

Statement of Substantial Need for Earlier Implementation

I hereby find, pursuant to §1043(f)(1)(c) of the New York City Charter, and hereby represent to the Mayor, that there is substantial need for the implementation of the amendments to Section 5000-01 of Title 1 of the Rules of the City of New York, regarding construction document compliance with the 2014 New York City Energy Conservation Code ("NYCECC"), upon the publication in the City Record of its Notice of Adoption.

The 2014 NYCECC was enacted by Local Law 4 for the year 2015, effective January 1, 2015. Requirements for new code provisions of commercial buildings and progress inspections in the current 1 RCNY §5000-01 cite an earlier version of the NYCECC, making the citations from the rule incorrect for the 2014 NYCECC and associated inspection forms. Adoption of this proposed amendment to the current rule will correct the misalignment between the code and the rule, and resolve the considerable confusion resulting in the industry.



Rick D. Chandler, P.E.
Commissioner
Department of Buildings

APPROVED: _____



Bill de Blasio
Mayor

DATE: _____

1.26.15

NOTICE OF ADOPTION OF RULE

NOTICE IS HEREBY GIVEN, pursuant to the authority vested in the Commissioner of the Department of Buildings by Section 643 of the New York City Charter and in accordance with Section 1043 of the Charter, that the Department of Buildings hereby adopts the amendments to Section 5000-01 of Chapter 5000 of Title 1 of the Official Compilation of the Rules of the City of New York, regarding energy code.

This rule was first published on December 16, 2014 and a public hearing thereon was held on January 16, 2015

Dated: 1.26.15

New York, New York

A handwritten signature in black ink, appearing to read "Rick Chandler", written over a horizontal line.

Rick D. Chandler, P.E.

Commissioner

Statement of Basis and Purpose

Local Law 4 for the year 2015 was effective as of January 1, 2015. It updates the New York City Energy Conservation Code ("City Energy Code") to comply with the requirements of the State Energy Law and the 2014 updates to the New York State Energy Code ("State Energy Code"). This rule amends 1 RCNY Section 5000-01, which implements the City Energy Code, to conform to the changes to the City Energy Code in Local Law 4. The rule also reflects changes in the State Energy Code regarding specific tests, inspections and code references.

Specifically, this amendment to Section 5000-01:

- Removes definitions listed in the rule that will be defined in the City Energy Code, if Intro. 550 is enacted;
- Adds and removes progress inspections to correspond to City Energy Code requirements that come into effect if Intro. 550 is enacted;
- Clarifies the existing supporting documentation submission requirements by requiring a supporting documentation index; and
- Clarifies commissioning requirements.

References in this rule to the Administrative Code or the New York City Energy Conservation Code mean the Administrative Code or the New York City Energy Conservation Code, respectively, as amended by Local Law 4 of 2015.

The Department of Buildings' authority for these rules is found in sections 643 and 1043 of the New York City Charter. Section 5 of Local Law 4 authorizes the Department to promulgate rules implementing the changes to the City Energy Code. Section 4 of Local Law 4 repeals and replaces section 28-1001.2 of the Administrative Code of the City of New York, and includes authority for the Department to issue this rule.

New material is underlined.

[Deleted material is in brackets.]

"Shall" and "must" denote mandatory requirements and may be used interchangeably in the rules of this department, unless otherwise specified or unless the context clearly indicates otherwise.

Section 1. Subdivision (b) of section 5000-01 of title 1 of the rules of the city of New York is amended, to read as follows:

(b) References: See New York City Energy Conservation Code (Administrative Code Sections 28-1001.1 et seq.); New York State Energy Conservation Construction Code (19 NYCRR part 1240); Administrative Code Section 28-104.7.9, Sections [BC106.13] BC107.13 and [BC109.3.5] BC110.3.5; 1 RCNY §101-07 ("[Inspections and] Approved Agencies").

§2. Subdivision (c) of section 5000-01 of title 1 of the rules of the city of New York is amended to read as follows:

(c) Definitions. For the purposes of this chapter, the following terms shall have the following meanings:

[(1)] ADDITION. An addition as defined in the Energy Code.

[(2)] APPROVED PROGRESS INSPECTION AGENCY. An approved progress inspection agency as described in subparagraph (iii) of paragraph (3) of subdivision (c) of section 101-07 of the rules of the Department.

ASHRAE 90.1. American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., Standard 90.1-2010 as defined in the New York State Energy Conservation Construction Code and amended by Appendix A of the Energy Code.

[(3)] COMMERCIAL BUILDING. A commercial building as defined in the Energy Code.

[(4)] DESIGN APPLICANT. An applicant of record who develops, signs and seals the construction drawings. The design applicant may be someone other than the registered design professional who prepares, signs and seals the energy analysis.

[(5)] ENERGY CODE. The New York City Energy Conservation Code ("ECC"), [including American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., Standard 90.1, "Energy Standard for Buildings Except Low-Rise Residential Buildings," ("ASHRAE 90.1") where applicable] as defined in Chapter 10 of Title 28 of the Administrative Code.

