



## Legislation Text

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Int. No. 550-A

By Council Members Williams, Richards, Arroyo and Kallos (by request of the Mayor)

A Local Law to amend the administrative code of the city of New York, in relation to conforming the New York city energy conservation code to the New York state energy code with amendments unique to construction in the city and repealing section 28-1001.2 in relation thereto.

Be in enacted by the Council as follows:

Section 1. Statement of findings and purpose. The New York State Energy Conservation Construction Code (the “New York State Energy Code”) is promulgated by the State Fire Prevention and Building Code Council pursuant to Article 11 of the New York State Energy Law. In accordance with Article 11, the New York City Energy Conservation Code must be at least as strict as the New York State Energy Code. The purpose of this local law is to conform the New York City Energy Conservation Code to recent changes in the New York State Energy Code with local law amendments unique to construction in the City.

§2. Section 28-1001.1 of the administrative code of the city of New York, as amended by local law number 1 for the year 2011, is amended to read as follows:

**§28-1001.1 Adoption of the New York city energy conservation code.** In accordance with section 11-109 of the New York state energy law, which permits any municipality to promulgate a local energy conservation construction code, the city of New York hereby adopts the [2010 energy conservation construction code of New York state] New York state energy code in effect and any amendments thereto that are more stringent than such code adopted by the city of New York as the minimum requirements for the design, construction and alteration of buildings for the effective use of energy in the city. Such adoption shall be subject to amendments pursuant to local law and set forth in section 1001.2 of this chapter, which shall be known and cited as the “New York

city amendments to the [2010 energy conservation construction code of New York state.” Such edition of the 2010 energy conservation construction code of New York state] New York state energy code.” The New York state energy code with such New York city amendments shall together be known and cited as the “New York city energy conservation code (NYCECC).”

§3. The administrative code of the city of New York is amended by adding a new section 28-1001.1.1 to read as follows:

**§28-1001.1.1 Definition.** As used in this chapter, the term “New York State Energy Code” means the New York State Energy Conservation Construction Code (the “New York State Energy Code”), constituting part 1240 of title 19 of the New York codes, rules and regulations (19 NYCRR Part 1240), and the publications incorporated by reference in such part, promulgated on November 18, 2014 by the State Fire Prevention and Building Code Council pursuant to Article 11 of the New York State Energy Law.

§4. Section 28-1001.2 of the administrative code of the city of New York, as added by local law number 1 for the year 2011, is REPEALED and a new section 28-1001.2 is added to read as follows:

**§28-1001.2 New York city amendments to the New York state energy code.** The following New York city amendments to the New York state energy code are hereby adopted as set forth in sections 28-1001.2.1, 28-1001.2.2 and 28-1001.2.3.

**§28-1001.2.1 New York city amendments to 19 NYCRR Part 1240.**

**1240.5 Exceptions.**

Delete Exception (b) in its entirety and replace with a new Exception (b) to read as follows:

**(b) Certain alterations.** The following need not comply with the provisions of the New York State Energy Code, provided that the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Glass-only replacements in an existing sash and frame, provided that the U-factor and the solar heat gain coefficient (SHGC) shall be equal to or lower than before the glass replacement.
3. Alterations, renovations or repairs to roof/ceiling, wall or floor cavities, including spaces between furring strips, provided that such cavities are insulated to the full existing cavity depth with insulation having a minimum nominal value of R-3.0/inch (R-2.0/cm).

4. Alterations, renovations or repairs to walls and floors in cases where the existing structure is without framing cavities and no new framing cavities are created.
5. Reroofing where neither the sheathing nor the insulation is exposed. Roofs without insulation in the cavity and where the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.
6. Replacement of existing doors that separate conditioned space from the exterior shall not require the installation of a vestibule or revolving door, provided, however, that an existing vestibule that separates a conditioned space from the exterior shall not be removed.
7. An alteration that replaces less than 50 percent of the luminaires in a space, provided that such alteration does not increase the installed interior lighting power.
8. An alteration that replaces only the bulb and ballast within the existing luminaires in a space, provided that such alteration does not increase the installed interior lighting power.

## **§28-1001.2.2 New York city amendments to residential and commercial chapters of the New York state energy code**

### **CHAPTER 1** **GENERAL REQUIREMENTS**

Chapter 1 is deleted in its entirety and a new Chapter 1 is added to read as follows:

### **CHAPTER 1** **ADMINISTRATION**

#### **Introductory Statement**

The New York City Energy Conservation Code (“NYCECC”) is comprised of the New York State Energy Code (“NYSEC”) with amendments as enacted into law by the New York City Council.

Reflecting changes in the New York State Energy Code, the NYCECC is divided into provisions relevant to residential buildings and provisions relevant to commercial buildings as follows:

1. The provisions of the NYCECC for residential buildings are reflected in the state publications incorporated by reference in 19 NYCRR section 1240.3, as amended by sections 28-1001.2.1, 28-1001.2.2 and 28-1001.2.3 of the administrative code of the city of New York. Such state publications include (i) Chapters 1, 2, 3, 4, and 6 of the 2010 ECCCNY, as amended by Chapter 1 of the publication entitled the 2014 Supplement to the New York State Energy Conservation Construction Code (the “2014 Supplement”); and (ii) the referenced standards incorporated by reference in 19 NYCRR section 1240.3(b).
2. The provisions of the NYCECC for commercial buildings are reflected in the state publications

incorporated by reference in 19 NYCRR section 1240.4, as amended by sections 28-1001.2.1, 28-1001.2.2 and 28-1001.2.3 of the administrative code of the city of New York. Such state publications include (i) Chapter 1 of the 2010 ECCCNY, as amended by Chapter 1 of the 2014 Supplement; (ii) Chapters C2, C3, and C4 in the “commercial provisions” of the 2012 edition of the International Energy Conservation Code (the “2012 IECC”), as amended by Chapter 2 of the 2014 Supplement; (iii) the 2010 edition of Energy Standard for Buildings Except Low-Rise Residential Buildings (“ASHRAE 90.1-2010”), as amended by Chapter 3 of the 2014 Supplement; and (iv) reference standards incorporated by reference in 19 NYCRR section 1240.4(c).

## **SECTION ECC 101**

### **SCOPE AND GENERAL REQUIREMENTS**

**101.1 General.** These provisions shall be known and cited as the “New York City Energy Conservation Code,” “NYCECC” or “ECC,” and are referred to herein as “this code.” All section numbers in this code shall be deemed to be preceded by the designation “ECC.” Administration and enforcement of this code shall be in accordance with Title 28 of the Administrative Code.

#### **101.1.1 Titles.**

The 2010 edition of the Energy Conservation Construction Code of New York State shall be known as the “2010 ECCCNY.”

The 2012 edition of the International Energy Code shall be known as the “2012 IECC.”

The 2010 edition of the Energy Standard for Buildings Except Low-Rise Residential Buildings shall be known as “ASHRAE 90.1-2010.” Where this code makes reference to ASHRAE 90.1-2010, such standard shall be as amended for New York City in accordance with Appendix A of this code.

The 2014 Supplement to the New York State Energy Conservation Construction Code shall be known as the “2014 Supplement.”

Chapters 1, 2, 3, 4 and 6 of the 2010 ECCCNY (as amended by Chapter 1 of the 2014 Supplement) and the referenced standards incorporated by reference in 19 NYCRR Section 1240.3(b) shall be known collectively as the “New York State Residential Energy Code.”

Chapter 1 of the 2010 ECCCNY (as amended by Chapter 1 of the 2014 Supplement), Chapters C2, C3, and C4 in the “commercial provisions” of the 2012 IECC (as amended by Chapter 2 of the 2014 Supplement), ASHRAE 90.1-2010 (as amended by Chapter 3 of the 2014 Supplement), and the referenced standards incorporated by reference in 19 NYCRR Section 1240.4(b), shall be known collectively as the “New York State Commercial Energy Code.”

The New York State Residential Energy Code and the New York State Commercial Energy Code shall be known collectively as the “New York State Energy Code.”

The New York State Energy Code along with the New York City amendments to the New York State Energy Code shall be known collectively as the “New York City Energy Conservation Code.”

**101.2 Scope.** This code applies to residential buildings and commercial buildings as defined in Chapter 2 and

Chapter C2 of this code.

**101.2.1 References.** Where reference is made within this code to the Building Code of New York State, Existing Building Code of New York State, Fire Code of New York State, Fuel Gas Code of New York State, Mechanical Code of New York State, Plumbing Code of New York State, Property Maintenance Code of New York State or Residential Code of New York State, the reference shall be deemed to be to the analogous provision(s) of Title 28 of the Administrative Code (the New York City Construction Codes), the 1968 Building Code, the New York City Fire Code or the New York City Electrical Code.

**101.2.2 Occupancy classifications.** For determination of occupancy classification and use within this code, a comparable occupancy classification shall be made to the New York City Building Code.

**101.2.3 Reconciliation with New York State Energy Code.** Whenever any provision of the New York State Energy Code provides for a more stringent requirement than imposed by this code, the more stringent requirement shall govern.

**101.2.4 Other laws.** The provisions of this code shall not be deemed to nullify any federal, state or local law, rule or regulation relating to any matter as to which this code does not provide.

**101.3 Intent.** This code shall regulate the design and construction of buildings for the effective use of energy. This code is intended to provide flexibility to permit the use of innovative approaches and techniques to achieve the effective use of energy. This code is not intended to abridge safety, health or environmental requirements contained in other applicable codes or ordinances. To the fullest extent feasible, use of modern technical methods, devices and improvements that tend to minimize consumption of energy and utilize to the greatest extent practical solar and other renewable energy sources without abridging reasonable requirements for the safety, health and security of the occupants or users of buildings shall be permitted. As far as may be practicable, the improvement of energy conservation construction practices, methods, equipment, materials and techniques shall be encouraged.

**101.4 Applicability.** The provisions of this code shall apply to the construction of buildings. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

**101.4.1 Existing buildings.** Except as specified in this chapter, this code shall not be used to require the removal, alteration or abandonment of, nor prevent the continued use and maintenance of, an existing building or building system lawfully in existence at the time of adoption of this code.

**101.4.2 Historic buildings.** An alteration or renovation to an existing building or structure that (1) is listed in the New York State Register of Historic Places, either individually or as a contributing building to a historic district, (2) is listed in the National Register of Historic Places, either individually or as a contributing building to a historic district, (3) has been determined to be eligible for listing in either the New York State or National Register of Historic Places, either individually or as a contributing building to a historic district, by the New York State Commissioner of Parks, Recreation and Historic Preservation, or (4) has been determined to be eligible for listing in the National Register of Historic Places, either individually or as a contributing building to a historic district, by the United States Secretary of the Interior, need not comply with this code.

**101.4.3 Additions, alterations, renovations or repairs.** It is intended that the residential provisions of the New York City Energy Conservation Code shall apply to additions, alterations, and renovations of existing residential buildings in all cases where the New York State Residential Energy Code would apply, and that the commercial provisions of the New York City Energy Conservation Code shall apply to additions, alterations, and renovations of existing commercial buildings in all cases where ASHRAE 90.1-2010 would apply. Additions, alterations, renovations or repairs to an existing building, building system, equipment or portion thereof, other than repairs of equipment, shall conform to the provisions of this code as they relate to new construction without requiring the unaltered portion of the existing building, building system or equipment to comply with this code. Additions, alterations, renovations or repairs shall not create an unsafe or hazardous condition or overload existing building systems. An addition shall be deemed to comply with this code if the addition alone complies or if the existing building and addition comply with this code as a single building.

**Exception:** The following need not comply with the provisions of this code provided that the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Glass-only replacements in an existing sash and frame, provided that the U-factor and the solar heat gain coefficient (SHGC) shall be equal to or lower than before the glass replacement.
3. Alterations, renovations or repairs to roof/ceiling, wall or floor cavities, including spaces between furring strips, provided that such cavities are insulated to the full existing cavity depth with insulation having a minimum nominal value of R-3.0/inch (R-2.0/cm).
4. Alterations, renovations or repairs to walls and floors in cases where the existing structure is without framing cavities and no new framing cavities are created.
5. Reroofing where neither the sheathing nor the insulation is exposed. Roofs without insulation in the cavity and where the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.
6. Replacement of existing doors that separate conditioned space from the exterior shall not require the installation of a vestibule or revolving door, provided, however, that an existing vestibule that separates a conditioned space from the exterior shall not be removed.
7. An alteration that replaces less than 50 percent of the luminaires in a space, provided that such alteration does not increase the installed interior lighting power.
8. An alteration that replaces only the bulb and ballast within the existing luminaires in a space, provided that such alteration does not increase the installed interior lighting power.

**101.4.3.1 Prescriptive envelope compliance for additions.** Additions shall comply with Sections 101.4.3.1.1 and 101.4.3.1.2 or alternatively with ASHRAE 90.1-2010 as amended by Appendix A of this code.

**101.4.3.1.1 Vertical fenestration.** New vertical fenestration area that results in a total building fenestration area less than or equal to that specified in Section C402.3.1 shall comply with Section

C402.3. Additions with vertical fenestration that result in a total building fenestration area greater than Section C402.3.1 or additions that exceed the fenestration area greater than Section C402.3.1 shall comply with Section C402.3.1.1 for the addition only. Additions that result in a total building vertical glass area exceeding that specified in Section C402.3.1.1 shall comply with Section C407.

**101.4.3.1.2 Skylight area.** New skylight area that results in a total building fenestration area less than or equal to that specified in Section C402.3.1 shall comply with Section C402.3. Additions with skylight area that result in a total building skylight area greater than Section C402.3.1 or additions that exceed the skylight area greater than Section C402.3.1 shall comply with Section C402.3.1.2 for the addition only. Additions that result in a total building skylight area exceeding that specified in Section C402.3.1.2 shall comply with Section C407.

**101.4.3.2 Alterations to building envelope.** New building envelope assemblies that are part of the alteration shall comply with Sections 101.4.3.2.1 and 101.4.3.2.2 or alternatively with ASHRAE 90.1-2010 as amended by Appendix A of this code.

**101.4.3.2.1 Vertical fenestration.** The addition of vertical fenestration that results in a total building fenestration area less than or equal to that specified in Section C402.3.1 shall comply with Section C402.3. The addition of vertical fenestration that results in a total building fenestration area greater than Section C402.3.1 shall comply with Section C402.3.1.1 for the space adjacent to the new fenestration only. Alterations that result in a total building vertical glass area exceeding that specified in Section C402.3.1.1 shall comply with Section C407.

**101.4.3.2.2 Skylight Area.** The addition of skylight area that results in a total building skylight area less than or equal to that specified in Section C402.3.1 shall comply with Section C402.3. The addition of skylight area that results in a total building skylight area greater than Section C402.3.1 shall comply with Section C402.3.1.2 for the space adjacent to the new skylights. Alterations that result in a total building skylight area exceeding that specified in Section C402.3.1.2 shall comply with Section C407.

**101.4.4 Change in occupancy or use.** Spaces undergoing a change in occupancy that would result in an increase in demand for either fossil fuel or electrical energy shall comply with this code. Where the use of a space changes from one use in Table C405.5.2(1) or (2) to another use in Table C405.5.2(1) or C405.5.2(2), the installed lighting wattage shall comply with Section C405.5.

**101.4.5 Change in space conditioning.** Any non-conditioned space that is altered to become conditioned space shall comply with this code.

**101.4.6 Mixed occupancy.** Where a building includes both residential and commercial occupancies, each occupancy shall be separately considered and shall meet the applicable provisions of Chapter 4 for residential and Chapter C4 for commercial.

**101.5 Compliance.** Residential buildings shall comply with the provisions of the New York City Energy Conservation Code applicable to residential buildings. Commercial buildings shall comply with the provisions of the New York City Energy Conservation Code applicable to commercial buildings.

**101.5.1 Compliance software** The use of computer software to demonstrate compliance with this code shall be in accordance with the requirements of Sections 101.5.1.1 or 101.5.1.2.

**101.5.1.1 Residential buildings.** Compliance with the residential provisions of the New York City Energy Conservation Code can be demonstrated through the use of (i) computer software that is developed by the United States Department of Energy (such as REScheck, REM/Rate home energy rating or REM/Design Home energy analysis software) specifically for the New York State Residential Energy Code, or (ii) any other building energy modeling or home energy rating (HERS) software that shall have been expressly approved in writing by the New York Secretary of State as acceptable for demonstrating compliance with the New York State Residential Energy Code. Software programs used to show compliance with the residential provisions of the New York City Energy Conservation Code must indicate compliance with the New York State Residential Energy Code, and must reflect the actual requirements of the residential provisions of the New York City Energy Conservation Code. When using the software approach to show compliance, the mandatory code provisions of the residential provisions of the New York City Energy Conservation Code must be followed.

