City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code
Chapter 1

Submitted by: Phoenix Planning & Development Department Code Committee

Chapter 1. ADMINISTRATION

Note: For reserved sections herein, refer to the city of Phoenix Building Construction Code - Administrative Provisions for these code requirements.

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 in height with a separate means of egress and their accessory structures.

Exceptions:
1. Live/work units complying with the requirements of 419 of the International Building Code shall be permitted to be built as one- and two-family dwellings or townhouses. Fire suppression required by Section 419.5 of the International Building Code when constructed 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 shall be permitted to be constructed in accordance with the International Residential Code for One- and Two-family Dwellings when equipped with a fire sprinkler system in accordance with Section P2904.

R101.3 Intent. Reserved. ~~The purpose of this code is to provide minimum requirements to safeguard the public safety, health and general welfare, through affordability, structural strength, means of egress facilities, stability, sanitation, light and ventilation, energy conservation and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to fire fighters and emergency responders during emergency operations.~~

SECTION R102. APPLICABILITY

R102.1 General. Reserved. ~~Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern.~~

R102.2 Other laws. Reserved. ~~The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.~~

R102.3 Application of references. Reserved. ~~References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code~~.

R102.4 Referenced codes and standards. The codes and standards referenced in this code shall be

considered part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections R102.4.1 and R102.4.2.

Exception: Where enforcement of a code provision would violate the conditions of the listing of the equipment or appliance, the conditions of the listing and manufacturer's instructions shall apply.

R102.4.1 Where differences occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

R102.4.2 Provisions in referenced codes and standards. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code, the provisions of this code, as applicable, shall take precedence over the provisions in the referenced code or standard.

R102.5 Appendices. Provisions in the appendices shall not apply unless specifically referenced in the adopting ordinance.

R102.6 Partial invalidity. Reserved. ~~In the event any part or provision of this code is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions.~~

R102.7 Existing structures. The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, ~~the International Property Maintenance Code~~ Chapter 39 of the Phoenix City Code, or the International 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. Additions, alterations or repairs to any structure shall conform to that required for a new structure without requiring the existing structure to comply with all of the requirements of this code, unless otherwise stated. Additions, alterations or repairs shall not cause an existing structure to become unsafe or adversely affect the performance of the building.

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.

Cost Impact: No cost impact

ACTION TAKEN:

2012 Code Committee				Date: 11/27/2012
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code Chapter 2

Submitted by: Phoenix Planning & Development Department Code Committee

SECTION R202. DEFINITIONS

Fire separation distance. The distance measured from the building face to one of the following:

1. To the closest interior lot line; or
2. to the centerline of a street, an alley, or public way; or
3. to an imaginary line between two buildings on the lot.

The distance shall be measured at a right angle from the face of the framing ~~wall~~.

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:

- This establishes a more exact point for measurement. Construction documents use this point for measuring distances.
- Definition allows standard plans to be used in lieu of separate submittals for each production home.

Cost Impact: Use of standards reduces cost for the department and home builders.

ACTION TAKEN:

2012 Code Committee				Date: 5/22/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code
Section R301.1.4

Submitted by: Phoenix Planning & Development Department 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 previous amendments.

Cost Impact: No additional cost impact above what was approved in the 2006 amendments. The same text is used in this proposal as approved on December 1, 2006.

ACTION TAKEN:

2012 Code Committee				Date: 9/26/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code
Sections R313.1 & R313.2 (also see next document)

Submitted by: Phoenix Planning & Development Department 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 when *additions* or *alterations* are made to existing *townhouses* that do not have an automatic residential fire sprinkler system installed, unless required by the Bret Tarver Sprinkler Ordinance Section ~~903.2~~ 903.1 of the Phoenix Fire Code.

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

R313.2 One- and two-family detached dwellings automatic fire systems. An automatic residential fire sprinkler system shall be installed in detached one- and two-family *dwellings as required by*~~. Detached one- family dwellings shall comply with~~ the Bret Tarver Sprinkler Ordinance Section ~~903.2~~ 903.1 of the Phoenix Fire Code.

Exception: An automatic residential fire sprinkler system shall~~ not~~ be ~~required for~~ installed in *additions* or *alterations* to existing buildings ~~that are not already provided with an automatic residential sprinkler system unless~~ as required by the Bret Tarver Sprinkler Ordinance Section ~~903.2~~ 903.1 of the Phoenix Fire Code.

R313.2.1 Design and installation. Automatic residential fire sprinkler systems shall be designed and installed in accordance with Section P2904 or NFPA 13D.

Reasons:
In accordance with Arizona Revised Statutes Title 9, Chapter 7, Article 1, Section 9-807, municipalities shall not adopt an ordinance that prohibits a person from choosing not to install fire sprinklers in a single family detached residence or any residential building that contains not more than two dwelling units. This section does not apply to any ordinance requiring sprinklers adopted prior to December 31, 2009, so the existing Bret Tarver Sprinkler Ordinance can remain in effect.

Cost Impact: There will be an added cost to the homebuilder when the scope of the project requires fire sprinklers.

ACTION TAKEN:

2012 Code Committee			Date: 1/15/14
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date: 1/16/14
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board			Date: 1/16/14
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Council Subcommittee			Date: 2/18/14
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
City Council Action			Date: 2/26/14
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code
Section R301.1.5

Submitted by: Phoenix Planning & Development Department 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: While there could be a possible cost for a survey, this code amendment could save cost by preventing construction in a prohibited location. The same text is used in this proposal as approved on 12-01-06.

ACTION TAKEN:			
2012 Code Committee			Date: 11/19/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board			Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Council Subcommittee			Date: 4/16/13
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City Council Action			Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code
Section R301.2 and Table R301.2(1)

Submitted by: Phoenix Planning & Development Department 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)
(Due to space limitations the table could not be reproduced; only the values are listed)

Ground snow load:	0
Wind speed (mph):	90
Seismic design category:	B
Weathering:	Negligible
Frost line depth:	0
Termite:	Moderate to heavy
Decay:	None to slight
Winter design temperature:	N/A
Ice shield underlayment required:	N/A
Flood hazards:	See Phoenix City Code
Air freezing index:	0
Mean annual temperature:	70°F

Reasons:
In order for this document to be adopted, the completed referenced table has to be part of it. The deleted sentence is meaningless as part of a code enforcement requirement.

Cost Impact: No additional cost impact from prior approved values.

ACTION TAKEN:

2012 Code Committee				Date: 5/29/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date:
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
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Council Subcommittee				Date: 4/16/13
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City Council Action				Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to 2012 International Residential Code Section R301.2.4 & R301.2.4.1

Submitted by: Phoenix Planning & Development Department 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)~~ shall be designed and constructed in accordance with ~~Section R322~~ the Phoenix City Code. ~~Buildings 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 R322.3 for buildings and structures located in whole or in part in coastal high-hazard areas (V Zones) and coastal A Zones, if delineated, ASCE 24 is permitted subject to the limitations of this code and the limitations therein.~~

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

Cost Impact: No cost impact. Current City Code requirements are in place.

ACTION TAKEN:

2012 Code Committee				Date: 11/19/12
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
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Development Advisory Board				Date: 12/20/12
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Council Subcommittee				Date: 4/16/13
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City Council Action				Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to 2012 International Residential Code Section R301.5

Submitted by: Phoenix Planning & Development Department Code Committee

Table R301.5

USE	LIVE LOAD
Sleeping rooms	~~30~~ 40

Table R301.5 Footnote "e."

e. See Section ~~R502.2.2~~ R507 for decks attached to exterior walls.

Reasons:
This amendment requires the entire floor to be designed for the same load. This provides flexibility for future remodels and was recommended by the Arizona Building Officials during the 2006 code adoption.

