

Chapter 4-15

ENERGY CONSERVATION CODE

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Section 4-15-01 PURPOSE

The purpose of this Chapter is to establish minimum regulations for energy-efficient buildings using prescriptive and performance related provisions. The provisions of this Chapter shall regulate the design of building envelopes for adequate thermal resistance and low air leakage, including the design and selection of mechanical systems, service water-heating and electrical equipment and/or power and lighting systems enabling an effective use of energy in new building construction.

(Ord-50-14, 12/16/14; 6369, Repealed & Replaced, 12/14/2004; 6196, Added, 12/10/2002)

Section 4-15-02 CODE ADOPTED

All rules, regulations and ordinances applying to the design, construction, quality of materials, erection, installation, alteration, repair, location, relocation, replacement, addition to, use or maintenance of the building envelope, building mechanical systems, service water-heating and electrical power and lighting systems, contained in book and in code form, designated as the 2012 Edition of the International Energy Conservation Code (IECC), published under the authority of the International Code Council, Inc., is ratified and adopted, except as said rules and regulations are hereby changed, altered and amended by this Ordinance. The 2012 Edition of the International Energy Conservation Code, and amendments pursuant to this ordinance, shall be known as the Energy Conservation Code of Boise City. One (1) copy of the 2012 Edition of the International Energy Conservation Code shall be filed for use and examination by the public in the office of the City Clerk. All provisions in this chapter shall be effective as of January 1, 2015.

(Ord-50-14, 12/16/14; 6790, Amended, 11/09/2010; 6622, Amended, 12/11/2007; 6369, Repealed & Replaced, 12/14/2004; 6196, Added, 12/10/2002)

Section, 4-15-03 IECC ENERGY CODE AMENDMENT, SECTION 101.1, TITLE

C101.1 Title. This code shall be known as the Energy Conservation Code of Boise City, and shall be cited as such. It is referred to herein as “this code.

(Ord-50-14, 12/16/14; 6790, Amended, 11/09/2010; 6622, Renumbered, 12/11/2007; 6369, Repealed & Replaced, 12/14/2004; 9196, Added, 12/10/2002)

**Section 4-15-04 IECC ENERGY CODE AMENDMENT, SECTION C107, FEES IS
DELETED**

Section C107 shall be deleted in its entirety and replaced with the following:

(Ord-50-14, 12/16/14; 6790, Amended, 11/09/2010; 6622, Renumbered, 12/11/2007; 6369, Repealed & Replaced, 12/14/2004; 6196, Added, 12/10/2002)

Section 4-15-05 IECC ENERGY CODE AMENDMENT, SECTION C108, STOP WORK ORDER

Section R108 shall be repealed in its entirety and replaced with the following:

C108 Stop work order. Whenever the building official identifies any work regulated by the

Energy Conservation Code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the building official is authorized to issue a stop work order in accordance with Section 115 of the International Building Code or Section R114 of the International Residential Code and as further stated in, the Boise City Building Code of Boise City Municipal Code.

(Ord-50-14, 1216/14; 6790, Amended, 11/09/2010; 6622, Renumbered, 12/11/2007; 6369, Repealed & Replaced, 12/14/2004; 6196, Added, 12/10/2002)

Section 4-15-06 IECC ENERGY CODE AMENDMENT, SECTION C109, BOARD OF APPEALS PROCESS

Section C109 shall be repealed in its entirety and replaced with the following:

C109 Board of appeals process. Any person, firm, association or corporation desiring to appeal an order, decision or determination made by the building official relative to the application and interpretation of this code shall file a written appeal with the building official within ten (10) calendar days from the date the order, decision, or determination was issued. Any person appealing a decision of the City shall include payment of an appeal fee in the amount of one hundred fifty dollars (\$150.00) at time of filing the written appeal request. In the event the appeal is granted, the appeal fee shall be returned to the appellant.