**101.5.1.2 Commercial buildings.** Compliance with the commercial provisions of the New York City Energy Conservation Code can be demonstrated through the use of (i) computer software that is developed by the United States Department of Energy (such as COMCheck) specifically for the New York State Commercial Energy Code (or specifically for ASHRAE 90.1-2010, as amended by Chapter 3 of the 2014 Supplement), or (ii) other software that shall have been expressly approved in writing by the New York Secretary of State as acceptable for demonstrating compliance with the New York State Commercial Energy Code (or for demonstrating compliance with ASHRAE 90.1-2010, as amended by Chapter 3 of the 2014 Supplement). Software programs used to show compliance with the commercial provisions of the New York City Energy Conservation Code must indicate compliance with the New York State Commercial Energy Code (or compliance with ASHRAE 90.1-2010, as amended by Chapter 3 of the 2014 Supplement), and must reflect the actual requirements of the commercial provisions of the New York City Energy Conservation Code (or the actual requirements of ASHRAE 90.1-2010, as amended by Appendix A of this code). When using the software approach to show compliance with the commercial provisions of the New York City Energy Conservation Code, the mandatory code provisions in Chapters C2 through C5 (or, if applicable, the mandatory provisions of ASHRAE 90.1-2010, as amended by Appendix A of the New York City Energy Conservation Code) must be followed.

**101.5.2 Low-energy buildings.** The following buildings, or portions thereof separated from the remainder of the building by building thermal envelope assemblies complying with this code, shall be exempt from the building thermal envelope provisions of this code:

1. Those with a peak design rate of energy use less than 3.4 Btu/h per square foot (10.7 W/m<sup>2</sup>) or 1.0 watt per square foot (10.7 W/m<sup>2</sup>) of floor area for space conditioning purposes.
2. Those that do not contain conditioned space.

**101.5.3 Demonstration of compliance.** For a building project application or applications required to be submitted to the department, the following documentation, as further described in the rules of the department, shall be required in order to demonstrate compliance with this code:

**101.5.3.1 Professional statement.** Any registered design professional or lead energy professional filing an application or applications for a new building or alteration project shall provide on a signed and sealed drawing a statement of compliance or exemption in accordance with the rules of the department.

**101.5.3.2 Energy analysis.** For any application that is not exempt from this code and for which a work



permit is required in accordance with Section 28-105 of the Administrative Code, an energy analysis shall be provided on a sheet or sheets within the construction drawing set. The energy analysis shall identify the compliance path followed, demonstrate how the design complies with this code and be in a format as prescribed in the rules of the department. The energy analysis shall meet the requirements of this code for the entire project. Projects that utilize trade-offs among disciplines shall use DOE2-based energy modeling programs or other energy-modeling programs as prescribed in the rules of the department and shall be signed and sealed by a lead energy professional.

**101.5.3.3 Supporting documentation.** For any application that is not exempt from this code and for which a work permit is required in accordance with Section 28-105 of the Administrative Code, supporting documentation shall be required in the approved construction drawings. See Section 103 for further requirements.

**101.6 Severability.** If a section, subsection, sentence, clause or phrase of this code is, for any reason, held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this code.

## **SECTION ECC 102** **ALTERNATE MATERIALS, METHOD OF CONSTRUCTION, DESIGN OR INSULATING SYSTEMS**

**102.1 General.** This code is not intended to prevent the use of any material, method of construction, design or insulating system not specifically prescribed herein, provided that such material, method of construction, design or insulating system has been approved by the commissioner as (1) meeting the intent of this code, (2) achieving energy savings that are equivalent to or greater than would be achieved using prescribed materials, methods of construction, designs or insulating systems, and (3) meeting the requirements of Article 113 of Chapter 1 of Title 28 of the Administrative Code and the remaining New York City Construction Codes.

**102.1.1 Above-code programs.** The commissioner shall be permitted to find that a national, state or local energy efficiency program exceeds the energy efficiency required by this code. Buildings approved in writing by such an energy efficiency program shall be considered in compliance with this code. Notwithstanding approval by such an energy efficiency program, the requirements identified as “mandatory” in Chapters 4 and C4 of this code shall still apply.

## **SECTION ECC 103** **CONSTRUCTION DOCUMENTS**

**103.1 General.** Construction documents shall be prepared in accordance with the provisions of Chapter 1 of Title 28 of the Administrative Code, the New York City Construction Codes, including this code, and the rules of the department.

**103.2 Supporting documentation on construction documents.** Supporting documentation shall include those construction documents that demonstrate compliance with this code.

**103.2.1 Intent.** Supporting documentation shall accomplish the following:

1. Demonstrate conformance of approved drawings to the energy analysis for every element and value of the energy analysis;

2. Demonstrate conformance of approved drawings to other mandatory requirements of this code, including, but not limited, to, sealing against air leakage from the building envelope and from ductwork as applicable, insulation of ducts and piping as applicable, mechanical and lighting controls with devices shown and operational narratives for each, and additional requirements as set forth in this section;
3. Identify required progress inspections in accordance with the scope of work, this code, the Administrative Code, the New York City Building Code and the rules of the department; and
4. Comply with other requirements as may be set forth in the rules of the department.

**103.2.2 Detailed requirements.** Construction documents shall be drawn to scale upon suitable material. Electronic media documents are permitted to be submitted in accordance with department procedures. Construction documents for a project shall be fully coordinated and of sufficient clarity to indicate the location, nature and extent of the work proposed, and show in sufficient detail pertinent data and features of the building, building systems and equipment as herein governed. Details shall include, but are not limited to, as applicable, insulation materials and their R-values; fenestration U-factors and SHGCs; area-weighted U-factor and SHGC calculations; mechanical system design criteria; mechanical and service water heating system and equipment, types, sizes and efficiencies; economizer description; equipment and systems controls; fan motor horsepower and controls; duct sealing, duct and pipe insulation and location; lighting fixture schedule with wattages and control narrative; and air sealing details.

**103.3 Examination of documents.** In accordance with Article 104 of Chapter 1 of Title 28 of the Administrative Code, the department shall examine or cause to be examined the accompanying construction documents and shall ascertain by such examinations whether the construction indicated and described is in accordance with the requirements of this code and other pertinent laws, rules and regulations.

**103.4 Changes during construction.** Changes made during construction that are not in compliance with the approved construction documents shall be resubmitted for approval as an amended set of construction documents.

## **SECTION ECC 104**

### **INSPECTIONS**

**104.1 General.** Except as otherwise specifically provided, inspections required by this code or by the department during the progress of work may be performed on behalf of the owner by an approved agency. All inspections shall be performed at the sole cost and expense of the owner. Refer to Article 116 of Chapter 1 of Title 28 of the Administrative Code for additional provisions relating to inspections. In addition to any inspections otherwise required by this code or the rules of the department, the following inspections shall be required:

1. Progress inspections. Progress inspections shall be performed in accordance with the rules of the department.
2. Final inspection. Refer to Article 116 of Chapter 1 of Title 28 of the Administrative Code and the rules of the department.
3. Issuance of Certificate of Compliance. Refer to Section 28-116.4.1 of the Administrative Code.

The requirements of Section 104.1 shall not be read to prohibit the operation of any heating equipment or appliances installed to replace existing heating equipment or appliances serving an occupied portion of a structure provided that a request for inspection of such heating equipment or appliances has been filed with the department not more than 48 hours after such replacement work is completed, and before any portion of such equipment or appliances is concealed by any permanent portion of the structure.

**104.1.1 Approved agencies.** Refer to Article 114 of Chapter 1 of Title 28 of the Administrative Code and the rules of the department.

**104.1.2 Inspection of prefabricated construction assemblies.** Prior to the issuance of a work permit for a prefabricated construction assembly having concealed mechanical work, the department shall require the submittal of an evaluation report by the manufacturer or approved agency on each prefabricated construction assembly, indicating the complete details of the mechanical system, including a description of the system and its components, the basis upon which the system is being evaluated for energy use, test results and similar information, and other data as necessary for the commissioner to determine conformance to this code.

**104.1.2.1 Test and inspection records.** Required test and inspection records shall be made available to the commissioner at all times during the fabrication of the mechanical system and the erection of the building; or such records as the commissioner designates shall be filed.

**104.2 Testing.** Envelope, heating, ventilating, air conditioning, service water heating, lighting and electrical systems shall be tested as required in this code and in accordance with Sections 104.2.1 through 104.2.3. Except as otherwise required in this code or in the rules of the department, tests shall be made by the permit holder and witnessed by an approved agency.

**104.2.1 New, altered, extended, renovated or repaired systems.** New envelope, heating, ventilating, air conditioning, service water heating, lighting and electrical installations or systems, and parts of existing systems that have been altered, extended, renovated or repaired, shall be tested as prescribed herein or in the rules of the department to disclose leaks and defects.

**104.2.2 Apparatus, instruments, material and labor for tests.** Apparatus, instruments, material and labor required for testing an envelope, heating, ventilating, air conditioning, service water heating, lighting and/or electrical installation or system or part thereof shall be furnished by the permit holder.

**104.2.3 Reinspection and testing.** Where any work or installation does not pass an initial test or inspection, the necessary corrections shall be made so as to achieve compliance with the New York City Construction Codes, including this code. The work or installation shall then be reinspected or retested by the approved agency.

**104.3 Sign-off of completed work.** In addition to the requirements of Article 116 of Chapter 1 of Title 28 of the Administrative Code, Section 103.4 of this code and other requirements for sign-off, the project team shall either certify that construction does not differ from the last approved energy analysis or provide a whole-project as-built energy analysis and supporting documents, signed and sealed, for approval prior to sign-off. The as-built energy analysis and supporting documents shall reflect the materials, equipment and values actually used in the construction of the project, and shall demonstrate compliance of the constructed project with this code. Such signed and sealed documents may be accepted with less than full examination by the department based on

the professional certification of the registered design professional.

**104.4 Temporary connection.** The commissioner shall have the authority to allow the temporary connection of an installation to the sources of energy for the purpose of testing the installation or for use under a temporary certificate of occupancy.

## **SECTION ECC 105** **REFERENCED STANDARDS**

**105.1 Referenced standards.** The standards referenced in Chapters 2, 3, and 4 of the New York City Energy Conservation Code shall be those that are listed in Chapter 6 of the New York City Energy Conservation Code, and in the rules of the department and such standards shall be considered part of the requirements of the residential provisions of the New York City Energy Conservation Code to the prescribed extent of each such reference. The standards referenced in Chapters C2, C3, and C4 of the New York City Energy Conservation Code shall be those that are listed in Chapter C5 of the New York City Energy Conservation Code, and in the rules of the department and such standards shall be considered part of the requirements of the commercial provisions of the New York City Energy Conservation Code to the prescribed extent of each such reference. Where differences occur between provisions of this code and the referenced standards, the provisions of this code shall apply. Refer to Article 103 of Chapter 1 of Title 28 of the Administrative Code for additional provisions relating to referenced standards.

## **CHAPTER 2** **DEFINITIONS**

### **SECTION 202** **GENERAL DEFINITIONS**

Revise the definition of “Addition” after the definition of “Accessible,” to read as follows:

**ADDITION.** An extension or increase in the conditioned space floor area or height of a building or structure.

Revise the definition of “Approved” after the definition of “Alteration,” to read as follows:

**APPROVED.** See Section 28-101.5 of the Administrative Code.

Add a new definition of “Approved agency” after the definition of “Approved,” to read as follows:

**APPROVED AGENCY.** See Section 28-101.5 of the Administrative Code.

Add a new definition of “Authority having jurisdiction” after the definition of “Area weighted average,” to read as follows:

**AUTHORITY HAVING JURISDICTION.** The commissioner or the commissioner’s designee.

Delete the definition “Basement Wall” after the definition of “Automatic.”

Revise the term “Code enforcement official” and add the term “Code official” after the definition of “C-

factor (thermal conductance),” to read as follows:

**CODE ENFORCEMENT OFFICIAL.** The commissioner or the commissioner’s designee.

**CODE OFFICIAL.** The commissioner or the commissioner’s designee.

Add a new definition of “Grade plane” after the definition of “F-factor,” to read as follows:

**GRADE PLANE.** For the purposes of this code, a reference plane representing the average of finished ground level adjoining the building at exterior walls. Where the finished ground level slopes away from the exterior walls, the reference plane shall be established by the lowest points within the area between the building and the lot line or, where the lot line is more than 6 feet (1829 mm) from the building, between the building and a point 6 feet (1829 mm) from the building.

Add a new definition of “Lead energy professional” after the definition of “Labeled,” to read as follows:

**LEAD ENERGY PROFESSIONAL.** The registered design professional who signs and seals the energy analysis for an entire project. Such individual may be the same registered design professional who signs and seals the design drawings for the same project.

Add new definitions of “Professional certification” and “Project” after the definition of “Nameplate Horsepower,” to read as follows:

**PROFESSIONAL CERTIFICATION.** See Section 28-101.5 of the Administrative Code.

**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 107 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.

### **CHAPTER 3**

### **CLIMATE ZONES, DESIGN CONDITIONS, MATERIALS, EQUIPMENT AND SYSTEMS**

#### **301.1 General.**

Delete Section 301.1 in its entirety and replace with a new Section 301.1 to read as follows:

**301.1 General.** Climate zones from Table 301.1 shall be used in determining the applicable requirements from Chapter 4.

### **CHAPTER 4**

### **RESIDENTIAL ENERGY EFFICIENCY**

#### **403.7 Systems serving multiple dwelling units.**

Delete Section 403.7 in its entirety and replace with a new Section 403.7 to read as follows:

**403.7 Systems serving multiple dwelling units.** Systems serving buildings containing three or more

dwelling units shall comply with Sections C403 and C404 in lieu of Section 403.

#### **403.9 Pools.**

Delete Section 403.9 in its entirety and replace with a new Section 403.9 to read as follows:

**403.9 Pools.** Pools shall be provided with energy-conserving measures in accordance with Sections 403.9.1 through 403.9.3.

**403.9.1 Pool heaters.** All pool heaters shall be equipped with a readily accessible on-off switch to allow shutting off the heater without adjusting the thermostat setting. Pool heaters fired by natural gas or LPG shall not have continuously burning pilot lights.

**403.9.2 Time switches.** Time switches that can automatically turn off and on heaters and pumps according to a preset schedule shall be installed on swimming pool heaters and pumps.

#### **Exceptions:**

1. Where public health standards require 24-hour pump operation.
2. Where pumps are required to operate solar- and waste-heat-recovery pool-heating systems.

**403.9.3 Pool covers.** Heated pools shall be equipped with a vapor-retardant pool cover on or at the water surface. Pools heated to more than 90°F (32°C) shall have a pool cover with a minimum insulation value of R-12.

**Exception:** Pools deriving over 60 percent of the energy for heating from site-recovered energy or solar energy source.

## **CHAPTER 6** **REFERENCED STANDARDS**

At the end of the first paragraph, add the following sentence:

Refer to the rules of the department for any subsequent additions, modifications or deletions that may have been made to the referenced standards set forth herein in accordance with Section 28-103.19 of the Administrative Code.

Delete the referenced standard titled “AAMA” in its entirety and replace with a new referenced standard titled “AAMA,” to read as follows:

**AAMA**

American Architectural Manufacturers Association 1827 Walden Office Square, Su

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>AAMA/WDMA/CSA 101/I.S.2/A440-08</u>	<u>Specifications for Windows, Doors and U402.4.4</u>	

Delete the referenced standard titled “ACCA” in its entirety and replace with a new referenced standard

titled “ACCA,” to read as follows:

<b>ACCA</b>		<u>Air Conditioning Contractors of America 2800 Shirlington Road, Suite 300 Arlington</u>
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>Manual J-87</u>	<u>Residential Load Calculation Seventh Edit</u>	<u>403.6, 405.6.1</u>

Delete the referenced standard titled “AFPA” in its entirety and replace with a new referenced standard titled “AFPA,” to read as follows:

<b>AFPA</b>		<u>American Forest &amp; Paper Association 1111 19th St, NW, Suite 800 Washington, DC 20</u>
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>*NDS-05</u>	<u>National Design Specification (NDS) for W</u>	<u>Table 402.1.5.1, Table 402.1.5.2 with 2005 Supplement</u>

Delete the referenced standard titled “AHRI” in its entirety.

Delete the referenced standard titled “AISI” in its entirety and replace with a new referenced standard titled “AISI,” to read as follows:

<b>AISI</b>		<u>American Iron and Steel Institute 1140 Connecticut Avenue, Suite 705 Washington, DC</u>
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>S230-07</u>	<u>Standard for Cold-Formed Steel Framing-P</u>	<u>Table 402.1.5.1, Table 402.1.5.2 for One- and Two-Family Dwellings</u>

Delete the referenced standard titled “AMCA” in its entirety.