Cost Impact: Negligible

ACTION TAKEN:

2012 Code Committee				Date: 6/5/12
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
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Development Advisory Board				Date: 12/20/12
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Council Subcommittee				Date: 4/16/13
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City Council Action				Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

2012 CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code Section R302.1

Submitted by: Phoenix Planning & Development Department Code Committee

SECTION R302 FIRE-RESISTANT CONSTRUCTION

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 shall comply with Table R302.1(2).

Exceptions:
1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the *fire separation distance*.
2. Walls between ~~of~~ *dwellings* and *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.
6. Residences constructed in residential developments which have received preliminary site plan approval prior to July 1, 2007 may continue to comply with the building setback requirements of the 2003 International Residential Code. This provision will expire on July 1, 2015.

Reasons:
2. Verbiage changed for clarification.
6. Added to include the language from Ordinance G-5506 which provided relief to home builders with lots that had been designed to meet the 3' setback of prior codes. This gave the home builders eight years to plan for the new setback requirements.

Cost Impact: No additional costs.

ACTION TAKEN:

2012 Code Committee			Date: 8/7/12
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date:
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board			Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Council Subcommittee			Date: 4/16/13
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City Council Action			Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

INTERNATIONAL RESIDENTIAL CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 IRC
Table R302.1(1)

Submitted by: Michael Grubbs

Code Section Proposed Information:
Please see deletions shown as strike-outs, new language as underlined.

2015 IRC

TABLE R302.1(1) EXTERIOR WALLS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	< 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Projections	Not Allowed	N/A	< 2 feet
	Fire-resistance rated	1 hour on the underside [a, b]	≥ 2 feet to < 5 feet
	Not fire-resistance rated	0 hours	≥5 feet
Openings in walls	Not allowed	N/A	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 3 ~~< 5~~ feet
		None required	3 ~~5~~ feet

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable.

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

b. Roof eave fire resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave provided that gable vent openings are not installed.

Reasons:
Unprotected roof overhangs now permitted to project to within 2' of the property line when fire blocking is installed between the top plate and the underside of the roof sheathing. For dwellings with or without fire sprinkler protection, penetrations of exterior walls do not require fire-resistant protection unless they are located less than 3' from the property line.

Cost Impact:
No increase in construction costs, cost savings may be realized.

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

ACTION TAKEN:

2015 Code Committee				Date: 1/14/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 3/17/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 5/19/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Neighborhoods, Housing and Development Subcommittee				Date: 6/21/2016
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 9/7/2016
☐ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

INTERNATIONAL RESIDENTIAL CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 IRC
Table R302.1(2)

Submitted by: Michael Grubbs

Code Section Proposed Information:

TABLE R302.1(2) EXTERIOR WALLS—DWELLINGS WITH FIRE SPRINKLERS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E 119 or UL 263 with exposure from the outside	0 feet
	Not fire-resistance rated	0 hours	3 feet[a]
Projections	Not Allowed	N/A	< 2 feet
	Fire-resistance rated	1 hour on the underside[b, c]	2 feet[a]
	Not fire-resistance rated	0 hours	3 feet
Openings in walls	Not allowed	N/A	< 3 feet
	Unlimited	0 hours	3 feet[a]
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet[a]

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable

a. For residential subdivisions where all dwellings are equipped throughout with an automatic sprinkler systems installed in accordance with Section P2904, the fire separation distance for nonrated exterior walls and rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.

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

c. The roof eave fire resistance rating shall be permitted to be reduced to 0 hours on the

underside of the eave provided that gable vent openings are not installed.

Reasons:
Same explanation as Table 302.1(1) Unprotected roof overhangs now permitted to project to within 2' of the property line when fire blocking is installed between the top plate and the underside of the roof sheathing. For dwellings with or without fire sprinkler protection, penetrations of exterior walls do not require fire-resistant protection unless they are located less than 3' from the property line.

Cost Impact:
No increase in construction costs, cost savings may be realized.

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

ACTION TAKEN:

2015 Code Committee				Date: 1/14/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 3/17/16
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 5/19/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Neighborhoods, Housing and Development Subcommittee				Date: 6/21/2016
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 9/7/2016
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code Section R302.5.1

Submitted by: Phoenix Planning & Development Department Code Committee

R302.5.1 Opening protection.

Openings from a private garage or carport directly into a room used for sleeping purposes 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, equipped with a self-closing device.

Reasons:
Whether a garage or carport, 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:
Negligible

ACTION TAKEN:

2012 Code Committee				Date: 6/12/12
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
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Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to 2012 International Residential Code Section R303.9

Submitted by: Phoenix Planning & Development Department Code Committee

SECTION R303. LIGHT, VENTILATION, ~~AND~~ HEATING AND COOLING

R303.9 Required heating and cooling. ~~When 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 minimum~~ room temperatures between ~~of~~ 70°F(21°C) ~~68°F~~ ~~(20°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 all 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.

Reason:
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 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: The cost associated with providing cooling, but this has been a requirement for over 20 years and is accepted practice.

Cost Impact:
No additional costs. The verbiage is consistent with the Neighborhood Preservation Ordinance.

ACTION TAKEN:

2012 Code Committee				Date: 5/29/12
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

INTERNATIONAL RESIDENTIAL CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 IRC
Section R304.1

Submitted by: Michael Grubbs

Code Section Proposed Information (see example):
Please see deleted text as strike out, new language underlined.

R304.1 Minimum area. ~~Every *dwelling* unit shall have at least one habitable room that shall have not less than 120 square feet (11 m2) of gross floor area.~~
~~R304.2 Other rooms.~~ ~~Other~~ Habitable rooms shall have a floor area of not less than 70 square feet (6.5 m2).

Reasons:

Provisions for habitable room size have been reduced from 120 square feet to 70 square feet, proponents of minimalist living have prompted this change.

Cost Impact:
No cost impact

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

ACTION TAKEN:

2015 Code Committee				Date: 1/14/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 3/17/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 5/19/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Neighborhoods, Housing and Development Subcommittee				Date: 6/21/2016
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 9/7/2016
☐ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code
Section R310.4

Submitted by: Phoenix Planning & Development Department Code Committee

R310.4 Bars, grilles, covers and screens. Bars, grilles, covers, screens or similar devices are permitted to be placed over emergency escape and rescue openings, bulkhead enclosures, or window wells that serve such openings, provided the minimum net clear opening size complies with Sections R310.1.1 to R310.1.3, 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 which is required for normal operation of the escape and rescue opening. The dwelling shall be equipped with smoke alarms installed in accordance with Section R314.

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

Cost Impact:
Negligible

ACTION TAKEN:			
2012 Code Committee			Date: 6/26/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board			Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Council Subcommittee			Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
City Council Action			Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code
Sections R313.1 & R313.2 (also see next document)

Submitted by: Phoenix Planning & Development Department 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 when *additions* or *alterations* are made to existing *townhouses* that do not have an automatic residential fire sprinkler system installed, unless required by the Bret Tarver Sprinkler Ordinance Section ~~903.2~~ 903.1 of the Phoenix Fire Code.

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

R313.2 One- and two-family detached dwellings automatic fire systems. An automatic residential fire sprinkler system shall be installed in detached one- and two-family *dwellings as required by*~~. Detached one- family dwellings shall comply with~~ the Bret Tarver Sprinkler Ordinance Section ~~903.2~~ 903.1 of the Phoenix Fire Code.

Exception: An automatic residential fire sprinkler system shall~~ not~~ be ~~required for~~ installed in *additions* or *alterations* to existing buildings ~~that are not already provided with an automatic residential sprinkler system unless~~ as required by the Bret Tarver Sprinkler Ordinance Section ~~903.2~~ 903.1 of the Phoenix Fire Code.

R313.2.1 Design and installation. Automatic residential fire sprinkler systems shall be designed and installed in accordance with Section P2904 or NFPA 13D.

Reasons:
In accordance with Arizona Revised Statutes Title 9, Chapter 7, Article 1, Section 9-807, municipalities shall not adopt an ordinance that prohibits a person from choosing not to install fire sprinklers in a single family detached residence or any residential building that contains not more than two dwelling units. This section does not apply to any ordinance requiring sprinklers adopted prior to December 31, 2009, so the existing Bret Tarver Sprinkler Ordinance can remain in effect.

