

**Joint Committee on Administrative Rules**  
**ADMINISTRATIVE CODE**

**TITLE 71: PUBLIC BUILDINGS, FACILITIES AND REAL PROPERTY**  
**CHAPTER I: CAPITAL DEVELOPMENT BOARD**  
**SUBCHAPTER d: ENERGY CODES**  
**PART 600 ILLINOIS ENERGY CONSERVATION CODE**

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The General Assembly's Illinois Administrative Code database includes only those rulemakings that have been permanently adopted. This menu will point out the Sections on which an emergency rule (valid for a maximum of 150 days, usually until replaced by a permanent rulemaking) exists. The emergency rulemaking is linked through the notation that follows the Section heading in the menu.

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**AUTHORITY:** Implementing and authorized by the Capital Development Board Act [20 ILCS 3105] and the Energy Efficient Building Act [20 ILCS 3125].

**SOURCE:** Adopted by emergency rulemaking at 28 Ill. Reg. 11355, effective July 26, 2004, for a maximum of 150 days; emergency rules expired December 22, 2004; adopted at 29 Ill. Reg. 777, effective January 1, 2005; new Part adopted by emergency rulemaking at 29 Ill. Reg. 5736, effective April 8, 2005, for a maximum of 150 days; emergency expired September 4, 2005; emergency rulemaking repealed at 29 Ill. Reg. 6093, effective April 18, 2005, for a maximum of 150 days; emergency expired September 14, 2005; old Part repealed at 29 Ill. Reg. 16414 and new Part adopted at 29 Ill. Reg. 14790, effective April 8, 2006; amended at 31 Ill. Reg. 14422, effective October 9, 2007; emergency amendment at 33 Ill. Reg. 12407, effective August 18, 2009, for a maximum of 150 days; amended at 33 Ill. Reg. 16702, effective November 23, 2009; emergency rulemaking at 34 Ill. Reg. 2582, effective January 29, 2010, for a maximum of 150 days; emergency expired June 27, 2010; amended at 34 Ill. Reg. 11398, effective July 26, 2010; amended at 37 Ill. Reg. 789, effective January 11, 2013; amended at 37 Ill. Reg. 12822, effective July 23, 2013; amended at 40 Ill. Reg. 2754, effective January 20, 2016; amended at 43 Ill. Reg. 8707, effective August 5, 2019.

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SECTION 600.100 DEFINITIONS**

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**Section 600.100 Definitions**

Definitions of terms in the International Energy Conservation Code, incorporated by reference in Subpart C of this Part, apply, as do the following definitions:

"Act" means the Capital Development Board Act [20 ILCS 3105].

"Authority Having Jurisdiction" or "AHJ" means the organization, office or individual responsible for approving equipment, materials, an installation or procedure.

"CDB" or "Board" means the Illinois Capital Development Board.

*"Commercial Facility" means any building except a building that is classified as a residential building. [20 ILCS 3125/10]*

"Council" means the Illinois Energy Conservation Advisory Council appointed under Subpart B of this Part and whose purpose it is to recommend modifications to the *Illinois Energy Conservation Code*.

"EEB Act" means the Energy Efficient Building Act [20 ILCS 3125].

"IECC" means the International Energy Conservation Code.

"Illinois Energy Conservation Code" or "Code" means:

With respect to the State facilities covered by Subpart B:

This Part, all additional requirements incorporated within Subpart B (including the 2018 International Energy Conservation Code that encompasses ASHRAE 90.1, including all published errata but excluding published supplements) and any statutorily authorized adaptations to the incorporated standards adopted by CDB;

With respect to the privately funded commercial facilities covered by Subpart C:

This Part, all additional requirements incorporated within Subpart C (including the 2018 International Energy Conservation Code that encompasses ASHRAE 90.1, including all published errata but excluding published supplements, and any statutorily authorized adaptations to the incorporated standards adopted by CDB; and

With respect to the residential buildings covered by Subpart D:

This Part, all additional requirements incorporated within Subpart D (including the 2018 International Energy Conservation Code, including all published errata but excluding published supplements) and any statutorily authorized adaptations to the incorporated standards adopted by CDB.

*"Municipality" means any city, village or incorporated town. [20 ILCS 3125/10]*

*"Residential Building" means a detached one-family or 2-family dwelling or any building that is 3 stories or less in height above grade that contains multiple dwelling units, in which the occupants reside on a primarily permanent basis, such as a townhouse, a row house, an apartment house, a convent, a monastery, a rectory, a fraternity or sorority house, a dormitory, and a rooming house; provided, however, that when applied to a building located within the boundaries of a municipality having a population of 1,000,000 or more, the term "residential building" means a building containing one or more dwelling units, not exceeding 4 stories above grade, where occupants are primarily permanent. [20 ILCS 3125/10]*

*"State Funded Building" means and includes buildings under the jurisdiction of each officer, department, board, commission, institution and body politic and corporate of the State, including the Illinois Building Authority, and any other person expending or encumbering State or federal funds by virtue of an appropriation or other authorization by the General Assembly or federal authorization or grant. This includes State funded housing, hospitals, penitentiaries, laboratories, educational facilities, administrative facilities, recreational facilities, environmental equipment and parking facilities [20 ILCS 3105/4.01].*

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

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**SECTION 600.110 ADOPTION AND MODIFICATION OF THE CODE**

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**Section 600.110 Adoption and Modification of the Code**

- a) The purpose of the Illinois Energy Conservation Code is to implement Section 15 of the Energy Efficient Building Act [20 ILCS 3125] that requires CDB to officially adopt, as a minimum requirement for State and commercial structures and as a minimum and maximum requirement for residential buildings, the 2018 International Energy Conservation Code, including all published errata but excluding any published supplements, to apply that Code to all commercial structures in Illinois, and to assist local code officials with enforcing the requirements of the Code. The 2018 Illinois Energy Conservation Code will become effective on July 1, 2019.
- b) This Code as described in Subpart B (State facilities) is effective July 26, 2004. This Code as described in Subpart C (privately-funded commercial facilities) is effective April 8, 2007. The Code as described in Subpart D (residential buildings) is effective January 29, 2010.
- c) Application of the Code
  - 1) State Facilities. The Code as described in Subpart B of this Part applies to all State facilities for which money has been appropriated or authorized by the General Assembly.
  - 2) Privately Funded Commercial Facilities and Residential Buildings. The Code as described in Subparts C and D of this Part applies *to any new building or structure in this State for which a building permit application is received by a municipality or county.* [20 ILCS 3125/20]
    - A) *Additions, alterations, renovations or repairs to an existing building, building system or portion thereof shall conform to the provisions of the Code as they relate to new construction without requiring the unaltered portion of the existing building or building system to comply with the Code.* [20 ILCS 3125/20(c)]

- B) All exceptions listed in the Code related to additions, alterations, renovations or repairs to an existing building are acceptable provided the energy use of the building is not increased.
- d) This Code, together with the standards incorporated by reference in this Part, has the force of a building code and is administrative law applicable in the State of Illinois.