Delete the referenced standard titled “ANSI” in its entirety and replace with a new referenced standard titled “ANSI,” to read as follows:

<b>ANSI</b>		<u>American National Standards Institute 25 West 43rd Street, Fourth Floor New York, N</u>
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>Z21.50-07</u>	<u>Vented Gas Fireplace (CSA ANSI Z21.50/C303.1.5</u>	
<u>Z21.60-03</u>	<u>Decorative Gas Burning Appliances for Inst303.1.5</u>	
	<u>Fuel Burning Fireplaces with addenda Z21.6</u>	
	<u>ANSI Z21.50/CSA 2.26)</u>	
<u>Z21.50/CSA 2.22</u>	<u>Vented Gas Fireplaces (ANSI Z21.50/CSA 303.1.5</u>	
<u>-07</u>		
<u>Z21.60/CSA 2.26</u>	<u>Decorative Gas Burning Appliances for Inst303.1.5</u>	
<u>-03</u>	<u>Fuel Burning Fireplaces with Addendum Z2</u>	
	<u>(ANSI Z21.60/CSA 2.26)</u>	
<u>*Z65-96</u>	<u>Method for Measuring Floor Area in Office</u>	<u>402.4.2.1, 403.2.2</u>

Delete the referenced standard titled “ASHRAE” in its entirety and replace with a new referenced standard titled “ASHRAE,” to read as follows:

<b><u>ASHRAE</u></b>	<u>American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. 179 2305</u>	
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
90.1-10	<u>Energy Standard for Buildings Except Low</u>	<u>101.1.1, 101.4.3, 101.4.3.1,</u>
	<u>Buildings (ANSI/ASHRAE/IESNA 90.1-2101.4.3.2, 101.5.1.2</u>	
*119-88 (RA 2004)	<u>Air Leakage Performance for Detached Single-Family Residential Buildings</u>	<u>Table 405.5.2(1)</u>
*ASHRAE/ANSI-152-04	<u>Method of Test for Determining the Design</u>	<u>403.2.2</u>
*ASHRAE-05	<u>Efficiencies of Residential Thermal Distribution Systems</u>	
	<u>ASHRAE Handbook of Fundamentals-2004</u>	<u>402.1.4, Table 405.5.2(1)</u>

Delete the referenced standard titled “ASME” in its entirety.

Delete the referenced standard titled “ASTM” in its entirety and replace with a new referenced standard titled “ASTM,” to read as follows:

<b><u>ASTM</u></b>	<u>ASTM International 100 Barr Harbor Drive West Conshohocken, PA 19428-2859</u>	
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
E 84-04	<u>Standard Test Method for Surface Burning Characteristics of Building Materials</u>	<u>402.4.1(12)(c)</u>
E 96-00	<u>Standard Test Methods for Water Vapor Transmission Properties of Building Materials</u>	<u>402</u>
E 283-04	<u>Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors</u>	<u>A202, 402.4.3</u>
*E 779-99	<u>Standard Test Method for Determining Air Leakage Rate by Fan Pressurization</u>	<u>402.4.2.1</u>
*E 1554-03	<u>Standard Test Methods for Determining Air Leakage Rate by Fan Pressurization</u>	<u>403.2.2</u>
E 2178-03	<u>Standard Test Method for Air Permeance of Building Materials</u>	<u>402</u>
F 1667-03	<u>Standard Specification for Driven Fasteners and Staples</u>	<u>Table 402.1.5.1, Table 402.1.5.2</u>

Delete the referenced standard titled “CSA” in its entirety and replace with a new referenced standard titled “CSA,” to read as follows:

<b><u>CSA</u></b>	<u>Canadian Standards Association 5060 Spectrum Way Mississauga, Ontario, Canada</u>	
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>AAMA/WDMA/CSA 101/1.S.2/A440-08</u>	<u>Specifications for Windows, Doors and Unitized Curtain Walls</u>	<u>402.4.4</u>



Delete the referenced standard titled “DOE” in its entirety and replace with a new referenced standard titled “DOE,” to read as follows:

<b>DOE</b>	U.S. Department of Energy c/o Superintendent of Documents U.S. Government Printing 9325	
Standard reference number	Title	Referenced in code section number
(Current Edition)	State Energy Price and Expenditure Report	405.3

Delete the referenced standard titled “ICC” in its entirety and replace with a new referenced standard titled “ICC,” to read as follows:

<b>ICC</b>	International Code Council, Inc. 500 New Jersey Avenue, NW 6th Floor Washington, D.C. 20001	
Standard Reference Number	Title	Referenced in code section number
BCNYS-10	Building Code of New York State	101.2.1, 201.3, 303.1.5, 303.2, T402.1.
EBNYS-10	Existing Building Code of New York State	101.2.1
ECCCNYS-10	Energy Conservation Construction Code of New York State	101.2.3, 101.5.1
FCNYS-10	Fire Code of New York State	101.2.1, 201.3
FGNYS-10	Fuel Gas Code of New York State	101.2.1, 201.3
MCNYS-10	Mechanical Code of New York State	101.2.1, 201.3
NYCECC-10	New York City Energy Conservation Code	101.1, 101.5.3.2, 101.5.3.3, 104.3
PCNYS-10	Plumbing Code of New York State	101.2.1, 201.3
PMNYS-10	Property Maintenance Code of New York State	101.2.1
RCNYS-10	Residential Code of New York State	101.2.1, 201.3, 202, 303.1.5, T402.1.1, 402.1.5.2, 402.2.1.1, 402.4.1(12), 403.2, (1)

Delete the referenced standard titled “IESNA” in its entirety and replace with a new referenced standard titled “IESNA,” to read as follows:

<b>IESNA</b>	Illuminating Engineering Society of North America 120 Wall Street, 17 <sup>th</sup> Floor New York, NY 10038	
Standard reference number	Title	Referenced in code section number
ANSI/ASHRAE/IESNA 90.1-2010	Energy Standard for Buildings, Except Low-Rise Buildings	101.1.1, 101.4.3, 101.4.3.1, 101.4.3.2, 101.5.1.2

Delete the referenced standard titled “NFRC” in its entirety and replace with a new referenced standard titled “NFRC,” to read as follows:

<b>NFRC</b>	National Fenestration Rating Council, Inc. 8484 Georgia Avenue, Suite 320 Silver Spring, MD 20910	
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<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
100-01	Procedure for Determining Fenestration Pro303.1.3 Second Edition	
200-01	Procedure for Determining Fenestration Pro303.1.3 Gain Coefficients and Visible Transmittance Incidence-Second Edition	
400-01	Procedure for Determining Fenestration Pro402.4.4 Second Edition	

Add a new referenced standard titled “NYC” after “NFRC,” to read as follows:

## **NYC**

New York City Department of Buildings 280 Broadway New York, NY 10007

<u>Standard Reference Number</u>	<u>Title</u>	<u>Referenced in code section number</u>
NYCBC-68	1968 Building Code of the City of New Y	101.2.1
NYCAC	New York City Administrative Code	101.1, 101.2.1, 101.5.3.2, 101.5.3.3, 102.1, 103.1, 103.2.1, 103.3, 104.1, 104.1.1, 104.3, 105.1
NYCBC	New York City Building Code	101.2.2, 102.1, 103.1, 103.2.1, 104.2.3, 201.3, 303.1.5, 303.2
NYCEC	New York City Electrical Code	101.2.1, 201.3
NYCFC	New York City Fire Code	101.2.1, 201.3
NYCFG	New York City Fuel Gas Code	102.1, 103.1, 103.2.1, 104.2.3, 201.3
NYCMC	New York City Mechanical Code	102.1, 103.1, 103.2.1, 104.2.3, 201.3, 403.2.2
NYCPC	New York City Plumbing Code	102.1, 103.1, 103.2.1, 104.2.3, 201.3

Delete the referenced standard titled “SMACNA” in its entirety.

Delete the referenced standard titled “UL” in its entirety.

Delete the referenced standard titled “WDMA” in its entirety and replace with a new referenced standard titled “WDMA,” to read as follows:

## **WDMA**

Window and Door Manufacturers Association 1400 East Touhy Avenue, Suite 470

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
AAMA/WDMA/CSA 101/I.S.2/A440-08	Specifications for Windows, Doors and U	402.4.4

## **CHAPTER C2** **DEFINITIONS**

## **SECTION C202** **GENERAL DEFINITIONS**

Revise the definition of “Approved” after the definition of “Alteration,” to read as follows:

**APPROVED.** See Section 28-101.5 of the Administrative Code.

Add a new definition of “Approved agency” after the definition of “Approved,” to read as follows:

**APPROVED AGENCY.** See Section 28-101.5 of the Administrative Code.

Revise the definition of “ASHRAE 90.1-2010” after the definition of “Approved Agency,” to read as follows:

**ASHRAE 90.1-2010.** The 2010 edition of the Energy Standard for Buildings Except Low-rise Residential Buildings, Standard Reference Number 90.1-2010, published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE 90.1-2010 is published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., is jointly sponsored by the Illuminating Engineering Society of North America and the American National Standards Institute, and is also known as “ANSI/ASHRAE/IES 90.1-2010.”)

Add a new definition of “Authority having jurisdiction” after the definition of “ASHRAE 90.1-2010,” to read as follows:

**AUTHORITY HAVING JURISDICTION.** The commissioner or the commissioner’s designee.

Add the term “Code enforcement official” and revise the term “Code official” after the definition of “C-factor (thermal conductance),” to read as follows:

**CODE ENFORCEMENT OFFICIAL.** The commissioner or the commissioner’s designee.

**CODE OFFICIAL.** The commissioner or the commissioner’s designee.

Add a new definition of “Electrical design load” after the definition of “Economizer, water,” to read as follows:

**ELECTRICAL DESIGN LOAD.** The electrical load that feeders and branch circuits are required to support pursuant to the relevant provisions of the New York City Electrical Code for the category of equipment loads being supported.

Add a new definition of “Grade plane” after the definition of “General lighting,” to read as follows:

**GRADE PLANE.** For the purposes of this code, a reference plane representing the average of finished ground level adjoining the building at exterior walls. Where the finished ground level slopes away from the exterior walls, the reference plane shall be established by the lowest points within the area between the building and the lot line or, where the lot line is more than 6 feet (1829 mm) from the building, between the building and a point 6 feet (1829 mm) from the building.

Add a new definition of “Lead energy professional” after the definition of “Labeled,” to read as follows:

**LEAD ENERGY PROFESSIONAL.** The registered design professional who signs and seals the energy analysis for an entire project. Such individual may be the same registered design professional who signs and seals the design drawings for the same project.

Add a new definition of "Occupancy sensor" after the definition of "Nonstandard part load value (NPLV)," to read as follows:

**OCCUPANCY SENSOR.** A device that detects the presence or absence of people within an area and causes lighting, equipment, or appliances to be regulated accordingly.

Add new definitions of "Photosensor" and “Professional certification” and “Project” after the definition of "On-Site renewable energy," to read as follows:

**PHOTOSENSOR.** A device that detects the presence of visible light.

**PROFESSIONAL CERTIFICATION.** See Section 28-101.5 of the Administrative Code.

**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 107 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.

Revise the definition of “Vapor Retarder Class” after the definition of “Vapor Retarder,” to read as follows:

**VAPOR RETARDER CLASS.** A vapor retarder shall be classified in accordance with its permeance rating measured in “perm” ( $1 \text{ perm} = 5.7 \times 10^{-11} \text{ kg/Pa} \cdot \text{s} \cdot \text{m}^2$ ) when tested in accordance with the desiccant method using Procedure A of ASTM E 96-00, as follows:

**Class I vapor retarder:** a vapor retarder having a permeance rating of 0.1 perm or less.

**Class II vapor retarder:** a vapor retarder having a permeance rating that is more than 0.1 perm and less than or equal to 1.0 perm.

**Class III vapor retarder:** a vapor retarder having a permeance rating that is more than 1.0 perm and less than or equal to 10.0 perm.

## **CHAPTER C4**

### **COMMERCIAL ENERGY EFFICIENCY**

#### **SECTION C401**

##### **GENERAL**

#### **C401.2 Application.**

Delete Item 1 and replace with a new Item 1 to read as follows:

1. The requirements of ASHRAE 90.1-2010, as amended by Appendix A of the New York City Energy Conservation Code; or

Delete Item 3 and replace with a new Item 3 to read as follows:

3. Performance. The requirements of Section C407.

#### **C401.2.1 Application to existing buildings.**

Delete Item 3 and replace with a new Item 3 to read as follows:

3. The requirements of ASHRAE 90.1-2010, as amended by Appendix A of the New York City Energy Conservation Code.

### **SECTION C402** **BUILDING ENVELOPE REQUIREMENTS**

#### **C402.1.1 Insulation and fenestration criteria.**

The reference to “ASHRAE 90.1-2010, as amended by Chapter 3 of the 2014 Supplement” shall be deemed to be a reference to “ASHRAE 90.1-2010, as amended by Appendix A of the New York City Energy Conservation Code.”

#### **C402.4.4 Doors and access openings to shafts, chutes, stairways, and elevator lobbies.**

Delete Section C402.4.4 in its entirety and replace with a new Section C402.4.4 to read as follows:

**C402.4.4 Doors and access openings to shafts, chutes, stairways, and elevator lobbies.** Doors and access openings from conditioned space to shafts, chutes, stairways and elevator lobbies shall either meet the requirements of Section C402.4.3 or shall be gasketed, weatherstripped or sealed.

**Exception:** Door openings required to comply with Section 715 or 715.3 of the New York City Building Code; or doors and door openings required by the New York City Building Code to comply with UL 1784 shall not be required to comply with Section C402.4.4.

#### **C402.4.9.1 Class III vapor retarders.**

Delete Section C402.4.9.1 in its entirety and replace with a new Section C402.4.9.1 to read as follows:

**C402.4.9.1 Class III vapor retarders.** When a vapor retarder is required by Section C402.4.9, a Class III vapor retarder may be provided in lieu of a Class I or II vapor retarder for framed walls, floors, and ceilings made of the materials indicated in Table C402.4.9.1.

**Exception:** Nothing in this section C402.4.9.1 or in Table C402.4.9.1 shall be construed as permitting a Class III vapor retarder in any situation where a Class I or Class II vapor retarder is required by the 2010 Building Code of New York State, the Residential Code of New York State or the Building Code of New York City, as applicable.

#### **C402.4.9.2 Material vapor retarder class.**

Delete Section C402.4.9.2 in its entirety and replace with a new Section C402.4.9.2 to read as follows:

**C402.4.9.2 Material vapor retarder class.** A vapor retarder shall be classified in accordance with its permeance rating measured in “perm” ( $1 \text{ perm} = 5.7 \times 10^{-11} \text{ kg/Pa} \cdot \text{s} \cdot \text{m}^2$ ) when tested in accordance with the desiccant method using Procedure A of ASTM E 96, as follows:

**Class I vapor retarder:** a vapor retarder having a permeance rating of 0.1 perm or less.

**Class II vapor retarder:** a vapor retarder having a permeance rating that is more than 0.1 perm and less than or equal to 1.0 perm.

**Class III vapor retarder:** a vapor retarder having a permeance rating that is more than 1.0 perm and less than or equal to 10.0 perm.

The vapor retarder class shall be based on the testing of the vapor retarder or an assembly that includes the vapor retarder, such testing to be performed and certified by the manufacturer of the vapor retarder or by an approved independent testing organization. However, in the absence of certified test results indicating that a different class is appropriate, the following materials shall be deemed to be in the class specified:

**Class I:** Sheet polyethylene, non-perforated aluminum foil

**Class II:** Kraft faced fiberglass batts

**Class III:** Latex or enamel paint

## **SECTION C403** **BUILDING MECHANICAL SYSTEMS**

### **C403.1 General.**

Delete Section C403.1 in its entirety and replace with a new Section C403.1 to read as follows:

**C403.1 General.** Mechanical systems and equipment serving the building heating, cooling or ventilating needs shall comply with Sections C403.2.1, C403.2.2, C403.2.3, C403.2.4, C403.2.5, C403.2.7, C403.2.8, C403.2.9, and C403.2.11 (referred to as the mandatory provisions) and either:

1. Section C403.3 (Simple systems); or
2. Section C403.4 (Complex systems).

### **C403.2 Provisions applicable to all mechanical systems (Mandatory).**

Amend the first sentence of Section C403.2 to read as follows:

**C403.2 Provisions applicable to all mechanical systems (Mandatory).** Mechanical systems and equipment serving the building heating, cooling or ventilating needs shall comply with Sections C403.2.1, C403.2.2, C403.2.3, C403.2.4, C403.2.5, C403.2.7, C403.2.8, C403.2.9, and C403.2.11.