Cost Impact: There will be an added cost to the homebuilder when the scope of the project requires fire sprinklers.

ACTION TAKEN:

2012 Code Committee			Date: 1/15/14
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date: 1/16/14
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board			Date: 1/16/14
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Council Subcommittee			Date: 2/18/14
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
City Council Action			Date: 2/26/14
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code Sections R313.1 & R313.2

Submitted by: Phoenix Planning & Development Department 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 when *additions* or *alterations* are made to existing *townhouses* that do not have an automatic residential fire sprinkler system installed ~~.~~ unless required by the Bret Tarver Sprinkler Ordinance Section 903.2 of the Phoenix Fire Code.

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

R313.2 One- and two-family detached dwellings automatic fire systems. An automatic residential fire sprinkler system shall be installed in ~~one- and~~ two-family *dwellings*. Detached one-family dwellings shall comply with the Bret Tarver Sprinkler Ordinance Section 903.2 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 unless required by the Bret Tarver Sprinkler Ordinance Section 903.2 of the Phoenix Fire Code.

R313.2.1 Design and installation. Automatic residential fire sprinkler systems shall be designed and installed in accordance with Section P2904 or NFPA 13D.

Reasons:
In accordance with Arizona Revised Statutes Title 9, Chapter 7, Article 1, Section 9-907, municipalities shall not adopt an ordinance that prohibits a person from choosing not to install fire sprinklers in a single family detached residence. This section does not apply to any ordinance requiring sprinklers that was adopted prior to December 31, 2009, so the existing Tarver Ordinance can remain in effect.

Cost Impact: There will be an added cost to the homebuilder when the scope of the project requires fire sprinklers.

ACTION TAKEN:

2012 Code Committee				Date: 8/7/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

INTERNATIONAL RESIDENTIAL CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 IRC
Section R314

Submitted by: Michael Grubbs

Code Section Proposed Information:

Please see deleted section with strike out, new Section with underline.

~~**R314.1 Smoke detection and notification.** All smoke alarms shall be listed and labeled in accordance with UL 217 and installed in accordance with the provisions of this code and the household fire warning *equipment* provisions of NFPA 72.~~

~~**R314.2 Smoke detection systems.** Household fire alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required by this section for smoke alarms, shall be permitted. The household fire alarm system shall provide the same level of smoke detection and alarm as required by this section for smoke alarms. Where a household fire warning system is installed using a combination of smoke detector and audible notification device(s), it shall become a permanent fixture of the occupancy and owned by the homeowner. The system shall be monitored by an *approved* supervising station and be maintained in accordance with NFPA 72.~~

~~**Exception:** Where smoke alarms are provided meeting the requirements of Section R314.4.~~

~~**R314.3 Location.** Smoke alarms shall be installed in the following locations:~~
~~1. In each sleeping room.~~
~~2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.~~
~~3. On each additional *story* of the *dwelling*, including *basements* and habitable attics but not including crawl spaces and uninhabitable *attics*. In *dwellings* or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full *story* below the upper level.~~

~~**R314.3.1 Alterations, repairs and additions.** When *alterations*, repairs or *additions* requiring a *permit* occur, or when one or more sleeping rooms are added or created in existing *dwellings*, the individual *dwelling unit* shall be equipped with smoke 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, are exempt from the requirements of this section.~~
~~2. Installation, *alteration* or repairs of plumbing or mechanical systems are exempt from the requirements of this section.~~

~~**R314.4 Power source.** Smoke alarms shall receive their primary power from the building wiring when such wiring is~~
~~served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection.~~

~~**Exceptions:**~~
~~1. Smoke alarms shall be permitted to be battery operated when installed in buildings without commercial power.~~

~~2. Hard wiring of smoke alarms in existing areas shall not be required where the *alterations* or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an *attic*, crawl space or *basement* available which could provide access for hard wiring without the removal of interior finishes.~~

~~**R314.5 Interconnection.** Where more than one smoke alarm is required to be installed within an individual dwelling unit in accordance with Section R314.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.~~
~~**Exception:** Interconnection of smoke alarms in existing areas shall not be required where alterations or repairs do not result in removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for interconnection without the removal of interior finishes.~~

SECTION R314

SMOKE ALARMS

R314.1 General. Smoke alarms shall comply with NFPA 72 and Section R314.

R314.1.1 Listings. Smoke alarms shall be *listed* in accordance with UL 217. Combination smoke and carbon monoxide alarms shall be *listed* in accordance with UL 217 and UL 2034.

R314.2 Where required. Smoke alarms shall be provided in accordance with this section.

R314.2.1 New construction. Smoke alarms shall be provided in *dwelling units*.

R314.2.2 Alterations, repairs and additions. Where *alterations*, *repairs* or *additions* requiring a permit occur, or where one or more sleeping rooms are added or created in existing *dwellings*, the individual *dwelling unit* shall be equipped with smoke alarms located as required for new *dwellings*.

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

R314.3 Location. Smoke alarms shall be installed in the following locations:
1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional *story* of the *dwelling*, including *basements* and *habitable attics* and not including crawl spaces and uninhabitable *attics*. In *dwellings* or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full *story* below the upper level.
4. Smoke alarms shall be installed not less than 3 feet (914 mm) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by Section R314.3.

R314.3.1 Installation near cooking appliances. Smoke alarms shall not be installed in the following locations unless this would prevent placement of a smoke alarm in a location required by Section R314.3.
1. Ionization smoke alarms shall not be installed less than 20 feet (6096 mm) horizontally from a permanently installed cooking *appliance*.
2. Ionization smoke alarms with an alarm-silencing switch shall not be installed less than 10 feet (3048 mm) horizontally from a permanently installed cooking *appliance*.
3. Photoelectric smoke alarms shall not be installed less than 6 feet (1828 mm) horizontally from a permanently installed cooking *appliance*.

R314.4 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in accordance with Section R314.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual *dwelling unit*. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

Exception: Interconnection of smoke alarms in existing areas shall not be required where *alterations* or repairs do not result in removal of interior wall or ceiling finishes exposing the structure, unless there is an *attic*, crawl space or *basement* available that could provide access for interconnection without the removal of interior finishes.

R314.5 Combination alarms. Combination smoke and carbon monoxide alarms shall be permitted to be used in lieu of smoke alarms.

R314.6 Power source. Smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and, where primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection.

Exceptions:
1. Smoke alarms shall be permitted to be battery operated where installed in buildings without commercial power.
2. Smoke alarms installed in accordance with Section R314.2.2 shall be permitted to be battery powered.

R314.7 Fire alarm systems. Fire alarm systems shall be permitted to be used in lieu of smoke alarms and shall comply with Sections R314.7.1 through R314.7.4.

R314.7.1 General. Fire alarm systems shall comply with the provisions of this code and the household fire warning *equipment* provisions of NFPA 72. Smoke detectors shall be *listed* in accordance with UL 268.

R314.7.2 Location. Smoke detectors shall be installed in the locations specified in Section R314.3.

R314.7.3 Permanent fixture. Where a household fire alarm system is installed, it shall become a permanent fixture of the occupancy, owned by the homeowner.

R314.7.4 Combination detectors. Combination smoke and carbon monoxide detectors shall be permitted to be installed in fire alarm systems in lieu of smoke detectors, provided that they are *listed* in accordance with UL 268 and UL 2075.

Reasons:
Section 314 was completely reorganized for clarity and ease of use. New provisions recognize combination smoke and carbon monoxide alarms, allows the use of wireless smoke alarms and provides a power source option to use battery powered smoke alarms in remodel projects in lieu of hard wired alarms.

