

ARTICLE 3  
INTERNATIONAL RESIDENTIAL CODE

SECTION 1. ADOPTION. The International Residential Code, 2012 Edition, published by the International Code Council, including Appendix Chapters E, G, H, J, K, P, and O is hereby adopted.

- a) SECTION 2. DEFINITIONS. For the purposes of the International Residential Code, 2012 Edition, as adopted, the following words and phrases shall have the following meanings:
- b) The term "ordinance" shall mean and include the word "resolution."
- c) The term "city" shall mean and include the word "county."
- d) The term "misdemeanor", unless otherwise specifically defined or provided for herein, shall mean Class I Infraction.
- e) The term "Code official" shall mean the Johnson County Building Code Official.
- f) The term "approved certified sprinkler system" shall mean one that has been designed by an engineer who is licensed in the State of Kansas, and installed by a contractor licensed to do so by the Kansas State Fire Marshall, and approved by the County Building Code Official.

SECTION 3. DELETIONS. The following provisions of the International Residential Code, as adopted, shall be deleted and not applicable under this Code:

- a) Section R112 Board of Appeals.
- b) Section R309.5 Fire Sprinklers.
- c) Section N1103.4.2 (R403.4.2) Hot water pipe insulation (Prescriptive).
- d) Section N1103.2.3 (R403.2.3) Building Cavities (Mandatory).
- e) Section N1104.1 (R404.1) Lighting Equipment (Mandatory).

SECTION 4. ADDITIONS.

- a) Section R113.4 Violation Penalties. At the end of Section R113.4 add the following language: Violation of any provision of this Code shall be a public offense, punishable upon conviction as provided in Article 20 of the Johnson County Code of Regulations for Buildings and Construction, 2012 Edition. Each separate day or any portion thereof, during which any violation of this Code occurs or continues, shall also be deemed to constitute a separate offense, and shall be punishable as provided in Article 20 designated above. Unless otherwise provided a violation of this Code shall be a Class I Infraction.

- b) Section R306.5 of the 2012 International Residential Code for One and Two-Family Dwellings is hereby added as follows:  
R306.5 New single family dwellings toilet facilities. Toilet facilities shall be provided within 500 feet (measured from the property line adjacent to the street for platted subdivisions along the public right-of-way) for all new single family dwellings starting from the time of the first footing inspection until facilities are available in the dwelling. If the facilities are not located on the job site, the location of the required facilities shall be posted on the job site or other certification provided to the Building Code Official to verify the availability of toilet facilities. The facilities on the site shall be removed prior to issuance of a Temporary Certificate of Occupancy.
- c) Section R306.6 of the 2012 International Residential Code for One and Two-Family Dwellings is hereby added as follows:  
R306.6 New Single Family Dwellings Construction Site Maintenance. All construction sites shall be maintained in a good, clean, and safe condition, including, but not limited to, the following minimum requirements:
1. Construction materials shall be stored, maintained and secured so as to prevent a safety risk or danger. Accumulated construction debris shall be hauled away and disposed of at an approved land fill. Dumpsters shall be emptied or removed when full and may be used only for construction debris. Construction materials shall not be stored in a public right-a-way.
  2. All mud, dirt, or debris deposited on any street, crosswalk, sidewalk, or other public property as a result of excavation, construction, or demolition shall be immediately broom cleaned to the extent possible and disposed of in an acceptable manner.
  3. It shall be unlawful to intentionally place, deposit, or otherwise dispose of construction debris in any public or private sewer.
  4. Airborne particles shall be controlled on the property at all times during work by means of a water truck and/or spraying equipment, or other water sources capable of spraying and thoroughly saturating all portions of the structure and surrounding property affected by the work. Spraying shall be undertaken at all times necessary to thoroughly control the creation and migration of airborne particles, including, without limitation, dust, from the subject property.
  5. No person shall operate or cause to be operated any radio, media player, telecommunications device or other such object at such a volume or in any other manner that would cause a nuisance or disturbance to any person.
  6. Every contractor shall be responsible for all actions of their employees, agents, and subcontractors under this subsection, and shall be responsible for all violations of the provisions of this subsection committed by such employees, agents, or subcontractors.
- d) Section R309.6 of the 2012 International Residential Code for One and Two-Family Dwellings is hereby added as follows:  
R309.6 Residential driveways. Residential concrete and asphalt driveway slabs shall be a minimum of 4-inches thick. The driveway shall have a constant slope

so as to avoid ponding of water. The slope shall be away from the house or building or drain by means approved by the County Engineer.

