

5. Proposed Code Amendment. Use ‘legislative format’ including both old and new language. **See instructions on page five for specific details.** Please attach a separate sheet for each separate proposal.

| | | |
|-------------|-------------------------|--------------|
| IECC | IDAPA 07.03.01, 004, 04 | 5-8 |
| Code | Section | Pages |

Please note number of additional pages: 7

To adopt the 2015 *International Energy Conservation Code* and make editorial amendments and other amendment update changes or deletions to IDAPA 07.03.01, 004, 04, accordingly to align.

See separate attachment for proposed IDAPA rule changes.

Supporting Data for Statewide Amendment Proposals. This information is required for all statewide amendment proposals. Attach supporting documentation, as necessary; incomplete proposals will not be accepted.

The governing boards require supporting data on any amendment proposal to show:

1. That it meets basic criteria – See Part I to specify how this proposal meets the criteria for code amendment.
2. The intended effect – See Part II to describe the purpose of the proposed amendment, including the benefits and the problems addressed.
3. The potential impacts or benefits to business – See Part III/Types of Construction, to explain how methods in construction businesses, industries and services would be affected.
4. The potential impacts on enforcement procedures, See Part III/Types of Services Required, to provide some analysis of the impacts on code enforcement in local jurisdictions.
5. Economic costs and benefits – Use the Table in Part IV of this form to estimate the costs and benefits of the proposal on construction practices, users and/or the public, the enforcement community, and operation and maintenance.

Part I ♦ Background information on amendment.

Code references: IECC, IDAPA 07.03.01, 004, 04 Title: International Energy Conservation Code

Related Codes: IRC

(Does this amendment change other related codes?)

Proponent: Charlie Allen

Phone: 612-4022

Date: 4/14/16

NOTE: Amendments to the state building code must be based on one of the following criteria; please indicate the pertinent rationale for the proposed amendment by selecting from the list below:

- (1) The amendment is needed to address a critical life/safety need.
- (2) The amendment is needed to address a specific state policy or statute.
- (3) The amendment is needed for consistency with state or federal regulations.
- (4) The amendment is needed to address a unique character of the state.
- (5) The amendment corrects errors and omissions.

Part II ♦ Amendment Benefit:

PROBLEM(S) ADDRESSED (Describe the intended effect of the proposed code amendment):

Many of the proposed amendments to the IDAPA rules are editorial in nature in order to align them with the 2015 edition of the *International Energy Conservation Code* (IECC).

There are amendments with compromise in some areas. Some amendments provide other viable options that align with current construction practices where it has been shown already meet compliance with the 2015 IECC. For example, providing a footnote to Table R402.1.2 to allow R-38 attic insulation where R-21 is provided in the exterior walls in Climate Zone 5. Numerous Reschecks on the 2015 IECC for current construction of homes are showing compliance with R-38 attic insulation and R-21 wall insulation which is very typical of current construction practice of homes today.

The existing amendment on lighting to be 50% high efficacy is proposed to be deleted. The 2015 IECC requires 75% of lighting to be high efficacy which still allows 25% of lighting to be of any type for decorative purposes. Light bulbs are being regulated nationally whereas most are high efficacy that are

available anyway with prices having dropped significantly as well. Efficient lighting also has substantial energy savings with a very quick payback of 1-2 years for homeowners.

An exception is added clarifying piping insulation is not required for single family dwellings for items 1, 2 and 4 listed under IECC section R403.5.3.

Adopting the 2015 IECC also allows another option for builder compliance using the Energy Rating Index (ERI) method (such as the HERS rating). Adding another option is a good thing and many builders are currently already utilizing this method but typically still have to submit traditional energy code compliance documents instead. This change would allow jurisdictions to accept the ERI documents and independent rater inspections/reports. An amendment adjusts Table R406.4 Maximum Energy Rating Index in Climate Zones 5 and 6 to more of a tiered approach based on square footages of the homes. This is needed due to volume differences between smaller homes and larger homes.

