

**ARTICLE XIII.**  
**CHICAGO ENERGY CONSERVATION CODE**

**SECTION 1.** The Municipal Code of Chicago is hereby amended by inserting a new Title 14N, as follows:

**TITLE 14N ENERGY CONSERVATION CODE**

**PART I – COMMERCIAL PROVISIONS**

**CHAPTER 14N-C1 SCOPE AND PURPOSE**

**14N-C1-C001 Adoption of the commercial provisions of the International Energy Conservation Code by reference.**

The commercial provisions of the *International Energy Conservation Code*, 2018 edition, second printing, and all erratum thereto identified by the publisher (hereinafter referred to as “IECC-CE”), except Appendix CA, are adopted by reference and shall be considered part of the requirements of this title except as modified by the specific provisions of this title.

If a conflict exists between a provision modified by this title and a provision adopted without modification, the modified provision shall control.

**14N-C1-C002 Citations.**

Provisions of IECC-CE which are incorporated into this title by reference may be cited as follows:

14N-C[IECC-CE chapter number]-[IECC-CE section number]

**14N-C1-C003 Global modifications.**

The following modifications shall apply to each provision of IECC-CE incorporated into this title:

1. Replace each occurrence of “*International Codes*” with “*Chicago Construction Codes*.”
2. Replace each occurrence of “*International Building Code*” with “*Chicago Building Code*.”
3. Replace each occurrence of “ASME A17.1” or “ASME A17.1/CSA B44” with “the *Chicago Conveyance Device Code*.”
4. Replace each occurrence of “NFPA 70” with “the *Chicago Electrical Code*.”

5. Replace each occurrence of “*International Fire Code*” with “*Chicago Fire Prevention Code*.”
6. Replace each occurrence of “*International Fuel Gas Code*” with “*Chicago Fuel Gas Code*.”
7. Replace each occurrence of “*International Mechanical Code*” with “*Chicago Mechanical Code*.”
8. Replace each occurrence of “*International Energy Conservation Code*” with “*Chicago Energy Conservation Code*.”
9. Replace each occurrence of “*International Plumbing Code*” with “*Chicago Plumbing Code*.”
10. Replace each occurrence of “*International Existing Building Code*” with “*Chicago Building Rehabilitation Code*.”
11. Replace each occurrence of “*International Property Maintenance Code*” with “*Chicago Minimum Requirements for Existing Buildings*.”
12. Replace each occurrence of “*code official*” or “code official” with “*building official*.”
13. Delete each bracketed designation of ICC code development committee responsibility preceding a section number.

#### **14N-C1-C100 Chapter C1.**

The provisions of Chapter 1 of IECC-CE are not adopted. The following is adopted as Chapter C1:

#### **“CHAPTER C1. SCOPE AND PURPOSE**

##### **C101. GENERAL**

###### **C101.1 Title.**

This Part I of Title 14N of the Municipal Code of Chicago shall be known as the *Chicago Energy Conservation Code—Commercial Provisions*, hereinafter referred to as “this code.”

###### **C101.2 Scope.**

This code applies to *commercial buildings*, the *building site* and associated systems and equipment.

###### **C101.3 Intent.**

This code shall regulate the design and construction of *buildings* for the effective use and conservation of energy over the useful life of each *building*. This code is intended to provide flexibility to allow the use of innovative and cost-effective approaches and techniques to achieve this objective.

#### **C101.4 Compliance.**

*Commercial buildings* shall meet the requirements of this code. *Residential buildings* shall meet the requirements of the *Chicago Energy Conservation Code—Residential Provisions*.

##### **C101.4.1 Mixed commercial and residential buildings.**

Where a *building* includes both *commercial building* and *residential building* portions, each portion shall be separately considered and meet applicable requirements of this code and the *Chicago Energy Conservation Code—Residential Provisions*.

##### **C101.4.2 Evidence of compliance.**

The *building official* may designate specific computer software, worksheets, forms, compliance manuals and other similar materials as providing evidence of compliance with the requirements of this code.”

## **CHAPTER 14N-C2 DEFINITIONS**

### **14N-C2-C201 General.**

The provisions of Section C201 of IECC-CE are adopted by reference without modification.

