H-3518.2

HOUSE BILL 2689

State of Washington 62nd Legislature 2012 Regular Session

By Representatives Eddy, Springer, Anderson, Upthegrove, Sullivan, Tharinger, and Dammeier

Read first time 01/25/12. Referred to Committee on Technology, Energy & Communications.

AN ACT Relating to the international energy conservation code; and amending RCW 19.27.015, 19.27.031, 19.27.080, 19.27A.015, 19.27A.020, 19.27A.025, 19.27A.045, 19.27A.150, and 19.27A.160.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

Sec. 1. RCW 19.27.015 and 2009 c 362 s 2 are each amended to read as follows:

((~~As used in this chapter:~~)) The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.

(1) "Agricultural structure" means a structure designed and constructed to house farm implements, hay, grain, poultry, livestock, or other horticultural products. This structure may not be a place of human habitation or a place of employment where agricultural products are processed, treated, or packaged, nor may it be a place used by the public((~~;~~)).

(2) "City" means a city or town((~~;~~)).

(3) "Multifamily residential building" means common wall residential buildings that consist of four or fewer units, that do not exceed two stories in height, that are less than five thousand square

feet in area, and that have a one-hour fire-resistive occupancy separation between units((~~; and~~)).

(4) "State building code" means the set of nationally recognized model codes and standards developed under consensus processes by nationally recognized consensus bodies and as adopted by the state building code council for statewide applicability.

(5) "Temporary growing structure" means a structure that has the sides and roof covered with polyethylene, polyvinyl, or similar flexible synthetic material and is used to provide plants with either frost protection or increased heat retention.

Sec. 2. RCW 19.27.031 and 2003 c 291 s 2 are each amended to read as follows:

Except as otherwise provided in this chapter, there shall be in effect in all counties and cities the state building code which shall consist of the following referenced codes which are hereby adopted ((~~by reference~~)):

(1)(a) The International Building Code, published by the International Code Council((~~[,]~~)), Inc.;

(b) The International Residential Code, published by the International Code Council, Inc.;

(2) The International Mechanical Code, published by the International Code Council((~~[,]~~)), Inc., except that the standards for liquified petroleum gas installations shall be NFPA 58 (Storage and Handling of Liquified Petroleum Gases) and ANSI Z223.1/NFPA 54 (National Fuel Gas Code);

(3) The International Fire Code, published by the International Code Council((~~[,]~~)), Inc., including those standards of the National Fire Protection Association specifically referenced in the International Fire Code: PROVIDED, That, notwithstanding any wording in this code, participants in religious ceremonies shall not be precluded from carrying hand-held candles;

(4) Except as provided in RCW 19.27.170, the Uniform Plumbing Code and Uniform Plumbing Code Standards, published by the International Association of Plumbing and Mechanical Officials: PROVIDED, That any provisions of such code affecting sewers or fuel gas piping are not adopted; ((~~and~~))

(5) The rules adopted by the council establishing standards for making buildings and facilities accessible to and usable by ((~~the physically disabled~~)) individuals with disabilities or elderly persons as provided in RCW 70.92.100 through 70.92.160; and

(6) The International Energy Conservation Code, published by the International Code Council, Inc.

In case of conflict among the codes and rules enumerated in subsections (1)((~~, (2), (3), and (4)~~)) through (6) of this section, the first named code or rules shall govern over those following.

The codes enumerated in this section shall be adopted by the council as provided in RCW 19.27.074. The council shall solicit input from first responders to ensure that firefighter safety issues are addressed during the code adoption process.

The council may issue opinions relating to the codes at the request of a local official charged with the duty to enforce the enumerated codes.

Sec. 3. RCW 19.27.080 and 2003 c 291 s 3 are each amended to read as follows:

Nothing in this chapter affects the provisions of chapters ((~~19.27A,~~)) 19.28, 43.22, 70.77, 70.79, 70.87, ((~~48.48~~)) 43.44, 18.20, 18.46, 18.51, 28A.305, 70.41, 70.62, 70.75, 70.108, 71.12, 74.15, 70.94, 76.04, 90.76 RCW, or RCW 28A.195.010, or grants rights to duplicate the authorities provided under chapters 70.94 or 76.04 RCW.