### **TABLE C403.2.3(1)**

Delete Table C403.2.3(1) in its entirety and replace with a new Table C403.2.3(1) to read as follows:

TABLE C403.2.3(1)

## MINIMUM EFFICIENCY REQUIREMENTS:

## ELECTRICALLY OPERATED UNITARY AIR CONDITIONERS AND CONDENSING UNITS

EQUIPMENT TYPE	SIZE CATEGORY	HEATING SECTION TYPE	SUBCATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY		TEST PROCEDURE
				Before 6/1/2016	As of 6/1/2016	
Air conditioners, air cooled	< 65,000 Btu/h <sup>b</sup>	All	Split System	13.0 SEER	13.0 SEER	AHRI 210/240
			Single Package	13.0 SEER	14.0 SEER	
Through-the-wall (air cooled)	≤ 30,000 Btu/h <sup>b</sup>	All	Split system	12.0 SEER	13.0 SEER	
			Single Package	12.0 SEER	14.0 SEER	
Small-duct high-velocity (air cooled)	< 65,000 Btu/h <sup>b</sup>	All	Split System	10.0 SEER	11.0 SEER	
Air conditioners, air cooled	≥ 65,000 Btu/h and < 135,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.2 EE 11.4 IE	11.2 EE 11.4 IE	AHRI 340/360
		All other	Split System and Single Package	11.0 EE 11.2 IE	11.0 EE 11.2 IE	
	≥ 135,000 Btu/h and < 240,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EE 11.2 IE	11.0 EE 11.2 IE	
		All other	Split System and Single Package	10.8 EE 11.0 IE	10.8 EE 11.0 IE	
	≥ 240,000 Btu/h and < 760,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	10.0 EE 10.1 IEER	10.0 EE 10.1 IEER	
		All other	Split System and Single Package	9.8 EE 9.9 IEER	9.8 EE 9.9 IEER	
	≥ 760,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	9.7 EE 9.8 IEER	9.7 EE 9.8 IEER	

		All other	Split System and Single Package	9.5 EER 9.6 IEER	9.5 EER 9.6 IEER	
Air conditioners, water cooled	< 65,000 Btu/h	All	Split System and Single Package	12.1 EER 12.3 IEER	12.1 EER 12.3 IEER	AHRI 210/24
	≥ 65,000 Btu/h and < 135,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.5 EER 11.7 IEER	12.1 EER 12.3 IEER	AHRI 340/36
		All other	Split System and Single Package	11.3 EER 11.5 IEER	11.9 EER 12.1 IEER	
	≥ 135,000 Btu/h and < 240,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EER 11.2 IEER	12.5 EER 12.7 IEER	
		All other	Split System and Single Package	10.8 EER 11.0 IEER	12.3 EER 12.5 IEER	
	≥ 240,000 Btu/h and < 760,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EER 11.1 IEER	12.4 EER 12.6 IEER	
		All other	Split System and Single Package	10.8 EER 10.9 IEER	12.2 EER 12.4 IEER	
	≥ 760,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EER 11.1 IEER	12.0 EER 12.4 IEER	
		All other	Split System and Single Package	10.8 EER 10.9 IEER	12.0 EER 12.2 IEER	

(continued)

TABLE C403.2.3(1)-CONTINUED

## MINIMUM EFFICIENCY REQUIREMENTS:

## ELECTRICALLY OPERATED UNITARY AIR CONDITIONERS AND CONDENSING UNITS

EQUIPMENT TYPE	SIZE CATEGORY	HEATING SECTION TYPE	SUB-CATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY		TEST PROCEDURE
				Before 6/1/2016	As of 6/1/2016	



Air conditioners, evaporatively cooled	< 65,000 Btu/h <sup>b</sup>	All	Split System and Single Package	12.1 EE 12.3 IEER	12.1 EE 12.3 IEER	AHRI 210/24
	≥ 65,000 Btu/h and < 135,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.5 EE 11.7 IE	12.1 EE 12.3 IEER	AHRI 340/36
		All other	Split System and Single Package	11.3 EE 11.5 IE	11.9 EE 12.1 IEER	
	≥ 135,000 Btu/h and < 240,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EE 11.2 IE	12.0 EE 12.2 IEER	
		All other	Split System and Single Package	10.8 EE 11.0 IE	11.8 EE 12.0 IEER	
	≥ 240,000 Btu/h and < 760,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EE 11.1 EE	11.9 EE 12.1 EE	
		All other	Split System and Single Package	10.8 EE 10.9 EE	11.5 EE 11.7 EE	
	≥ 760,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EE 11.1 EE	11.7 EE 11.9 EE	
		All other	Split System and Single Package	10.8 EE 10.9 EE	11.5 EE 11.7 EE	
Condensing units, air cooled	≥ 135,000 Btu/h			10.1 EE 11.4 IE	10.5 EE 14.0 IEER	AHRI 365
Condensing units, water cooled	≥ 135,000 Btu/h			13.1 EE 13.6 IEER	13.5 EE 14.0 IEER	
Condensing units, evaporatively cooled	≥ 135,000 Btu/h			13.1 EE 13.6 IEER	13.5 EE 14.0 IEER	

For SI: 1 British thermal unit per hour = 0.2931 W.

- Chapter 6 of the referenced standard contains a complete specification of the referenced test procedure, including the reference year version of the test procedure.
- Single-phase, air-cooled air conditioners less than 65,000 Btu/h are regulated by NAECA. SEER values are those set by NAECA.

#### **TABLE C403.2.3(2)**

Delete Table C403.2.3(2) in its entirety and replace with a new Table C403.2.3(2) to read as follows:

TABLE C403.2.3(2)

## MINIMUM EFFICIENCY REQUIREMENTS:

## ELECTRICALLY OPERATED UNITARY AND APPLIED HEAT PUMPS

EQUIPMENT TYPE	SIZE CATEGORY	HEATING SECTION TYPE	SUBCATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY	TEST PROCEDURE <sup>a</sup>
Air cooled (cooling mode)	< 65,000 Btu/h <sup>b</sup>	All	Split System	14.0 SEER	AHRI 210/240
			Single Packaged	14.0 SEER	
Through-the-wall, air cooled	≤ 30,000 Btu/h <sup>b</sup>	All	Split System	14.0 SEER	
			Single Packaged	14.0 SEER	
Single-duct high-velocity air cooled	< 65,000 Btu/h <sup>b</sup>	All	Split System	13.0 SEER	
Air cooled (cooling mode)	≥ 65,000 Btu/h and < 135,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EER 11.2 IEER	AHRI 340/360
		All other	Split System and Single Package	10.8 EER 11.0 IEER	
	≥ 135,000 Btu/h and < 240,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	10.6 EER 10.7 IEER	
		All other	Split System and Single Package	10.4 EER 10.5 IEER	
	≥ 240,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	9.5 EER 9.6 IEER	
		All other	Split System and Single Package	9.3 EER 9.4 IEER	
Water source (cooling mode)	< 17,000 Btu/h	All	86°F entering water	11.2 EER	ISO 13256-1
	≥ 17,000 Btu/h and < 65,000 Btu/h	All	86°F entering water	12.0 EER	
	≥ 65,000 Btu/h and < 135,000 Btu/h	All	86°F entering water	12.0 EER	

Ground water source (cooling mode)	< 135,000 Btu/h	All	59°F entering water	16.2 EER	
		All	77°F entering water	13.4 EER	
Water-source water to water (cooling mode)	< 135,000 Btu/h	All	86°F entering water	10.6 EER	ISO 13256-2
			59°F entering water	16.3 EER	
Ground water source Brine to water (cooling mode)	< 135,000 Btu/h	All	77°F entering fluid	12.1 EER	
Air cooled (heating mode)	< 65,000 <sup>b</sup> Btu/h	=	Split System	8.2 HSPF	AHRI 210/240
		=	Single Package	8.0 HSPF	
Through-the-wall, (air cooled, heating mode)	≤ 30,000 Btu/h <sup>b</sup> (cooling capacity)	=	Split System	8.2 HSPF	
		=	Single Package	8.0 HSPF	
Small-duct high velocity (air cooled, heating mode)	< 65,000 <sup>b</sup> Btu/h	=	Split System	7.7 HSPF	

(continued)

TABLE C403.2.3(2)-CONTINUED

## MINIMUM EFFICIENCY REQUIREMENTS:

## ELECTRICALLY OPERATED UNITARY AND APPLIED HEAT PUMPS

EQUIPMENT TYPE	SIZE CATEGORY	HEATING SECTION TYPE	SUB-CATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY	TEST PROCEDURE <sup>a</sup>
Air cooled (heating mode)	$\geq 65,000$ Btu/h and $< 135,000$ Btu/h (cooling capacity)	=	47°F db/43°F wb Outdoor Air	3.3 COP	AHRI 340/360
			17°F db/15°F wb Outdoor Air	2.25 COP	
	$\geq 135,000$ Btu/h (cooling capacity)	=	47°F db/43°F wb Outdoor Air	3.2 COP	
			17°F db/15°F wb Outdoor Air	2.05 COP	
Water source (heating mode)	$< 135,000$ Btu/h (cooling capacity)	=	68°F entering water	4.2 COP	ISO 13256-1
Ground water source (heating mode)	$< 135,000$ Btu/h (cooling capacity)	=	50°F entering water	3.6 COP	
Ground source (heating mode)	$< 135,000$ Btu/h (cooling capacity)	=	32°F entering fluid	3.1 COP	
Water-source water to water (heating mode)	$< 135,000$ Btu/h (cooling capacity)	=	68°F entering water	3.7 COP	ISO 13256-2
		=	50°F entering water	3.1 COP	
Ground source brine to water (heating mode)	$< 135,000$ Btu/h (cooling capacity)	=	32°F entering fluid	2.5 COP	

For SI: 1 British thermal unit per hour = 0.2931 W, °C = [(°F) - 32]/1.8.

- a. Chapter 6 of the referenced standard contains a complete specification of the referenced test procedure, including the reference year version of the test procedure.
- b. Single-phase, air-cooled air conditioners less than 65,000 Btu/h are regulated by NAECA. SEER values are those set by NAECA.

**TABLE C403.2.3(3)**

Delete Table C403.2.3(3) in its entirety and replace with a new Table C403.2.3(3) to read as follows:

**TABLE C403.2.3(3)****MINIMUM EFFICIENCY REQUIREMENTS:**

**ELECTRICALLY OPERATED PACKAGED TERMINAL AIR CONDITIONERS, PACKAGED TERMINAL HEAT PUMPS, SINGLE-PACKAGE VERTICAL AIR CONDITIONERS, SINGLE VERTICAL HEAT PUMPS, ROOM AIR CONDITIONERS AND ROOM AIR-CONDITIONER HEAT PUMPS**

EQUIPMENT TYPE	SIZE CATEGORY (INPUT)	SUBCATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY		TEST PROCEDURE <sup>a</sup>
			Before 10/08/2015	As of 10/08/2015	
PTAC (cooling mode) new construction	All Capacities	95°F db outdoor air	12.5 - (0.213 × Cap/100) EER	13.8 - (0.300 × Cap/100) EER	AHRI 310/380
PTAC (cooling mode) replacements <sup>b</sup>	All Capacities	95°F db outdoor air	10.9 - (0.213 × Cap/100) EER	10.9 - (0.213 × Cap/100) EER	
PTHP (cooling mode) new construction	All Capacities	95°F db outdoor air	12.3 - (0.213 × Cap/100) EER	14.0 - (0.300 × Cap/100) EER	
PTHP (cooling mode) replacements <sup>b</sup>	All Capacities	95°F db outdoor air	10.8 - (0.213 × Cap/100) EER	10.8 - (0.213 × Cap/100) EER	
PTHP (heating mode) new construction	All Capacities	=	3.2 - (0.0 × Cap/100) COP	3.2 - (0.0 × Cap/100) COP	
PTHP (heating mode) replacements <sup>b</sup>	All Capacities	=	2.9 - (0.0 × Cap/100) COP	2.9 - (0.0 × Cap/100) COP	
SPVAC (cooling mode)	< 65,000 Btu/h	95°F db/ 75°F wb outdoor air	9.0 EER	9.0 EER	AHRI 390
	≥ 65,000 Btu/h and < 135,000 Btu/h	95°F db/ 75°F wb outdoor air	8.9 EER	8.9 EER	

	$\geq 135,000$ Btu/h and < 240,000 Btu/h	95°F db/ 75°F wb outdoor air	8.6 EER	8.6 EER	
SPVHP (cooling mode)	< 65,000 Btu/h	95°F db/ 75°F wb outdoor air	9.0 EER	9.0 EER	
	$\geq 65,000$ Btu/h and < 135,000 Btu/h	95°F db/ 75°F wb outdoor air	8.9 EER	8.9 EER	
	$\geq 135,000$ Btu/h and < 240,000 Btu/h	95°F db/ 75°F wb outdoor air	8.6 EER	8.6 EER	
SPVHP (heating mode)	< 65,000 Btu/h	47°F db/ 43°F wb outdoor air	3.0 COP	3.0 COP	AHRI 390
	$\geq 65,000$ Btu/h and < 135,000 Btu/h	47°F db/ 43°F wb outdoor air	3.0 COP	3.0 COP	
	$\geq 135,000$ Btu/h and < 240,000 Btu/h	47°F db/ 75°F wb outdoor air	2.9 COP	2.9 COP	

(continued)

TABLE C403.2.3(3)-CONTINUED

## MINIMUM EFFICIENCY REQUIREMENTS:

ELECTRICALLY OPERATED PACKAGED TERMINAL AIR CONDITIONERS, PACKAGED TERMINAL HEAT PUMPS, SINGLE-PACKAGE VERTICAL AIR CONDITIONERS, SINGLE VERTICAL HEAT PUMPS, ROOM AIR CONDITIONERS AND ROOM AIR-CONDITIONER HEAT PUMPS

EQUIPMENT TYPE	SIZE CATEGORY (INPUT)	SUBCATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY		TEST PROCEDURE <sup>a</sup>
			Before 10/08/20	As of 10/08/20	
Room air conditioners, with louvered slides	< 6,000 Btu/h		9.7 SEE	11.0 SEE	ANSI/AHAM RAC-1

	<u>≥ 6,000 Btu/h and &lt; 8,000 Btu/h</u>	=		<u>9.7 EER</u>	<u>11.0 EER</u>	
	<u>≥ 8,000 Btu/h and &lt; 14,000 Btu/h</u>	=		<u>9.8 EER</u>	<u>10.9 EER</u>	
	<u>≥ 14,000 Btu/h and &lt; 20,000 Btu/h</u>	=		<u>9.7 SEE</u>	<u>10.7 SEE</u>	
	<u>≥ 20,000 Btu/h</u>	=		<u>8.5 EER</u>	<u>9.4 EER</u>	
<u>Room air conditioners, without louvered slides</u>	<u>&lt; 8,000 Btu/h</u>	=		<u>9.0 EER</u>	<u>10.0 EER</u>	
	<u>≥ 8,000 Btu/h and &lt; 20,000 Btu/h</u>	=		<u>8.5 EER</u>	<u>9.5 EER</u>	
	<u>≥ 20,000 Btu/h</u>	=		<u>8.5 EER</u>	<u>9.4 EER</u>	
<u>Room air- conditioner heat pumps with louvered slides</u>	<u>&lt; 20,000 Btu/h</u>	=		<u>9.0 EER</u>	<u>9.8 EER</u>	
	<u>≥ 20,000 Btu/h</u>	=		<u>8.5 EER</u>	<u>9.3 EER</u>	
<u>Room air- conditioner heat pumps without louvered slides</u>	<u>&lt; 14,000 Btu/h</u>	=		<u>8.5 EER</u>	<u>9.3 EER</u>	
	<u>≥ 14,000 Btu/h</u>	=		<u>8.0 EER</u>	<u>8.7 EER</u>	
<u>Room air conditioner casement only</u>	<u>All capacities</u>	=		<u>8.7 EER</u>	<u>9.5 EER</u>	
<u>Room air conditioner casement- slider</u>	<u>All capacities</u>	=		<u>9.5 EER</u>	<u>10.4 EER</u>	

For SI: 1 British thermal unit per hour = 0.2931 W, °C = [(°F) - 32]/1.8.

"Cap" = The rated cooling capacity of the project in Btu/h. If the unit's capacity is less than 7000 Btu/h, use 7000 Btu/h in the calculation. If the unit's capacity is greater than 15,000 Btu/h, use 15,000 Btu/h in the calculations.

- Chapter 6 of the referenced standard contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.
- Replacement unit shall be factory labeled as follows: "MANUFACTURED FOR REPLACEMENT APPLICATIONS ONLY: NOT TO BE INSTALLED IN NEW CONSTRUCTION PROJECTS." Replacement efficiencies apply only to units with existing sleeves less than 16 inches (406 mm) in height and less than 42 inches (1067 mm) in width.

