

# Energy Code Checklist for Residential Construction

(Required for all New Residential Buildings, Additions and other Residential Building Permits as Applicable)

The code sections listed are from Chapter 4 in the 2009 IECC. There are different requirements for residential with 4 or more stories and commercial.

Project 1340 Steamboat Blvd, Steamboat Springs, CO 80487 Address		Permit #
Owner/ David and Mendy Bristol Agent Graham Custom Homes (Josh Graham)		Checked By
Phone # 970-846-5552	Email joshgch@hotmail.com	Date
<b>Project Type:</b> (Check One) <input checked="" type="checkbox"/> New Building <input type="checkbox"/> Addition <input type="checkbox"/> Renovation		Method

## Required Documentation with Permit Submittal:

1. **Energy Compliance Documentation** – Choose ONE method. All projects shall comply with Sections 401, 402.4, 402.5, and 403.1, 403.2.2, 403.2.3, and 403.3 through 403.9 (referred to as mandatory provisions)
  - ☒ **Prescriptive** (402.1 through 402.3, 403.2.1 & 404.1 & mandatory requirements) - **USE THIS FORM (#1,2,3,4,5,6)**
  - ☐ **Trade Off** (402.1 through 402.3, 403.2.1 & 404.1 & mandatory requirements) - **USE THIS FORM (#1,2,3,4,6)** and attach documentation to show compliance (i.e. REScheck). REScheck must include compliance form, inspection checklist and certificate. [www.energycodes.gov/REScheck](http://www.energycodes.gov/REScheck) (it's free & easy!).
  - ☐ **Performance** (405 & mandatory requirements) - **USE THIS FORM (#1,2,3,4)** and attach documentation to show compliance. Documentation must include standard reference design and proposed design.
2. **Mandatory Requirements** – All projects must meet the mandatory requirements of the IECC (401, 402.4, 402.5, 403.1, 403.2.2, 403.2.3, & 403.3 through 403.9). **COMPLETE ALL ITEMS (a through q)**

Mandatory Requirements	Compliance
a) Building Thermal Envelope (402.4.1) Seal building envelope from air infiltration	X Will Comply
b) Air Sealing and Insulation (402.4.2) This is mandatory for all new dwelling units. 3 <sup>rd</sup> Party Verification of sealing and insulation-choose one method.	<input type="checkbox"/> Blower Door    X Visual Insp.
c) Fireplaces (402.4.3) Wood-burning have gasketed doors and outdoor combustion air (Fireplaces illegal in Steamboat Airshed and Steamboat Springs)	X Will Comply <input type="checkbox"/> N/A
d) Fenestration Air Leakage (402.4.4) Windows, sliding glass doors, skylights	X ≤ 0.3 cfm/sf
e) Fenestration Air Leakage (402.4.4) Swinging doors	X ≤ 0.5 cfm/sf
f) Recessed Lighting (402.4.5) IC-rated and air tight when in thermal envelope	X Will Comply <input type="checkbox"/> N/A
g) Heating/Cooling System Controls (403.1) Programmable thermostat for furnace	X Will Comply <input type="checkbox"/> N/A
h) Duct Sealing (403.2) All ducts sealed with approved material	X Will Comply <input type="checkbox"/> N/A
i) Duct Tightness Testing (403.2.2) Required if furnace/duct is outside of thermal envelope	<input type="checkbox"/> Test 1 <input type="checkbox"/> Test 2    X N/A
j) Building Cavities (403.2.3) Building framing cavities shall not be used as supply ducts	X Will Comply <input type="checkbox"/> N/A
k) Mechanical System Piping Insulation (403.3) R-3 minimum for > 105°F or <55°F	X Will Comply <input type="checkbox"/> N/A
l) Circulating Hot Water System (403.4) Piping insulated R-2 min. and on/off switch	X Will Comply <input type="checkbox"/> N/A
m) Mechanical Ventilation (403.5) Outdoor air intakes/exhaust require dampers	X Will Comply <input type="checkbox"/> N/A
n) Equipment Sizing (403.6) Heating/Cooling equip. sized per M1401.3 of IRC	X Will Comply <input type="checkbox"/> N/A
o) Systems Serving Multiple Dwelling Units (403.7) Shall comply with 503 & 504 (comm.)	<input type="checkbox"/> Will Comply    X N/A
p) Snow Melt System Controls (403.8) Automatic Shutoff	<input type="checkbox"/> Will Comply    X N/A
q) Pools (403.9) Pool heaters, Time Switches, Pool Covers	<input type="checkbox"/> Will Comply    X N/A

