



**SOUTHERN NEVADA  
AMENDMENTS  
TO THE  
2018 INTERNATIONAL RESIDENTIAL  
CODE**

## **PREFACE**

This document was developed by the Southern Nevada Building Officials' International Residential Code committee and presents recommended amendments to the 2018 International Residential Code as published by the International Code Council

Participation in the 2018 IRC Committee was open to all interested parties. However, voting on amendment proposals was limited to one vote each for six of Southern Nevada municipalities (Clark County, Henderson, Las Vegas, North Las Vegas, Boulder City, and Mesquite), the Clark County School District, and three industry representatives. All committee proceedings were conducted in accordance with Robert's Rules of Order.

The recommended amendments contained herein are not code unless adopted and codified by governmental jurisdictions. These amendments are not intended to prevent the use of any material or method of construction not specifically prescribed herein, provided any alternates have been approved and their use authorized by the Building Official. This document may be copied and used in whole or in part without permission or approval from the organizations listed on the cover page.

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## Section R101 General

Delete Chapter 1 in its entirety except Section R101. Revise Sections R101.1 and R101.2 as follows:

**R101.1 Title.** These provisions shall be known as the *Residential Code for One- and Two-Family Dwellings* and shall be cited as such and will be referred to herein as “this code”.

### **R101.2 Scope.**

The provisions of the *International Residential Code for One- and Two-family Dwellings*, shall apply to the construction, *alteration*, movement, enlargement, replacement, repair, *equipment*, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and *townhouses* not more than three stories above *grade plane* in height with a separate means of egress and their *accessory structures* not more than three stories above *grade plane* in height. Where this code refers to codes not adopted by the jurisdiction, the applicable code adopted by the jurisdiction shall govern.

## Section R202

Revise definition of *Townhouse* as follows:

**Definitions: TOWNHOUSE.** A single-family *dwelling unit* constructed in a group of three or more attached units in which each unit extends from foundation to roof and with a *yard* or public way on at least two sides, and as recorded on a final map or major subdivision map.

**Table R301.2(1)**

Amend Table R301.2(1) and changing footnotes “d”, “g” and “n”:

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

GROUND SNOW LOAD °	WIND DESIGN				Seismic Design Category f	SUBJECT TO DAMAGE FROM			Winter Design Temp e	Ice Barrier Underlayment Required h	FLOOD HAZARDS g	AIR FREEZING INDEX i	MEAN ANNUAL TEMP j
	Speed d (mph)	Topographic effects k	Special wind region l	Windborne debris zone m		Weathering a	Frost line depth b	Termite c					
0<2000'	115	No	No	No	D 0	Negligible	1'<5000'	Moderate To Heavy	0' to 4500' Winter 27° F Summer 112° F	No	*	1500	66.3° F
5<3600'	115	No	No	No	D 0	Negligible	1'<5000'		No	*	1500	66.3° F	
10<4500'	115	No	No	No	D 0	Negligible	1'<5000'		No	*	1500	66.3° F	
15<6000'	115	No	No	No	D 0	Severe	3'>5000'		YES	*	2000	48.1° F	
IBC for Elevations >6000'	IBC	IBC	No	No	IBC	IBC	IBC		4500' to 6000' Winter 5° F Summer 92° F	IBC	*	IBC	IBC

**MANUAL J DESIGN CRITERIA n**

Elevation	Latitude	Winter heating	Summer cooling	Altitude correction factor	Indoor design temperature	Design temperature cooling	Heating temperature difference
Cooling temperature difference	Wind velocity heating	Wind velocity cooling	Coincident wet bulb	Daily range	Winter humidity	Summer humidity	

For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.

a. Where weathering requires a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code, the frost line depth strength required for weathering shall govern. The weathering column shall be filled in with the weathering index, “negligible,” “moderate” or “severe” for concrete as determined from Figure R301.2(4). The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216 or C 652.

b. Where the frost line depth may require deeper footings than indicated in Figure R403.1 (1), the frost line depth strength required for weathering shall govern. The jurisdiction shall fill in the frost line depth column with the minimum depth of footing below finish grade.

