

CHAPTER Puc 1800 NEW HAMPSHIRE CODE FOR ENERGY CONSERVATION IN NEW BUILDING CONSTRUCTION

PART Puc 1801 DEFINITIONS

(A) Puc 1801.01 "Addition" means an extension or increase in the height, conditioned floor area or conditioned volume of a building or structure with a 40% or less glass to wall and ceiling ratio.

Puc 1801.02 "Applicant" means the general contractor, builder, owner or other person submitting an application to the commission or local building code official, as applicable, for approval regarding compliance with the energy code.

Puc 1801.03 "Application" means the plans and specifications, compliance materials, cover letter and any additional material submitted to the commission or local building code official, as applicable, for review for compliance with the energy code.

Puc 1801.04 "ASHRAE 90.1" means the American Society of Heating, Refrigerating and Air-conditioning Engineers, Inc./Illuminating Engineering Society of North America (ASHRAE/IES) 90.1-1999 standard for construction titled, "Energy Efficient Design of New Buildings Except Low Rise Residential Buildings".

Puc 1801.05 "Certificate of compliance" means the document issued by the commission certifying approval of an application pursuant to RSA 155-D:4 IV.

Puc 1801.06 "Commission" means the New Hampshire public utilities commission.

(B) Puc.1801.07 "Conditioned Sunroom Addition" or "Sunroom Addition" means an addition with a glass to wall and ceiling ratio of greater than 40%.

Puc 1801.08 "Energy Code" means the "New Hampshire Code for Energy Conservation in New Building Construction", as referred to in RSA 155-D:2, II, which is Puc 1800.

Puc 1801.09 "Fossil Fuel Heat System" means any heating system fueled by oil, gas (natural gas or propane) or electricity.

Puc 1801.10 "Greenhouse" means a structure with a glass to wall and ceiling ratio of greater than 40% which is used solely as a room in which to grow plants.

Puc 1801.11 "International Energy Conservation Code (IECC 2000)" means the "International Energy Conservation Code", 2000 edition, issued by the International Code Council, Inc, 5203 Leesburg Pike, Suite 600 Falls Church, Virginia 22041.

Puc 1801.12 "Non-residential building" means any building or structure which is not a residential building.

Puc 1801.13 "ResCheck" means the computer software, provided by the Department of Energy (DOE), set to IECC 2000, "ResCheck" designed to allow an applicant to calculate and demonstrate compliance of a structure with the IECC 2000 code and includes the DOE package generator which uses the RES Check software engine or any performance packages developed from by the Department of Energy for Climate Zone 15.

Puc 1801.14 "Residential building", as referenced in RSA 155-D:3,II, means:

- (a) Any detached one or 2 family dwelling;
- (b) Any other dwelling, three stories or less in height; and
- (c) Any other structure 3 stories or less in height and less than 4,000 square feet in gross floor area.

1801.15 "Thermal Isolation" means a separation of conditioned spaces between a sunroom addition and a dwelling unit consisting of existing or new walls, doors, or windows.

Readopt with amendment and renumber Puc 1802, eff 11-16-89 (Document no. 4702, ss Document No. 6152, eff 12-26-95, EXPIRED 4-24-96, ss Document 6333, eff 9-17-96, ss Document No. 6897, eff 2-1-99)

PART Puc 1802 APPLICATION OF RULES

Puc 1802.01 Application of Rules.

(a) All new buildings and structures or portions thereof and additions, alterations or renovations to existing buildings that provide facilities or shelter for public assembly, educational, business, mercantile, institutional, storage and residential occupancy, as well as those portions of factory and industrial occupancies designed primarily for human occupancy within New Hampshire shall, except as provided in Puc 1802.02, comply with the minimum design and construction requirements, as set forth in the International Energy Conservation Code 2000

Puc 1802.02 Exemptions from and Amendments to IECC 2000 and Additional Requirements.