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

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**SECTION 600.120 ILLINOIS ENERGY CONSERVATION ADVISORY COUNCIL**

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**Section 600.120 Illinois Energy Conservation Advisory Council**

- a) The Executive Director of the Capital Development Board shall appoint an Advisory Council. The Council shall be composed of the Executive Director or his or her authorized representative, who shall serve as Chairman ex-officio, and 11 additional members appointed by the Executive Director. The appointed members shall consist of 1 person representing the Illinois Environmental Protection Agency; 2 persons representing the residential construction contracting industry; 2 licensed architects; 1 licensed mechanical engineer; 1 licensed electrical engineer; 2 persons representing local code officials; and 2 persons representing the construction contracting industry. Members of the Council shall be appointed for 4 year terms. The members appointed by the Executive Director shall serve for the term of their appointments and may be reappointed upon expiration of the term. Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his or her predecessor was appointed shall be appointed for a full term.
- b) Seven members of the Council shall constitute a quorum. The Chairman shall only vote to break a tie or when necessary to establish a quorum.
- c) The purpose of the Council shall be to recommend modifications to the Illinois Energy Conservation Code.
- d) Members of the Council shall serve without compensation but shall be reimbursed for reasonable travel expenses necessarily incurred in the performance of their duties.

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

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**SECTION 600.130 REVISIONS TO THE CODE**

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**Section 600.130 Revisions to the Code**

This Code may be revised by the Capital Development Board on its own volition or pursuant to recommendations of the Illinois Energy Conservation Advisory Council and in accordance with the Illinois Administrative Procedure Act [5 ILCS 100].



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**SECTION 600.200 STANDARDS FOR STATE FUNDED FACILITIES**

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**Section 600.200 Standards for State Funded Facilities**

- a) The 2018 IECC, including published errata but excluding published supplements, available from the International Code Council at 500 New Jersey Avenue NW, 6<sup>th</sup> Floor, Washington DC 20001, phone: 1-888-ICC-SAFE (422-7233), [www.iccsafe.org](http://www.iccsafe.org), is hereby incorporated into the Illinois Energy Conservation Code, as described in this Subpart as applicable to State funded facilities, with the modifications outlined in subsection (c).
- b) All incorporations by reference in this Section are of the cited standards as they existed on the date specified. These incorporations include no later editions or amendments.
- c) **Modifications to IECC**  
Under Section 15 of the EEB Act, when applying the Code to State funded facilities, CDB may modify the incorporated standards to respond to the unique economy, population distribution, geography and climate of Illinois, as long as the objectives of the EEB Act are maintained. Modifications, additions or omissions to IECC are specified in Appendix A and are rules of the CDB and are not requirements of the IECC.

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

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**SECTION 600.210 EXEMPTIONS**

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**Section 600.210 Exemptions**

- a) *The following buildings are exempt from the Code:*
- 1) *Buildings otherwise exempt from the provisions of a locally adopted building code and buildings that do not contain a conditioned space;*
  - 2) *Buildings that do not use either electricity or fossil fuel for comfort conditionings;*
  - 3) *Historic buildings listed on the National Register of Historic Places or the Illinois Register of Historic Places, and those buildings that are designated by authorized personnel as historically significant;*
  - 4) *Other buildings specified as exempt by the IECC.*
- b) *For purposes of determining whether an exemption authorized under subsection (a) (2) applies, a building will be presumed to be heated by electricity, even in the absence of equipment used for electric comfort heating, whenever the building is provided with electrical service in excess of 100 amps, unless the code enforcement official determines that this electrical service is necessary for purposes other than providing electric comfort heating. [20 ILCS 3125/20]*

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

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**SECTION 600.220 COMPLIANCE**

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**Section 600.220 Compliance**

Compliance with the Illinois Energy Conservation Code for State facilities as described by this Subpart B shall be demonstrated by submission of:

- a) the compliance forms published in the ASHRAE 90.1 User's Manual;
- b) Compliance Certificates generated by the U.S. Department of Energy's COMCheck code compliance tool; or
- c) the seal of the Architect/Engineer as required by Section 14 of the Illinois Architecture Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

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**Section 600.300 Standards for Privately Funded Commercial Facilities**

- a) The 2018 IECC, including published errata but excluding published supplements, available from the International Code Council at 500 New Jersey Avenue NW, 6<sup>th</sup> Floor, Washington DC 20001, phone: 1-888-ICC-SAFE (422-7233), [www.iccsafe.org](http://www.iccsafe.org), is hereby incorporated into the Illinois Energy Conservation Code, as described in this Subpart as applicable to privately funded commercial facilities, with the modifications outlined in subsection (c).
- b) All incorporations by reference in this Section are of the cited standards as they existed on the date specified. These incorporations include no later editions or amendments.
- c) **Modifications to IECC**  
Under Section 15 of the EEB Act, when applying the Code to privately funded commercial facilities, CDB may modify the incorporated standards to respond to the unique economy, population distribution, geography and climate of Illinois, as long as the objectives of the EEB Act are maintained. Modifications, additions or omissions to IECC are specified in Appendix A and are rules of the CDB and are not requirements of the IECC.

