LEGISLATIVE GENERAL COUNSEL
₵ Approved for Filing: C.R. Gilbert ₵
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H.B. 202

ENERGY CONSERVATION CODE AMENDMENTS

2013 GENERAL SESSION

STATE OF UTAH

Chief Sponsor: Brad R. Wilson

Senate Sponsor: Curtis S. Bramble

LONG TITLE

General Description:

This bill amends the State Construction Code.

Highlighted Provisions:

This bill:

- adopts the 2012 edition of the International Energy Conservation Code;
- modifies certain provisions of the International Energy Conservation Code; and
- modifies certain energy provisions of the International Residential Code.

Money Appropriated in this Bill:

None

Other Special Clauses:

This bill Ŝ→ **[~~takes effect on July 1, 2013~~] provides a contingent effective date** ←Ŝ .

Utah Code Sections Affected:

AMENDS:

15A-2-103, as last amended by Laws of Utah 2012, Chapter 76

15A-3-203, as enacted by Laws of Utah 2011, Chapter 14

15A-3-701, as enacted by Laws of Utah 2011, Chapter 14

Uncodified Material Affected:

ENACTS UNCODIFIED MATERIAL

Be it enacted by the Legislature of the state of Utah:

H.B. 202

Section 1. Section **15A-2-103** is amended to read:

15A-2-103. Specific editions adopted of construction code of a nationally recognized code authority.

(1) Subject to the other provisions of this part, the following construction codes are incorporated by reference, and together with the amendments specified in Chapter 3, Statewide Amendments to International Plumbing Code, and Chapter 4, Local Amendments Incorporated as Part of State Construction Code, are the construction standards to be applied to building construction, alteration, remodeling, and repair, and in the regulation of building construction, alteration, remodeling, and repair in the state:

(a) the 2009 edition of the International Building Code, including Appendix J, issued by the International Code Council;

(b) the 2009 edition of the International Residential Code, issued by the International Code Council;

(c) the 2009 edition of the International Plumbing Code, issued by the International Code Council;

(d) the 2009 edition of the International Mechanical Code, issued by the International Code Council;

(e) the 2009 edition of the International Fuel Gas Code, issued by the International Code Council;

(f) the 2011 edition of the National Electrical Code, issued by the National Fire Protection Association;

(g) the [~~2009~~] 2012 edition of the International Energy Conservation Code, issued by the International Code Council;

(h) subject to Subsection 15A-2-104(2), the HUD Code;

(i) subject to Subsection 15A-2-104(1), Appendix E of the 2009 edition of the International Residential Code, issued by the International Code Council; and

(j) subject to Subsection 15A-2-104(1), the 2005 edition of the NFPA 225 Model Manufactured Home Installation Standard, issued by the National Fire Protection Association.

(2) Consistent with Title 65A, Chapter 8, Management of Forest Lands and Fire Control, the Legislature adopts the 2006 edition of the Utah Wildland Urban Interface Code, issued by the International Code Council, with the alternatives or amendments approved by the

Utah Division of Forestry, as a construction code that may be adopted by a local compliance agency by local ordinance or other similar action as a local amendment to the codes listed in this section.

Section 2. Section **15A-3-203** is amended to read:

15A-3-203. Amendments to Chapters 6 through 15 of IRC.

[~~(1) IRC, Sections R612.2 through R612.4.2, are deleted.~~]

[~~(2) IRC, Chapter 11, is deleted and replaced with Chapter 11 of the 2006 International Residential Code and Chapter 4 of the 2006 International Energy Conservation Code.~~]

(1) In IRC, Section N1101.8 (R103.2), all words after the words "herein governed." are deleted and replaced with the following: "Construction documents include all documentation required to be submitted in order to issue a building permit."

(2) In IRC, Section N1101.14 (R303.3), all wording after the first sentence is deleted.

(3) In IRC, Table N1102.1.1 **Ŝ→ [~~(402.1.1)~~] (R402.1.1) ←Ŝ** and Table N1102.1.3(R402.1.3), the rows for "climate zone 3", "climate zone 5 and Marine 4", and "climate zone 6" are deleted and replaced and a new footnote j is added as follows:

"TABLE N1102.1.1 (R402.1.1)

INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION U-FACTOR [b]	SKYLIGHT [b] U-FACTOR	GLAZED FENESTRATION SHGC [b,e]	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE [i,j]	FLOOR R-VALUE	BASEMENT [c] WALL R-VALUE	SLAB [d] R-VALUE & DEPTH	CRAWL SPACE [c] WALL R-VALUE
3	0.65	0.65	0.40	30	15	5	19	0	0	5/13
5 and Marine 4	0.35	0.60	NR	38	19 or 13 + 5[h]	13	30 [g]	10/13	10, 2 ft	10/13
6	0.35	0.60	NR	49	19 or 13 + 5[h]	15	30 [g]	10/13	10, 4 ft	10/13

j. Log walls complying with ICC400 and with a minimum average wall thickness of 5" or greater shall be permitted in Zones 5-8 when overall window glazing is .31 U-factor or lower, minimum heating equipment efficiency is 90 AFUE (gas) or 84 AFUE (oil), and all other component requirements are met."