HISTORIC BUILDING. A historic building as described in the ECC.

[(6)] PROJECT. A [design and construction undertaking comprised of work related to one or more buildings and the site improvements. A project is represented by one or more plan/work applications, including construction documents compiled in accordance with Section BC 106 of the New York City Building Code, that relate either to the construction of a new building or buildings or to the demolition or alteration of an existing building or buildings. Applications for a project may have different registered design professionals and different job numbers, and may result in the issuance of one or more permits.]project as defined in the Energy Code.

[(7)] RESIDENTIAL BUILDING. A residential building as defined in the Energy Code.

§3. Subdivision (d) of section 5000-01 of title 1 of the rules of the city of New York is amended to read as follows:

(d) Applicability.

(1) Applicable version and edition of Energy Code. Applications must comply with the Energy Code version and edition in effect when the application is filed, continuing through construction and sign-off of the application by the Department.

(2) Commercial building projects. All applications related to a single commercial building project must [use] follow either ECC [Chapter 5] Chapters C2 through C5 or ASHRAE 90.1 [(as required by section ECC 501)] in its entirety and as modified by ECC Appendix A.

[(3) Commercial buildings with vertical fenestration exceeding 40% of the above-grade wall.]

(i) ECC Compliance Path. Vertical fenestration is allowed up to 30% of the gross wall area, prescriptively. Commercial buildings with vertical fenestration exceeding [40%] 30% of the above-grade wall must [be designed in accordance with either section ECC 506 or ASHRAE 90.1, and] provide daylighting controls in accordance with ECC provisions to a maximum fenestration area of 40% of the gross above-grade wall area.

(ii) ASHRAE 90.1 Compliance Path. Vertical fenestration is allowed up to 40% of the gross wall area, prescriptively. If the vertical fenestration exceeds 40% of the gross wall area, the design team must use energy modeling [to comply with the Energy Code,] in accordance with Section 11 of ASHRAE 90.1 ("Energy Cost Budget Method") or Appendix G of ASHRAE 90.1 ("Performance Rating Method") and as provided in subparagraph (iv) of paragraph (1) of subdivision (f) of this section or Section 5.6 of ASHRAE 90.1 ("Building Envelope Trade-off Option").

[(4)] (3) Identification of related applications. Applicants must indicate in the application form all applications related to the project or, if an application has not yet been filed, the name of the applicant or the applicant's firm and discipline for any anticipated related applications.

§4. Subparagraphs (i) and (ii) of paragraph 2 of subdivision (e) of section 5000-01 of title 1 of the rules of the city of New York are amended to read as follows:

(i) Historic building. [All the proposed work is in or on the premises of
(A) a National- or State-designated historic building
(B) a building certified as a contributing building within a National or State historic district
(C) or, a building certified as eligible for such designation, as provided in section ECC 101.4.2.]

(ii) Envelope of low-energy building. All the proposed work is related to the envelope system of a low-energy or unconditioned building, as described in [section ECC 101.5.2] ECC Chapter 1.

§5. The undesignated introductory paragraph, subparagraph (i), clause (D) of subparagraph (ii), clause (D) of subparagraph (iii), and the first undesignated clause of subparagraph (iv) of paragraph 1, and paragraph 2 of subdivision (f) of section 5000-01 of title 1 of the rules of the city of New York, are amended to read as follows:

(f) Energy analysis. An energy analysis is required for every project that is not entirely exempt. The energy analysis shall identify the compliance path followed, demonstrate how the project design complies with the Energy Code and, for commercial projects, indicate whether the project is designed in accordance with ECC [Chapter 5] Chapters C2 through C5 or with ASHRAE 90.1.

(1) Accepted formats for energy analysis. One of the following formats may be used to present the energy analysis:

(i) Tabular analysis. For new buildings, additions and/or alterations to existing residential or commercial buildings for which either ECC Chapter 4, ECC [Chapter 5] Chapters C2 through C5 or ASHRAE 90.1 has been used, the applicant may create a table entitled “Energy Analysis” as described in figure 1.

Such table shall compare the proposed values of each Energy Code-regulated item in the scope of work with the respective prescriptive values required by the Energy Code. The items shall be organized by discipline, including Envelope Systems, Mechanical and Service Water Heating Systems, and Lighting and Electrical Systems, as applicable.

For commercial building additions and/or alterations involving lighting, the applicant may choose to utilize the Lighting Application Worksheet from COMcheck for the lighting part of the analysis in lieu of including lighting in the tabular analysis; however, the supporting documentation index must provide a breakdown of each lighting fixture to clarify the location per room type or floor. See subparagraph [iii] (iii) of this paragraph and Figure 2 in subdivision (g) of this section.