- e) Section R401.4.3 of the 2012 International Residential Code for One and Two-Family Dwellings is hereby added as follows:  
R401.4.3 Soils report required. Foundation designs for new dwellings using the standards referenced in Subsection R404.1.2 shall submit a report from a registered design professional specifying the properties of the soil based on Table 405.1 prior the inspection of footings, if deemed necessary by the Building Code Official.
  
- f) Section R401.4.4 of the 2012 International Residential Code for One and Two-Family Dwellings is hereby added as follows:  
R401.4.4 Johnson County Residential Foundation Guidelines. Foundation designs for one-and two-family dwellings may use the approved standard design provided in the Johnson County Residential Foundation Guidelines in lieu of the prescriptive requirements of the 2012 International Residential Code as approved by the Building Code Official.
  
- g) Section R401.2.1 of the 2012 International Residential Code for One and Two-Family Dwellings is hereby added as follows:  
R401.2.1 Design required. A design in accordance with accepted engineering practices shall be provided for concrete or masonry foundation walls when any of the conditions listed below exist:
  - 1. Walls are subject to hydrostatic pressure from ground water.
  - 2. Walls supporting more than 48 inches of unbalanced backfill that do not have permanent lateral support at the top and bottom.
  - 3. Sites containing CH, MH, OL, or OH soils as identified in Table R405.1.
  - 4. Foundation walls ten feet or greater in height, measured from the top of the wall to the bottom of the footing.
  - 5. Lots identified on the subdivision grading plan as having more than six feet of fill or having a finished slope steeper than 4 horizontal to 1 vertical before grading.
  - 6. Footings and foundations with existing fill soils below the footing level.
  - 7. Sloping lots steeper than 4 to 1 before grading.
  - 8. Lots where some footings will bear on soil and others will bear on a different soil type, including rock.
  - 9. Areas where problems have historically occurred.
  - 10. Stepped footing and foundation walls.
  
- h) Section R403.1.1.1 of the 2012 International Residential Code for One and Two-Family Dwellings is hereby added as follows:  
R403.1.1.1 Continuous footing reinforcement. Continuous footings for basement foundation walls shall have minimum reinforcement consisting of not less than two No. 4 bars, uniformly spaced, located a minimum 3 inches clear from the bottom of the footing.

- i) Section R403.1.1.2 of the 2012 International Residential Code for One and Two-Family Dwellings is hereby added as follows:  
R403.1.1.2 Column pads. Column pads shall be a minimum of 24 inches by 24 inches and 8 inches deep. Reinforcement shall consist of a minimum of three No. 4 bars each way, uniformly spaced.
  
- j) Section R506.2.5 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby added as follows:  
R506.2.5 Basement floor slab isolation. Basement floor slabs shall be isolated from column pads, interior columns, and interior bearing walls to facilitate differential movement. Nonbearing walls supported on basement floor slabs shall be provided with a minimum one inch expansion joint to facilitate differential movement between the floor slab and the floor framing above. Isolation and/or an expansion joint is not required within six inches of the exterior walls
  
- k) Section R903.5 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby added as follows:  
R903.5 Hail exposure. Hail exposure, as specified in Sections R903.5.1 and R903.5.2, shall be determined using Figure R903.5  
R903.5.1 Moderate hail exposure. One or more hail days with hail diameters larger than 1.5 inches (38 mm) in a 20-year period.  
R903.5.2 Severe hail exposure. One or more hail days with hail diameters equal to or larger than 2.0 inches (51 mm) in a 20-year period.

