



DEPARTMENT OF PLANNING SERVICES  
BUILDING INSPECTION DIVISION  
1555 N 17<sup>TH</sup> AVENUE, GREELEY, CO 80631  
(970) 400-6100

## 2018 IECC RESIDENTIAL ENERGY CODE COMPLIANCE FORM

PERMIT NUMBER: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

DIRECTIONS: Place an X next to Prescriptive, UA, SPA or ERI indicating the path chosen. An air tightness blower door test is required of all paths and must be equal to or less than 3 ACH50.

(A) PRESCRIPTIVE compliance for residential construction, 2018 IECC, Table R402.1.2, Climate Zone 5	
BUILDING ENVELOPE	INSULATION R-VALUE
Roof Insulation in attic	R-49
Roof rafter insulation (not to exceed 500 sq ft)	R-30
Wood frame wall insulation	R-20 or R-13+R5ci* (ci* = continuous insulation)
Crawl space wall	R-15ci*/R-19
Wood Floor (over unconditioned space)	R-30
Basement walls	R-15ci*/R-19
Slab edge insulation (slab on grade foundations)	R-10 (top of slab to 24" below grade)
Windows	U-.30

(B) TOTAL UA ALTERNATIVE (REScheck), 2018 IECC, Section R402.1.4	
Submit a passing UA calculation (REScheck) using 2018 IECC. The rating must be submitted at time of application and must include either address/legal description or parcel number, name of individual completing the rating form, name and version of software tool (i.e. Rescheck).	

(C) SIMULATED PERFORMANCE ALTERNATIVE, 2018 IECC, Section R405	
An energy rating system (HERS rating) must be utilized using an approved and current software tools such as REM/Rate, Ekotrope or EnergyGauge. A preliminary/projected rating passing 2018 IECC must be submitted at time of application. Rating must include address, name of certified Energy Rater and version of software. Final ratings require a blower door test, must include the home energy rating certificate and must be submitted prior to final building inspection.	

(D) ENERGY RATING INDEX (ERI) COMPLIANCE ALTERNATIVE, 2018 IECC, Section R406	
An energy rating system must be utilized using approved and current software tools such as REM/Rate, Ekotrope or EnergyGauge. A preliminary/projected rating ERI analysis must be submitted and shown to have an ERI index of less than or equal to 61. This is specific to climate zone 5 (found in 2018 IECC table R406.4).	

Contractor: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



# IECC Compliance Guide for Homes in Colorado

Code: 2018 International Energy Conservation Code

## Step-by-Step Instructions

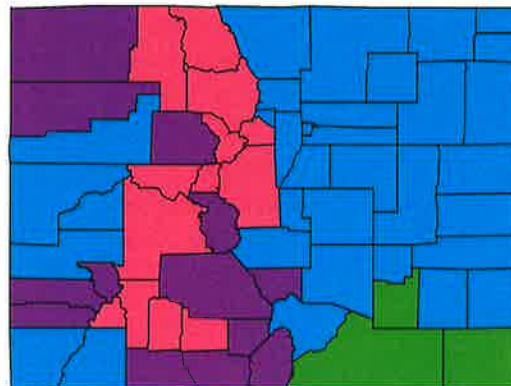
1. Using the climate zone map to the right, match the jurisdiction to the appropriate IECC climate zone. Use the simplified table of IECC building envelope requirements (below) to determine the basic prescriptive requirements for the thermal envelope associated with the jurisdiction.
2. Use the "Outline of 2018 IECC Requirements" printed on the back of this sheet as a reference or a categorized index to the IECC requirements. Construct the building according to the requirements of the IECC and other applicable code requirements.

## The 2018 International Energy Conservation Code

The 2018 IECC was developed by the International Code Council (ICC) and is currently available to states for adoption. The IECC is the national model standard for energy-efficient residential construction recognized by federal law. Users of this guide are strongly recommended to obtain a copy of the IECC and refer to it for any questions and further details on compliance. To obtain a copy of the 2018 IECC, contact the ICC or visit [www.iccsafe.org](http://www.iccsafe.org). IECC compliance training is also available from many sources.

## Limitations

This guide is an energy code compliance aid for Colorado based upon the simple prescriptive option of the 2018 IECC. It does not provide a guarantee for meeting the IECC. This guide is not designed to reflect the actual energy code, with amendments, if any, adopted in Colorado and does not, therefore, provide a guarantee for meeting the state energy code. For details on the energy code adopted by Colorado, including how it may differ from the IECC, please contact your local building code official. Additional copies of this guide are available on [www.reca-codes.com](http://www.reca-codes.com).



CLIMATE ZONE 7			
Clear Creek	Jackson	Pitkin	Summit
Grand	Lake	Rio Grande	
Gunnison	Mineral	Routt	
Hinsdale	Park	San Juan	

CLIMATE ZONE 6			
Alamosa	Costilla	Moffat	San Miguel
Archuleta	Custer	Ouray	
Chaffee	Dolores	Rio Blanco	
Colfax	Eagle	Saguache	

CLIMATE ZONE 5			
Adams	Elbert	La Plata	Prowers
Arapahoe	El Paso	Larimer	Pueblo
Bent	Fremont	Lincoln	Sedgwick
Boulder	Garfield	Logan	Teller
Cheyenne	Gilpin	Mesa	Washington
Crowley	Huerfano	Montezuma	Weld
Delta	Jefferson	Montrose	Yuma
Denver	Kiowa	Morgan	
Douglas	Kit Carson	Phillips	