* * *

(ii) REScheck Software Program. The REScheck software program available from the United States Department of Energy website may be used for residential buildings as follows:

(D) [New York State form] REScheck version.

* * *

(iii) COMcheck. The COMcheck software program available from the United States Department of Energy website may be used for commercial buildings as follows:

(D) COMcheck versions. [Applicants must use only the New York State COMcheck form or the ASHRAE 90.1 COMcheck form, whichever reflects the standard used for project design.

All three parts of the COMcheck report—the envelope, the mechanical/service water heating and the lighting/power parts—shall be presented, except where the project type is an addition or alteration as described above and some parts of the report are not relevant to the scope of work.

Where ECC Chapter 5 has been used for design, the report must specify the 2010 Energy Conservation Construction Code of New York State version of COMcheck unless a stand-alone New York State-specific

version of the software is no longer supported. In the event that a New York State-specific version is no longer supported, the report must specify the 2007 ASHRAE 90.1 version of the software.

Where ASHRAE 90.1 has been used for design, the report must specify the 2007 ASHRAE 90.1 version of the software.]

1. Only the New York State versions of the COMcheck forms are permitted.

2. For applications filed on or after January 1, 2015, the report must specify the New York State Energy Code or New York State amended ASHRAE 90.1. In the event that a New York State-specific version is no longer supported, the report must specify the applicable IECC or ASHRAE 90.1 version of the software.

3. All three parts of the COMcheck report—the envelope, the mechanical/service water heating and the lighting/power parts—shall be presented, except where the project type is an addition or alteration as described above and some parts of the report are not relevant to the scope of work.

(iv) Energy modeling based on DOE2. For new commercial buildings and additions or alterations to commercial buildings, where trade-offs among disciplines and/or the performance path are used in accordance with [section ECC 506 or] ASHRAE 90.1 section 11 or Appendix G, an energy modeling program developed by the United States Department of Energy, including DOE2 or updates of DOE2, shall be used; such updates include DOE2.1E, VisualDOE, EnergyPlus and eQuest.

(2) Mixed-occupancy buildings three stories or fewer. In accordance with section ECC 101.4.6, buildings three stories or fewer above grade with mixed residential and non-residential occupancies must comply with the respective requirements of Chapters 2 through 4 and [5] Chapters C2 through C5, and must have separate energy analyses, except that a tabular analysis format may be used to show both the residential and non-residential requirements.

§6. Subdivision (g) of section 5000-01 of title 1 of the rules of the city of New York is amended by amending the first undesignated paragraph, and adding a new Figure 2 following such first undesignated paragraph, to read as follows:

(g) Supporting documentation. The construction drawings submitted for approval shall provide all energy design elements and shall match or exceed the energy efficiency of each value in each part of the energy analysis – envelope, mechanical/service water heating, and lighting/power. The supporting documentation shall be listed in a table that serves as an indexing guide to the construction document set. Such table shall list the proposed values of each Energy Code-regulated item in the scope of work with the respective location in the drawing set.

Figure 2: Sample Supporting Documentation Index:

SUPPORTING DOCUMENTATION INDEX Code chapter and/or standard used for design Climate Zone 4A		
Code Section	Item Description	Supporting Documentation Location
(List specific code section)	(List all elements of the scope of work in the detail that they are addressed by the energy code.)	(List the drawing page number and/or section title.)

§7. Paragraph 1 of subdivision (g) of section 5000-01 of title 1 of the rules of the city of New York is amended to read as follows:

(1) Envelope. Building wall sections and details shall be provided for each unique type of roof/ceiling, wall, and either the foundation, slab-on-grade, basement or cellar assembly. Such building wall sections shall show each layer of the assembly, including, but not limited to, insulation, moisture control and air barriers. If continuous insulation is indicated, it must be fully continuous, uninterrupted by framing, slab edges, shelf angles, or any other continuous breaks in the insulation. The insulation in each case shall be labeled and shall be equal to or greater than the R values, and an assembly in each case shall be equal to or less than the assembly U factors, in the energy analysis.

Door, window and skylight schedules shall include columns for U and SHGC values for each fenestration assembly type, and such values shall be equal to or less than those in the energy analysis. Mandatory requirements to prevent air leakage shall be detailed. Siding attachment over foam sheathing shall comply with the Energy Code as required.

§8. Paragraph 3 of subdivision (g) of section 5000-01 of title 1 of the rules of the city of New York is amended by amending subparagraphs (ii) and (iv), and adding a new subparagraph (v), to read as follows:

(ii) Exterior lighting zones. Exterior lighting zones as set forth in ECC Table [505.6.2(1)]C405.6.2(1) correspond with the following zoning districts in the New York City Zoning Resolution:

* * *

(iv) Feeders. For applications using ASHRAE 90.1 for prescriptive compliance, calculated feeder voltage drops must be provided in accordance with ASHRAE 90.1 [section 8.4].