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

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SECTION 600.310 EXEMPTIONS**

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**Section 600.310 Exemptions**

- a) The following buildings are exempt from the Code:
- 1) *Buildings otherwise exempt from the provisions of a locally adopted building code and buildings that do not contain a conditioned space;*
  - 2) *Buildings that do not use either electricity or fossil fuel for comfort conditioning;*
  - 3) *Historic buildings listed on the National Register of Historic Places or the Illinois Register of Historic Places, and those buildings that are designated by authorized personnel as historically significant;*
  - 4) *Other buildings specified as exempt by the IECC.*
- b) *For the purposes of determining whether an exemption authorized under subsection (a)(2) applies, a building will be presumed to be heated by electricity, even in the absence of equipment used for electric comfort heating, whenever the building is provided with electrical service in excess of 100 amps, unless the code enforcement official determines that this electrical service is necessary for purposes other than providing electric comfort heating. [20 ILCS 3125/20]*

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

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SECTION 600.330 COMPLIANCE**

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**Section 600.330 Compliance**

- a) Compliance with the Illinois Energy Conservation Code as described by this Subpart C (applicable to commercial facilities) shall be determined by the local authority having jurisdiction (AHJ).
- b) Minimum compliance shall be demonstrated by submission of:
  - 1) the compliance forms published in the ASHRAE 90.1 User's Manual; or
  - 2) Compliance Certificates generated by the U.S. Department of Energy's COMcheck code compliance tool; or
  - 3) other comparable compliance materials that meet or exceed, as determined by the authority having jurisdiction, the compliance forms published in the ASHRAE 90.1 User's Manual or the U.S. Department of Energy's COMcheck code compliance tool; or
  - 4) the seal of the Architect/Engineer as required by Section 14 of the Illinois Architecture Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

(Source: Amended at 33 Ill. Reg. 16702, effective November 23, 2009)

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**SECTION 600.340 APPLICATION TO HOME RULE UNITS**

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**Section 600.340 Application to Home Rule Units**

*No unit of local government, including any home rule unit, may apply energy efficient building standards to privately funded commercial facilities in a manner that is less stringent than the Code as described in this Subpart C. However, nothing in the EEB Act or this Subpart prevents a unit of local government from adopting an energy efficiency code or standards for commercial buildings that are more stringent than this Code. [20 ILCS 3125/45(a)]*

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

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**SECTION 600.400 STANDARDS FOR RESIDENTIAL BUILDINGS**

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**Section 600.400 Standards for Residential Buildings**

- a) The 2018 IECC, including published errata but excluding published supplements, available from the International Code Council at 500 New Jersey Avenue NW, 6<sup>th</sup> Floor, Washington DC 20001, phone: 1-888-ICC-SAFE (422-7233), [www.iccsafe.org](http://www.iccsafe.org), is hereby incorporated into the Illinois Energy Conservation Code, as described in this Subpart as applicable to residential buildings, with the modifications outlined in subsection (c).
- b) All incorporations by reference in this Section are of the cited standards as they existed on the date specified. These incorporations include no later editions or amendments.
- c) **Modifications to IECC**  
Under Section 15 of the EEB Act, when applying the Code to residential buildings, CDB may modify the incorporated standards to respond to the unique economy, population distribution, geography and climate of Illinois, as long as the objectives of the Act are maintained pursuant to that statutory authority. Modifications, additions or omissions to IECC are specified in Appendix A and are rules of the CDB and are not requirements of the IECC.

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)



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**SECTION 600.410 EXEMPTIONS**

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**Section 600.410 Exemptions**

- a) The following buildings are exempt from the Code:
  - 1) *Buildings otherwise exempt from the provisions of a locally adopted building code and buildings that do not contain a conditioned space;*
  - 2) *Buildings that do not use either electricity or fossil fuel for comfort conditioning;*
  - 3) *Historic buildings listed on the National Register of Historic Places or the Illinois Register of Historic Places, and those buildings that are designated by authorized personnel as historically significant;*
  - 4) *Other buildings specified as exempt by the IECC. [20 ILCS 3125/20]*
- b) *For the purposes of determining whether an exemption authorized under subsection (a)(2) applies, a building will be presumed to be heated by electricity, even in the absence of equipment used for electric comfort heating, whenever the building is provided with electrical service in excess of 100 amps, unless the code enforcement official determines that this electrical service is necessary for purposes other than providing electric comfort heating. [20 ILCS 3125/20(b)(2)]*

(Source: Added at 34 Ill. Reg. 11398, effective July 26, 2010)

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SECTION 600.420 LOCAL JURISDICTION**

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**Section 600.420 Local Jurisdiction**

- a) Construction projects involving residential buildings and for which a municipality or county requires a building permit must comply with the Illinois Energy Conservation Code if the project involves new construction, addition, alteration, renovation or repair.
- b) The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Code.
- c) *A unit of local government that does not regulate energy efficient building standards is not required to adopt, enforce or administer the Code; however, any energy efficient building standards adopted by a unit of local government must comply with the Act. If a unit of local government does not regulate energy efficient building standards, any construction, renovation or addition to buildings or structures is still subject to the provisions contained in the Act. [20 ILCS 3125/20 (d)].*

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

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**SECTION 600.430 COMPLIANCE**

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**Section 600.430 Compliance**

- a) Compliance with the Illinois Energy Conservation Code as described by this Subpart D (applicable to residential buildings) shall be determined by the local AHJ.
- b) Minimum compliance shall be demonstrated by submission of:
  - 1) Compliance Certificates generated by the U.S. Department of Energy's REScheck code compliance tool; or
  - 2) Other comparable compliance materials that meet or exceed, as determined by the AHJ, U.S. Department of Energy's REScheck code compliance tool; or
  - 3) The seal of the architect/engineer as required by Section 14 of the Illinois Architecture Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

(Source: Added at 34 Ill. Reg. 11398, effective July 26, 2010)

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**SECTION 600.440 APPLICATION TO HOME RULE UNITS**

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**Section 600.440 Application to Home Rule Units**

- a) *No unit of local government, including any home rule unit, may regulate energy efficient building standards for residential buildings in a manner that is either less or more stringent than the standards established in this Subpart D.*
- b) *The following entities may regulate energy efficient building standards for residential buildings in a manner that is more stringent than the provisions contained in this Subpart D:*
  - 1) *a unit of local government, including a home rule unit, that has, on or before May 15, 2009, adopted or incorporated by reference energy efficient building standards for residential buildings that are equivalent to or more stringent than the 2006 IECC;*
  - 2) *a unit of local government, including a home rule unit, that has, on or before May 15, 2009, provided to the Capital Development Board, as required by Section 10.18 of the Capital Development Board Act [20 ILCS 3105], an identification of an energy efficient building code or amendment that is equivalent to or more stringent than the 2006 IECC; and*
  - 3) *a municipality with a population of 1,000,000 or more. [20 ILCS 3125/45 (b)]*
- c) *No unit of local government, including any home rule unit or unit of local government that is subject to State regulation under the Code as provided in Section 15 of the EEB may enact any annexation ordinance or resolution, or require or enter into any annexation agreement, that imposes energy efficient building standards for residential buildings that are either less or more stringent than the energy efficiency standards in effect, at the time of construction, throughout the unit of local government. [20 ILCS 3125/45(c)]*

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

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**ENERGY CONSERVATION CODE SECTIONS**

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**Section 600.APPENDIX A Supplanted and Additional 2018 International Energy Conservation Code Sections**

The following Code sections shall be referenced in place of the corresponding 2018 IECC sections.