CLIMATE ZONE 4		
Baca	Las Animas	Otero

	Windows			Insulation			Foundation			
	Fenestration U-Factor	Skylight U-Factor	Glazed Fenestration SHGC	Ceiling R-Value	Wood Frame Wall R-Value	Mass Wall R-Value	Floor R-Value	Basement Wall R-Value	Slab R-Value and Depth	Crawl Space Wall R-Value
Zone 7	0.30	0.55	NR	49	20 + 5 or 13 + 10	19/21	38	15/19	10, 4 ft	15/19
Zone 6	0.30	0.55	NR	49	20 + 5 or 13 + 10	15/20	30	15/19	10, 4 ft	15/19
Zone 5	0.30	0.55	NR	49	20 or 13 + 5	13/17	30	15/19	10, 2 ft	15/19
Zone 4	0.32	0.55	0.40	49	20 or 13 + 5	8/13	19	10/13	10, 2 ft	10/13

NR indicates No Requirement

# Outline of 2018 IECC Requirements for Colorado Homes

The simplified table of building envelope requirements (on the previous page) applies to new residential buildings, as defined in the IECC, with wood framing and/or mass walls. For steel-framed buildings, the same window requirements apply; however, refer to IECC section R402.2.6 for specific insulation R-value requirements. The table also applies to all additions, alterations and replacement windows. The table is based upon the thermal envelope requirements in the 2018 IECC's prescriptive compliance option for the appropriate climate zones (Table R402.1.2) and does not reflect any state-specific amendments to the IECC.

## Fenestration (IECC Sections R303.1.3, R402.3, R402.5)

- Fenestration (including all windows and doors) and Skylight U-factors are maximum acceptable levels. The Glazed Fenestration SHGC maximums apply to all windows, skylights and glazed doors. An area-weighted average of fenestration products is permitted to satisfy these requirements. (See IECC section R402.3.)
- Window, door and skylight U-factors and SHGCs must be determined by an accredited, independent laboratory, and labeled and certified by the manufacturer, in accordance with a National Fenestration Rating Council (NFRC) rating. Products without an NFRC label must use the default values in IECC section R303.1.3. See [www.nfrc.org](http://www.nfrc.org) for more details on the NFRC rating system.
- Windows, skylights, and sliding glass doors must also be labeled in a manner to show that they meet the IECC's air infiltration requirements.
- Up to 15 square feet of glazed fenestration is permitted to be exempt from the U-factor and SHGC requirements. One side-hinged opaque door assembly up to 24 square feet is exempted from the Fenestration U-factor requirement. Special exceptions may apply for Fenestration U-factor requirements in thermally isolated sunrooms. (See IECC section R402.3.5.)

## Insulation (IECC Sections R303.1.4 and R402.2)

- Insulation R-values are minimum acceptable levels and must be determined according to Federal Trade Commission rule.
- R-values for walls represent the sum of cavity insulation plus insulated sheathing, if any. The second R-value for mass walls applies when more than half the insulation is on the interior of the mass wall.
- The insulation for basement walls must be from the top of the wall down 10 feet below grade or to the basement floor, whichever is less. Basement wall insulation is not required in warm-humid locations as defined in IECC Figure R301.1 and Table R301.3(1). Insulation requirements for crawl space walls are further specified in IECC section R402.2.11.
- Floor insulation must be installed to maintain contact with the underside of the subfloor decking. Refer to the code for details allowing insulation to be installed on the lower side of the ceiling cavity.
- Access doors from conditioned spaces to unconditioned spaces (e.g., attics and crawl spaces) shall be weatherstripped and insulated to a level equivalent to the insulation on the surrounding surfaces. Vertical access doors are permitted to meet the fenestration requirements in Table R402.1.2.
- Insulation requirements for slab on grade floors are further specified in IECC section R402.2.10. R-5 insulation shall be provided under the full slab area for heated slabs, in addition to slab edge insulation R-values.

- Special Insulation exceptions related to ceilings with or without attic spaces, masonry veneer and thermally isolated sunrooms are set forth in IECC section R402.

## Ducts (IECC Section R403.3)

- Ducts must be tested and verified to have total leakage of no more than 4cfm/100 sq. ft. (or 3cfm if air handler is not installed), except where air handler and all ducts are located inside conditioned space. Air handlers and filter boxes must also be properly sealed.
- Supply and return ducts shall be sealed and insulated as follows:

Duct Location	< 3 inches in diameter	≥ 3 inches in diameter
Attic	R-6	R-8
Other portions of the building	R-4.2	R-6
Completely inside conditioned space	Exempt	Exempt

- Special provisions apply to ducts buried within ceiling insulation. (See IECC section R403.3.6.)

## Air Sealing (IECC Section R402.4)

- The building envelope is required to be properly sealed and tested, and verified as having an air leakage rate no higher than 3 ACH at 0.2 inch w.g. (50 Pascals) in climate zones 4 through 7. Recessed lighting must also be sealed to limit air leakage.

## Documentation (IECC Sections R103, R303.3, R401.3)

- The appropriate construction documents and preventative maintenance information must be provided, along with a permanent certificate listing certain insulation, window and HVAC performance information.

## Systems (IECC Section R403)

- HVAC system must be properly sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J or other approved methodologies. New or replacement heating and cooling equipment must meet or exceed federal minimum efficiency requirements for geographic location in which it is installed.
- Temperature controls must be installed, including a programmable thermostat where required.
- Mechanical system piping must be insulated to a minimum of R-3. Hot water piping must be insulated to R-3, with certain exceptions.
- Specific requirements apply to circulating hot water systems, mechanical ventilation, snow melt systems, and pools.

## Lighting (IECC Sections R202 and R404.1)

- A minimum of 90% of permanently installed fixtures must contain only high-efficacy lamps as defined in the IECC.