

**2015 INTERNATIONAL ENERGY CONSERVATION CODE
IECC ADMINISTRATION AND GENERAL REQUIREMENTS
(Residential and Commercial)**

Tips

Verify that the plans and documentation have been checked for compliance with the *International Energy Conservation Code* (IECC). Minimum information should include

- Insulation materials and *R*-values
- Window *U*-factors
- Window solar heat gain coefficient (SHGC)
- Mechanical system design criteria
- Mechanical and service water heating system and equipment types, sizes and efficiencies
- Equipment and systems controls
- Duct sealing and insulation *R*-values and testing
- Pipe insulation
- Details for air sealing and testing of the building envelope
- Additional details required for commercial buildings

I. SCOPE AND ADMINISTRATION

- **Compliance**—Residential buildings shall meet the provisions of IECC—Residential Provisions (chapters designated as “RE” with section prefixes of “R”). Commercial buildings shall meet the provisions of IECC—Commercial Provisions (chapters designated as “CE” with section prefixes of “C”). **R101.5, C101.5**
- **Residential building**—For this code, includes detached one- and two-family dwellings and multiple single-family dwellings (townhouses) as well as Group R-2, R-3 and R-4 buildings three stories or less in height above grade plane. **R202, C202**
- **Commercial building**—For this code, all buildings that are not included in the definition of “Residential building.” **R202, C202**
- **Existing building**—With some exceptions this code permits the continued use and maintenance of an existing building or building system lawfully in existence at the time of adoption of this code. **R501.2, C501.2**
- **Historic building**—Any building or structure listed, designated or certified as a historic property by local, state or national listing is exempt from this code provided a report is submitted. **R501.6, C501.6**
- **Additions, alterations, renovations and repairs**—Additions, alterations, renovations and repairs to an existing building, building

system or portion thereof shall conform to the code provisions stipulated in Chapter 5 without requiring the unaltered portion(s) of the existing building or building system to comply with this code.

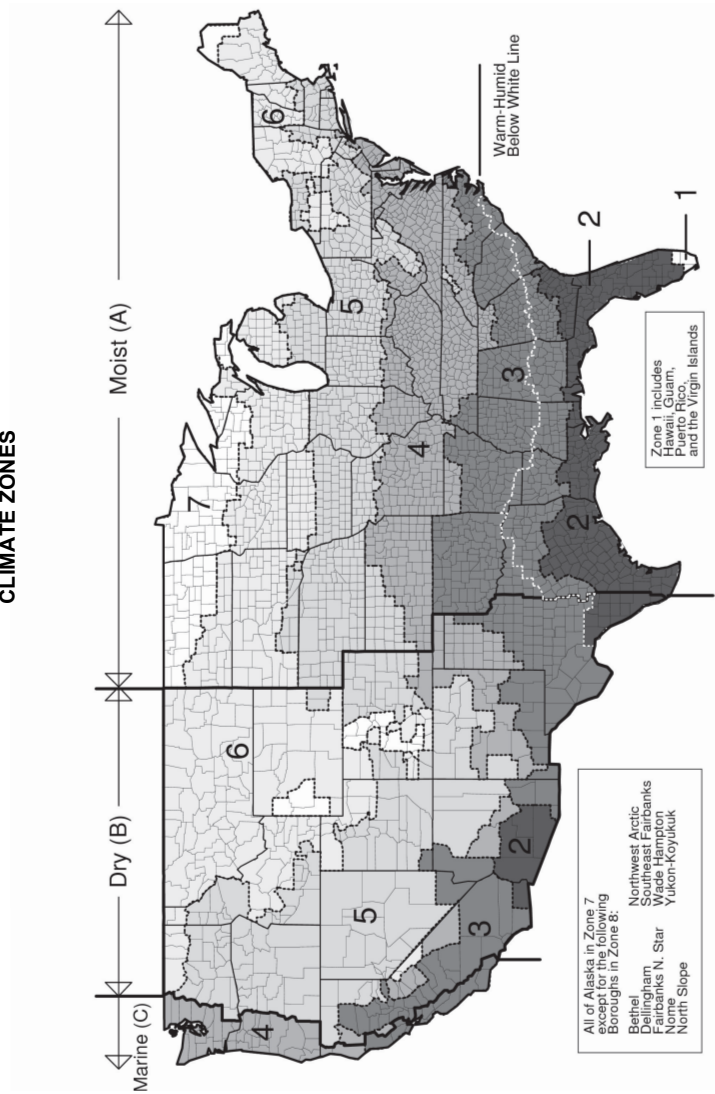
R501.1, C501.1

- **Mixed occupancy**—Where a building includes both residential and commercial occupancies, each occupancy shall be separately considered and meet the applicable provisions of the IECC—Commercial and Residential provisions. **R101.4.1, C101.4.1**
- **Alternate materials or methods**—This code is not intended to prevent the use of any material or prohibit any design or method of construction not specifically prescribed herein, provided that such alternative has been approved by the code official as meeting the intent of this code. **R102.1, C102.1**
- **Above code programs**—The authority having jurisdiction shall be permitted to deem a national, state or local energy efficiency program to exceed the energy efficiency required by this chapter. The requirements identified as “mandatory” in IECC Chapters 4 [CE] and 4 [RE] shall be met. **R102.1.1, C102.1.1**
- **Approval of construction documents**—One set of approved construction documents shall be kept at the site of work. **R103.3.1, C103.3.1**
- **Inspections**
 - **General**—It shall be the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes until approved. Neither the code official nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material, product, system or building component required to allow inspection to validate compliance with this code. **R104.1, C104.1**
 - **Required Inspections**—The code official or his or her designated agent, upon notification, shall make the inspections set forth below:
 - * Footing and foundation
 - * Framing and rough-in
 - * Plumbing rough-in
 - * Mechanical rough-in
 - * Electrical rough-in (commercial only)
 - * Final

The building shall have a final inspection and not be occupied until approved.

