

NOTICE OF ADOPTION OF RULE

Notice is hereby given pursuant to the authority vested in the Commissioner 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 amended Section 101-07 of Chapter 100 of Title 1 of the Rules of the City of New York, regarding approved progress inspection agencies, and new Chapter 5000 of Title 1 of the Rules of the City of New York, regarding construction documents approval requirements for compliance with the New York City Energy Code.

This rule was first published on April 16, 2010, and a public hearing thereon was held on May 18, 2010. This rule shall take effect on September 7, 2010.

Dated: 6/17/10
New York, New York



Robert D. LiMandri
Commissioner

Section 1. Paragraph 3 of subdivision c of section 101-07 of Chapter 100 of Title 1 of the Rules of the City of New York is amended to read as follows:

(3) Progress inspection agencies.

(i) Responsibility of owner. It shall be the responsibility of the owner to retain an approved agency to perform all required progress inspections for a new building or alteration project.

(ii) Obligation to avoid conflict of interest. A progress inspector and/or a progress inspection agency shall not engage in any activities that may conflict with their objective judgment and integrity, including, but not limited to, having a financial and/or other interest in the construction, installation, manufacture or maintenance of structures or components that they inspect.

(i)iii) Agency qualifications. Registered design professionals with relevant experience shall be deemed approved progress inspection agencies, without further requirement of registration or accreditation, for the purpose of conducting the progress inspections required by section BC 109.3 [of the building code]. [Such progress inspections shall include the following:

- (A) Preliminary. See section 28-116.2.1 of the New York City Administrative Code and section 109.2 of the building code.
- (B) Footing & foundation. See section 109.3.1 of the building code.
- (C) Lowest floor elevation. See section 109.3.2 of the building code.
- (D) Frame inspection. See section 109.3.3 of the building code.
- (E) Energy Code Compliance Inspections. See section 109.3.5 of the building code.
- (F) Fire-resistant rated construction. See section 109.3.1 of the building code.
- (G) Final. See section 28-116.2.4.2 of the New York City Administrative Code and section 109.5 of the building code.

(H) Public assembly emergency lighting. See sections 1006 and 1024 of the building code and section 28-116.2.2 of the Administrative Code.]

(iii)iv) Inspector qualifications. A progress inspection agency shall conduct required progress inspections, provided such inspections are conducted by a registered design professional with relevant experience or [a person under such design professional's direct supervision.] an otherwise qualified individual pursuant to the following table:

| <u>Progress Inspection Category</u> | <u>2008 Code Section</u> | <u>Qualifications</u> | |
|---|--------------------------------------|--|--|
| | | <u>Primary Inspector or Inspection Supervisor</u> | <u>Supplemental Inspector under direct supervision of Inspection Supervisor</u> |
| <u>Preliminary inspection</u> | <u>AC 28-116.2.1</u> | <ul style="list-style-type: none"> • <u>Registered design professional with relevant experience</u> | <ul style="list-style-type: none"> • <u>A person with relevant experience</u> |
| <u>Compliance inspections</u> | <u>AC 28-116.2.2</u> | <ul style="list-style-type: none"> • <u>Registered design professional with relevant experience</u> | <ul style="list-style-type: none"> • <u>A person with relevant experience</u> |
| <u>Footing and foundation</u> | <u>BC 109.3.1</u> | <ul style="list-style-type: none"> • <u>Registered design professional with relevant experience</u> | <ul style="list-style-type: none"> • <u>A person with relevant experience</u> |
| <u>Lowest floor elevation</u> | <u>BC 109.3.2; BC G105.3, Item 1</u> | <ul style="list-style-type: none"> • <u>Engineer with relevant experience or licensed professional land surveyor with relevant experience</u> | <ul style="list-style-type: none"> • <u>A person with relevant experience</u> |
| <u>Frame</u> | <u>BC 109.3.3</u> | <ul style="list-style-type: none"> • <u>Registered design professional with relevant experience</u> | <ul style="list-style-type: none"> • <u>A person with relevant experience</u> |
| <u>Fire-resistance-rated construction</u> | <u>BC 109.3.4</u> | <ul style="list-style-type: none"> • <u>Registered design professional with relevant experience</u> | <ul style="list-style-type: none"> • <u>A person with relevant experience</u> |
| <u>Energy code compliance – “residential”¹ buildings</u> | <u>BC 109.3.5</u> | <ul style="list-style-type: none"> • <u>Registered design professional of record for the respective work;</u> <u>or</u> • <u>Registered design professional with five years experience in the design, construction, construction observation and/or inspection of Energy Code-</u> | <ul style="list-style-type: none"> • <u>3 years experience in the inspection or construction observation of buildings for Energy Code-regulated systems</u> |

¹ As such term “residential” is defined in the New York City Energy Conservation Code.