(v) Automatic receptacle controls. For applications using ASHRAE 90.1 for prescriptive compliance, 50 percent of the receptacles must be automatically controlled and clearly shown on the drawings in accordance with ASHRAE 90.1.

§9. Paragraphs 4 and 7 of subdivision (g) of section 5000-01 of title 1 of the rules of the city of New York are amended to read as follows:

(4) Mandatory requirements. The construction documents shall comply with all mandatory requirements of the Energy Code.

(i) For residential buildings, references for such requirements are listed in Section ECC 401.2.

(ii) For commercial buildings complying with the provisions of ECC [Chapter 5 provisions] Chapters C2 through C5, references for such requirements are listed throughout [Chapter 5 or, if Section 506 is used, in Section ECC 506.2] Chapters C2 through C5; for commercial buildings complying with ASHRAE 90.1, such requirements are set forth [in Sections 5.4, 6.4, 7.4, 8.4, 9.4 and 10.4] throughout the referenced standard.

[Exception: Sections ECC 402.5 and 502.5 shall not be mandatory as vapor barriers are not required in Zone 4A.]

(iii) Commissioning statement. Every application filed by a registered design professional for approval of construction documents for a new building or alteration under the commercial provisions of ECC shall include a statement of either compliance with or exemption from the commissioning requirements of the Energy Code as described in ECC C408.

(7) Required progress inspections. Supporting documentation shall also set forth all applicable required progress inspections in accordance with the Energy Code, 1 RCNY §101-07 and this section.

(i) Applicant's instructions regarding required progress inspections. Progress inspections required to be performed during construction for any new building, addition or alteration project shall be identified by the design applicant according to the scope of work and listed and described in the approved construction drawings as required progress inspections.

The description shall set forth the standard of construction and the inspection criteria as appropriate for the scope of work in accordance with Table I or Table II of subdivision (h) of this section, as applicable; simple reference to the citations provided, without such description, is not sufficient.

The applicant shall include the instruction that, in accordance with Section BC [109.9] 110.9 and ECC 104.2.3, where an inspection or test fails, the construction shall be corrected and must be made available for reinspection and/or retesting by the progress inspector until it complies.

For additions and alterations, the applicant must clearly indicate what portions of the altered systems should be inspected and/or tested, and what inspection and/or testing may be outside the scope of the work.

(ii) Construction scheduling instructions. The drawings shall state that, in accordance with Article 116 of Title 28 and Section BC [109] 110, construction shall be scheduled to allow required progress inspections to take place, and that roofs, ceilings, exterior walls, interior walls, floors, foundations, basements and

any other construction shall not be covered or enclosed until required progress inspections are completed or the progress inspector indicates that such covering or enclosure may proceed, at each stage of construction, as applicable.

(iii) Commercial building reference standards and citations. Progress inspection reference standards and citations shall conform to the respective requirements of ECC [Chapter 5] Chapters C2 through C5 or ASHRAE 90.1 as used for design, in accordance with the following:

(A) When ECC [Chapter 5 has] Chapters C2 through C5 have been used for the project design, as reflected in the energy analysis, the applicant shall list on the drawings the respective references and citations for ECC for the progress inspection.

(B) When ASHRAE 90.1 has been used for the project design, as reflected in the energy analysis, the applicant shall list on the drawings the respective references and citations for ASHRAE 90.1 for the progress inspection.

§10. The undesignated opening paragraph and Table I of subdivision (h) of section 5000-01 of title 1 of the rules of the city of New York are amended to read as follows:

(h) List of progress inspections required. The following progress inspections and/or testing set forth in Tables I and II shall be required when applicable to the scope of work and shall be identified/described in the supporting documentation and included on the drawings submitted to the Department. Energy Code sections cited in Tables I and II of this section shall be understood to include the section, all subsections, all tables and, when ASHRAE 90.1 is used, appendices related to the cited Energy Code section.

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**TABLE I – PROGRESS INSPECTIONS FOR ENERGY CODE
COMPLIANCE – RESIDENTIAL BUILDINGS**

