TOWN OF GILMANTON
Residential Energy Code Application
for Certification of Compliance for New Construction, Additions and/or Renovations
(EC-1 Form)
Minimum Provisions

Effective Date: April 1, 2010

Owner/Owner Builder: Company Name: (if applicable)			**General Contractor:** Company Name:		
Name:			Name:		
Mail Address:			Mail Address:		
Town/City:	State:	Zip:	Town/City:	State:	Zip:
Phone:	Cell:		Phone:	Cell:	
E-Mail:			E-Mail:		

Location of Proposed Structure:

Tax Map #: Lot #:

Street:

Town/City: County:

Type of Construction:

○ **Residential** ○ **Small Commercial**

○ New Building ○ Renovation ○ Addition

○ Thermally Isolated Sunroom

○ Modular Home: the site contractor must submit this form detailing supplementary rooms and Floor and/or Basement insulation unless the floor insulation is installed or provided by the manufacturer and no heated space is added.

Zone 5 ○ Cheshire, Hillsborough, Rockingham or Strafford **except the town of Durham that uses 2012 IECC**

Zone 6 ○ All other counties **and the town of Durham**

Total New Conditioned* Floor Area:

_____ ft²

Heating System: (if new system is being installed)

Annual Fuel Use Efficiency (AFUE): _____ %

Fuel Type(s): ☐ Oil ☐ Natural Gas ☐ Propane (LP)

☐ Electric ☐ Wood ☐ Other _____

Heating System Type: ☐ Hot Water ☐ Hot Air

☐ Stove ☐ Resistance ☐ Heat Pump ☐ Geothermal

Basement or Crawl Space: (*a conditioned space is one being heated or cooled, containing un-insulated ducts or with a fixed opening into a conditioned space. Walls must be insulated)

Conditioned? ○ Yes (Walls must be insulated) ○ No

☐ Full Basement ☐ Walk Out Basement

☐ Slab on Grade ☐ Other _____

Structure is EXEMPT because:

☐ Mobile Home ☐ On an historic register

☐ Low energy use (less than 1 watt/ ft²)

Form Submitted by:

☐ Owner ☐ Builder ☐ Designer ☐ Other _____

Architects must certify plans meet code; no form required

(revised 2/8/19

I hereby certify that all the information contained in this application is true and correct, and construction shall comply in all respects with the terms and specifications of the approval given by the Town of Gilmanton and with the New Hampshire Code for Energy Conservation in New Building Construction.

Signature_____ **Print Name**_____ **Date**_____

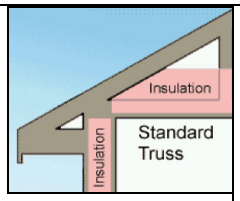
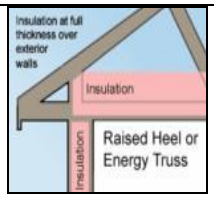
Official Use Only		
Date Complete Application Received:	**Approved by:**	**Date:**

New Hampshire Energy Code EC-1

Certification No.:

Directions: Complete the "Your Proposed Structure" columns. No measurements or calculations are needed. If you at least meet the New Hampshire Energy Code requirements, your project will be approved. Write N/A in any section that does not apply to your project. If your planned structure cannot meet these requirements, consider downloading REScheck from http://www.energycodes.gov/rescheck/download.stm and use trade-offs to prove compliance. **Submit pages 1 and 2 only.**

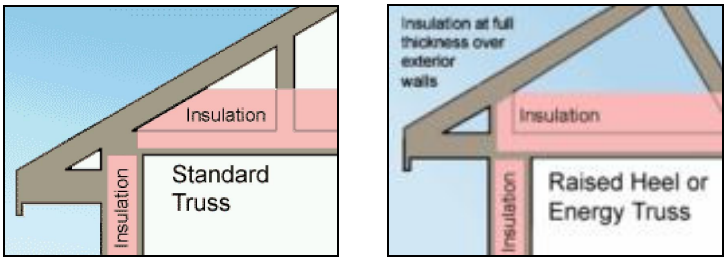
You are encouraged to build with higher R-values and lower U-values than you report here. The "Required R or U Values" are the worst permitted in NH.