R104.2, C104

IECC FIGURE C301.1 AND R301.1
CLIMATE ZONES



II. GENERAL REQUIREMENTS

- **Climate zones**—The applicable climate zone from Figure R301.1 or C301.1 or Table R301.1 or C301.1 shall be used in determining the applicable requirements from Chapters 4 [RE] and 4 [CE].
R301.1, C301.1
- **Material identification**—Materials, systems and equipment shall be identified in a manner to allow determination of compliance with energy provisions of the IECC.
R303.1, C303.1
- **Building thermal envelope insulation**—An *R*-value identification mark shall be applied by the manufacturer and shall be readily identifiable on each piece of insulation 12 inches (305 mm) or more in width.
R303.1.1, C303.1.1
- **Insulation installer certificate**—As an alternative to insulation marking, the insulation installers shall provide a certification listing the type, manufacturer and *R*-value of insulation installed in each element of the building thermal envelope. For blown or sprayed insulation (fiberglass and cellulose), the initial installed thickness, settled thickness, settled *R*-value, installed density, coverage area and number of bags installed shall be listed on the certification. For sprayed polyurethane foam (SPF) insulation, the installed thickness of the areas covered and *R*-value of installed thickness shall be listed on the certification. The insulation installer shall sign, date and post the certification in a conspicuous location on the job site.
R303.1.1, C303.1.1
- **Blown or sprayed roof/ceiling insulation**—The thickness of blown-in or sprayed roof/ceiling insulation shall be written in inches (mm) on markers that are installed at least once for every 300 square feet (28 m²). Each marker shall face the attic access opening. Spray polyurethane foam thickness and installed *R*-value shall be listed on the certificate provided by the insulation installer.
R303.1.1.1, C303.1.1.1
- **Insulation mark installation**—Insulating materials shall be installed such that the manufacturer's *R*-value mark is readily observable upon inspection.
R303.1.2, C303.1.2
- **Fenestration product rating**—The *U*-factor, solar heat gain coefficient (SHGC) and visible transmittance (VT) of glazed fenestration products shall be identified in the form of a label applied directly to the fenestration product by the manufacturer. Products lacking such a label shall be assigned a default value prescribed by the code.
R303.1.3, C303.1.3

**TABLE C303.1.3(1)
DEFAULT GLAZED FENESTRATION U-FACTORS**

FRAME TYPE	SINGLE PANE	DOUBLE PANE	SKYLIGHT	
			Single	Double
Metal	1.20	0.80	2.00	1.30
Metal with Thermal Break	1.10	0.65	1.90	1.10
Nonmetal or Metal Clad	0.95	0.55	1.75	1.05
Glazed Block	0.60			

**TABLE C303.1.3(2)
DEFAULT DOOR U-FACTORS**

DOOR TYPE	U-FACTOR
Uninsulated Metal	1.20
Insulated Metal	0.60
Wood	0.50
Insulated, nonmetal edge, max 45% glazing, any glazing double pane	0.35

**TABLE C303.1.3(3)
DEFAULT GLAZED FENESTRATION SHGC AND VT**

	SINGLE GLAZED		DOUBLE GLAZED		GLAZED BLOCK
	Clear	Tinted	Clear	Tinted	
SHGC	0.8	0.7	0.7	0.6	0.6
VT	0.6	0.3	0.6	0.3	0.6

- **Installation**—All materials, systems and equipment shall be installed in accordance with the manufacturer's installation instructions and the *International Building Code*® (IBC®) or *International Residential Code*® (IRC®) as applicable.
R303.2, C303.2
- **Protection of exposed foundation insulation**—Exterior foundation insulation shall have a rigid, opaque and weather-resistant protective covering that extends a minimum of 6 inches (153 mm) below grade.
R303.2.1, C303.2.1
- **Maintenance information**—Maintenance information shall be furnished for equipment and systems that require preventive maintenance.
R303.3, C303.3

RESIDENTIAL ENERGY EFFICIENCY

Residential buildings include detached one- and two-family dwellings and multiple single-family dwellings (townhouses) as well as Group R-2, R-3 and R-4 buildings three stories or less in height above grade plane.

A new Section R406 in the 2015 IECC covers an alternative compliance method based on an Energy Rating Index (ERI), also known as HERS (Home Energy Rating System). ERI is a numerical value based on a linear scale from 0 to 100. (A residential building that uses no net purchased energy has an index value of 0.) The ERI method must consider all energy used in the residential building. Table R406.4 provides the Maximum Energy Rating Index for residential buildings rated design. The code also addresses compliance software tools, the requirement for a compliance report and the details of specific code official approval. The HERS rating system is based on RESNET Standards (Residential Energy Services Network), RESNET is a not-for-profit membership corporation and a recognized national standards-making body for building energy efficiency rating and certification systems.

**TABLE R406.4
MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
1	52
2	52
3	51
4	54
5	55
6	54
7	53
8	53