### **14N-C2-C202 General definitions.**

The provisions of Section C202 of IECC-CE are adopted by reference with the following modifications:

1. Revise the definition of “addition” to read:  
  
“**ADDITION.** An extension or increase in the *conditioned floor area*, number of stories or height of an *existing building*.”
2. Revise the definition of “alteration” to read:  
  
“**ALTERATION.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code*.”
3. Revise the definition of “approved” to read:  
  
“**APPROVED.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.”
4. Revise the definition of “approved agency” to read:  
  
“**APPROVED AGENCY.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.”
5. Revise the definition of “building” to read:

**“BUILDING.** As defined in Chapter 2 of the *Chicago Building Code.*”

6. Insert the following definition:

**“BUILDING OFFICIAL.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*”

7. Revise the definition of “change of occupancy” to read:

**“CHANGE OF OCCUPANCY.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”

8. Insert the following definitions:

**“CHICAGO BUILDING CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*

**CHICAGO BUILDING REHABILITATION CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*

**CHICAGO CONSTRUCTION CODES.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*

**CHICAGO CONSTRUCTION CODES ADMINISTRATIVE PROVISIONS.** Title 14A of the Municipal Code of Chicago.

**CHICAGO CONVEYANCE DEVICE CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*

**CHICAGO ELECTRICAL CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*

**CHICAGO ENERGY CONSERVATION CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*

**Chicago Energy Conservation Code—Commercial Provisions.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*

**Chicago Energy Conservation Code—Residential Provisions.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*

**CHICAGO FIRE PREVENTION CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*

**CHICAGO FUEL GAS CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*

**CHICAGO MECHANICAL CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*

**CHICAGO MINIMUM REQUIREMENTS FOR EXISTING BUILDINGS.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*

**CHICAGO PLUMBING CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*”

9. Delete the definition of “code official.”
10. Revise the definition of “dwelling unit” to read:  
“**DWELLING UNIT.** As defined in Chapter 2 of the *Chicago Building Code.*”
11. Insert the following definition:  
“**EXISTING BUILDING.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”
12. Revise the definition of “floor area, net” to read:  
“**FLOOR AREA, NET.** As defined in Chapter 2 of the *Chicago Building Code.*”
13. Revise the definition of “greenhouse” to read:  
“**GREENHOUSE.** As defined in Chapter 2 of the *Chicago Building Code.*”
14. Revise the definition of “historic building” to read:  
“**HISTORIC BUILDING.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”
15. Revise the definition of “labeled” to read:  
“**LABELED.** As defined in Chapter 2 of the *Chicago Building Code.*”
16. Revise the definition of “listed” to read:  
“**LISTED.** As defined in Chapter 2 of the *Chicago Building Code.*”
17. Revise the definition of “low-sloped roof” to read:  
“**LOW-SLOPED ROOF.** As defined in Chapter 2 of the *Chicago Building Code.*”
18. Revise the definition of “registered design professional” to read:  
“**REGISTERED DESIGN PROFESSIONAL.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions.*”
19. Revise the definition of “repair” to read:  
“**REPAIR.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”
20. Revise the definition of “reroofing” to read:  
“**REROOFING.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”
21. Revise the definition of “residential building” to read:

**“RESIDENTIAL BUILDING.** For this code, Group R-2, R-3, R-4 and R-5 occupancies with no more than four *stories above grade plane.*”

22. Revise the definition of “roof recover” to read:

**“ROOF RECOVER.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”

23. Revise the definition of “roof repair” to read:

**“ROOF REPAIR.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”

24. Revise the definition of “roof replacement” to read:

**“ROOF REPLACEMENT.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”

25. Insert the following definition:

**“STORY ABOVE GRADE PLANE.** As defined in Chapter 2 of the *Chicago Building Code.*”

26. Revise the definition of “sleeping unit” to read:

**“SLEEPING UNIT.** As defined in Chapter 2 of the *Chicago Building Code.*”

27. Revise the definition of “ventilation” to read:

**“VENTILATION.** As defined in Chapter 2 of the *Chicago Building Code.*”

## CHAPTER 14N-C3 GENERAL REQUIREMENTS

### 14N-C3-C301 Climate zones.

The provisions of Section C301 of IECC-CE are adopted by reference with the following modifications:

1. Revise Section C301, in its entirety, to read:

**“C301.1 General.**

*Climate zone 5A shall be used to determine the applicable requirements in Chapter 4.*”

2. Delete all figures and tables accompanying Section C301.

### 14N-C3-C302 Design conditions.

The provisions of Section C302 of IECC-CE are adopted by reference without modification.