Building Section	Required R or U Values	YOUR PROPOSED STRUCTURE: Write Planned R and U Values	YOUR PROPOSED STRUCTURE: Brands / Models / insulation type and thickness (if known)
Window U Factor (lower U is better)	**U .35** (maximum) **U-.32** (if log walls in Zone 5) **U-.30** (if log walls in Zone 6) **U .50** (Thermally Isolated Sunrooms only)	Write in U-Value	Check if ☐ **Sunroom** ☐ **Log Walls**
Skylights	**U .60**		
Flat Ceiling[i] *or* **Flat Ceiling with Raised or Energy Trusses R-value**	 **R-38** (Zone 5) **R-49** (Zone 6) if using the above construction technique **R-49** if log walls  **R-30** (Zone 5) **R-38** (Zone 6) if maintaining the full R value over the plates **R-49** if log walls	Write in R-Value → If using only R-30 in Zone 5 or R-38 in Zone 6 you must check this box	NOTE: R-38 will be deemed to satisfy the requirement for R-49 if the full R-38 insulation value is maintained over the outside plates. **If using only R-30 (Zone 5) or R-38 (Zone 6), you must certify that you'll maintain R-38 over the plates by checking the box below.** ☐ ***By checking this box, I certify that this structure is being built with a raised energy truss or that the full R-value of the ceiling insulation will be maintained over the outside plates.***
Sloped or Cathedral Ceiling	**R-30** (Zone 5 & 6) or **38** if more than 500 ft sq or 20% of total ceiling area (Zone 6) **R-24** (Thermally Isolated Sunrooms only)	Write in R-Value	Check if ☐ **Sunroom**
Above Grade Wall[ii] **R-value**	**R-20** Cavity Insulation only *or* **R-13** *plus* **R-5** Cavity *plus* Continuous Insulation **R-13** (Thermally Isolated Sunrooms only)	Write in R-Value	Log homes must comply with ICC400-2012, have an average minimum wall thickness of 5" or greater with specific gravity of ≤0.5 or 7" with specific gravity >0.5. Check if ☐ **Sunroom** ☐ **Log Walls**
Door U-Value	**U .35** (maximum)	Write in U-Value	
Floor R Value (Basement ceiling)	**R-30** *or* Insulation sufficient to fill joist cavity	Write in R-Value	If conditioning the basement you must insulate **Basement Walls.** If not, you may insulate either **Floor** or **Basement Walls** and/or **Slab Edge**
Basement or Crawl Space Wall R Value	**R-13** Cavity Insulation or **R-10** Continuous Insulation (Zone 5) **R-19** Cavity Insulation or **R-15** Continuous Insulation (Zone 6)	Write in R-Value	
Slab Edge[iii] **R Value**	**R-10** **2′** (Zone 5) **4′** (Zone 6) (see drawing pg 3) *add* **R-5** if the Slab is heated or **R-15** under entire heated slab if a log home.	Write in R-Value	Check if ☐ **Heated Slab**
Air Sealing	**Planned Air Sealing Test Method** There are two approaches to demonstrating compliance with air sealing requirements.	☐ Blower Door ☐ Visual Inspect	The visual inspection certification must be consistent with the requirements of Table 402.4.2 (page 4) and the method of compliance planned and approved by the local jurisdiction

Submit pages 1 and 2 to:

Footnotes to Residential Energy Code Application for Certification of Compliance

[i] Ceilings with attic spaces: R-30 in Zone 5 or R-38 in Zone 6 will be deemed to satisfy the requirement for R-38 or R-49 respectively wherever the full height of uncompressed R-30 or R-38 insulation extends over the wall top plate at the eaves or the full R-value is maintained. This is accomplished by using a raised heel or energy truss as shown in the diagram below or by using higher R-value insulation over the plates.