Inspection/Test		Frequency (minimum)	Reference Standard (See ECC Chapter 6) or Other Criteria	ECC or Other Citation
IA	Envelope Inspections			
IA1	Protection of exposed foundation insulation: Insulation shall be visually inspected to verify proper protection where applied to the exterior of basement or cellar walls, crawl-space walls and/or the perimeter of slab-on-grade floors.	Prior to backfill	Approved construction documents	303.2.1
IA2	Insulation placement and R-values: Installed insulation for each component of the conditioned space envelope and at junctions between components shall be visually inspected to ensure that the R-values are marked, that such R-values conform to the R-values identified in the construction documents and that the insulation is properly installed. Certifications for unmarked insulation shall be similarly visually inspected.	As required to verify continuous enclosure while walls, ceilings and floors are open	Approved construction documents	303.1, 303.1.1, 303.1.2, 402.1, 402.2, 402.4.2.2, Table 402.4.2
IA3	Fenestration [thermal values] U-factor and product ratings: U-factors of installed fenestration shall be verified by visual inspection for conformance with the U-factors identified in the construction drawings, either by verifying the manufacturer's NFRC labels or, where not labeled, using the ratings in ECC Tables 303.1.3(1) and (2).	As required during installation	Approved construction drawings; NFRC 100	303.1, 303.1.3, 402.1, 402.3, 402.6
IA4	Fenestration [product ratings for] air leakage: Windows, skylights and sliding glass doors, except site-built windows, skylights and doors, shall be visually inspected to verify that installed assemblies are listed and labeled to the referenced standard.	As required during installation	NFRC 400, AAMA/WDMA/CSA 101/I.S.2/A440	402.4.4
IA5	Fenestration areas: Dimensions of windows, doors and skylights shall be verified by visual inspection.	Prior to final construction inspection	Approved construction documents	402.3[, 402.6]
IA6	Air sealing and insulation – visual inspection [option]: Openings and penetrations in the building envelope, including site-built fenestration and doors, shall be visually inspected to verify that	As required during envelope construction	Approved construction documents; ASTM E283; ASTM E84;	402.4.1, 402.4.2.2, 402.4.3

	they are properly sealed, in accordance with Table 402.4.2.		RCNYS	
IA7	Air sealing and insulation – testing [option]: Testing shall be performed in accordance with section ECC 402.4.2.1 and shall be accepted if the building meets the requirements detailed in such section. Test results shall be retained in accordance with the provisions of Title 28.	Prior to final construction inspection	ASHRAE/ASTM E779; ANSI Z65; Approved construction documents	402.4.2.1
IB	Mechanical and Plumbing Inspections			
IB1	Fireplaces: Provision of combustion air and tight-fitting fireplace doors shall be verified by visual inspection.	Prior to final construction inspection	Approved construction documents; ANSI Z21.60 (see also MC 904), ANSI Z21.50	303.1.5; BC 2111; MC Chapters 7, 8, 9; FGC Chapter 6
IB2	[Outdoor air intake and exhaust dampers] Shutoff dampers: Not less than 20% of installed automatic or gravity dampers, and a minimum of one of each type, shall be visually inspected and physically tested for proper operation.	Prior to final construction inspection	Approved construction documents	403.5, 403.7, [503] <u>C403</u>
IB3	[Equipment] HVAC and service water heating equipment: Heating and cooling equipment shall be verified by visual inspection for proper sizing. Pool heaters and covers shall be verified by visual inspection.	Prior to final plumbing and construction inspection	ACCA Manual J; Approved construction documents, including energy analysis	403.6, 403.7, 403.9, [503] <u>C403</u>
IB4	[Controls] HVAC and service water heating system controls: System controls shall be inspected to verify that each dwelling is provided with at least one individual programmable thermostat with capabilities as described in ECC 403.1.1, and that such controls are set and operate as specified in ECC 403.1.1. Controls for supplementary electric-resistance heat pumps shall be inspected to verify that such controls prevent supplemental heat operation when the heat pump compressor can meet the heating load. Controls for snow- and ice-melting systems and pools shall be inspected for proper operation. Not less than 20% or	Prior to final electrical and construction inspection	Approved construction documents, including control system narratives	403.1, 403.4, 403.7, 403.8, 403.9[, 503, 504]

	one of each control type, whichever is more, shall be inspected. <u>Controls for turning off circulating hot water pumps when not in use shall be inspected for an automatic or manual switch.</u>			
IB5	[Duct and piping] HVAC insulation and [duct] sealing: Installed duct and piping insulation shall be visually inspected to verify correct insulation placement and values. Ducts, air handlers, filter boxes and building cavities used as ducts shall be visually inspected for proper sealing.	Prior to closing ceilings and walls and prior to final construction inspection	Approved construction documents; RCNYS M1601.3.1	403.2.1, 403.2.2, 403.3, 403.4, 403.7[, 503, 504]; MC [Section 603; 1RCNY §5000-01] <u>603.9</u>
IB6	Duct leakage testing: Where the air handler and/or some ductwork is in unconditioned space, duct-leakage testing shall be performed either after rough-in or post-construction to ensure compliance with ECC 403.2.2. Not less than 20% of such ductwork shall be tested.	Prior to closing ceilings and walls and prior to final construction inspection	Approved construction documents; ANSI/ASHRAE 152, ASTM E1554 Test Method A	403.2.2, 403.7[, 503]
IC	Electrical Power and Lighting Systems			
IC1	Electrical [metering] energy consumption: The presence and operation of individual meters or other means of monitoring individual dwelling units shall be verified by visual inspection for all dwelling units.	Prior to final electrical and construction inspection	Approved construction documents	404.2
IC2	[Lighting in dwelling units] Interior lighting power: Lamps in permanently installed lighting fixtures shall be visually inspected to verify compliance with high-efficacy requirements.	Prior to final electrical and construction inspection	Approved construction documents	404.1
ID	Other			
ID1	Maintenance information: Maintenance manuals for equipment and systems requiring preventive maintenance shall be reviewed for applicability to installed equipment and systems before such manuals are provided to the owner. Labels required for such equipment or systems shall be inspected for accuracy and completeness.	Prior to sign-off or issuance of Certificate of Occupancy	Approved construction documents	303.3
ID2	Permanent certificate: The installed permanent certificate shall be visually inspected for location, completeness and accuracy.	Prior to final plumbing, electrical and/or construction inspection as	Approved construction documents	401.3; 1RCNY 5000-01(g)(5)