Cost Impact:
New construction, no cost change; remodel construction, cost savings

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

ACTION TAKEN:

2015 Code Committee				Date: 1/14/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 3/17/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 5/19/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Neighborhoods, Housing and Development Subcommittee				Date: 6/21/2016

☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
City Council Action			Date: 9/7/2016
☐ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

INTERNATIONAL BUILDING CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 IRC
Section R315

Submitted by: Michael Grubbs

Code Section Proposed Information (see example):
Please see deleted text as strike-outs, new language as underlined.

~~**SECTION R315**~~

~~**CARBON MONOXIDE ALARMS**~~

~~**R315.1 Carbon monoxide alarms.** For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in *dwelling units* within which fuel-fired *appliances* are installed and in dwelling units that have attached garages.~~

~~**R315.2 Carbon monoxide detection systems.** Carbon monoxide detection systems that include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720, shall be permitted. The carbon monoxide detectors shall be listed as complying with UL 2075. Where a household carbon monoxide detection system is installed, it shall become a permanent fixture of the occupancy, owned by the homeowner and shall be monitored by an approved supervising station.~~
~~**Exception:** Where carbon monoxide alarms are installed meeting the requirements of Section R315.1, compliance with Section 315.2 is not required.~~

~~**R315.3 Where required in existing dwellings.** Where work requiring a *permit* occurs in existing *dwellings* that have attached garages or in existing dwellings within which fuel-fired *appliances* exist, carbon monoxide alarms shall be provided in accordance with Section R315.1.~~

~~**R315.4 Alarm requirements.** Single-station carbon monoxide alarms shall be listed as complying with UL 2034 and shall be installed in accordance with this code and the manufacturer's installation instructions.~~

2015 IRC

SECTION R315

CARBON MONOXIDE ALARMS

R315.1 General. Carbon monoxide alarms shall comply with Section R315.

R315.1.1 Listings. Carbon monoxide alarms shall be *listed* in accordance with UL 2034. Combination carbon monoxide and smoke alarms shall be *listed* in accordance with UL 2034 and UL 217.

R315.2 Where required. Carbon monoxide alarms shall be provided in accordance with Sections R315.2.1 and 315.2.2.

R315.2.1 New construction. For new construction, carbon monoxide alarms shall be provided in dwelling units where either or both of the following conditions exist.
1. The *dwelling unit* contains a fuel-fired *appliance.*
2. The *dwelling unit* has an attached garage with an opening that communicates with the dwelling unit.

R315.2.2 Alterations, repairs and additions. Where *alterations*, repairs or *additions* requiring a permit

occur, or where one or more sleeping rooms are added or created in existing *dwellings*, 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, is exempt from the requirements of this section.
2. Installation, alteration or repairs of plumbing or mechanical systems are exempt from the requirements of this section.

R315.3 Location. Carbon monoxide alarms in *dwelling units* shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms. Where a fuel-burning *appliance* is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom.

R315.4 Combination alarms. Combination carbon monoxide and smoke alarms shall be permitted to be used in lieu of carbon monoxide alarms.

R315.5 Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and, where primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection.

Exceptions:
1. Carbon monoxide alarms shall be permitted to be battery operated where installed in buildings without commercial power.
2. Carbon monoxide alarms installed in accordance with Section R315.2.2 shall be permitted to be battery powered.

R315.6 Carbon monoxide detection systems. Carbon monoxide detection systems shall be permitted to be used in lieu of carbon monoxide alarms and shall comply with Sections R315.6.1 through R315.6.4.

R315.6.1 General. Household carbon monoxide detection systems shall comply with NFPA 720. Carbon monoxide detectors shall be *listed* in accordance with UL 2075.

R315.6.2 Location. Carbon monoxide detectors shall be installed in the locations specified in Section R315.3. These locations supersede the locations specified in NFPA 720.

R315.6.3 Permanent fixture. Where a household carbon monoxide detection system is installed, it shall become a permanent fixture of the occupancy and owned by the homeowner.

R315.6.4 Combination detectors. Combination carbon monoxide and smoke detectors shall be permitted to be installed in carbon monoxide detection systems in lieu of carbon monoxide detectors, provided that they are *listed* in accordance with UL 2075 and UL 268.

Reasons:
Section 315 was completely reorganized for clarity and ease of use. New provisions recognize combination smoke and carbon monoxide alarms, allows the use of wireless carbon monoxide alarms and provides a power source option to use battery powered carbon monoxide alarms in remodel projects in lieu of hard wired alarms.

Cost Impact:

New construction, no cost change; remodel construction, cost savings

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

ACTION TAKEN:

2015 Code Committee Date: 1/14/16

☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date: 3/17/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board			Date: 5/19/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Neighborhoods, Housing and Development Subcommittee			Date: 6/21/2016
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
City Council Action			Date: 9/7/2016
☐ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code Section R320.2

Submitted by: Phoenix Planning & Development Department Code Committee

SECTION R320 ACCESSIBILITY

R320.1 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 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:
There is a minimal additional cost for providing this access.

ACTION TAKEN:

2012 Code Committee				Date: 8/7/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code
Section R322

Submitted by: Phoenix Planning & Development Department Code Committee

SECTION R322 FLOOD-RESISTANT CONSTRUCTION

RESERVED

~~**R322.1 General.**~~
~~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) shall be designed and constructed in accordance with the provisions contained in this section. Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.~~

~~**R322.1.1 Alternative provisions.**~~
~~As an alternative to the requirements in Section R322.3 for buildings and structures located in whole or in part in coastal high-hazard areas (V Zones) and Coastal A Zones, if delineated, ASCE 24 is permitted subject to the limitations of this code and the limitations therein.~~

~~**R322.1.2 Structural systems.**~~
~~All structural systems of all buildings and structures shall be designed, connected and anchored to resist flotation, collapse or permanent lateral movement due to structural loads and stresses from flooding equal to the design flood elevation.~~

~~**R322.1.3 Flood-resistant construction.**~~
~~All buildings and structures erected in areas prone to flooding shall be constructed by methods and practices that minimize flood damage.~~

~~**R322.1.4 Establishing the design flood elevation.**~~
~~The design flood elevation shall be used to define flood hazard areas. At a minimum, the design flood elevation is the higher of:~~
~~1. The base flood elevation at the depth of peak elevation of flooding (including wave height) which has a 1 percent (100-year flood) or greater chance of being equaled or exceeded in any given year; or~~
~~2. The elevation of the design flood associated with the area designated on a flood hazard map adopted by the community, or otherwise legally designated.~~

~~**R322.1.5 Lowest floor.**~~
~~The lowest floor shall be the floor of the lowest enclosed area, including *basement*, but excluding any unfinished flood-resistant enclosure that is useable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the building or structure in violation of this section.~~

~~**R322.1.6 Protection of mechanical and electrical systems.**~~
~~Electrical systems, *equipment* and components; heating, ventilating, air conditioning; plumbing *appliances* and plumbing fixtures; *duct systems*; and other service *equipment* shall be located at or above the elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high-hazard areas including V Zones). If replaced as part of a substantial improvement, electrical systems, *equipment* and components; heating, ventilating, air conditioning and plumbing *appliances* and plumbing fixtures; *duct systems*; and other service *equipment* shall meet the requirements of this section. Systems, fixtures, and *equipment* and components shall not~~

be mounted on or penetrate through walls intended to break away under flood loads.

Exception: Locating electrical systems, *equipment* and components; heating, ventilating, air conditioning; plumbing *appliances* and plumbing fixtures; *duct systems*; and other service *equipment* is permitted below the elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high-hazard areas including V Zones) provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation in accordance with ASCE 24. Electrical wiring systems are permitted to be located below the required elevation provided they conform to the provisions of the electrical part of this code for wet locations.

R322.1.7 Protection of water supply and sanitary sewage systems.
New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems in accordance with the plumbing provisions of this code. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into systems and discharges from systems into floodwaters in accordance with the plumbing provisions of this code and Chapter 3 of the *International Private Sewage Disposal Code*.