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| | | <u>regulated systems for buildings</u> | |
| <u>Energy code compliance – “commercial”² buildings</u> | <u>BC 109.3.5</u> | <ul style="list-style-type: none"> • <u>Registered design professional of record for the respective work;</u> <u>or</u> <ul style="list-style-type: none"> • <u>Registered design professional with five years experience in the design, construction, construction observation and/or inspection of Energy Code-regulated systems for commercial buildings, at least three years of which shall be for the system type(s) for which he/she performs progress inspections</u> | <ul style="list-style-type: none"> • <u>3 years experience in the inspection or construction observation of the system type(s) for Energy Code-regulated systems in commercial buildings for which he/she performs progress inspections</u> |
| <u>Other</u> | <u>BC 109.3.6</u> | <ul style="list-style-type: none"> • <u>Registered design professional with relevant experience</u> | <ul style="list-style-type: none"> • <u>A person with relevant experience</u> |
| <u>Final</u> | <u>AC 28-116.2.4.2</u> | <ul style="list-style-type: none"> • <u>Registered design professional with relevant experience</u> | <ul style="list-style-type: none"> • <u>A person with relevant experience</u> |
| <u>Place of assembly emergency lighting</u> | <u>AC 28-116.2.2</u> | <ul style="list-style-type: none"> • <u>Registered design professional with relevant experience</u> | <ul style="list-style-type: none"> • <u>A person with relevant experience</u> |

(iii)y Verifications by progress inspector. In addition to all other items required to be inspected in accordance with applicable laws and rules, the progress inspector shall verify the following:

(A) Completion of related special inspections. A progress inspection agency’s performance of a progress inspection shall include verification that any special inspections that were required to have been conducted prior to the progress inspection have been documented as completed.

(B) Updated approved documents. Prior to performing a progress inspection, the progress inspection agency shall verify that the relevant approved construction documents, for the purpose of the progress inspection, represent the built conditions. If changes are required in the approved construction documents for the purpose of the progress inspection, the progress inspector shall

² As such term “commercial” is defined in the New York City Energy Conservation Code.

wait to perform the inspections until the updated construction documents have been approved, including the energy analysis, where applicable.

(C) Energy code verifications. Progress inspectors for Energy Code compliance shall perform inspections in accordance with the following:

1. Sampling. Unless noted otherwise in the Inspection/Test columns of Tables I and II of 1 RCNY §5000-01 (h), required inspections or tests shall be performed on not less than 15% of each relevant construction item in the scope of work as listed in the applicable table, and on not less than one of each type where applicable. Selection of such sample construction shall be at the sole discretion of the progress inspector. Nothing in this item shall prevent the progress inspector from determining that, in his or her professional judgment, more than 15% of a given type of construction item shall be inspected.

2. Phased inspection for temporary certificates of occupancy. Prior to issuance of a temporary certificate of occupancy for less than the total scope of work, inspection shall be required for all work serving the portion of the building for which the temporary certificate of occupancy is to be issued. Where a practical difficulty for some inspections is demonstrated to the commissioner, the commissioner may grant a waiver of those inspections for a specified time or until final inspection for the final certificate of occupancy.

3. Phased inspection of controls. Notwithstanding item 2 of this clause, where inspection of the HVAC and lighting controls for central head-end systems and communication networks depends upon completion of installation of all related end devices and components located in the building, such inspection of such controls for head-end systems and communication networks shall be completed prior to issuance of a final certificate of occupancy.

4. Lighting. Where the progress inspector verifies that, for any given space, the lighting power density is less than the lighting power density for such space on the approved construction documents, the progress inspector may approve such space without the need for revised construction documents to be submitted to and approved by the Department. For the purposes of this item, a space shall

mean an area within the building separated by floor-to-ceiling partitions from all other spaces within the building.

§2. Title 1 of the Rules of the City of New York is amended by adding a new Chapter 5000 to read as follows:

Chapter 5000 – New York City Energy Conservation Code

§5000-01 Construction document approval requirements for compliance with the New York City Energy Conservation Code

(a) Purpose. This section sets forth the requirements for filing and approval of construction documents and the universe of progress inspections during construction, in accordance with the New York City Energy Conservation Code.

(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 and BC109.3.5; 1 RCNY §101-07 (“Inspections and Approved Agencies”).

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

(3) ENERGY CODE. The New York City Energy Conservation Code (“ECC”).

(4) 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.

(5) RESIDENTIAL BUILDING. A residential building as defined in the Energy Code.

(d) Professional statement. Every application filed by a registered design professional for approval of construction documents, shall include a professional statement of compliance with the Energy Code as set forth in Section BC 106.13; however, if the project is exempt from the requirements of the Energy Code in accordance with Section ECC 101, the professional shall include a statement of exemption instead and provide the citation to the provision that allows the exemption.

(e) Owner statement. The owner of the property for which an application for construction document approval is being filed shall attest on the application form that he or she shall not knowingly authorize construction documents or construction work that fail to comply with the Energy Code.

(f) Energy analysis. The applicant shall include an energy analysis on a sheet in the construction drawing set in the initial application filing. The energy analysis shall demonstrate how the applicant intends to comply with the Energy Code.

Exception: An energy analysis is not required for a project that is exempt from the Energy Code.