		applicable		
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§11. Paragraph 2 and Table II of subdivision (h) of section 5000-01 of title 1 of the rules of the city of New York are amended to read as follows:

(2) Commercial buildings. The progress inspections and tests described in Table II shall be performed for buildings regulated by either ECC [Chapter 5] Chapters C2 through C5 or ASHRAE 90.1 as applicable.

**TABLE II – PROGRESS INSPECTIONS FOR ENERGY CODE
COMPLIANCE – COMMERCIAL BUILDINGS**

	Inspection/Test	Periodic (minimum)	Reference Standard (See ECC Chapter [6] <u>C5</u>) or Other Criteria	ECC or Other Citation
IIA	Envelope Inspections			
IIA1	Protection of exposed foundation insulation: Insulation shall be visually inspected to verify proper protection where applied to the exterior of basement or cellar walls, crawl-space walls and/or the perimeter of slab-on-grade floors.	As required during foundation work and prior to backfill	Approved construction documents	<u>C303.2.1</u> ; ASHRAE 90.1 – 5.8.1.7
IIA2	Insulation placement and R-values: Installed insulation for each component of the conditioned space envelope and at junctions between components shall be visually inspected to ensure that the R-values are marked, that such R-values conform to the R-values identified in the construction documents and that the insulation is properly installed. Certifications for unmarked insulation shall be similarly visually inspected.	As required to verify continuous enclosure while walls, ceilings and floors are open	Approved construction documents	<u>C303.1</u> , <u>C303.1.1</u> , <u>C303.1.2</u> , [502.1, 502.2] <u>C402.1</u> , <u>C402.2</u> ; ASHRAE 90.1 – 5.5, 5.6 or 11; 5.8.1
IIA3	Fenestration [thermal values]<u>U-factor</u> and product ratings: U-factors, [and] SHGC and VT values of installed fenestration shall be visually inspected for conformance with the U-factors, [and] SHGC and VT values identified in the construction drawings by verifying the manufacturer's NFRC labels or, where not labeled, using the ratings in ECC Tables <u>C303.1.3(1)</u> , (2) and (3).	As required during installation	Approved construction documents; NFRC 100, NFRC 200	<u>C303.1</u> , <u>C303.1.3</u> [;], [502.3] <u>C402.3</u> ; ASHRAE 90.1 – 5.5; 5.6 or 11; 5.8.2

	[Where ASHRAE 90.1 is used, visible light transmittance values shall also be verified.]			
IIA4	<p>Fenestration [and door assembly product ratings for] air leakage: Windows and sliding or swinging door assemblies, except site-built windows and/or doors, shall be visually inspected to verify that installed assemblies are listed and labeled by the manufacturer to the referenced standard.</p> <p>For curtain wall, storefront glazing, commercial entrance doors and revolving doors, the testing reports shall be reviewed to verify that the installed assembly complies with the standard cited in the approved plans.</p>	As required during installation; prior to final construction inspection	NFRC 400, AAMA/WDMA/CSA 101/I.S.2/A440 ASTM E283; ANSI/DASMA 105	[502.4] <u>C402.4.3</u> ; ASHRAE 90.1 – 5.4.3.2
IIA5	Fenestration areas: Dimensions of windows, doors and skylights shall be verified by visual inspection.	Prior to final construction inspection	Approved construction documents	[502.3] <u>C402.3</u> ; ASHRAE 90.1 – [5.5.4] <u>5.5.4.2</u> , 5.6 or 11
IIA6	<p>[Sealing] Air sealing and insulation – visual inspection: Openings and penetrations in the building envelope, including site-built fenestration and doors, shall be visually inspected to verify that a continuous air barrier around the envelope forms an air-tight enclosure.</p> <p>The progress inspector shall visually inspect to verify that materials and/or assemblies have been tested and meet the requirements of the respective standards, or that the building is tested and meets the requirements of the standard, in accordance with the standard(s) cited in the approved plans.</p>	As required during construction	Approved construction documents; ASTM E2178, ASTM E2357, ASTM E1677, ASTM E779, ASTM E283.	[502.4.3, 502.4.7] <u>C402.4</u> ; ASHRAE 90.1 – 5.4.3.1
IIA7	Projection factors: Where the energy analysis utilized a projection factor > 0, the projection dimensions of overhangs, eaves or permanently attached shading devices shall be verified for conformance with approved plans by visual inspection.	Prior to final construction inspection	Approved construction documents, including energy analysis	[502.3] <u>C402.3</u> ; ASHRAE 90.1 – 5.5.4, 5.6 or 11

