

Residential Energy Code Guide for Idaho

R402.4.4 Rooms Containing Fuel Burning Appliances

Where open combustion air ducts serve open combustion, fuel burning appliances:

- The open duct and appliance shall be located outside the *building thermal envelope* or enclosed in a sealed and insulated room, isolated from inside the thermal envelope.
- The door into the room shall be fully gasketed and any water lines and ducts in the room insulated in accordance with R403.
- Combustion air duct passing through conditioned space shall be insulated to a minimum R-8.
- Exceptions: Direct vent appliances with both intake and exhaust pipes installed continuous to the outside, Fireplaces and stoves installed per code.

R402.4.5 Recessed Lighting

- IC-rated and labeled, air leakage rate 2 cfm max.
- Gasketed or caulked at the ceiling.

R403.3.2 Duct Sealing

- Ducts, air handlers and filter boxes shall be sealed.
- Joints and seams shall comply with either the IMC or IRC.

R403.3.4 Duct Leakage

Total leakage shall be measured in accordance with R403.3.3 as follows:

- Rough-In: less than or equal to 4 cubic feet /min/100 ft² when installed at time of test.
- Less than or equal to 3 cubic feet/min/100 ft² when not installed at time of test.
- Post-Construction: Total leakage less than or equal to 4 cubic feet/min/100 ft².

R403.3.5 Building Cavities

Shall not be used as ducts or plenums.

R403.5.3 Hot Water Pipe Insulation

Insulation for hot water piping with a thermal resistance, *R*-value, of not less than R-3 shall be applied to the following:

1. Piping serving more than one dwelling unit.
2. Piping located outside the *conditioned space*.
3. Piping located under a floor slab.
4. Buried piping.
5. Supply and return piping in recirculation systems other than demand recirculation systems.

R403.6 Mechanical Ventilation

- In compliance with IRC or IMC, as applicable.
- Outdoor air intake and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

R403.7 Equipment Sizing Per ACCA Manual S, based on loads calculated per ACCA Manual J.

R403.9 Snowmelt Controls

Mandatory controls- Auto shutoff: no moisture, pavement T > 50°F and air T > 40°F.

R403.10 Pools and In-Ground Spas

Readily accessible shutoff switches for heaters (R403.10.2) and timers for pumps and heaters (R403.10.3), AND vapor-retardant covers for all pools.

R404.1 Lighting

A minimum of 75% of permanently installed fixtures must have high-efficacy lamps.

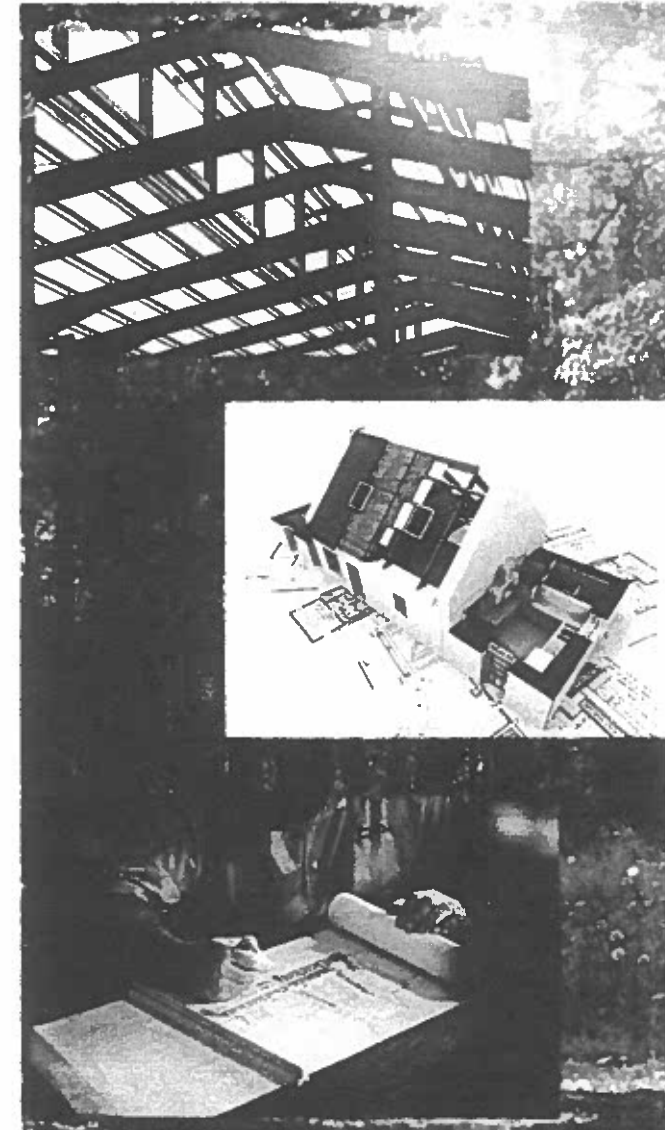
R405 Simulated Performance Alternative

Third Party Computer modeling, showing proposed home is more efficient than standard reference design home.