PRIMARY REASON FOR AMENDMENT: (Describe how the amendment meets one of the criteria listed above)

With the proposal of adopting the 2015 IECC, there is the need to update or delete some of the IDAPA rule amendments. Doing so will correct errors or omissions to align with the code text.

Mandating a blower door test on every home is likely not feasible especially in the more rural parts (unique character) of the state. Qualified individuals to perform the blower door tests in rural areas may be scarce. The amendment to retain the visual inspection option and an option for a blower door test along with the existing specified air changes per hour (ACH) amendment will remain. Across the state, blower door tests are showing new homes with an average of 3.6 ACH, indicating tight construction.

Providing a footnote to Table R402.1.2 to allow R-38 attic insulation where R-21 is provided in the exterior walls in Climate Zone 5 as another option is good and complies with the 2015 IECC in most typical cases. This construction is typical practice in Climate Zone 5 of the state.

The market has already taken care of the availability of low U-values on windows and high efficacy light bulbs. Even though the code has minor changes on these, there really is no change in actual construction practice with these changes.

An exception added clarifying piping insulation is not required for single family dwellings for items 1, 2 and 4 listed under IECC section R403.5.3. There appears to be no sound available data backing these requirements.

If builders are choosing to do an ERI method in their construction, why not allow this method as another option for meeting the energy code? They could then just submit the ERI documents/design and rater information/reports to applicable jurisdictions for review and approval. The 2015 IECC allows this method as an option. Options are good and this can save redundancy in eliminating submittal of traditional energy compliance documents. The ERI target is amended with a tiered approach based on size of the homes for our Climate Zones in Idaho.

In current construction practices, costs will likely remain the same because of the above mentioned amendments with some slight increases in lighting.

TYPE OF BENEFITS PROJECTED:

Part III ♦ Amendment Impacts or Benefits:

TYPES OF CONSTRUCTION: New Construction Alteration/Tenant Improvement/Repair
 Residential-Single Family Residential-Multi Family Commercial Industrial

List businesses/industries affected by amendment:

Manufacturers: _____
 Specific Construction Contractors & Trades: Commercial, multi family, single family dwellings
 Construction Supply Industry: _____
 Specialty Trades: _____
 Types of Buildings: Commercial, Multi-family, Single family dwellings
 Fire Protection Industry: _____

Types of Services Required:

- Reporting:** Brief Description _____
- Record Keeping:** Brief Description _____
- Other:** Brief Description _____
- Indirect Cost to Industry:** Indicate whether there are multiple sources to obtain the equipment, material or service required by this proposal. If not, provide a justification of the benefit versus small business impact.

Part IV ♦ Amendment Costs and Benefits

| Building Type | Construction ¹ | | | Enforcement ² | | | Operations & Maintenance ³ | | | |
|--------------------|---|-----------------------|-----------------------|-----------------------------|----------|----------|---------------------------------------|----------|----------|-----------------------------|
| | Co sts | % impact ⁴ | Benefits ⁵ | Costs | % impact | Benefits | Costs | % impact | Benefits | |
| Residential | Likely to remain the same with slight increases in lighting | N/A | ↑ | ∅ | N/A | ↑ | ∅ | N/A | ↑ | |
| Single family | | | | | | | | | | |
| Multi-family | | | | | | | | | | |
| Commercial/ Retail | | | | updated code new exceptions | | | Updated code new exceptions | | | Updated code new exceptions |
| Industrial | | | | | | | | | | |
| Institutional | | | | | | | | | | |

1 \$ / square foot of floor area or other cost. Attach data. Construction costs are costs prior to occupancy, and include both design and direct construction costs that impact the total cost of the construction to the owner/consumer.
 2 Cost per project plan. Attach data. Enforcement costs include governmental review of plans, field inspection, and mediated litigation required for enforcement.
 3 Cost to building owner/tenants over the life of the project.
 4 Cost differential over a specific size project or range of projects as determined by the proponent. Provide sufficient cost and benefit detail to clarify the impact to the Council. All data should be created and referenced to third party reputable sources for verification.
 5 Note sectors with measurable benefit from Part II, including benefits to a) the user, b) the public, c) the industry, and/or d) the economy; use e) for all of the above.