c. The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.

d. The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [Figure R301.2 (5) A]. Wind exposure category shall be selected as “category C” unless the applicant provides a detailed justification on how the exposure category is determined on a site-specific basis in accordance with Section R301.2.1.4.

e. The outdoor design dry-bulb temperature shall be selected from the columns of 97<sup>1/2</sup>-percent values for winter from Appendix D of the *International Plumbing Code*. Deviations from the Appendix D temperatures shall be permitted to reflect local climates or local weather experience as determined by the building official. [Also see Figure R301.2 (1).]

f. The jurisdiction shall fill in this part of the table with the seismic design category determined from Section R301.2.2.1.

g. September 27, 2002. “The Flood Insurance Study for Clark County, Nevada and Incorporated Areas”, as amended or revised with the accompanying Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) and related supporting data along with any revisions thereto.

h. In accordance with Sections R905.1.2, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1, where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with “YES.” Otherwise, the jurisdiction shall fill in this part of the table with “NO.”

i. The jurisdiction shall fill in this part of the table with the 100-year return period air freezing index (BF-days) from Figure R403.3 (2) or from the 100-year (99%) value on the National Climatic Data Center data table “Air Freezing Index- USA Method (Base 32° F).”

j. The jurisdiction shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table “Air Freezing Index-USA Method (Base 32°F).”

k. In accordance with Section R301.2.1.5, where there is local historical data documenting structural damage to buildings due to topographic wind speed-up effects, the jurisdiction shall fill in this part of the table with “YES.” Otherwise, the jurisdiction shall indicate “NO” in this part of the table.

l. In accordance with Figure R301.2(5)A, where there is local historical data documenting unusual wind conditions, the jurisdiction shall fill in this part of the table with “YES” and identify any specific requirements. Otherwise, the jurisdiction shall indicate “NO” in this part of the table.

m. In accordance with Section R301.2.1.2 the jurisdiction shall indicate the wind-borne debris wind zone(s). Otherwise, the jurisdiction shall indicate “NO” in this part of the table.

n. Manual J and the 2018 IECC shall be used to fill in these values.

o. The jurisdiction shall fill in this section of the table using the Ground Snow Loads in figure R301.2 (6)

## Table R301.5

Amend Table R301.5 as follows:

TABLE R301.5

USE	LIVE LOAD
Uninhabitable attics without storage <sup>b</sup>	10
Uninhabitable attics with limited storage <sup>b,g</sup>	20
Habitable attics and attics served with fixed stairs	40
Balconies (exterior) and decks <sup>e</sup>	40
Fire escapes	40
Guards and handrails <sup>d</sup>	200 <sup>h</sup>
Guard in-fill components <sup>f</sup>	50 <sup>h</sup>
Passenger vehicle garages <sup>a</sup>	50 <sup>a</sup>
Rooms other than sleeping rooms	40
Sleeping rooms	40 <sup>i</sup>
Stairs	40 <sup>c</sup>

i. Where it can be determined in designing the floor that the actual live load will be greater than the value shown in Table R301.5, the actual live load shall be used in the design of such buildings or portions thereof. Special provisions shall be made for machine and apparatus loads.

## Section 301.6 Roof Loads

Amend R301.6 by adding a second sentence to read as follows:

**R301.6 Roof load.** The roof shall be designed for the live load indicated in Table R301.6 or the snow load indicated in Table R301.2(1), whichever is greater. Roof live loads in accordance with Section 1607.13 of the 2018 International Building Code may be used in place of the loads in Table R301.6.

## Section 302.1 Exterior Walls

Revise Section R302.1, as follows:

**R302.1 Exterior Walls.** Construction, projections, openings and penetrations of *exterior walls* of dwellings and accessory buildings shall comply with Table R302.1 (1); or *dwellings* equipped throughout with an *automatic sprinkler system* installed in accordance with Section P2904 or NFPA13-D shall comply with Table R302.1 (2). For use of this Table, fire separation distance in the field shall be measured from the lot line to the foundation.