IIA8	Loading dock weatherseals: Weatherseals at loading docks shall be visually verified.	Prior to final construction inspection	Approved construction documents	[502.4.5] <u>C402.4.6</u> ; ASHRAE 90.1 – 5.4.3.3
IIA9	[Building entrance vestibules] Vestibules: Required entrance vestibules shall be visually inspected for proper operation.	Prior to final construction inspection	Approved construction documents	[502.4.6] <u>C402.4.7</u> ; ASHRAE 90.1 – 5.4.3.4
IIB	Mechanical and Service Water Heating Inspections			
IIB1	Fireplaces: Provision of combustion air and tight-fitting fireplace doors shall be verified by visual inspection.	Prior to final construction inspection	Approved construction documents; ANSI Z21.60 (see also MC 904), ANSI Z21.50	[303.1.5] <u>C402.2.9</u> ; BC 2111; MC Chapters 7, 8, 9 FGC Chapter 6
IIB2	[Outdoor air intakes and exhaust openings] Shutoff dampers: Dampers for stair and elevator shaft vents and other outdoor air intakes and exhaust openings integral to the building envelope shall be visually inspected to verify that such dampers, except where permitted to be gravity dampers, comply with approved construction drawings. Manufacturer's literature shall be reviewed to verify that the product has been tested and found to meet the standard.	As required during installation	Approved construction documents; AMCA 500D	[502.4.4] <u>C403.2.4.4</u> ; ASHRAE 90.1 – 6.4.3.4
IIB3	HVAC[,] and service water heating [and pool] equipment [sizing and performance]: Equipment sizing, efficiencies and other performance factors of all major equipment units, as determined by the applicant of record, and no less than 15% of minor equipment units, shall be verified by visual inspection and, where necessary, review of manufacturer's data. Pool heaters and covers shall be verified by visual inspection.	Prior to final plumbing and construction inspection	Approved construction documents	[503.2, 504.2, 504.7] <u>C403.2</u> , <u>C404.2</u> , <u>C404.7</u> , <u>C406.2</u> ; ASHRAE 90.1 – 6.3, 6.4.1, 6.4.2, 6.8; 7.4, 7.8
IIB4	HVAC [system controls and economizers] and service [hot] water	After installation and prior to final	Approved construction	[503.2.4, 503.2.5.1,

	<p>heating system controls: No less than 20% of each type of required controls and economizers shall be verified by visual inspection and tested for functionality and proper operation. Such controls shall include, but are not limited to:</p> <ul style="list-style-type: none"> • Thermostatic • Set point overlap restriction • Off-hour • Shutoff damper • Snow-melt system • Demand control systems • Outdoor heating systems • Zones • Economizers • Air systems • Variable air volume fan • <u>Single Zone Cooling Systems</u> • Hydronic systems • Heat rejection equipment fan speed • Complex mechanical systems serving multiple zones • Ventilation • Energy recovery systems • Hot gas bypass limitation • Temperature • Service water heating • Hot water system • Pool heater and time switches • Exhaust hoods • Radiant heating systems • <u>HVAC Control in Group R-1 Sleeping Rooms.</u> <p>Controls with seasonally dependent functionality: Controls whose complete operation cannot be demonstrated due to prevailing weather conditions typical of the season during which progress inspections will be performed shall be permitted to be signed off for the purpose of a Temporary Certificate of Occupancy with only a visual inspection, provided, however, that the progress inspector shall perform a supplemental inspection where the controls are visually inspected and tested for</p>	<p>electrical and construction inspection, except that for controls with seasonally dependent functionality, such testing shall be performed before sign-off for issuance of a Final Certificate of Occupancy</p>	<p>documents, including control system narratives; ASHRAE Guideline 1: The HVAC Commissioning Process where applicable</p>	<p>503.2.11, 503.3, 503.4, 504.3, 504.6, 504.7] <u>C403.2.4, C403.2.5.1, C403.2.11, C403.3, C403.4, C404.3, C404.6, C404.7;</u> ASHRAE 90.1 – 6.3, 6.4, 6.5, [6.7.2.4,] 7.4.4, 7.4.5</p>
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	<p>functionality and proper operation during the next immediate season thereafter. The owner shall provide full access to the progress inspector within two weeks of the progress inspector's request for such access to perform the progress inspection.</p> <p>For such supplemental inspections, the Department shall be notified by the approved progress inspection agency of any unresolved deficiencies in the installed work within 180 days of such supplemental inspection.</p>			
IIB5	<p>[Duct, plenum and piping] HVAC insulation and sealing: Installed duct and piping insulation shall be visually inspected to verify proper insulation placement and values.</p> <p>Joints, longitudinal and transverse seams and connections in ductwork shall be visually inspected for proper sealing.</p>	After installation and prior to closing shafts, ceilings and walls	Approved construction documents; SMACNA Duct Construction Standards, Metal and Flexible	[503.2.7, 503.2.8, 504.5] <u>C403.2.7</u> , <u>C403.2.8</u> , <u>C404.5</u> ; MC 603.9; ASHRAE 90.1 – 6.3, [6.4.4.2] <u>6.4.4</u> , 6.8.2, 6.8.3; 7.4.3
IIB6	<p>[Air leakage testing for high-pressure duct systems] Duct leakage testing: For duct systems designed to operate at static pressures in excess of 3 inches w.g. (746 Pa), representative sections, as determined by the progress inspector, totaling at least 25% of the duct area, per ECC [503.2.7.1.3]<u>C403.2.7.1.3</u>, shall be tested to verify that actual air leakage is below allowable amounts.</p>	After installation and sealing and prior to closing shafts, ceilings and walls	Approved construction documents; SMACNA HVAC Air Duct Leakage Test Manual	[503.2.7.1.3] <u>C403.2.7.1.3</u> ; ASHRAE 90.1 – 6.4.4.2.2
IIC	Electrical Power and Lighting Systems			
IIC1	<p>Electrical [metering] energy consumption: The presence and operation of individual meters or other means of monitoring individual apartments shall be verified by visual inspection for all apartments <u>and where required in a covered tenant space.</u></p>	Prior to final electrical and construction inspection	Approved construction documents	[505.7] <u>C405.7</u>
IIC2	<p>Lighting in dwelling units: Lamps in permanently installed lighting fixtures</p>	Prior to final electrical and	Approved construction	[505.5.3] <u>C405.1</u> ;

