ENERGY CONSERVATION CODE OF THE CITY OF LAWRENCE, KANSAS, JULY 1, 2016, EDITION

Amending Article 8

OF CHAPTER V OF THE CODE OF THE CITY OF LAWRENCE, KANSAS

City *of* Lawrence

Incorporated By Reference Pursuant to K.S.A. 12-3009, *et seq.*, K.S.A. 12-3301 *et seq.*, and the Home Rule Authority of the City

Passed by the Governing Body of the City of Lawrence, Kansas

Ordinance No. 9244

Effective July 1, 2016

SECTION 1. Chapter V, Article 8 of the Code of the City of Lawrence, Kansas, 2015 Edition, and amendments thereto, is hereby amended to read as follows:

ARTICLE 8. ENERGY CONSERVATION CODE

5-801 **ENERGY CONSERVATION CODE ADOPTED AND INCORPORATED.**
The *2015 International Energy Conservation Code*, published by the International Code Council, Inc., other than those portions hereinafter specifically deleted, modified, or amended, is hereby adopted as the City's Energy Code and is incorporated herein by reference as if set forth in full.

5-802 **OFFICIAL COPY.**
Not less than one (1) copy of the *2015 International Energy Conservation Code* shall be marked or stamped "OFFICIAL COPY AS INCORPORATED BY ORDINANCE No. 9244," with all sections or portions deleted, modified, or amended clearly marked as such, and to which one (1) copy of this ordinance shall be affixed, shall be filed with the City Clerk, shall be open to inspection, and shall be available to the public during reasonable business hours. Additional official copies shall, at the cost of the City, be supplied to those officials and agencies charged with enforcement of the City's Energy Conservation Code.

5-803 **AMENDMENTS TO THE *2015 INTERNATIONAL ENERGY CONSERVATION CODE.***
The *2015 International Energy Conservation Code* is amended as set forth in the succeeding sections of this Article. These amendments shall not serve to delete, modify, or amend any discretely numbered section or subsection of the *2015 International Energy Conservation Code*, unless the section or subsection is specifically identified as being deleted, modified, or amended.

5-804 **The *2015 International Energy Conservation Code*** is hereby amended by deleting CHAPTER 1, "SCOPE AND ADMINISTRATION."

5-805 **Section R401.3 of the *2015 International Energy Conservation Code*** is hereby amended to read as follows:

R401.3 Certificate (Mandatory). A permanent certificate shall be completed by the builder or registered design professional and posted on ~~a wall in the space where the furnace is located, a utility room or an approved location inside the building~~ the electrical panel. ~~Where located on an electrical panel, t~~The certificate shall not cover or obstruct the visibility of the circuit directory label, service disconnect label or other required labels. The certificate shall list the predominant R-values of insulation installed in or on ceiling/roof, walls, foundation (slab, basement wall, crawlspace wall and floor) and ducts outside conditioned spaces; U-factors for fenestration and the solar heat gain coefficient (SHGC) of fenestration, and the results from any required duct system and building envelope air leakage testing done on the building. Where there is more than one value for each component, the certificate shall list the value covering the largest area. The certificate shall list the types and efficiencies of heating, cooling and service water heating equipment. Where a gas-fired unvented room heater, electric furnace or baseboard electric heater is installed in the residence, the certificate shall list “gas-fired unvented room heater,” “electric furnace” or “baseboard electric heater,” as appropriate. An efficiency shall not be listed for gas-fired unvented room heaters, electric furnaces or electric baseboard heaters.

5-806 **Table R402.1.1 of the *2015 International Energy Conservation Code*** is hereby amended to read as follows:

TABLE R402.1.2
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]	FLOOR R-VALUE	BASEMENT[c] WALL R-VALUE	SLAB[d] R-VALUE & DEPTH	CRAW SPACE[c] WALL R-VALUE
1	NR	0.75	0.25	30	13	3/4	13	0	0	0
2	0.40	0.65	0.25	38	13	4/6	13	0	0	0
3	0.35	0.55	0.25	38	20 or 13 + 5[h]	8/13	19	5/13[f]	0	5/13
4 except Marine	0.35	0.55	0.40	49	~~20~~19 or 13+2[h]	8/13	19	10/13	10, 2 ft[j]	10/13
5 and Marine 4	0.32	0.55	NR	49	20 or 13 + 5[h]	13/17	30[g]	15/19	10, 2 ft	15/19
6	0.32	0.55	NR	49	20+5 or 13+10[h]	15/20	30[g]	15/19	10, 4 ft	15/19
7 and 8	0.32	0.55	NR	49	20+5 or 13+10[h]	15/20	38[g]	15/19	10, 4 ft	15/19

For SI:1 foot = 304.8 mm.

a. R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the installed R-value of the insulation shall not be less than the R-value specified in the table.