### Exception:

1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the fire separation distance.

2. Walls of individual dwelling units and their accessory structures located on the same lot.
3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.
4. Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding 4 inches (102 mm).
5. Foundation vents installed in compliance with this code are permitted.

TABLE R302.1 (1) EXTERIOR WALLS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls (c)	Fire-resistance rated	1 hour-tested in accordance with ASTM E119, UL 263 or Section 703.3 of the <i>International Building Code</i> with exposure from both sides	0 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Projections	Not allowed	NA	< 2 feet
	Fire-resistance rated	1 hour on the underside, or heavy timber, or fire-retardant-treated wood (a),(b)	≥ 2 feet to < 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Openings in walls	Not allowed	NA	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet

For SI: 1 foot = 304.8 mm. NA = Not Applicable,

(a). The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave overhang if fireblocking is provided from the wall top plate to the underside of the roof sheathing.

(b). The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the rake overhang where gable vent openings are not installed.

(c). Unrated exterior finishes shall not project more than 4 inches into the fire separation distance.

**Section R 307.1**

Revise R307.1 Space Required, as follows:

**R307.1 Space required.** Fixtures shall be spaced in accordance with UPC section 402.5



## Section R313

Revise R313.1 and R313.2 and add section R313.3, as follows:

**R313.1 Townhouse automatic fire sprinkler systems.** An automatic residential fire sprinkler system shall be installed in *townhouses* where the *living space* of the building exceeds 5,000 square feet (465 m<sup>2</sup>) in area.

**Exception:** An automatic residential fire system shall not be required where *additions* or *alterations* are made to existing townhouses that do not have an automatic residential fire sprinkler system installed.

**R313.1.1 Design and installation.** Automatic residential fire sprinkler systems for *townhouses* shall be designed and installed in accordance with Section P2904 or NFPA 13D.

**R313.2 One- and two-family dwellings automatic fire sprinkler systems.** An automatic residential fire sprinkler system shall be installed in one- and two-family *dwellings* where *the living space* of the building exceeds 5,000 square feet (465 m<sup>2</sup>) in area.

**Exception:** An automatic residential fire system shall not be required for *additions* or *alterations* made to existing buildings that are not already provided with an automatic residential fire sprinkler system.

**R313.2.1 Design and installation.** Automatic residential fire sprinkler systems for one- and two-family *dwellings* shall be designed and installed in accordance with Section P2904 or NFPA 13D.

**R313.3 Fire Flow.** For any building not otherwise required to provide fire sprinklers, where the available fire flow does not meet the fire flow requirements of the 2018 IFC, approved automatic sprinkler systems shall be provided as required by the fire code official.

## Section R315.2.2

Revise subsection 315.2.2, to read as follows:

**R315.2.2 Alterations, repairs and additions.** Where *alterations*, *repairs* or *additions* requiring a permit occur, the *individual dwelling unit* shall be equipped with carbon monoxide alarms located as required for new *dwellings*.

**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.
2. Installation, alteration or repairs of plumbing, or non-fuel fired mechanical systems.

### Section R401.3

*Section R401.3 is deleted in its entirety and replaced with a new section R401.3 to read as follows:*

**R401.3 Drainage.** The ground immediately adjacent to the foundation shall be sloped away from the building at a slope of not less than one unit vertical in 20 units horizontal (5-percent slope) for a minimum distance of 10 feet (3048 mm) measured perpendicular to the face of the wall. If physical obstructions or lot lines prohibit 10 feet (3048mm) of horizontal distance, a 5-percent slope shall be provided to an approved alternative method of diverting water away from the foundation. Swales used for this purpose shall be sloped a minimum of 1 percent along the flow line where located within 10 feet (3048mm) of the building foundation. Impervious surfaces within 10 feet (3048mm) of the building foundation shall be sloped a minimum of 2 percent away from the building.