(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 or 8 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. Commercial building alterations and additions involving lighting may utilize the Lighting Application Worksheet from COMcheck and the tenant-area or portion-of-building method for the lighting analysis in lieu of including it in the tabular analysis. See subparagraph iii of this paragraph.

Figure 1: Sample tabular energy analysis:

| ENERGY ANALYSIS | | |
|--|------------------------------|---|
| Code chapter and/or standard used for design | | |
| Climate Zone XXX (climate zone shall be identified here) | | |
| Item Description | Proposed Design Value | Code Prescriptive Value and Citation |
| (list all elements of the | (list the value used in the | (list the prescriptive value |

| | | |
|---|----------------|-------------------------------------|
| <u>scope of work in detail that are addressed by the energy code)</u> | <u>design)</u> | <u>required by the Energy Code)</u> |
|---|----------------|-------------------------------------|

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

(A) New buildings. REScheck may be used for new residential buildings.

(B) Additions. REScheck may be used for additions only where a whole-building analysis, including the existing building and the addition, is performed.

(C) Alterations and repairs. REScheck may be used for alterations and repairs only where a whole-building analysis, including the existing-to-remain and altered envelope and mechanical systems, is performed.

(D) New York State form. Only the New York State REScheck form shall be permitted.

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

(A) New buildings. COMcheck may be used for new commercial buildings.

(B) Additions. COMcheck may be used for additions only as follows:

1. Where a whole-building analysis, including the existing building and the addition, is performed; or
2. Where the COMcheck report states "addition" as the project type.

(C) Alterations and repairs. COMcheck may be used for alterations and repairs only as follows:

1. Where a whole-building analysis, including the existing-to-remain and altered parts of the building, is performed; or
2. Where the COMcheck report states "alteration" as the project type.

(D) COMcheck versions. Only the New York State COMcheck form shall be permitted, except that where ASHRAE 90.1 is used in accordance with ECC Chapter 8, the comparable ASHRAE 90.1 COMcheck form shall be used instead. 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 cost budget worksheet. For new commercial buildings and additions or alterations to commercial buildings, where the Energy Cost Budget Method of ASHRAE 90.1 is used in accordance with ECC Chapter 8, 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. Other energy modeling programs approved by the Secretary of State of New York State may also be used. The lead energy professional shall identify the software and report inputs and outputs on a Department form.

(v) Alternative formats. Formats other than those listed in subparagraphs i through iv of this paragraph, including, but not limited to, the simulated performance alternative set forth in Section ECC 404 or the total building performance method set forth in Section ECC 806, may be used only if they are approved in advance by the commissioner. Use of these performance methods, when approved by the commissioner, shall utilize software programs acceptable to the commissioner. The applicant shall provide the project-relevant utility company energy cost rate structure in effect on January 1 of the calendar year in which the initial submission of the project application(s) is filed, and shall utilize the electricity, gas and steam prices from the rate structure in the energy model. Fuel oil prices used in the model shall be supported by comparable local supplier information from the provider in effect on January 1 of such calendar year.

(2) Professional responsibility for energy analysis. The energy analysis shall be signed and sealed by registered design professional(s) as follows:

(i) Lead professional. Where a whole-building analysis is performed for the energy analysis or where the design uses tradeoffs such that one or more systems of the energy analysis – envelope, mechanical/ service water heating and lighting/power – could not meet the prescriptive requirements of the Energy Code on its own, a lead professional shall be identified who shall sign and seal the entire energy analysis for all systems involved. Such lead professional shall be a registered design professional and may or may not be an applicant of record.

(ii) Responsibility by discipline. Where each system of the energy analysis – envelope, mechanical/service water heating and lighting/power – meets the prescriptive requirements of the Energy Code individually, different registered design professionals may sign and seal their respective parts of the energy analysis report individually; however, all parts of the energy analysis report shall be presented together on a sheet in the drawing set of the initial filing.

(iii) Registered design professional other than an applicant of record. A registered design professional other than an applicant of record may prepare, sign and seal the energy analysis, either as lead professional or for individual discipline(s) in accordance with subparagraph ii of this paragraph. Such registered design professional shall file a PW1 form as a subsequent filing to the initial application document.

(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. In addition, other mandatory Energy Code requirements shall be provided as described in paragraphs 1 through 4 and as referenced in paragraph 5 of this subdivision. Further, supporting documentation shall provide all information necessary for a progress inspector to verify during construction that the building has been constructed in accordance with the approved construction documents and subdivision h of this section to meet the requirements of the Energy Code.

(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 vapor retarders, and the insulation in each case shall be labeled and shall be equal to or greater than the R values in the energy analysis. Door, window and skylight schedules shall include columns for U and SHGC values for each assembly type, and such values shall be equal to or less than those in the energy analysis. Mandatory requirements to prevent air and moisture leakage shall be detailed.