**CHAPTER 1 [CE]**  
**SCOPE AND ADMINISTRATION**

**SECTION C101**  
**SCOPE AND GENERAL REQUIREMENTS**

**C101.1 Title.** This Code shall be known as the Illinois Energy Conservation Code or Code and shall mean:

With respect to the State facilities covered by 71 Ill. Adm. Code 600.Subpart B:

This Part, all additional requirements incorporated within Subpart B (including the 2018 International Energy Conservation Code, including all published errata but excluding published supplements that encompass ASHRAE 90.1-2016), and any statutorily authorized adaptations to the incorporated standards adopted by CDB, are effective July 1, 2019.

With respect to the privately funded commercial facilities covered by 71 Ill. Adm. Code 600.Subpart C:

This Part, all additional requirements incorporated within Subpart C (including the 2018 International Energy Conservation Code, including all published errata and excluding published supplements that encompass ASHRAE 90.1-2016), and any statutorily authorized adaptations to the incorporated standards adopted by CDB, are effective July 1, 2019.

**C101.1.2 Adoption.** The Board shall adopt amendments to this Code within 12 months after publication of changes to the International Energy Conservation Code. Any such update in this Code shall take effect within 6 months after it is adopted by the Board and shall apply to any new building or structure in this State for which a building permit application is received by a municipality or county, except as otherwise provided by the EEB Act.

**C101.1.3 Adaptation.** The Board may appropriately adapt the International Energy Conservation Code to apply to the particular economy, population distribution, geography and climate of the State and construction within the State, consistent with the public policy objectives of the EEB Act.

**C101.5 Compliance.** Commercial buildings shall meet the provisions of the Illinois Energy Conservation Code covered by 71 Ill. Adm. Code 600.Subpart C. The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Illinois Energy Conservation Code. Minimum compliance shall be demonstrated by submission of:

1. Compliance forms published in the ASHRAE 90.1 User's Manual; or
2. Compliance Certificates generated by the U.S. Department of Energy's COMcheck™ Code compliance tool; or
3. Other comparable compliance materials that meet or exceed, as determined by the AHJ, the compliance forms published in the ASHRAE 90.1 User's Manual or the U.S. Department of Energy's COMcheck™ code compliance tool; or
4. The seal of the architect/engineer as required by Section 14 of the Illinois Architectural Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

**C102.1.1 Above Code Programs.** No unit of local government, including any home rule unit, may apply energy efficient building standards to privately funded commercial facilities in a manner that is less stringent than this Code as described in 71 Ill. Adm. Code 600.Subpart C. However, nothing in the EEB Act or Subpart C prevents a unit of local government from adopting an energy efficiency code or standards that are more stringent than this Code. The requirements identified as "mandatory" in Chapter 4 shall be met.

## SECTION C109 BOARD OF APPEALS

**C109.1 General.** In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this Code, there may be created a board of appeals. The code official shall be an ex officio member of the board of appeals but shall not have a vote on any matter before the board. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.

**C109.3 Qualifications.** The board of appeals shall consist of members who are qualified by experience and training.

## CHAPTER 2 [CE] DEFINITIONS

### SECTION C202 GENERAL DEFINITIONS

**Authority Having Jurisdiction or AHJ** – means the organization, officer or individual responsible for approving equipment, materials, an installation or procedure.

**Board** – means the Illinois Capital Development Board.

**Council** – means the Illinois Energy Conservation Advisory Council whose purpose is to recommend modifications to the Illinois Energy Conservation Code.

**EEB Act** – means the Energy Efficient Building Act [20 ILCS 3125].

**Roof Membrane Peel and Replacement** – When an existing weather resisting roof membrane alone is removed, exposing insulation or sheathing and only a new weather resisting roof membrane is installed.

## CHAPTER 4 [CE] COMMERCIAL ENERGY EFFICIENCY

### SECTION C402 BUILDING ENVELOPE REQUIREMENTS

**C402.5.1 Air Barriers.** A continuous air barrier shall be provided throughout the building thermal envelope. The air barriers shall be permitted to be located on the inside or outside of the building envelope, located within the assemblies composing the envelope, or any combination thereof. The air barrier shall comply with Sections C402.5.1.1 and C402.5.1.2. For roof air barriers on existing buildings, refer to Section C503.1 or C504.2.

**Exception:** Air barriers are not required in buildings located in Climate Zone 2B.

**C402.5.1.1 Air Barrier Construction.** The continuous air barrier shall be constructed to comply with the following:

1. The air barrier shall be continuous for all assemblies that are the thermal envelope of the building and across the joints and assemblies.
2. Air barrier joints and seams shall be sealed, including sealing transitions at joints between dissimilar materials. The joints and seals shall be securely installed in or on the joint for its entire length so as not to dislodge, loosen or otherwise impair its ability to resist positive and negative pressure from wind, stack effect and mechanical ventilation.
3. Penetrations of the air barrier shall be caulked, gasketed or otherwise sealed in a manner compatible with the construction materials and location. Sealings shall allow for expansion, contraction and mechanical vibration. Paths for air leakage from the building to the space between the roof deck and roof covering used air barrier shall be caulked, gasketed or otherwise covered with a moisture vapor-permeable material. Joints and seams associated with penetrations shall be sealed in the same manner or taped. Sealing materials shall be securely installed around the penetration so as not to dislodge, loosen or otherwise impair the penetrations' ability to resist positive and negative pressure from wind, stack effect and mechanical ventilation. Sealing of concealed fire sprinklers, where required, shall be in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.

4. Recessed lighting fixtures shall comply with Section C402.5.8. Where similar objects are installed that penetrate the air barrier, provisions shall be made to maintain the integrity of the air barrier.

## SECTION C405 ELECTRICAL POWER AND LIGHTING SYSTEMS

**C405.1 General (Mandatory).** This section covers lighting system controls, the maximum lighting power for interior and exterior applications and electrical energy consumption.

