



## **City of Ames amendments to the 2015 International Residential Code (IRC)**

### Ames Municipal Code **Section 5.201. ONE-AND-TWO-FAMILY DWELLINGS.**

The provisions of the 2015 International Residential Code for One- and Two-family Dwellings (IRC), are amended by revising the following text as stated:

(1) Table R301.2(1), **Climatic and Geographical Design Criteria** is amended to include the following local values:

|                                  |                   |
|----------------------------------|-------------------|
| Ground Snow Load (lbs)           | 25                |
| Wind Speed (mph)                 | 115               |
| Topographic Effects              | No                |
| Special Wind Region              | No                |
| Wind Borne Debris Zone           | No                |
| Seismic Design Category          | A                 |
| Weathering                       | Severe            |
| Frost Line Depth (inches)        | 42                |
| Termite                          | Moderate to Heavy |
| Winter Design Temp (F.)          | - 5               |
| Ice Shield Underlayment Required | Yes               |
| Flood Hazards                    | See FEMA Maps     |
| Air Freezing Index               | 1896              |
| Mean Annual Temperature (F.)     | 48.2              |

(2) **Section R302.1 Exterior Walls, Fire-Resistant Construction.** Add exception #6: Walls of detached garages and accessory structures greater than or equal to 3 feet from a property line.

(3) **Section R302.13 Fire protection of floors is deleted in its entirety.**

(4) **Section R311.3.2 Floor elevations for other exterior doors** is amended by deleting the exception and inserting the following in lieu thereof: **Exception:** A top landing is not required where a stairway of not more than three risers is located on the exterior side of the door, provided the door does not swing over the stairway.

(5) **Section R311.7.8.2 Continuity** is amended by adding Exception 3:

(3) Handrails may be interrupted at the point of transition from handrail to guardrail on stairways open on both sides at the bottom of a flight of stairs.

(6) **Section R313.1 Townhouse automatic fire sprinkler systems** is amended by deleting the text of that section and inserting the following in lieu thereof: Automatic residential sprinkler systems shall not be required in townhouses.

(7) **Section R313.2 One- and Two-family dwellings automatic fire systems** is amended by deleting the text of that section and inserting the following in lieu thereof: Automatic residential fire sprinkler systems shall not be required in one- and two-family dwellings.

(8) **Section R314.2.2 Alterations, repairs and additions** is amended by deleting “When

alterations, repairs or additions requiring a permit occur, or”.

(9) **Section R314.6 Power source** is amended by deleting Exceptions 1 and 2 and adding Battery operated smoke alarms installed in accordance with Section 314.2.2 shall be allowed for existing sleeping areas.

(10) **Section R315.2.2 Alterations, repairs and additions.** The first sentence is amended to read: When one or more sleeping rooms are added or created in an existing dwelling that has an attached garage or within which a fuel-burning appliance exists, carbon monoxide alarms shall be required outside each separate sleeping area and in the immediate vicinity of bedrooms, and on every story of the dwelling. Carbon monoxide alarms shall be hard-wired, interconnected, and shall have battery backup.

(11) **Section R315.5 Power source** is amended by deleting **Exceptions 1 and 2.**

(12) **Section R401.2 Requirements** is amended by adding the following: Footings of buildings with Type V wood framed construction of three stories or less shall be allowed to be designed to meet, at a minimum, the prescriptive standards of the following table.

|   |    |    |    |
|---|----|----|----|
| Number of floors supported by foundations*            | 1  | 2  | 3  |
| Thickness of foundation walls (inches) concrete       | 8  | 8  | 10 |
| Thickness of foundation walls (inches) concrete block | 8  | 8  | 12 |
| Width of footing (inches)                             | 16 | 16 | 18 |
| Thickness of footing (inches)                         | 8  | 8  | 12 |
| Minimum depth of footing below grade                  | 42 | 42 | 42 |

\*Foundations may support a roof in addition to the stipulated number of floors. Foundations supporting roofs only shall be as required for supporting one floor. All other structures shall have footings and foundations engineered to meet the requirements of Chapter 4 of the IRC. All buildings shall have perimeter footings to 42" below grade, and such footings shall be designed to withstand all forces placed upon them as per Chapter 4 of the IRC or engineering to show equivalency.

