



**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)**

**Chapter 1**

**Submitted by:** 2018 International Residential Code Committee

**CHAPTER 1 ADMINISTRATION**

Notes:

1. For reserved sections herein, refer to the city of Phoenix Building Construction Code - Administrative Provisions for these code requirements.
2. For sections that remain unchanged from base code, the term “see this section of the 2018 IRC” shall refer to the unchanged base code.

**SECTION R101 TITLE, SCOPE AND PURPOSE**

**R101.1 Title.**

These provisions shall be known as the Residential Code for One- and Two-Family Dwellings as amended by the city of Phoenix, 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.

**Exception:** The following shall be permitted to be constructed in accordance with this code, ~~where provided with a residential fire sprinkler system complying with Section P2904:~~

1. Live/work units located in one- and two-family dwellings, or townhouses and complying with the requirements of Section 419 of the International Building Code. Fire suppression required by Section 419.5 of the International Building Code when designed under the International Residential Code for One- and Two-family dwellings shall conform to Section P2904.
2. Owner-occupied lodging houses with five or fewer guestrooms.
3. A care facility with five or fewer persons receiving *custodial care* within a dwelling unit.
4. A care facility with five or fewer persons receiving *medical care* within a dwelling unit.
5. A care facility with five or fewer persons receiving care that ~~are~~ reside within a single-family dwelling.

**R101.3 Intent.** Reserved.

**SECTION R102 APPLICABILITY** – Reserved, except as noted below.

**R102.5 Appendices.** See this section of the 2018 IRC.

**R102.6 Partial invalidity.** See this section of the 2018 IRC.

**R102.7 Existing structures.**

The legal occupancy of any structure existing on the date of adoption if this code shall be permitted to continue without change, except as is specifically covered in this code or the ~~International Property Maintenance Code or the International Fire Code~~ Phoenix Fire Code, or as is deemed necessary by the building official for the general safety and welfare of the occupants and the public.

**R102.7.1 Additions, alterations or repairs.** See this section of the 2018 IRC.

**R102.7.2 Effective code.**

All permit applications submitted on or after the effective date of this code shall be subject to the requirements of the codes and appendices adopted by Ordinance.

**PART 2 - ADMINISTRATION AND ENFORCEMENT**

**SECTION R103 DEPARTMENT OF BUILDING SAFETY** – Reserved.

**SECTION R104 DUTIES AND POWERS OF THE BUILDING OFFICIAL** – Reserved.

**SECTION R105 PERMITS** – Reserved.

**SECTION R106 CONSTRUCTION DOCUMENTS** – Reserved.

**SECTION R107 TEMPORARY STRUCTURES AND USES** – Reserved.

**SECTION R108 FEES** – Reserved.

**SECTION R109 INSPECTIONS** – Reserved.

**SECTION R110 CERTIFICATE OF OCCUPANCY** – Reserved.

**SECTION R111 SERVICE UTILITIES** – Reserved.

**SECTION R112 BOARD OF APPEALS** – Reserved.

**SECTION R113 VIOLATIONS** – Reserved.

**SECTION R114 STOP WORK ORDER** – Reserved.

**Reasons:**

The deleted provisions are contained in the Phoenix Building Construction Code – Administrative Provisions (Chapter 1 of the International Building Code). These provisions may conflict with the adopted administrative code and retaining them is redundant. The retained sections are specific to one- and two-family residences or townhouses designed under the IRC and differ from the same numbered sections in the IBC.

**Cost Impact:** No cost impact.

Approved in previous 2012 Code Adoption process:  YES  NO

**ACTION TAKEN:**

**2018 Code Committee** Date: January 8, 2018  
 Approved as submitted  Modified and approved  Denied  No action taken

**Development Advisory Board (DAB) Technical Subcommittee** Date: February 8, 2018  
 Approved as submitted  Modified and approved  Denied  No action taken

**Development Advisory Board (DAB)** Date: February 15, 2018  
 Approved as submitted  Modified and approved  Denied  No action taken

**Downtown, Aviation, Economy, and Innovation Subcommittee** Date: May 2, 2018  
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**City Council Action** Date: June 6, 2018  
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**Adopted by City of Phoenix Ordinance G-6463 effective July 6, 2018**



**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)  
Section AQ102**

**Submitted by:** 2018 International Residential Code Committee

**APPENDIX Q, SECTION AQ102**

**SECTION AQ102 DEFINITIONS**

**TINY HOUSE.** A *dwelling* that is no more than 400 square feet (37 m<sup>2</sup>) and no less than 200 square feet (18.58 m<sup>2</sup>) ~~or less~~ in floor area excluding *lofts*.

**Reasons:**

Referencing the Coconino County policies and to keep requirements uniform throughout the state.

**Cost Impact:** No cost impact.

**Approved in previous 2012 Code Adoption process:**  YES  NO

**ACTION TAKEN:**

**2018 Code Committee** Date: January 8, 2018

Approved as submitted  Modified and approved  Denied  No action taken

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**Development Advisory Board (DAB)** Date: February 15, 2018

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**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)  
Section R202**

**Submitted by:** 2018 International Residential Code Committee

**SECTION R202 DEFINITIONS**

**[RB] FIRE SEPARATION DISTANCE.** The distance measured from the building face to one of the following:

1. To the closest interior *lot line*.
2. To the centerline of a street, an alley or a public way.
3. To an imaginary line between two buildings on the *lot*. The distance shall be measured at the right angle from the face of the wall framing.

**Reasons:**

This establishes a more exact point for measurement. Construction documents use this point for measuring distances.

**Cost Impact:** No cost impact.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
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**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018  
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# City of Phoenix

PLANNING & DEVELOPMENT DEPARTMENT

## PHOENIX BUILDING CONSTRUCTION CODE

### Amendment to 2018 International Residential Code (IRC) Section R202

**Submitted by:** 2018 International Residential Code Committee

#### SECTION R202 DEFINITIONS

**[RB] STANDARD PLANS.** Plans authorized by the Planning & Development Department to be used in construction on a repetitive basis. Standard plans may include options allowing variations to the building design that may alter the interior and exterior appearance.

**Reasons:**

The definition allows standard plans to be used in lieu of separate submittals for each production home.

**Cost Impact:**

The use of standard plans reduces the cost for the department and the home builders.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

#### ACTION TAKEN:

**2018 Code Committee**      Date: January 8, 2018

Approved as submitted    Modified and approved    Denied    No action taken

**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018

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**Development Advisory Board (DAB)**      Date: February 15, 2018

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**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018

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# City of Phoenix

PLANNING & DEVELOPMENT DEPARTMENT

## PHOENIX BUILDING CONSTRUCTION CODE

### Amendment to 2018 International Residential Code (IRC) Section R301.1.4

**Submitted by:** 2018 International Residential Code Committee

**R301.1.4 Access to a public way.**

All buildings shall be located on lots fronting a public way or other approved access to a public way. Such approved access shall be recorded with the county of Maricopa, with the approval of the building official or recorded on the approved plat in accordance with the Phoenix city code. The access shall be in compliance with the Phoenix Fire Code.