(a) The following, exemptions shall apply to the IECC 2000 adopted in Puc 1802.01:

- (1) Buildings and structures or portions thereof which are exempt pursuant to RSA 155-D:7, I, II and/or III;
- (2) Residential buildings, defined in Puc 1801.14 shall conform to the A-1 standards as provided in the IECC 2000;
- (3) A historic building, which is exempt from the energy code pursuant to RSA 155-D:7, IV and/or exempt from the IECC 2000 pursuant to the IECC 2000 § 101.4.2.3;
- (4) Greenhouses that are free-standing, or attached to a building and separated by a wall having the same thermal value as an exterior wall, and provided with a separate temperature control system.;
- (5) Buildings or additions with less than 150 square feet of gross floor area;
- (6) Buildings and structures or portions thereof which are neither heated or cooled by systems dependent upon fossil fuel; and,
- (7) Mobil homes and other structures which are subject to Title VI the National Manufactured Home Construction and Safety Standards Act of 1974, 42 U.S.C § 544401 through 5426.

(b) The following amendments shall apply to the IECC 2000 adopted in PUC 1802.01

(1) IECC 2000§ 104.1 shall be amended to read in its entirety as follows

"Prior to receiving a permit to build, specifications and plans or drawings showing compliance with the IECC 2000 shall be submitted and approved;

(2) The definitions of residential and non-residential buildings contained in § 201.1 of the IECC 2000 are amended to the definitions of residential and non-residential buildings contained in Puc 1801.14 and Puc 1801.12 respectively;

(3) The exterior design conditions attributable to residential construction described in chapter 3 § 302, of the IECC 2000 shall be those attributable to Concord, New Hampshire or DOE Climate Zone 15.

(4) The requirements for duct work insulation shall be modified to require a minimum insulation factor of R-3, pursuant to RSA 155-D:3,I (c).

(5) Conditioned Sunroom Additions shall:

(a) maintain thermal isolation;

(b) not be used as kitchens or sleeping rooms; and

(c) shall be thermostatically controlled as a separate zone of the existing system.

(6) Additions, alterations, renovations or repairs to an existing building, building system or portion thereof shall conform to the provisions of this code as they relate to new construction without requiring the unaltered portion(s) of the existing building system to comply with this code provided:

(a) the addition, alteration, renovation or repair shall not create unsafe or hazardous situations in the unaltered portions of the existing building or building system; and

(b) the addition, alteration, renovation or repair shall not cause mechanical service water-heating, electrical distribution or illumination system or portion thereof to become unsafe, hazardous or overloaded.

(7) Should the situations described in (6)(a) or (6)(b) exist, then the unaltered portion(s) of the existing building or building system must also comply with the provisions of this code.

(8) The following renovations need not comply with the provisions of this code provided the energy use of the building is not increased as a result of these renovations:

(a) storm windows installed over existing windows or doors;

(b) glass only replacements in an existing sash and frame;

(c) existing ceiling, wall or floor cavities exposed during construction provided these cavities are filled with insulation; and

(d) construction where the existing roof, wall or floor cavity is not exposed.

(9) IECC 2000 section 105 shall be amended in accordance with 155-A:7 Enforcement Authority as follows:

a. The local enforcement agency appointed pursuant to RSA 674:51 shall have the authority to enforce the provisions of the state building code, provided, however, that where there is no building inspector, the state fire marshal or the state fire marshal's designee shall have the authority to enforce the provisions of the state building code, subject to the review provisions contained in RSA 155-A:10.

(b) Upon the request of a local enforcement agency, state agencies, boards, and commissions may provide advisory services and technical assistance concerning any building or any construction project in the local enforcement agent's jurisdiction.

(c) The local enforcement agency appointed to enforce the state building code shall have the authority to inspect all buildings, structures, construction sites, and other places in the jurisdiction. If consent for such inspection is denied or not reasonably obtainable, the local enforcement agency may obtain an administrative inspection warrant under RSA 595-B.

(10) Statewide exterior design conditions for residential construction described in chapter 3 § 302, of the IECC 2000 shall be those attributable to Concord, New Hampshire, as contained in data relating to DOE Climate Zone 15, (HDD range 7000-8499).