Recognizing that the energy conservation code is multi-disciplinary, the building official shall then set a hearing before the board of the most relevant discipline given the nature of the issue being appealed. Thus, depending upon the issue, an energy conservation code appeal may be heard by the City building, electrical or plumbing/mechanical boards of appeals established under other applicable Titles of Boise City Municipal Code. Ten (10) calendar days prior to any hearing, the appellant shall be notified as to which board will hear the appeal and will be given a copy of the ordinance governing appeals to that board. The ordinance applicable to the relevant board shall govern the conduct and procedures of the appeal hearing. The building official shall schedule the appeal hearing within fifteen (15) calendar days of receiving the appeal request. Any order, decision or ruling of the board of appeals may be appealed, by filing notice in writing to the City Council within ten (10) calendar days of such order, decision or ruling.

(Ord-50-14-12-16-14; 6790, Amended, 11/09/2010; 6622, Amended, 12/11/2007; 6622, Renumbered, 12/11/2007; 6369, Repealed & Replaced, 12/14/2004; 6196, Added, 12/10/2002)

Section 4-15-07 IECC ENERGY CODE AMENDMENT, ADD SECTION C110, VIOLATIONS

C110 Violations. Violations of any provision of the Energy Conservation Code identified by the building official shall be subject to enforcement under provisions of Section 114 of the International Building Code or Section R113 of the International Residential Code and as further stated in the Boise City Building Code of Boise City Municipal Code.

(Ord-50-14, 12/16/14; 6790, Amended, 11/09/2010; 6622, Renumbered, 12/11/2007; 6369, Repealed & Replaced, 12/14/2004; 6196, Added, 12/10/2002)

Section 4-15-08 IECC ENERGY CODE AMENDMENT, SECTION C201.3, TERMS

DEFINED IN OTHER CODES

C201.3 Terms defined in other codes. Terms that are not defined in this code but are defined in the currently adopted editions in the International Building Code, International Residential Code, National Electrical Code, International Fire Code, International Fuel Gas Code, International Mechanical Code or the Uniform Plumbing Code, such terms shall have the meanings ascribed to them as in those codes.

(Ord-50-14, 12/16/14; 6790, Amended, 11/09/2010; 6622, Renumbered, 12/11/2007; 6369, Repealed & Replaced, 12/14/2004; 6196, Added, 12/10/2002)

Section 4-15-09 IECC ENERGY CODE AMENDMENT, SECTION R101.1 TITLE

R101.1 Title. This code shall be known as the Energy Conservation Code of Boise City, and shall be cited as such. It is referred to herein as “this code.”

(Ord-50-14, 12/16/14)

Section 4-15-10 IECC ENERGY CODE AMENDMENT, SECTION R107, FEES

Section R107 shall be repealed in its entirety and replaced with the following:

R107 Fees. The fees for residential inspection verifying for compliance with the Energy Conservation Code shall be assessed in accordance with Table No. 1-A of the Boise City Building Code in Boise City Municipal Code.

(Ord-50-14, 12/16/14)

Section 4-15-11 IECC ENERGY CODE AMENDMENT, SECTION R108, STOP WORK ORDER

Section R108 shall be repealed in its entirety and replaced with the following:

R108 Stop work order. Whenever the building official identifies any work regulated by the Energy Conservation Code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the building official is authorized to issue a stop work order in accordance with Section 115 of the International Building Code or Section R114 of the International Residential Code and as further stated in the Boise City Building Code of Boise City Municipal Code.

(Ord-50-14, 12/16/14)

Section 4-15-12 IECC ENERGY CODE AMENDMENT, SECTION R109, BOARD OF APPEALS PROCESS

Section R109 shall be repealed in its entirety and replaced with the following:

R109 Board of appeals process. Any person, firm, association or corporation desiring to appeal an order, decision or determination made by the building official relative to the application and interpretation of this code shall file a written appeal with the building official within ten (10) calendar days from the date the order, decision, or determination was issued. Any person

appealing a decision of the City shall include payment of an appeal fee in the amount of one hundred fifty dollars (\$150.00) at time of filing the written appeal request. In the event the appeal is granted, the appeal fee shall be returned to the appellant.