**Reasons:**

Clarifies access requirements for all lots. Carried forward from the previous amendments.

**Cost Impact:** No cost impact.

No additional cost impact above what was approved in the 2006 and 2012 amendments. The same text is used in this proposal as approved on Dec. 1, 2006.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018

Approved as submitted    Modified and approved    Denied    No action taken

**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018

Approved as submitted    Modified and approved    Denied    No action taken

**Development Advisory Board (DAB)**      Date: February 15, 2018

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**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018

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# City of Phoenix

PLANNING & DEVELOPMENT DEPARTMENT

## PHOENIX BUILDING CONSTRUCTION CODE

### Amendment to 2018 International Residential Code (IRC) Section R301.1.5

**Submitted by:** 2018 International Residential Code Committee

**R301.1.5 Lot corner identification.**

In construction applications where legally surveyed lot corner identification markers are not readily verifiable or are missing, the building official, when deemed necessary, shall require lot boundary markers to be surveyed and permanently identified in accordance with State law at the owner's or applicant's expense. The survey shall be executed by a registrant licensed to do such work by the Arizona State Board of Technical Registration.

**Reasons:**

Often construction is started without locating the legal corners of a lot, leading to disputes after substantial completion of the work. This requirement would limit such cases and ensure compliance to both the Residential Code and the Zoning Ordinance.

**Cost Impact:** Minimal cost impact.

While there could be a possible cost for a survey, this code amendment could save costs by preventing construction in a prohibited location. The same text is used in this proposal as approved on 12-01-06 and 05-15-13.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: November 8, 2017  
 Approved as submitted     Modified and approved     Denied       No action taken

**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 15, 2018  
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**Development Advisory Board (DAB)**      Date: March 15, 2018  
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**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)  
Section R301.2 and Table R301.2(1)**

**Submitted by:** 2018 International Residential Code Committee

**R301.2 Climatic and geographic design criteria.**

Buildings shall be constructed in accordance with the provisions of this code as limited by the provisions of this section. ~~Additional criteria shall be established by the local jurisdiction and set forth in Table R301.2(1)~~

**TABLE R301.2(1)**

<b>CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA</b>	
<u>(Due to space limitations, the table could not be reproduced; only the values are listed)</u>	
Ground snow load <sup>o</sup> :	<u>N/A</u>
Wind Speed <sup>d</sup> (mph):	<u>115</u>
Topographic effects <sup>k</sup> :	<u>NO</u>
Special wind region <sup>l</sup> :	<u>NO</u>
Windborne debris zone <sup>m</sup> :	<u>NO</u>
Seismic Design Category <sup>f</sup> :	<u>B</u>
Weathering <sup>a</sup> :	<u>Negligible</u>
Frost line depth <sup>b</sup> :	<u>0</u>
Termite <sup>c</sup> :	<u>Moderate to heavy</u>
Winter design temperature <sup>e</sup> :	<u>None to slight</u>
Ice barrier underlayment required <sup>n</sup> :	<u>NO</u>
Flood Hazards <sup>g</sup> :	<u>See Phoenix city code</u>
Air freezing index <sup>i</sup> :	<u>N/A</u>
Mean annual temperature <sup>j</sup> :	<u>71.2° F</u>

**MANUAL J DESIGN CRITERIA<sup>N</sup>**

Refer to Section M1401.3 and N1103.7 of the 2018 IRC.

~~Elevation:~~

~~Latitude:~~

~~Winter heating:~~

~~Summer cooling:~~

~~Altitude correction factor:~~

~~Indoor temperature design:~~

~~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 mike 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 C34, C55, C62, C73, C90, C129, C145, C216 or C652.
- b. Where the frost line depth requires 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 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</sup>/<sub>2</sub>-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. The jurisdiction shall fill in this part of the table with (a) the date of the jurisdictions' entry into the National Flood Insurance Program (dated of adoption of the fires code or ordinance for management of flood hazard areas), (b) the date(s) of the Flood Insurance Study and the (c) the panel numbers and dates of the currently effective FIRM' and FBFMs or other flood hazard map adopted by the authority having jurisdiction, as amended.
- h. In accordance with Sections R905.1.2, R905.4.3.1, R905.5.3.1m 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 (FG-days) from Figure R403.3(2) or from the 100-year (99 percent) 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 are local historical data documenting unusual wind conditions, the jurisdiction shall fill in the 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 zones(s). Otherwise, the jurisdiction shall indicate "NO" in this part of the table.
- ~~n. The jurisdiction shall fill in these sections of the table to establish the design criteria using Table 1a or 1b from ACCA Manual J or established criteria determined by the jurisdiction.~~
- o. The jurisdiction shall fill in this section of the table using the Ground Snow Loads.

**Reasons:**

In order for this document to be adopted, the completed referenced table has to be a part of it. The deleted sentence is not required as the amendment refers to another code section rather than providing data.

**Cost Impact:** No cost impact.

**Approved in previous 2012 Code Adoption process:**       YES       NO

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
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**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018  
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**Development Advisory Board (DAB)**      Date: February 15, 2018  
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**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018  
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**City Council Action**      Date: June 6, 2018  
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# City of Phoenix

PLANNING & DEVELOPMENT DEPARTMENT

## PHOENIX BUILDING CONSTRUCTION CODE

### Amendment to 2018 International Residential Code (IRC) Section R301.2.4

**Submitted by:** 2018 International Residential Code Committee

**R301.2.4 Floodplain construction.**

~~Buildings and structures constructed in whole or in part in flood hazard areas (including A or V Zones) as established in Table R301.2(1), and substantial improvement and repair of substantial damage of buildings and structures in flood hazard areas, shall be designed and constructed in accordance with Section R322. Chapter 32B of the *Phoenix City Code*. Buildings and structures that are located in more than one flood hazard area shall comply with the provisions associated with the most restrictive flood hazard area. Building and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.~~

**~~R301.2.4.1 Alternative provisions.~~**

~~As an alternative to the requirements in Section R322, ASCE 24 is permitted subject to the limitations of this code and limitations therein.~~

**Reasons:**

The city's floodplain ordinance is contained in Chapter 32B of the Phoenix city code.

**Cost Impact:** No cost impact.

Current city code requirements are in place.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018

Approved as submitted     Modified and approved     Denied     No action taken

**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018

Approved as submitted     Modified and approved     Denied     No action taken

**Development Advisory Board (DAB)**      Date: February 15, 2018

Approved as submitted     Modified and approved     Denied     No action taken

**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018

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**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)  
Table R301.5**

**Submitted by:** 2018 International Residential Code Committee

**Table R301.5  
MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS  
(in pounds per square foot)**

USE	LIVE LOAD
Habitable attics and attics served with fixed stairs	<del>30</del> <u>40</u>
Sleeping rooms	<del>30</del> <u>40</u>

**Reasons:**

Habitable attics and sleeping rooms can be used as floor space and 40 psf more closely reflects floor live loading. The code change reflects the changes made to the 2018 IBC and is recommended by the Structural Sub-Committee.