R406 Energy Rating Index (ERI) Compliance Alternative

ERI in accordance with RESNET/ICC 301. Third Party HERS rater uses modeling to generate an ERI or HERS score, equal to or lower than the required score for the applicable Climate Zone.

- Climate Zone 5 - 68
- Climate Zone 6 - 68



2018 International Energy Conservation Code (IECC)

**Idaho Amended Sections in Red text
Pending Legislative Approval in Spring of
2020**

R103.2 Construction Documents

U-factors, R-value and other pertinent data must be shown on plans, energy compliance reports, and HVAC design documents.

R202 Definitions

CONTINUOUS AIR BARRIER. A combination of materials and assemblies that resist or prevent the passage of air through the *building thermal envelope*.

CONTINUOUS INSULATION (ci).

Insulating material that is continuous across all structural members without thermal bridges other than fasteners and service openings. It is installed on the interior or exterior, or is integral to any opaque surface, of the *building envelope*.

RESIDENTIAL BUILDING. One- and two-family dwellings, townhouses, and Group R-2, R-3 and R-4 buildings, 3 stories or less in height above grade plane.

R401.2 Compliance Options

1. 2018 Prescriptive Table R402.1.2 and Total UA Alternative - R402.1.5
2. Simulated Performance Alternative - R405
3. ERI (Energy Rating Index)/HERs - R406

R401.3 Certificate

Permanent certificate listing performance values, factors, and ratings for all building thermal envelope components, shall be posted in approved location.

R402.4.1.2 Air Barrier & Insulation Installation and Inspection per Table R402.4.1.2

- Insulation and air barriers installed in accordance with manufacturer's instructions.
- Continuous air barrier installed at the building thermal envelope.

- All gaps and voids sealed between conditioned and un-conditioned spaces.
- Air-permeable insulation (fiberglass, rock-wool, cellulose) is not used for air sealing.
- Closed-cell foam is the only insulation that also serves as an air barrier.
- Dropped ceilings/Soffits, shafts and chases shall be capped with an air barrier lid and sealed- (attic insulation does not drop down into soffits.)
- Walls shall be framed to allow insulation in corners and in headers.
- Wall insulation shall be enclosed on 6 sides.
- Include air barrier on backside of knee-walls.
- Wall batt insulation shall be cut neatly to fit wall cavities and around all pipes, wiring and boxes.
- Recessed can lights, boxes and HVAC boots penetrating the thermal envelope shall be sealed.
- Exterior walls adjacent to fireplaces, tubs, showers shall include an inside surface air barrier.
- Air sealing shall be provided between the garage and conditioned spaces.
- Floor insulation in contact with underside of floor or topside of sheathing/ lid below.
- Air barrier underside of cantilevers.

R402.2.4 Access hatches and doors

- Must be weather stripped.
- Attic hatch must have insulation of required R-value attached to the panel.
- Insulation dam required around access opening in ceilings.
- Vertical access doors must meet fenestration requirements - Table R402.1.2.

R402.4 Air Leakage

The components of the Building Thermal Envelope as listed in Table R402.1.1 shall be installed in accordance with the manufacturer's instructions.

R402.4.1.2 Building Thermal Envelope

Testing building envelope tightness and insulation installation shall be considered acceptable when tested **air leakage is less than five (5) air changes per hour (ACH)**

when tested with a blower door at a pressure of 33.5 psf (50Pa). Testing shall occur after rough in and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation and combustion appliances.

- Effective July 1, 2021, twenty percent (20%) of all new single-family home construction shall be tested to establish air leakage rates.

IRC-R806.5 Unvented attic and unvented enclosed rafter assemblies

Air-impermeable insulation, closed cell spray foam or rigid foam board, must be installed on the cold side of the roof assembly for condensation control.

Insulation for Condensation Control IRC R806.5		
Climate Zone	5	6
Minimum Rigid Board on Air-Impermeable Insulation R-Value ^{a,b}	R-20	R-25

R402.4.2 Fireplaces

New wood-burning fireplaces shall have tight-fitting flue dampers or doors, and outdoor combustion air. Where using tight-fitting doors on factory-built fireplaces listed and *labeled* in accordance with UL 127, the doors shall be tested and *listed* for the fireplace.