TABLE N1102.1.3 (R402.1.3)

EQUIVALENT U-FACTORS[a]

CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR [b]	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR
3	0.65	0.65	0.035	0.082	0.141	0.047	0.360	0.136
5 and Marine 4	0.35	0.60	0.030	0.060	0.082	0.033	0.059	0.065
6	0.35	0.60	0.026	0.060	0.060	0.033	0.059	0.065

(4) In IRC, Section N1102.2.1 (R402.2.1), the last sentence is deleted.

(5) In IRC, Section N1102.2.2 (R402.2.2), the last sentence is deleted.

(6) In IRC, Section N1102.3.3 (R402.3.3), the last sentence is deleted.

(7) In IRC, Section N1102.3.4 (R402.3.4), the last sentence is deleted.

(8) In IRC, Section N1102.4.1 (R402.4.1), in the first sentence, the word "and" is deleted and replaced with the word "or".

(9) In IRC, Section N1102.4.1.1 (R402.4.1.1), the last sentence is deleted and replaced with the following: "Where allowed by the building official, the builder may certify compliance to components criteria for items which may not be inspected during regularly scheduled inspections."

(10) In IRC, Section N1102.4.1.2 (R402.4.1.2), the following changes are made:

a. In the first sentence, the words "in Zones 1 and 2, and 3 air changes per hour in Zone 3 through 8" are deleted.

b. In the third sentence, the words "Where required by the building official," and the word "third" are deleted.

c. The following sentence is inserted after the third sentence: "The following parties shall be approved to conduct testing: Parties certified by BPI or RESNET, or licensed contractors who have completed training provided by Blower Door Test equipment manufacturers or other comparable training."

(11) In IRC, Section N1102.4.4 (R402.4.4), the last sentence is deleted.

(12) In IRC, Section N1103.2.2 (R403.2.2), the requirements for **Ŝ→ [~~duct tightness~~] total leakage ←Ŝ** testing are deleted and replaced with the following:

"1. Postconstruction test: Total leakage shall be less than or equal to 10 cfm (283 L/min) per 100 square feet (9.29 m2) of conditioned floor space when tested at a pressure

differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.

2. Rough-in test: Total leakage shall be less than or equal to 10 cfm (283 L/min) per 100 square feet (9.29 m2) of conditioned floor area when tested at a pressure differential of at least 0.1 inches w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 7.5 cfm (212 L/min) per 100 square feet (9.29 m2) of conditioned floor area."

(13) In IRC, Section N1103.2.2 (R403.2.2), the exception for Ŝ→ **[~~duct tightness~~] total leakage** ←Ŝ testing is deleted and replaced with the following: "Exception: The total leakage test is not required for systems with all air handlers and at least 50% of all ducts (measured by length) located entirely within the building thermal envelope."

(14) In IRC, Section N1103.2.3 (R403.2.3), the words "or plenums" are deleted.

(15) In IRC, Section N1103.4.2 (R403.4.2), the sentences for "3.", "9.", and the last sentence are deleted.

(16) In IRC, Section N1103.5 (R403.5), the first sentence is deleted.

(17) IRC, Section N1104.1 (R404.1) and the exception are deleted, and N1104.1.1 (R404.1.1) becomes N1104.1 (R404.1).

(18) In IRC, Table N1105.5.2(1) (R405.5.2(1)), the following changes are made under the column STANDARD REFERENCE DESIGN:

a. In the row "Air exchange rate", the words "in Zones 1 and 2, and 3 air changes per hour in Zones 3 through 8" are deleted.

b. In the row "Heating systems[f, g]", the standard reference design is deleted and replaced with the following:

"Fuel Type: same as proposed design

Efficiencies:

Electric: air source heat pump with prevailing federal minimum efficiencies

Nonelectric furnaces: natural gas furnace with prevailing federal minimum efficiencies

Nonelectric boilers: natural gas boiler with prevailing federal minimum efficiencies

Capacity: sized in accordance with Section N1103.6"

c. In the row "Cooling systems[f, h]" the words "As proposed" are deleted and replaced with the

following:

"Fuel Type: Electric

Efficiency: in accordance with prevailing federal minimum standards"

d. In the row "Service water heating[f, g, h, i]", the words "As proposed" are deleted and replaced with the following:

"Fuel Type: same as proposed design

Efficiency: in accordance with prevailing federal minimum standards

Tank Temperature: 120º F"

e. In the row "Thermal distribution systems" the word "none" is deleted and replaced with the following: "Thermal distribution system efficiency (DSE) of .080 shall be applied to both the heating and cooling system efficiencies."