R322.1.8 Flood-resistant materials.
Building materials used below the elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high-hazard areas including V Zones) shall comply with the following:
1. All wood, including floor sheathing, shall be pressure-preservative-treated in accordance with AWPA U1 for the species, product, preservative and end use or be the decay-resistant heartwood of redwood, black locust or cedars. Preservatives shall be listed in Section 4 of AWPA U1.
2. Materials and installation methods used for flooring and interior and *exterior walls* and wall coverings shall conform to the provisions of FEMA/FIA-TB-2.

R322.1.9 Manufactured homes.
New or replacement *manufactured homes* shall be elevated in accordance with Section R322.2 (flood hazard areas including A Zones) or Section R322.3 in coastal high-hazard areas (V Zones). The anchor and tie-down requirements of Sections AE604 and AE605 of Appendix E shall apply. The foundation and anchorage of *manufactured homes* to be located in identified floodways shall be designed and constructed in accordance with ASCE 24.

R322.1.10 As-built elevation documentation.
A registered *design professional* shall prepare and seal documentation of the elevations specified in Section R322.2 or R322.3.

R322.2 Flood hazard areas (including A Zones).
All areas that have been determined to be prone to flooding but not subject to high-velocity wave action shall be designated as flood hazard areas. Flood hazard areas that have been delineated as subject to wave heights between $1^1/_2$ feet (457 mm) and 3 feet (914 mm) shall be designated as Coastal A Zones. All building and structures constructed in whole or in part in flood hazard areas shall be designed and constructed in accordance with Sections R322.2.1 through R322.2.3.

R322.2.1 Elevation requirements.
1. Buildings and structures in flood hazard areas not designated as Coastal A Zones shall have the lowest floors elevated to or above the design flood elevation.
2. Buildings and structures in flood hazard areas designated as Coastal A Zones shall have the lowest floors elevated to or above the base flood elevation plus 1 foot (305 mm), or to the design flood elevation, whichever is higher.
3. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including *basement*) elevated at least as high above the highest adjacent *grade* as the depth number specified in feet on the FIRM, or at least 2 feet (610 mm) if a depth number is not specified.
4. Basement floors that are below *grade* on all sides shall be elevated to or above the design flood elevation.

Exception: Enclosed areas below the design flood elevation, including *basements* whose floors are not below *grade* on all sides, shall meet the requirements of Section R322.2.2.

R322.2.2 Enclosed area below design flood elevation.

Enclosed areas, including crawl spaces, that are below the design flood elevation shall:

1. Be used solely for parking of vehicles, building access or storage.
2. Be provided with flood openings that meet the following criteria:
   - 2.1. There shall be a minimum of two openings on different sides of each enclosed area; if a building has more than one enclosed area below the design flood elevation, each area shall have openings on exterior walls.
   - 2.2. The total net area of all openings shall be at least 1 square inch (645 mm^2) for each square foot (0.093 m^2) of enclosed area, or the openings shall be designed and the *construction documents* shall include a statement by a registered *design professional* that the design of the openings will provide for equalization of hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters as specified in Section 2.6.2.2 of ASCE 24.
   - 2.3. The bottom of each opening shall be 1 foot (305 mm) or less above the adjacent ground level.
   - 2.4. Openings shall be not less than 3 inches (76 mm) in any direction in the plane of the wall.
   - 2.5. Any louvers, screens or other opening covers shall allow the automatic flow of floodwaters into and out of the enclosed area.
   - 2.6. Openings installed in doors and windows, that meet requirements 2.1 through 2.5, are acceptable; however, doors and windows without installed openings do not meet the requirements of this section.

R322.2.3 Foundation design and construction.

Foundation walls for all buildings and structures erected in flood hazard areas shall meet the requirements of Chapter 4.

Exception: Unless designed in accordance with Section R404:

1. The unsupported height of 6-inch (152 mm) plain masonry walls shall be no more than 3 feet (914 mm).
2. The unsupported height of 8-inch (203 mm) plain masonry walls shall be no more than 4 feet (1219 mm).
3. The unsupported height of 8-inch (203 mm) reinforced masonry walls shall be no more than 8 feet (2438 mm).

For the purpose of this exception, unsupported height is the distance from the finished *grade* of the under-floor space to the top of the wall.

R322.3 Coastal high-hazard areas (including V Zones).

Areas that have been determined to be subject to wave heights in excess of 3 feet (914 mm) or subject to high-velocity wave action or wave-induced erosion shall be designated as coastal high-hazard areas. Buildings and structures constructed in whole or in part in coastal high-hazard areas shall be designed and constructed in accordance with Sections R322.3.1 through R322.3.6.

R322.3.1 Location and site preparation.

1. New buildings and buildings that are determined to be substantially improved pursuant to Section R105.3.1.1, shall be located landward of the reach of mean high tide.
2. For any alteration of sand dunes and mangrove stands the *building official* shall require submission of an engineering analysis which demonstrates that the proposed *alteration* will not increase the potential for flood damage.

R322.3.2 Elevation requirements.

1. All buildings and structures erected within coastal high-hazard areas shall be elevated so that the lowest portion of all structural members supporting the lowest floor, with the exception of piling, pile caps, columns, grade beams and bracing, is:

1.1. Located at or above the design flood elevation, if the lowest horizontal structural member is

oriented parallel to the direction of wave approach, where parallel shall mean less than or equal to 20 degrees (0.35 rad) from the direction of approach, or
1.2. Located at the base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher, if the lowest horizontal structural member is oriented perpendicular to the direction of wave approach, where perpendicular shall mean greater than 20 degrees (0.35 rad) from the direction of approach.
2. Basement floors that are below *grade* on all sides are prohibited.
3. The use of fill for structural support is prohibited.
4. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways.

> **Exception:** Walls and partitions enclosing areas below the design flood elevation shall meet the requirements of Sections R322.3.4 and R322.3.5.

R322.3.3 Foundations.
Buildings and structures erected in coastal high-hazard areas shall be supported on pilings or columns and shall be adequately anchored to such pilings or columns. The space below the elevated building shall be either free of obstruction or, if enclosed with walls, the walls shall meet the requirements of Section R322.3.4. Pilings shall have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift). Water loading values used shall be those associated with the design flood. Wind-loading values shall be those required by this code. Pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling. Pile systems design and installation shall be certified in accordance with Section R322.3.6. Spread footing, mat, raft or other foundations that support columns shall not be permitted where soil investigations that are required in accordance with Section R401.4 indicate that soil material under the spread footing, mat, raft or other foundation is subject to scour or erosion from wave-velocity flow conditions. If permitted, spread footing, mat, raft or other foundations that support columns shall be designed in accordance with ASCE 24. Slabs, pools, pool decks and walkways shall be located and constructed to be structurally independent of buildings and structures and their foundations to prevent transfer of flood loads to the buildings and structures during conditions of flooding, scour or erosion from wave-velocity flow conditions, unless the buildings and structures and their foundation are designed to resist the additional flood load.

R322.3.4 Walls below design flood elevation.
Walls and partitions are permitted below the elevated floor, provided that such walls and partitions are not part of the structural support of the building or structure and:
1. Electrical, mechanical, and plumbing system components are not to be mounted on or penetrate through walls that are designed to break away under flood loads; and
2. Are constructed with insect screening or open lattice; or
3. Are designed to break away or collapse without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Such walls, framing and connections shall have a design safe loading resistance of not less than 10 (479 Pa) and no more than 20 pounds per square foot (958 Pa); or
4. Where wind loading values of this code exceed 20 pounds per square foot (958 Pa), the *construction documents* shall include documentation prepared and sealed by a registered *design professional* that:
4.1. The walls and partitions below the design flood elevation have been designed to collapse from a water load less than that which would occur during the design flood.
4.2. The elevated portion of the building and supporting foundation system have been designed to withstand the effects of wind and flood loads acting simultaneously on all building components (structural and nonstructural). Water-loading values used shall be those associated with the design flood. Wind-loading values shall be those required by this code.