For more additional copies contact:
tukarica@gmail.com

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New Building Codes **Effective January 1, 2021**

Section 9-1-1. Code Adoption: That the approved editions of the following nationally recognized codes and appendix are adopted as the official building codes of the County of Elmore:

- a. 2018 International Building Code (IBC)
- b. 2018 International Residential Code (IRC) parts I-III and IX
- c. 2018 International Existing Building Code (IEBC)
- d. 2018 International Energy Conservation Code (IECC)
- e. 2015 International Fire Code
- f. 2018 Idaho Manufactured Homes Standards
- g. Prescriptive items are also added and can be reviewed in our office located at 520 E 2nd S St, Mountain Home, ID 83647

All above items can be found at this location on-line:

<https://codes.iccsafe.org/>

Elmore County web site

<https://elmorecounty.org/>

Idaho Department of Building Safety:

<https://dbs.idaho.gov/>

Idaho Department of Building Officials:

<https://www.idaho.org/code-updates>

Key Changes to the 2018 International Residential Code for One-and Two-Family Dwellings

- An updated seismic map reflects the most conservative Seismic Design Category (SDC) based on any soil type and a new map reflects less conservative SDCs when Site Class A, B or D is applicable.
- The townhouse separation provisions now include options for using two separate fire-resistant-rated walls or a common wall.
- An emergency escape and rescue opening is no longer required in basement sleeping rooms where the dwelling has an automatic fire sprinkler system and the basement has a second means of egress or an emergency escape opening.
- The exemption for interconnection of smoke alarms in existing areas has been deleted.
- New girder/header tables have been revised to incorporate the use of #2 Southern Pine in lieu of #1 Southern Pine.
- New tables address alternative wood stud heights and the required number of full height studs in high wind areas.

Recommendation of adoption by the Idaho Building Code Board with the following amendments:

- Correlated language with the IBC code on personal care, custodial care and child care
- More options to address protection of roof eaves close to property lines
- Elimination of requirement to protect floors of unfinished basements
- Exceptions from smoke detectors for exterior work or trade permits
- Replacement of footing section and Table to former edition of code

Key Changes in the 2018 International Building Code (IBC)

- Accessory storage spaces of any size are now permitted to be classified as part of the occupancy to which they are accessory.
 - New code sections have been introduced addressing medical gas systems and higher education laboratories.
 - Use of fire walls to create separate buildings is now limited to only the determination of permissible types of construction based on allowable building area and height.
 - Where an elevator hoistway door opens into a fire-resistance-rated corridor, the opening must be protected in a manner to address smoke intrusion into the hoistway.
 - The occupant load factor for business uses has been revised to one occupant per 150 square feet.
 - Live loads on decks and balconies increase the deck live load to one and one-half times the live load of the area served.
 - The minimum lateral load that fire walls are required to resist is five pounds per square foot.
 - Wind speed maps updated, including maps for the state of Hawaii. Terminology describing wind speeds has changed again with ultimate design wind speeds now called basic design wind speeds.
 - Site soil coefficients now correspond to the newest generation of ground motion attenuation equations (seismic values).
 - Five-foot tall wood trusses requiring permanent bracing must have a periodic special inspection to verify that the required bracing has been installed.
 - New alternative fastener schedule for construction of mechanically laminated decking is added giving equivalent power-driven fasteners for the 20-penny nail.
- provisions

2018 International Building Code (IBC) – Recommendation of adoption by the Idaho Building Code Board with following amendments:

- Correlated language with the residential code on personal care, custodial care and child care
- Clarification language to use commercial IBC code for medical care
- Less restrictive threshold of when a drinking fountain is required
- Correlated language on relocatable modular buildings referencing state statute

2018 Residential and Commercial Energy Codes

- Air leakage for Idaho is 5 air changes per hour vs. 3 ACH for national code
- **Blower door test required on 20% of homes built by a contractor** *(this requirement is a reduction and has an implementation schedule of an additional 6 months after code adoption for soft implementation for education period for contractors)*
- Reduction of requirements in hot water pipe insulation
- Lighting requires a minimum of 75% of permanently installed fixtures must have high-efficacy lamps
- Energy Rating Index (ERI) (compliance alternative) required score is 68 or less in Climate Zones 5 & 6

(relaxed to a figure currently being met in Idaho)

Additional changes are available at our office or email listing available.

Elmore County Land Use and Building Dept.

Address: 520 East 2nd South
Mountain Home, Idaho 83647

208.587.2142 ext. 502