### **14N-C3-C303 Materials, systems and equipment.**

The provisions of Section C303 of IECC-CE are adopted by reference with the following modification:

1. Revise Sections C303.1.1 and C303.1.1.1 by replacing each occurrence of “*listed*” with “*indicated*.”

## **CHAPTER 14N-C4 COMMERCIAL ENERGY EFFICIENCY**

### **14N-C4-C401 General.**

The provisions of Section C401 of IECC-CE are adopted by reference without modification.

### **14N-C4-C402 Building envelope requirements.**

The provisions of Section C402 of IECC-CE are adopted by reference with the following modifications:

1. Revise Section C402.1.2 by deleting item 5 and revising item 4 to read:  
“Have an average wall and roof U-factor less than 0.200.”
2. Revise Table C402.1.3 by deleting all columns except “5 and Marine 4.”
3. Revise Table C402.1.4 by deleting all columns except “5 and Marine 4.”
4. Delete Section C402.2.2 in its entirety.
5. Delete Section C402.3 and all its subparts.
6. Delete Table C402.3.
7. Revise Table C402.4 by deleting all columns except “5 and Marine 4.”
8. Revise the first sentence of Section C402.4.1.1 to read:  
“Not more than 40 percent of the gross above grade wall area shall be vertical fenestration, provided that all of the following requirements are met:”
9. Revise Section C402.4.2 by deleting item 1 in the exception.
10. Revise Section C402.4.3.1 to read:  
“Skylights shall be permitted a maximum SHGC of 0.60 where located above *daylight zones* provided with *daylight responsive controls*.”
11. Revise Section C402.4.3.2 to read:

“Where skylights are installed above *daylight zones* provided with *daylight responsive controls*, a maximum U-factor of 0.75 shall be allowed.”

12. Revise Section C402.5.1 by adding the following after the last sentence:

“For roof air barriers on existing buildings, refer to Section C503.1 or C504.2.”

13. Delete the exception to Section C402.5.1.

14. Revise Section C402.5.1.1, item 3 to read:

“Penetrations of the air barrier shall be caulked, gasketed or otherwise sealed in a manner compatible with the construction materials and location. Sealing 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.”

15. Revise Section C402.5.1.1, item 4 to read:

“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.”

16. Revise the first sentence of Section C402.5.3 to read:

“Where combustion air is supplied through openings in an exterior wall to a room or space containing a space-conditioning fuel-burning appliance, one of the following shall apply:”

17. Revise Section C402.5.7 by deleting exception item 1.

#### **14N-C4-C403 Building mechanical systems.**

The provisions of Section C403 of IECC-CE are adopted by reference with the following modifications:

1. Revise the first sentence of Section C403.4.3.3.2 to read:

“The following shall apply to hydronic water loop heat pump systems:”

2. Revise Section C403.4.4, item 3.2 to read:

“Where pumps have automatic direct digital control configured to operate pumps only when zone heating or cooling is required, a variable speed drive shall be provided for pumps with motors having a nominal output power of 7.5 hp or greater.”

3. Delete Table C403.4.4.
4. Revise Section C403.5 by deleting exception items 1 and 5.
5. Revise Table C403.5(1) by deleting all rows except for climate zone 5A.
6. Delete Table C403.5(2).
7. Revise Section C403.7.4 by deleting exception items 5 and 6.

#### **14N-C4-C404 Service water heating (mandatory).**

The provisions of Section C404 of IECC-CE are adopted by reference with the following modifications:

1. Revise Tables C404.7.4(1) and C404.7.4(2) by deleting all rows except for climate zone 5A.
2. Revise Section C403.7.7 by deleting exception item 2.
3. Revise the first two sentences of Section C403.11.1 to read:

“Supply and return air ducts and plenums shall be insulated with not less than R-6 insulation where located in unconditioned spaces and with not less than R-12 insulation where located outside the building. Where located within a building envelope assembly, the duct or plenum shall be separated from the building exterior or unconditioned or exempt spaces by not less than R-12 insulation.”

#### **14N-C4-C405 Electrical power and lighting systems.**

The provisions of Section C405 of IECC-CE are adopted by reference with the following modification:

1. Revise 405.1, by replacing the first two sentences with the following:  
  
“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 comply with Sections C405.2.4 and C405.3.”

#### **14N-C4-C406 Additional efficiency package options.**

The provisions of Section C406 of IECC-CE are adopted by reference without modification.

#### **14N-C4-C407 Total building performance.**

The provisions of Section C407 of IECC-CE are adopted by reference without modification.

#### **14N-C4-C408 Maintenance information and system commissioning.**

The provisions of Section C408 of IECC-CE are adopted by reference without modification.