Sec. 4. RCW 19.27A.015 and 1990 c 2 s 2 are each amended to read as follows:

Except as provided in RCW 19.27A.020((~~(7)~~)) (6), the Washington state energy code for residential buildings shall be the maximum and minimum energy code for residential buildings in each city, town, and county and shall be enforced under the authority of chapter 19.27 RCW by each city, town, and county no later than July 1, 1991. The Washington state energy code for nonresidential buildings shall be the minimum energy code for nonresidential buildings enforced by each city, town, and county under the authority of chapter 19.27 RCW.

Sec. 5. RCW 19.27A.020 and 2010 c 271 s 304 are each amended to read as follows:

(1) The state building code council shall adopt ((~~rules~~)) by rule the international energy conservation code, published by the International Code Council, Inc., to be known as the Washington state energy code and included as part of the state building code, chapter 19.27 RCW.

(2) The council shall follow the legislature's standards set forth in this section to adopt rules to be known as the Washington state energy code. The Washington state energy code shall be designed to:

(a) Construct increasingly energy efficient homes and buildings that help achieve the broader goal of building zero fossil-fuel greenhouse gas emission homes and buildings by the year 2031;

(b) Require new buildings to meet a certain level of energy efficiency, but allow flexibility in building design, construction, and heating equipment efficiencies within that framework; ((~~and~~))

(c) Allow space heating equipment efficiency to offset or substitute for building envelope thermal performance; and

(d) Incorporate the 2012 international energy conservation code in total with the following revisions to table C402.1.2, table C402.2, table R402.1.1, and table R402.1.3 and the default tables of chapter 10 of the 2009 Washington state energy code appendix to the code to comply with the small business provisions of chapter 19.85 RCW and to meet equivalency with the building envelope requirements of the 2009 Washington state energy code and create parity between the prescriptive design approach as the base assumptions and the U-factor alternative design approach.

(i)(A)

2012 IECC, Energy Code, Zone 5, and 4 Marine

Assembly U-Factors

Reference Table C402.1.2

Opaque Building Component	All Other U-Factor	Group R Multifamily U-Factor
Roofs		
Insulation entirely above roof deck	0.034	0.031
Metal Building	0.031	0.031
Single Rafter	0.027	0.027

Attic or other	0.027	0.027
Walls, Above Grade		
Mass, Exterior and integral insulation	0.150	0.090
Metal building	0.064	0.052
Steel Framed, Metal Stud Walls	0.064	0.057
Wood Framed and other	0.057	0.057
Walls Below Grade	**Same As Above Grade Walls**	**Same As Above Grade Walls**
Floors		
Mass	0.029	0.029
Steel Joists	0.029	0.029
Wood Framed or other	0.029	0.029
Slab on Grade Floors		
Unheated	0.54	0.54
Heated	0.36	0.36
Opaque Doors		
Swinging/Operating	0.6	0.4
Nonswinging/fixed	0.6	0.4
Vertical Fenestration		
(vertical & Overhead glazing		
0-40% of Gross Wall)		
Nonmetal framing	0.320	0.320
Metal Framing/fixed and operable windows	0.400	0.400
Entrance Doors	0.600	0.600
Skylights		
Without curb (i.e. sloped glazing)	0.50	0.500
With curb (i.e. individual skylights)	0.60	0.600

(B)

Table C402.1.2*, as it relates to climate zone 6, is modified as follows:

Building Component	All Other	Group R Multifamily
Roofs		
Insulation entirely above deck	U-0.034	U-0.031
Metal building	U-0.031	U-0.031
Single rafter	U-0.027	U-0.027
Attic or other	U-0.027	U-0.027
Walls, Above Grade		
Mass, exterior and integral insulation	U-0.123	U-0.080
Metal building	U-0.064	U-0.044
Steel framed, metal stud walls	U-0.064	U-0.044
Wood framed and other	U-0.051	U-0.044
Walls Below Grade	Same as Walls, Above Grade	
Floors		
Mass	U-0.029	U-0.029
Steel joists	U-0.029	U-0.029
Wood framed or other	U-0.029	U-0.029
Slab on Grade Floors		
Unheated	F-0.54	F-0.54
Heated	F-0.36	F-0.36
Opaque Doors		
Swinging/operating	U-0.60	U-0.40
Nonswinging	U-0.60	U-0.40
Vertical Fenestration (Vertical and Overhead Glazing 0-40% of Gross Wall)		
Nonmetal framing	U-0.32	U-0.32
Metal framing/fixed and operable windows	U-0.40	U-0.40
Entrance doors	U-0.60	U-0.60
Skylights		

Without curb (i.e. sloped glazing)	U-0.50	U-0.50
With curb (i.e. individual skylights)	U-0.60	U-0.60

*Table footnotes remain unchanged.

(ii)(A)

2012 IECC, Energy Code, Zone 5, and 4 Marine

Assembly R-Factors

Reference Table C402.2

Opaque Building Component	**All Other Assembly R-Factors**	**Group R Multifamily Assembly R-Factors**
Roofs		
Insulation entirely above roof deck	R25ci	R25ci
Metal Building	R19 + R11 LS	R19 + R11 LS
Single Rafter	R38 Advanced Framing	R38 Advanced Framing
Attic or other	R49, or R38 Advanced	R49, or R38 Advanced
Walls, Above Grade		
Mass, Exterior and integral insulation	R5.7ci	R11.4ci
Metal building	R13 + R13ci	0.052
Steel Framed, Metal Stud Walls	(4" LGS R13+R7.5ci), (6" LGS, R19+R7.5ci)	(4" LGS R13+R9ci), (6" LGS, R19+R9ci)
Wood Framed and other	2x6 Std Wood Frame R21	2x6 Std Wood Frame R21
Walls Below Grade	**Same As Above Grade Walls**	**Same As Above Grade Walls**
Floors		
Mass	R30	R30
Steel Joists	R30	R30
Wood Framed or other	R30	R30
Slab on Grade Floors		
Unheated	R10 Rigid, with Thermal Break	R10 Rigid, with Thermal Break
Heated	Fully Insulated, R10	Fully Insulated, R10

Below are all U-Factors

Opaque Doors		
Swinging/Operating	0.600	0.400
Nonswinging/fixed	0.600	0.400
Vertical Fenestration (vertical & Overhead glazing 0-40% of Gross Wall)		
Nonmetal framing	0.320	0.320
Metal framing/fixed and operable windows	0.400	0.400
Entrance Doors	0.600	0.600
Skylights		
Without curb (i.e. sloped glazing)	0.50	0.500
With curb (i.e. individual skylights)	0.60	0.600

(B)

Table C402.2*, as it relates to climate zone 6, is modified as follows:

Building Component	All Other	Group R Multifamily
Roofs		
Insulation entirely above deck	R30ci	R38ci
Metal building	R25 + R11 LS	R25 + R11 LS
Single rafter	R38 advanced framing	R38 advanced framing
Attic or other	R49 or R38 adv. framing	R49 or R38 adv. framing
Walls, Above Grade		
Mass, exterior and integral insulation	R7.6ci	R13.3ci
Metal building	R13 + R13ci	R19 + R16ci
Steel framed, metal stud walls	R13 + R7.5ci	R19 + R14ci

Wood framed and other	R13 + R7.5ci or R21 + R2.5	R21 + R5ci
Walls Below Grade		
	Same as Walls, Above Grade	
Floors		
Mass	R30	R30
Steel joists	R38 + R4ci	R38 + R4ci
Wood framed or other	R30	R30
Slab on Grade Floors		
Unheated	R10 rigid with thermal break or R15 for 36" below	R10 rigid with thermal break or R15 for 36" below
Heated	Fully insulated, R10 or R15 for 36" below	Fully insulated, R10 or R20 for 48" below
Opaque doors		
Swinging/operating	U-0.60	U-0.40
Nonswinging	U-0.60	U-0.40
Vertical Fenestration (Vertical and Overhead Glazing 0-40% of Gross Wall)		
Nonmetal framing	U-0.32	U-0.32
Metal framing/fixed and operable windows	U-0.40	U-0.40
Entrance doors	U-0.60	U-0.60
Skylights		
Without curb (i.e. sloped glazing)	U-0.50	U-0.50
With curb (i.e. individual skylights)	U-0.60	U-0.60

*Table footnotes remain unchanged.