\*Trench footings are allowed as a continuous 8" single pass trench for a single story wood frame structure with spans not exceeding 16 feet. The trench must be 42" deep and have at least two (2) horizontal rods fixed in place and tied into the existing structure. Soil bearing capacity shall be a minimum of 2000 psf.

\*Spread Footings shall have two evenly spaced #4 continuous reinforcing rods. For alterations and additions, reinforcing rods shall be tied into the existing footings.

\*Concrete foundation walls shall be reinforced with a minimum of # 4 bars at 18 inches on center each way

(13) **Section R403.1 General** is amended by adding the following text to the end of the section: Where concrete footings are used in new one- and two-family dwellings, an approved concrete encased electrode shall be provided in the vicinity of the panel for each residential electrical service. The electrode shall be accessible and connected to at least twenty feet of #4 reinforcing rod by a minimum of two wire ties.

(14) **Section R403.1 General** is amended by adding the following text: An Iowa licensed architect or engineer shall determine footing size and structural design for residential structures supported by post and beam construction and having a common roof with the house.

(15) **Section R403.1.3.6 Isolated concrete footings.** Delete this section in its entirety.

(16) **Section R401.4.3 Demolition of foundations.** Where a structure has been demolished or removed, all foundations shall be removed in their entirety and the excavation shall be filled and maintained with clean fill material to the existing grade. Removal shall include, but is not limited to the removal of the entire basement including walls, floors, footings, and foundations.

(17) **Section R403.1.4.1 Frost Protection** is amended by deleting Exception 1 and inserting the following in lieu thereof:

1. Protection of freestanding accessory structures with an area of 900 square feet or less, of light-framed construction, with an eave height of 10 feet or less shall not be required.

(18) **Section R403.1.6 Foundation Anchorage** is amended by deleting “maximum of 6 feet” and inserting in lieu thereof “maximum of 4 feet”.

(19) **Section R404.1.3.2 Reinforcement for foundation walls** is amended by adding the following to the end of the section: Minimum reinforcement for concrete foundation walls shall be #4 bars at 18” on center, each way or approved design by the registered design professional in responsible charge.

(20) **Section R326.1 General** is amended by replacing **General** with **BARRIER REQUIREMENTS FOR SWIMMING POOLS, SPAS, AND HOT TUBS FOR ONE- AND TWO-FAMILY DWELLINGS**, removing the text of that section and inserting the following in lieu thereof:

(a) The provisions of this section shall apply to the design of barriers for residential swimming pools, spas, and hot tubs (collectively referred to as a pool) for one- and two- family dwellings. These design controls are intended to provide protection against potential drownings and near-drownings by restricting access to swimming pools.

**Exceptions:**

1. Spas and hot tubs with a lockable safety cover that complies with ASTM F 1346.
2. Swimming pools with a powered safety cover that complies with ASTM F 1346.

(b) Outdoor pools. An outdoor pool, including an in-ground, above-ground or on-ground pool shall be surrounded by a barrier which shall comply with the following items 1-15:

1. The top of the barrier shall be at least 48 inches (1219 mm) above grade measured on the side of the barrier which faces away from the pool. Such height shall exist around the entire perimeter of the barrier and for a distance of 3 feet measured horizontally from the outside of the barrier. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches measured on the side of the barrier which faces away from the pool for surface that are not solid, such as grass or gravel. For surfaces that are solid, such as concrete, the distance shall be 4 inches maximum. Where the top of the pool structure is above grade the barrier may be installed on grade or shall be mounted on top of the swimming pool. Where the barrier is mounted on top of the pool, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches.

2. Openings in the barrier shall not allow the passage of a 4-inch-diameter (102 mm) sphere.

3. Solid barriers which do not have openings shall not contain indentations or protrusions, except for normal construction tolerances and tooled masonry joints.

4. Mesh fences, other than chain link fences, in compliance with the following number 7, shall be installed in accordance with the manufacturer’s instructions and comply with the following:

- (i) The bottom of the mesh fence shall be not more than 1 inch above the deck or installed surface or grade.
- (ii) The maximum vertical clearance from the bottom of the mesh fence and the solid surface shall not permit the fence to be lifted more than 4 inches from grade or decking.
- (iii) The fence shall be designed and constructed so that it does not allow passage of a 4- inch sphere under any mesh panel. The maximum vertical clearance from the bottom of the mesh fence and the solid surface shall not be more than 4 inches from grade or decking.
- (iv) An attachment device shall attach each barrier section at a height not lower than 45 inches above grade.
- (v) Where a hinged gate is used with a mesh fence, the gate shall comply with the following items 11, 12, and 13.
- (vi) Patio deck sleeves such as vertical post receptacles that are placed inside the patio surface shall be of a nonconductive material.
- (vii) Mesh fences shall not be installed on top of onground pools.

