



2018 Residential Energy Code Adoption

As of January 1, 2023, in compliance with House Bill 22-1362, Mesa County will begin enforcing the 2018 International Energy Conservation Code ("IECC"). The attached **Energy Code Checklist for Residential Construction** ("checklist") should serve as a guide for residential plan submission and inspection requirements.

- The Energy Code Checklist for Residential Construction will be required to be completed and submitted with every residential new build, remodel, addition, alteration, repair, and other permits as applicable. The form must be completed in its entirety for all projects.
- The items covered on the Energy Code Checklist for Residential Construction must be shown on the submitted plans or submitted along with them as applicable (ex. Manuals S & J, ResCheck, Performance Report, etc.).
- Plans submitted prior to January 1, 2023 will be inspected based on the 2009 IECC if picked up before March 1, 2023. Plans that are submitted prior to January 1, 2023 but not issued before March 1, 2023 will be subject to the 2018 IECC. This may require a plan revision to verify compliance.
- Additional inspections that may be required to be scheduled include:
 - Foundation insulation (prior to backfilling)
 - Air barrier (before covering)
- Additional documentation that must be submitted includes:
 - Manual J (at plan review)
 - Manual S (at plan review)
 - Equipment Sizing and Efficiency Rating (on plans or at plan review)
 - ResCheck* (at plan review)
 - Blower Door Results (when completed but before CO)
 - Duct Tightness Results* (when completed)

There are free trainings and resources available at www.energycodes.gov.

**if required (see attached form for requirements)*

This is a working document and is subject to change



2018 IECC Residential Inspection Timing Guidelines

Mandatory Requirements	Verification time
a) Certificate (R401.3)	At final inspections
b) Building Thermal Envelope (R402.4.1) <ul style="list-style-type: none"> • Air Barrier(have install instructions on site for inspection) • Foundation Insulation 	Depends on method, prior to concealment
c) Air Sealing and Insulation Testing/Insp (R402.4.1.2)	At insulation inspection and Blower Door Results by finals
d) Fireplaces (R402.4.2)	At or before final building inspection
e) Fenestration Air Leakage (R402.4.3)	At rough-in inspections
f) Recessed Lighting (R402.4.5)	At final inspections
g) Heating/Cooling System Controls (R403.1.1)	At final inspections
h) Duct Sealing (R403.3.2)	At rough-in inspections
i) Building Cavities (R403.3.5)	At rough-in inspections
j) Mechanical System Piping Insulation (R403.4)	At rough-in inspections
k) Circulating Hot Water System (R403.5)	At rough-in inspections
l) Mechanical Ventilation (R403.6)	At rough-in inspections
m) Equipment Sizing (R403.7)	At plan review and furnace/boiler inspections
n) Hot Water Pipe Insulation (R403.5.3)	At underground and rough-in plumbing inspections
o) Lighting Equipment (R404.1)	At final inspections
p) Duct Insulation (R403.3.1)	At insulation inspection
q) Duct Tightness Test (R403.3.3)	Test results by final inspections
r) Eave Baffle (R402.2.3)	At insulation inspection
s) Attic Hatches (R402.2.4)	At final inspections

Energy Code Checklist for Residential Construction

(This form is required for New Residential Buildings, Additions, Alterations, Repairs, and other Permits as Applicable)

Project Address:		Permit #:
Applicant Name:	Signature:	Checked By:
Phone #:	Email:	Date:
Project Type: (check one) <input type="checkbox"/> New Building <input type="checkbox"/> Addition <input type="checkbox"/> Renovation		

Required Documentation with Permit Submittal:

1. **Energy Compliance Pathway**- Choose ONE method. **All methods must meet mandatory requirements.**
 - Prescriptive Method**- Complete this form and submit with plans
 - Trade Off Method**- Complete this form and attach documentation to show compliance (i.e. ResCheck). ResCheck must include compliance form, inspection checklist, and certificate. www.energycodes.gov/rescheck
 - Simulated Performance Alternative**- Provide 2018 IECC Performance Report (R405)
 - Energy Rating Index**- Provide 2018 IECC Energy Rating Index Report (R406)
2. **Mandatory Requirements**- All projects must meet the **mandatory** requirements of the IECC.