### **CHAPTER 14N-C5 EXISTING BUILDINGS**

#### **14N-C5-C501 General.**

The provisions of Section C501 of IECC-CE are adopted by reference with the following modification:

1. Revise Section C501.4 to read:

*“Alterations, repairs, additions and changes of occupancy to, or relocation of, existing buildings and structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy or relocation, respectively, in this code and in the other Chicago Construction Codes.”*

#### **14N-C5-C502 Additions.**

The provisions of Section C502 of IECC-CE are adopted by reference with the following modification:

1. Revise the third sentence of Section C502.1 to read:

*“An addition shall be deemed to comply with this code if the addition alone complies, if the existing building and addition comply with this code as a single building or if the building with the addition will use no more energy than the existing building.”*

#### **14N-C5-C503 Alterations.**

The provisions of Section C503 of IECC-CE are adopted by reference with the following modification:

1. Revise Section C503.3.1 by adding the following after the last sentence:

*“For low-sloped roofs, where the required R-value cannot be provided due to flashing height limitations presented by existing rooftop conditions that are not being altered, such as HVAC equipment, door or window sill height, parapet height, weep holes, and roof flashing heights not meeting the manufacturer’s specifications if reduced, the*

maximum thickness of insulation compatible with the available space and existing conditions shall be installed. New insulation shall have a minimum R-value of R-5 per inch. In no case shall a *roof replacement* reduce the R-value of the *roof assembly*.”

#### **14N-C5-C504 Repairs.**

The provisions of Section C504 of IECC-CE are adopted by reference without modification.

#### **14N-C5-C505 Change of occupancy or use.**

The provisions of Section C505 of IECC-CE are adopted by reference without modification.

### **CHAPTER 14N-C6 REFERENCED STANDARDS**

#### **14N-C6-C600 Chapter C6.**

The provisions of Chapter 6 of IECC-CE are adopted by reference with the following modifications:

1. Delete the following ICC references: IBC-18, IFC-18, IFCG-18, IMC-18, IPC-18, IPSDC-18 and IPMC-18.
2. Delete all NFPA references.

### **PART II – RESIDENTIAL PROVISIONS**

#### **CHAPTER 14N-R1 SCOPE AND PURPOSE**

##### **14N-R1-R001 Adoption of the residential provisions of the International Energy Conservation Code by reference.**

The residential provisions of the *International Energy Conservation Code*, 2018 edition, second printing, and all erratum thereto identified by the publisher (hereinafter referred to as “IECC-RE”), except Appendix RA, are adopted by reference and shall be considered part of the requirements of this title except as modified by the specific provisions of this title.

If a conflict exists between a provision modified by this title and a provision adopted without modification, the modified provision shall control.

### **14N-R1-R002 Citations.**

Provisions of IECC-RE which are incorporated into this title by reference may be cited as follows:

14N-R[IECC-RE chapter number]-[IECC-RE section number]

### **14N-R1-R003 Global modifications.**

The following modifications shall apply to each provision of IECC-RE incorporated into this title:

1. Replace each occurrence of "*International Codes*" with "*Chicago Construction Codes.*"
2. Replace each occurrence of "*International Building Code*" with "*Chicago Building Code.*"
3. Replace each occurrence of "ASME A17.1" or "ASME A17.1/CSA B44" with "the *Chicago Conveyance Device Code.*"
4. Replace each occurrence of "NFPA 70" with "the *Chicago Electrical Code.*"
5. Replace each occurrence of "*International Fire Code*" with "*Chicago Fire Prevention Code.*"
6. Replace each occurrence of "*International Fuel Gas Code*" with "*Chicago Fuel Gas Code.*"
7. Replace each occurrence of "*International Mechanical Code*" with "*Chicago Mechanical Code.*"
8. Replace each occurrence of "*International Energy Conservation Code*" with "*Chicago Energy Conservation Code.*"
9. Replace each occurrence of "*International Plumbing Code*" with "*Chicago Plumbing Code.*"
10. Replace each occurrence of "*International Existing Building Code*" with "*Chicago Building Rehabilitation Code.*"
11. Replace each occurrence of "*International Property Maintenance Code*" with "*Chicago Minimum Requirements for Existing Buildings.*"
12. Replace each occurrence of "*code official*" or "code official" with "*building official.*"
13. Delete each bracketed designation of ICC code development committee responsibility preceding a section number.