(2) Mechanical/service water heating. Space heating and cooling equipment, energy recovery equipment, ventilation equipment, service water heating equipment, and mandatory requirements including control systems, duct sealing and duct and piping insulation shall be shown on the construction drawings and shall be equal to or greater than the energy efficiency requirements established in the energy analysis, the Energy Code and/or this section, as applicable. A narrative shall be provided for

each mandatory control system describing its function and operation and specifying proper setpoints of equipment and controls.

(i) Joints and sealing in residential buildings. In accordance with the New York State Residential Code as referenced in the Energy Code, joints of duct systems in residential buildings shall be made substantially airtight by means of tapes, mastics or gasketing. Closure systems used with rigid fibrous glass ducts shall comply with UL 181A and shall be marked "181A-P" for pressure-sensitive tape, "181A-M" for mastic or "181A-H" for heat-sensitive tape. Closure systems used with flexible air ducts and flexible air connectors shall comply with UL 181B and shall be marked "181B-FX" for pressure-sensitive tape or "181B-M" for mastic. Duct connections to flanges of air distribution system equipment or sheet metal fittings shall be mechanically fastened. Crimp joints for round ducts shall have a contact lap of at least 1.5 inches (38 mm) and shall be mechanically fastened by means of at least three sheet metal screws or rivets equally spaced around the joint.

(3) Lighting/power. The applicant shall provide reflected ceiling plans, floor plans and/or electrical drawings with lighting layouts for each floor or space in the project, and for exterior lighting as applicable. The lighting fixtures shall be described and keyed to the lighting plans, including type designation, brief description, lamp type, watts per lamp, quantity of lamps per fixture, ballast/transformer type, and system input watts per fixture, such that the drawings support the energy analysis. In addition, mandatory lighting and power controls shall be shown and described, and a narrative provided describing their function and operation. Control devices and zones shall be indicated on drawings. Lighting documentation shall not be required within dwelling units as such term is defined in the Energy Code and for buildings regulated by ECC Chapter 4.

(4) Electrical construction drawings required. Construction documents, including a single-line diagram of the building or tenant electrical distribution system and other relevant electrical construction drawings, shall be submitted as supporting documentation if required for any of the following: to support the energy analysis; to satisfy mandatory requirements of the Energy Code, such as controls, transformer, metering, voltage drop and electric motor requirements; or to support progress inspections required by this section. Such drawings shall be numbered with an "EN" discipline designator and shall be signed and sealed by a registered design professional. Such registered design professional, if not an applicant of record, shall file a PW1 form as a subsequent filing to the initial application document.

(5) Mandatory requirements. The construction documents shall comply with all mandatory requirements of the Energy Code. For residential buildings, references for such requirements are listed in Section ECC 404.2. For commercial buildings complying with ECC Chapter 8 provisions, references for such requirements are listed as the Exceptions to Section ECC 801.2; 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.

(6) Permanent certificate in residential buildings. For residential buildings, the construction documents shall indicate the following with regard to the permanent certificate required in accordance with Section ECC 401.3:

(i) New buildings. For new buildings regulated under ECC Chapter 4, a permanent certificate shall be required to be installed indoors and in accordance with Section ECC 401.3, except that it may be posted near the electrical distribution panel at eye level and in plain sight.

(ii) Additions and alterations. For additions and alterations affecting information on an existing permanent certificate, such permanent certificate shall be updated, initialed where changed and reposted such that the values on the posted permanent certificate remain current.

(7) Deferred submittals. Drawings showing design intent and performance criteria matching those in the energy analysis may be submitted as supporting documentation for the initial construction document approval provided that, in accordance with Section 28-104.2.6 of the Administrative Code, the applicant elects to defer any additional drawings that may be required by Section 28-104.7.1.

(8) 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 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 in accordance with the cited section(s) 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 is not sufficient. The applicant shall include the instruction that, in accordance with Section BC 109.9, where an inspection or test fails, the construction shall be corrected.

(ii) Construction scheduling instructions. The drawings shall state that, in accordance with Article 116 of Title 28 and Section BC 109, 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 8 or ASHRAE 90.1 as used for design, in accordance with the following:

(A) When ECC Chapter 8 has been used for design, as reflected in the energy analysis, the applicant shall direct on the drawings that the respective references and citations for ECC shall be used for the progress inspection.

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

(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. Energy Code sections cited in Tables I and II of this section shall be understood to include the section, all subsections and all tables related to the cited Energy Code section.

(1) Residential buildings. The progress inspections and tests described in Table I shall be performed for buildings regulated by ECC Chapter 4.