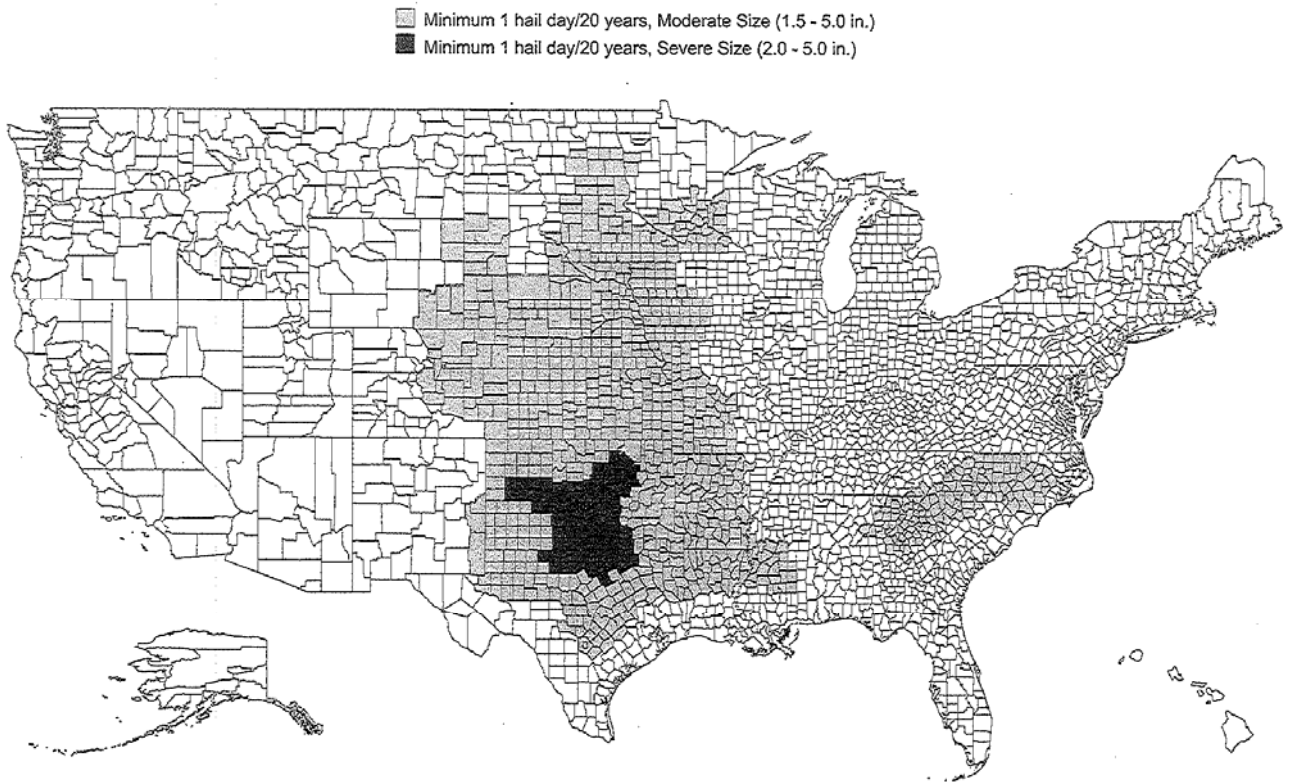


Figure R903.5  
Hail Exposure Map

- l) Section P2603.5.2 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby added as follows:  
P2603.5.2 Cleanouts on building sewers. Cleanouts on building sewers shall be located as required by the appropriate authority having jurisdiction.
- m) Section P3002.2.1 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby added as follows:  
P3002.2.1 Drainage pipe in filled ground. Where a building drain is installed on filled or unstable ground, the drainage pipe shall conform to one of the standards for ABS plastic pipe, cast-iron pipe, copper or copper-alloy tubing, or PVC plastic pipe listed in Table P3002.1(2).
- n) Section P3002.2.2 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby added as follows:  
P3002.2.2 Sanitary and storm sewers. Where separate systems of sanitary drainage and storm drainage are installed on the same property, the sanitary and storm building sewers or drains shall be permitted to be laid side by side in one trench if approved by the appropriate authority having jurisdiction.
- o) Section E3902.5 of the 2012 International Residential Code for One- and Two-Family Dwellings shall have the following exceptions added as follows:  
E3902.5 Unfinished basement receptacles.  
Exceptions:  
1. A single receptacle supplying a permanently installed sump pump.  
2. A single receptacle supplied by a dedicated branch circuit that is located and identified for specific use by a cord- and plug-connected appliance such as a refrigerator or freezer.
- p) Section E3902.12 of the 2012 International Residential Code for One- and Two-Family Dwellings shall have the following exceptions added as follows: E3902.12 Arc-fault circuit-interrupter protection.  
Exceptions:  
1. A smoke alarm or carbon monoxide alarm shall not be considered an outlet and shall not be included in a branch circuit protected by an arc-fault circuit interrupter.  
2. This section shall not apply where existing dwelling unit premises' wiring circuits make the application of this section impracticable, as deemed by the Building Code Official.

