NYC Energy Conservation Code

Residential New Buildings

Photo: Samantha Modell
The NYC Energy Conservation Code (NYCECC or Energy Code) governs new building and alteration applications. This guide focuses on new residential buildings up to three stories.

A Department of Buildings plan examination includes review for Energy Code compliance, including the proposed building’s: thermal envelope; heating systems; and permanently installed lighting and power systems. Applicants may demonstrate compliance by using REScheck software or DOE2 energy modeling software.

Building Envelope
The Energy Code provides minimum standard requirements for thermal insulation of building walls, floors, roofs, windows, skylights and doors. The building envelope must also be properly air-sealed and moisture-protected from condensation.

Heating and Service Hot Water Systems
Heating and service hot water systems must comply with minimum efficiency ratings and must be correctly sized. Ducts and system piping must be properly insulated and sealed, and shut-off dampers must be provided where the building envelope is penetrated.

Lighting and Power
In residential buildings, 50% of all permanent light fixtures must use high-efficacy lamps, and each dwelling unit must be separately metered to track electricity consumption.

For complete and current information, please refer to the NYC Energy Conservation Code, as this guide provides only provide a brief overview of the compliance requirements.

To learn more, visit the Department’s Energy Code Guideline page in the Codes & Reference section at nyc.gov/buildings. You may also email questions to EnergyCode@buildings.nyc.gov.
FIRST STEPS

Determine if the project is for a Residential New Building (Energy Conservation Construction Code of New York State 202)
Any residential building up to three stories – 2011 NYCECC, Chapter 4

Determine Scope of Work
1. Identify building thermal envelope and whether it is continuous
2. Identify heating system(s)
3. Identify lighting and power system(s)

Applicable Exemptions
Envelope of low-energy buildings

Acceptable Codes
The code elected at initial filing remains in effect for the life of the application:
1. 2007 ECCNYS, modified by 2009 NYCECC (applications filed between 7/1/2010 – 12/27/2010); or
2. 2011 NYCECC, 2010 ECCNYS with modifications (applications filed after 12/28/2010)

ADMINISTRATIVE

DOB Forms
• PW1: Section 10 (complies or is exempt), Section 11 (related applications)
• PW1C: For boilers greater than 350,000 Btu
• TR1: Progress inspection item Energy Code Compliance Inspections
• TR8: Energy Code progress inspections
• EN1: Scanned on plans (only for energy modeling using DOE2 software)

Technical Documents
• N/A
Related Applications

- PW1, Section 11: Related application numbers and, when not yet filed, indicate the disciplines to be filed and by whom
- Other disciplines may be filed under subsequent documents

BIS Required Items

- Check current Department of Buildings Rules, Bulletins and Service Notices
- All required work types have been filed

PROFESSIONAL STATEMENT

Applicant’s Statement of Compliance or Exemption from NYCECC

PW1, Section 10: Properly checked “in compliance” or “exempt” for the correct reasons – 1 RCNY 5000-1(e)

ENERGY ANALYSIS

All of the following methods of analysis are acceptable:

REScheck:

- Analysis accounts for the entire project, even if other disciplines are filed under separate documents or applications
- Analysis indicates correct property address and site information
- Analysis worksheets:
  - Are scanned onto plans, signed and sealed
  - Indicate correct code version
  - Account for all building thermal envelope, heating system and lighting system components proposed
  - Indicate that proposal passes

Simulated Performance Alternative

- EN1: Scanned on the plans
SUPPORTING DOCUMENTATION

*Drawings correspond to each item applicable and as indicated in the Energy Analysis:*

**Permanent Certificate**
- Location of permanent certificate to be identified on drawings – NYCECC 401.3

**Envelope**
- Identify thermal envelope and whether it is continuous
- Drawings indicate:
  - Insulation R or U values for below- and above-grade walls and wall assemblies, slabs on grade, floors and roof assemblies – NYCECC 402
  - Access hatches to unconditioned attic and crawl spaces that are insulated and weather-stripped – NYCECC 402.2.3
  - Party walls in attached buildings are properly insulated and air-sealed – NYCECC 402.2.12
  - Fenestration U values for doors, windows and skylights – NYCECC 402.3
  - Specific provisions for air leakage – NYCECC 402.4

**Heating Systems**
- Controls narrative for alternating systems – determination required
- Drawings indicate:
  - Location of thermostat(s) for each separate system – NYCECC 403.1
  - Provisions for duct insulation and sealing – NYCECC 403.2
  - Provisions for mechanical system piping insulation – NYCECC 403.3
  - Circulating hot water systems are insulated to at least R-2 and include a shut-off switch – NYCECC 403.4
  - Mechanical ventilation intakes and exhausts have shut-off dampers – NYCECC 403.5
  - Heating load calculations for deriving correct equipment size – NYCECC 403.6
  - Specific provisions for snow-melt systems and pools where applicable
NYC Energy Conservation Code
Residential New Buildings

– NYCECC 403.8, 403.9

**Electrical Power and Lighting Systems**

Drawings indicate:

- That at least 50% of lamps in permanently installed lighting fixtures are high-efficiency – NYCECC 404.1

- That each dwelling unit is fitted with a separate electrical meter or sub-meter – NYCECC 404.2

**Progress Inspections**

- Progress inspection tables and construction scheduling requirements shown on drawings

*The following progress inspections are required in most filings, must be indicated on the TR8 form and presented in tabular format on the drawings – 1 RCNY 5000-01, Table 1:*

- IA1) Protection of foundation insulation
- IA2) Insulation placement and R-values
- IA3) Fenestration thermal values and ratings
- IA4) Fenestration ratings for air leakage
- IA5) Fenestration areas
- IA6) Air sealing and insulation – visual
- IA7) Air sealing and insulation – testing
- IB1) Fireplaces
- IB2) Dampers integral to building envelope
- IB3) HVAC and service water heating equipment
- IB4) HVAC and service water heating system controls
- IB5) Duct plenum and piping insulation and sealing
- IB6) Duct leakage testing
- IC1) Electrical metering
- IC2) Lighting in dwelling units
- ID1) Maintenance information
- ID2) Permanent certificate
The above list is not comprehensive; see 1 RCNY 5000-01 for a complete list of inspections that may be applicable. Construction scheduling requirements for the above progress inspections must be provided on the drawings in the form of notes.