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

| | <u>Inspection/ Test</u> | <u>Frequency (minimum)</u> | <u>Reference Standard (See ECC Chapter 10) or Other Criteria</u> | <u>ECC or Other Citation</u> |
|------------|--|---|--|--|
| IA | <u>Envelope Inspections</u> | | | |
| <u>IA1</u> | <u>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.</u> | <u>Prior to backfill</u> | <u>Approved construction documents</u> | <u>102.2.1</u> |
| <u>IA2</u> | <u>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.</u> | <u>As required to verify continuous enclosure while walls, ceilings and floors are open</u> | <u>Approved construction documents.</u> | <u>102.1 402.1, 402.2, 402.2.5</u> |
| <u>IA3</u> | <u>Fenestration values and product ratings for U-factors: 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 102.1.3(1) and (2).</u> | <u>As required during installation</u> | <u>Approved construction drawings; NFRC 100, Tables 102.1.3</u> | <u>102.1.3, 402.1, 402.3</u> |
| <u>IA4</u> | <u>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.</u> | <u>As required during installation</u> | <u>NFRC 400, AAMA/WDMA 101/I.S.2, or AAMA/WDMA 101/I.S.2/NAF S</u> | <u>402.4.2</u> |

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| IA5 | <u>Fenestration areas: Dimensions of windows, doors and skylights shall be verified by visual inspection.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents</u> | <u>402.3, 402.5.1</u> |
| IA6 | <u>Sealing: Openings and penetrations in the building envelope, including site-built fenestration and doors, shall be visually inspected to verify that they are properly sealed.</u> | <u>As required during envelope construction</u> | <u>Approved construction documents</u> | <u>402.4.1, 402.4.3</u> |
| IA7 | <u>Whole building envelope infiltration testing: When the R values of ECC Table 402.1(2) are used for the design, and ECC 402.1, Exception 3.1 is utilized as a result, the results of the air change test shall be reviewed for compliance with ECC 402.4.4.</u> | <u>Prior to final inspection</u> | <u>ASHRAE/ASTM E779; Approved construction documents</u> | <u>402.4.4</u> |
| IA8 | <u>Moisture control, vapor retarder: Construction, including, but not limited to, above-grade frame walls, floors and ceilings that are not ventilated to allow moisture to escape, shall be visually inspected for installation of vapor retarder.</u> | <u>As required during envelope construction and prior to covering vapor retarder</u> | <u>Approved construction documents</u> | <u>402.5</u> |
| <u>IB Mechanical and Plumbing Inspections</u> | | | | |
| IB1 | <u>Fireplaces: Provision of combustion air and tight-fitting fireplace doors shall be verified by visual inspection.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents; ANSI Z21.60 (see also MC 904), ANSI Z21.50</u> | <u>102.5; BC 2111; MC Chapters 7, 9; FGC Chapter 6</u> |
| IB2 | <u>Fresh air intake and exhaust dampers: Not less than 20% of installed dampers, and a minimum of one of each type, shall be visually inspected and physically tested for proper operation.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents</u> | <u>403.5</u> |

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| <u>IB3</u> | <u>Equipment efficiencies: When the R values of ECC Table 402.1(2) are used for the design, and ECC 402.1, Exception 3.3 is utilized as a result, the efficiencies of all installed mechanical equipment shall be verified by visual inspection.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents, including energy analysis</u> | <u>403.7</u> |
| <u>IB4</u> | <u>Controls: System controls shall be inspected to verify that each dwelling is provided with individual programmable thermostats and that such controls operate as specified in ECC 403.1. Not less than 20% or one of each control type, whichever is more, shall be inspected.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents, including control system narratives</u> | <u>403.1, 403.1.1</u> |
| <u>IB5</u> | <u>Duct and piping insulation and duct sealing: Installed duct and piping insulation shall be visually inspected to verify insulation placement and values. Ducts, air handlers, filter boxes and building cavities used as ducts shall be visually inspected for proper sealing.</u> | <u>Prior to closing ceilings and walls and prior to final inspection</u> | <u>Approved construction documents</u> | <u>403.2.1, 403.2.2, 403.3, 403.4; MC Section 603; 1RCNY §5000-01</u> |
| <u>IB6</u> | <u>Duct leakage testing: When the R values of ECC Table 402.1(2) are used for the design, and ECC 402.1, Exception 3.2 is utilized as a result, the results of the duct leakage tests shall be reviewed for compliance with ECC 403.2.4. Not less than 20% of such ductwork shall be tested.</u> | <u>Prior to closing ceilings and walls and prior to final inspection</u> | <u>Approved construction documents; ANSI/ASHRAE 152, ASTM E1554 Test Method A</u> | <u>403.2.4</u> |
| <u>IC</u> | <u>Other</u> | | | |
| <u>IC1</u> | <u>Electrical metering: 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.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents</u> | <u>102.4</u> |
| <u>IC2</u> | <u>Transformers: Single-phase and three phase dry-type and liquid-filled distribution transformers installed as part of the scope of</u> | <u>Prior to final inspection</u> | <u>Approved construction documents; NEMA TP1</u> | <u>102.6, 805.7</u> |

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| | <u>work (and not by the utility) shall be visually inspected to ensure that the installed transformers are listed and labeled to the referenced standard, or that associated product literature confirms that the transformers meet the referenced standard.</u> | | | |
| IC3 | <u>Permanent certificate: The installed permanent certificate shall be visually inspected for location, completeness and accuracy.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents</u> | <u>401.3; 1RCNY 5000-01</u> |
| IC4 | <u>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 and for compliance with ECC 102.3.</u> | <u>Prior to sign-off or issuance of Certificate of Occupancy</u> | <u>Approved construction documents</u> | <u>102.3</u> |

(2) Commercial buildings. The progress inspections and tests described in Table II shall be performed for buildings regulated by ECC Chapter 8, including ASHRAE 90.1 where applicable.