Informational Note: Two examples of the application of this exception are where the existing dwelling unit has a multi-wire branch circuit or utilizes a listed panel board for which there is no listed device for the application of AFCI protection.

- q) Section E3902.13 of the 2012 International Residential Code for One- and Two-Family Dwellings shall have the following exception added as follows:  
E3902.13 Arc-fault circuit interrupter protection for branch circuit extensions or modifications.

Exception: This section will not apply where existing dwelling unit premises' wiring circuits make the application of this section impracticable, as determined by the Building Code Official.

Informational Note: Two examples of the application of this exception are where the existing dwelling unit has a multi-wire branch circuit or utilizes a listed panel board for which there is no listed device for the application of AFCI protection.

## SECTION 5. AMENDMENTS

- a) Section R101.1 Title. Amend Section R101.1 as follows: These provisions shall be known as the Residential Code for One- and Two-Family Dwellings of Johnson County, Kansas, and shall be cited as such and will be referred to herein as "this Code."
- b) Section R108.2 Schedule of permit fees. Amend Section R108.2 as follows: On buildings, structures, electrical, gas, mechanical, and plumbing systems, or alterations requiring a permit, a fee for each permit shall be paid as required in accordance with the schedule in Table 1-A. When permit fees are required, a plan review fee shall be paid at the time of submitting documents for plan review. The plan review fee shall be \$50.00, except that plan review fees for new single-family dwellings shall be \$100.00.  
The plan review fee specified in this subsection is a separate fee from the permit fees specified in Section 108, and is in addition to the permit fees.  
When submittal documents are incomplete or changed so as to require additional plan review or when the project involves deferred submittal items, an additional plan review fee shall be charged at the rate shown in Table 1-A.  
Applications for which no permit is issued within 180 days following the date of application shall expire and plans and other data submitted for review may thereafter be returned to the applicant or destroyed by the Building Code Official. The Building Code Official may extend the time for action by the applicant for a period not exceeding 180 days on written request by the applicant showing that circumstances beyond the control of the applicant have prevented action from being taken. No application shall be extended more than once. In order to renew action on an application after expiration, the applicant shall resubmit plans and pay a new plan review fee.

**TABLE 1-A BUILDING PERMIT FEES**

TOTAL VALUATION	FEE
\$1.00 to \$500.00	\$22.00
\$501.00 to \$2,000.00	\$22.00 for the first \$500.00 plus \$2.75 for each additional \$100.00, or fraction thereof, to and including \$2,000.00
\$2,001.00 to \$25,000.00	\$63.00 for the first \$2,000.00 plus \$12.50 for each additional \$1,000.00, or fraction thereof, to and including \$25,000.00
\$25,001.00 to \$50,000.00	\$352.00 for the first \$25,000.00 plus \$9.00 for each additional \$1,000.00, or fraction thereof, to and including \$50,000.00
\$50,001.00 to \$100,000.00	\$580.00 for the first \$50,000.00 plus \$6.25 for each additional \$1,000.00, or fraction thereof, to and including \$100,000.00
\$100,001.00 to \$500,000.00	\$895.00 for the first \$100,000.00 plus \$5.00 for each additional \$1,000.00, or fraction thereof to and including \$500,000.00
\$500,001.00 to \$1,000,000.00	\$2,855.00 for the first \$500,000.00 plus \$4.25 for each additional \$1,000.00, or fraction thereof, to and including \$1,000,000.00
\$1,000,001.00 and up	\$4,995.00 for the first \$1,000,000.00 plus \$2.75 for each additional \$1000.00, or fraction thereof
<b>Other Inspections and Fees:</b>	
1. Inspections outside of normal business hours (minimum charge -two hours)	\$50.00 per hour*
2. Reinspection fees assessed under provisions of Section 108.8	\$50.00 per hour*
3. Inspections for which no fee is specifically indicated (minimum charge - one-half hour)	\$50.00 per hour*
4. Additional plan review required by changes, additions or revisions to plans	\$50.00 per hour*
5. For use of outside consultants for plan checking or inspections.	Actual costs**
<p>*Or the total hourly cost to the jurisdiction, whichever is the greatest. This cost shall include supervision, overhead, equipment, hourly wages and fringe benefits of the employees involved.</p> <p>**Actual costs include administrative and overhead costs.</p>	