04. International Energy Conservation Code. ~~2012~~ 2015 Edition with the following amendments.

(3-20-14)

a. Add the following as a new subsection C101.5.3: Industrial, electronic, and manufacturing equipment. Buildings or portions thereof that are heated or cooled exclusively to maintain the required operating temperature of industrial, electronic, or manufacturing equipment shall be exempt from the provisions of this code. Such buildings or portions thereof shall be separated from connected conditioned space by building thermal envelope assemblies complying with this code.

(3-25-16)

b. ~~Delete the values contained in Table R402.1.1 (Table N1102.1.1) for climate zone “5 and Marine 4” and climate zone “6” and replace with the following: Add footnote j to the Ceiling R-Value header, add footnote k to the Wood frame Wall R-Value header, and add footnote l to table title of Table R402.1.2~~

(3-20-14)

| Climate Zone | 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 | Crawlspace Wall R-Value |
|----------------|-----------------------|-------------------|--------------------------|-----------------|---------------------------|-------------------|-----------------|-----------------------|--------------|-------------------------|
| 5 and Marine 4 | 0.35 | 0.60 | NR | 49 | 20 or 13+5 ^h | 13/17 | 30 ^g | 10/13 | 10, 2 ft | 10/13 |
| 6 | 0.35 | 0.60 | NR | 49 | 20+5 or 13+5 ^h | 15/19 | 30 ^g | 15/19 | 10, 4 ft | 10/13 |

(3-20-14)

~~j. The Ceiling R-Value in Climate zone 5 may be reduced to R-38 when the wood frame wall R-value is increased to R-21.~~

~~k. The continuous insulation required for wood frame walls in climate zone 6 may be eliminated if wall R-value is increased to R-21.~~

~~c. Add the following footnote to the title of Table R402.1.1—Insulation and Fenestration Requirements by Component: ¹ For residential log home building thermal envelope construction requirements see section R402.6.~~

(3-25-16)

d. ~~Delete the values contained in Table R402.1.3 (Table N1102.1.3) for climate zone “5 and Marine~~

4” and climate zone “6” and replace with the following:

| TABLE R402.1.3 EQUIVALENT U-FACTORS | | | | | | | | |
|--|-----------------------|-------------------|-----------------|-------------------------|-------------------|---------------|-----------------------|-------------------------|
| Climate Zone | Fenestration U-factor | Skylight U-factor | Ceiling R-Value | Wood-Frame Wall R-Value | Mass-Wall R-Value | Floor R-Value | Basement Wall R-Value | Crawlspace Wall R-Value |
| 5 and Marine 4 | 0.35 | 0.60 | 0.030 | 0.057 | 0.082 | 0.033 | 0.059 | 0.065 |
| 6 | 0.35 | 0.60 | 0.026 | 0.057 | 0.060 | 0.033 | 0.050 | 0.065 |

(3-20-14)

e. Delete Table R402.2.6 (Table N1102.2.6 and replace with the following:

| Table R402.2.6 STEEL-FRAME CEILING, WALL AND FLOOR INSULATION (R-VALUE) | |
|--|---|
| Wood Frame R-value Requirement | Cold-formed Steel Equivalent R-value ^a |
| Steel Truss Ceilings^b | |
| 5-30 | 5-38 R _V 5-30 + 3 R _V 5-26 + 5 |
| 5-38 | 5-49 R _V 5-38 + 3 |
| 5-49 | 5-38 + 5 |
| Steel Truss Ceilings^b | |
| 5-30 | 5-38 I _Q 2 [4 R _V 2 [6 R _V 2 [8 5-49 I _Q DQ\ IUDP I _Q J |
| 5-38 | 5-49 I _Q 2 [4 R _V 2 [6 R _V 2 [8 R _V 2 [10 |
| Steel-Framed Wall | |
| 5-13 | 5-13 + 5 R _V 5-15 + 4 R _V 5-21 + 3 R _V 5-0 + 10 |
| 5-19 | 5-13 + 9 R _V 5-19 + 8 R _V 5-25 + 7 |
| 5-21 | 5-13 + 10 R _V 5-19 + 9 R _V 5-25 + 8 |
| Steel Joist floor | |
| 5-13 | 5-19 I _Q 2 [6 5-19 + 6 I _Q 2 [8 R _V 2 [10 |
| 5-19 | 5-19 + 6 I _Q 2 [6 5-19 + 12 I _Q 2 [8 R _V 2 [10 |
| a. Cavity insulation R-value is listed first, followed by continuous insulation R-value. | |
| b. Insulation exceeding the height of the framing shall cover the framing. | |