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

| | <u>Inspection/ Test</u> | <u>Periodic (minimum)</u> | <u>Reference Standard (See ECC Chapter 10) or Other Criteria</u> | <u>ECC or Other Citation</u> |
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| <u>IIA Envelope Inspections</u> | | | | |
| IIA1 | <u>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</u> | <u>As required during foundation work and prior to</u> | <u>Approved construction documents</u> | <u>102.2.1</u> |

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| | walls and/or the perimeter of slab-on-grade floors. | backfill | | |
| 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 | 102.1, 802.2, Tables 802.2; ASHRA E 90.1 – 5.4.1, 5.5, 5.6, 5.8.1 |
| IIA3 | Fenestration values and product ratings for U-factors and SHGC values: U-factors and SHGC values of installed fenestration shall be visually inspected for conformance with the U-factors and SHGC values identified in the construction drawings by verifying the manufacturer's NFRC labels or, where not labeled, using the ratings in ECC Tables 102.1.3(1), (2) and (3). Where ASHRAE 90.1 is used, visible light transmittance values shall also be verified. | As required during installation | Approved construction documents; NFRC 100, NFRC 200, Tables 102.1.3 | 102.1.3, Tables 802.2, ASHRA E 90.1 – 5.4.2, 5.5.4, Tables 5.5; 5.6, 5.8.2 |
| IIA4 | Fenestration and door assembly product ratings for air leakage: Windows, skylights and sliding or swinging door assemblies, except site-built windows, skylights and/or doors, shall be visually inspected to verify that installed assemblies are listed and labeled by the manufacturer to the referenced standard. | As required during installation | NFRC 400, AAMA/WDMA 101/I.S.2, AAMA/WDMA 101/I.S.2/NAF S-02; ASTM E283 | 802.3.1, 802.3.2; ASHRA E 90.1 – 5.4.3.1, 5.4.3.2, 5.5.4, 5.6, 5.8.2 |
| IIA5 | Fenestration areas: Dimensions of windows, doors and skylights shall be verified by visual inspection. | Prior to final inspection | Approved construction documents | 802.2; ASHRA E 90.1 – 5.5.4.1 |

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| IIA6 | <u>Sealing: Openings and penetrations in the building envelope, including site-built fenestration and doors, shall be visually inspected to verify that they are properly sealed.</u> | <u>As required during construction</u> | <u>Approved construction documents</u> | <u>802.3.3, 802.3.5, 802.3.6, 802.3.7; ASHRA E 90.1 – 5.4.3.1, 5.4.3.3 5.4.3.4</u> |
| IIA7 | <u>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 against approved plans by visual inspection.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents, including energy analysis</u> | <u>Tables 802.2; 802.2.3</u> |
| IIA8 | <u>Moisture control, vapor retarder: Framed walls, floors and ceilings that are not ventilated to allow moisture to escape, shall be visually inspected for installation of a vapor retarder for moisture control.</u> | <u>As required during construction of envelope and prior to covering vapor barrier</u> | <u>Approved construction documents; ASTM E96 Procedure A</u> | <u>802.1.2</u> |
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| <u>IIB Mechanical and Service Water Heating Inspections</u> | | | | |
| IIB1 | <u>Fireplaces: Provision of combustion air and tight-fitting fireplace doors shall be verified by visual inspection.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents; ANSI Z21.60 (see also MC 904), ANSI Z21.50</u> | <u>102.5; BC 2111; MC Chapters 7, 9; FGC Chapter 6</u> |
| IIB2 | <u>Dampers integral to the building thermal envelope: Dampers shall be visually inspected to verify that such openings are equipped with motorized dampers that have been tested and listed or labeled. If such dampers are not listed or labeled, they shall be tested and shall meet</u> | <u>As required during installation</u> | <u>Approved construction documents; AMCA 500</u> | <u>802.3.4; ASHRA E 90.1 – 6.4.3.4.4</u> |

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| | the requirements to the satisfaction of the progress inspector. | | | |
| IIB3 | HVAC and service water heating equipment performance: Equipment 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. | Prior to final inspection | Approved construction documents | 803.2.2, Tables 803.2.2; 803.3.2, Tables 803.3.2; 804.2, Table 804.2; ASHRA E 90.1 – 6.1, 6.3, 6.4.1, 6.8, Tables 6.8.1; 7.4.2, Table 7.8 |
| IIB4 | HVAC system controls and economizers and service hot water 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, Thermostatic; Set point overlap restriction; Off-hour; Shutoff damper; Economizers; Variable air volume fan; Hydronic systems; Heat rejection equipment fan speed; Complex mechanical systems serving multiple zones; Ventilation; Energy recovery systems; Service water heating; Hot water system; Exhaust hoods; Radiant heating systems; and Hot gas bypass systems. Controls with seasonally dependent functionality: Controls whose complete operation cannot be demonstrated due to prevailing | After installation and before final inspection, except that for controls with seasonally dependent functionality, such testing shall be performed before sign-off or issuance of a Final Certificate of Occupancy | Approved construction documents, including control system narratives; ASHRAE Guideline 1: The HVAC Commissioning Process where applicable | 803.2.3, 803.2.4, 803.2.5, 803.2.6, 803.2.7, 803.3.3, 803.3.4, 803.3.5, 803.3.9, 804.3, 804.6; ASHRA E 90.1 – 6.3, 6.4.3, 6.5, 6.7.2.4, 7.4.4, Appendix E; 1RCNY 5000-01(g)(2) |