(c) The following additional requirements shall apply:

(1) Circulating domestic hot water pipe shall be insulated to a minimum of R-4; and

(2) Non circulating domestic hot water pipes shall be insulated to a minimum of R-4.

(d) Nothing contained in (a)(10) above shall be construed as precluding towns and cities from enforcing provisions of Puc 1800 and/or inspecting buildings, pursuant to RSA 155-D:4, I or otherwise.

Puc 1802.03 Cross References from RSA 155-D. The reference in RSA 155-D:4, IX, providing that geographical distinctions shall not apply in the administration of the code to residential construction, shall indicate that geographical zones within New Hampshire based on heating degree day variations which are a factor in building design parameter requirements shall not be applied in the administration of the energy code as to residential construction, such that the minimum standard for the entire state shall be, as provided in Puc 1802.02 (that applicable to Concord, New Hampshire)

PART Puc 1803 METHODS OF COMPLIANCE REGARDING DESIGN

Puc 1803.01 Design Approval Required.

(a) No building design shall be considered approved pursuant to Puc 1800 and RSA 155-D without the issuance of a certificate of compliance and an approval number by the commission, except as provided in (b) and (c) below.

(b) A building design which a local building official has approved in writing pursuant to RSA 155-D:4, II shall be deemed approved pursuant to (a) above.

(c) Pursuant to RSA 155-D:5, II, a building design shall be deemed approved for which:

(1) Plans have been certified as complying with the energy code by an architect or engineer pursuant to RSA 155-D:4, VI; or

(2) Plans have been deemed to be approved due to failure of the commission to act on a completed application within 15 working days of submittal pursuant to RSA 155-D:4, V.

Puc 1803.02 Demonstrating Compliance with the Design Requirements of Puc 1800.

(a) An applicant shall demonstrate that each building meets or exceeds the minimum construction standards of the IECC2000, as modified by Puc 1800, by one of the following methods:

(1) As to a residential building:

a. By showing compliance on a paper application as provided with ResCheck®;

b. By showing compliance by entering construction standards data in the computer software program, Res Check®, or a New Hampshire version of Res Check®, pursuant to Puc 1803.03;

c. By a certification issued by an architect or engineer, pursuant to Puc 1803.04;

d. A manufactured or prefabricated structure, except a mobile home, transported over state lines for erection in New Hampshire, only, shall be certified by the manufacturer as meeting the requirements of the IECC2000, as modified by Puc 1800, or a nationally recognized equivalent of the IECC2000, pursuant to RSA 155-D:4, VIII; or

e. By showing a standard design approval, pursuant to Puc 1803.05; or

f. By submitting an Energy Compliance Statement generated after completion of a third party Home Energy Rating System (HERS) audit performed by a nationally certified Home Energy Rating System (HERS) Provider using REM/Rate, Solar Guage Treat or any other HERS Software approved by the National Residential Energy Services Network (RESNET); or

(2) As to a non-residential building:

a. By a certification issued by an architect or engineer, pursuant to Puc 1803.04;

b. By showing compliance by entering constructions standards data in a computer software program, such as Com Check EZ®, Com Check Plus® or their equivalent, recognized by the American Society of Heating, Refrigerating and Air-conditioning Engineers, Inc./Illuminating Engineering Society of North America (ASHRAE/IES) to show compliance with ASHRAE 90.1;

- c. By showing a standard design approval, pursuant to Puc 1803.05; or
- d. A manufactured or prefabricated structure, except a mobile home, transported over state lines for erection in New Hampshire, only, shall be certified by the manufacturer as meeting the requirements of the IECC2000, as modified by Puc 1800, or a nationally recognized equivalent of the IECC2000, pursuant to RSA 155-D:4, VIII;
- e. A non-residential building of 4000 square feet or less may show compliance using either the residential (Res Check software) or commercial code (Com Check software).



