How-to Guide:
Supporting Documentation

In Compliance with

2025 New York City Energy Conservation Code

- GENERAL
- BUILDING ENVELOPE
- MECHANICAL SYSTEMS
- LIGHTING & ELECTRICAL POWER
- **OTHER REQUIREMENTS**

NOTE: In this *How-To Guide: Supporting Documentation,* selected Energy Code provisions have been generalized, summarized, rephrased, and/or highlighted. This guide is intended: 1) To provide general guidance for the job applications seeking compliance with the 2025 NYCECC; 2) Not to replace or represent the entire 2025 NYCECC and related regulations of the City of New York and the Department of Buildings; and 3) Not to provide complete compliance solutions for any particular type of job or work. Comprehensive mandates, applicability, exemptions, exceptions and options will be found in the 2025 NYCECC and related regulations of the City of New York and the Department of Buildings.

Additional Energy Efficiency Credits

Key Principles

Projects required to comply with Additional Energy Efficiency Credits (ECC Sections R408, C406, or Section 11) must include a credit summary table in the main filing or submit a summary of credits generated by COMcheck or REScheck.

The table must:

- List each proposed credit and **corresponding code section**
- Identify **base/required credits** and **credits achieved**
- Include **supporting calculations and drawings**, where applicable
- Show the **total credits achieved compared to the credits required**

Important notes:

- The credit table must appear **only once in the main filing**
- Credits may be counted **only if the measure is not already required by the Energy Code or other laws**
- For **mixed-occupancy buildings**, required credits must be **weighted by gross conditioned floor area**
- For multiple occupancies, credits must be area weighted per occupancy
- Credits must always be rounded to a whole number

Example Additional Efficiency Credit Table

Credit ID	Code Section	Credit Title	Base Energy Credit	Credit Achieved	Supporting Documentation
E02	C406.2.1.2	UA reduction (15%)	13	6	
E03	C406.2.1.3	Reduced air leakage	8	17	EN-003
				Total Additional Efficiency Credits Achieved:	23
				Total Credits Required	

PERMANENT AND THERMAL ENVELOPE CERTIFICATE

1 RCNY §5000-01(g)(4)
R401.3
C401.3

For new buildings, a permanent certificate must be installed indoors and in accordance with Sections ECC R401.3 or C401.3, except that it may be posted near the electrical distribution panel at eye level and in plain sight. The Builder or Other Approved Party must complete and post the Certificate.

Required Data Contents in the Certificate

- **R-values in opaque assemblies and other components -** insulation in ceiling/roofs, walls, floor/foundation components, and ducts outside the conditioned spaces
- **U-factors and SHGC values of fenestration -** windows and doors
- **Air leakage testing results**
- **Mechanical equipment types and efficiencies** - HVAC and Service water heating equipment

Location of Certificate

- Drawings must specify that the Certificate shall be posted on a wall in the space where the furnace is located, a utility room, or an approved location inside the building prior to final inspections of the application.
- When specifying to post the Certificate near or on the electrical distribution panel, drawings must also instruct that the Certificate must be readily visible (at eye level and in plain sight) and yet must not obstruct the visibility of the other Code-required labels (e.g., circuit directory label, service disconnect label, etc.).

Additions & Alterations Job Applications

For Additions and Alterations applications affecting information on the *existing Permanent Certificate*, drawings must specify that the existing Certificate shall be updated and re-installed.

Permanent Energy Efficiency Certificate

Insulation Rating					
Ceiling/Roof	Attic	R-50 cavity			
	Vaulted	R-50 cavity			
Walls	Framed wall (wood frame)	R-6 continuous	+ R-21 cavity		
	Mass wall	n/a			
	Basement	R-15 continuous			
	Crawl Space	n/a			
Floors	Over unconditioned space	R-30 cavity			
	Slab Edge	R-12 continuous	4 ft deep		
Ducts outside Conditioned space	Attic	R-10			
	Other	R-8			
Fenestration Rating					
Window	U-Factor (NFRC)	U-0.25		SHGC (NFRC)	0.36

Figure OR-2.a. Sample Permanent Energy Efficiency Certificate (partial view)
[Click here for the full view of a Sample certificate and a Sample suggested form]