### **14N-R1-R100 Chapter R1.**

The provisions of Chapter 1 of IECC-RE are not adopted. The following is adopted as Chapter R1:

## **“CHAPTER R1. SCOPE AND PURPOSE**

### **R101. GENERAL**

#### **R101.1 Title.**

This Part II of Title 14N of the Municipal Code of Chicago shall be known as the *Chicago Energy Conservation Code—Residential Provisions*, hereinafter referred to as “this code.”

#### **R101.2 Scope.**

This code applies to *residential buildings*, the *building site* and associated systems and equipment.

#### **R101.3 Intent.**

This code shall regulate the design and construction of *buildings* for the effective use and conservation of energy over the useful life of each *building*. This code is intended to provide flexibility to allow the use of innovative and cost-effective approaches and techniques to achieve this objective.

#### **R101.4 Compliance.**

*Residential buildings* shall meet the requirements of this code. *Commercial buildings* shall meet the requirements of the *Chicago Energy Conservation Code—Commercial Provisions*.

##### **R101.4.1 Mixed residential and commercial buildings.**

Where a *building* includes both *residential building* and *commercial building* portions, each portion shall be separately considered and meet applicable requirements of this code and the *Chicago Energy Conservation Code—Commercial Provisions*.

##### **R101.4.2 Evidence of compliance.**

The *building official* may designate specific computer software, worksheets, forms, compliance manuals and other similar materials as providing evidence of compliance with the requirements of this code.”

## **CHAPTER 14N-R2 DEFINITIONS**

### **14N-R2-R201 General.**

The provisions of Section R201 of IECC-RE are adopted by reference without modification.

### **14N-R2-R202 General definitions.**

The provisions of Section R202 of IECC-RE are adopted by reference with the following modifications:

1. Delete the definition of “accessible.”

2. Insert the following definition:  
**“ACCESS (TO).** That which enables a device, appliance or equipment to be reached by *ready access* or by a means that first requires the removal or movement of a panel or similar obstruction.
3. Revise the definition of “addition” to read:  
**“ADDITION.** An extension or increase in the *conditioned floor area*, number of stories or height of an *existing building*.”
4. Revise the definition of “alteration” to read:  
**“ALTERATION.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code*.”
5. Revise the definition of “approved” to read:  
**“APPROVED.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.”
6. Revise the definition of “approved agency” to read:  
**“APPROVED AGENCY.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.”
7. Revise the definition of “building” to read:  
**“BUILDING.** As defined in Chapter 2 of the *Chicago Building Code*.”
8. Insert the following definition:  
**“BUILDING OFFICIAL.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.”
9. Insert the following definition:  
**“CHANGE OF OCCUPANCY.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code*.”
10. Insert the following definitions:  
**“CHICAGO BUILDING CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.  
**CHICAGO BUILDING REHABILITATION CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.  
**CHICAGO CONSTRUCTION CODES.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.  
**CHICAGO CONSTRUCTION CODES ADMINISTRATIVE PROVISIONS.** Title 14A of the Municipal Code of Chicago.

**CHICAGO ELECTRICAL CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.

**CHICAGO ENERGY CONSERVATION CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.

**Chicago Energy Conservation Code—Commercial Provisions.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.

**Chicago Energy Conservation Code—Residential Provisions.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.

**CHICAGO FIRE PREVENTION CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.

**CHICAGO FUEL GAS CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.

**CHICAGO MECHANICAL CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.

**CHICAGO MINIMUM REQUIREMENTS FOR EXISTING BUILDINGS.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.

**CHICAGO PLUMBING CODE.** As defined in Chapter 2 of the *Chicago Construction Codes Administrative Provisions*.”

11. Delete the definition of “code official.”

12. Revise the definition of “dwelling unit” to read:

“**DWELLING UNIT.** As defined in Chapter 2 of the *Chicago Building Code*.”

13. Insert the following definition:

“**EXISTING BUILDING.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code*.”

14. Revise the definition of “high-efficacy lamps” to read:

“**HIGH-EFFICACY LAMPS.** 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 lumens per watt or light fixtures of not less than 55 lumens per watt.”

15. Revise the definition of “historic building” to read:

“**HISTORIC BUILDING.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code*.”

16. Revise the definition of “labeled” to read:

“**LABELED.** As defined in Chapter 2 of the *Chicago Building Code*.”