**Cost Impact:** Minimal cost impact.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
 Approved as submitted     Modified and approved     Denied     No action taken

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**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)**

**Section R302.2.2**

**Submitted by:** 2018 International Residential Code Committee

**R302.2.2 Common walls.**

Common walls separating *townhouses* shall be assigned a fire resistance rating in accordance with Item 1 or 2. The common wall shared by two townhouses shall be constructed without plumbing or 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 extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be in accordance with chapters 34 through 43. Penetrations of the membrane of common walls for electrical outlet boxes shall be in accordance with section R302.4.

1. Where a fire sprinkler system in accordance with P2904 is provided, the common wall shall not be less than a 1-hour fire resistance rated wall assembly tested in accordance with ASTM E119, UL 263 or section 703.3 of the *International Building Code (as amended by the City of Phoenix)*.
2. Where a fire sprinkler system in accordance with P2904 is not provided, the common wall shall not be less than a 2-hour fire resistance rated wall assembly tested in accordance with ASTM E119, UL 263 or section 703.3 of the *International Building Code (as amended by the City of Phoenix)*.

**Reasons:**

Clarifies the IBC is the amended version.

**Cost Impact:** No cost impact.

This amendment follows our current policy and procedures.

**Approved in previous 2012 Code Adoption process:**       YES       NO

**ACTION TAKEN:**

<b>2018 Code Committee</b>	Date: January 8, 2018
<input type="checkbox"/> Approved as submitted <input checked="" type="checkbox"/> Modified and approved <input type="checkbox"/> Denied	<input type="checkbox"/> No action taken

<b>Development Advisory Board (DAB) Technical Subcommittee</b>	Date: February 8, 2018
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<b>Development Advisory Board (DAB)</b>	Date: February 15, 2018
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<b>Downtown, Aviation, Economy, and Innovation Subcommittee</b>	Date: May 2, 2018
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# City of Phoenix

PLANNING & DEVELOPMENT DEPARTMENT

## PHOENIX BUILDING CONSTRUCTION CODE

### Amendment to 2018 International Residential Code (IRC) Section R302.5.1

**Submitted by:** 2018 International Residential Code Committee

**R302.5.1 Opening protection.**

Openings from a private garage or carport directly into a room used for sleeping purposes or a hallway that only accesses sleeping room(s) shall not be permitted. Other openings between the garage or carport and residence shall be equipped with solid wood doors not less than 1 3/8 inches (35 mm) in thickness, solid or honeycomb-core steel doors not less than 1 3/8 inches (35 mm) thick, or 20-minute fire-rated doors or windows, equipped with a self-closing or automatic-closing device.

**Reasons:**

Whether a garage or carport, the rooms used for sleeping purposes should be protected from the hazard inherent in this use. Industry is supportive of the self-closing provisions to provide an additional level of safety.

**Cost Impact:** Minimal cost impact.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO (parts)**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
 Approved as submitted    Modified and approved    Denied    No action taken

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**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)  
Section R303.10**

**Submitted by:** 2018 International Residential Code Committee

**R303.10 Required heating and cooling.**

~~Where the winter design temperature in Table R301.2(1) is below 60° F (16° C), Every dwelling unit shall be provided with heating and cooling facilities capable of maintaining a room temperatures of not less than between 68° F (20° C) 70° F (21° C) and 90° F (50° C) at a point 3 feet (914 mm) above the floor and 2 feet (610 mm) from exterior walls in habitable rooms at the design temperature.~~ The installation of one or more portable space heaters or portable space coolers shall not be used to achieve compliance with this section.

**Reasons:**

The intent of this proposed amendment is to recognize that the cooling season in Phoenix is the dominant design condition. The City Council of Phoenix included provisions for space cooling in all residential dwellings during the update of the Neighborhood Preservation Ordinance approved on June 16, 1998. The cooling requirement for dwellings was incorporated into the adoption of the 1997 Uniform Building Code and was approved with an effective date of March 12, 1999. The adoption of the 2003 I-codes included mandatory heating and cooling for occupied interior spaces. An exception allowed for no heating and cooling when the primary purpose was not associated with human comfort, such as warehouses. The 2006 and 2012 I-codes were amended by Phoenix to require heating and cooling in habitable spaces. This proposed amendment re-establishes the City Council mandate to provide heating and cooling in residential dwellings.

**Cost Impact:**

There is a cost associated with providing cooling, but this has been a requirement for over 19 years and is accepted practice. The verbiage is consistent with the Neighborhood Preservation Ordinance.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
 Approved as submitted    Modified and approved    Denied    No action taken

**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018  
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**Development Advisory Board (DAB)**      Date: February 15, 2018  
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**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018  
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**City Council Action**      Date: June 6, 2018  
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**Adopted by City of Phoenix Ordinance G-6463 effective July 6, 2018**



# City of Phoenix

PLANNING & DEVELOPMENT DEPARTMENT

## PHOENIX BUILDING CONSTRUCTION CODE

### Amendment to 2018 International Residential Code (IRC) Section R310.4

**Submitted by:** 2018 International Residential Code Committee

**Section R310.4 Bars, grilles, covers and screens.**

Where bars, grilles, covers, screens or similar devices are placed over emergency escape and rescue openings, area wells, or window wells, the minimum net clear opening size shall comply with sections R310.2.1 through R310.2.3 and such devices shall be releasable or removable from the inside without the use of a key, tool, special knowledge or force greater than that required for the normal operation of the escape and rescue opening. The dwelling shall be equipped with smoke alarms installed in accordance with Section R314.

**Reasons:**

Retains current requirements for smoke detectors when quick release security bars over bedroom windows are installed. Carryover.

**Cost Impact:** Minimal cost impact.

**Approved in previous 2012 Code Adoption process:**       YES       NO

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
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**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018  
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PHOENIX BUILDING CONSTRUCTION CODE

Amendment to 2018 International Residential Code (IRC)

Section R313

Submitted by: 2018 International Residential Code Committee

SECTION R313 AUTOMATIC FIRE SPRINKLER SYSTEMS

R313.1 Townhouse automatic fire sprinkler systems.

An automatic residential fire sprinkler system shall be installed in townhouses.

Exception: An automatic residential fire sprinkler 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 when not required, in accordance with section 903.1 of the Phoenix Fire Code.

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 when required, in accordance with section 903.1 of the Phoenix Fire Code.

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 when not required, in accordance with section 903.1 of the Phoenix Fire Code.

Reasons:

PFC Section 903.1 (Bret Tarver Fire Sprinkler Ordinance) is the current governing standard for when fire sprinklers are required in buildings. A.R.S. Title 9, Chapter 7, Section 9-807, prohibits municipalities from adopting any ordinance that requires installation of fire sprinklers in any residential building containing not more than two (2) residences. This provision does not apply to any ordinance adopted prior to December 31, 2009, or townhouses, which are defined as having three (3) or more residences in a single building.