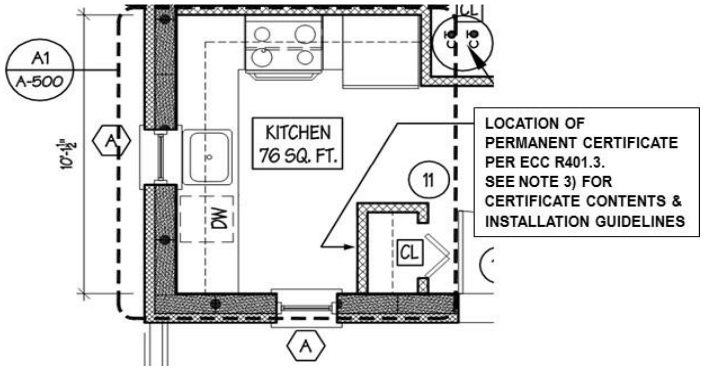


Figure OR-2.b. Sample Plan Drawing indicating Certificate Requirement

ELECTRICAL VEHICLE SERVICE READY

R404.6

- **This Requirement Applies to**
  - One or two-family dwellings with parking area
  - Low-rise multi-family buildings with parking area
  - Townhouses with parking area
- **For Each Dwelling Unit, Provide:**
  - 208/240V 40-amp outlet, or
  - Panel capacity and conduit for the future installation of such an outlet adjacent to the parking area.
- **For Residential occupancies with Common Parking Area, Provide:**
  - Panel capacity and conduit for the future installation of 208/240V 40-amp outlets for 5 percent of the total parking spaces, but not less than one outlet, or
  - 208/240V 40-amp outlets for 5 percent of the total parking spaces, but not less than one outlet.

Figure OR-3.
Electrical Outlet Ready for Electrical Vehicle Service
Source:
basc.pnnl.gov/images

Demand Responsive Controls

Applies where **demand response signals and infrastructure are available,** exceptions include small systems, certain occupancies, and specialized applications

- **HVAC Systems:**
  Must respond to demand signals by adjusting setpoints (e.g., ± 1–4°F) while maintaining occupant comfort and normal operation when no signal is present

C403.4.6
C404.8
C405.2.8.1

- **Water Heating:**
  Electric storage water heaters (40–120 gal, ≤ 12 kW) must include demand response capability to initiate heating in response to a signal (per AHRI 1430/CTA-2045)

- **Lighting Systems:**
  Interior lighting (≥ 75% of floor area in applicable occupancies) must automatically reduce output to ≤ 80% and gradually dim during demand response events

ENERGY RATING INDEX (ERI) - COMPLIANCE ALTERNATIVE FOR RESIDENTIAL BUILDINGS

ERI is a score-based rating system which alternatively determines Energy Code compliance of a new residential building based on its energy performance. It allows applicants to approach the Energy Code with the same flexibility of the Simulated Building Performance (Section R405), yet it uses energy modeling and in-field inspection to confirm that results are achieved.

ERI 'Reference Design' vs. 'Rated Design'

R406.4
R406.5

- The ERI Reference Design is a standardized baseline home defined by ANSI/RESNET/ICC 301 and used to calculate the Energy Rating Index (ERI).
- The Rated Design is the proposed residential building design being evaluated for compliance.
- Compliance is achieved when the Rated Design has an ERI less than or equal to the value in Table R406.5 for the applicable climate zone.
- Different ERI targets apply depending on whether the building includes qualifying on-site renewable energy systems (OPP).

For Compliance Through ERI Approach, Drawings Must Indicate:

R406.2
R406.3
R406.5
R406.6
R406.7

1) Mandatory provisions for Residential buildings listed in Table R406.2 are met.
2) The building thermal envelope thermal conductance must be less than or equal than the prescriptive thermal conductance multiplied by 1.15
3) Verification of compliance is required to be completed by an approved third party.
4) Documentation is required regarding a) Compliance software tools, b) Compliance report, and c) Other additional documentation that may be required to submit to the Department.
5) Calculation software tools, where used, meet the requirements on a) Minimum capabilities, b) Specific approval, and c) Input values.