No less than 90% of the permanently installed lighting serving dwelling units shall be provided by lamps with an efficacy of not less than 65 lm/W or light fixtures with an efficacy of not less than 55 lm/W, or with Sections C405.2.4 and C405.3. Sleeping units shall comply with Section C405.2.4 and Section R404.1 or C405.3. Lighting installed in walk-in coolers, walk-in freezers, refrigerated warehouse coolers and refrigerated warehouse freezers shall comply with the lighting requirements of Section C403.10.1 or C403.10.2.

## CHAPTER 5 [CE] EXISTING BUILDINGS

### SECTION C503 ALTERATIONS

**C503.1 General.** Alterations to any building or structure shall comply with the requirements of this Code for new construction. Alterations shall be such that the existing building or structure is no less conforming to the provisions of this Code than the existing building or structure was prior to the alteration. Alterations to an existing building, building system or portion thereof shall conform to the provisions of this Code as those provisions relate to new construction without requiring the unaltered portions of the existing building or building system to comply with this Code. Alterations shall not create an unsafe or hazardous condition or overload existing building systems.

Alterations complying with ANSI/ASHRAE/IESNA 90.1 need not comply with Sections C402, C403, C404 and C405.

**Exceptions:** The following alterations need not comply with the requirements for new construction, provided the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Surface-applied window film installed on existing single-pane fenestration assemblies reducing solar heat gain, provided the Code does not require the glazing or fenestration to be replaced.
3. Existing ceiling, wall or floor cavities exposed during construction, provided that these cavities are filled with insulation.
4. Construction in which the existing roof, wall or floor cavity is not exposed.
5. Roof recover.
6. Roof membrane peel and replacement.



7. Air barriers shall not be required for roof recover and roof replacement when the alterations or renovations to the building do not include alterations, renovations or repairs to the remainder of the building envelope.
8. Roof replacements for roof systems 2:12 slope or less shall comply with the low slope roof insulation requirements unless the installation of insulation above the structural roof deck, and necessary to achieve the code required *R*-value, is deemed infeasible by the code official to accommodate the added thickness of insulation above the roof deck. Conditions of infeasibility due to flashing height limitations presented by existing rooftop conditions include, but are not limited to, HVAC or skylight curb, low door or glazing, parapet, weep holes, drainage patterns, or cricket or saddle construction. These conditions are subject to manufacturer's specifications, manufacturer's installation instructions, and code official approval.

**CHAPTER 1 [RE]  
SCOPE AND ADMINISTRATION**

**SECTION R101  
SCOPE AND GENERAL REQUIREMENTS**

**R101.1 Title.** This Code shall be known as the Illinois Energy Conservation Code or this Code, and shall mean:

With respect to the residential buildings covered by 71 Ill. Adm. Code 600.Subpart D:

This Part, all additional requirements incorporated within Subpart D (including the 2018 International Energy Conservation Code, including all published errata but excluding published supplements) and any statutorily authorized adaptations to the incorporated standards adopted by CDB are effective July 1, 2019.

**R101.1.2 Adoption.** The Board shall adopt amendments to this Code within 12 months after publication of changes to the International Energy Conservation Code. Any such update in this Code shall take effect within 6 months after it is adopted by the Board and shall apply to any new building or structure in this State for which a building permit application is received by a municipality or county, except as otherwise provided by the EEB Act.

**R101.1.3 Adaptation.** The Board may appropriately adapt the International Energy Conservation Code to apply to the particular economy, population distribution, geography and climate of the State and construction within the State, consistent with the public policy objectives of the EEB Act.

**R101.5 Compliance.** Residential buildings shall meet the provisions of the Illinois Energy Conservation Code covered by 71 Ill. Adm. Code 600.Subpart D. The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Illinois Energy Conservation Code. Minimum compliance shall be demonstrated by submission of:

1. Compliance Certificates generated by the U.S. Department of Energy's REScheck™ Code compliance tool; or
2. Other comparable compliance materials that meet or exceed, as determined by the AHJ, U.S. Department of Energy's REScheck™ Code compliance tool; or

3. The seal of the architect/engineer as required by Section 14 of the Illinois Architectural Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

**SECTION R102  
ALTERNATIVE MATERIALS DESIGN AND METHODS  
OF CONSTRUCTION AND EQUIPMENT**

**R102.1.1 Above Code Programs.** No unit of local government, including any home rule unit, may regulate energy efficient building standards for residential building in a manner that is either less or more stringent than the standards established pursuant to this Code. The requirements identified as "mandatory" in Chapter 4 shall be met.

However, the following entities may regulate energy efficient building standards for residential buildings in a manner that is more stringent than the provisions contained in this Code:

- i) A unit of local government, including a home rule unit, that has, on or before May 15, 2009, adopted or incorporated by reference energy efficient building standards for residential buildings that are equivalent to or more stringent than the 2006 International Energy Conservation Code;
- ii) A unit of local government, including a home rule unit, that has, on or before May 15, 2009, provided to the Capital Development Board, as required by Section 10.18 of the Capital Development Board Act, an identification of an energy efficient building code or amendment that is equivalent to or more stringent than the 2006 International Energy Conservation Code; and
- iii) A municipality with a population of 1,000,000 or more.

**SECTION R109  
BOARD OF APPEALS**

**R109.1 General.** In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this Code, there may be created a board of appeals. The code official shall be an ex officio member of the board of appeals but shall not have a vote on any matter before the board. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.

**R109.3 Qualifications.** The board of appeals shall consist of members who are qualified by experience and training.

**CHAPTER 2 [RE]  
DEFINITIONS**

**SECTION R202  
GENERAL DEFINITIONS**

**Authority Having Jurisdiction or AHJ** – means the organization, officer or individual responsible for approving equipment, materials, an installation or procedure.

**Board** – means the Illinois Capital Development Board.

**Council** – means the Illinois Energy Conservation Advisory Council whose purpose is to recommend modifications to the Illinois Energy Conservation Code.

**EEB Act** – means the Energy Efficient Building Act [20 ILCS 3125].

**High-Efficacy Lamps** – means compact fluorescent lamps, light-emitting diode (LED) lamps, T-8 or smaller diameter linear fluorescent lamps, or other lamps with an efficacy of not less than 65 lm/W or light fixtures of not less than 55 lm/W.

**Local Exhaust** – means an exhaust system that uses one or more fans to exhaust air from a specific room or rooms within a dwelling.