Cost Impact: No cost impact.

Approved in previous 2015 Code Adoption process: [ ] YES [x] NO

ACTION TAKEN:

2018 Code Committee Date: January 8, 2018
[ ] Approved as submitted [x] Modified and approved [ ] Denied [ ] No action taken

Development Advisory Board (DAB) Technical Subcommittee Date: February 8, 2018
[x] Approved as submitted [ ] Modified and approved [ ] Denied [ ] No action taken

Development Advisory Board (DAB) Date: February 15, 2018
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Downtown, Aviation, Economy, and Innovation Subcommittee Date: May 2, 2018
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**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)  
Section R320.2**

**Submitted by:** 2018 International Residential Code Committee

**SECTION R320 ACCESSIBILITY**

**R320.2 Scope.**

Where there are four or more *dwelling* units or sleeping units in a single structure, the provisions of Chapter 11 of the *International Building Code* for Group R-3 shall apply.

**R320.2.1 Guestrooms.**

A *dwelling* with guestrooms shall comply with the provisions of Chapter 11 of the *International Building Code* for Group R-3. For the purpose of applying the requirements of Chapter 11 of the *International Building Code*, guestrooms shall be considered to be sleeping units.

**Exceptions:** Owner-occupied lodging houses with five or fewer guestrooms constructed in accordance with the *International Residential Code* are not required to be accessible.

**R320.2 Model home complex.**

**R320.2.1 No-step entrance.**

At least one single family dwelling as part of a Model Home Complex, as described in the Phoenix Zoning Ordinance, shall have a no-step entrance as described in Section R320.2.2.

**R320.2.2 Dwellings.**

Residential single family dwellings, as part of a Model Home Complex, as described in the Zoning Ordinance, shall have a route of travel as described herein. The route of travel shall be a continuous no-step path connecting each subdivision sales office or public way to the primary entry.

The route of travel shall conform to the following requirements:

1. The running slope shall not exceed 1:12.
2. Routes of travel complying with this section are not required to have handrails.
3. The route of travel shall be a firm, stable, and slip resistant surface for a minimum width of 36 inches (914 mm) continuous and clear for a height of 7 feet (2.134 m) above the route.
4. The entry to the model home shall have a maneuvering space of a minimum 48 inches (1219 mm) by 48 inches (1219 mm) on the exterior side of the entry door.
5. The threshold at the entry shall not exceed ½ inch (13 mm).
6. The no step entry shall be identified by a readily viewable sign.

**Reasons:**

To provide a somewhat accessible route to the model home to allow access without traversing steps or steep slopes. This requirement was approved by the Development Advisory Board on May 17th, 2001 and has been in the Phoenix Building Construction Code since that time.

**Cost Impact:** Minimal cost impact.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
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**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018  
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# City of Phoenix

PLANNING & DEVELOPMENT DEPARTMENT

## PHOENIX BUILDING CONSTRUCTION CODE

### Amendment to 2018 International Residential Code (IRC) Section R322

**Submitted by:** 2018 International Residential Code Committee

#### R322 FLOOD RESISTENT CONSTRUCTION

Delete the text of this section of the IRC and replace with: All proposed development in a FEMA designated Flood Hazard Area shall conform to the requirements of Chapter 32B of the Phoenix City Code.

#### Reasons:

The city's floodplain ordinance is contained in Chapter 32B of the Phoenix City Code.

**Cost Impact:** No cost impact.

Current city code requirements are in place.

**Approved in previous 2012 Code Adoption process:**       YES       NO

#### ACTION TAKEN:

**2018 Code Committee**      Date: January 8, 2018  
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**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018  
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**Development Advisory Board (DAB)**      Date: February 15, 2018  
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**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018  
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**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)  
Section R328**

**Submitted by:** 2018 International Residential Code Committee

**R328 FIREPLACE RESTRICTIONS**

**R328.1 Definitions.**

For purposes of this article, the following words and terms shall be defined as follows:

**FIREPLACE:** A built-in-place masonry hearth and fire chamber or a factory-built appliance, designed to burn solid fuel or to accommodate gas or electric log insert or similar device, and which is intended for occasional recreational or aesthetic use, not for cooking, heating, or industrial processes.

**SOLID FUEL:** Includes, but is not limited to, wood, coal, or other non-gaseous or non-liquid fuels, including those fuels defined by the Maricopa County Air Pollution Control Officer as "inappropriate fuel" to burn in residential wood burning devices.

**WOODSTOVE:** A solid-fuel burning heating appliance including a pellet stove, which is either freestanding or designed to be inserted into a fireplace.

**R328.2 General.**

In accordance with the Phoenix City Council adopted Ordinance G-4062, on or after December 31, 1998, no person, firm or corporation shall construct or install a fireplace or a wood stove, and the Building Official shall not approve or issue a permit to construct or install a fireplace or a wood stove, unless the fireplace or wood stove complies with one of the following:

1. A fireplace which has a permanently installed gas or electric log insert;
2. A fireplace, wood stove or other solid fuel burning appliance which has been certified by the United States Environmental Protection Agency as conforming to 40 Code of Federal Regulations part 60, subpart AAA;
3. A fireplace, woodstove or other solid fuel burning appliance that has been tested and listed by a nationally recognized testing agency to meet performance standards equivalent to those adopted by 40 Code of Federal Regulations part 60, subpart AAA;
4. A fireplace, wood stove or other solid fuel burning appliance which has been determined by the Maricopa County Air Pollution Control Officer to meet performance standards equivalent to those adopted by 40 Code of Federal Regulations part 60, subpart AAA, as in effect on July 1, 1990.
5. A fireplace which has a permanently installed wood stove insert which complies with subparagraph 2, 3, or 4 above.

**Exceptions:** The following installations are not regulated and are not prohibited by this section:

1. Furnaces, boilers, incinerators, kilns, and other similar space heating or industrial process equipment.
2. Cook stoves, barbecue grills, and similar appliances designed primarily for cooking.
3. Fire pits, barbecue grills, and other outdoor fireplaces.

**R328.3 Fireplace or wood stove alterations prohibited.**

Fireplaces constructed or installed on or after December 31, 1998, that contain a gas or electric log insert or a woodstove insert, shall not be altered to directly burn wood or any other solid fuel. On or after December 31, 1998, no person, firm, or corporation shall alter a fireplace, woodstove, or other solid-fuel burning appliance in any manner that would void its certification or operational compliance with the provisions of this section.

Fireplaces constructed or installed on or after December 31, 1998, shall not be altered without first obtaining a permit from the City to ensure compliance with this section.

**Reasons:**

This amendment is included to comply with Chapter 40 of the Phoenix City Code and with Maricopa County Air Pollution Control regulations.

**Cost Impact:** No cost impact.  
Matches existing regulations.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
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**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018  
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**Development Advisory Board (DAB)**      Date: February 15, 2018  
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**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018  
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# City of Phoenix

PLANNING & DEVELOPMENT DEPARTMENT

## PHOENIX BUILDING CONSTRUCTION CODE

### Amendment to 2018 International Residential Code (IRC) Section R401.3

**Submitted by:** 2018 International Residential Code Committee

**R401.3 Drainage.**

Delete the text of this section of the IRC and replace with: All drainage shall conform to the requirements of Chapter 32A of the Phoenix City Code.