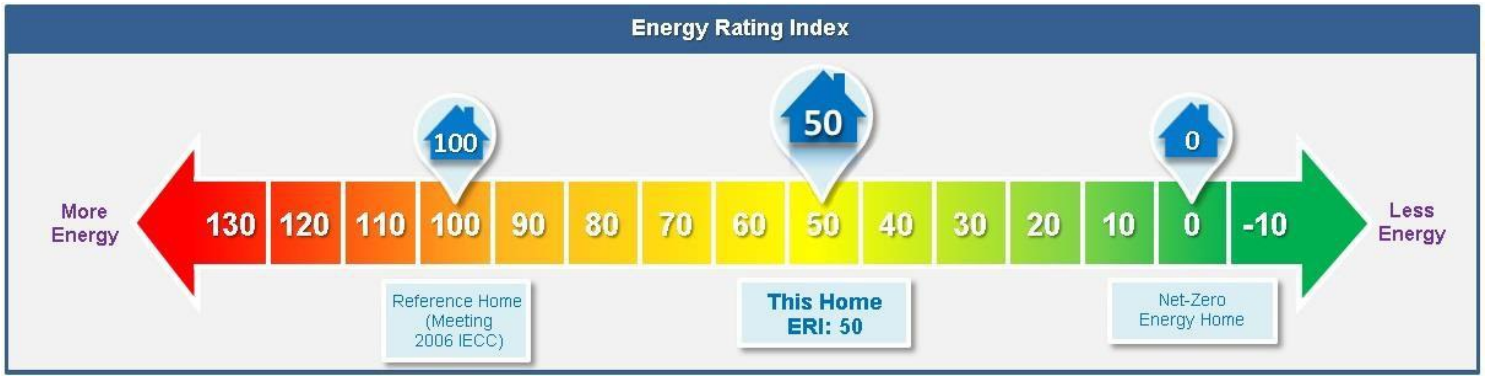


Figure OR-5. Sample Energy Rating Index Label

SYSTEM COMMISSIONING

Specify Total Proposed Heating and Cooling Capacity

1 RCNY §5000-01(g)
C408.2
6.7.3.3
C408.3
9.7.3

- For ALL Commercial building job applications including New buildings, Additions, and Alterations Total Heating Equipment Capacity (in Btu/h) being Installed, or

  Total Heating Equipment Capacity (in Btu/h) Serving the Alteration space
  and
  Total Cooling Equipment Capacity (in Btu/h) being Installed, or
  Total Cooling Equipment Capacity (in Btu/h) Serving the Alteration space

Must be clearly calculated and documented *on an EN- labeled sheet*.

Specify Whether System Commissioning is Required

- Drawings must clearly state *whether* System Commissioning is required.
- System Commissioning is *not required* for:
  - Buildings with less than 10,000 square feet (929 m2) gross conditioned floor area and combined heating, cooling and service water heating capacity of less than 960,000 Btu/h (281 kW) (Both ECC and ASHRAE)
  - Mechanical systems of Total Heating capacity Installed, or Serving the Alteration Space < 600 kBtu/h (ASHRAE only)
  - Mechanical systems of Total Cooling capacity Installed, or Serving the Alteration Space < 480 kBtu/h (ASHRAE only)
  - Renewable Energy systems of Total generating capacity < 25 kW

Areas Where Commissioning is Required

- For systems for which Commissioning is required, drawings should clearly identify specifications of each Commissioning-required system with detailed information on the equipment/fixture schedules and complete narratives including controls notes.