(19) In Table N1105.5.2(2) (R405.5.2(2)), the number "0.80" is inserted under "Forced air systems" for "Distribution system components located in unconditioned space".

(20) In IRC, Section M1307.2, the words "In Seismic Design Categories D1 and D2" are deleted.

Ŝ→ (21)The RESCheck Software adopted by the United States Department of Energy and modified to meet the requirements of this section shall be used to verify compliance with this section. The software shall address the Total UA alternative approach and account for Equipment Efficiency Trade-offs when applicable per the standard reference design as amended. ←Ŝ

[~~(3)~~] **Ŝ→ [~~(21)~~] (22) ←Ŝ** IRC, Section M1411.6, is deleted.

[~~(4) In IRC, Section M1502.4.4.1, the words "25 feet (7,620 mm)" are deleted and replaced with "35 feet (10,668 mm)".~~]

Section 3. Section **15A-3-701** is amended to read:

Part 7. Statewide Amendments to IECC

15A-3-701. General provisions.

The following is adopted as an amendment to the IECC to be applicable statewide[~~, in IECC, Section 504.4,~~]:

(1) In IECC, Section C202, the definition for "CONDITIONED SPACE" is deleted and replaced with the following: "CONDITIONED SPACE. An area, room or space enclosed within the building thermal envelope that is directly heated or cooled, or indirectly heated or cooled by any of the following means:

1. Openings directly into an adjacent conditioned space.

2. An un-insulated floor, ceiling or wall adjacent to a conditioned space.

3. Un-insulated duct, piping or other heat or cooling source within the space."

(2) In IECC, Section C404.4, a new exception is added as follows: "Exception: Heat

traps, other than the arrangement of piping and fittings, shall be prohibited unless a means of controlling thermal expansion can be ensured as required in the IPC Section 607.3."

(3) In IECC, Section R103.2, all words after the words "herein governed." are deleted and replaced with the following: "Construction documents include all documentation required to be submitted in order to issue a building permit."

(4) In IECC, Section R202, the definition for "CONDITIONED SPACE" is deleted and replaced with the following: "CONDITIONED SPACE. An area, room or space enclosed within the building thermal envelope that is directly heated or cooled, or indirectly heated or cooled by any of the following means:

1. Openings directly into an adjacent conditioned space.

2. An un-insulated floor, ceiling or wall adjacent to a conditioned space.

3. Un-insulated duct, piping or other heat or cooling source within the space."

(5) In IECC, Section R303.3, all wording after the first sentence is deleted.

(6) In IECC, Table R402.1.1 and Table R402.1.3, the rows for "climate zone 3", "climate zone 5 and Marine 4, and climate zone 6" are deleted and replaced and a new footnote j is added as follows:

"TABLE R402.1.1

INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION U-FACTOR [b]	SKYLIGHT [b] U-FACTOR	GLAZED FENESTRATION SHGC [b,e]	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE [i,j]	FLOOR R-VALUE	BASEMENT [c] WALL R-VALUE	SLAB [d] R-VALUE & DEPTH	CRAWL SPACE [c] WALL R-VALUE
3	0.65	0.65	0.40	30	15	5	19	0	0	5/13
5 and Marine 4	0.35	0.60	NR	38	19 or 13 + 5[h]	13	30[g]	10/13	10, 2 ft	10/13
6	0.35	0.60	NR	49	19 or 13 + 5[h]	15	30[g]	10/13	10, 4 ft	10/13

j. Log walls complying with ICC400 and with a minimum average wall thickness of 5" or greater shall be permitted in Zones 5-8 when overall window glazing is .31 U-factor or lower, minimum heating equipment efficiency is 90 AFUE (gas) or 84 AFUE (oil), and all other component requirements are met.

TABLE R402.1.3 EQUIVALENT U-FACTORS[a]

CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR [b]	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR

3	0.65	0.65	0.035	0.082	0.141	0.047	0.360	0.136
5 and Marine 4	0.35	0.60	0.030	0.060	0.082	0.033	0.059	0.065
6	0.35	0.60	0.026	0.060	0.060	0.033	0.059	0.065

(7) In IECC, Section R402.2.1, the last sentence is deleted.

(8) In IECC, Section R402.2.2, the last sentence is deleted.

(9) In IECC, Section R402.3.3, the last sentence is deleted.

(10) In IECC, Section R402.3.4, the last sentence is deleted.

(11) In IECC, Section R402.4.1, in the first sentence, the word "and" is deleted and replaced with the word "or".