5. Where the barrier is composed of horizontal and vertical members, and the distance between the tops of the horizontal members is less than 45 inches, the horizontal members shall be located on the pool side of the fence. Spacing between vertical members shall not exceed 1 3/4 inches in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 3/4 inches in width.

6. Where the barrier is composed of horizontal and vertical members, and the distance between the tops of the horizontal members is 45 inches or more, spacing between vertical members shall not exceed 4 inches. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 3/4 inches in width.

7. The maximum opening formed by a chain link fence shall be a 1 3/4 inches, unless the fence has slats fastened at the top or the bottom which reduce the openings to not more than 1 3/4 inches.

8. Where the barrier is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall not be more than 1 3/4 inches. The angle of diagonal members shall not be greater than 45 degrees from vertical.

9. There shall be a clear zone of not less than 36 inches between the exterior of the barrier and any permanent structures or equipment such as pumps, filters and heaters that can be used to climb the barrier.

10. The pool side of the required barrier shall not be less than 20 inches from the water's edge.

11. Access gates shall comply with the requirements of items (b) 12 and (b) 13 and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from

the pool, and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates, such as utility or service gates, shall remain locked when not in use.

12. Double gates or multiple gates shall have at least one leaf secured in place and the adjacent leaf shall be secured with a self-latching device. The gate and barrier shall not have openings larger than 1/2 inch within 18 inches of the latch release mechanism. The self-latching device shall comply with item (b) 13.

13. Where the release mechanism of the self-latching device is located less than 54 inches from grade, the release mechanism shall be located on the pool side of the gate at least 3 inches below the top of the gate, and the gate and barrier shall have no opening larger than 1/2 inch within 18 inches of the release mechanism.

14. Where a wall of a dwelling or structure serves as part of the barrier and where doors or windows provide direct access to the pool through that wall, one of the following conditions shall be met:

- (i) The pool shall be equipped with a safety cover in accordance with ASTM F 1346;
- (ii) Doors, and operable windows having a sill height of less than 48 inches above the indoor finished floor shall have an alarm that produces an audible warning when the door, window or their screens are opened. The alarm shall be listed and labeled as a water hazard entrance alarm in accordance with UL 2017. The operable parts of the alarm deactivation switches shall be located at least 54 inches above the finished floor.
- (iii) Other approved means of protection, such as self-closing doors with self-latching devices, shall be acceptable as long as the degree of protection afforded is not less than the protection afforded by item (i) or (ii).

15. An onground pool wall structure or a barrier mounted on top of an onground pool wall structure shall serve as a barrier where all of the following conditions are present:

- (i) Where only the pool wall serves as the barrier, the bottom of the wall is on grade, the top of the wall is not less than 48 inches above grade for the entire perimeter of the pool, the wall complies with the requirements of items(b) 1-10 above and the pool manufacturer allows the wall to serve as a barrier.
- (ii) Where a barrier is mounted on top of the pool wall, the top of the barrier is not less than 48 inches above grade for the entire perimeter of the pool, the wall complies with the requirements of (b) 1-10 and the pool manufacturer allows the wall to serve as a barrier.
- (iii) Ladders or steps used as means of access to the pool are capable of being secured, locked or removed to prevent access except where the ladder or steps are surrounded by a barrier that meets the requirements of (18) above.
- (iv) Openings created by the securing, locking or removal of ladders and steps do not allow the passage of a 4-inch sphere.
- (v) Barriers that are mounted on top of onground pool walls are installed in accordance with the pool manufacturer's instructions.

(c) Indoor pools shall be surrounded by a barrier that complies with Sec. 5.201 (18)

(21) **Appendix J** is amended by deleting Section AJ102.5 Flood Hazard areas.

(22) **Appendix J** is amended by deleting Section AJ301.2 Water Closets.

(23) **Appendix J** is amended by deleting Section AJ301.3 Electrical including the Exceptions.

(24) **Appendix J** is amended by deleting Section AJ501.5 Electrical equipment and wiring and associated subsections.