

# Residential Energy

## Code Guide for Idaho



2018 International Energy  
Conservation Code (IECC)

### 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 ft<sup>2</sup> when installed at time of test.
- Less than or equal to 3 cubic feet/min/100 ft<sup>2</sup> when not installed at time of test.
- Post-Construction: Total leakage less than or equal to 4 cubic feet/min/100 ft<sup>2</sup>.

### 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**

**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 <sup>a,b</sup>	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.



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