**Residential Building** – means a detached one-family or 2-family dwelling or any building that is 3 stories or less in height above grade that contains multiple dwelling units, in which the occupants reside on a primarily permanent basis, such as a townhouse, a row house, an apartment house, a convent, a monastery, a rectory, a fraternity or sorority house, a dormitory and a rooming house; provided, however, that when applied to a building located within the boundaries of a municipality having a population of 1,000,000 or more, the term "residential building" means a building containing one or more dwelling units, not exceeding 4 stories above grade, where occupants are primarily permanent.

**Roof Membrane Peel and Replacement** – When an existing weather resisting roof membrane alone is removed, exposing insulation or sheathing, and only a new weather resisting roof membrane is installed.

**Whole House Mechanical Ventilation System** – means an exhaust system, supply system or combination thereof that is designed in accordance with Section R403.6 to mechanically exchange indoor air with outdoor air when operating continuously or through a programmed intermittent schedule to satisfy the whole house ventilation rates. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

## CHAPTER 4 [RE] RESIDENTIAL ENERGY EFFICIENCY

### SECTION R402 BUILDING THERMAL ENVELOPE

**TABLE R402.1.2  
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT<sup>a</sup>**

CLIMATE ZONE	FENESTRATION U-FACTOR <sup>b</sup>	SKYLIGHT <sup>b</sup> U-FACTOR	GLAZED FENESTRATION SHGC <sup>b,c</sup>	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE <sup>d</sup>	FLOOR R-VALUE	BASEMENT <sup>c</sup> WALL R-VALUE	SLAB <sup>d</sup> R-VALUE & DEPTH	CRAWL SPACE <sup>c</sup> WALL R-VALUE
1	NR	0.75	0.25	30	13	3/4	13	0	0	0
2	0.40	0.65	0.25	38	13	4/6	13	0	0	0

3	0.32	0.55	0.25	38	20 or 13+5 <sup>h</sup>	8/13	19	5/13 <sup>1</sup>	0	5/13
4 except Marine	0.32	0.55	0.40	49	20 or 13+5 <sup>h</sup>	8/13	19	10/13	10, 2 ft	10/13
5 and Marine 4	0.30	0.55	NR	49	20 or 13+5 <sup>h</sup>	13/17	30 <sup>g</sup>	10/13	10, 2 ft	15/19
6	0.30	0.55	NR	49	20+5 or 13+10 <sup>h</sup>	15/20	30 <sup>g</sup>	15/19	10, 4 ft	15/19
7 and 8	0.30	0.55	NR	49	20+5 or 13+10 <sup>h</sup>	19/21	38 <sup>g</sup>	15/19	10, 4 ft	15/19

NR = Not Required

For SI: 1 foot = 304.8 mm

- <sup>a</sup> *R*-values are minimums. *U*-factors and SHGC are maximums. When insulation is installed in a cavity that is less than the label or design thickness of the insulation, the installed *R*-value of the insulation shall not be less than the *R*-value specified in the table.
- <sup>b</sup> The fenestration *U*-factor column excludes skylights. The SHGC column applies to all glazed fenestration. Exception: In Climate Zones 1 through 3, skylights shall be permitted to be excluded from glazed fenestration SHGC requirements, provided that the SHGC for skylights does not exceed 0.30.
- <sup>c</sup> "10/13" means *R*-10 continuous insulation on the interior or exterior of the home or *R*-13 cavity insulation on the interior of the basement wall. "15/19" means *R*-15 continuous insulation on the interior or exterior of the home or *R*-19 cavity insulation at the interior of the basement wall. Alternatively, compliance with "15/19" shall be *R*-13 cavity insulation on the interior of the basement wall plus *R*-5 continuous insulation on the interior or exterior of the home.
- <sup>d</sup> *R*-5 shall be provided under the full slab area of a heated slab in addition to the required slab edge *R*-value for slabs, as indicated in the table. The slab edge insulation for heated slabs shall not be required to extend below the slab.
- <sup>e</sup> There are no SHGC requirements in the Marine Zone.
- <sup>f</sup> Basement wall insulation is not required in warm-humid locations as defined by Figure R301.1 and Table R301.1 (of the IECC).
- <sup>g</sup> Alternatively, insulation sufficient to fill the framing cavity and providing not less than an *R*-value of *R*-19.
- <sup>h</sup> The first value is cavity insulation, the second value is continuous insulation. Therefore, as an example, "13+5" means *R*-13 cavity insulation plus *R*-5 continuous insulation.
- <sup>i</sup> Mass walls shall be in accordance with Section R402.2.5. The second *R*-value applies when more than half the insulation is on the interior of the mass wall.

**TABLE R402.1.4  
EQUIVALENT U-FACTORS**

CLIMATE ZONE	FENES-TRATION	SKYLIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL	MASS WALL U-FACTOR	FLOOR U-FACTOR	BASEMENT WALL	
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	U-FACTOR		U-FACTOR			U-FACTOR		CRAWL SPACE WALL U-FACTOR
5 and Marine 4	0.30	0.55	0.026	0.060	0.082	0.033	0.059	0.055

**R402.2.2 Ceilings Without Attic Spaces.** When Section R402.1.2 requires insulation *R*-values greater than *R*-30 in the ceiling and the design of the roof/ceiling assembly does not allow sufficient space for the required insulation, the minimum required insulation *R*-value for those roof/ceiling assemblies shall be *R*-30. Insulation shall extend over the top of the wall plate to the outer edge of the plate and shall not be compressed. This reduction of insulation from the requirements of Section R402.1.2 shall be limited to 500 square feet (46 m<sup>2</sup>) or 20 percent of the total insulated ceiling area, whichever is less. This reduction shall not apply to the *U*-factor alternative approach in Section R402.1.4 and the Total UA alternative in Section R402.1.5.

**Exception:** For roofs on existing buildings with slope less than 2 units vertical in 12 units horizontal, refer to Section R503.1.1.

**R402.2.9 Basement Walls.** Walls associated with conditioned basements shall be insulated from the top of the basement wall down to 10 feet (3048 mm) below grade or to within 6 inches (152 mm) of the basement floor, whichever is less. Walls associated with unconditioned basements shall comply with this requirement except when the floor overhead is insulated in accordance with Sections R402.1.2 and R402.2.2.8.

**Exception:** Walls associated with conditioned basements may be insulated from the top of the basement wall down to 4 feet (1219 mm) below grade when the basement wall *R*-value is at least 15/19, (basement wall *U*-Factor of 0.050).