**Exception:** Where low expansive, low collapsible, low soluble soil conditions occur or where an exterior asphalt or concrete surface abuts a building, the slope of the ground away from the building foundation is permitted to be reduced to not less than one unit vertical in 48 units (2-percent slope).

The procedure used to establish the final ground level adjacent to the foundation shall account for additional settlement of the backfill.

### Section R401.4

*Section R401.4 is deleted in its entirety and replaced with revised section R401.4 to read as follows:*

**401.4 Soil tests.** All structures or additions shall have a soils geotechnical reports complying with the 2018 IBC Chapter 18.

**Exception:** Projects listed in the 2018 IBC Section 1803.2. All projects shall comply with 2018 IBC Section 1803.1.

### Section R401.5

*Insert a new section R401.5 as follows:*

**R401.5 Grading Plan.** All projects that require grading shall have a grading plan prepared, stamped, and signed by a registered design professional in accordance with 2018 IBC chapter 18 and appendix J.

### Section R406.2

*Section R406.2 is amended to read as follows:*

**R406.2 Concrete and masonry foundation waterproofing.** When the approved geotechnical report indicates there is a high water table or other severe soil-water conditions are known to exist, exterior foundation walls that retain earth and enclose interior spaces

and floors below *grade* shall be waterproofed from the higher of (a) the top of the footing or (b) 6 inches (152 mm) below the top of the basement floor, to the finished *grade*. Walls shall be waterproofed in accordance with one of the following:

1. Two-ply hot mopped felts.
2. Fifty five pound (25 kg) roll roofing.
3. 10-mil (0.254 mm) polyvinyl chloride.
4. 10-mil (0.254 mm) polyethylene.
5. Forty-mil (1 mm) polymer-modified asphalt.
6. Sixty-mil (1.5 mm) flexible polymer cement.
7. One-eighth inch (3 mm) cement-based, fiber-reinforced, waterproof coating.
8. Sixty-mil (1.5 mm) solvent free liquid-applied synthetic rubber.

All joints in membrane waterproofing shall be lapped and sealed with an adhesive compatible with the membrane.

**Exception:** Organic-solvent-based products such as hydrocarbons, chlorinated hydrocarbons, ketones and esters shall not be used for ICF walls with expanded polystyrene form material. Use of plastic roofing cements, acrylic coatings, latex coatings, mortars and parings to seal ICF walls is permitted. Cold-setting asphalt or hot asphalt shall conform to type C of ASTM D 449. Hot asphalt shall be applied at a temperature of less than 200°F (93°C).

### Section R506.2.3 Vapor retarder

*Revise Section R506.2.3 Vapor retarder, as follows:*

**R506.2.3 Vapor retarder.** A 10 mil (0.010 inch; 0.25 mm) polyethylene or approved vapor retarder conforming to ASTM E 1745 Class A requirements with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists.

**Exception:** The vapor retarder is not required for the following:

1. From garages, utility buildings and other unheated *accessory structures*.
2. For unheated storage rooms having an area of less than 70 square feet (6.5m<sup>2</sup>) and carports.
3. Driveways, walks, patios and other flatwork not likely to be enclosed and heated at a later date.
4. Where *approved* by the *building official*, based on local site conditions.

### Section R807.1

*Revise section R807.1, to read as follows:*

**R807.1 Attic access.** Buildings with combustible ceiling or roof construction shall have at least one attic access opening. Additional access openings shall be provided to attic areas that have electrical, plumbing, or mechanical fixtures or equipment that require access for periodic maintenance.

**Exception:** Access openings are not required for non-contiguous enclosed attic spaces that do not have plumbing, mechanical, or electrical components that require access for periodic maintenance.

The rough-framed opening shall be not less than 22 inches by 30 inches (559 mm by 762mm) and shall be located in a hallway or other location with *ready access*, Where located in a wall, the opening shall be not less than 22 inches wide by 30 inches high (559mm by 762mm). Where the access is located in a ceiling, minimum unobstructed headroom in the *attic* space shall be 30 inches (762 mm) at some point above the access measured vertically from the bottom of the ceiling framing members. See 2018 UMC 904.10 for access requirements where mechanical equipment is located in attics.