(iii)(A)

Residential Construction, as defined by the IRC

Reference Table R402.1.1, Pg R-29, 2012 IECC **R-Value Table**

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 and Depth

5 and Marine 4	0.30	0.50	N/R	49	R21	R21	30	15/21	R10, 2', with T-Break

(B)

Table R402.1.1* as it relates to climate zone 6, is modified as follows:

Component	Standard
Fenestration U-Factor	0.30
Skylight U-Factor	0.50
Glazed Fenestration SHGC	N/R
Ceiling R-Value	R49
Wood Frame Wall R-Value	R21+5 or R13+10
Mass Wall R-Value	R21
Floor R-Value	R30
Basement Wall R-Value	15/21
Slab R-Value and Depth	R10, 4', with T-break

*Table footnotes remain unchanged.

(iv)(A)

Residential Construction, as defined by the IRC

Reference Table R402.1.3, Pg R-30, 2012 IECC **U-Value Table**

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 and Depth
5 and Marine 4	0.30	0.50	N/R	0.027	0.057	0.057	0.029	0.050	F-.54

(B)

Table R402.1.3* as it relates to climate zone 6, is modified as follows:

Component	Standard
Fenestration U-Factor	0.300
Skylight U-Factor	0.500

Ceiling U-Factor	0.027
Wood Frame Wall U-Factor	0.057
Mass Wall U-Factor	0.057
Floor U-Factor	0.029
Basement Wall U-Factor	0.050
Slab Floor F-Factor	F-.54

*Table footnotes remain unchanged.

(3) The Washington state energy code shall take into account regional climatic conditions((~~. Climate zone 1 shall include all counties not included in climate zone 2. Climate zone 2 includes: Adams, Chelan, Douglas, Ferry, Grant, Kittitas, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, and Whitman counties~~)) and assign appropriate climate zone designations as outlined in the international energy conservation code.

(4) The Washington state energy code for residential buildings shall be the ((~~2006 edition of the Washington state energy code, or as amended by rule by the council~~)) 2012 international energy conservation code, published by the International Code Council, Inc. or as amended in the future.

(5) The minimum state energy code for new nonresidential buildings shall be the ((~~Washington state energy code, 2006 edition, or as amended by the council by rule~~)) 2012 international energy conservation code, published by the International Code Council, Inc. or as amended in the future.

(6)(a) Except as provided in (b) of this subsection, the Washington state energy code for residential structures shall preempt the residential energy code of each city, town, and county in the state of Washington.

(b) The state energy code for residential structures does not preempt a city, town, or county's energy code for residential structures which exceeds the requirements of the state energy code and which was adopted by the city, town, or county prior to March 1, 1990. Such cities, towns, or counties may not subsequently amend their energy code for residential structures to exceed the requirements adopted prior to March 1, 1990.

(7) The state building code council shall ((~~consult with the department of general administration as provided in RCW 34.05.310 prior to publication of proposed rules. The director of the department of general administration shall recommend to the state building code council any changes necessary to conform the proposed rules to the requirements of this section~~)), in order to meet the intent of providing greater public access to administrative rule making and to promote consensus among interested parties, solicit comments from the public before filing with the code reviser's office a notice of proposed rule making under RCW 34.05.320.

(8) The state building code council shall evaluate and consider comments from interested parties as outlined in subsection (7) of this section prior to the adoption of the international energy conservation code in Washington state in place of the existing state energy code.