(12) In IECC, Section R402.4.1.1, the last sentence is deleted and replaced with the following: "Where allowed by the building official, the builder may certify compliance to components criteria for items which may not be inspected during regularly scheduled inspections."

(13) In IECC, Section R402.4.1.2, the following changes are made:

a. In the first sentence, the words "in Zones 1 and 2, and 3 air changes per hour in Zone 3 through 8" are deleted.

b. In the third sentence, the words "Where required by the building official," and the word "third" are deleted.

c. The following sentence is inserted after the third sentence: "The following parties shall be approved to conduct testing: Parties certified by BPI or RESNET, or licensed contractors who have completed training provided by Blower Door Test equipment manufacturers or other comparable training."

(14) In IECC, Section R402.4.4, the last sentence is deleted.

(15) In IECC, Section R403.2.2, the requirements for duct tightness testing are deleted and replaced with the following:

"1. Postconstruction test: Total leakage shall be less than or equal to 10 cfm (283 L/min) per 100 square feet (9.29 m2) of conditioned floor space when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.

2. Rough-in test: Total leakage shall be less than or equal to 10 cfm (283 L/min) per 100 square feet (9.29 m2) of conditioned floor area when tested at a pressure differential of at

least 0.1 inches w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 7.5 cfm (212 L/min) per 100 square feet (9.29 m2) of conditioned floor area."

(16) In IECC, Section R403.2.2, the exception for total leakage testing is deleted and replaced with the following: "Exception: The total leakage test is not required for systems with all air handlers and at least 50% of all ducts (measured by length) located entirely within the building thermal envelope."

(17) In IECC, Section R403.2.3, the words "or plenums" are deleted.

(18) In IECC, Section R403.4.2, the sentences for "3." and "9." and the last sentence are deleted.

(19) In IECC, Section R403.5, the first sentence is deleted.

(20) IECC, Section R404.1 and the exception are deleted, and R404.1.1 becomes R404.1.

(21) In IECC, Table R405.5.2(1), the following changes are made under the column STANDARD REFERENCE DESIGN:

a. In the row "Air exchange rate", the words "in Zones 1 and 2, and 3 air changes per hour in Zones 3 through 8" are deleted.

b. In the row "Heating systems[f, g]", the standard reference design is deleted and replaced with the following:

"Fuel Type: same as proposed design

Efficiencies:

Electric: air source heat pump with prevailing federal minimum efficiencies

Nonelectric furnaces: natural gas furnace with prevailing federal minimum efficiencies

Nonelectric boilers: natural gas boiler with prevailing federal minimum efficiencies

Capacity: sized in accordance with Section N1103.6"

c. In the row "Cooling systems[f, h]" the words "As proposed" are deleted and replaced with the following:

"Fuel Type: Electric

Efficiency: in accordance with prevailing federal minimum standards"

d. In the row "Service water heating[f, g, h, i]", the words "As proposed" are deleted and replaced

with the following:

"Fuel Type: same as proposed design

Efficiency: in accordance with prevailing federal minimum standards

Tank Temperature: 120º F"

e. In the row "Thermal distribution systems" the word "none" is deleted and replaced with the following: "Thermal distribution system efficiency (DSE) of .080 shall be applied to both the heating and cooling system efficiencies."

(22) In IECC, Table R405.5.2(2), the number "0.80" is inserted under "Forced air systems" for "Distribution system components located in unconditioned space".

Ŝ→ (23)The RESCheck Software adopted by the United States Department of Energy and modified to meet the requirements of this section shall be used to verify compliance with this section. The software shall address the Total UA alternative approach and account for Equipment Efficiency Trade-offs when applicable per the standard reference design as amended. ←Ŝ

Section 4. **Study on improving residential energy efficiency.**

(1) During the 2013 interim, the Architectural Advisory Committee of the Uniform Building Code Commission, in consultation with the Mechanical Advisory Committee of the Uniform Building Code Commission, shall study and make recommendations **Ĥ→ [~~on ways to increase residential energy efficiency by 5% by January 1, 2015~~] regarding increasing residential energy performance ←Ĥ** .

(2) The Architectural Advisory Committee shall present its recommendations to the Business and Labor Interim Committee no later than the October 2013 interim meeting.

Section 5. **Ŝ→ Contingent ←Ŝ Ŝ→ [~~Effective~~] effective ←Ŝ date.**

Ŝ→ [~~This bill takes effect on July 1, 2013.~~] This bill takes effect on the first day of the month following the month in which the Uniform Building Code Commission certifies in writing to the Business and Labor Interim Committee that the United States Department of Energy has adopted a version of the RESCheck software that can be used to verify compliance to the requirements of this bill. ←Ŝ

Legislative Review Note
as of 2-7-13 1:08 PM

Office of Legislative Research and General Counsel