17. Revise the definition of “listed” to read:  
“**LISTED.** As defined in Chapter 2 of the *Chicago Building Code.*”
18. Insert the following definition:  
“**LOCAL EXHAUST.** An exhaust system that uses one or more fans to exhaust air from a specific room or rooms within a *dwelling unit.*”
19. Insert the following definition:  
“**LOW-SLOPED ROOF.** As defined in Chapter 2 of the *Chicago Building Code.*”
20. Delete the definition of “readily accessible.”
21. Insert the following definition:  
“**READY ACCESS (TO).** That which enables a device, appliance or equipment to be directly reached without requiring the use of a ladder or the removal or movement of any panel or similar obstruction.”
22. Revise the definition of “repair” to read:  
“**REPAIR.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”
23. Revise the definition of “reroofing” to read:  
“**REROOFING.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”
24. Revise the definition of “residential building” to read:  
“**RESIDENTIAL BUILDING.** For this code, Group R-2, R-3, R-4 and R-5 occupancies with no more than four *stories above grade plane.*”
25. Revise the definition of “roof re-cover” to read:  
“**ROOF RECOVER.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”
26. Revise the definition of “roof repair” to read:  
“**ROOF REPAIR.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”
27. Revise the definition of “roof replacement” to read:  
“**ROOF REPLACEMENT.** As defined in Chapter 2 of the *Chicago Building Rehabilitation Code.*”
28. Insert the following definition:  
“**STORY ABOVE GRADE PLANE.** As defined in Chapter 2 of the *Chicago Building Code.*”
29. Revise the definition of “ventilation” to read:

**“VENTILATION.** As defined in Chapter 2 of the *Chicago Building Code.*”

## **CHAPTER 14N-R3 GENERAL REQUIREMENTS**

### **14N-R3-R301 Climate zones.**

The provisions of Section R301 of IECC-RE are adopted by reference with the following modifications:

1. Revise Section R301, in its entirety, to read:

**“R301.1 General.**

*Climate zone 5A* shall be used to determine the applicable requirements in Chapter 4.”

2. Delete all figures and tables accompanying Section R301.

### **14N-R3-R302 Design conditions.**

The provisions of Section R302 of IECC-RE are adopted by reference without modification.

### **14N-R3-R303 Materials, systems and equipment.**

The provisions of Section R303 of IECC-RE are adopted by reference without modification.

## **CHAPTER 14N-R4 RESIDENTIAL ENERGY EFFICIENCY**

### **14N-R4-R401 General.**

The provisions of Section R401 of IECC-RE are adopted by reference with the following modification:

1. Delete Section R401.2.1.

### **14N-R4-R402 Building thermal envelope.**

The provisions of Section R402 of IECC-RE are adopted by reference with the following modifications:

1. Revise Section R402.1.1 to read:

“Wall assemblies in the *building thermal envelope* shall comply with the vapor retarder requirements of Section 1405.3 of the *Chicago Building Code*.

2. Revise Table R402.1.2 by deleting all rows except “5 and Marine 4,” deleting the exception to note b, deleting the first sentence of note c and deleting note f.
3. Revise Table R402.1.4 by deleting all rows except “5 and Marine 4” and deleting note c.
4. Revise Section R402.2.1 to read:

“**Ceilings below sloped roofs.** Installing R-38 insulation over 100 percent of the ceiling area requiring insulation shall satisfy the requirement for R-49 insulation wherever the full height of uncompressed R-38 insulation extends over the wall top plate at the eaves. 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.

5. Revise Section R402.2.2 to read:

“**Low-sloped roofs.** For *low-sloped roofs*, installing R-38 insulation over 100 percent of the ceiling area requiring insulation shall satisfy the requirement for R-49 insulation. For *low-sloped roofs* with above-deck insulation, installing R-30 *continuous insulation* above the roof deck shall satisfy the requirement for R-49 insulation. 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.”

6. Revise Section R402.2.10 by deleting the last sentence.
7. Revise Section R402.2.11 by deleting “or *International Residential Code*, as applicable” from the third sentence.
8. Revise Section R402.2.13 exception item 1 to read:  
“The minimum ceiling insulation *R-value* shall be R-24.”
9. Revise Section R402.3.5 exception by deleting “In *Climate Zones* 2 through 8,”.
10. Revise Section R402.4.1.1 by deleting the last sentence.
11. Revise the first paragraph of Section R402.4.1.2 to read:

“The *building* or *dwelling unit* shall be tested and verified as having an air leakage rate not exceeding four air changes per hour. Testing shall be conducted in accordance with RESNET/ICC 380, ASTM E779 or ASTM E1827 and reported at a pressure of 0.2 inch w.g. (50 Pascals). A written report of the results of the test shall be signed by the party conducting the test and made available to the *building official*. Testing shall be performed after creation of all penetrations of the *building thermal envelope*.”