**Reasons:**

The city's Grading and Drainage ordinance is contained in Chapter 32A of the Phoenix City Code.

**Cost Impact:** No cost impact.  
Current city code requirements are in place.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
 Approved as submitted    Modified and approved    Denied    No action taken

**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018  
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**Development Advisory Board (DAB)**      Date: February 15, 2018  
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**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018  
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**City Council Action**      Date: June 6, 2018  
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**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)  
Table R401.4.1**

**Submitted by:** 2018 International Residential Code Committee

**R401.4.1 Geotechnical evaluation.**

In lieu of a complete geotechnical evaluation the load-bearing values in Table R401.4.1 shall be assumed. A complete geotechnical evaluation is required for presumptive load-bearing values greater than 1500 pounds per square foot (72kPA).

**TABLE R401.4.1  
PRESUMPTIVE LOAD-BEARING  
VALUES OF FOUNDATION MATERIALS<sup>a</sup>**

<b>CLASS OF MATERIAL</b>	<b>LOAD-BEARING PRESSURE (pounds per square foot)</b>
Crystalline bedrock	12,000
Sedimentary and foliated rock	4,000
Sandy gravel and gravel (GW and GP)	3,000
Sand, silty sand, clayey sand, silty gravel and clayey gravel (SW, SP, SM <sup>ε</sup> , SC <sup>ε</sup> , GM, and GC)	<del>2,000</del> <u>1500</u>
Clay, sandy clay, silty clay, clayey silt, silt and sandy silt (CL <sup>ε</sup> , ML, MH, and CH <sup>ε</sup> )	<del>1,500</del> <u>1000</u>

For SI: 1 pound per square foot = 0.0479kPa

- a. Where soil tests are required by Section R401.4, the allowable bearing capacities of the soil shall be part of the recommendations.
- b. Where the building official determines that in-place soils with an allowable bearing capacity of less than ~~4500~~ 1000 psf are likely to be present at the site, the allowable bearing capacity shall be determined by a soils investigation.
- c. This soil classification may be prone to expansive, collapsible or cyclic properties with changes to soil moisture content.

**Reasons:**

The geography of Phoenix incorporates native desert as well as previously farmed land that exhibit inconsistent bearing values. Geotechnical engineers practicing in the Phoenix area have provided their professional opinions and recommend the adjustment in the bearing values. This amendment is intended to further assist the design community in clarifying the soil load-bearing values that may be presumed without conducting a geotechnical investigation. Footnote c has

been added to several soil classifications at the request of the geotechnical engineering and structural engineering communities, to highlight the use of presumptive bearing values that may not be appropriate due to their detrimental soil properties.

**Cost Impact:** No cost impact.

**Approved in previous 2012 Code Adoption process:**       YES       NO

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
 Approved as submitted    Modified and approved    Denied    No action taken

**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018  
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**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018  
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**PHOENIX BUILDING CONSTRUCTION CODE**  
**Amendment to 2018 International Residential Code (IRC)**  
**Section R403.1.1**

**Submitted by:** 2018 International Residential Code Committee

**SECTION R403 FOOTINGS**

**R403.1.1 Minimum size.**

Minimum sizes for concrete and masonry footings shall be as set forth in Table R403.1 and Figure R403.1(1). The footing width, W, shall be based on the load-bearing value of the soil in accordance with Table R401.4.1. Spread footings shall be at least 6 inches (152 mm) in thickness, T. Footing projections, P, shall be at least 2 inches (51 mm) and shall not exceed the thickness of the footing. The size of footings supporting piers and columns shall be based on the tributary load and allowable soil pressure in accordance with Table R401.4.1. Footings for wood foundations shall be in accordance with the details set forth in Section R403.2, and Figures R403.1(2) and R403.1(3).

**Exception:** For enclosure of existing carport and patio covers, non-bearing wood framed exterior walls within the projection of the existing roof may be supported on an existing, uncracked concrete slab. The minimum slab thickness shall be 3.5 inches and the construction shall comply with the requirements of R317 for protection against decay.

**Reasons:**

This will allow enclosure of existing covered areas without requiring construction of a new footing. The only loads on the base of the wall are lateral loads from wind, which can be resisted by existing slab.

**Cost Impact:**

Reduce cost for carport and patio enclosures.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

<b>2018 Code Committee</b>	Date: January 8, 2018
<input checked="" type="checkbox"/> Approved as submitted <input type="checkbox"/> Modified and approved <input type="checkbox"/> Denied	<input type="checkbox"/> No action taken

<b>Development Advisory Board (DAB) Technical Subcommittee</b>	Date: February 8, 2018
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<b>Development Advisory Board (DAB)</b>	Date: February 15, 2018
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<b>Downtown, Aviation, Economy, and Innovation Subcommittee</b>	Date: May 2, 2018
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# City of Phoenix

PLANNING & DEVELOPMENT DEPARTMENT

## PHOENIX BUILDING CONSTRUCTION CODE

### Amendment to 2018 International Residential Code (IRC) Section R502.3.1

**Submitted by:** 2018 International Residential Code Committee

#### SECTION R502 ALLOWABLE JOIST SPANS

##### **R502.3.1 Sleeping areas and attic joists.**

Table R502.3.1(4 ~~2~~) shall be used to determine the maximum allowable span of floor joists that support sleeping areas and *attics* that are accessed by means of a fixed stairway in accordance with Section R311.7 provided that the design live load does not exceed ~~30~~ 40 pounds per square foot (4.44 1.92 kPa) and the design dead load does not exceed 20 pounds per square foot (0.96 kPa). The allowable span of ceiling joists that support *attics* used for limited storage or no storage shall be determined in accordance with Section R802.4.

#### **Reasons:**

This will coordinate the required design table with the proposed amendment to Table R301.5 for live loads in sleeping areas.

**Cost Impact:** Minimal cost impact.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

#### **ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
 Approved as submitted     Modified and approved     Denied       No action taken

**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018  
 Approved as submitted     Modified and approved     Denied       No action taken

**Development Advisory Board (DAB)**      Date: February 15, 2018  
 Approved as submitted     Modified and approved     Denied       No action taken

**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018  
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**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)  
Section N1101.4.1**

**Submitted by:** 2018 International Residential Code Committee

**N1101.4.1 RESNET testing & inspection protocol.**

The Residential Energy Services Network (RESNET) Mortgage Industry National Home Energy Rating System, Standards Protocol for third party testing and inspections, shall be deemed to meet the requirements of sections R402.4.1.1, R402.4.1.2 and R403.2.2. and shall meet the following conditions:

1. Third Party Testing and Inspections shall be completed by RESNET certified Raters or Rating Field Inspectors and shall be subject to RESNET Quality Assurance Field Review procedures.
2. Sampling, in accordance with Chapter 6 of the RESNET Standards shall be performed by Raters or Rating Field Inspectors working under a RESNET Accredited Sampling Provider.
3. Third Party Testing is required for the following items:
  - a. N1102.4.1.1 – Building Envelope – Thermal and Air Barrier Checklist
  - b. N1102.4.1.2 – Testing – Air Leakage Rate
  - c. N1103.3.2 – Sealing – Duct Tightness
4. The other requirements identified as “mandatory” in Chapter 11 shall be met.
5. Alternate testing and inspection programs and protocols shall be allowed when approved by the Code Official.