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| | <p><u>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 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. For such supplemental inspections, the Department shall be notified by the progress inspection approved agency of any unresolved deficiencies in the installed work within 180 days of such supplemental inspection.</u></p> | | | |
| IIB5 | <p><u>Duct, plenum and piping insulation and sealing: Installed duct and piping insulation shall be visually inspected to verify proper insulation placement and values. Joints, longitudinal and transverse seams and connections in ductwork shall be visually inspected for proper sealing.</u></p> | <p><u>After installation and prior to closing shafts, ceilings and walls</u></p> | <p><u>Approved construction documents; SMACNA Duct Construction Standards, Metal and Flexible; UL 181A or UL 181B</u></p> | <p><u>803.2.8, 803.2.9, 803.3.6, 803.3.7, 804.5; ASHRA E 90.1 – 6.3, 6.4.4.1, 6.4.4.2.1, Tables 6.8.2 and 6.8.3; 7.4.3</u></p> |

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| IIB6 | Air leakage testing for duct systems designed to operate at static pressures in excess of 3 inches w.g. (746 Pa): Representative sections totaling at least 25% of the duct area, per ECC 803.3.6, shall be tested to verify that actual air leakage is below allowable amounts. | After installation and sealing and prior to closing shafts, ceilings and walls | Approved construction documents; SMACNA HVAC Air Duct Leakage Test Manual | 803.2.8.1.1, 803.3.6; ASHRA E 90.1 – 6.4.4.2.2 |
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IIC Electrical Power and Lighting Systems

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| IIC1 | Electrical metering: The presence and operation of individual meters or other means of monitoring individual apartments shall be verified by visual inspection for all apartments. | Prior to final inspection | Approved construction documents | 102.4; 805.8 |
| IIC2 | Transformers: Single-phase and three phase dry-type and liquid-filled distribution transformers shall be visually inspected to ensure that the installed transformers are listed and labeled to the referenced standard, or that associated product literature confirms that the transformers meet the referenced standard. | Prior to final inspection | Approved construction documents; NEMA TP1 | 102.6, 805.7 |
| IIC3 | Electric 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 inspection | Approved construction documents | ASHRA E 90.1 – 10.4.1 |
| IIC4 | Lighting controls: Not less than 15% of each type of required lighting controls, including manual interior lighting controls, light-reduction controls, automatic lighting shut-off, restroom controls, exterior building lighting controls and exterior grounds lighting controls, shall be verified by visual inspection and tested for functionality and proper operation. | Prior to final inspection | Approved construction documents, including control system narratives | 805.2; ASHRA E 90.1 – 9.1, 9.4.1; 1RCNY 5000-01(g)(3) |

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| IIC5 | <u>Tandem wiring: Tandem wiring shall be tested for functionality.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents</u> | <u>805.3; ASHRA E 90.1 – 9.4.2</u> |
| IIC6 | <u>Exit signs: Installed exit signs shall be visually inspected to verify that the label indicates that they do not exceed maximum permitted wattage.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents</u> | <u>805.4; ASHRA E 90.1 – 9.4.3</u> |
| IIC7 | <u>Interior lighting power: Installed lighting shall be verified for compliance with the lighting power allowance by visual inspection of fixtures, lamps, ballasts and relevant transformers.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents</u> | <u>805.5; ASHRA E 90.1 – 9.1.3, 9.1.4, 9.2.1, 9.5, 9.6; 1RCNY 5000-01(i)</u> |
| IIC8 | <u>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.</u> | <u>Prior to final inspection</u> | <u>Approved construction documents</u> | <u>805.6; ASHRA E 90.1 – 9.1.1, 9.4.4, 9.4.5</u> |
| <u>IID Other</u> | | | | |
| IID1 | <u>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 and for compliance with ECC 102.3.</u> | <u>Prior to sign-off or issuance of Final Certificate of Occupancy</u> | <u>Approved construction documents, including electrical drawings; ASHRAE Guideline 4: Preparation of Operating and Maintenance Documentation for Building Systems</u> | <u>102.3; 803.3.8.3; ASHRA E 90.1 – 6.7.2.2, 8.7.2</u> |

(i) Energy Analysis of Constructed Conditions. In accordance with Section 28-104.3 of the Administrative Code, if constructed work differs from the

last-approved full energy analysis, an as-built energy analysis shall be submitted as a post-approval amendment, listing the actual values used in the building for all applicable Energy Code-regulated items and demonstrating that the building complies with the Energy Code. Such energy analysis shall be signed and sealed by a registered design professional, who shall certify that to the best of his or her knowledge and belief the building as built complies with the Energy Code; where no trade-offs have been used among disciplines, more than one registered design professional may sign and seal the energy analysis. The energy analysis shall be approved by the Department prior to sign-off or issuance of the certificate of occupancy.