c) Section R301.2 Climatic and geographic design criteria. Amend Table R301.2(1) to read:

**TABLE R301.2(1)  
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA**

GROUND SNOW LOAD	WIND DESIGN		SEISMIC DESIGN CATEGORY <sup>f</sup>	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP <sup>e</sup>	ICE BARRIER UNDERLAYMENT REQUIRED <sup>h</sup>	FLOOD HAZARDS <sup>g</sup>	AIR FREEZING INDEX <sup>i</sup>	MEAN ANNUAL TEMP <sup>j</sup>
	Speed <sup>d</sup> (mph)	Topographic effects <sup>k</sup>		Weathering <sup>a</sup>	Frost line depth <sup>b</sup>	Termite <sup>e</sup>					
20	90	No	A	Severe	36"	M-H	6°F	Yes		92.7	55°F

- d) Section R302.2 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
R302.2 Townhouses. Each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies meeting the requirements of Section 706 of the International Building Code, or when townhouses on both sides of the fire resistance rated wall assembly are equipped throughout with an automatic sprinkler system installed in accordance with Section P2904, the wall separating the townhouses shall meet the requirements of Sections 302.1, 302.2.1, 302.2, 302.2.3, and 302.2.4 of this Code.  
Exception: When townhouses on both sides of the fire-resistance rated wall assembly are equipped throughout with an automatic sprinkler system installed in accordance with Section P2904, a common 1-hour fire-resistance rated wall assembly tested in accordance with ASTM E 199 or UL 263 is permitted for townhouses if such walls do not contain plumbing, mechanical equipment, ducts, or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extended to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be installed in accordance with Chapters 34 through 43. Penetrations of electrical outlet boxes shall be in accordance with Section R302.4.
- e) Section R302.3 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
R302.3 Two-family dwellings. Two-family dwellings shall be separated in accordance with the requirements for townhouses as set forth in this Code.
- f) Section R303.4 of the 2012 International Residential Code for One-and Two-Family Dwellings is hereby amended as follows:  
R303.4 Mechanical Ventilation. If the air infiltration rate of a dwelling unit is less than 3 air changes per hour when tested with a blower door at a pressure of 0.2 inch w.c (50 Pa) in accordance with Section N1102.4.1.2, the dwelling unit shall be provided with whole-house mechanical ventilation in accordance with Section M1507.3.
- g) Section R313.2 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
R313.2 One- and two-family dwellings automatic fire systems. An automatic residential fire sprinkler system may be installed in one- and two-family dwellings.  
Exception: An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential sprinkler system.
- h) Section R315.3 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
R315.3 Where required in existing dwellings. If work requiring a permit occurs in existing dwellings that have attached garages or in existing dwellings within



which fuel-fired appliances exist, then carbon monoxide alarms shall be provided in accordance with Section R315.1.

Exceptions:

1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck, are exempt from the requirements of this Section.
2. Installation, alteration or repairs of plumbing or mechanical systems are exempt from the requirements of this Section.

- i) Section R401 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:

R401.1 Application. The provisions of this chapter shall control the design and construction of the foundation and foundation spaces for all buildings. In addition to the provisions of this chapter, the design and construction of foundations in flood hazard areas as established by Table R301.2(1) or the designated Johnson County flood hazard areas shall meet the provisions of Section R322. Wood foundations shall be designed and installed in accordance with AF&PA PWF. Foundation designs for one- and two-family dwellings may use the approved standards and designs provided in the Johnson County Residential Foundation Guidelines in lieu of the prescriptive requirements of Chapter 4 of this Code as approved by the Building Official.