Puc 1803.03 Demonstrating Compliance by Res Check®.

- (a) An applicant shall demonstrate compliance of a residential building by Res Check®, as follows:

- (1) By a Res Check® compliance verification method, as follows:

- a. Residential building design by Res Check® prescriptive package worksheets in which the U-values and R-values are given for the thermal envelope;
- b. Residential building design by Res Check® component performance worksheets, also called the trade-off method, which allows trade-offs between building envelope components and heating and cooling equipment efficiencies to minimize costs; or
- c. Residential building design by Res Check® computer software print out or electronic transmission, which achieves similar results to the manual trade-off approach; and

- (2) By a completed Res Check® basic requirements checklist.

Puc 1803.04 Architect's or Engineer's Certification.

(a) Pursuant to RSA 155-D:4, VI, and VII, all architects or engineers registered and practicing in New Hampshire shall certify in writing to the commission and to the local building official in whose jurisdiction the building is located, that any building or structure which they design and that any blueprint to which they affix their professional seal, meets or exceeds the requirements of the energy code.

(b) Any architect or engineer issuing certification pursuant to RSA 155-D:4, VI, and VII shall provide, in writing, to the commission and to the local building official, the following:

- (1) The name, address, signature and telephone number of the certifying architect or engineer;
- (2) The registration stamp and registration number of the certifying architect or engineer;
- (3) The tax map and lot number, and the county, town and street location of the project;
- (4) The name, address and telephone number of the project owner;
- (5) The name, address and telephone number of the general contractor if known at the time of certification;



(6) A statement describing the method used by the Architect or Engineer to determine that the structure meets the IECC 2000 code specifications; and

(7) A certification statement as follows:

“The proposed structure has been designed and reviewed by the architect or engineer and determined to be in compliance with all applicable requirements of RSA 155-D and the energy code adopted pursuant thereto.”

(c) Any architect or engineer providing the certification described in this section shall be registered and practicing in the state of New Hampshire.

(d) An architect or engineer shall be deemed to be "practicing in New Hampshire", referred to in (c) above, if he or she has a working knowledge of all relevant New Hampshire building codes and the energy code, for the purpose of designing a structure in compliance with the energy code.

Puc 1803.05 Standard Design.

(a) If an applicant has previously received a certificate of compliance for an identically designed structure and the energy code requirements applicable to the structure have not been revised or amended since the issuance of the certificate of compliance, the applicant may:

- (1) Provide the prior approval number;
- (2) Complete, sign and date the application;
- (3) Omit from the application materials architectural drawings and proof of compliance; and
- (4) Submit the material described in (1) through (3) above as a completed application.

(b) The standard design method of demonstrating energy code compliance, as specified in (a) above, may be used with residential and non-residential buildings.

(c) Plans which have been deemed to be automatically approved due to failure of the commission to act on a completed application within 15 working days of submittal, pursuant to RSA 155-D:4, V, shall not be deemed to be previously approved plans, for purposes of this section.

Puc 1803.06 Certificate of Compliance with the Design Requirements of Puc 1800.

(a) The commission shall issue to the applicant a certificate of compliance, pursuant to RSA 155-D:4,IV, with the design requirements of Puc 1800 if:

- (1) The commission determines that the applicant has demonstrated, pursuant to Puc 1803, that the design of the building complies with the energy code; or
- (2) The commission, pursuant to RSA 155-D:4,V, has failed to act on a completed application within 15 working days of submission of the completed application.

(b) The applicant shall, prior to obtaining a building permit, submit the certificate of compliance issued by the commission to the appropriate local building official responsible for the issuance of building permits, as evidence of compliance with the design requirements of Puc 1800.

PART Puc 1804 APPLICATION PROCESS

Puc 1804.01 Content of Applications.