((~~(9) The definitions in RCW 19.27A.140 apply throughout this section.~~))

Sec. 6. RCW 19.27A.025 and 1991 c 122 s 3 are each amended to read as follows:

(1)(a) The minimum state energy code for new nonresidential buildings shall be the ((~~Washington state energy code, 1986 edition, as amended~~)) 2012 international energy conservation code, published by the International Code Council, Inc. or as amended in the future. The state building code council may, by rule adopted pursuant to chapter 34.05 RCW, amend that code's requirements for new nonresidential buildings provided that:

((~~(a)~~)) (i) Such amendments increase the energy efficiency of typical newly constructed nonresidential buildings and maintain and promote a competitive business climate to build a strong state economy; and

((~~(b)~~)) (ii) Any new measures, standards, or requirements adopted as amendments to the international energy conservation code must be technically feasible, commercially available, and cost-effective to building owners and tenants and must, prior to filing the rule-making order, first be evaluated according to national consensus standards such as: (A) ASTM E917 practice for measuring life-cycle costs of buildings and building systems; (B) ASTM E1074 practice for measuring net benefits and net savings for investments in buildings and building

systems; and (C) ASTM E1121 practice for measuring payback for investments in buildings and building systems, for the purpose of assessing the impact of proposed amendments to the code.

(b) The state building code council shall adopt rules consistent with chapter 19.85 RCW and evaluate impacts resulting from adoption of the energy code based on the extent of disproportionate impact on small business and reduce the costs imposed by the rule on small business.

(2) In considering amendments to the state energy code for nonresidential buildings, the state building code council shall establish and consult with a technical advisory committee including representatives of appropriate state agencies, local governments, general contractors, building owners and managers, design professionals, utilities, and other interested and affected parties.

(3) Decisions to amend the Washington state energy code for new nonresidential buildings shall be made prior to December 15th of any year and shall not take effect before the end of the regular legislative session in the next year. Any disputed provisions within an amendment presented to the legislature shall be approved by the legislature before going into effect. A disputed provision is one which was adopted by the state building code council with less than a two-thirds majority vote. Substantial amendments to the code shall be adopted no more frequently than every three years.

Sec. 7. RCW 19.27A.045 and 1990 c 2 s 5 are each amended to read as follows:

The state building code council shall maintain the state energy code for residential structures in a status which is consistent with the state's interest as set forth in section 1, chapter 2, Laws of 1990. In maintaining the Washington state energy code for residential structures, beginning in 1996 the council shall review the Washington state energy code every three years. After January 1, 1996, by rule adopted pursuant to chapter 34.05 RCW, the council may ((~~amend any provisions of~~)) adopt a new edition of the international energy conservation code as the Washington state energy code to increase the energy efficiency of newly constructed residential buildings. The state building code council shall adopt rules consistent with chapter 19.85 RCW and evaluate impacts resulting from adoption of the energy code based on the extent of disproportionate impact on small business

and reduce the costs imposed by the rule on small business. Prior to filing the rule-making order, the Washington state building code council's proposed rules must first be evaluated according to national consensus standards such as: (1) ASTM E917 practice for measuring life-cycle costs of buildings and building systems; (2) ASTM E1074 practice for measuring net benefits and net savings for investments in buildings and building systems; and (3) ASTM E1121 practice for measuring payback for investments in buildings and building systems, for the purpose of assessing the impact of proposed amendments to the code. Decisions to ((~~amend~~)) adopt a new edition of the Washington state energy code for residential structures shall be made prior to December 1st of any year and shall not take effect before the end of the regular legislative session in the next year.

Sec. 8. RCW 19.27A.150 and 2010 c 271 s 306 are each amended to read as follows:

(1) To the extent that funding is appropriated specifically for the purposes of this section, the department of commerce shall develop and implement a strategic plan for enhancing energy efficiency in and reducing greenhouse gas emissions from homes, buildings, districts, and neighborhoods. The strategic plan must be used to help direct the future code increases in RCW 19.27A.020, with targets for new buildings consistent with RCW 19.27A.160. The strategic plan will identify barriers to achieving net zero energy use in homes and buildings and identify how to overcome these barriers in future energy code updates and through complementary policies.

(2) The department of commerce must complete and release the strategic plan to the legislature and the council by December 31, 2010, and update the plan every three years.