**R402.4.1.2 Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding 4 air changes per hour (ACH) in Climate Zones 4 and 5. The building or dwelling unit shall be provided with a whole-house mechanical ventilation system as designed in accordance with Section R403.6. Testing shall be conducted in accordance with RESNET/ICC 380, ASTM E779 or ASTM E1827 and reported at a pressure of 0.2 inches w.g. (50 Pascals). When required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test, indicating the ACH, shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after all penetrations of the building thermal envelope have been sealed.

**Exceptions:**

1. For additions, alterations, renovations or repairs to existing buildings, building envelope tightness and insulation installation shall be considered acceptable when the items in Table R402.4.1.1, applicable to the method of construction, are field verified. When required by the code official, an approved third party independent from the installer shall inspect both air barrier and insulation installation criteria.
2. For heated attached private garages and heated detached private garages accessory to 1- and 2-family dwellings and townhouses not more than 3 stories above grade plane in height, building envelope tightness and insulation installation shall be considered acceptable when the items in Table R402.4.1.1, applicable to the method of construction, are field verified. When required by the code official, an approved third party independent from the installer shall

inspect both air barrier and insulation installation criteria. Heated attached private garage space and heated detached private garage space shall be thermally isolated from all other habitable, conditioned spaces.

3. For low-rise multifamily buildings, dwelling units shall be tested and verified as having a leakage rate of not exceeding 0.25 cubic feet per minute (CFM) per square foot of enclosure area (all 6 sides of the dwelling unit) in Climate Zones 1 through 8. Testing shall be conducted with an unguarded blower door at a pressure of 0.2 inches w.g. (50 Pascal). If guarded blower door testing (a test with one or more adjacent units pressurized that should eliminate any leakage between units) is being performed, this exception is not allowed and the standard testing requirement of Section 402.4.1.2 apply. When required by the code official, testing shall be conducted by an approved third party. For buildings with more than 7 units, a sampling protocol is allowed by an approved third party. The sampling protocol requires the first 7 units to be tested without any failures. Upon successful testing of those initial 7 units, remaining units can be sampled at a rate of 1 in 7. If any sampled unit fails compliance with the maximum allowable air leakage rate, 2 additional units in the same sample set must be tested. If additional failures occur, all units in the sample set must be tested. In addition, all units in the next sample set must be tested for compliance before sampling of further units can be continued.

During testing:

1. Exterior windows and doors and fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers, including exhaust, intake, makeup air, backdraft and flue dampers, shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior or interior terminations for continuous ventilation systems shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

**R402.4.4 Rooms Containing Fuel-burning Appliances. This section has been deleted. It is not required in Illinois.**

## SECTION R403 SYSTEMS

**R403.3 Ducts.** Ducts and air handlers shall be insulated, sealed, tested and installed in accordance with Sections R403.3.1 through R403.3.7. When required by the code official, duct testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official.

### **R403.3.3 Duct testing (Mandatory).**

Ducts shall be pressure tested to determine air leakage by one of the following methods:

1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. Registers shall be taped or otherwise sealed during the test.
2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

**Exceptions:**

1. A duct air-leakage test shall not be required when the ducts and air handlers are located entirely within the building thermal envelope.
2. A duct air-leakage test shall not be required for ducts serving heat or energy recovery ventilators that are not integrated with ducts serving heating or cooling systems.

**R403.6 Mechanical Ventilation (Mandatory).** The building or dwelling unit shall be provided with ventilation that complies with the requirements of this section or the International Mechanical Code, as applicable, or with other approved means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

**R403.6.2 Recirculation of Air.** Exhaust air from bathrooms and toilet rooms shall not be recirculated within a residence or circulated to another dwelling unit and shall be exhausted directly to the outdoors. Exhaust air from bathrooms, toilet rooms and kitchens shall not discharge into an attic, crawl space or other areas inside the building.

**R403.6.3 Exhaust equipment.** Exhaust equipment serving single dwelling units shall be listed and labeled as providing the minimum required airflow in accordance with ANSI/AMCA 210-ANSI/ASHRAE 51.

**R403.6.4 Whole-house Mechanical Ventilation System.** Whole-house mechanical ventilation systems shall be designed in accordance with Sections R403.6.4.1 through R403.6.4.4.

**R403.6.4.1 System Design.** The whole-house ventilation system shall consist of one or more supply or exhaust fans, or a combination of such, and associated ducts and controls. Local exhaust or supply fans are permitted to serve as such a system. Outdoor air ducts connected to the return side of an air handler shall be considered to provide supply ventilation.

**R403.6.4.2 System Controls.** The whole-house mechanical ventilation system shall be provided with controls that enable manual override.

**R403.6.4.3 Mechanical Ventilation Rate.** The whole house mechanical ventilation system shall provide outdoor air at a continuous rate of not less than that determined in accordance with Table R403.6.4.3(1) or Equation 4-1.

**Exceptions:**

1. The whole-house mechanical ventilation system is permitted to operate intermittently when the system has controls that enable operation for not less than 25 percent of each 4-hour segment and the ventilation rate prescribed in Table R403.6.4.3(1) is multiplied by the factor determined in accordance with Table R403.6.4.3(2).

2. The total required outdoor air ventilation rate ( $Q_{tot}$ ) shall be as specified in Table 403.6.4.3(1) or calculated in accordance with Equation 4-1.

Equation 4-1:

$$CFM_{total} = 0.01CFA + 7.5(Nbr + 1)$$

Where:

$CFM_{total}$	=	total required ventilation rate, (cfm)
$CFA$	=	conditioned floor area of residence, (ft <sup>2</sup> )
$Nbr$	=	number of bedrooms (not to be less than 1)

**R403.6.4.3.1 Different Occupant Density.** Table R403.6.4.3(1) assumes 2 persons in a dwelling unit and an additional person for each additional bedroom. When higher occupant densities are known, the airflow rate shall be increased by 7.5 cfm (3.5 L/s) for each additional person. When approved by the authority having jurisdiction, lower occupant densities may be used.

**R403.6.4.3.2 Airflow Measurement.** The airflow rate required is the quantity of outdoor ventilation air supplied and/or indoor air exhausted by the whole-house mechanical ventilation system installed, and shall be measured using a flow hood, flow grid, or other airflow measuring device. Ventilation airflow of systems with multiple operating modes shall be tested in all modes designed to meet Section R403.6.4.3. When required by the *code official*, testing shall be conducted by an *approved* third party. A written report of the results of the test, indicating the verified airflow rate, shall be signed by the party conducting the test and provided to the *code official*.