(3-25-16)

f. c. Delete section R402.4.1 (N1102.4.1) and replace with the following: Building thermal envelope. The building thermal envelope shall comply with sections R402.4.1.1 and either section R402.4.1.2 or R402.4.1.3. The sealing methods between dissimilar materials shall allow for differential expansion and contraction. (3-25-16)

g. d. Delete section R402.4.1.1 (N1102.4.1.1) and replace with the following: Installation. The

components of the building thermal envelope as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table R402.4.1.1, as applicable to the method of construction. (3-25-16)

~~h. Delete the criteria requirement for the "Fireplace" component of Table R402.4.1.1 (Table N1102.4.1.1) – Air Barrier and Insulation Installation, and replace with the following: An air barrier shall be installed on fireplace walls. (3-20-14)~~

i e. Delete section R402.4.1.2 (N1102.4.1.2) and replace with the following: Testing option, Building envelope tightness and insulation installation shall be considered acceptable when tested air leakage is less than seven (7) air changes per hour (ACH) when tested with a blower door at a pressure of 33.5 psf (50 Pa). 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. During testing: (3-25-16)

- i. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed; (3-20-14)
- ii. Dampers shall be closed, but not sealed, including exhaust, intake, makeup air, backdraft and flue dampers; (3-20-14)
- iii. Interior doors shall be open; (3-20-14)
- iv. Exterior openings for continuous ventilation systems and heat recovery ventilators shall be closed and sealed; (3-20-14)
- v. Heating and cooling system(s) shall be turned off; (3-20-14)
- vi. HVAC ducts shall not be sealed; and (3-20-14)
- vii. Supply and return registers shall not be sealed. (3-20-14)

j f. Add the following as section R402.4.1.3 (N1102.4.1.3): Visual inspection option, Building envelope tightness and insulation installation shall be considered acceptable when the items listed in Table R402.4.1.1, applicable to the method of construction, are field verified. Where required by code official an approved party independent from the installer of the insulation shall inspect the air barrier and insulation. (3-20-14)

k g. Add the following section: R402.6 (N1102.6) Residential Log Home Thermal Envelope. Residential log home construction shall comply with sections R401 (General), R402.4 (Air Leakage), R402.5 (Maximum Fenestration U-Factor and SHGC), R403.1 (Controls), ~~R403.2.2~~ **R403.3.2** (Sealing), ~~R403.2.3~~ **R403.3.5** (Building Cavities), sections ~~R403.3~~ **R403.4** through ~~R403.9~~ **R403.10** (referred to as the mandatory provisions), Section R404 (Electrical Power and Lighting Systems), and either i., ii., or iii. as follows: (3-20-14)

- i. Sections R402.2 through R402.3, ~~R403.2.1~~ **R403.3.1**, R404.1 and Table R402.6; (4-7-11)
- ii. Section R405 Simulated Performance Alternative (Performance); or (4-7-11)
- iii. REScheck (U.S. Department of Energy Building Codes Program). (4-7-11)

l h. Add Table R402.6 (Table N1102.6) Log Home Prescriptive Thermal Envelope Requirements By Component to be used only in accordance with item i of section R402.6 above to appear as follows:

**TABLE R402.6
LOG HOME PRESCRIPTIVE THERMAL ENVELOPE REQUIREMENTS BY COMPONENT**

For SI: 1 foot = 304.8 mm.