12. Insert the following after the first paragraph of Section R402.4.1.2:

“**Exceptions:**

1. For *additions, alterations* 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.

2. For heated attached private garages and heated detached private garages accessory to Group R-5 occupancies with not more than 3 *stories above grade plane, building thermal 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. Heated attached private garage space and heated detached private garage space shall be built with *thermal isolation* from all other habitable, conditioned spaces.
  3. For 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 six sides of the *dwelling unit*). 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 *dwelling units*) is being performed, this exception is not allowed and the standard testing requirement of Section 402.4.1.2 apply. For *buildings* with more than seven *dwelling units*, a sampling protocol is allowed. The sampling protocol requires the first seven *dwelling units* to be tested without any failures. Upon successful testing of those initial seven *dwelling units*, remaining *dwelling units* can be sampled at a rate of 1 in 7. If any sampled *dwelling unit* fails compliance with the maximum allowable air leakage rate, two additional *dwelling units* in the same sample set must be tested. If additional failures occur, all *dwelling units* in the sample set must be tested. In addition, all *dwelling units* in the next sample set must be tested for compliance before sampling of further *dwelling units* may be performed.”
13. Revise the first sentence of Section R402.4.4 to read:
- “Where open combustion air ducts provide combustion air to open combustion fuel-burning appliances, the appliances and combustion air opening shall be located outside the *building thermal envelope* or enclosed in a room that is isolated from inside the thermal envelope.”
14. Revise Section R402.5 to read:
- “The area-weighted average maximum fenestration *U*-factor permitted using tradeoffs from Section R402.1.5 or R405 shall be 0.48 for *vertical fenestration* and 0.75 for *skylights*.”

#### **14N-R4-R403 Systems.**

The provisions of Section R403 of IECC-RE are adopted by reference with the following modifications:

1. Revise Section R403.3.2 to read:

“Ducts, air handlers and filter boxes shall be sealed. Joints and seams shall comply with the *Chicago Mechanical Code*.”

2. Revise the last sentence of Section R403.3.3 to read:

“A written report of the results of the test shall be signed by the party conducting the test and made available to the *building official*.”
3. Revise Section R403.3.6 by deleting item 3.
4. Revise the last two sentences of R403.5.1 to read:

“*Access to* automatic controls, temperature sensors and pumps shall be provided.  
*Ready access to* manual controls shall be provided.”
5. Revise Section R403.6 to read:

“The *building* shall be provided with *ventilation* that complies with the requirements of the *Chicago Building Code* and *Chicago Mechanical Code*. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the *ventilation* system is not operating.”
6. Revise the first paragraph of Section R403.6.1 to read:

“*Whole-house mechanical ventilation* shall be provided in accordance with Section 403.6.4. Fans used to provide *whole-house mechanical ventilation* shall meet the efficacy requirements of Table R403.6.1.”
7. Insert a new Section R403.6.2 to read:

**“Recirculation of air.** Exhaust air from bathrooms and toilet rooms shall not be recirculated within a *dwelling unit* 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*.”
8. Insert a new Section R403.6.3 to read:

**“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.”
9. Insert a new Section R403.6.4 to read:

**“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 mechanical 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.*

$$CFM_{total} = 0.01 CFA + 7.5(N_{br} + 1) \quad \text{(Equation 4-1)}$$

where:

$CFM_{total}$  = total required ventilation rate (cfm)

$CFA$  = conditioned floor area of dwelling unit (ft<sup>2</sup>)

$N_{br}$  = number of bedrooms (not less than 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 ventilation rate ( $CFM_{total}$ ) shall be as specified in Table 403.6.4.3(1) or calculated in accordance with Equation 4-1.

**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 (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 = 0.093 m<sup>2</sup>, 1 cubic foot per minute = 0.47 L/s.

**TABLE R403.6.4.3(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>	4.0	3.0	2.0	1.5	1.3	1.0

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

b. Extrapolation beyond the table is prohibited.

**R403.6.4.3.1 Different occupant density.** Table R403.6.4.3(1) assumes two persons per *dwelling unit* and an additional person for each additional bedroom. Where higher occupant densities are known, the airflow rate shall be increased by 7.5 cfm (3.5 L/s) for each additional occupant.

When *approved* by the *building official*, lower occupant densities may be used.