Recognizing that the energy conservation code is multi-disciplinary, the building official shall then set a hearing before the board of the most relevant discipline given the nature of the issue being appealed. Thus, depending upon the issue, an energy conservation code appeal may be heard by the City building, electrical or plumbing/mechanical boards of appeals established under other applicable Titles of Boise City Municipal Code. Ten (10) calendar days prior to any hearing, the appellant shall be notified as to which board will hear the appeal and will be given a copy of the ordinance governing appeals to that board. The ordinance applicable to the relevant board shall govern the conduct and procedures of the appeal hearing. The building official shall schedule the appeal hearing within fifteen (15) calendar days of receiving the appeal request. Any order, decision or ruling of the board of appeals may be appealed, by filing notice in writing to the City Council within ten (10) calendar days of such order, decision or ruling.

(Ord-50-14, 12/16/14)

Section 4-15-13 IECC ENERGY CODE AMENDMENT, ADD SECTION R110, VIOLATIONS

R110 Violations. Violations of any provision of the Energy Conservation Code identified by the building official shall be subject to enforcement under provisions of Section 114 of the International Building Code or Section R113 of the International Residential Code and as further stated in the Boise City Building Code of Boise City Municipal Code.

(Ord-50-14, 12/16/14)

Section 4-15-14 IECC ENERGY CODE AMENDMENT, SECTION R201.3, TERMS DEFINED IN OTHER CODES

R201.3 Terms defined in other codes. Terms that are not defined in this code but are defined in the currently adopted editions in the International Building Code, International Residential Code, National Electrical Code, International Fire Code, International Fuel Gas Code, International Mechanical Code or the Uniform Plumbing Code, such terms shall have the meanings ascribed to them as in those codes.

(Ord-50-14, 12/16/14)

Section 4-15-15 IECC ENERGY CODE AMENDMENT, TABLE R402.1.1, INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT

Items listed under Climate Zone 5 and Marine 4 in Table R402.1.1 shall be amended as follows:

**TABLE R402.1.1 (N1102.1.1)
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT^{a, k}**

Climate Zone	Fenestration U-factor ^b	Skylight U-factor ^b	Glazed Fenestration SHGC ^{b, e}	Ceiling R-Value	Wood Frame Wall R-Value	Mass Wall R-Value ⁱ	Floor R-Value	Basement ^c Wall R-Value	Slab ^d R-Value	Crawl-space ^c Wall R-Value
5 and Marine 4	0.35	0.60	NR	38	20 or 13+5 ^h	13/17	30 ^g	0/13	10, 2ft	10/13

(Ord-50-14, 12/16/14)

Section 4-15-16 IECC ENERGY CODE AMENDMENT, TABLE R402.1.1, INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT, ADD FOOTNOTE K

Add footnote k to the title of Table R402.1.1 - Insulation and Fenestration Requirements by Component. Add footnote k underneath Table R402.1.1 after footnote j to read as follows:

k. For residential log home building thermal envelope construction requirements see section R402.6

Section 4-15-17 IECC ENERGY CODE AMENDMENT, TABLE R402.1.3, EQUIVALENT U-FACTORS

Items listed under Climate Zone 5 and Marine 4 in Table R402.1.3 shall be amended as follows:

**TABLE R402.1.3 (N1102.1.3)
EQUIVALENT U-FACTORS^a**

Climate Zone	Fenestration U-factor	Skylight U-factor	Ceiling U-factor	Wood Frame Wall U-factor	Mass Wall U-factor ^b	Floor U-factor	Basement Wall U-factor	Crawlspace Wall U-factor
5 and Marine 4	0.35	0.60	0.030	0.057	0.082	0.033	0.059	0.065

(Ord-50-14, 12/16/14)

Section 4-15-18 IECC ENERGY CODE AMENDMENT, TABLE R402.2.6, STEEL-FRAME CEILING, WALL AND FLOOR INSULATION (R-VALUE)

Table R402.2.6 shall be repealed and replaced with the following:

**TABLE R402.2.6 (N1102.2.6)
STEEL-FRAME CEILING, WALL AND FLOOR INSULATION
(R-VALUE)**

WOOD FRAME R-VALUE REQUIREMENT	COLD-FORMED STEEL EQUIVALENT R-VALUE^a
	Steel Truss Ceilings^a
R-30	R-38 or R-30 + 3 or R-26 + 5
R-38	R-49 or R-38 + 3
R-49	R-38 + 5
	Steel Joist Ceilings^b
R-30	R-38 in 2 x 4 or 2 x 6 or 2 x 8 R-49 in any framing
R-38	R-49 in 2 x 4 or 2 x 6 or 2 x 8 or 2 x 10
	Steel-Framed Wall
R-13	R-13 + 5 or R-15 + 4 or R-21 + 3 or R-0 + 10
R-19	R-13 + 9 or R-19 + 8 or R-25 + 7
R-21	R-13 + 10 or R-19 + 9 or R-25 + 8
	Steel Joist Floor
R-13	R-19 in 2 x 6 R-19 + 6 in 2 x 8 or 2 x 10
R-19	R-19 + 6 in 2 x 6 R-19 + 12 in 2 x 8 or 2 x 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.

(Ord-50-14, 12/16/14)

Section 4-15-19 IECC ENERGY CODE AMENDMENT, SECTION R402.4.1, BUILDING THERMAL ENVELOPE

Repeal section R402.4.1 and replace with the following:

R402.4.1 Building thermal envelope. The *building thermal envelope* shall comply with Sections R402.4.1.1 and either R402.4.1.2 or R402.4.1.3. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.

(Ord-50-14, 12/16/14)

Section 4-15-20 IECC ENERGY CODE AMENDMENT, TABLE R402.4.1.1, AIR BARRIER AND INSULATION INSTALLATION

Repeal the criteria requirement for the “fireplace” component of Table R402.4.1.1 and replace with the following:

TABLE R402.4.1.1 (N1102.4.1.1) AIR BARRIER AND INSULATION INSTALLATION

COMPONENT	CRITERIA ^a
Fireplace	An air barrier shall be installed on fireplace walls.

(Ord-50-14, 12/16/14)

Section 4-15-21 IECC ENERGY CODE AMENDMENT, SECTION R402.4.1.2, TESTING OPTION

Repeal section R402.4.1.2 and replace with the following:

R402.4.1.2 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 pascals). 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:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed;
2. Dampers shall be closed, but not sealed; including exhaust, intake, makeup air, back draft, and flue dampers;
3. Interior doors shall be open;
4. Exterior openings for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
5. Heating and cooling system(s) shall be turned off;
6. HVAC ducts shall not be sealed; and
7. Supply and return registers shall not be sealed.

(Ord-50-14, 12/16/14)

Section 4-15-22 IECC ENERGY CODE AMENDMENT, ADD SECTION R402.4.1.3, VISUAL INSPECTION OPTION

R402.4.1.3 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 the code official an approved party independent from the installer of the insulation shall inspect the air barrier and insulation.

(Ord-50-14, 12/16/14)

Section 4-15-23 IECC ENERGY CODE AMENDMENT, ADD SECTION R402.6, RESIDENTIAL LOG HOME THERMAL ENVELOPE

R402.6 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 (Sealing), R403.2.3 (Building Cavities), sections R403.3 through R403.9 (referred to as the mandatory provisions), Section R404 (Electrical Power and Lighting Systems), and either subsection i., ii., or iii. as follows:

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

(Ord-50-14, 12/16/14)

Section 4-15-24 IECC ENERGY CODE AMENDMENT, ADD TABLE R402.6, LOG HOME PRESCRIPTIVE THERMAL ENVELOPE REQUIREMENTS BY COMPONENT

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

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

For SI: 1 foot= 304.8 mm

- 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.

(Ord-50-14, 12/16/14; ORD-43-13, amended,11/19/13)

Section 4-15-25 IECC ENERGY CODE AMENDMENT, SECTION R404.1, LIGHTING EQUIPMENT (MANDATORY)

R404.1 Lighting equipment (Mandatory). A minimum of 50 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps or a minimum of 50 percent of the permanently installed lighting fixtures shall contain only high efficacy lamps.

Exception: Low-voltage lighting shall not be required to utilize high-efficacy lamps.

(Ord-50-14, 12/16/14)