### **TABLE C403.2.3(4)**

Delete Table C403.2.3(4) in its entirety and replace with a new Table C403.2.3(4) to read as follows:

**TABLE 403.2.3(4)**

#### **WARM AIR FURNACES AND COMBINATION WARM AIR FURNACES/AIR-CONDITIONING UNITS, WARM AIR DUCT FURNACES AND UNIT HEATERS, MINIMUM EFFICIENCY REQUIREMENTS**

<b>EQUIPMENT TYPE</b>	<b>SIZE CATEGORY (INPUT)</b>	<b>SUBCATEGORY OR RATING CONDITION</b>	<b>MINIMUM EFFICIENCY<sup>d,e</sup></b>	<b>TEST PROCEDURE<sup>a</sup></b>
Warm air furnaces, gas fired	< 225,000 Btu/h		80% AFUE or 80%E <sup>c</sup>	DOE 10 CFR Part 430 or ANSI Z21.47
	≥ 225,000 Btu/h	Maximum capacity	81%E <sup>f</sup>	ANSI Z21.47
Warm air furnaces, oil fired	< 225,000 Btu/h		80% AFUE or 80%E <sup>c</sup>	DOE 10 CFR Part 430 or UL 727
	≥ 225,000 Btu/h	Maximum capacity	82%E <sup>g</sup>	UL 727
Warm air duct furnaces, gas fired	All capacities	Maximum capacity	80%E <sup>c</sup>	ANSI Z83.8
Warm air unit heaters, gas fired	All capacities	Maximum capacity	80%E <sup>c</sup>	ANSI Z83.8
Warm air unit heaters, oil fired	All capacities	Maximum capacity	80%E <sup>c</sup>	UL 731

For SI: 1 British thermal unit per hour = 0.2931 W.

- Chapter 6 of the referenced standard contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.
- Minimum and maximum ratings as provided for and allowed by the unit's controls.
- Combination units not covered by the National Appliance Energy Conservation Act of 1987 (NAECA) (3-phase power or cooling capacity greater than or equal to 65,000 Btu/h [19 kW]) shall comply with either rating.
- E = Thermal efficiency. See test procedure for detailed discussion.

†



e.  $E$  = Combustion efficiency (100% less flue losses). See test procedure for detailed discussion.

f.  $E_c$  = Combustion efficiency. Units must also include an IID, have jackets not exceeding 0.75 percent of the input rating, and have either power venting or a flue damper. A vent damper is an acceptable alternative to a flue damper for those furnaces where combustion air is drawn from the conditioned space.

g.  $E_t$  = Thermal efficiency. Units must also include an IID, have jacket losses not exceeding 0.75 percent of the input rating, and have either power venting or a flue damper. A vent damper is an acceptable alternative to a flue damper for those furnaces where combustion air is drawn from the conditioned space.

### TABLE C403.2.3(5)

Delete Table C403.2.3(5) in its entirety and replace with a new Table C403.2.3(5) to read as follows:

TABLE C403.2.3(5)

#### MINIMUM EFFICIENCY REQUIREMENTS: GAS- AND OIL-FIRED BOILERS

EQUIPMENT TYPE <sup>a</sup>	SUBCATEGORY OR RATING CONDITION	SIZE CATEGORY (INPUT)	MINIMUM EFFICIENCY	TEST PROCEDURE
Boilers, hot water	Gas-fired	< 300,000 Btu/h	82% AFUE	10 CFR Part 430
		$\geq 300,000$ Btu/h and $\leq 2,500,000$ Btu/h <sup>b</sup>	83% $E_t$	10CFR Part 431
		$> 2,500,000$ Btu/h <sup>a</sup>	85% $E_c$	
	Oil-fired <sup>c</sup>	< 300,000 Btu/h	84% AFUE	10 CFR Part 430
		$\geq 300,000$ Btu/h and $\leq 2,500,000$ Btu/h <sup>b</sup>	84% $E_t$	10 CFR Part 431
		$> 2,500,000$ Btu/h <sup>a</sup>	85% $E_c$	
Boilers, steam	Gas-fired	< 300,000 Btu/h	80% AFUE	10 CFR Part 430
	Gas-fired- all, except natural draft	$\geq 300,000$ Btu/h and $\leq 2,500,000$ Btu/h <sup>b</sup>	80% $E_t$	10CFR Part 431
		$> 2,500,000$ Btu/h <sup>a</sup>	80% $E_t$	
	Gas-fired-natural draft	$\geq 300,000$ Btu/h and $\leq 2,500,000$ Btu/h <sup>b</sup>	79% $E_t$	
		$> 2,500,000$ Btu/h <sup>a</sup>	79% $E_t$	

	Oil-fired <sup>e</sup>	< 300,000 Btu/h	82% AFUE	10 CFR Part 430
		≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h <sup>b</sup>	83% E <sup>t</sup>	10CFR Part 431
		> 2,500,000 Btu/h <sup>a</sup>	83% E <sup>t</sup>	

For SI: 1 British thermal unit per hour = 0.2931 W.

E<sub>c</sub> = Combustion efficiency (100 percent less flue losses). E<sub>t</sub> = Thermal efficiency. See referenced standard document for detailed

information.

a. These requirements apply to boilers with rated input of 8,000,000 Btu/h or less that are not packaged boilers and to all packaged boilers. Minimum efficiency requirements for boilers cover all capacities of packaged boilers.

b. Maximum capacity - minimum and maximum ratings as provided for and allowed by the unit's controls.

c. Includes oil-fired (residual).

### TABLE C403.2.3(8)

Delete Table C403.2.3(8) in its entirety and replace with a new Table C403.2.3(8) to read as follows:

TABLE C403.2.3(8)

#### MINIMUM EFFICIENCY REQUIREMENTS:

#### HEAT REJECTION EQUIPMENT

EQUIPMENT TYPE <sup>a</sup>	TOTAL SYSTEM HEAT REJECTION CAPACITY AT RATED CONDITIONS	SUBCATEGORY OR RATING CONDITION	PERFORMANCE REQUIRED <sup>b,c,d</sup>	TEST PROCEDURE <sup>e,f</sup>
Propeller or axial fan open circuit cooling towers	All	95°F Entering Water 85°F Leaving Water 75°F Entering wb	> 38.2 gpm/hp	CTI ATC-105 and CTI STD-201
Centrifugal fan open circuit cooling towers	All	95°F Entering Water 85°F Leaving Water 75°F Entering wb	> 20.0 gpm/hp	CTI ATC-105 and CTI STD-201
Propeller or axial fan closed circuit cooling towers	All	102°F Entering Water 90°F Leaving Water 75°F Entering wb	> 14.0 gpm/hp	CTI ATC-105S and CTI STD-201
Centrifugal closed circuit cooling towers	All	102°F Entering Water 90°F Leaving Water 75°F Entering wb	> 7.0 gpm/hp	CTI ATC-105S and CTI STD-201

Air-cooled condensers	All	125°F Condensing Temperature R- 22 Test Fluid 190°F Entering Gas Temperature 15°F Subcooling 95°F Entering db	> 176,000 Btu/h-hp	AHRI 460
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For SI:  $^{\circ}\text{C} = [(^{\circ}\text{F}) - 32] / 1.8$ ,  $\text{L/s} \cdot \text{kW} = (\text{gpm/hp}) / (11.83)$ ,  $\text{COP} = (\text{Btu/h} \cdot \text{hp}) / (2550.7)$ .

db = dry bulb temperature,  $^{\circ}\text{F}$ , wb = wet bulb temperature,  $^{\circ}\text{F}$ .

- The efficiencies and test procedures for both open and closed circuit cooling towers are not applicable to hybrid cooling towers that contain a combination of wet and dry heat exchange sections.
- For purposes of this table, open circuit cooling tower performance is defined as the water flow rating of the tower at the thermal rating condition listed in Table 403.2.3(8) divided by the fan nameplate rated motor power.
- For purposes of this table, closed circuit cooling tower performance is defined as the water flow rating of the tower at the thermal rating condition listed in Table 403.2.3(8) divided by the sum of the fan nameplate rated motor power and the spray pump nameplate rated motor power.
- For purposes of this table, air-cooled condenser performance is defined as the heat rejected from the refrigerant divided by the fan nameplate rated motor power.
- Chapter 6 of the referenced standard contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.
- If a certification program exists for a covered product, and it includes provisions for verification and challenge of equipment efficiency ratings, then the product shall be listed in the certification program, or, if a certification program exists for a covered product, and it includes provisions for verification and challenge of equipment efficiency ratings, but the product is not listed in the existing certification program, the ratings shall be verified by an independent laboratory test report.

#### **C403.2.4.4.2 Outdoor air intakes and exhausts.**

Delete Section C403.2.4.4.2 in its entirety and replace with a new Section C403.2.4.4.2 to read as follows:

**C403.2.4.4.2 Outdoor air intakes and exhausts.** Outdoor air supply and exhaust openings in the building envelope, ducts, or equipment shall be provided with Class I motorized dampers with a maximum leakage rate of 4 cfm/ft<sup>2</sup> (20.3 L/s · m<sup>2</sup>) at 1.0 inch water gauge (w.g.) (249 Pa) when tested in accordance with AMCA 500D. Outdoor air supply and exhaust motorized dampers shall be configured to close automatically when the systems or spaces served are not in use.

#### **Exceptions:**

- Gravity (nonmotorized) dampers having a maximum leakage rate of 20 cfm/ft<sup>2</sup> (101.6 L/s · m<sup>2</sup>) at 1.0 inch water gauge (w.g.) (249 Pa) when tested in accordance with AMCA 500D are permitted to be used as follows:
  - In buildings less than three stories in height above grade for exhaust and relief dampers.
  - Where the design outdoor air intake or exhaust capacity does not exceed 300 cfm (141 L/s).

Gravity (nonmotorized) dampers for ventilation air intakes shall be protected from direct exposure to wind.

- Gravity (nonmotorized) dampers smaller than 24 inches (610 mm) in either dimension shall be permitted to have a leakage of 40 cfm/ft<sup>2</sup> (203.2 L/s · m<sup>2</sup>) at 1.0 inch water gauge (w.g.) (249 Pa) when tested in accordance with AMCA 500D.
- Dampers are not required for:
  - 3.1.
Ventilation or exhaust systems

serving unconditioned spaces.

- 3.2.  
kitchen exhaust hoods.

Exhaust systems serving Type 1

**C403.2.7.1.3 High-pressure duct systems.**

Delete Section C403.2.7.1.3 in its entirety and replace with a new Section C403.2.7.1.3 to read as follows:

**C403.2.7.1.3 High-pressure duct systems.** Ducts designed to operate at static pressures in excess of 3 inches water gauge (w.g.) (750 Pa) shall be insulated and sealed in accordance with Section C403.2.7. In addition, ducts and plenums shall be leak-tested in accordance with the SMACNA HVAC Air Duct Leakage Test Manual with the rate of air leakage (CL) less than or equal to 6.0 as determined in accordance with Equation C4-3.

$$CL = F/P^{0.65}$$

**(Equation C4-3)**

where:

F = The measured leakage rate in cfm per 100 square feet of duct surface.  
P = The static pressure of the test.

Documentation shall be furnished by the designer demonstrating that representative sections totaling at least 25 percent of the duct area have been tested and that all tested sections meet the requirements of this section.

**TABLE C403.3.1**

Delete Table 403.3.1 in its entirety and replace with a new Table C403.3.1 to read as follows:

**TABLE C403.3.1  
EQUIPMENT EFFICIENCY PERFORMANCE EXCEPTION FOR ECONOMIZERS**

<b>CLIMATE ZONE</b>	<b>COOLING EQUIPMENT EFFICIENCY IMPROVEMENT (%)<sup>a</sup></b>
<u>4A</u>	<u>42</u>
<u>5A</u>	<u>49</u>
<u>6A</u>	<u>56</u>

- a. A system qualifies for Exception 8 to the requirements of Section C403.3.1 if:

(1) the energy efficiency of the HVAC unit is rated with a “part load” metric (such as IPLV, IEER or SEER); Tables C403.2.3(1) through C403.2(8) specify a required minimum cooling efficiency for such HVAC unit using the same “part load” metric; and the rated efficiency of the HVAC unit exceeds the required minimum efficiency (expressed in the same “part load” metric) by at least the percentage shown in this Table; or

(2) the energy efficiency of the HVAC unit is not rated with any “part load” metric but is rated with a “full load” metric (such as EER or COP); Tables C403.2.3(1) through C403.2(8) specify a required minimum cooling efficiency for such HVAC unit using the same “full load” metric; and the rated efficiency of the HVAC unit exceeds the required minimum efficiency (expressed in the same “full

load” metric) by at least the percentage shown in this Table.

#### **C403.3.1.1.5 Dampers**

Delete Section C403.3.1.1.5 in its entirety and replace with a new Section C403.3.1.1.5 to read as follows:

**C403.3.1.1.5 Dampers.** Exhaust/relief and outdoor air dampers shall meet the requirements of Section C403.2.4.4.2.

#### **C403.4.2 Fan airflow control.**

Delete Section C403.4.2 in its entirety and replace with a new Section C403.4.2 to read as follows:

**C403.4.2 Fan airflow control.** HVAC systems with fans shall meet the requirements of C403.3.3 or C403.4.2.1.

**C403.4.2.1 Variable air volume (VAV) fan control.** Individual VAV fans with motors of 5 horsepower (3.7 kW) or greater shall be:

1. Driven by a mechanical or electrical variable speed drive;
2. Driven by a vane-axial fan with variable-pitch blades; or
3. The fan shall have controls or devices that will result in fan motor demand of no more than 30 percent of their design wattage at 50 percent of design airflow when static pressure set point equals one- third of the total design static pressure, based on manufacturer’s certified fan data.

**C403.4.2.1.1 Static pressure sensor location.** Static pressure sensors used to control VAV fans shall be placed in a position such that the controller setpoint is no greater than one-third the total design fan static pressure, except for systems with zone reset control complying with Section C403.4.2.1.2. For sensors installed down-stream of major duct splits, at least one sensor shall be located on each major branch to ensure that static pressure can be maintained in each branch.

**C403.4.2.1.2 Set points for direct digital control.** For systems with direct digital control of individual zone boxes reporting to the central control panel, the static pressure set point shall be reset based on the zone requiring the most pressure, i.e., the set point is reset lower until one zone damper is nearly wide open.

### **SECTION C405** **ELECTRICAL POWER AND LIGHTING SYSTEMS (MANDATORY)**

#### **C405.2.2.2 Occupancy sensors.**

Delete Section C405.2.2.2 in its entirety and replace with a new Section C405.2.2.2 to read as follows:

**C405.2.2.2 Occupancy sensors.** Automatic control devices shall be installed in the following spaces to automatically turn off lights within 30 minutes of all occupants leaving the space as follows:

1. Occupancy sensors shall be installed in all classrooms (not including shop classrooms, laboratory classrooms, and preschool classrooms), conference/meeting rooms, employee lunch and break rooms, and offices smaller than 200 square feet (18.5 m<sup>2</sup>) in area. These shall be manual-on switches. Such sensors and controls shall not have an override switch that converts from manual-on to automatic-on functionality. The occupancy sensor may have a grace period of up to 30 seconds to turn on the lighting automatically after the sensor has turned off the lighting if occupancy is detected.
2. Occupancy sensors shall be installed in restrooms, storage rooms, private offices 200 square feet (18.5 m<sup>2</sup>) in area or greater, janitorial closets, and other spaces 300 square feet in area or less enclosed by floor-to-ceiling height partitions, except for spaces listed in Item 1. These automatic control devices shall be installed to automatically turn off lights within 30 minutes of all occupants leaving the space, and shall either be manual-on or shall be controlled to automatically turn the lighting on to not more than 50 percent power.

**Exception:** Full automatic-on controls shall be permitted to control lighting in public corridors, stairways, restrooms, primary building entrance areas and lobbies, and areas where manual-on operation would endanger the safety or security of the room or building occupants.

### **C405.3 Reserved.**

Add a new Section C405.3 to read as follows:

### **C405.3 Reserved.**

### **C405.5.1.2 Reserved.**

Add a new Section C405.5.1.2 to read as follows:

### **C405.5.1.2 Reserved.**

### **C405.6.1 Reserved.**

Add a new Section C405.6.1 to read as follows:

### **C405.6.1 Reserved.**

### **C405.6.2 Exterior building lighting power.**

Delete Section C405.6.2 in its entirety and replace with a new Section C405.6.2 to read as follows:

### **C405.6.2 Exterior building lighting power.**

The total exterior lighting power allowance for all exterior building applications is the sum of the base site allowance plus the individual allowances for areas that are to be illuminated and are permitted in Table C405.6.2(2) for the applicable lighting zone. Tradeoffs are allowed only among exterior lighting applications listed in Table C405.6.2(2), Tradable Surfaces section. The lighting zone for the building exterior is determined from Table C405.6.2(1) unless otherwise specified by the local jurisdiction. Exterior lighting for all applications (except those included in the exceptions to Section C405.6.2) shall comply with the requirements of Section C405.6.