R322.3.5 Enclosed areas below design flood elevation.
Enclosed areas below the design flood elevation shall be used solely for parking of vehicles, building access or storage.

R322.3.6 Construction documents.

~~The *construction documents* shall include documentation that is prepared and sealed by a registered *design professional* that the design and methods of construction to be used meet the applicable criteria of this section.~~

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

Cost Impact:
No cost impact. Current City Code requirements are in place.

ACTION TAKEN:

2012 Code Committee			Date: 7/31/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board			Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Council Subcommittee			Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
City Council Action			Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code
Section 325

Submitted by: Phoenix Planning & Development Department Code Committee

325.0 FIREPLACE RESTRICTIONS

R325.1 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.

R325.2 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.

R325.3 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 additional cost impact from current requirements.

ACTION TAKEN:

2012 Code Committee				Date: 10/2/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code
Section R401.1

Submitted by: Phoenix Planning & Development Department Code Committee

R401.1 Application. The provisions of this chapter shall control the design and construction of the foundation and foundation spaces for all buildings. In addition to the provisions of this chapter, the design and construction of foundations in flood hazard areas ~~as established by table R301.2.(1) shall meet the provisions of section **R322**~~ shall be in accordance with the Phoenix City Code. Wood foundations shall be designed and installed in accordance with AF&PA PWF.

Reason:
Flood hazards addressed in city of Phoenix Flood Management Plan (City Code). This is needed to reflect changes to section **R322.**

Cost Impact: No additional costs involved.

ACTION TAKEN:

2012 Code Committee				Date: 10/22/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
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Council Subcommittee				Date: 4/16/13
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City Council Action				Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code Section R401.3

Submitted by: Phoenix Planning & Development Department Code Committee

R401.3 Drainage. All lot drainage shall comply with the requirements of Chapter 32A of the Phoenix City Code. ~~Surface drainage shall be diverted to a storm sewer conveyance or other approved point of collection that does not create a hazard. Lots shall be graded to drain surface water away from foundation walls. The grade shall fall a minimum of 6 inches (152 mm) within the first 10 feet (3048 mm).~~

> ~~**Exception:** Where lot lines, walls, slopes or other physical barriers prohibit 6 inches (152 mm) of fall within 10 feet (3048 mm),drains or swales shall be constructed to ensure drainage away from the structure. Impervious surfaces within 10 feet (3048 mm) of the building foundation shall be sloped a minimum of 2 percent away from the building.~~

Reason:
Drainage is designed under Chapter 32 of the City Code

Cost Impact: No additional costs involved

ACTION TAKEN:

2012 Code Committee				Date: 10/22/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
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City Council Action				Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code Section 401.4.1

Submitted by: Phoenix Planning & Development Department 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[a]

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

For SI: 1 pound per square foot = 0.0479 kPa.

a. When 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 ~~1,500~~ 1000 psf are likely to be present at the site, the allowable bearing capacity shall be determined by a soils investigation.

Reasons:
The allowable bearing values were adjusted to match the typical soils found in the Phoenix area. Assumed values greater than 1500 psf are uncharacteristic for native soils found in the area and would require a soil report. The table was adjusted to match previous allowable values as recommended by a group of local geotechnical engineers during the amendments to the 2003 IBC.

Cost Impact: Some foundations in poor soil may need to be larger. Cost impact minimal.

ACTION TAKEN:

2012 Code Committee				Date: 10/22/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
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Council Subcommittee				Date: 4/16/13
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City Council Action				Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code Section R403.1.1

Submitted by: Phoenix Planning & Development Department Code Committee

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.

ACTION TAKEN:

2012 Code Committee				Date: 10/22/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
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Council Subcommittee				Date: 4/16/13
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City Council Action				Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code Section 502.3.1

Submitted by: Phoenix Planning & Development Department Code Committee

R502.3.1 Sleeping areas and attic joists.
Table R502.3.1(~~1~~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 (~~1.44~~ 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 correlate the required design table with the proposed amendment to Table R301.5 for live loads in sleeping areas and allow flexibility for future remodeling.

Cost Impact: Minimal additional design and construction costs will be incurred.

ACTION TAKEN:

2012 Code Committee			Date: 10/22/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date: 12/11/12
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Development Advisory Board			Date: 12/20/12
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Council Subcommittee			Date: 4/16/13
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City Council Action			Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code Section 606.12

Submitted by: Phoenix Planning & Development Department Code Committee

R606.12 Seismic requirements.
All new masonry elements shall meet the minimum reinforcing requirements of R606.12.2.2.3 and R606.12.2.3.3. In addition, the seismic requirements of this section shall apply to the design of masonry and the construction of masonry building elements located in Seismic Design Category D_0, D_1 or D_2. Townhouses in Seismic Design Category C shall comply with the requirements of Section R606.12.2. These requirements shall not apply to glass unit masonry conforming to Section R610 or masonry veneer conforming to Section R703.7.

Reasons:
This will require minimum reinforcing in all new masonry construction. This reinforcing has been required in previous editions of the Phoenix Construction Code at the recommendation of the Structural Engineers Association of Arizona as an inexpensive way to greatly increase the safety of masonry construction. The amendment also correlates with the revised seismic design category "B" in Table R301.2(1).

Cost Impact: Minimum construction costs could be incurred due to additional reinforcing.

ACTION TAKEN:

2012 Code Committee				Date: 10/22/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
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City Council Action				Date: 5/15/13
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City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code (IRC) Sections R702, R703

Submitted by: Phoenix Planning & Development Department Code Committee

SECTION 702
INTERIOR COVERING

702.8 Adhered masonry veneer. Adhered masonry veneer shall comply with the applicable requirements in Section 702.8.1 and Sections 6.1 and 6.3 of ACI 530/ASCE 5/TMS 402. Special inspection is not required.

> **702.8.1 Interior adhered masonry veneer.** Interior adhered masonry veneers shall have a maximum weight of 20 psf (0.958 kg/m^2) and shall be installed in accordance with Section 702.8. Where the adhered masonry veneer is supported by wood construction, the supporting members shall be designed to limit deflection to 1/600 of the span of the supporting members.

SECTION 703
EXTERIOR COVERING

703.12 Adhered masonry veneer installation.
Adhered masonry veneer shall be installed in accordance with the manufacturer's instructions, and Sections 6.1 and 6.3 of ACI 530/ASCE 5/TMS 402. Special inspection is not required.

Reasons:
Proposed amendments allow for flexibility of the application of adhered veneers and ensures consistency with provisions in the IBC and also exempts residential occupancies from a special inspection requirement.

Cost Impact: These proposals will reduce project cost for owners and developers.

ACTION TAKEN:			
2012 Code Committee			Date: 11/19/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board			Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Council Subcommittee			Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
City Council Action			Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposal for 2012 IRC CODE
Section N1101.7.1

Submitted by: Sharon Bonesteel on behalf of MAG Building Codes Comm., Testing Protocol Ad Hoc Comm.

Proposed Language:

N1101.7.1 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 N1102.4.1.1, N1102.4.1.2 and N1103.2.2. 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. N1103.2.2 – 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:

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 2012 International Residential Code (IRC) and the 2012 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; and
6) The committee will hear the final form and draft requested of the Ad Hoc committee (as proposed above) at their meeting scheduled for January 16, 2013, and will be voting on this item (after full committee review) as a new MAG standard.

Cost Impact:

1) There will be no cost additions to Cities and Towns.
2) There will be significant cost savings for the large production home builders.
3) There will be significant energy savings for the future homeowners.