**R403.6.4.4 Local Exhaust Rates.** Local exhaust systems shall be designed to have the capacity to exhaust the minimum air flow rate determined in accordance with Table R403.6.4.4.

**TABLE R403.6.4.3(1)  
CONTINUOUS WHOLE-HOUSE MECHANICAL  
VENTILATION SYSTEM AIRFLOW RATE REQUIREMENTS**

DWELLING UNIT FLOOR AREA (square feet)	NUMBER OF BEDROOMS				
	0 - 1	2 - 3	4 - 5	6 - 7	> 7
	Airflow in CFM				
< 1,500	30	45	60	75	90
1,501 - 3,000	45	60	75	90	105
3,001 - 4,500	60	75	90	105	120
4,501 - 6,000	75	90	105	120	135
6,001 - 7,500	90	105	120	135	150
> 7,500	105	120	135	150	165



For SI: 1 square foot = 0.0929 m<sup>2</sup>, 1 cubic foot per minute = 0.0004719 m<sup>3</sup>/s.

**TABLE R403.6.4.3(2)**  
**INTERMITTENT WHOLE-HOUSE MECHANICAL**  
**VENTILATION RATE FACTORS<sup>a, b</sup>**

<b>RUN-TIME PERCENTAGE IN EACH 4-HOUR SEGMENT</b>	<b>25%</b>	<b>33%</b>	<b>50%</b>	<b>66%</b>	<b>75%</b>	<b>100%</b>
Factor <sup>a</sup>	4	3	2	1.5	1.3	1.0

<sup>a</sup> For ventilation system run time values between those given, the factors are permitted to be determined by interpolation.

<sup>b</sup> Extrapolation beyond the table is prohibited.

**TABLE R403.6.4.4**  
**MINIMUM REQUIRED LOCAL EXHAUST RATES FOR**  
**ONE- AND TWO-FAMILY DWELLINGS**

<b>AREA TO BE EXHAUSTED</b>	<b>EXHAUST RATES</b>
Kitchens	100 cfm intermittent or 25 cfm continuous
Bathrooms-Toilet Rooms	Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous

For SI: 1 cubic foot per minute = 0.0004719 m<sup>3</sup>/s.

**SECTION R405**  
**SIMULATED PERFORMANCE ALTERNATIVE (PERFORMANCE)**

**TABLE R405.5.2(1)**  
**SPECIFICATIONS FOR THE STANDARD**  
**REFERENCE AND PROPOSED DESIGNS**

<b>BUILDING COMPONENT</b>	<b>STANDARD REFERENCE DESIGN</b>	<b>PROPOSED DESIGN</b>
Air Exchange Rate	<p>The air leakage rate at a pressure of 0.2 inch w.g. (50 Pa) shall be</p> <p>Climate Zone 4 and 5: 4 air changes per hour</p> <p>The mechanical ventilation rate shall be in addition to the air leakage rate and shall be the same as in the proposed design, but no greater than <math>0.01 \times CFA + 7.5 \times (N_{br} + 1)</math></p> <p>where:</p> <p><math>CFA</math> = conditioned floor area, ft<sup>2</sup> <math>N_{br}</math> = number of bedrooms</p> <p>Energy recovery shall not be assumed for mechanical ventilation.</p>	<p>The measured air exchange rate.<sup>a</sup></p> <p>The mechanical ventilation rate<sup>b</sup> shall be in addition to the air leakage rate and shall be as proposed.</p>

## CHAPTER 5 [RE] EXISTING BUILDINGS

### SECTION R502 ADDITIONS

**R502.1.1.2 Heating and Cooling Systems.** New heating, cooling and duct systems that are part of the addition shall comply with Section 403.

**Exception:** When ducts from an existing heating and cooling system are extended to an addition, the new and existing duct systems shall not be required to be tested in accordance with Section R403.3.3. New duct systems shall be sealed in accordance with Section R403.3.2.

### SECTION R503 ALTERATIONS

**R503.1.1 Building Envelope.** Building envelope assemblies that are part of the alteration shall comply with Section R402.1.3 or R402.1.4, Sections R402.2.1 through R402.2.1.3, R402.3.1, R402.3.2, R402.4.3 and R402.4.5.

**Exception:** The following alterations are not required to comply with the requirements for new construction provided the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Existing ceiling, wall or floor cavities exposed during construction provided that these cavities are filled with insulation.
3. Construction in which the existing roof, wall or floor cavity is not exposed.
4. Roof recover.
5. Roof membrane peel and replacement.
6. Roofs without insulation in the cavity and when the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.
7. For roof replacement on existing buildings with a roof slope of less than 2" in 12", and when the roof covering is removed and insulation remains, and when the required *R*-value cannot be provided due to thickness limitations presented by existing rooftop conditions, (including heating, ventilating and air-conditioning equipment, low door or glazing heights, parapet heights, weep holes, and roof flashing heights not meeting the manufacturer's specifications), the maximum thickness of insulation compatible with the available space and existing uses shall be installed. Insulation used shall be minimum *R*-3.5 per inch. In areas where flashing may be terminated a minimum of 8" above the roof covering (including required insulation), insulation shall be a minimum of *R*-20.
8. *R*-value for roof assemblies with tapered insulation above deck with slope greater than 1/8" in 12" shall average *R*-20.

9. Surface-applied window film installed on existing single pane fenestration assemblies to reduce solar heat gain provided the Code does not require the glazing or fenestration assembly to be replaced.

**R503.1.2 Heating and Cooling Systems.** New heating, cooling and duct systems that are part of the alteration shall comply with Section R403.

**Exception:** When ducts from an existing heating and cooling system are extended, the new and existing duct systems shall not be required to be tested in accordance with Section R403.3.3. Altered duct systems shall be sealed in accordance with Section R403.3.2.

## **SECTION R504 REPAIRS**

**R504.2 Application.** For the purposes of this Code, the following shall be considered repairs:

1. Glass-only replacements in an existing sash and frame.
2. Roof repairs.
3. Insulation with new roof covering for roof slopes less than 2 in 12 inches only in areas where the tapered insulation is used above an existing roof covering to create slope between drains or upslope from obstructions to water flow.
4. Repairs in which only the bulb, ballast or both within the existing luminaires in a space are replaced, provided that the replacement does not increase the installed interior lighting power.

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)