**Exception:** Lighting used for the following exterior applications is exempt where equipped with

a control device independent of the control of the nonexempt lighting:

1. Specialized signal, directional and marker lighting associated with transportation;
2. Advertising signage or directional signage;
3. Integral to equipment or instrumentation and is installed by its manufacturer;
4. Theatrical purposes, including performance, stage, film production and video production;
5. Athletic playing areas;
6. Temporary lighting;
7. Industrial production, material handling, transportation sites and associated storage areas;
8. Theme elements in theme/amusement parks; and
9. Used to highlight features of public monuments and registered historic landmark structures or buildings.

#### **C405.7.1 Electrical sub-metering (mandatory).**

Add a new section C405.7.1 to read as follows:

**C405.7.1 Measurement of electrical consumption of tenant spaces in covered buildings constructed on and after January 1, 2016.** The terms meter, submeter, covered building, tenant space and covered tenant space shall be as defined in Section 28-311.2 of the Administrative Code of the city of New York. Each covered tenant space in a building where plans were filed with the department on and after January 1, 2016 shall be equipped with a separate meter or sub-meter to measure the electrical consumption of such space when let or sublet. Where the covered tenant space is a floor with multiple tenancies, each tenancy that is 10,000 gross square feet (929 m<sup>2</sup>) in area or less shall (i) be equipped with a separate meter or sub-meter, (ii) share a meter or sub-meter with other tenant spaces on the floor, or (iii) share a meter or sub-meter covering the entire floor. As new covered tenant spaces are created, they shall be equipped with meters or sub-meters as provided in this section.

**Exception:** Covered tenant space for which the electrical consumption within such space is measured by a meter dedicated exclusively to that space.

### **SECTION C407** **TOTAL BUILDING PERFORMANCE**

Delete Section C407 in its entirety and replace with a new section C407 to read as follows:

### **SECTION C407** **TOTAL BUILDING PERFORMANCE**

**C407.1 Scope.** This section establishes criteria for compliance using total building performance. Buildings following the total building performance path must comply with ASHRAE 90.1-2010 as amended by Appendix A of this code, demonstrating compliance under Section 11 or Appendix G of such standard.

### **SECTION C408** **SYSTEM COMMISSIONING**

#### **Section C408.1 General.**

Delete Section C408.1 in its entirety and replace with a new Section C408.1 to read as follows:

**C408.1 General.** This section covers the commissioning of building mechanical systems in Section

C403, service water heating systems in Section C404, and electrical power and lighting systems in Section C405.

### **C408.2 Mechanical systems commissioning and completion requirements.**

Delete Section C408.2 in its entirety and replace with a new Section C408.2 with a new title, to read as follows:

**C408.2 Mechanical, renewable energy, and service water heating systems commissioning and completion requirements.** Prior to passing the final mechanical inspection, the registered design professional shall provide evidence of mechanical systems commissioning and completion in accordance the provisions of this section.

Construction document notes shall clearly indicate provisions for commissioning and completion requirements in accordance with this section and are permitted to refer to specifications for further requirements. Copies of all documentation shall be given to the owner and shall be made available to the code official upon request in accordance with Sections C408.2.4 and C408.2.5.

Mechanical systems, renewable energy, and service water heating systems shall include but are not limited to, at a minimum, the following heating, ventilating, air conditioning, service water heating, indoor air quality and refrigeration systems (mechanical and/or passive) and associated controls:

1. Heating, cooling, air handling and distribution, ventilation, and exhaust systems, and their related air quality monitoring systems.
2. Air, water, and other energy recovery systems.
3. Manual or automatic controls, whether local or remote, on energy using systems including but not limited to temperature controls, setback sequences, and occupancy based control, including energy management functions of the building management system.
4. Plumbing, including insulation of piping and associated valves, domestic and process water pumping, and mixing systems.
5. Mechanical heating systems and service water heating systems.
6. Refrigeration systems.
7. Renewable energy and energy storage systems.
8. Other systems, equipment and components that are used for heating, cooling or ventilation and that affect energy use.

**Exception:** Mechanical, renewable energy, and service hot water systems in buildings where the total mechanical equipment capacity being installed is less than 480,000 Btu/h (140 690 W) cooling capacity and 600,000 Btu/h (175 860 W) heating capacity are exempt from the commissioning requirements.

### **C408.2.1 Commissioning plan.**



Delete Item 2 and replace with a new Item 2 to read as follows:

2. A listing of the specific equipment, appliances or systems to be tested, their full sequences of operation, and a description of the tests to be performed, including prerequisite activities and reference to specific checklists or worksheets which are necessary or required by the department.

#### **C408.2.3.1 Equipment.**

Delete the exception in this section and replace with a new exception to read as follows:

**Exception:** Unitary or packaged HVAC equipment listed in Tables C403.2.3(1) through C403.2.3(3) that do not require supply air economizers shall only be required to demonstrate functioning under full-load and part-load conditions.

#### **C408.2.5.4 Final commissioning report.**

Delete the language in the first sentence before the colon and replace with new language to read as follows:

Within 30 months for buildings 500,000 gross square feet (46 452 m<sup>2</sup>) or greater, excluding R-2 occupancies, or within 18 months for R-2 occupancies and all other buildings, of the issuance of the certificate of occupancy or letter of completion, a registered design professional or approved agency shall prepare a report of test procedures and results, including test procedures and results performed after occupancy, identified as the "Final Commissioning Report", provide such report to the building owner, and submit a certification to the department with applicable fees in accordance with department rules. The owner of a building 500,000 gross square feet (46 452 m<sup>2</sup>) or greater may apply for an extension of time to the code official based on good cause, in accordance with department rules. Such report shall include:

### **CHAPTER C5** **REFERENCED STANDARDS**

Delete Chapter C5 in its entirety and replace with a new Chapter C5 to read as follows:

This chapter lists the standards that are referenced in various sections of this document. The standards are listed herein by the promulgating agency of the standard, the standard identification, the effective date and title, and the section or sections of this document that reference the standard. The application of the referenced standards shall be as specified in Section 105.

**AAMA**

American Architectural Manufacturers Association

1827 Walden Office Square

Suite 550

Schaumburg, IL 60173-4268

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>AAMA/WDMA/CSA 101/I.S.2/A A440-11</u>	<u>North American Fenestration Standard/ Windows, Doors and Unit Skylights</u>	<u>STable C402.4.3</u>

# AHAM

Association of Home Appliance Manufacturers

1111 19th Street, NW, Suite 402

Washington, DC 20036

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>ANSI/ AHAM RAC-1-2008</u>	<u>Room Air Conditioners</u>	<u>Table C403.2.3(3)</u>

# AHRI

Air Conditioning, Heating, and Refrigeration Institute

4100 North Fairfax Drive

Suite 200

Arlington, VA 22203

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>ISO/AHRI/ASHRAE 13256-1 (2005)</u>	<u>Water-source Heat Pumps-Testing and RaTable C403.2.3(2)</u> <u>Part 1: Water-to-air and Brine-to-air Heat</u>	
<u>ISO/AHRI/ASHRAE 13256-2 (1998)</u>	<u>Water-source Heat Pumps-Testing and RaTable C403.2.3(2)</u> <u>Part 2: Water-to-water and Brine-to-water</u>	
<u>210/240-08</u>	<u>Unitary Air Conditioning and Air-source ITable C403.2.3(1), Table</u> <u>C403.2.3(2)</u>	
<u>310/380-04</u>	<u>Standard for Packaged Terminal Air CondTable C403.2.3(3)</u> <u>Pumps</u>	
<u>340/360-2007</u>	<u>Commercial and Industrial Unitary Air-coTable C403.2.3(1), Table</u> <u>Pump Equipment</u>	<u>C403.2.3(2)</u>
<u>365-09</u>	<u>Commercial and Industrial Unitary Air-coTable C403.2.3(1), Table</u> <u>Units</u>	<u>C403.2.3(6)</u>
<u>390-03</u>	<u>Performance Rating of Single Package VeTable C403.2.3(3)</u> <u>and Heat Pumps</u>	
<u>400-01</u>	<u>Liquid to Liquid Heat Exchangers with ATable C403.2.3(9)</u>	
<u>440-08</u>	<u>Room Fan Coil</u>	<u>C403.2.8</u>
<u>460-05</u>	<u>Performance Rating Remote Mechanical ITable C403.2.3(8)</u> <u>Refrigerant Condensers</u>	
<u>550/590-03</u>	<u>Water Chilling Packages Using the VaporC403.2.3.1, Table</u> <u>with Addenda</u>	<u>C403.2.3(7), Table</u> <u>C406.2(6)</u>
<u>560-00</u>	<u>Absorption Water Chilling and Water-heaTable C403.2.3(7), Table</u> <u>C406.2(6)</u>	
<u>*AHRI 840-98</u>	<u>Unit Ventilators</u>	<u>C403.2.8</u>
<u>1160-08</u>	<u>Performance Rating of Heat Pump Pool HTable C404.2</u>	

\*Denotes standard that is incorporated by reference into 19 NYCRR Part 1240

# AMCA

Air Movement and Control Association International

30 West University Drive

Arlington Heights, IL 60004-1806

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>500D-10</u>	<u>Laboratory Methods for Testing Dampers</u>	<u>C403.2.4.4.1, C403.2.4.4.2</u>

## **ANSI**

American National Standards Institute

25 West 43rd Street

Fourth Floor

New York, NY 10036

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>Z21.10.3/CSA 4.3-04</u>	<u>Gas Water Heaters, Volume III-Storage Water Heaters with Input</u>	<u>Table C404.2</u>
<u>Z21.47/CSA 2.3-06</u>	<u>Gas-fired Central Furnaces</u>	<u>Table C403.2.3(4), Table C406.2.(4)</u>
<u>Z21.50-07</u>	<u>Vented Gas Fireplace (CSA ANSI Z21.50/CSA 2.22)</u>	<u>C402.2.9</u>
<u>Z21.60-03</u>	<u>Decorative Gas Burning Appliances for Installation in Solid-Fuel</u>	<u>C402.2.9</u>
<u>Z83.8/CSA 2.6-09</u>	<u>Gas Unit Heaters, Gas Packaged Heaters, Gas Utility Heaters and</u>	<u>Table C403.2.3(4), Table C406.2.(4)</u>

## **ASHRAE**

American Society of Heating, Refrigerating and Air-Conditioning

1791 Tullie Circle, NE

Atlanta, GA 30329-2305

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>ANSI/ASHRAE/ACCA Standard 183-2007</u>	<u>Peak Cooling and Heating Load Determination for Residential Buildings</u>	<u>C403.2.1</u>
<u>ASHRAE-2004</u>	<u>ASHRAE HVAC Systems Design Manual</u>	<u>C403.2.1</u>
<u>111-08</u>	<u>Measurement, Testing and Commissioning of Building Energy Systems</u>	<u>C408.2.2</u>
<u>ISO/AHRI/ASHRAE 13256-1 (2005)</u>	<u>Water-source Heat Pumps and Chillers - Part 1: Water-to-air air conditioning</u>	<u>Table C403.2.3(2)</u>
<u>ISO/AHRI/ASHRAE 13256-2 (1998)</u>	<u>Water-source Heat Pumps and Chillers - Part 2: Water-to-water air conditioning</u>	<u>Table C403.2.3(2)</u>
<u>90.1-2010</u>	<u>Energy Standard for High-Rise Buildings</u>	<u>Table C402.2, C403.2.3.1, C407.1</u>
<u>146-2006</u>	<u>Testing and Rating Procedures for Building Energy Systems</u>	<u>Table C404.2</u>

## **ASTM**

ASTM International

100 Barr Harbor Drive

West Conshohocken, PA 19428-2859

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>C 90-08</u>	<u>Specification for Load-bearing Concrete Masonry</u>	<u>Table C402.2</u>
<u>C 1371-04</u>	<u>Standard Test Method for Determination of Thermal Conductivity of Thermal Insulation Materials Near Room Temperature Using Emissometers</u>	<u>Table C402.2.1.1</u>
<u>C 1549-04</u>	<u>Standard Test Method for Determination of Thermal Conductivity of Thermal Insulation Materials Near Ambient Temperature Using a Portable Reflectometer</u>	<u>Table C405.2.1.1</u>

<u>D 1003-07e1</u>	<u>Standard Test Method for Haze and Luminance Transmittance of Transparent Plastics</u>
<u>*ASTM E96-00</u>	<u>Standard Test Methods for Water Vapor Transmission Properties of Materials (Vapor Retarder)</u>
<u>E 283-04</u>	<u>Test Method for Determining the Rate of Water Vapor Transmission Through Exterior Windows, Curtain Walls and Doors</u>
<u>E 408-71(2002)</u>	<u>Test Methods for Total Normal Emittance of Surfaces</u>
<u>E 779-03</u>	<u>Standard Test Method for Determining Air Leakage Rate by Pressurization</u>
<u>E 903-96</u>	<u>Standard Test Method Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres</u>
<u>E 1677-05</u>	<u>Standard Specification for an Air-retarding Barrier System for Low-rise Framed Building Windows, Doors and Unit Skylights</u>
<u>E 1918-97</u>	<u>Standard Test Method for Measuring Solar Radiation Heat Gain Through Horizontal or Low-sloped Surfaces in the Laboratory</u>
<u>E 1980-(2001)</u>	<u>Standard Practice for Calculating Solar Radiation Heat Gain Through Horizontal and Low-sloped Opaque Surfaces</u>
<u>E 2178-03</u>	<u>Standard Test Method for Air Permeance of Building Envelope Assemblies</u>
<u>E 2357-05</u>	<u>Standard Test Method for Determining Air Leakage Rate by Pressurization</u>

\*Denotes standard that is incorporated by reference into 19 NYCRR Part 1240

## CSA

Canadian Standards Association

5060 Spectrum Way

Mississauga, Ontario, Canada L4W 5N6

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>AAMA/WDMA/CSA 101/1.S.2/A440-11</u>	<u>North American Fenestration Standard/Specification for Windows, Doors and Unit Skylights</u>	<u>Table C402.4.3</u>

## CTI

Cooling Technology Institute

2611 FM 1960 West, Suite A-101

Houston, TX 77068

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>ATC 105/105S (00)</u>	<u>Acceptance Test Code for Water Cooling Towers</u>	<u>Table C403.2.3(8)</u>
<u>STD 201-09</u>	<u>Standard for Certification of Water Cooling Towers</u>	<u>Table C403.2.3(8)</u>

## DASMA

Door and Access Systems Manufacturers Association 1300 Sumner Avenue

Cleveland, OH 44115-2851

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>105-92 (R2004)</u>	<u>Test Method for Thermal Transmittance of Garage Doors</u>	<u>Table C402.4.3</u>

**DOE**U.S. Department of Energy c/o Superintendent of DocumentsU.S. Government Printing OfficeWashington, DC 20402-9325

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>10 CFR, Part 430-1998</u>	<u>Energy Conservation Program for Consur</u>	<u>Table C403.2.3(4), Table</u>
	<u>Procedures and Certification and Enforce</u>	<u>C403.2.3(5), Table C404.2,</u>
	<u>Plumbing Products; and Certification and</u>	<u>Table C406.2(4), Table</u>
	<u>Requirements for Residential Appliances;</u>	<u>C406.2(5)</u>
<u>*Appendix N to Subpart</u>	<u>Uniform Test Method for Measuring the IC202</u>	
<u>B of Part 430 of Title 10</u>	<u>of Furnaces and Boilers</u>	
<u>of the Code of Federal</u>		
<u>Regulations - 2009</u>		
<u>10 CFR, Part 431-2004</u>	<u>Energy Efficiency Program for Certain C</u>	<u>Table C403.2.3(5), Table</u>
	<u>Industrial Equipment: Test Procedures an</u>	<u>C406.2(5)</u>
	<u>Final Rules</u>	
<u>NAECA 87-(88)</u>	<u>National Appliance Energy Conservation Tables</u>	<u>C403.2.3(1), (2),</u>
	<u>100-12 (with Amendments of 1988-P.L. 1(4)</u>	