(a) Each applicant shall show in detail in the application documents, pertinent data and features of the building project and the equipment and systems as governed by Puc 1800, including but not limited to, the following:

- (1) Design criteria;
- (2) Exterior envelope component materials;
- (3) U-values of the envelope systems;
- (4) R-values of insulating materials;
- (5) Size and type of apparatus and equipment;
- (6) Equipment and systems controls;
- (7) Energy calculations, if applicable; and
- (8) Other pertinent data to indicate conformance with the requirements of Puc 1800.

(b) Each applicant shall include with each application for review of a building for compliance with the energy code, the following:

- (1) An EC-1 application form; and
- (2) Architectural drawings of the building.

(c) On the EC-1 application form required by (b)(1) above, the applicant shall provide the following:

- (1) The applicant's name;
- (2) The applicant's title and professional certification relative to the project, such as owner, builder, general contractor, architect or engineer, if any;
- (3) The name of the applicant's business relative to the project, if any;
- (4) The applicant's complete address and telephone number;
- (5) As to the owner of the structure the subject of the application, his/her;
 - a. Name;
 - b. Complete address; and
 - c. Telephone number;

(6) A complete description of the location of the subject building including its tax map and lot number, its street address, and the town or city and county wherein located;

(7) A certification by the applicant, as follows:

"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 Public Utilities Commission and with the New Hampshire Code for Energy Conservation in New Building Construction.";

(8) The signature of the applicant; and

(9) The date of the signature.

(d) In the architectural drawings of the building required by (b)(2) above, the applicant shall:

(1) Show the exterior dimensions of all heated living spaces;

(2) Show all window and exterior door locations;

(3) Label alphabetically all window and door locations on the floor plan to coincide with the list of windows and doors required by (d)(8) below;

(4) Show all floor plan perimeter dimensions;

(5) Show the finished wall height for each heated floor in the structure;

(6) Provide elevation drawings for any floors where there are cathedral, roof deck or sloping ceilings;

(7) Provide elevation drawings which identify:

a. The dimensions of the flat ceiling area;

b. The length of slope;

c. The height of any knee walls;

d. The height of any full height walls;

e. The distance from the knee wall to the exterior wall;

f. The distance from the knee wall to the opposite wall; and

g. The dimensions of dormer walls and skylight shafts.

(8) Provide a list of windows and doors which:

a. Identifies each window and door alphabetically;

- b. States the U or R-value of each window size, glazed door and door glazing area;
- c. Lists the quantity of each window size;
- d. Identifies the roughed-out dimensions of each window in decimals of a foot or inches or any combination thereof; and
- e. Provides the total square foot area of all rough openings for each window size; and
- f. Provides the total square foot rough-opening dimensions of all windows and all glazed doors and sliders.

(e) In the window and door schedules required by (d) (8) above, applicants shall meet the following requirements:

- (1) Descriptions of doors which have less than 50 percent glazing area shall include under the glazing totals only the glass area in those doors;
- (2) The entire rough opening dimension of the solid area of the door shall be listed separately;
- (3) The U or R-values for each different type of window and door shall also be listed on the window and door schedule;
- (4) Basement windows shall be separately listed on the schedule; and
- (5) Basement windows shall be included in the glazing total only when foundation walls enclose heated living space.

(f) The architectural drawings required by (b)(2) above shall meet the following requirements:

- (1) The drawings shall, in addition to meeting the specific requirements of this section, provide, pursuant to (a) above, any additional information necessary to allow determination of compliance with RSA 155-D and Puc 1800;
- (2) The maximum size of any prints submitted shall be 18 inches by 24 inches; and
- (3) Each drawing shall contain a scale of the drawings shown in feet and inches.

Puc 1804.02 Procedure Relating to Applications.

(a) Applicants may submit applications to the commission in any of the following forms:

- (1) In paper form; or
- (2) In electronic form, using the commission's online compliance module.

(b) Any application submitted electronically shall not be deemed received, for purposes of the response within 15 working days deadline of RSA 155-D:V, until the applicant submits a paper copy of the application containing an original signature of the applicant or a signature is confirmed by a unique electronic identifier mechanism.