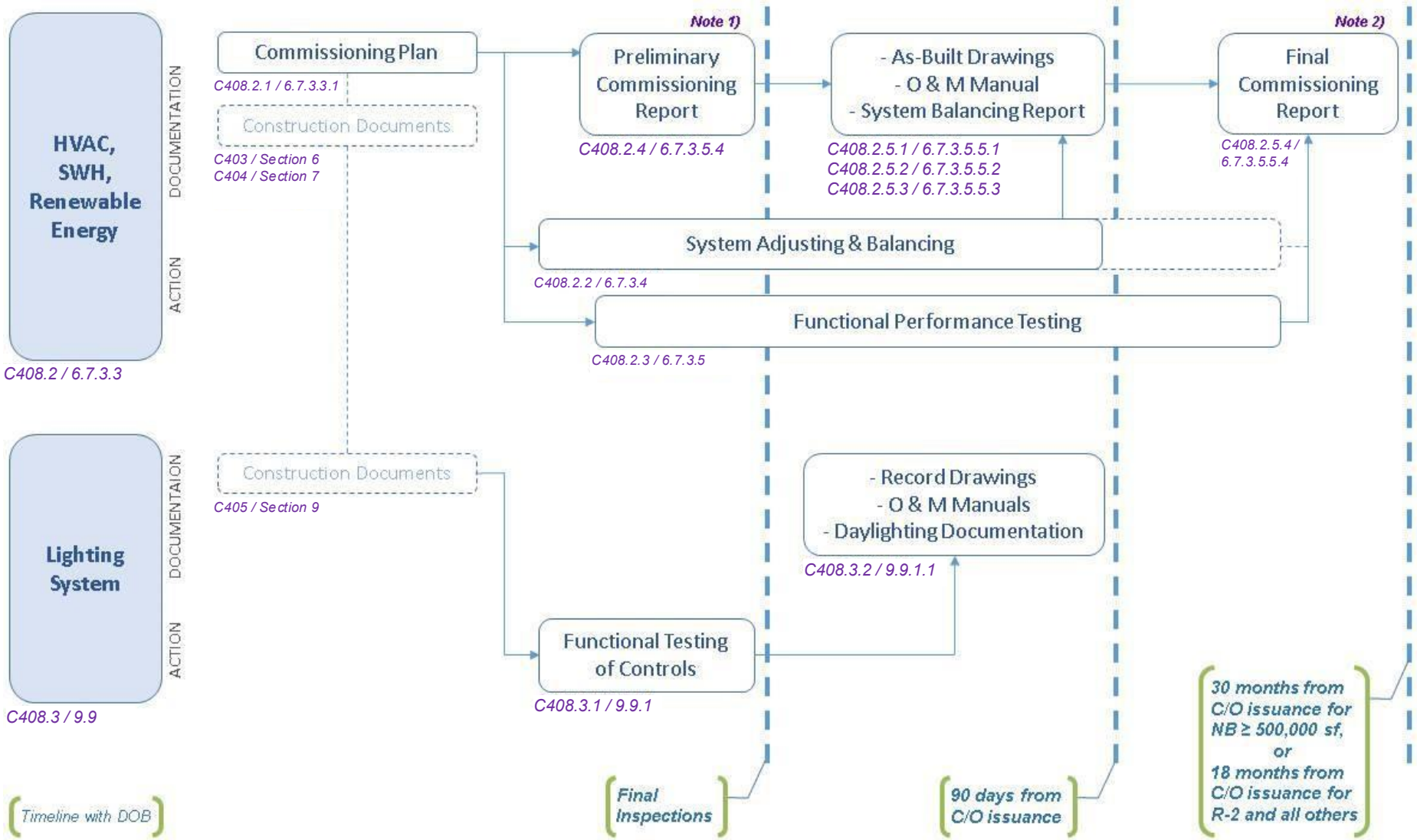
- Commissioning-required systems, at a minimum, include the following:

  Mechanical systems
  1) Heating, cooling, air handling and distribution, ventilation and exhaust systems;
  2) Energy recovery systems;
  3) Manual or automatic controls;
  4) Plumbing systems;
  5) Service water heating systems;
  6) Refrigeration systems;
  7) Renewable energy and energy storage systems; and
  8) Other systems/equipment/components supporting HVAC and affecting energy use.

  Lighting control systems
  1) Occupant sensor controls;
  2) Time-switch controls; and
  3) Daylight responsive controls.

> ▪ *Total Heating Equipment Capacity' calculations must include the 'Service Water Heating' equipment capacity.*

SYSTEM COMMISSIONING



Note 1) Upon the owner's receipt of the Preliminary Commissioning Report, the owner (owner's authorized agent) shall send a letter acknowledging the receipt to DOB at cx@buildings.nyc.gov.

Note 2) Upon completion of the final commissioning procedures, the owner (owner's authorized agent) shall send the Final Commissioning Report to DOB at cx@buildings.nyc.gov. Click here for more information in the FAQ under DOB Energy Code website.

Figure OR-7. System Commissioning Work Flow

CHANGES TO EXISTING BUILDINGS

Compliance

- Job applications of additions, alterations, repairs or relocation of existing buildings/structures, or changes of occupancy to existing buildings must demonstrate compliance with the NYCECC and other governing NYC Codes that are effective as of the job application filing date.
- Job applications <u>following *ECC*</u> must comply with: *R501.2* *C501.2*
  1) Section R502/Section C502 for Additions
  2) Section R503/Section C503 for Alterations
  3) Section R504/Section C504 for Repairs
  4) Section R505/Section C505 for Changes of Occupancy or Use
- Job applications <u>following *ASHRAE*</u> must comply with: *4.2.1.2* *4.2.1.3*
  1) Provisions of Sections 5, 6, 7, 8, 9 and 10 *or* Section 11 *or* Appendix G for Additions
  2) Provisions of Sections 5, 6, 7, 8, 9 and 10 *or* Section 11 *or* Appendix G for Alterations
  3) Provisions of Sections 5, 6, 7, 8, 9 and 10 for Repairs and Changes of Occupancy or Use

Clear Scope of Work

1 RCNY §5000-01(g)

- Construction drawings must clearly define the proposed scope of work in the existing buildings by:
  1) Written descriptions of all proposed changes to the existing buildings, and
  2) Graphical delineations of the proposed work on drawings to separate the areas affected by 'additions, alterations, repairs, relocations, or changes of C/O' from the areas of 'existing-to-remain.'