\*Denotes standard that is incorporated by reference into 19 NYCRR Part 1240

**ICC**International Code Council, Inc. 500 New Jersey Avenue, NW 6th Floor Washington

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>EBNYS-10</u>	<u>Existing Building Code of New York Stat</u>	<u>101.2.1</u>
<u>ECCCNYS-10</u>	<u>Energy Conservation Construction Code o</u>	<u>101.1.1</u>
<u>BCNYS-10</u>	<u>Building Code of New York State</u>	<u>101.2.1, C402.2.9,</u>
		<u>C402.4.9.1</u>
<u>FCNYS-10</u>	<u>Fire Code of New York State</u>	<u>101.2.1</u>
<u>FGNYS-10</u>	<u>Fuel Gas Code of New York State</u>	<u>101.2.1</u>
<u>IECC-12</u>	<u>International Energy Conservation Code</u>	<u>101.1.1</u>
<u>NYSCEC-14</u>	<u>New York State Commercial Energy Code</u>	<u>101.1.1, 101.5.1.2</u>
<u>NYSEC-14</u>	<u>New York State Energy Code</u>	<u>101.1.1, 101.2.3, 101.5.1.2,</u>
		<u>C202</u>
<u>NYSREC-14</u>	<u>New York State Residential Energy Code</u>	<u>101.1.1, 101.4.3, 101.5.1.1</u>
<u>PCNYS-10</u>	<u>Plumbing Code of New York State</u>	<u>101.2.1</u>
<u>PMNYS-10</u>	<u>Property Maintenance Code of New York</u>	<u>101.2.1</u>
<u>RCNYS-10</u>	<u>Residential Code of New York State</u>	<u>101.2.1, 101.4.3, 101.5.1.1,</u>
		<u>C402.2.9, C402.4.9.1</u>

**IESNA**Illuminating Engineering Society of North America 120 Wall Street, 17<sup>th</sup> Floor Ne

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>ANSI/ASHRAE/IESNA</u>	<u>Energy Standard for Buildings, Except L</u>	<u>101.1.1, 101.4.3, 101.4.3.1,</u>
<u>90.1-2010</u>	<u>Buildings</u>	<u>101.4.3.2, 101.5.1.2, C202,</u>
		<u>C401.2, C401.2.1, C402.1.1,</u>
		<u>Table C402.1.2, Table</u>
		<u>C402.2, C403.2.3.1, C407.1</u>

\*Denotes standard that is incorporated by reference into 19 NYCRR Part 1240

**ISO**International Organization for Standardization1, rue de Varembe, Case postale 56, CH-1211Geneva, Switzerland

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>ISO/AHRI/ASHRAE 13256-1 (2005)</u>	<u>Water-source Heat Pumps-Testing and Rating Part 1: Water-to-air and Brine-to-air Heat</u>	<u>RC403.2.3(2)</u>
<u>ISO/AHRI/ASHRAE 13256-2 (1998)</u>	<u>Water-Source Heat Pumps-Testing and Rating Part 2: Water-to-water and Brine-to-water</u>	<u>RC403.2.3(2)</u>

**NFRC**National Fenestration Rating Council, Inc. 6305 Ivy Lane, Suite 140 Greenbelt, M

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>100-2010</u>	<u>Procedure for Determining Fenestration -Second Edition</u>	<u>FC303.1.3, C402.2.1</u>
<u>200-2010</u>	<u>Procedure for Determining Fenestration Gain Coefficients and Visible Transmittance-Incidence-Second Edition</u>	<u>FC303.1.3, C402.3.1.1</u>
<u>400-2010</u>	<u>Procedure for Determining Fenestration Leakage-Second Edition</u>	<u>FTable C402.4.3</u>

**NYC**New York City Department of Buildings 280 Broadway New York, NY 10007

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>NYCBC-68</u>	<u>1968 Building Code of the City of New York</u>	<u>101.2.1, C201.3</u>
<u>NYCAC</u>	<u>New York City Administrative Code</u>	<u>101.1, 101.2.1, 101.5.3.2, 101.5.3.3, 102.1, 103.1, 103.2.1, 103.3, 104.1, 104.1.1, 104.2.3, 104.3, 105.1, C202, C405.7.1</u>
<u>NYCBC</u>	<u>New York City Building Code</u>	<u>101.2.2, 102.1, 103.1, 103.2.1, 104.2.3, C201.3, C202, C303.2, C402.2.9, C402.4.4, C402.4.9.1, C402.4.9.3, C403.3.3</u>
<u>NYCEC</u>	<u>New York City Electrical Code</u>	<u>101.2.1, C202</u>
<u>NYCFC</u>	<u>New York City Fire Code</u>	<u>101.2.1, C201.3</u>
<u>NYCFG</u>	<u>New York City Fuel Gas Code</u>	<u>102.1, 103.1, 103.2.1, 104.2.3, C201.3</u>
<u>NYCMC</u>	<u>New York City Mechanical Code</u>	<u>102.1, 103.1, 103.2.1, 104.2.3, C201.3, C403.2.5, C403.2.5.1, C403.2.6, C403.2.7, C403.2.7.1, C403.2.7.1.1, C403.2.7.1.2, C403.3.3, C403.4.5, C408.2.2.1</u>
<u>NYCPC</u>	<u>New York City Plumbing Code</u>	<u>102.1, 103.1, 103.2.1, 104.2.3, C201.3</u>

**SMACNA**Sheet Metal and Air Conditioning Contractors National Association, Inc.

	4021 Lafayette Center Drive	
	Chantilly, VA 20151-1209	
Standard reference number	Title	Referenced in code section number
SMACNA-85	HVAC Air Duct Leakage Test Manual	C403.2.7.1.3

## UL

Underwriters Laboratories 333 Pfingsten Road Northbrook, IL 60062-2096

Standard reference number	Title	Referenced in code section number
727-06	Oil-fired Central Furnaces-with Revision: 2010	Table C403.2.3(4), Table C406.2 (4)
731-95	Oil-fired Unit Heaters-with Revisions thru 2010	Table C403.2.3(4), Table C406.2 (4)
1784-01	Standard for Air Leakage Tests of Door Assemblies	C402.4.4

## US-FTC

United States - Federal Trade Commission

	600 Pennsylvania Avenue NW	
	Washington, DC 20580	
Standard reference number	Title	Referenced in code section number
CFR Title 16 (May 31, 2005)	R-value Rule	C303.1.4

## WDMA

Window and Door Manufacturers Association

	1400 East Touhy Avenue, Suite 470	
	Des Plaines, IL 60018	
Standard reference number	Title	Referenced in code section number
AAMA/WDMA/CSA 101/I.S.2/A440-11	North American Fenestration Standard/Series 1000 Windows, Doors and Unit Skylights	Table C402.4.3

### **§28-1001.2.3 New York city amendments to the 2010 edition of Energy Standard for Buildings Except Low-Rise Residential Buildings (“ASHRAE 90.1-2010”), as amended by Chapter 3 of the 2014**

**Supplement.** The New York city amendments to ASHRAE 90.1-2010 are as follows:

For the purpose of applying ASHRAE 90.1-2010 in the NYCECC, modifications to ASHRAE 90.1-2010 pursuant to Chapter 3 of the 2014 supplement and New York City amendments of such standard pursuant to this section are deemed to be incorporated in a new Appendix A to be inserted after chapter C5 of the NYCECC and to read as follows:

## **APPENDIX A**

## **MODIFIED ENERGY STANDARD FOR BUILDINGS, EXCEPT FOR LOW-RISE RESIDENTIAL BUILDINGS**

### **SECTION ECC A101** **SCOPE**

**A101.1 Scope.** This appendix provides the modifications to the nationally recognized standard ASHRAE 90.1-2010, governing commercial energy efficiency. Where a referenced publication has been modified for the City of New York as by the New York City Construction Codes and the New York City Energy Conservation Code, every reference to such publication shall be deemed to include all such modifications.

### **SECTION ECC A102** **ENERGY STANDARD FOR COMMERCIAL BUILDINGS**

**A102.1 General.** The standards for energy efficiency in commercial buildings, as defined in Section C202 of this code, shall be in accordance with Chapter C4 of this code or in accordance with ASHRAE 90.1-2010 as amended by chapter 3 of the 2014 Supplement and Section 28-1001.2.3 of the Administrative Code. Refer to the rules of the department for any subsequent additions, modifications or deletions that may have been made to this standard in accordance with Section 28-103.19 of the Administrative Code.

**A102.2 New York City amendments.** The following New York City amendments to ASHRAE 90.1-2010, as amended by chapter 3 of the 2014 Supplement, are hereby adopted as set forth in this section.

### **Chapter 6 - Heating, Ventilation, and Air-Conditioning**

**6.7.2.4** Delete Section 6.7.2.4 in its entirety and replace with a new Section 6.7.2.4 to read as follows:

**6.7.2.4.** Projects complying with this standard shall also comply with Section C408 of the New York City Energy Conservation Code in regards to system commissioning. When demonstrating compliance with Section C408.3.1, projects following ASHRAE 90.1-2010 must demonstrate compliance with Chapter 9 of ASHRAE 90.1-2010 as required, in lieu of Section C405 of the New York City Energy Conservation Code.

**Table 6.8.1A** Delete Table 6.8.1A in its entirety and replace with a new Table 6.8.1A to read as follows:

**TABLE 6.8.1A**

#### **ELECTRICALLY OPERATED UNITARY AIR CONDITIONERS AND CONDENSING UNITS - MINIMUM EFFICIENCY REQUIREMENTS**

EQUIPMENT TYPE	SIZE CATEGORY	HEATING SECTION TYPE	SUBCATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY		TEST PROCEDURE <sup>b</sup>
				Before 6/1/2016	As of 6/1/2016	
Air conditioners, air cooled	< 65,000 Btu/h <sup>c</sup>	All	Split System	13.0 SEER	13.0 SEER	AHRI 210/240



			Single Package	14.0 SEER	14.0 SEER	
Through-the-wall (air cooled)	$\leq 30,000$ Btu/h <sup>c</sup>	All	Split system	13.0 SEER	13.0 SEER	
			Single Package	14.0 SEER	14.0 SEER	
Small-duct high-velocity (air cooled)	$< 65,000$ Btu/h <sup>c</sup>	All	Split System	10.0 SEER	11.0 SEER	
Air conditioners, air cooled	$\geq 65,000$ Btu/h and $< 135,000$ Btu/h	Electric Resistance (or None)	Split System and Single Package	11.2 EE 11.4 IE	11.2 EE 11.4 IE	AHRI 340/36
		All other	Split System and Single Package	11.0 EE 11.2 IE	11.0 EE 11.2 IE	
	$\geq 135,000$ Btu/h and $< 240,000$ Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EE 11.2 IE	11.0 EE 11.2 IE	
		All other	Split System and Single Package	10.8 EE 11.0 IE	10.8 EE 11.0 IE	
	$\geq 240,000$ Btu/h and $< 760,000$ Btu/h	Electric Resistance (or None)	Split System and Single Package	10.0 EE 10.1 IEER	10.0 EE 10.1 IEER	
		All other	Split System and Single Package	9.8 EE 9.9 IE	9.8 EE 9.9 IE	
	$\geq 760,000$ Btu/h	Electric Resistance (or None)	Split System and Single Package	9.7 EE 9.8 IE	9.7 EE 9.8 IE	
		All other	Split System and Single Package	9.5 EE 9.6 IE	9.5 EE 9.6 IE	
Air conditioners, water cooled	$< 65,000$ Btu/h <sup>b</sup>	All	Split System and Single Package	12.1 EE 12.3 IEER	12.1 EE 12.3 IEER	AHRI 210/24
	$\geq 65,000$ Btu/h and $< 135,000$ Btu/h	Electric Resistance (or None)	Split System and Single Package	11.5 EE 11.7 IE	12.1 EE 12.3 IEER	AHRI 340/36
		All other	Split System and Single Package	11.3 EE 11.5 IE	11.9 EE 12.1 IEER	

	$\geq 135,000$ Btu/h and $< 240,000$ Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EE 11.2 IE	12.5 EE 12.5 IEER	
		All other	Split System and Single Package	10.8 EE 11.0 IE	12.3 EE 12.5 IEER	
	$\geq 240,000$ Btu/h and $< 760,000$ Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EE 11.1 IE	12.4 EE 12.6 IEER	
		All other	Split System and Single Package	10.8 EE 10.9 IEER	12.2 EE 12.4 IEER	
	$\geq 760,000$ Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EE 11.1 IE	12.2 EE 12.4 IEER	
		All other	Split System and Single Package	10.8 EE 10.9 IEER	12.0 EE 12.2 IEER	

(continued)

TABLE 6.8.1A

**ELECTRICALLY OPERATED UNITARY AIR CONDITIONERS AND CONDENSING UNITS - MINIMUM EFFICIENCY REQUIREMENTS**

EQUIPMENT TYPE	SIZE CATEGORY	HEATING SECTION TYPE	SUB- CATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY		TEST PROCEDURE
				Before 6/1/2016	As of 6/1/2016	
Air conditioners, evaporatively cooled	$< 65,000$ Btu/h <sup>b</sup>	All	Split System and Single Package	12.1 EE 12.3 IEER	12.1 EE 12.3 IEER	AHRI 210/240
	$\geq 65,000$ Btu/h and $< 135,000$ Btu/h	Electric Resistance (or None)	Split System and Single Package	11.5 EE 11.7 IE	12.1 EE 12.3 IEER	AHRI 340/360
		All other	Split System and Single Package	11.3 EE 11.5 IE	11.9 EE 12.1 IEER	
	$\geq 135,000$ Btu/h and $< 240,000$ Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EE 11.2 IE	12.0 EE 12.2 IEER	

		All other	Split System and Single Package	10.8 EE 11.0 IE	11.8 EE 12.0 IEER	
	$\geq 240,000$ Btu/h and $< 760,000$ Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EE 11.1 EE	11.9 EE 12.1 EE	
		All other	Split System and Single Package	10.8 EE 10.9 EE	12.2 EE 11.9 EE	
	$\geq 760,000$ Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EE 11.1 EE	11.7 EE 11.9 EE	
		All other	Split System and Single Package	10.8 EE 10.9 EE	11.5 EE 11.7 EE	
Condensing units, air cooled	$\geq 135,000$ Btu/h			10.1 EE 11.4 IE	10.5 EE 11.8 IE	AHRI 365
Condensing units, water cooled	$\geq 135,000$ Btu/h			13.1 EE 13.6 IEER	13.5 EE 14.0 IEER	
Condensing units, evaporatively cooled	$\geq 135,000$ Btu/h			13.1 EE 13.6 IEER	13.5 EE 14.0 IEER	

a. IPLVs and part-load rating conditions are only applicable to *equipment* with capacity modulation.

b. Section 12 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.

c. Single-phase, air-cooled air conditioners  $< 65,000$  Btu/h are regulated by NAECA. SEER values are those set by NAECA.