(c) When an applicant submits plans and specifications to the commission for review pursuant to RSA 155-D, it shall comply with the following:

(1) Applications shall include one original and 2 copies of all material submitted; and

(2) The application materials shall not be completed in pencil or by any other non-permanent marking method.

(d) If, after the application has been submitted to the commission, an applicant makes a substantive revision which would cause the structure to be less energy efficient or to use more fossil fuels or electricity, the applicant shall resubmit the modified plans and application for recertification by the Commission.

(e) The date of the revision, as described in (d) above, shall constitute, for purposes of RSA 155-D:4,V, a new receipt date for the application.

(f) For purposes of RSA 155-D:4,V, an application shall not be considered received by the commission until all material required to be submitted has been submitted.

(g) An owner of a building for which plans and specifications have been approved by an architect or engineer pursuant to RSA 155-D:4,VI shall submit to the commission in lieu of an application, a copy of the certification required in Puc 1803.04 (b) and shall submit another copy of the certification directly to the town as proof of compliance with the code.

Puc 1804.03 Appeals Process.

(a) Any applicant whose application has been initially disapproved by the commission may request an informal reconsideration conference with the director of consumer affairs at the commission.

(b) The director of consumer affairs at the commission, or his or her designee, shall hold an informal conference requested pursuant to (a) above, within 10 working days of the request for a conference.

(c) Within 10 working days of the informal conference referred to in (a) above, the director of consumer affairs shall, pursuant to RSA 541-A:29,II(a):

(1) Issue a written decision which shall:

a. Affirm, reverse or modify the decision on the application; and

b. Summarize the results of the informal conference and the basis for the decision; and

(2) Provide a copy of the written decision, referred to in (c)(1) above, to the applicant.

(e) Any applicant dissatisfied with the decision of the director of consumer affairs may request in writing, within 10 working days of receipt of the written decision, a formal hearing before the commission, pursuant to Puc 202 and Puc 204, to review the decision.

Puc 1804.04 Training

It shall be the responsibility of the Commission to develop and administer a training program for architects, engineers, contractors, municipal building officials and others effected by this energy code

regarding all aspects of the Code for Energy Conservation in New Building Construction. The training programs shall include classroom lectures and, if requested, technical assistance in the field.

PART Puc 1805 EVIDENCE OF COMPLIANCE OF THE COMPLETED BUILDING

Puc 1805.01 As-Built Construction Certification Required.

(a) Prior to occupancy of a building for which compliance with the energy code is required, certification that the building as constructed complies with the energy code shall be provided as required by this section.

(b) In those municipalities which issue certificates of occupancy, the owner-builder or general contractor shall submit to the appropriate local building official responsible for the issuance of certificates of occupancy, written certification that the building has been constructed as specified in the application and in conformance with the energy code.

(c) In those municipalities which do not issue certificates of occupancy, the owner-builder or general contractor shall submit to the commission and to the owner or buyer of the building written certification that the building has been constructed as specified in the application and in conformance with the energy code.

(d) The individual operating as the owner-builder or general contractor issuing the certification required by (b) and (c) above shall include in the certification the requirements contained in form EC-3, as provided in (e) below.

(e) The owner-builder or general contractor shall include on form EC-3, the certification of energy code compliance, the following:

- (1) The name of the owner, builder or general contractor submitting the form;
- (2) The name of the company the owner, builder or general contractor is representing;
- (3) Identification of the building being certified, including the tax map and lot number, the street address, the municipality and the county wherein the property is located;
- (4) The date on which all New Hampshire energy code related components and systems have been installed on the building being certified;
- (5) A statement as follows:

"The building being certified meets or exceeds the requirements of the New Hampshire Code for Energy Conservation in New Building Construction and RSA 155-D and complies in all respects with the statements and information supplied on and in connection with the application for certificate of compliance approved by the Public Utilities Commission.";
- (6) A statement describing the method used by the Architect or Engineer to determine that the structure meets the IECC 2000 code specifications.
- (7) The signature of the builder or contractor; and
- (8) The date of the signature.