hot water demand within the occupancy. Controls automatically turn off the pump when water is in circulation loop is at set-point temperature and no demand for hot water exists.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1.2 [FI29][2]	Electric heat trace systems comply with IEEE 515.1 or UL 515. Controls automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.3 [FI31][2]	Drain water heat recovery units tested in accordance with CSA B55.1. Potable water-side pressure loss of drain water heat recovery units < 3 psi for individual units connected to one or two showers. Potable water-side pressure loss of drain water heat recovery units < 2 psi for individual units connected to three or more showers.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.6.2 [FI25][2]	All mechanical ventilation system fans not part of tested and listed HVAC equipment meet efficacy and air flow limits per Table R403.6.2.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.6.3 [FI33][2]	Mechanical ventilation systems tested and verified to meet the minimum flow rates required by Section R403.6.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1.1.1 [FI32][2]	Demand recirculation water systems have automatic controls to start pump when hot water is requested.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
404.1 [FI6][1]	100% of permanent fixtures have high efficacy lamps.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
404.1.2 [FI23][3]	Fuel gas lighting systems have no continuous pilot light.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
404.1.1 [FI35][3]	Exterior lighting for multifamily buildings shall comply with Section C405.4.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
404.2 [FI36][3]	Permanent interior lighting shall be controlled with either a dimmer, occupancy sensor or other control built into the fixture.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
404.3 [FI37][3]	Exterior lighting >= 30 watts shall have the following controls: manual on/off switch with automatic shut-off, automatic shut-off in daylight hours, and controls that override automatic shutoff that returns to automatic control within 24 hours.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
401.3 [FI7][2]	Compliance certificate posted with building specifications and compliance path and results.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
303.3 [FI18][3]	Manufacturer manuals for mechanical and water heating systems have been provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
408.2.1 [FI38][3]	Enhanced Envelope Performance Option: Proposed building UA = 0.95 UA of 2021 IECC Standard Reference Design.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

2021 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Above-Grade Wall	31.90
Below-Grade Wall	0.00
Floor	10.00
Ceiling / Roof	60.00
Ductwork (unconditioned spaces):	_____

Glass & Door Rating	U-Factor	SHGC
Window	0.26	
Door	0.27	

Heating & Cooling Equipment	Efficiency
Heating System:_____	_____
Cooling System:_____	_____
Water Heater:_____	_____

Name: _____ **Date:**_____

Comments