**Reasons:**

These provisions were contained in the previously adopted 2012 IRC and mirror requirements in the 2018 IECC Residential Energy Section.

**Previous Substantiation:**

1. Maricopa Association of Governments Building Code Committee has reviewed the Third-Party Testing and Inspection procedures of the Residential Energy Services Network (RESNET) with the intent to promote and present uniform guidelines for the acceptance of the RESNET Mortgage Industry National Home Energy Rating System Standards (Standards) as an “Above Code Program” for the jurisdictions within Maricopa County; and
2. The inspection and testing required under the 2018 International Residential Code (IRC) and the 2018 International Energy Conservation Code (IECC) is currently being performed under the RESNET Standards for home builders participating in the Environmental Protection Agency’s ENERGY STAR for Homes Program; and
3. The RESNET Standards (Chapters 3,6, and 8) are in the process of being certified as ANSI Standards; and
4. The utilization of the RESNET Standards would assure home builders of the ability to continue a testing and inspection process that has been proven to be successful in saving energy while protecting the health, safety and welfare of the public in the building code sections covered by the program; and

5. The committee has researched and discussed this issue and determined that the intent of the code is being met by the acceptance of the testing and inspection protocols of the RESNET Standards.

**Cost Impact:**

There will be significant cost savings for the large production home builders.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018

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**Development Advisory Board (DAB) Technical Subcommittee**      Date: March 8, 2018

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**Development Advisory Board (DAB)**      Date: March 15, 2018

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**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018

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**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)**

**Section N1103.3.1**

**Submitted by:** 2018 International Residential Code Committee

**N1103.3 Ducts.**

Ducts and air handlers shall be installed in accordance with Sections R403.3.1 through R403.3.7.

**N1103.3.1 Insulation (prescriptive).**

Supply and return ducts in attics shall be insulated to an *R*-value of not less than R-8 for ducts 3 inches (76 mm) in diameter and larger and not less than R-6 for ducts smaller than 3 inches (76 mm) in diameter. Supply and return ducts in other portions of the *building* shall be insulated to not less than R-6 for ducts 3 inches (76 mm) in diameter and not less than R-4.2 for ducts smaller than 3 inches (76 mm) in diameter.

**Exception:** ~~Ducts or portions thereof located completely inside the *building thermal envelope*.~~

1. Ducts or portions thereof located completely inside the building thermal envelope.
2. Supply ducts may be insulated to a minimum of R-6 when one or more of the following conditions are met:
  - 2.1 Minimum SEER rating of space heating/cooling system is increased to 15.
  - 2.2 Maximum U-factor is decreased to 0.35 and maximum SHGC is decreased to 0.22 for all fenestration products.
  - 2.3 Wall cavity insulation minimum R-value is increased to R-19.
  - 2.4 Residential buildings that meet the requirements of sections R102.1.1 or R405.
  - 2.5 Residential buildings with attic radiant barriers in accordance with ASTM C1313, installed in accordance with ASTM C1743.

**Reasons:**

These provisions were adopted in 2012.

Previous substantiation: The Arizona Homebuilders Association proposed efficiency improvements in heating/cooling equipment, glazing product performance, and increased thermal envelope insulation as an alternative to providing R-8 duct insulation required by the IECC. A Code Modification was approved in July 2006 to allow a trade-off to the use of R-6 insulation on HVAC ducts in residential attics. Energy simulation software was used to compare cost savings for each of the proposed areas of concentration. The benefits from improving the efficiency of the air conditioning system, window thermal resistance to heat gain, and wall cavity insulation were shown to surpass cost savings from increasing HVAC duct insulation. Based on these findings, staff recommendation is that this amendment be adopted for use in the 2012 IECC and the 2012 IRC Chapter 11.

\*\* A public proposal was submitted to include attic radiant barriers in the list of trade-offs for the R-8 duct insulation. Simulation software was used to demonstrate cost savings when radiant barriers and R-6 insulation were incorporated, as compared to no radiant barriers and R-8 duct insulation. Based on these positive savings results and the requirement for listed products, staff recommends that this previously approved proposal be modified to include radiant barriers in the list of exceptions.

**Cost Impact:**

Builders could realize construction cost savings or net – neutral cost savings.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
 Approved as submitted    Modified and approved    Denied    No action taken

**Development Advisory Board (DAB) Technical Subcommittee**      Date: March 8, 2018  
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**Development Advisory Board (DAB)**      Date: March 15, 2018  
 Approved as submitted    Modified and approved    Denied    No action taken

**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018  
 Approved as submitted    Modified and approved    Denied    No action taken

**City Council Action**      Date: June 6, 2018  
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**Adopted by City of Phoenix Ordinance G-6463 effective July 6, 2018**



**PHOENIX BUILDING CONSTRUCTION CODE  
Amendment to 2018 International Residential Code (IRC)  
Table N1106.4**

**Submitted by:** 2018 International Residential Code Committee

**TABLE N1106.4 (R406.4)**

MAXIMUM ENERGY RATING INDEX	
CLIMATE ZONE	ENERGY RATING INDEX
1	57
2	<del>57</del> 64
3	57
4	62
5	61
6	61
7	58
8	58

- a. Where on-site renewable energy is included for compliance using the ERI analysis of Section N1106.4, the building shall meet the mandatory requirements of Section N1106.2, and the building thermal envelope shall be greater than or equal to the levels of efficiency and SHGC in Table N1102.1.2 or Table N1102.1.4.

**Reasons:**

In 2012, the Phoenix Building Construction Code had set the HERS score at 73, In 2016, it was lowered to 64. 2017 permit records of home testing results show an average score of 62.5. The committee recommends the score remain at 64. This change aligns this IRC section with IECC Table R406.4.

**Cost Impact:**

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018

Approved as submitted     Modified and approved     Denied     No action taken

**Development Advisory Board (DAB) Technical Subcommittee**      Date: March 8, 2018

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**Development Advisory Board (DAB)**      Date: March 15, 2018

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**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018

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**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to 2018 International Residential Code (IRC)  
Section E3901.9**

**Submitted by:** 2018 International Residential Code Committee

**E3901.9 Basements, garages and accessory buildings.**

Not less than one receptacle outlet, in addition to any provided for specific equipment, shall be installed in each separate unfinished portion of a basement; in each vehicle bay at not less than (18) inches (457 mm) and not more than 5.5 feet (1676 mm) above the floor in attached garages; in each vehicle bay at not less than (18) inches (457 mm) and not more than 5.5 feet (1676 mm) above the floor in detached garages that are provided with electric power and in accessory buildings that are provided with electric power. [210.52(G)(1), (2), and (3)]

**Reasons:**

**2018 IRC Section G2408.2 (305.3) Elevation of ignition source.** This section states that Equipment and appliances having an ignition source shall be elevated such that the source of the ignition is not less than 18 inches (457 mm) above the floor in hazardous locations and public garages, private garages, repair garages, motor fuel dispensing facilities and parking garages.