	shall be visually inspected to verify compliance with high-efficacy requirements.	construction inspection	documents	ASHRAE 90.1 – 9.1.1
IIC3	Interior lighting power: Installed lighting shall be verified for compliance with the lighting power allowance by visual inspection of fixtures, lamps, ballasts and transformers.	Prior to final electrical and construction inspection	Approved construction documents	[505.5] <u>C405.5</u> , <u>C406.3</u> ; ASHRAE 90.1 – 9.1, 9.2, 9.5, 9.6 1RCNY §101-07(c)(3)(v)(C)4
IIC4	Exterior lighting power: Installed lighting shall be verified for compliance with source efficacy and/or the lighting power allowance by visual inspection of fixtures, lamps, ballasts and relevant transformers.	Prior to final electrical and construction inspection	Approved construction documents	[505.6] <u>C405.6</u> ; ASHRAE 90.1 – [9.4.4, 9.4.5] <u>9.4.3</u> ; 1RCNY §101-07(c)(3)(v)(C)4
IIC5	Lighting controls: Each type of required lighting controls, including: occupant sensors manual interior lighting controls light-reduction controls automatic lighting shut-off daylight zone controls sleeping unit controls exterior lighting controls shall be verified by visual inspection and tested for functionality and proper operation.	Prior to final electrical and construction inspection	Approved construction documents, including control system narratives	[505.2, 505.2.2.2] <u>C405.2</u> ; ASHRAE 90.1 – 9.4.1[, 9.4.1.2] (as modified by section ECC A102)
IIC6	Exit signs: Installed exit signs shall be visually inspected to verify that the label indicates that they do not exceed maximum permitted wattage.	Prior to final electrical and construction inspection	Approved construction documents	[505.4] <u>C405.4</u> ; ASHRAE 90.1 – [9.4.3] <u>9.4.2</u>
[IIC7]	Tandem wiring: Tandem wiring shall be tested for functionality.	Prior to final electrical and construction inspection	Approved construction documents	505.3; ASHRAE 90.1 – 9.4.2]
[IIC8] IIC7	Electric motors (including but not limited to fan motors): Where required by the construction documents for energy code compliance, motor listing or labels shall be visually inspected to verify that they comply with the respective energy requirements in the construction documents.	Prior to final electrical and construction inspection	Approved construction documents	[503.2.10] <u>C403.2.10</u> ; ASHRAE 90.1 – 10.4
IID	Other			

IID1	Maintenance information: Maintenance manuals for mechanical, service hot water and electrical equipment and systems requiring preventive maintenance shall be reviewed for applicability to installed equipment and systems before such manuals are provided to the owner. Labels required for such equipment or systems shall be inspected for accuracy and completeness.	Prior to sign-off or issuance of Final Certificate of Occupancy	Approved construction documents, including electrical drawings where applicable; ASHRAE Guideline 4: Preparation of Operating and Maintenance Documentation for Building Systems	C303.3, [503.2.9.3] C408.2.5.2; ASHRAE 90.1 – 4.2.2.3, 6.7.2.2, 8.7.2, 9.7.2.2
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