

**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 this Code and shall mean:

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

This Part, all additional requirements incorporated within Subpart B (including ASHRAE 90.1 Standards, including all published errata and excluding published supplements which encompasses ASHRAE 90.1), and any statutorily authorized adaptations to the incorporated standards adopted by CDB is effective January 29, 2010.

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

This Part, all additional requirements incorporated within Subpart C (including the 2012 International Energy Conservation Code, including all published errata and excluding published supplements which encompasses ASHRAE 90.1), and any statutorily authorized adaptations to the incorporated standards adopted by CDB is effective January 29, 2010.

**C101.1.2 Adoption.** The Board shall adopt the Code within 12 months after its publication. The 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 therein, 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 subpart C of TITLE 71 Ill. Adm. Code 600. 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. 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 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 program.** 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 that are more stringent than Illinois Energy Conservation 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 said board but shall have no 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**

#### **ADD THE FOLLOWING 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 [20ILCS 3125].

## 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 Subpart D of TITLE 71 Ill. Adm. Code 600:

This Part, all additional requirements incorporated within Subpart D (including the 2012 International Energy Conservation Code, including all published errata excluding published supplements) and any statutorily authorized adaptations to the incorporated standards adopted by CDB is effective January 29, 2010.

**R101.1.2 Adoption.** The Board shall adopt this Code within 12 months after its publication. The 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 therein, consistent with the public policy objectives of the EEB Act.

**R101.4.3 Additions, alterations, renovations or repairs.** Additions, alterations, renovations or repairs to an existing building, building system or portion thereof shall conform to the provisions of this Code as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with this Code. In the case of any addition, alteration, renovation or repair to an existing residential structure, the Code applies only to the portions of that structure that are being added, altered, renovated or repaired [20 ILCS 3125/20(a)]. Additions, alterations, renovations or repairs shall not create 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 provided 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.
3. Existing ceiling, wall, or floor cavities exposed during construction provided that these cavities are filled with insulation
4. Construction where the existing roof, wall or floor cavity is not expose.
5. Reroofing for roofs 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. Alterations that replace less than 50 percent of the luminaires in a space, provided that such alterations do not increase the installed interior lighting power.
8. Alterations that replace only the bulb and ballast within the existing luminaires in a space provided that the *alteration* does not increase the installed interior lighting power.

**R101.5 Compliance.** *Residential buildings* shall meet the provisions of the *Illinois Energy Conservation Code* covered by subpart D of TITLE 71 Ill. Adm. Code 600. 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 – METHOD OF CONSTRUCTION, DESIGN OR INSULATING SYSTEMS**

**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 55 of the Illinois Building Commission 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 said board but shall have no 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**

**ADD THE FOLLOWING 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 [20ILCS 3125]

**LOCAL EXHAUST.** 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.

**WHOLE HOUSE MECHANICAL VENTILATION SYSTEM.** An exhaust system, supply system, or combination thereof that is designed in accordance with Section R403.5 to mechanically exchange indoor air for outdoor air when operating continuously or through a programmed intermittent schedule to satisfy the whole house ventilation rate. 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

**R402.2.8 Basement walls.** Walls associated with conditioned basements shall be insulated from the top of the *basement wall* down to 4 feet (1219 mm) below grade or to the basement floor, whichever is less. Walls associated with unconditioned basements shall meet this requirement unless the floor overhead is insulated in accordance with Sections R402.1.1 and R402.2.7.

**R402.4.1.2 Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 5 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 R403.5. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the *code official*, a testing shall 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.

During testing:

1. Exterior windows and doors, 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 doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and
6. Supply and return registers, if installed at the time of the test, shall be fully open.

**R402.4.1.3 Visual Inspection Option for Additions, Alterations, Renovations or Repairs.** 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. Where required by the *code official*, an *approved third party* independent from the installer, shall inspect air barrier and insulation installation.

**R403.5 Mechanical ventilation (Mandatory).** The building shall be provided with ventilation that meets the requirements of this section or the International Mechanical Code, as applicable. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

**R403.5.2 Recirculation of air.** Exhaust air from bathrooms and toilet rooms shall not be recirculated within a residence or to another *dwelling unit* and shall be exhausted directly to the outdoors. Exhaust air from bathrooms and toilet rooms shall not discharge into an *attic*, crawl space or other areas inside the building.

**R403.5.3 Whole-house mechanical ventilation system.** Whole-house mechanical ventilation systems shall be designed in accordance with Sections R403.5.4 through R403.5.6.

**R403.5.4 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.

**R403.5.5 System controls.** The whole-house mechanical ventilation system shall be provided with controls that enable manual override.

**R403.5.6 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 R403.5.6(1).

**Exception:** 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 R403.5.6(1) is multiplied by the factor

determined in accordance with Table R403.5.6(2).

**R403.5.7 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 R403.5.7.

**TABLE R403.5.7  
MINIMUM REQUIRED LOCAL EXHAUST RATES FOR ONE- AND TWO-FAMILY DWELLINGS**

AREA TO BE EXHAUSTED	EXHAUST RATES
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.

**TABLE R403.5.6(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 R403.5.6(2)  
INTERMITTENT WHOLE-HOUSE MECHANICAL VENTILATION RATE FACTORS<sup>a, b</sup>**

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

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

b. Extrapolation beyond the table is prohibited.

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

**REVISE Table R405.5.2(1)**, entry for “Air exchange rate” as follows:

STANDARD REFERENCE DESIGN. Air leakage rate of 5 air changes per hour in Climate 4 and 5 at a pressure of 0.2 inches w.g (50 Pa). The mechanical ventilation rate shall be in addition to the air leakage rate and the same as in the proposed design, but no greater than  $0.01 \times CFA + 7.5 \times (Nbr + 1)$  where:

*CFA* = conditioned floor area

*Nbr* = number of bedrooms

Energy recovery shall not be assumed for mechanical ventilation.