Many private/dwelling garages are utilized to work on vehicles or other equipment that contain volatile fuels or other liquids and gases. Other jurisdictions around the United States have amended this section of NEC article 210.52 to address this situation. The receptacles outlets, if installed below the 18 inches, could possibly become an ignition source which could cause fire, property damage, injury, or death if these volatile liquids or gases are present.

This proposed amendment to the 2018 IRC is to mirror the proposed amendment to the 2017 NEC article 210.52(G)(1), which has been voted on by the 2017 NEC code adoption committee. The 2017 NEC code adoption committee voted to accept the amendment as written to add the minimum receptacle height.

**Cost Impact:** No cost impact.

Receptacle outlets are required in the dwelling garages as per the NEC and IRC. All wiring and associated electrical equipment do not change from the NEC and IRC standard requirement.

**Approved in previous 2012 Code Adoption process:**       YES       NO

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
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**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018  
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# City of Phoenix

PLANNING & DEVELOPMENT DEPARTMENT

## PHOENIX BUILDING CONSTRUCTION CODE

### Amendment to 2018 International Residential Code (IRC) Section E3902.14

**Submitted by:** 2018 International Residential Code Committee

**E3902.14.1 Indoor damp locations.**

125-volt, single-phase, 15 and 20 ampere receptacles installed in indoor damp locations shall have ground-fault circuit-interrupter protection for personnel.

**Reasons:**

Added safety in damp locations indoors.

National Electrical Code, (NEC) Article 100 defines Damp Location as follows: "Locations protected from weather and not subject to saturation with water or other liquids but subject to moderate degrees of moisture.

Informational Note: Examples of such locations include partially protected locations under canopies, marquees, roofed open porches, and like locations, and interior locations subject to moderate degrees of moisture, such as some basements, some barns, and some cold-storage warehouses".

Since receptacles located in an outdoor damp location require GFCI protection, logically, receptacles located in an indoor damp location should also be provided with the same GFCI protection.

This proposal is in line with a proposal to add this item to the 2017 NEC.

**Cost Impact:** Minimal cost impact.

**Approved in previous 2012 Code Adoption process:**  YES  NO

**ACTION TAKEN:**

**2018 Code Committee** Date: January 8, 2018  
 Approved as submitted  Modified and approved  Denied  No action taken

**Development Advisory Board (DAB) Technical Subcommittee** Date: February 8, 2018  
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# City of Phoenix

PLANNING & DEVELOPMENT DEPARTMENT

## PHOENIX BUILDING CONSTRUCTION CODE

### Amendment to 2018 International Residential Code (IRC) Section E3908.8

**Submitted by:** 2018 International Residential Code Committee

**E3908.8 Types of equipment grounding conductors.**

The equipment grounding conductor run with or enclosing the circuit conductors shall be one or more or a combination of the following:

- 4. Electrical metallic tubing with an additional equipment grounding conductor sized in accordance with table E3908.12.

**Reasons:**

This amendment requires that specific wiring methods include an individual equipment-grounding conductor. This amendment is more restrictive than the NEC, but provides for a higher degree of equipment grounding safety. The intent of the amendment is to supplement the low impedance path to ground and to attain reasonable compliance with requirements for the performance of the fault current path.

Note: This amendment is, essentially, a continuation of the amendment to the currently adopted code, 2011 NEC, with updated code language from the 2018 IRC.

**Cost Impact:** Minimal cost impact.  
Due to additional grounding conductor.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018

Approved as submitted    Modified and approved    Denied    No action taken

**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018

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**Development Advisory Board (DAB)**      Date: February 15, 2018

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**Downtown, Aviation, Economy, and Innovation Subcommittee**      Date: May 2, 2018

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**PHOENIX BUILDING CONSTRUCTION CODE**

**Amendment to the 2018 International Residential Code (IRC)  
Appendix Adoption**

**Submitted by:** 2018 International Residential Code Committee

**APPENDIX A – SIZING AND CAPACITIES OF GAS PIPING**

*Reason: Provides guidance on pipe sizing with all the methods of sizing.*

**APPENDIX B – SIZING OF VENTING SYSTEMS**

*Reason: Provides a guide for inspectors and customers.*

**APPENDIX C – EXIT TERMINALS OF MECHANICAL DRAFT AND DIRECT-VENT SYSTEMS**

*Reason: Good graphical representation of vent terminals.*

**APPENDIX E – MANUFACTURED HOUSING USED AS DWELLINGS AND FACTORY BUILT BUILDINGS**

*Reason: Continues factory-built building requirements.*

**APPENDIX G – PIPING STANDARDS FOR VARIOUS APPLICATIONS**

**APPENDIX H – PATIO COVERS**

*Reason: Continuation of less restrictive structural requirements for patio covers.*

**APPENDIX J – EXISTING BUILDINGS AND STRUCTURES**

*Reason: Allows additional design flexibility when modifying an existing building.*

**APPENDIX K – SOUND TRANSMISSION**

*Reason: Incorporates Phoenix Amendment for sound mitigation around City airport.*

**APPENDIX N – VENTING METHODS**

*Reason: Provides useful guidance for residential plumbing situations.*

**APPENDIX P – SIZING OF WATER PIPING SYSTEMS**

*Reason: Provides useful guidance for pipe sizing.*

**APPENDIX Q – TINY HOUSES**

*Reason: Useful information for inspectors and customers.*

**APPENDIX R – LIGHT STRAW-CLAY CONSTRUCTION**

*Reason: New appendix with development options.*

**APPENDIX S – STRAWBALE CONSTRUCTION**

*Reason: New appendix with development options.*

**APPENDIX T – SOLAR-READY PROVISIONS – DETACHED ONE- AND TWO-FAMILY DWELLINGS**

*Reason: New appendix with development options and guidance for builders.*

**Reasons:** See above.

**Cost Impact:** Minimal cost impact.

There is less restriction and more flexibility in the model code requirements, therefore the cost impact should be slightly less.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

Exception is new Appendices Q and R.

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
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**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 8, 2018  
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# City of Phoenix

PLANNING & DEVELOPMENT DEPARTMENT

## PHOENIX BUILDING CONSTRUCTION CODE

### Amendment to 2018 International Residential Code (IRC)

#### Appendix E

Submitted by: 2018 International Residential Code Committee

**Replace entire Appendix E with the following text:**

### **APPENDIX E MANUFACTURED HOUSING USED AS DWELLINGS AND FACTORY BUILT BUILDINGS**

#### **SECTION AE101 SCOPE**

##### **AE101.1 General.**

Factory-built buildings, manufactured homes and mobile homes shall comply with applicable laws of the State of Arizona and this code. The provisions of this section for factory-built buildings, manufactured homes and mobile homes take precedence over other code provisions which are inconsistent therewith. The general provisions of this code shall apply in all areas where there are not specific provisions in this section.