CHANGES TO EXISTING BUILDINGS

A. Additions

- In general, *altered* portions that resulted from the proposed 'addition' in the existing building or building system are subject to the ECC requirements for *new* buildings. *R502 C502*
- Specifically, *Residential* buildings must demonstrate compliance by Prescriptive compliance option per Section R502.2
- Specifically, *Commercial* buildings must demonstrate compliance by 1) Prescriptive compliance option per Section C502.3, *or* 2) satisfying 2025 NYC ASHRAE 90.1 applicable sections.
- Compliance of the 'addition' must be demonstrated by showing that:
  1) The 'addition' portion alone complies with the ECC prescriptively; *or*
  2) The existing building and the 'addition' combined, as a single building, comply with the ECC through the performance path; *or*
  3) For Residential buildings, the existing building with the 'addition' uses no more energy than the existing building prior to the 'addition.'
- A change from unconditioned space to conditioned space is considered an addition.
- Additions of more than 25% of the existing conditioned area are also required to comply with 50% Additional Efficiency Credits for new Commercial buildings or 5 credits for Residential Buildings.

B. Alterations

- In general, *altered* portions that resulted from the proposed 'alteration' in the existing building or building system are subject to the ECC requirements for *new* buildings. *R503 C503*
- Alterations that are substantial improvements (as defined in the ECC) must also comply with 100% of the required Additional Efficiency Credits.
- The following alterations, provided that the energy use of the building after the 'alteration' is not increased, need *not* comply with the requirements for *new* buildings:
  1) Storm windows installed over existing fenestration
  2) Surface-applied window film installed on existing single-pane fenestration assemblies reducing solar heat gain
  3) Existing ceiling, wall or floor cavities exposed during construction, provided that cavities are completely filled with insulation
  4) Construction where the existing roof, wall or floor cavity is not exposed
  5) Roof recover
  6) Re-roofing of roofs without insulation in the cavity, providing new insulation either above or below the exposed sheathing (Residential buildings only)
  7) Alterations that replace less than 10 % of the luminaires in a space *(commercial buildings only)*
  8) Air barriers are not required for roof recover and roof replacement unless the entire existing building envelope is in the work scope of alterations, renovations or repairs *(commercial buildings only)*
- Compliance requirements for 'alterations' in *Residential* buildings
  1) Building Envelope: Section R503.1.1
  2) Heating and cooling systems: Section R503.1.2
  3) Service hot water systems: Section R503.1.3
  4) Lighting: Section R503.1.4

CHANGES TO EXISTING BUILDINGS

B. Alterations (*continued from the previous page*)

R503
C503

- Compliance requirements for 'alterations' in *Commercial* buildings
  1) Building Envelope: Section C503.2
  2) Heating and cooling systems: Section C503.3
  3) Service hot water systems: Section C503.4
  4) Lighting systems: Section C503.5
- Alterations in Commercial buildings complying with 2025 NYC ASHRAE 90.1 need *not* comply with Section C503.

C. Repairs

R504
C504

- While building maintenance and repairs must be conducted in compliance with relevant New York City Codes, work on damaged/non-damaged building components justified by the required repair/maintenance in the existing building are considered as 'repairs' work and are *not* subject to the requirements for Alterations in Section R503/Section C503.
- The following are considered 'repairs':
  1) Glass-only replacements in fenestration
  2) Roof repairs
  3) Replacement of the bulb and/or ballast within the existing luminaires in a space, without increasing the installed interior lighting power
  4) Replacement of existing doors that separate conditioned space from the exterior, without removing the existing vestibule (Commercial buildings only)
  5) Air barriers are not required for roof repair unless the entire existing building envelope is in the work scope of alterations, renovations or repairs (Commercial buildings only)
- Repairs in Commercial buildings complying with 2025 NYC ASHRAE 90.1 need *not* comply with Section C504.

D. Change of Occupancy or Use

R505
C505

- Residential building: A space converted from a different use to a dwelling unit, shall comply with the Addition requirementsof R502
- *Commercial buildings: When a change of use happens in a space, the Energy Use Intensity* for each system shall be checked under tables C505.2.2, C505.2.3 and C505.2.4*, where the EUI* is increased the system must comply as if it was a New Building.
- Alterations in conjunction with the change of use or occupancy must also comply with the requirements of R503 and C503.