**** Note: The 2012 Code Committee modified the proposal to correct some section references and to require that the sampling occur within the same subdivision. We experience major variation in the quality of work from one crew and/or superintendent to the next and did not feel it was appropriate to eliminate the test requirement based on sampling that could be conducted on another product that was built by an entirely different crew in another city. The DAB Technical Subcommittee approved the amendment, but removed the staff requirement for the tests to occur in the same subdivision due to language in the test protocol that requires some testing within the subdivision. The Development Advisory Board approved the action as modified by the Technical Subcommittee.**

ACTION TAKEN (Staff Use Only):			
2012 Code Committee			Date:1/4/2013
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date: 1/8/2013
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board			Date: 1/17/2013
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Council Subcommittee			Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
City Council Action			Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to 2012 International Residential Code Section N1101.15

Submitted by: David McCarthy

Recommendation:

N1101.15 (R401.2) Compliance. Projects shall comply with ~~Sections identified as "mandatory" and with either sections identified as "prescriptive" or the performance approach in Section N1105.~~ one of the following:
1. Sections N1101.16 through N1104.
2. Section N1105 and the provisions of Sections N1101.16 through N1104 labeled "Mandatory."
3. An energy rating index (ERI) approach in Section N1106.

~~**N1101.15.1 (R401.2.1) Alternative approach for compliance.** A Home Energy Rating System ("HERS") Index of 73 or less, confirmed in writing by a Residential Energy Services Network certified energy rater may be used in place of the approach described in section N1101.15. Compliance may be demonstrated by sampling in accordance with Chapter 6 of the Mortgage Industry National Home Energy Rating Systems Standard as adopted by the Residential Energy Services Network.~~

Reasons:
This amendment adds a second performance path to energy code compliance. It allows an approach that utilizes an Energy Rating Index (ERI) found in new Section N1106. One of the most popular ERI programs is known as the Home Energy Rating System (HERS) program. The HERS Index was developed as a way to quantify energy efficiency and standardize the results. The Index considers the entire building system when calculating the score. Allowing a HERS Index as a means for complying with the IECC promotes additional innovation in energy efficiency in new residential construction, while at the same time ensuring the city meets its energy conservation goals. Moreover, it would allow builders to engage in a cost benefit analysis with different construction methods and materials in order to achieve a home which meets the energy efficiency goals.

Cost Impact:
Cost decrease.

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

ACTION TAKEN:				
2015 Code Committee				Date: 1/14/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 3/17/16
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 5/19/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Neighborhoods, Housing and Development Subcommittee				Date: 6/21/2016
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 9/7/2016
☐ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to 2012 International Residential Code Section N1101.15.1

Submitted by: Connie Wilhelm, Home Builders Association of Central Arizona

N1101.15.1 (R401.2.1) Alternative approach for compliance. A Home Energy Rating System ("HERS") Index of 73 or less, confirmed in writing by a Residential Energy Services Network certified energy rater may be used in place of the approach described in section N1101.15. Compliance may be demonstrated by sampling in accordance with Chapter 6 of the Mortgage Industry National Home Energy Rating Systems Standard as adopted by the Residential Energy Services Network.

Reasons:
With Energy Conservation the end result is all that matters and it should not matter to the City how that result is achieved. The HERS Index was developed as a way to quantify energy efficiency and standardize the results. The Index considers the entire building system when calculating the score. Allowing a HERS Index as a means for complying with the IECC would allow for additional innovation in energy efficiency in new residential construction, while at the same time ensuring the city meets its energy conservation goals. Moreover, it would allow builders to engage in a cost benefit analysis with different construction methods and materials in order to achieve a home which meets the energy efficiency goals.

Cost Impact: HERS Index Testing is done by private Raters and must be certified under the RESNET Standards. Therefore, there would be no additional cost to the city. By utilizing a HERS Index, builders are required to achieve a required level of energy efficiency, however, that are also provided increased flexibility to utilize a cost-benefit analysis on the methods used to achieve that efficiency.

ACTION TAKEN:

2012 Code Committee				Date: 11/27/12
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 1/17/413
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☐ Approved as submitted	☒ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code Section N1103.2

Submitted by: Forrest Fielder, Private Individual

N1103.2 Ducts. Ducts and air handlers shall be in accordance with Sections N1103.2.1 through 1103.2.3.

N1103.2.1 Insulation (Prescriptive). Supply ducts shall be insulated to a minimum of R-8. Ducts in floor trusses shall be insulated to a minimum of R-6.

Exceptions: ~~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 and return 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 section N1101.7 or section R405 of the *2012 International Energy Conservation Code*.
   2.5. Residential buildings with attic radiant barriers in accordance with ASTM C1313, installed in accordance with ASTM C1743.

Reason:
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 was 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: Savings from reconfiguration of attic truss openings.

ACTION TAKEN:

2012 Code Committee				Date: 2/1/2012
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 2/12/2013
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 2/21/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to 2012 International Residential Code
Section N1103.2.2.1

Submitted by: Connie Wilhelm, Home Builders Association of Central Arizona

~~**N1103.2.2.1 (R403.2.2.1). Sealed air handler.** Air Handlers shall have a manufacturer's designation for an air leakage of no more than 2 percent of the design air flow rate when tested in accordance with ASHRAE 193.~~

Reasons:
Air handler manufacturers are having difficulty manufacturing air handlers that are capable of meeting this requirement. Therefore, this equipment is not readily available on the marketplace for purchase and this requirement should be deleted. There is already a requirement for a duct leakage testing in the Code which will incorporate the measurement of leakage at the air handler. As long as the duct leakage requirements are met, the leakage from the air handler will have been accounted for making this requirement unnecessary.

Cost Impact: No additional cost to the city.

ACTION TAKEN:

2012 Code Committee				Date: 11/19/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to 2012 International Residential Code
Section N1106

Submitted by: David McCarthy

Recommendation:

SECTION N1106 (R406)

ENERGY RATING INDEX

COMPLIANCE ALTERNATIVE

N1106.1 (R406.1) Scope. This section establishes criteria for compliance using an Energy Rating Index (ERI) analysis.

N1106.2 (R406.2) Mandatory requirements. Compliance with this section requires that the mandatory provisions identified in Sections N1101.16 through N1104 be met. The building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table 402.1.1 or 402.1.3 of the 2009 *International Energy Conservation Code*.

Exception: Supply and return ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-6.

N1106.3 (R406.3) Energy rating index. The Energy Rating Index (ERI) shall be a numerical integer value that is based on a linear scale constructed such that the *ERI reference design* has an Index value of 100 and a *residential building* that uses no net purchased energy has an Index value of 0. Each integer value on the scale shall represent a 1 percent change in the total energy use of the rated design relative to the total energy use of the *ERI reference design*. The ERI shall consider all energy used in the *residential building*.

N1106.3.1 (R406.3.1) ERI reference design. The *ERI reference design* shall be configured such that it meets the minimum requirements of the 2006 *International Energy Conservation Code* prescriptive requirements. The proposed *residential building* shall be shown to have an annual total normalized modified load less than or equal to the annual total loads of the *ERI reference design*.

N1106.4 (R406.4) ERI-based compliance. Compliance based on an ERI analysis requires that the *rated design* be shown to have an ERI less than or equal to 64 when compared to the *ERI reference design*.

N1106.5 (R406.5) Verification by approved agency. Verification of compliance with Section N1106 shall be completed by an *approved* third party. Compliance may be demonstrated by sampling in accordance with Chapter 6 of the Mortgage Industry National Home Energy rating Systems Standard as adopted by the Residential Energy Services Network (RESNET).

N1106.6 (R406.6) Documentation. Documentation of the software used to determine the ERI and the parameters for the residential building shall be in accordance with Sections N1106.6.1 through N1106.6.3.

N1106.6.1 (R406.6.1) Compliance software tools. Documentation verifying that the methods and accuracy of the compliance software tools conform to the provisions of this section shall be provided to the *code official*.

N1106.6.2 (R406.6.2) Compliance report. Compliance software tools shall generate a report that documents that the ERI of the *rated design* complies with Sections N1106.3 and N1106.4. The compliance documentation shall include the following information:

1. Address or other identification of the residential building.

2. An inspection checklist documenting the building component characteristics of the *rated design*. The inspection checklist shall show results for both the *ERI reference design* and the *rated design*, and shall document all inputs entered by the user necessary to reproduce the results.