Mandatory Requirements	Compliance	Verification (for inspector)
a) Certificate (R401.3) Permanent certificate posted on/near elec. Panel with energy values	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
b) Building Thermal Envelope (R402.4.1) Seal building envelope from air infiltration	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
c) Air Sealing and Insulation Testing/Insp. (R402.4.1.2) Verify sealing and insulation- Blower Door Test Required for NEW BUILDINGS ONLY, Visual for remodels, additions, etc.	<input type="checkbox"/> Blower door (provide report) <input type="checkbox"/> Visual Inspection	<input type="checkbox"/>
d) Fireplaces (R402.4.2) Wood-burning have tight flue damper and outdoor combustion air	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
e) Fenestration Air Leakage (R402.4.3) Windows, sliding glass doors, skylights	<input type="checkbox"/> ≤ 0.3 cfm/sf (Check Label) <input type="checkbox"/> N/A	<input type="checkbox"/>
f) Fenestration Air Leakage (R402.4.3) Exterior swinging doors	<input type="checkbox"/> ≤ 0.5 cfm/sf (Check Label) <input type="checkbox"/> N/A	<input type="checkbox"/>
g) Recessed Lighting (R402.4.5) IC-rated and air tight when in thermal envelope	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
h) Heating/Cooling System Controls (R403.1.1) Programmable thermostat for furnace	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
i) Duct Sealing (R403.3.2) All ducts sealed with approved material(s)	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
j) Building Cavities (R403.3.5) Building framing cavities shall not be used as ducts, both supply and return	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
k) Mechanical System Piping Insulation (R403.4) R-3 minimum for > 105° F or < 55° F	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
l) Circulating Hot Water System (R403.5) Piping insulated R-3 min. and on/off switch	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
m) Mechanical Ventilation (R403.6) Ventilation per the IRC with dampers at outdoor air intakes and exhausts that close when the system is not operating	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
n) Equipment Sizing (R403.7) Heating/Cooling equipment sized per ACCA Manuals S & J (These documents must be provided)	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
o) Hot Water Pipe Insulation (R403.5.3) R-3 Insulation on: <ul style="list-style-type: none"> • Piping ≥ ¾" in nominal diameter • Piping serving more than one dwelling unit • Piping located outside the conditioned space • Piping from the water heater to a distribution manifold • Piping located under a floor slab • Buried piping • Supply and return piping in recirculation systems other than demand recirculation systems 	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
p) Lighting Equipment (R404.1) Min. 90% of lamps in permanent light fixtures are high efficacy	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>

3. **Building Wall Section**- Required for all new buildings and additions. Minimum of one section required. (For interior alterations, include documents to illustrate code compliance as necessary.)
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. These items must be shown on the Building Wall Section or Floor Plan (as applicable).

Building Components	Prescriptive Standard	Proposed/ Actual Value	Remarks	Verification (for inspector)
Insulation (R402.2) Prescriptive Standard is Minimum R-Value				
a) Ceilings with Attic Spaces (R402.2.1)	R-49/ R38		R-49 for standard truss, can be reduced to R-38 with Raised Heel/Energy Truss	<input type="checkbox"/>
b) Ceilings without Attic Spaces (R402.2.2)	R-30		Limited to 500 sf or 20% of the total insulated ceiling area, whichever is less	<input type="checkbox"/>
c) Wood Frame Wall (Table R402.1.2)	R-20 or R-13+5		R-20 for interior cavity or R-13 for interior cavity plus R-5 continuous insulation	<input type="checkbox"/>
d) Floors over Unconditioned Space (R402.2.8)	R-30		Floor insulation shall maintain permanent contact with subfloor decking	<input type="checkbox"/>
e) Basement Walls (R402.2.9)	R-15 or R-19		R-15 continuous insulation on the interior or exterior or R-19 for interior wall cavity	<input type="checkbox"/>
f) Slab-on-Grade Floors (R402.2.10)	R-10		Insulation shall extend 2 feet minimum with a minimum of 10" of coverage with soil	<input type="checkbox"/>
g) Crawl Space Walls (R402.2.11)	R-15 or R-19		R-15 continuous insulation on the interior or exterior or R-19 for interior wall cavity	<input type="checkbox"/>
Fenestrations (R402.3) Prescriptive Standard is Maximum U-Factor				
h) Windows, Sliding Glass Doors, and Swinging Doors with >50% glazing	U-0.30		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 documentations if this is used.	<input type="checkbox"/>
i) Skylights	U-0.55			<input type="checkbox"/>

(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 5B in the 2018 IECC).

6. Other Prescriptive Requirements:

Other Prescriptive Requirements if applicable	Compliance	Verification (for inspector)
Duct Insulation (R403.3.1) S & R in attics \geq R-8 for ducts \geq 3" diameter and \geq R-6 for ducts < 3" diameter. S & R ducts in other portions of the building \geq R-6 for ducts 3" diameter and \geq R-4.2 for ducts < 3" diameter	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
Duct Tightness Test (R403.3.3) Required if furnace or any duct is outside of the thermal envelope	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
Eave Baffle (R402.2.3) For air-permeable insulations in vented attics, a baffle shall be installed adjacent to soffit and eave vents.	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>
Attic Hatches (R402.2.4) Access doors to attic must be weather-stripped and insulated	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A	<input type="checkbox"/>

Notes:

- i. For further clarification of the above items, please refer to the 2018 International Energy Conservation Code (IECC)
- ii. Mesa County Building Department has other useful code related materials available at www.mesacounty.us
- iii. For free, up-to-date energy references, energy training, and energy code info, visit www.energycodes.gov