## **Section R905.7 Wood Shingles**

*Delete Section R905.7 in its entirety, and replace as follows:*

**R905.7 Wood shingles.** The installation of wood shingles is not permitted.

## **Section R905.8 Wood Shakes**

*Delete Section R905.8 in its entirety, and replace as follows:*

**R905.8 Wood shakes.** The installation of wood shakes is not permitted.

## **Section R1007 Fireplaces and Appliances**

*Add Section R1007 Fireplaces and Appliances, add R1008 Special Fireplace and Appliance Requirement as follows:*

### **R1007.1 Types of fireplaces**

**R1007.1 Types of fireplaces.** No solid fuel burning fireplace shall be constructed in any residential dwelling in Boulder City or the Las Vegas Valley Hydrographic Basin at an elevation of less than 4000 feet (1220 m) above sea level unless it is one of the following:

**R1007.1.1** A dedicated solid fuel burning factory-built enclosed fireplace or factory-built heater that conforms to the “Phase II Environmental Protection Agency, Standards of Performance for New Stationary Sources, New Residential Heaters” as prescribed in 40 CFR Part 60, Subpart AAA, as verified by a nationally recognized listing approved by the Building Official.

**R1007.1.2** A masonry fireplace or masonry heater constructed in accordance with Chapter 10 or a factory-built fireplace shall include one of the following;

1. The installation of a wood-burning insert which meets the standards described in R1007.1.1 of this subsection and which shall be installed in accordance with the manufacturer’s instructions.
2. The installation of gas logs with a nationally recognized listing and approved by the Building Official.

The fireplace opening shall be completely enclosed with a cover of solid glass, steel, or cast iron. The covering may be either solid or openable.

A caution sign shall be permanently installed and maintained where it is readily visible at all times. The sign shall state: "Caution: approved for fuel gas use only. Damper shall remain permanently blocked open."

The letters on the sign shall be a minimum of 3/8 inches in height.

**R1007.2 Types of appliances** The following appliances shall be provided with a nationally recognized listing approved by the Building Official prior to installation:

1. Decorative electrical appliance
2. Decorative vented gas appliance
3. Decorative un-vented gas appliance or heater

### **Section R1008 Special Fireplace and Appliance Requirements.**

**R1008.1 Installation within a dwelling unit** All fireplace or appliance installations within a dwelling unit shall comply with the following requirements:

1. If the fireplace or gas appliance is located in a sleeping room or an adjacent bathroom, then a permanent, unobstructed fresh air supply shall be provided directly from the exterior of the structure to the fire box.
2. The supply duct shall be a minimum 4" (102mm) or as directed in the manufacturer's listing.

#### **Exception:**

1. A decorative electrical appliance
2. Un-vented heater that is specifically listed for sleeping rooms
3. All decorative gas or electrical appliances shall comply with their listing and the manufacturer's installation instructions.

### **Section: Deleted Chapters**

*Delete chapters 11 through 22 and 24 through 43 in their entirety, excluding section P2904.*

## Section R806.5

Amend Table R806.5 as follows:

CLIMATE ZONE	MINIMUM RIDGED BOARD ON AIR-IMPERMEABLE INSULATION R-VALUE <sup>a,b</sup>
2B and 3B	0 (none required)
1, 2A, 2B, 3A, 3C	R-5
4C	R-10
4A, 4B	R-15
5	R-20
6	R-25
7	R-30
8	R-35

## Section P2904.2.3 Freezing areas

Revise Section P2904.2.3, as follows:

**Section P2904.2.3 Freezing areas.** Piping in unconditioned spaces shall be protected from freezing with a minimum of R-2 insulation. Where sprinklers are required in areas that are subject to freezing, dry-sidewall or dry-pendent sprinklers extending from a nonfreezing area into a freezing area shall be installed.

## Appendix H – Patio Covers

*Adopt Appendix H – Patio Covers*

## Appendix K – Sound Transmission

*Adopt Appendix K – Sound Transmission*