(3) The strategic plan must include ((~~recommendations~~)) a report to the council on potential energy code upgrades as provided in RCW 19.27A.020. At a minimum, the strategic plan must:

(a) Consider ((~~development of aspirational codes separate from the state energy code that contain economically and technically feasible optional standards that could achieve higher energy efficiency for those builders that elected to follow the aspirational codes in lieu of or in addition to complying with the standards set forth in the state energy code~~)) the positive benefits of adopting the international green

construction code, for commercial construction, and the national green building standard and recognized built-green programs, for residential construction, as optional codes separate from the state energy code since those codes contain economically and technically feasible standards that achieve higher energy efficiency than the state energy code;

(b) Determine the appropriate methodology to measure achievement of state energy code targets using the United States environmental protection agency's target finder program or equivalent methodology;

(c) Address the need for enhanced code training and ((~~enforcement~~)) administration as well as industry and community outreach and training;

(d) Include state strategies to support research, demonstration, and education programs designed to achieve a seventy percent reduction in annual net energy consumption as specified in RCW 19.27A.160 and enhance energy efficiency and on-site renewable energy production in buildings;

(e) Recommend incentives, education, training programs and certifications, particularly state-approved training or certification programs, joint apprenticeship programs, or labor-management partnership programs that train workers for energy-efficiency projects to ensure proposed programs are designed to increase building professionals' ability to design, construct, and operate buildings that will meet the seventy percent reduction in annual net energy consumption as specified in RCW 19.27A.160;

(f) Address barriers for utilities to serve net zero energy homes and buildings and policies to overcome those barriers;

(g) Address the limits of a prescriptive code in achieving net zero energy use homes and buildings and propose a transition to performance-based codes commensurate with RCW 19.27A.025(1)(a)(ii) and 19.27A.045;

(h) Identify financial mechanisms such as tax incentives, rebates, and innovative financing to motivate energy consumers to take action to increase energy efficiency and their use of on-site renewable energy. Such incentives, rebates, or financing options may consider the role of government programs as well as utility-sponsored programs;

(i) Address the adequacy of education and technical assistance, including school curricula, technical training, and peer-to-peer exchanges for professional and trade audiences;

(j) Develop strategies to develop and install district and neighborhood-wide energy systems that help meet net zero energy use in homes and buildings;

(k) Identify costs and benefits of energy efficiency measures on residential and nonresidential construction using national consensus standards such as: (i) ASTM E917 practice for measuring life-cycle costs of buildings and building systems; (ii) ASTM E1074 practice for measuring net benefits and net savings for investments in buildings and building systems; and (iii) ASTM E1121 practice for measuring payback for investments in buildings and building systems, for the purpose of assessing the impact of proposed amendments to the code; and

(l) Investigate methodologies and standards for the measurement of the amount of embodied energy used in building materials.

(4) The department of commerce and the council shall convene a work group with the affected parties to inform the initial development of the strategic plan.

Sec. 9. RCW 19.27A.160 and 2009 c 423 s 5 are each amended to read as follows:

(1) Except as provided in subsection (2) of this section, residential and nonresidential construction permitted under the 2031 state energy code must achieve a seventy percent reduction in annual net energy consumption, using the adopted 2006 Washington state energy code as a baseline.

(2) The council shall adopt state energy codes from 2013 through 2031 that incrementally move towards achieving the seventy percent reduction in annual net energy consumption as specified in subsection (1) of this section. The council shall report its progress by December 31, 2012, and every three years thereafter. If the council determines that economic, technological, or process factors would significantly impede adoption of or compliance with this subsection, the council may defer the implementation of the proposed energy code update and shall report its findings to the legislature by December 31st of the year prior to the year in which those codes would otherwise be enacted. In order to arrive at a determination, the council shall use national consensus standards such as: (a) ASTM E917 practice for measuring life-cycle costs of buildings and building systems; (b) ASTM E1074 practice for measuring net benefits and net savings for investments in

buildings and building systems; and (c) ASTM E1121 practice for measuring payback for investments in buildings and building systems, for the purpose of assessing the impact of complying with this section.

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