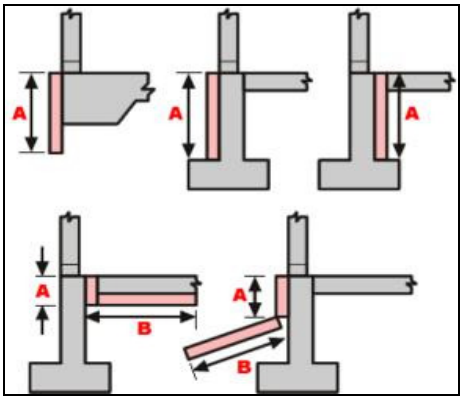


[ii] R-13 + R-5 means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25 percent or less of the exterior, R-5 sheathing is not required where the structural sheathing is placed. If structural sheathing covers more than 25 percent of exterior, the structural sheathing must be supplemented with insulated sheathing of at least R-2.

[iii] Slab edge insulation must start at the top of the slab edge and extend a total of two (Zone 5) or four feet (Zone 6). Insulation may go straight down, out at an angle away from the building, or along the slab edge and then under the slab. A slab is a concrete floor within 1' of grade level. See diagram below.

The top edge of insulation installed between the exterior wall and the interior slab may be mitered at a 45 degree angle away from the exterior wall.

Allowable Slab Insulation Configurations



A or A+ B must equal two feet in Zone 5 or four feet in Zone 6

MODULAR HOMES must be certified by the NH Department of Safety. Unless the floor insulation is provided by the manufacturer this form must be submitted. This form must also be submitted if the basement is to be insulated or supplementary heated space is added to the home upon or after it is set.

AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA

Required Elements Check List (see page 2 AIR SEALING) IECC Code section 402.4.2

This page must be provided to the building inspector at final inspection.

√ **Check here** Certification No.:

	Air barrier and thermal barrier	Exterior thermal envelope insulation for framed walls is installed in substantial contact and continuous alignment with building envelope air barrier.
		Breaks or joints in the air barrier are filled or repaired.
		Air-permeable insulation is not used as a sealing material.
		Air-permeable insulation is inside of an air barrier.
	Ceiling/attic	Air barrier in any dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed.
		Attic access (except unvented attic), knee wall door, or drop down stair is sealed.
	Walls	Corners and headers are insulated.
		Junction of foundation and sill plate is sealed.
	Windows and doors	Space between window/door jambs and framing is sealed.
	Rim joists	Rim joists are insulated and include an air barrier.
	Floors (including above-garage and cantilevered floors)	Insulation is installed to maintain permanent contact with underside of sub floor decking.
		Air barrier is installed at any exposed edge of insulation.
	Crawl space walls	Insulation is permanently attached to walls.
		Exposed earth in unvented crawl spaces is covered with Class I vapor retarder with overlapping joints taped.
	Shafts, penetrations	Duct shafts, utility penetrations, knee walls and flue shafts opening to exterior or unconditioned space are sealed.
	Narrow cavities	Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blown.
	Garage separation	Air sealing is provided between the garage and conditioned spaces.
	Recessed lighting	Recessed light fixtures are air tight, IC rated, and sealed to drywall. Exception—fixtures in conditioned space.
	Plumbing and wiring	Insulation is placed between outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.
	Shower/tub on exterior wall	Showers and tubs on exterior walls have insulation and an air barrier separating them from the exterior wall.
	Electrical/phone box on exterior walls	Air barrier extends behind boxes or air sealed-type boxes are installed.
	Common wall	Air barrier is installed in common wall between dwelling units. HVAC register boots HVAC register boots that penetrate building envelope are sealed to sub-floor or drywall.
	Fireplace	Fireplace walls include an air barrier.

NEW HAMPSHIRE ENERGY CODE

Summary of Basic Requirements See IECC 2009 Code Book for complete details

These 2 pages must be provided to the building inspector at final inspection or retained.