**Table 6.8.1B** Delete Table 6.8.1B in its entirety and replace with a new Table 6.8.1B to read as follows:

TABLE 6.8.1B

## ELECTRICALLY OPERATED UNITARY AND APPLIED HEAT PUMPS - MINIMUM EFFICIENCY REQUIREMENTS

EQUIPMENT TYPE	SIZE CATEGORY	HEATING SECTION TYPE	SUBCATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY <sup>a</sup>	TEST PROCEDURE <sup>b</sup>
Air cooled (cooling mode)	$< 65,000$ Btu/h <sup>c</sup>	All	Split System	14.0 SEER	AHRI 210/240
			Single Packaged	14.0 SEER	
Through-the-wall, air cooled	$\leq 30,000$ Btu/h <sup>c</sup>	All	Split System	14.0 SEER	
			Single Packaged	14.0 SEER	

Single-duct high-velocity air cooled	< 65,000 Btu/h <sup>c</sup>	All	Split System	13.0 SEER	
Air cooled (cooling mode)	≥ 65,000 Btu/h and < 135,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EER 11.2 IEER	AHRI 340/360
		All other	Split System and Single Package	10.8 EER 11.0 IEER	
	≥ 135,000 Btu/h and < 240,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	10.6 EER 10.7 IEER	
		All other	Split System and Single Package	10.4 EER 10.5 IEER	
	≥ 240,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	9.5 EER 9.6 IEER	
		All other	Split System and Single Package	9.3 EER 9.4 IEER	
Water source (cooling mode)	< 17,000 Btu/h	All	86°F entering water	11.2 EER	ISO 13256-1
	≥ 17,000 Btu/h and < 65,000 Btu/h	All	86°F entering water	12.0 EER	
	≥ 65,000 Btu/h and < 135,000 Btu/h	All	86°F entering water	12.0 EER	
Ground water source (cooling mode)	< 135,000 Btu/h	All	59°F entering water	16.2 EER	
		All	77°F entering water	13.4 EER	
Water-source water to water (cooling mode)	< 135,000 Btu/h	All	86°F entering water	10.6 EER	ISO 13256-2
			59°F entering water	16.3 EER	
Ground water source Brine to water (cooling mode)	< 135,000 Btu/h	All	77°F entering fluid	12.1 EER	

Air cooled (heating mode)	< 65,000 Btu/h <sup>c</sup>	=	Split System	8.2 HSPF	AHRI 210/240
		=	Single Package	8.0 HSPF	
Through-the- wall, (air cooled, heating mode)	≤ 30,000 Btu/h <sup>c</sup> (cooling capacity)	=	Split System	8.2 HSPF	
		=	Single Package	8.0 HSPF	
Small-duct high velocity (air cooled, heating mode)	< 65,000 Btu/h <sup>c</sup>	=	Split System	7.7 HSPF	
Air cooled (heating mode)	≥ 65,000 Btu/h and < 135,000 Btu/h (cooling capacity)	=	47°F db/43°F wb Outdoor Air	3.3 COP	AHRI 340/360
			17°F db/15°F wb Outdoor Air	2.25 COP	
	≥ 135,000 Btu/h (cooling capacity)	=	47°F db/43°F wb Outdoor Air	3.2 COP	
			17°F db/15°F wb Outdoor Air	2.05 COP	
Water source (heating mode)	< 135,000 Btu/h (cooling capacity)	=	68°F entering water	4.2 COP	ISO 13256-1
Ground water source (heating mode)	< 135,000 Btu/h (cooling capacity)	=	50°F entering water	3.6 COP	
Ground source (heating mode)	< 135,000 Btu/h (cooling capacity)	=	32°F entering fluid	3.1 COP	
Water-source water to water (heating mode)	< 135,000 Btu/h (cooling capacity)	=	68°F entering water	3.7 COP	ISO 13256-2
		=	50°F entering water	3.1 COP	

Ground source brine to water (heating mode)	< 135,000 Btu/h (cooling capacity)	=	32°F entering fluid	2.5 COP	
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a. IPLVs and part-load rating conditions are only applicable to equipment with capacity modulation.

b. Section 12 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.

c. Single-phase, air-cooled air conditioners <65,000 Btu/h are regulated by NAECA. SEER values are those set by NAECA.

**Table 6.8.1D** Delete Table 6.8.1D in its entirety and replace with a new Table 6.8.1D to read as follows:

TABLE 6.8.1D

**ELECTRICALLY OPERATED PACKAGED TERMINAL AIR CONDITIONERS, PACKAGED TERMINAL HEAT PUMPS, SINGLE-PACKAGE VERTICAL AIR CONDITIONERS, SINGLE VERTICAL HEAT PUMPS, ROOM AIR CONDITIONERS AND ROOM AIR-CONDITIONER HEAT PUMPS -MINIMUM EFFICIENCY REQUIREMENTS**

EQUIPMENT TYPE	SIZE CATEGORY (INPUT)	SUBCATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY		TEST PROCEDURE <sup>a</sup>
			Before 10/08/2011	As of 10/08/2011	
PTAC (cooling mode) standard size	All Capacities	95°F db outdoor air	12.5 - (0.2 × Cap/1000) EER	13.8 - (0.3 × Cap/1000) EER	AHRI 310/380
PTAC (cooling mode) nonstandard size <sup>b</sup>	All Capacities	95°F db outdoor air	10.9 - (0.2 × Cap/1000) EER	10.9 - (0.2 × Cap/1000) EER	
PTHP (cooling mode) standard size	All Capacities	95°F db outdoor air	12.3 - (0.2 × Cap/1000) EER	14.0 - (0.3 × Cap/1000) EER	
PTHP (cooling mode) nonstandard size <sup>b</sup>	All Capacities	95°F db outdoor air	10.8 - (0.2 × Cap/1000) EER	10.8 - (0.2 × Cap/1000) EER	
PTHP (heating mode) standard size	All Capacities	=	3.2 - (0.02 Cap/1000) COP	3.7 - (0.05 Cap/1000) COP	

PTHP (heating mode) nonstand ard size <sup>b</sup>	All Capacities	=	2.9 - (0.02 Cap/1000 COP	2.9 - (0.02 Cap/1000 COP	
SPVAC (cooling mode)	< 65,000 Btu/h	95°F db/ 75°F wb outdoor air	9.0 EER	9.0 EER	AHRI 390
	≥ 65,000 Btu/h and < 135,000 Btu/h	95°F db/ 75°F wb outdoor air	8.9 EER	8.9 EER	
	≥ 135,000 Btu/h and < 240,000 Btu/h	95°F db/ 75°F wb outdoor air	8.6 EER	8.6 EER	
SPVHP (cooling mode)	< 65,000 Btu/h	95°F db/ 75°F wb outdoor air	9.0 EER	9.0 EER	
	≥ 65,000 Btu/h and < 135,000 Btu/h	95°F db/ 75°F wb outdoor air	8.9 EER	8.9 EER	
	≥ 135,000 Btu/h and < 240,000 Btu/h	95°F db/ 75°F wb outdoor air	8.6 EER	8.6 EER	
SPVHP (heating mode)	< 65,000 Btu/h	47°F db/ 43°F wb outdoor air	3.0 COP	3.0 COP	AHRI 390
	≥ 65,000 Btu/h and < 135,000 Btu/h	47°F db/ 43°F wb outdoor air	3.0 COP	3.0 COP	
	≥ 135,000 Btu/h and < 240,000 Btu/h	47°F db/ 75°F wb outdoor air	2.9 COP	2.9 COP	

(continued)

TABLE 6.8.1D

ELECTRICALLY OPERATED PACKAGED TERMINAL AIR CONDITIONERS, PACKAGED TERMINAL HEAT PUMPS, SINGLE-PACKAGE VERTICAL AIR CONDITIONERS, SINGLE VERTICAL HEAT PUMPS, ROOM AIR CONDITIONERS AND ROOM AIR-CONDITIONER HEAT PUMPS -MINIMUM EFFICIENCY REQUIREMENTS

EQUIPMENT TYPE	SIZE CATEGORY (INPUT)	SUBCATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY	TEST PROCEDURE <sup>a</sup>
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			Before 10/08/20	As of 10/08/20	
Room air conditioners, with louvered slides	< 6,000 Btu/h	=	9.7 SEER	11.0 SEER	ANSI/AHAM RAC-1
	≥ 6,000 Btu/h and < 8,000 Btu/h	=	9.7 EER	11.0 EER	
	≥ 8,000 Btu/h and < 14,000 Btu/h	=	9.8 EER	10.9 EER	
	≥ 14,000 Btu/h and < 20,000 Btu/h	=	9.7 SEER	10.7 SEER	
	≥ 20,000 Btu/h	=	8.5 EER	9.4 EER	
Room air conditioners, without louvered slides	< 8,000 Btu/h	=	9.0 EER	10.0 EER	
	≥ 8,000 Btu/h and < 20,000 Btu/h	=	8.5 EER	9.5 EER	
	≥ 20,000 Btu/h	=	8.5 EER	9.4 EER	
Room air-conditioner heat pumps with louvered sides	< 20,000 Btu/h	=	9.0 EER	9.8 EER	
	≥ 20,000 Btu/h	=	8.5 EER	9.3 EER	
Room air-conditioner heat pumps without louvered sides	< 14,000 Btu/h	=	8.5 EER	9.3 EER	
	≥ 14,000 Btu/h	=	8.0 EER	8.7 EER	



Room air conditioner, casement only	All capacities		8.7 EER	9.5 EER	
Room air conditioner, casement-slider	All capacities		9.5 EER	10.4 EER	

- a. Section 12 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.
- b. Nonstandard size units must be factory labeled as follows: "MANUFACTURED FOR NONSTANDARD SIZE APPLICATIONS ONLY: NOT TO BE INSTALLED IN NEW STANDARD PROJECTS." Nonstandard size efficiencies apply only to units being installed in existing sleeves having an external wall opening of less than 16 in. high or less than 42 in. wide and having a cross-sectional area less than 670 in<sup>2</sup>.
- c. Cap means the rated cooling capacity of the product in Btu/h. If the unit's capacity is less than 7000 Btu/h in the calculation. If the unit's capacity is greater than 15,000 Btu/h, use 15,000 Btu/h in the calculation.

**Table 6.8.1E** Delete Table 6.8.1E in its entirety and replace with a new Table 6.8.1E to read as follows:

TABLE 6.8.1E

WARM-AIR FURNACES AND COMBINATION WARM-AIR FURNACES/AIR-CONDITIONING UNITS, WARM-AIR DUCT FURNACES AND UNIT HEATERS

EQUIPMENT TYPE	SIZE CATEGORY (INPUT)	SUBCATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY	TEST PROCEDURE <sup>a</sup>
Warm-air furnace, gas fired	< 225,000 Btu/h	Maximum capacity	80% AFUE or 80%E <sup>b,d</sup> t	DOE 10 CFR Part 430 or Section 2.39, Thermal Efficiency, ANSI Z21.47
	≥ 225,000 Btu/h	Maximum capacity	81%E <sup>d</sup> t	Section 2.39, Thermal Efficiency, ANSI Z21.47
Warm air furnaces, oil fired	< 225,000 Btu/h	Maximum capacity	80% AFUE or 80%E <sup>b,d</sup> t	DOE 10 CFR Part 430 Or Section 42, Combustion, UL 727
	≥ 225,000 Btu/h	Maximum capacity	82%E <sup>d</sup> t	Section 42, Combustion, UL 727
Warm air duct furnaces, gas fired	All capacities	Maximum capacity	80%E <sup>e</sup> c	Section 2.10, Efficiency, ANSI Z83.8
Warm air unit heaters, gas fired	All capacities	Maximum capacity	80%E <sup>e,f</sup> c	Section 2.10, Efficiency, ANSI Z83.8

Warm air unit heaters, oil fired	All capacities	Maximum capacity	80% E <sup>e,1</sup> c	Section 40, Combustion, UL 731
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a. Section 12 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.

b. Combination units not covered by the NAECA (3-phase power or cooling capacity greater than or equal to 19 kW) may comply with either rating.

c. Compliance of multiple firing rate units shall be at the maximum firing rate.

d. E<sub>t</sub> = thermal efficiency. Units must also include an interrupted or intermittent ignition device (IID), have jacket losses not exceeding 0.75% of the input rating, and have either power venting or a flue damper. A vent damper is an acceptable alternative to a flue damper for those furnaces where combustion air is drawn from the conditioned space.

e. E<sub>c</sub> = Combustion efficiency (100% less flue losses). See test procedure for detailed discussion.

f. As of August 8, 2008, according to the Energy Policy Act of 2005, units must also include an interrupted or intermittent ignition device (IID) and have either power venting or an automatic flue damper.

**Table 6.8.1F** Delete Table 6.8.1F in its entirety and replace with a new Table 6.8.1F to read as follows:

TABLE 6.8.1F

## GAS- AND OIL-FIRED BOILERS, MINIMUM EFFICIENCY REQUIREMENTS

EQ UIP ORY OR ME NT CONDITION TY PE <sup>a</sup>	SUBCATEG ORY OR ME NT CONDITION	SIZE CATEGORY (INPUT)	MINIMUM EFFICIENCY <sup>b,c</sup>	EFFICIENCY as of 3/2/2010 (Date 3yrs after ASHRAE Board Approval)	EFFICIEN as of 3/2/2010 (Date 3yrs after ASHRAE Board Approval)	TEST PROCEDURE
Boiler s, hot water	Gas-fired	< 300,000 Btu/h	82% AFUE	82% AFUE	82% AFUE	10 CFR Part 430
		≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h <sup>d</sup>	83% E t	83% E t	83% E t	10 CFR Part 431
		> 2,500,000 Btu/h <sup>a</sup>	85% E c	85% E c	85% E c	
	Oil-fired <sup>e</sup>	< 300,000 Btu/h	84% AFUE	84% AFUE	84% AFUE	10 CFR Part 430
		≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h <sup>d</sup>	84% E t	84% E t	84% E t	10 CFR Part 431
		> 2,500,000 Btu/h <sup>a</sup>	85% E c	85% E c	85% E c	

Boiler, steam	Gas-fired	< 300,000 Btu/h	80% AFUE	80% AFUE	80% AFUE	10 CFR Part 430
	Gas-fired-all, except natural draft	≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h <sup>d</sup>	80% E t	80% E t	80% E t	10 CFR Part 431
		> 2,500,000 Btu/h <sup>a</sup>	80% E t	80% E t	80% E t	
	Gas-fired-natural draft	≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h <sup>d</sup>	79% E t	79% E t	79% E t	
		> 2,500,000 Btu/h <sup>a</sup>	79% E t	79% E t	79% E t	
	Oil-fired <sup>e</sup>	< 300,000 Btu/h	82% AFUE	82% AFUE	82% AFUE	10 CFR Part 430
		≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h <sup>d</sup>	83% E t	83% E t	83% E t	10 CFR Part 431
		> 2,500,000 Btu/h <sup>a</sup>	83% E t	83% E t	83% E t	

For SI: 1 British thermal unit per hour = 0.2931 W.

a. These requirements apply to boilers with rated input of 8,000,000 Btu/h or less that are not packaged boilers and to all packaged boilers. Minimum efficiency requirements for boilers cover all capacities of packaged boilers.

b.  $E_c$  = Combustion efficiency (100% less flue losses). See reference document for detailed information.

c.  $E_t$  = Thermal efficiency. See reference document for detailed information.

d. Maximum capacity - minimum and maximum ratings as provided for and allowed by the unit's controls.

e. Includes oil-fired (residual).

## Chapter 8 - Power

**8.5** Delete Section 8.5 in its entirety and replace with a new Section 8.5 to read as follows:

### **8.5 Mandatory Provisions.**

**8.5.1 Measurement of electrical consumption of tenant spaces in covered buildings constructed on and after January 1, 2016.** The terms meter, submeter, covered building, tenant space and covered tenant space shall be as defined in Section 28-311.2 of the Administrative Code of the city of New York. Each covered tenant space in a building where plans were filed with the department on and after January 1, 2016 shall be equipped with a separate meter or sub-meter to measure the electrical consumption of such space when let or sublet. Where the covered tenant space is a floor with multiple tenancies, each tenancy that is 10,000 gross square feet (929 m<sup>2</sup>) in area or less shall (i) be equipped with a separate meter or sub-meter, (ii) share a meter or sub-meter with other tenant spaces on the floor, or (iii) share a meter or sub-meter covering the entire floor. As new covered tenant spaces are created, they shall be equipped with meters or

sub-meters as provided in this section.

**Exception:** Covered tenant space for which the electrical consumption within such space is measured by a meter dedicated exclusively to that space.

## **Chapter 9 - Lighting**

**9.1.1** Delete Exception b and replace with a new Exception b to read as follows:

b. dwelling units within commercial buildings shall not be required to comply with this section provided that a minimum of 75 percent of the lamps in permanently installed lighting fixtures, other than low voltage lighting, shall be high-efficacy lamps, or a minimum of 75 percent of the permanently installed lighting fixtures shall contain only high-efficacy lamps.

**9.4.1** Delete Section 9.4.1 in its entirety and replace with a new Section 9.4.1 to read as follows:

**9.4.1 Lighting Control.** Automatic control devices shall be installed in the following spaces to automatically turn off lights within 30 minutes of all occupants leaving the space as follows:

1. Occupant sensors shall be installed in all classrooms (not including shop classrooms, laboratory classrooms, and preschool classrooms), conference/meeting rooms, employee lunch and break rooms, and offices smaller than 200 square feet (18.5 m<sup>2</sup>) in area. These shall be manual-on switches. Such sensors and controls shall not have an override switch that converts from manual-on to automatic-on functionality. The occupant sensor may have a grace period of up to 30 seconds to turn on the lighting automatically after the sensor has turned off the lighting if occupancy is detected.
2. Occupant sensors shall be installed in restrooms, storage rooms, private offices 200 square feet (18.5 m<sup>2</sup>) in area or greater, janitorial closets, and other spaces 300 square feet (28 m<sup>2</sup>) in area or less enclosed by floor-to-ceiling height partitions, except for spaces listed in Item 1. These automatic control devices shall be installed to automatically turn off lights within 30 minutes of all occupants leaving the space, and shall either be manual on or shall be controlled to automatically turn the lighting on to not more than 50 percent power.

**Exception:** Full automatic-on controls shall be permitted to control lighting in public corridors, stairways, restrooms, primary building entrance areas and lobbies, and areas where manual-on operation would endanger the safety or security of the room or building occupants.

§5. This local law shall take effect on January 1, 2015 and shall apply to work for which applications for construction document approval are submitted to the department of buildings on or after such date; provided that the commissioner of buildings may take all actions necessary to implement this local law, including the promulgation of rules, on or before such effective date.

11/25/14- 6:19p