Exception: The provisions of this chapter shall be permitted to be used for wood foundations only in the following situations:

1. In buildings that have no more than two floors and a roof.
2. When interior basement and foundation walls are constructed at intervals not exceeding 50 feet.

Wood foundations in Seismic Design Category D<sub>0</sub>, D<sub>1</sub> or D<sub>2</sub> shall be designed in accordance with accepted engineering practice.

- j) Section R404.1.3 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:

R404.1.3 Design required. A design in accordance with accepted engineering practice shall be provided for concrete or masonry foundation walls when any of the conditions listed below exist. Where applicable, a standard design approved by the County may be used in lieu of a design from the design professional. For new single family dwellings where standard designs approved by the County are used, the design professional sealing the plans shall specify the use of those designs on the approved plans or through a separate report.

1. Walls are subject to hydrostatic pressure from ground water.
2. Walls supporting more than 48 inches of unbalanced backfill that do not have permanent lateral support at the top and bottom.
3. Sites containing CH, MH, OL, or OH soils as identified in Table R405.1
4. Foundation walls exceeding nine feet in height, measured from the top of the wall to the bottom of the slab.

5. Lots identified on the subdivision grading plan as having more than six feet of fill or having a finished slope steeper than 4 horizontal to 1 vertical before grading.
6. Footings and foundations with existing fill soils below the footing level.
7. Sloping lots steeper than 4 to 1 before grading.
8. Lots where some footings will bear on soil and others will bear on rock.
9. Areas where problems have historically occurred.
10. Stepped footing and foundation walls.
11. Garage floor slabs supported on more than 24 inches of clean sand or gravel or eight inches of earth.

k) Section R602.6.1 of the 2012 International Residential Code for One –and Two Family Dwellings is hereby amended as follows:

Section R602.6.1 Drilling and notching of top plate. When piping or ductwork is placed in or partly in an exterior wall or interior load-bearing wall, necessitating cutting, drilling or notching of the top plate by more than 50 percent of its width, a galvanized metal tie not less than 0.054 inch thick (1.37 mm) (16 gas) and 1 ½ inches (38 mm) wide shall be fastened across and to the plate at each side of the opening with not less than four 10d (0.148 inch diameter) nails having a minimum length of 1 ½ inches (38 mm) at each side or equivalent. The metal tie must extend a minimum of 6 inches past the opening. See Figure R602.6.1.

l) Section R907.3 of the 2012 International Residential Code for One –and Two Family Dwellings is hereby amended as follows:

R907.3 Recovering versus replacement. New roof coverings shall not be installed without first removing all existing layers of roof coverings where any of the following conditions exist:

1. Where the existing roof or roof covering is water-soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is asphalt shingle, wood shake, slate, clay, cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.

Exceptions:

1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that does not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
2. Installation of metal panel, metal shingle, and concrete and clay tile roof coverings over existing wood shake roofs shall be permitted when the application is in accordance with Section R907.4.
3. The application of new protective coating over existing spray polyurethane foam roofing systems shall be permitted without tear-off of existing roof coverings.

- m) Section N1101.1 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
N1101.1 Scope. This chapter regulates the energy efficiency for the design and construction of buildings regulated by this Code.

As an alternative to the provisions of Chapter 11 of this Code, structures validated by an accepted certified energy auditor to meet a HERS rating score of 85 or less shall be deemed to meet this Code. The energy auditor shall present national certification credentials to the building official for review and approval prior to issuance of the building permit, and no Certificate of Occupancy shall be issued for the structure until all documentation has been received and accepted that compliance is met.

Failure to meet the compliant rating of 85 or less shall result in a “notice” to the owner that the structure has failed to comply with this Code. Such “notice” shall be signed by the contractor and the owner.