§3. Effective date. (a) Section 1 of this rule shall take effect on January 1, 2011.

(b) Section 2 of this rule shall take effect on September 7, 2010, and shall apply to applications for approval of construction documents that are submitted to the Department on and after such date.

STATEMENT OF BASIS AND PURPOSE

This rule is promulgated pursuant to the authority of the Commissioner of Buildings under Sections 643 and 1043 of the New York City Charter.

Article 104 of Title 28 of the Administrative Code establishes the requirement for construction drawings, and the Department's approval of such drawings, as a condition of obtaining a permit for a building construction project. Such construction drawings must be created under the direct supervision of a registered design professional (architect or engineer licensed and registered in New York State), who must sign and seal each drawing as the applicant for the construction permit. Such registered design professional is obligated by the conditions of his or her license and by this article to certify that the construction drawings, to the best of his or her knowledge and belief, comply with the provisions of the New York City Construction Codes or the 1968 building code and of all other applicable laws and rules.

Article 116 of Title 28 allows required inspections during the construction period, other than special inspections, to be performed by approved agencies. Such approved agencies are established in Article 114 of Title 28 and elaborated in 1 RCNY §101-07, which also sets forth the powers, responsibilities and qualifications for progress inspectors. In part, the rule requires that progress inspectors have "relevant experience." The work of progress inspectors is established in Section BC 109.3 and involves the detailed inspection of the built work throughout the construction process to ensure that it complies with the approved construction documents, which, as stated above, must comply with all applicable laws and rules, including the New York City Construction Codes.

In December 2009, the City Council and the Mayor enacted Local Law No. 85 of 2009, which establishes the New York City Energy Conservation Code (the "Energy Code") as Chapter 10 of Title 28 of the Administrative Code. The establishment of the Energy Code is in accordance with Article 11 of the New York State Energy Law, which allows a local jurisdiction to establish its own energy code, provided that it is at least as stringent as the State's energy code. Under Local Law No. 85, the New York City Energy Conservation Code utilizes the technical provisions of the Energy Conservation Construction Code of New York State, but amends the administrative provisions to include all alterations within the applicability of the code; the State's energy code exempts alterations that do not affect at least 50% of any building system or subsystem from its provisions. The New York City Energy Conservation Code goes into effect on July 1, 2010 .

This rule amends 1 RCNY §101-07(c)(3) to clarify the role of the progress inspector in a design and construction project and to describe the relevant experience required for progress inspectors for compliance with the Energy Code.

Progress inspections to ensure compliance with the Energy Code are required by §BC 109.3.5, and progress inspections are described generally in §28-116.2.3 as “inspections required...to be made during the progress of the work” without further specifying what those inspections entail or who is authorized to perform them. The general requirements for such inspectors are set forth in the existing rule; however special expertise is required for compliance with the Energy Code beyond the fundamental requirement for professional licensure and therefore such “relevant experience” in this area, as provided in the existing rule, is detailed in this amendment. In addition, the paragraph of the rule relating to progress inspections, 1 RCNY §101-07(c)(3), is reorganized for greater clarity.

The rule adds 1 RCNY §5000-01 to define the requirements for construction document approval with regard to the Energy Code as set forth in §28-104.7.9 and §BC 106.13. It also establishes the universe of progress inspections required to satisfy BC §109.3.5 and the Energy Code. Depending on the scope of work of a particular project, whether a new building or an alteration, the applicant can select from this list the progress inspection(s) that is (are) applicable to the particular construction project.

Specifically, section 5000-01:

- Codifies current submission requirements for compliance with the Energy Code as they relate to Local Law No. 85 of 2009, which codified the New York City Energy Conservation Code.
- Adds the new submission requirement for progress inspections to be listed and described in the approved construction drawings.
- Describes what the applicant must include for the new submission requirement.
- Provides a new definition for “project”, which requires that a building or renovation construction project be addressed as a whole for purposes of compliance with the Energy Code, regardless of how it may be split up for filing purposes. (A project may be filed so that it has more than one job number – e.g., one for the general construction, one for mechanical work, one for plumbing work.)
- Requires electrical drawings to be submitted if required for compliance with the Energy Code. Currently electrical drawings are not submitted for construction drawing approval.
- Allows a professional who is not the applicant of record to prepare some documentation required for compliance with the Energy Code, and describe what such a professional must do to be entered into the Department’s records in association with the project.

- Lists the types of progress inspections and define, for each inspection, what the progress inspector is expected to inspect and what the standard is for construction compliance.