| Climate Zone | Fenestration U-factor ^a | Skylight U-factor | Glazed Fenestration Shgc | Ceiling R-value | Min. Average Log Size In Inches | Floor R-value | Basement Wall R-value ^d | Slab R-value & Depth ^b | Crawl Space Wall R-value ^d |
|--|------------------------------------|-------------------|--------------------------|-----------------|---------------------------------|---------------|------------------------------------|-----------------------------------|---------------------------------------|
| 5, 6 - High efficiency equipment path ^c | 0.32 | 0.60 | NR | 49 | 5 | 30 | 15/19 | 10, 4 ft. | 10/13 |
| 5 | 0.32 | 0.60 | NR | 49 | 8 | 30 | 10/13 | 10, 2 ft. | 10/13 |
| 6 | 0.30 | 0.60 | NR | 49 | 8 | 30 | 15/19 | 10, 4 ft. | 10/13 |

- a. The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
- b. R-5 shall be added to the required slab edge R-values for heated slabs.
- c. 90% AFUE natural gas or propane, 84% AFUE oil, or 15 SEER heat pump heating equipment (zonal electric resistance heating equipment such as electric base board electric resistance heating equipment as the sole source for heating is considered compliant with the high efficiency equipment path).
- d. "15/19" means R-15 continuous insulated sheathing on the interior or exterior of the home or R-19 cavity insulation at the interior of the basement wall. "15/19" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulated sheathing on the interior or exterior of the home. "10/13" means R-10 continuous insulated sheathing on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall.

(3-20-14)

~~m. Delete section R404.1 (N1104.1) and replace with the following: Lighting equipment (Mandatory). A minimum of fifty percent (50%) of the lamps in permanently installed lighting fixtures shall be high efficacy lamps or a minimum of fifty percent (50%) of the permanently installed lighting fixtures shall contain only high efficacy lamps.~~ (3-20-14)

i. Section R403.5.3 (N1103.5.3) Hot Water Pipe Insulation (Prescriptive). Add exception 1. Insulation for items 1, 2, and 4 shall not be required for Single Family Dwellings.

j. Delete Table R406.4 (N1106.4) Maximum Energy Rating Index and replace with the following:

Table R406.4 Maximum Energy Rating Index

| Climate Zone | Energy Rating Index |
|--------------|-------------------------------------|
| 1 | 52 |
| 2 | 52 |
| 3 | 51 |
| 4 | 54 |
| 5 | 1,500 sq. ft. or less – 70 |
| | 1,501 sq. ft. to 2,500 sq. ft. – 65 |
| | 2,501 sq. ft. to 5,000 sq. ft. – 60 |
| | 5,001 sq. ft. or greater – 55 |
| 6 | 1,500 sq. ft. or less – 69 |
| | 1,501 sq. ft. to 2,500 sq. ft. – 64 |
| | 2,501 sq. ft. to 5,000 sq. ft. – 59 |
| | 5,001 sq. ft. or greater – 54 |
| 7 | 53 |
| 8 | 53 |

05. References to Other Codes. Where any provisions of the codes that are adopted in this Section make reference to other construction and safety-related model codes or standards which have not been adopted by the involved authority having jurisdiction, to the extent possible, such reference should be construed as pertaining to the equivalent code or standard that has been duly adopted by such jurisdiction. (3-29-10)

005. OFFICE -- OFFICE HOURS -- STREET ADDRESS -- MAILING ADDRESS -- TELEPHONE, FACSIMILE AND WEB ADDRESS.

The principal place of business of the Division of Building Safety is in Meridian, Idaho. The office is located at 1090 E. Watertower St., Meridian, Idaho and is open from 8 a.m. to 5 p.m., except Saturday, Sunday and legal holidays. The mailing address is: Division of Building Safety, 1090 E. Watertower St., Meridian, Idaho 83642. The telephone number of the office is (208) 334-3896. The facsimile number of the office is (208) 855-9399. The Department website at <http://dbs.idaho.gov>. (3-30-06)