##### **AE101.1.1 Arizona law.**

The construction of factory-built buildings and manufactured homes is regulated by the State of Arizona, Arizona Revised Statutes A.R.S., Section 41-2141 et seq, and is not included in this Code.

##### **AE101.1.2 Manufactured home installation.**

The installation of manufactured homes and mobile homes, including connection to utilities, is regulated by the State of Arizona and is not included in this code, except that a City of Phoenix On-Site Permit is required for Phoenix Zoning Ordinance administration purposes. Connection to a City water or sewer tap requires a separate permit from the Planning and Development Department.

##### **AE101.1.3 Factory-built building installation.**

The installation of factory-built buildings including their foundations and direct connection to sewer, water, gas or electric utilities, is regulated by the State of Arizona and is not included in this code, except that a City of Phoenix On-Site Permit is required for compliance with Phoenix Zoning Ordinance requirements and with building code requirements pertaining to location on property and setback from other buildings or structures on the property. A City of Phoenix building permit is required for all on-site construction (except foundations) including connection to or alteration of existing on-site sewer, water, gas or electrical systems, and for construction of all site improvements required by the Zoning Ordinance, such as design review elements, signs, parking, landscaping, site amenities and disabled accessibility. Connection to a City water or sewer tap requires a separate permit from the Planning and Development Department.

##### **AE101.1.4 Alterations and additions.**

Repairs, alterations and site-built additions to factory-built buildings, mobile homes and manufactured homes are regulated by this code and by the Zoning Ordinance and require City of Phoenix permits.

#### **AE101.1.5. Occupancy and use.**

Occupancy and use of a factory built-building, manufactured home or mobile home is prohibited without first obtaining inspection approval and a certificate of occupancy from the building official, to verify compliance with the Zoning Ordinance and other applicable city codes and ordinances.

#### **AE101.2 Flood hazard areas.**

New and replacement manufactured homes to be installed in *flood hazard areas* as established in Table R301.2(1) shall meet the applicable requirements of Section R322.

### **SECTION AE102 REPAIRS, ALTERATIONS, AND ADDITIONS**

#### **AE102.1 Repairs, alterations, and additions.**

No person shall repair, alter or add on to a factory-built building, manufactured home or a mobile home after the unit has been installed, without first having obtained a permit from the building official for the specific work to be performed. All such work shall comply with the requirements of this Code. Additions and alterations shall be structurally separated from the manufactured home.

**Exception:** A structural separation need not be provided when structural plans, details and calculations are provided to justify the omission of such separation.

### **SECTION AE201 DEFINITIONS**

#### **AE201.1 General.**

For the purpose of this Section, the following definitions shall apply:

**FACTORY BUILT BUILDING** is a residential or non-residential building, including a dwelling unit or habitable room thereof, which is either wholly or in substantial part manufactured at an off-site location to be assembled on-site, except it does not include a manufactured home, recreational vehicle or mobile home (ARS 41-2142).

**MANUFACTURED HOME** is a structure built in accordance with the National Manufactured Home Construction and Safety Standards Act.

**MOBILE HOME** is a structure built prior to June 15, 1976, on a permanent chassis, capable of being transported in one or more sections and designed to be used with or without a permanent foundation as a dwelling, when connected to on-site utilities, except that it does not include recreational vehicles or factory-built buildings.

**ON-SITE PERMIT** is the permit issued by the building official which authorizes the placement of a factory-built building, manufactured home or mobile home on a site. The on-site permit shall authorize only the placement, foundation or unit tie-down, and specific connections to utility services which are authorized by a permit issued by the State of Arizona Office of Manufactured Housing. All other work on the site shall require a building permit issued by the building official in accordance with Section 105 of this code. Connection to a City water or sewer tap requires a separate permit from the Planning and Development Department.

### **SECTION AE301 INSTALLATION REQUIREMENTS**

#### **AE301.1 Installation requirements.**

No factory-built building, manufactured home or mobile home shall be moved onto or installed on any lot or site in the City of Phoenix except in compliance with these provisions.

**AE301.1.1 State insignia required.**

No person, firm or corporation shall move onto any site any factory-built building or manufactured home building unless such building bears a current, valid insignia of approval of the State of Arizona.

**AE301.1.2 State permit required.**

No person, firm or corporation shall move onto any site any factory-built building, manufactured home or mobile home unless and until a permit for such installation has been obtained from the State of Arizona.

**AE301.1.3 On-site permit required.**

No person firm or corporation shall move onto any site, or relocate on any site, any factory-built building, manufactured home or mobile home until an On-Site Permit has been issued by the City of Phoenix building official.

A site plan shall be submitted to the building official which shows all utility connections and all other information necessary to ascertain compliance with the separation and area restrictions of other sections of this code, and with all provisions of the Zoning Ordinance. If the building official is satisfied that the work described by the documents submitted conform to this section and other applicable law, the On-Site Permit shall be issued to the owner of the site or his authorized agent.

**AE301.1.4 Fire protection.**

All factory-built buildings must be protected pursuant to the Phoenix Fire Code.

**SECTION AE304 PERMITS**

**AE304.1 Building permit required.**

The person, firm or corporation obtaining the On-Site Permit shall also apply for and obtain a building permit from the building official when one or more of the following conditions apply:

1. For all on-site construction which connects to or alters existing buildings or existing on-site sewer, water, gas or electrical systems.
2. For all on-site construction which is required by or regulated by the Zoning Ordinance, such as for design review elements, signs, parking, landscaping, site amenities and accessibility.
3. For all construction or alteration which is not part of the State-approved factory-built building, manufactured home, or mobile home including all interior fit-up, tenant improvement or remodeling work which is not specifically included in such State permit.
4. When a City of Phoenix inspection is requested by the installer for work otherwise included in the State of Arizona installation permit, including but not limited to requests for utility clearance inspections.

All work subject to a building permit under this section is subject to all inspections and all technical requirements of this code and all other applicable city codes and ordinances. For administrative purposes, the building official may combine the On-Site Permit and the city building permit into a single document.

**Reasons:**

Appendix E Manufactured Housing Used as Dwellings does not address the State of Arizona and the City of Phoenix requirements for Manufactured Housing (Factory Built Buildings). This amendment matches local laws and is carried over from previous codes.

**Cost Impact:** No cost impact.

There is no additional cost because this has been in effect for several code cycles.

**Approved in previous 2012 Code Adoption process:**       **YES**       **NO**

**ACTION TAKEN:**

**2018 Code Committee**      Date: January 8, 2018  
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**Development Advisory Board (DAB) Technical Subcommittee**      Date: February 15, 2018  
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