- n) Section N1101.3 (R101.4.3) of the International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
N1101.3 (R101.4.3) Additions, alterations, renovations, or repairs. Additions, alterations, renovations or repairs to an existing building, building system or portion thereof shall conform to the provisions of this Code as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with this Code. Additions, alterations, renovations or repairs shall not create an unsafe or hazardous condition or overload existing building systems. An addition shall be deemed to comply with this Code if the addition alone complies or if the existing building and addition comply with this Code as a single building.
- o) Section N1101.8(R103.2) of the International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
N1101.8 (R103.2) Information on construction documents. Construction documents shall be drawn to scale upon suitable material. Electronic media documents are permitted to be submitted when approved by the Building Code Official. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed, and shows in sufficient detail pertinent data and features of the building, systems and equipment as herein governed. Details shall include, but are not limited to, insulation materials and their R-values; fenestration U-factors and SHGCs; area-weighted U-factor and SHGC calculations; mechanical system design criteria; mechanical and service water heating system and equipment types, sizes and efficiencies; economizer description; equipment and systems controls; fan motor horsepower (hp) and controls; duct sealing, duct and pipe insulation and location; and air sealing details.

- p) Table N1102.1.1 (R402.1.1) of the International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:

**TABLE N1102.1.1 (R402.1.1)  
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT<sup>a</sup>**

CLIMATE ZONE	FENESTRATION U-FACTOR <sup>b</sup>	SKYLIGHT U-FACTOR <sup>b</sup>	GLAZED FENESTRATION SHGC <sup>b,c</sup>	CEILING R-VALUE <sup>e</sup>	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE <sup>f</sup>	FLOOR R-VALUE	BASEMENT WALL R-VALUE <sup>c</sup>	SLAB R-VALUE & DEPTH <sup>d</sup>	CRAWL SPACE WALL R-VALUE <sup>c</sup>
4	.35	.55	.40	49	13	8/13	19	10/13	NR	10/13

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.
- c. “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 walls.
- d. R-5 shall be added to the required slab edge R-values for heated slabs.
- e. Or insulation sufficient to fill the framing cavity, R-19 minimum.
- f. The second R-value applies when more than half the insulation is on the interior of the mass wall.
- g. Loose-fill-insulation shall be installed at the rate recommended by the manufacturer’s statement “so many bags per 1000 sq ft”. Where the pitch of the roof restricts the “minimum thickness” at the exterior wall line, the insulation shall be blown into the cavity so as to achieve a greater compacted density to a point where the “minimum thickness” can be achieved. An alternative is to install high-density batts around the perimeter edge per N1102.2.

- q) Table N1102.4.1.1 (R402.4.1.1) of the International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:

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

COMPONENT	CRITERIA
Air barrier and thermal barrier	A continuous air barrier shall be installed in the building envelope. Exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed. Air-permeable insulation shall not be used as sealing material.
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed. Access opening, drop down stair or knee wall doors to unconditioned attic spaces shall be sealed.
Walls	Corners and the junction of the foundation and sill plate shall be sealed. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier. Knee walls shall be sealed.
Windows, skylights and doors	The space between window/door jambs and framing and skylights and framing shall be sealed.
Rim joists	Rim shall be sealed to prevent air leakage.
Floors (including above-garage and cantilevered	Insulation shall be installed to maintain permanent contact with underside of subfloor decking. The air

floors)	barrier shall be installed at any exposed edge of insulation.
Crawl space walls	Where provided in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls. Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.
Narrow cavities	Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be air tight, IC rated, and sealed to the drywall.
Plumbing and wiring	Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.
Shower/tub on exterior wall	Exterior walls adjacent to showers and tubs shall be insulated and the air barrier installed separating them from the showers and tubs.
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the sub floor or drywall.
Fireplace	An air barrier shall be installed on fireplace walls.

- r) Section N1102.4.1.2 (R402.4.1.2) of the International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
N1102.4.1.2 (R402.4.1.2) Testing. When required by the building official, the building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 5 air changes per hour. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the building official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the building official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.  
During testing:
1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weather stripping or other infiltration control measures;

2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures;
3. Interior doors, if installed at the time of the test, shall be open;
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and
6. Supply and return registers, if installed at the time of the test, shall be fully open.

s) Section N1103.2.2 (R403.2.2) of the International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:

N1103.2.2 (R403.2.2) Sealing (Mandatory). Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with Section M1601.4.1 of this Code.

Exceptions:

1. Air-impermeable spray foam products shall be permitted to be applied without additional joint seals.
2. Where a duct connection is made that is partially inaccessible, three screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.
3. Continuously welded and locking-type longitudinal joints and seams in ducts operating at static pressures less than two inches of water column (500 Pa) pressure classification shall not require additional closure systems.