b. The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
Exception: Skylights may be excluded from glazed fenestration SHGC requirements in Climate Zones 1 through 3 where the SHGC for such skylights does not exceed 0.30.

c. "15/19" means R-15 continuous insulation 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 insulation on the interior or exterior of the home. "10/13" means R-10 continuous insulation on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall.

d. R-5 shall be added to the required slab edge R-values for heated slabs. Insulation depth shall be the depth of the footing or 2 feet, whichever is less in Zones 1 through 3 for heated slabs.

e. There are no SHGC requirements in the Marine Zone.

f. Basement wall insulation is not required in warm-humid locations as defined by Figure N1101.10 and Table N1101.10.

g. Or insulation sufficient to fill the framing cavity, R-19 minimum.

h. The first value is cavity insulation, the second value is continuous insulation, so "13+5" means R-13 cavity insulation plus R-5 continuous insulation.

i. The second R-value applies when more than half the insulation is on the interior of the mass wall.

<u>j. Slab edge insulation may be eliminated for slab on grade floors when heating systems efficient rating is 90% or better.</u>

5-807 **Section R402.2.9 of the *2015 International Energy Conservation Code*** is hereby amended to read as follows:

R402.2.9 Basement walls. Walls associated with conditioned basements shall be insulated from the top of the basement wall down to 10 feet (3048 mm) below grade or to the basement floor, whichever is less. Walls associated with unconditioned basements shall meet this requirement unless the floor overhead is insulated in accordance with Section R402.1.2 and R402.2.8.

<u>**Exception:** Basement walls that are otherwise exposed shall be insulated from the top of the basement wall down to 3 feet (914mm) below grade or the basement floor, whichever is less.</u>

5-808 **Sections R403.3.2, 403.3.3, and 403.3.5 of the *2015 International Energy Conservation Code*** are hereby amended to read as follows:

R403.3.2 Sealing (Mandatory). Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with either the <u>*2015* *International Mechanical Code*</u>, <u>as adopted by the City</u>, or ~~the International Mechanical Code~~ <u>Section M1601.4.1 of the *2015 International Exiting Building Code*, as adopted by the City</u>, as applicable.

Exceptions:

1. Air-impermeable spray foam products shall be permitted to be applied without additional joint seals.

2. ~~For ducts having a static pressure classification of less than 2 inches of water column (500 Pa), additional closure systems shall not be required for~~ ~~c~~Continuously welded joints and seams, and locking-type joints, shall be permitted without additional joint seals. ~~and seams of other than the snap-lock and button-lock types.~~

R403.3.3 Duct Testing (Mandatory). Ducts shall be pressure tested to determine air leakage by one of the following methods:

1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. All registers shall be taped or otherwise sealed during the test.

2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

Exceptions: A duct air leakage test shall not be required where: ~~the ducts and air handlers are located entirely within the building thermal envelope.~~

1. The ducts and air handlers are located entirely within the building thermal envelope; or

2. A whole house air leakage test is performed.

~~**N1103.3.5 (R403.3.5) Building cavities (Mandatory).** Building framing cavities shall not be used as ducts or plenums.~~

5-809 **R403.5.1.1 of the *2015 International Energy Conservation Code*** is hereby amended to read as follows:

R403.5.1.1 Circulation systems. Heated water circulation systems ~~shall~~ may be provided with a circulation pump. The system return pipe shall be a dedicated return pipe or a cold water supply pipe. ~~Gravity and thermo-syphon circulation systems shall be prohibited.~~ Controls for circulating hot water system pumps shall start the pump based on the identification of a demand for hot water within the occupancy. The controls shall automatically turn off the pump when the water in the circulation loop is at the desired temperature and when there is no demand for hot water.

5-810 **Section R403.5.3 of the *2015 International Energy Conservation Code*** is hereby amended to read as follows:

R403.5.3 Hot water pipe insulation (Prescriptive). Insulation for hot water pipe with a minimum thermal resistance (R-value) of R-3 shall be applied to the following:

~~1.~~ ~~Piping 3/4-inch (19 mm) and larger in nominal diameter.~~

~~2.~~ ~~Piping serving more than one dwelling unit.~~

~~3.~~1. Piping located outside the conditioned space.

~~4.~~2. Piping from the water heater to a distribution manifold.

~~5.~~3. Piping located under a floor slab.

~~6.~~4. Buried in piping.

~~7.~~5. Supply and return piping in recirculation systems other than demand recirculation systems.

5-811 **Table R406.4 of the *2015 International Energy Conservation Code*** is hereby amended to read as follows:

TABLE N1106.4 (R406.4)
MAXIMUM ENERGY RATING INDEX

CLIMATE ZONE	ENERGY RATING INDEX
1	52
2	52
3	51
4	70
5	55
6	54
7	53
8	53