√ Check here **Certification No.:**

	Air Leakage Code section 402.4 The building thermal envelope must be durably sealed to limit infiltration	All joints, seams, penetrations and openings in the thermal envelope including those around window and door assemblies, utility penetrations, dropped ceilings or chases, knee walls, behind tubs and showers, separating unheated garages from the thermal envelope, common walls between dwelling units, attic access, rim joist junction and all other openings in the building envelope that are sources of air leakage must be caulked, gasketed, weather-stripped or otherwise sealed.
	Air Sealing and Insulation Code Section 402.4.2	Building envelope air tightness and insulation installation shall be demonstrated to comply with requirements by Blower Door testing to less than **7** air changes/hr at 50 Pa or a visual inspection per page 4 of this document. The local Building Official may require an independent 3rd party to conduct the visual inspection. See page 4.
	Testing Option Code Section 402.4.2.1 **or** **Visual Option** Code Section 402.4.2.1	While the Blower Door Test and/or Visual Option are methods of demonstrating compliance many of the general requirements as defined by this checklist (pages 5 & 6) must still be met. Blower Door Test conducted by: _____ Result (at 50 Pa): _____CFM Interior Volume_____ CF _____ACH **or** Structure passes Visual Inspection: _____signed _____ date
	Fireplaces Code Section 402.4.3	New wood-burning fireplaces shall have gasketed doors and outdoor combustion air.
	Recessed Lighting Code Section 402.4.5	Recessed lights must be type IC rated and labeled as meeting ASTM E 283 and sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.
	Electrical Power and Lighting Systems Code section 404	A minimum of 50% of the lamps in permanently installed lighting fixtures shall be high efficacy lamps.
	High-Efficacy Lamps Code section 202	Compact fluorescent lamps, T-8 or smaller diameter linear fluorescent lamps, or lamps with a minimum efficacy of: 1. 60 lumens per watt for lamps over 40 watts, 2. 50 lumens per watt for lamps over 15 watts to 40 watts, and 3. 40 lumens per watt for lamps 15 watts or less.
	Materials and Insulation Information Code section 102.1	Materials and equipment must be identified so that code compliance can be determined. Manufacturer manuals for all installed heating, cooling and service water heating equipment must be provided. Insulation R-values, glazing and door U-values and heating and cooling equipment efficiency must be clearly marked on the building plans, drawings or specifications.
	Pull-Down Attic Stairs, Attic Hatch, and Knee Wall Doors Code section 402.2.3	Should be insulated to a level equal to the surrounding surfaces and tightly sealed and weather-stripped at the opening.

	Full size Attic or Basement Entry Doors	All doors leading from a conditioned space into an unconditioned attic or enclosed attic or basement stairwell should be insulated and weather-stripped exterior rated door units. One door is exempt.
	Duct Insulation Code section 403.2	**Supply** ducts in attics must be insulated to at least R-8. All other ducts must be insulated to at least R-6. Exception: Ducts or portions thereof located completely inside the building thermal envelope.
	Duct Construction Code sections 403.2.2 &.3	Ducts, air handlers, filter boxes, and building cavities used as ducts must be sealed. Joints and seams must comply with Section M1601.4.1 of the *International Residential Code*. Building framing cavities must not be used as supply ducts.
	Duct Testing Code sections 403.2.2 &.3	Duct tightness shall be verified by testing unless the air handler and all ducts are located within the conditioned space. Test conducted by: _____ Duct test result at 25 Pa:_____Post construction or _____Rough-in test
	Temperature Controls Code section 403.1 & .1.1	At least one thermostat must be provided for each separate heating and cooling system. Hot air systems must be equipped with a programmable thermostat. Heat pumps having supplementary electric-resistance heat must have controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can meet the heating load
	Mechanical System Piping Insulation Code section 403.3	Mechanical system piping capable of conveying fluids at temperatures above 105°F or below 55°F must be insulated to R-3.
	Circulating Hot Water Systems Code section 403.4 & NH amendments	Circulating service water systems must include an automatic or readily accessible manual switch that can turn off the hot water circulating pump when the system is not in use. Circulating domestic hot water system piping shall be insulated to R-4.
	Mechanical Ventilation Code section 403.5	Outdoor air intakes and exhausts must have automatic or gravity dampers that close when the ventilation system is not operating.
	Equipment Sizing Code section 403.6	Heating and cooling equipment must be sized in accordance with Section M1401.3 of the *International Residential Code*.
	Certificate Code section 401.3	A permanent certificate, completed by the builder or registered design professional, must be posted on or in the electrical distribution panel. It must list the R-values of insulation installed in or on the ceiling, walls, foundation, and ducts outside the conditioned spaces; U-factors and SHGC for fenestration. The certificate must also list the type and efficiency of heating, cooling and service water heating equipment.

NEW HAMPSHIRE ENERGY CODE Summary of Basic Requirements Page 2

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