**R403.6.4.3.2 Airflow measurement.** The required ventilation rate is the quantity of outdoor *ventilation* air supplied 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. A written report of the results of the test, indicating the verified airflow rate, shall be signed by the party conducting the test and made available to the *building official*.

**R403.6.4.4 Local exhaust rates.** In Group R-5 occupancies, *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 R403.6.4.4  
MINIMUM REQUIRED LOCAL EXHAUST  
RATE FOR DWELLING UNITS IN GROUP R-5 OCCUPANCIES**

AREA TO BE EXHAUSTED	EXHAUST RATE
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 square foot = 0.093 m<sup>2</sup>, 1 cubic foot per minute = 0.47 L/s.”

10. Revise the first sentence of Section R403.10.1 to read:

“*Access to* an on-off switch controlling electric power to heaters shall be provided. The on-off switch shall be an integral part of the heater mounted on the exterior of the heater or external to and within 3 feet (914 mm) of the heater.”

**14N-R4-R404 Electrical power and lighting systems.**

The provisions of Section R404 of IECC-RE are adopted by reference with the following modification:

1. Revise Section R404.1 by italicizing “high-efficacy lamps.”

**14N-R4-R405 Simulated performance alternative (performance).**

The provisions of Section R405 of IECC-RE are adopted by reference with the following modification:

1. Revise Table R405.5.2(1) by changing the first three lines in second column of the row for “Air exchange rate” to read:

“The air leakage rate at a pressure of 0.2 inch w.g. (50 Pa) shall be 4 air changes per hour.”

#### **14N-R4-R406 Energy rating index compliance alternative.**

The provisions of Section R406 of IECC-RE are adopted by reference without modification.

### **CHAPTER 14N-R5 EXISTING BUILDINGS**

#### **14N-R5-R501 General.**

The provisions of Section R501 of IECC-RE are adopted by reference with the following modifications:

1. Revise Section R501.1 to read:

“The provisions of this chapter shall control the *alteration, repair, addition*, change of use and *change of occupancy of existing buildings* and existing structures.”

2. Revise Section R501.4 to read:

“*Alterations, repairs, additions*, changes of use and *changes of occupancy* to or relocation of *existing buildings* and existing structures shall comply with the provisions for *alterations, repairs, additions*, changes of use, *changes of occupancy* or relocation in this code and the other *Chicago Construction Codes*.”

#### **14N-R5-R502 Additions.**

The provisions of Section R502 of IECC-RE are adopted by reference without modification.

#### **14N-R5-R503 Alterations.**

The provisions of Section R503 of IECC-RE are adopted by reference with the following modification:

1. Revise Section R503.1.1 by adding new exception items 7 and 8 to read:

“7. For *roof replacement of low-sloped roofs*, where the required R-value cannot be provided due to flashing height limitations presented by existing rooftop conditions that are not being altered, such as HVAC equipment, door or window sill height, parapet height, weep holes, and roof flashing heights not meeting the manufacturer’s specifications if reduced, the maximum thickness of insulation compatible with the available space and existing conditions shall be installed.

New insulation shall have a minimum R-value of R-5 per inch. In no case shall a *roof replacement* reduce the R-value of the roof assembly.

8. The R-value for roof assemblies with tapered above-deck insulation shall average R-30.”

#### **14N-R5-R504 Repairs.**

The provisions of Section R504 of IECC-RE are adopted by reference with the following modification:

1. Revise Section R504.2 by adding item 4 to read:
  - “4. Insulation with new roof covering where installed above the existing roof covering of a *low-sloped roof* to create slope between drains or upslope from obstructions to water flow.”

#### **14N-R5-R505 Change of occupancy or use.**

The provisions of Section R505 of IECC-RE are adopted by reference without modification.

## **CHAPTER 14N-R6 REFERENCED STANDARDS**

#### **14N-R6-R600 Chapter R6.**

The provisions of Chapter 6 of IECC-RE are adopted by reference without the following modifications:

1. Insert a new referenced standard to read:

**AMCA**

Air Movement and Control Association International  
30 West University Drive  
Arlington Heights, IL 60004

**ANSI/AMCA 210-ANSI/ASHRAE 51—07: Laboratory Methods of Testing Fans for Aerodynamic Performance Rating**

2. Delete the following ICC references: IBC-18, IEBC-18, IECC-18, IFC-18, IFCG-18, IMC-18, IPC-18, IPSDC-18, IPMC-18 and IRC-18.
3. Delete all NFPA references.