When required by the Building Code Official, duct tightness shall be verified by either of the following:

1. Post construction test: Total leakage shall be less than or equal to 4 cfm (113.3L/min) per 100 square feet (9.29 m<sup>2</sup>) of conditioned floor area 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 4 cfm (113.3 L/min) per 100 *ft<sup>2</sup> square feet* (9.29 m<sup>2</sup>) of conditioned floor area when tested at a pressure differential of 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 3 cfm (85 L/min) per 100 square feet (9.29m<sup>2</sup>) of conditioned floor area.

Exceptions:

1. The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope.
2. On the post construction test, it is permissible to test for "leakage to the outdoors" versus a "total leakage." Leakage to the outdoors shall be less than or equal to 8 cfm per 100 square feet of conditioned floor area.

- t) Section N1104.1 (R404.1) of the International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
N1104.1 (R404.1) Lighting equipment (Mandatory). Fuel gas lighting systems shall not have continuously burning pilot lights.
- u) Section M1507.2 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
M1507.2 Recirculation of air. Exhaust air from bathrooms and toilet rooms shall not be recirculated within a residence or to another dwelling unit and may be exhausted into a ventilated attic with the discharge point at least six inches above insulation.
- v) Section P2503.3 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
P2503.3 Responsibility of permittee. The permit holder shall provide the test prescribed in Sections P2503.5 through P2503.8. Test equipment, materials and labor shall be furnished by the permittee.  
Exceptions:  
1. The testing of the DWV rough plumbing system shall be done in accordance with Section P2503.5.1 when required by the Building Code Official.  
2. The testing of the building sewer shall be done in accordance with Section P2503.4 when required by the Building Code Official.
- w) Section P2603.5.1 of the International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
P2603.5.1 Sewer depth. Building sewers shall be installed as required by the appropriate authority having jurisdiction.
- x) Section P2905.4.2 of the International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
P2905.4.2 Water service installation. Trenching, pipe installation and backfilling shall be in accordance with Section P2604. Where the building sewer is installed within 5 feet of the water service, the installation shall comply with the provisions provided by the appropriate authority having jurisdiction.  
Exception: The required separation distance shall not apply where a water service pipe crosses a sewer pipe, provided that the water service pipe is sleeved not less than 5 feet, horizontally, from the sewer pipe centerline, on both sides of the crossing with pipe materials listed in Table P2905.4, P3002.1(1), P3002.1(2), or P3002.2.
- y) Section E3902.2 of the International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:  
E3902.2 Garage and accessory building receptacles. All 125 volt, single-phase, 15- or 20-ampere receptacles installed in garages and grade-level portions of unfinished accessory buildings used for storage or work areas shall have ground-fault circuit-interrupter protection for personnel.

Exceptions:

1. Receptacles supplying only garage doors.
2. Receptacles supplying only refrigerators or freezers.

z) Section E3902.5 of the International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:

E3902.5 Unfinished basement receptacles. All 125 volt, single-phase, 15- and 20-ampere receptacles installed in unfinished basements shall have ground-fault circuit-interrupter protection for personnel. For purposes of this section, unfinished basements are defined as portions or areas of the basement not intended as habitable rooms and limited to storage areas, work areas, and the like.

Exceptions:

1. A receptacle supplying only a permanently installed fire alarm or burglar alarm system.
2. A receptacle supplying only a sump pump.
3. A receptacle supplying only a refrigerator or freezer.

aa) Section E3902.12 of the 2012 International Residential Code for One- and Two-Family Dwellings is hereby amended as follows:

E3902.12 Arc-fault circuit-interrupter protection. All branch circuits that supply 120-volt, single phase, 15- and 20-ampere outlets installed in family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, and similar rooms or areas shall be protected by a combination type arc-fault circuit interrupter installed to provide protection of the branch circuit. For these purposes, a smoke alarm shall not be considered an outlet and shall not be included in the arc-fault circuit.

Exceptions no. 1, 2, and 3 apply.

Add a new exception 4: This section will not apply where existing dwelling unit premises' wiring circuits make the application of this section impracticable, as determined by the building official.

Informational Note: One example of the application of this exception is where the existing dwelling unit utilizes a listed panelboard for which there is no listed device for the application of AFCI protection for a multi-wire branch circuit.