3. **Building Cross Section** – Required for all new buildings and additions. Additional documents may be required by the Building Official. Minimum (1) section required. *For interior alterations include documents to illustrate code compliance.*
4. **Floor Plan** – Required for all new buildings and additions. Floor plan must indicate thermal envelope, conditioned/unconditioned spaces and heating system location.
5. **Prescriptive Requirements – COMPLETE THIS TABLE**, if prescriptive method is chosen.

Building Components	Prescriptive Standard	Actual Value	Remarks
<b>Insulation (402.2) Prescriptive Standard is Minimum R-Value</b>			
Ceilings with Attic Spaces (402.2.1)	R-49	R-49	R-49 for standard truss, can be reduced to R-38 with Raised Heel/Energy Truss
Ceilings without Attic Spaces (402.2.2)	R-38	R-38	Limited to 500 sf OR 20% of the total insulated ceiling area, whichever is less (Not U-factor or Total UA)
Wood Frame Wall	R-21	R-21	R-21 for interior cavity
Floors Over Unconditioned Space (402.2.6)	R-38	R-38	Floor insulation shall maintain permanent contact with subfloor decking
Basement Walls (402.2.7)	R-15/19	R-19	R-15 continuous insulation on the interior or exterior or R-19 for interior wall cavity
Slab-on-Grade Floors (402.2.8) *R-5 shall be added for heated slabs**	R-10*	R-10	Insulation depth shall be the depth of the footing (4 foot minimum)
Unventilated Crawl Space Walls (402.2.9)	R-10 or R-13		R-10 continuous insulation on the interior or exterior or R-13 cavity at the interior of the basement wall
<b>Fenestrations (402.3) Prescriptive Standard is Maximum U-Factor</b>			
Windows, Sliding Glass Doors, and Swinging Doors	U-0.35	.35	An area weighted average may be used to satisfy the U-factor requirements but must include all windows, skylights, glass doors and opaque doors. Provide documentation if this is used.
Skylights	U-0.60	N/A	

(The above table is based on wood frame construction and common building practices, if not addressed in the table above, please attach separate documentation to illustrate code compliance. Values are based on Climate Zone 7 from Chapter 3 in the 2009 IECC)

#### 6. Other Prescriptive requirements:

Other Requirements	Compliance
<b>Certificate (401.3)</b> Permanent certificate posted on elec. panel with energy values	X Will Comply
<b>Duct Insulation (403.2.1)</b> Supply ducts in attic $\geq$ R-8, all other ducts outside thermal envelope $\geq$ R-6	X Will Comply <input type="checkbox"/> N/A
<b>Lighting Equipment (404.1)</b> A minimum of 50% of lamps permanently installed must be high efficacy	X Will Comply

#### Notes:

- i. For further clarification on any of the above items, please consult the International Energy Conservation Code (IECC). The IECC may be purchased through the International Code Council at [www.iccsafe.org](http://www.iccsafe.org) or 1-888-ICC-SAFE. On line read-only at <http://publicecodes.cyberregs.com/icod/iecc/IC-P-2009-000014.htm?bu2=IC-P-2009-000019>
- ii. \*\*Radiant piping used in slab-on-grade applications shall have insulating materials having a minimum R-value of 5 installed beneath the piping. On line read-only at [http://publicecodes.cyberregs.com/icod/irc/2009/icod\\_irc\\_2009\\_21\\_sec003.htm?bu=IC-P-2009-000002&bu2=IC-P-2009-000019](http://publicecodes.cyberregs.com/icod/irc/2009/icod_irc_2009_21_sec003.htm?bu=IC-P-2009-000002&bu2=IC-P-2009-000019)
- iii. For a Thermally Isolated Sunroom (greater than 40% glazing area of walls and roof) addition, refer to IECC
- iv. For free, up-to-date energy references, energy training and energy code info, visit [www.energycodes.gov](http://www.energycodes.gov)