



CITY OF CONCORD
New Hampshire's Main Street™
Community Development Department
Code Administration

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BULLETIN #	TITLE	DATE ISSUED
2020-02	Concord Energy Code – Requirements, Inspections & Testing	November 5, 2020
SUPERSEDES	SOURCE	SUPERSEDES
2020-01	2015 International Residential Code - As Amended	March 5, 2020

Informational Bulletin 2020-02
Concord Energy Code – Requirements, Inspections, Testing & Resources

Purpose and Scope:

This bulletin helps to clarify energy code requirements, required inspections, and required testing for all building permit applications for new single family, two-family, and townhouse dwelling units built using the 2015 IRC, as amended¹. This bulletin does not cover dwelling units constructed using the 2015 IBC².

Energy Code:

In September of 2019 the [State Building Code](#), and thus the energy efficiency code, was updated; this includes NH amendments. The City of Concord requires compliance with the State Building Code, including energy efficiency requirements, for all new dwelling units. Below is link to Chapter 11 (Energy Efficiency) of the 2015 IRC:

<https://codes.iccsafe.org/content/IRC2015/chapter-11-re-energy-efficiency>

Please see Appendix A of this bulletin for NH amendments to Chapter 11. The amendments are summarized as follows:

- Several required construction documents have been eliminated.
- The requirement for some continuous insulation (sheet type insulation) has been removed.
- The building or dwelling unit maximum air leakage rate was increased to 7 Air Changes Per Hour.
- The maximum duct leakage rates were increased.
- The mechanical ventilation requirement was removed.

Building Permit Energy Code Submittals:

We continue to require the [New Hampshire Residential Energy Code Application \(EC-1 Form pages 1 & 2\)](#) to be submitted as part of your new building permit application; the EC-1 form is also attached to this bulletin. Please note that the EC-1 form should no longer be sent to the State PUC. While most applicants will use the EC-1 form, simulated performance alternatives that comply with IRC section N1105 (R405), such as [ResCheck software](#) calculations, are also accepted.

Required Inspections:

Visual inspections of all insulating materials for slabs, basements, crawl spaces, floors, walls, and ceilings are required.

Required Testing:

Blower door and duct leakage testing is required. Please see Appendix A for details. Successful blower door and duct leakage test results are required to be submitted before a certificate of occupancy can be issued for the dwelling unit.

Exception: A duct air leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope. If you plan to use this exception you must do so in writing, and have it approved, when the building permit application is submitted.

Utility Sponsored Energy Saving and Rebate Programs:

For most residential new construction, including multi-family projects, the four utilities serving NH provide their own ENERGY STAR programs. They also offer other money saving programs that exceed the minimum building code requirements, but are not as strict as ENERGY STAR. Some programs may cover the costs of an energy design, blower door test, duct test, and offer possible rebates. We strongly encourage you to check with your local provider.

Unitil:	https://unitil.com/energy-efficiency/energy-efficiency-resources/
Eversource:	https://www.eversource.com/content/nh/residential/save-money-energy/manage-energy-costs-usage/new-homes-renovations
Liberty:	https://new-hampshire.libertyutilities.com/concord/residential/smart-energy-use/natural-gas/home-energy-savings-tips.html
NH Electric Coop:	https://www.nhec.com/new-equipment-construction/

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1. The BCRB (Building Code Review Board) has amended Chapter 11 of the 2015 International Residential Code and the amendments have been approved by the NH Legislature.
 2. The International Energy Conservation Code shall apply to all dwelling units constructed using the 2015 International Building Code (IBC).

Appendix A – 2015 IRC Chapter 11 NH Amendments

(Please note that this appendix only shows the amended sections of Chapter 11)

1. Amend Section N1101.5 as follows (Expires March 15, 2022):

N1101.5 (R103.2) Information on construction documents. Construction documents shall be drawn to scale upon suitable material. Electronic media documents are permitted to be submitted when *approved* by the *building official*. 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 as herein governed. Details shall include, but are not limited to, as applicable:

1. Insulation materials and their *R*-values.

2. Fenestration *U*-factors and SHGCs.

~~3. Area-weighted *U*-factor and SHGC calculations.~~

~~4. Mechanical system design criteria.~~

~~5. Mechanical and service water heating system and equipment types, sizes and efficiencies.~~

~~6. Equipment and system controls.~~

~~7. Duct sealing, duct and pipe insulation and location.~~

~~8. Air sealing details.~~

~~**N1101.5.1 (R103.2.1) Thermal envelope depiction.** The building's thermal envelope shall be represented on the construction drawings.~~

2. Amend Section N1102.1 as follows (Expires March 15, 2022):

N1102.1 (R402.1) General (Prescriptive). The *building thermal envelope* shall meet the requirements of Sections N1102.1.1 through N1102.1.4 ~~or the requirements of Section 305 of the ICC-400 2012 Standard on the Design and Construction of Log Structures.~~

Exception: The following low energy buildings, or portions thereof, separated from the remainder of the building by *building thermal envelope* assemblies complying with this section shall be exempt from the *building thermal envelope* provisions of Section N1102.

1. Those with a peak design rate of energy usage less than 3.4 Btu/h - ft² (10.7 W/m²) or 1.0 watt/ft² of floor area for space conditioning purposes.

2. Those that do not contain *conditioned space*.

~~3. Including garages, storage rooms and utility rooms that are not part of the thermal envelope.~~

3. Amend Table N1102.1.2 as follows (Expires March 15, 2022):

Revise row "CLIMATE ZONE 6", column "WOOD FRAME WALL R-VALUE" from "20+5 or 13+10^h" to "20 or 13+5^h".

4. Amend Section N1102.4.1.2 as follows (Blower Door Test - Expires March 15, 2022):

N1102.4.1.2 (R402.4.1.2) Testing. The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding five air changes per hour in Climate Zones 1 and 2, and ~~three~~ **seven** air changes per hour in Climate Zones 3 through 8. Testing shall be conducted in accordance with ASTM E 779 or ASTM E 1827 and reported at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the *code official*, testing shall be conducted by an *approved* third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official*. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*.

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5. Amend Section N1103.3.4 as follows:

N1103.3.4 (R403.3.4) Duct leakage (Prescriptive). The total leakage of the ducts, where measured in accordance with Section R403.3.3, shall be as follows:

1. Rough-in test: The total leakage shall be less than or equal to ~~(4)~~ 6 cubic feet per minute (113.3 170 L/min) per 100 square feet (9.29 m²) of conditioned floor area where the air handler is installed at the time of the test. Where the air handler is not installed at the time of the test, the total leakage shall be less than or equal to ~~(3)~~ 4 cubic feet per minute (85 113.3 L/min) per 100 square feet (9.29 m²) of conditioned floor area.
2. Post-construction test: Total leakage shall be less than or equal to ~~(4)~~ 8 cubic feet per minute (113.3 226.6 L/min) per 100 square feet (9.29 m²) of conditioned floor area.

6. Delete Section N1103.6 (Expires March 15, 2022):

~~**N1103.6 (R403.6) Mechanical ventilation (Mandatory).** The building shall be provided with ventilation that meets the requirements of Section M1507 of this code or the *International Mechanical Code*, as applicable, or with other approved means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.~~

~~**N1103.6.1 (R403.6.1) Whole-house mechanical ventilation system fan efficacy.** Mechanical ventilation system fans shall meet the efficacy requirements of Table N1103.6.1.
Exception: Where mechanical ventilation fans are integral to tested and listed HVAC equipment, they shall be powered by an electronically commutated motor.~~