3. Name of individual completing the compliance report.

4. Name and version of the compliance software tool.

Exception: Multiple orientations. Where an otherwise identical building model is offered in multiple orientations, compliance for any orientation shall be permitted by documenting that the building meets the performance requirements in each of the four (north, east, south and west) cardinal orientations.

N1106.6.3 (R406.6.3) Additional documentation. The *code official* shall be permitted to require the following documents:

1. Documentation of the building component characteristics of the *ERI reference design*.

2. A certification signed by the builder providing the building component characteristics of the *rated design.*
3. Documentation of the actual values used in the software calculations for the *rated design*.

N1106.7 (R406.7) Calculation software tools. Calculation software, where used, shall be in accordance with Sections N1106.7.1 through N1106.7.3.

N1106.7.1 (R406.7.1) Minimum capabilities. Calculation procedures used to comply with this section shall be software tools capable of calculating the ERI as described in Section N1106.3, and shall include the following capabilities:

1. Computer generation of the *ERI reference design* using only the input for the *rated design*.

The calculation procedure shall not allow the user to directly modify the building component characteristics of the *ERI reference design*.

2. Calculation of whole-building, as a single *zone*, sizing for the heating and cooling equipment in the *ERI reference design* residence in accordance with Section N1103.6.

3. Calculations that account for the effects of indoor and outdoor temperatures and part-load ratios on the performance of heating, ventilating and air-conditioning equipment based on climate and equipment sizing.

4. Printed *code official* inspection checklist listing each of the *rated design* component characteristics determined by the analysis to provide compliance, along with their respective performance ratings.

N1106.7.2 (406.7.2) Specific approval. Performance analysis tools meeting the applicable sections of Section N1106 shall be *approved*. Tools are permitted to be *approved* based on meeting a specified threshold for a jurisdiction. The *code official* shall approve tools for a specified application or limited scope.

N1106.7.3 (R406.7.3) Input values. When calculations require input values not specified by Sections N1102, N1103, N1104 and N1105, those input values shall be taken from an approved source.

Reasons:
This amendment adds a second performance path to energy code compliance. It allows an approach that utilizes an Energy Rating Index (ERI) found in new Section R406. One of the most popular ERI programs is known as the Home Energy Rating System (HERS) program. The HERS Index was developed as a way to quantify energy efficiency and standardize the results. The Index considers the entire building system when calculating the score. Allowing a HERS Index as a means for complying with the IECC promotes

additional innovation in energy efficiency in new residential construction, while at the same time ensuring the city meets its energy conservation goals. Moreover, it would allow builders to engage in a cost benefit analysis with different construction methods and materials in order to achieve a home which meets the energy efficiency goals.
Cost Impact: Cost decrease.
Approved in previous 2012 Code Adoption process: ☒ **YES** ☐ **NO**

ACTION TAKEN:			
2015 Code Committee			Date: 1/14/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date: 3/17/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board			Date: 5/19/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Neighborhoods, Housing and Development Subcommittee			Date: 6/21/2016
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
City Council Action			Date: 9/7/2016
☐ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendment to the 2012 International Residential Code Section M2302.2

Submitted by: Phoenix Planning & Development Department Code Committee

Section: M2302.2 Requirements. The installation, inspection, maintenance, repair and replacement of photovoltaic systems and all system components shall comply with the manufacturer's instructions, Section M2302.2.1 through M2302.2.3, Phoenix Fire Code and NFPA 70.

Reasons:
The Phoenix Fire Code has specific requirements for photovoltaic system installations on single one and two family dwellings in order to provide a level of safety for emergency responders.

Cost Impact:
Minimal, marking of conduits, equipment and providing access ways on roof for venting.

ACTION TAKEN:

2012 Code Committee				Date: 1/4/2013
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 1/8/2013
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 1/17/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

INTERNATIONAL RESIDENTIAL CODE CHANGE PROPOSAL

Proposed Amendments to 2012 IRC
Section E3603.1 through E3603.4 and Table E3603.4

Submitted by: Michael Grubbs

Code Section Proposed Information (see example):

~~SECTION E3603~~
~~SERVICE, FEEDER AND GROUNDING~~
~~ELECTRODE CONDUCTOR SIZING~~

~~E3603.1 Grounded and ungrounded service conductor size.~~ ~~Conductors used as ungrounded service entrance conductors, service lateral conductors, and feeder conductors that serve as the main power feeder to a dwelling unit shall be those listed in Table E3603.1. The main power feeder shall be the feeder(s) between the main disconnect and the panelboard that supplies, either by branch circuits or by feeders, or both, all loads that are part of or are associated with the dwelling unit. The feeder conductors to a dwelling unit shall not be required to have an allowable ampacity greater than that of the service-entrance conductors that supply them. Ungrounded service conductors shall have a minimum size in accordance with Table E3603.1. The grounded conductor ampacity shall be not less than the maximum unbalance of the load and its size shall be not smaller than the required minimum grounding electrode conductor size specified in Table E3603.1.~~

~~TABLE E3603.1~~
~~SERVICE CONDUCTOR AND GROUNDING ELECTRODE CONDUCTOR SIZING~~

~~CONDUCTOR TYPES AND SIZES- THHN, THHN, THHW, THW, THWN, USE, RHH, RHW , XHHW, RHW-2, THW-2, THWN-2, XHHW-2, SE, USE-2 (Parallel sets of 1/0 and larger conductors are permitted in either a single raceway or in separate raceways)~~		**~~SERVICE OR FEEDER RATING (AMPERES)~~**	**~~MINIMUM GROUNDING ELECTRIDE CONDUCTOR SIZE[a]~~**	
~~Copper (AWG)~~	**~~Aluminum and copper-clad aluminum (AWG)~~**	**~~Maximum load (amps)~~**	**~~Copper (AWG)~~**	**~~Aluminum (AWG)~~**
~~4~~	~~2~~	~~100~~	~~8[b]~~	~~6[c]~~
~~3~~	~~1~~	~~110~~	~~8[b]~~	~~6[c]~~
~~2~~	~~1/0~~	~~125~~	~~8[b]~~	~~6[c]~~
~~1~~	~~2/0~~	~~150~~	~~6[c]~~	~~4~~
~~1/0~~	~~3/0~~	~~175~~	~~6[c]~~	~~4~~
~~2/0~~	~~4/0 or two sets of 1/0~~	~~200~~	~~4[d]~~	~~2[d]~~
~~3/0~~	~~250 kcmil or two sets of 2/0~~	~~225~~	~~4[d]~~	~~2[d]~~
~~4/0 or two sets of 1/0~~	~~300 kcmil or two sets of 3/0~~	~~250~~	~~2[d]~~	~~1/0[d]~~
~~250 kcmil or two sets of 2/0~~	~~350 kcmil or two sets of 4/0~~	~~300~~	~~2[d]~~	~~1/0[d]~~
~~350 kcmil or two sets of 3/0~~	~~500 kcmil or two sets of 250 kcmil~~	~~350~~	~~2[d]~~	~~1/0[d]~~
~~400 kcmil or two sets of 4/0~~	~~600 kcmil or two sets of 300 kcmil~~	~~400~~	~~1/0[d]~~	~~3/0[d]~~

~~For SI: 1 inch = 25.4 mm.~~

~~a. Where protected by a ferrous metal raceway, grounding electrode conductors shall be electrically bonded to the ferrous metal raceway at both ends.~~
~~b. An 8 AWG grounding electrode conductor shall be protected with rigid metal conduit, intermediate metal conduit, rigid polyvinyl chloride (Type PVC) nonmetallic conduit, rigid thermosetting resin (Type RTRC) nonmetallic conduit, and electrical metallic tubing or cable armor.~~
~~c. Where not protected, 6 AWG grounding electrode conductor shall closely follow a structural surface for physical protection. The supports shall be spaced not more than 24 inches on center and shall be within 12 inches of any enclosure or termination.~~
~~d. Where the sole grounding electrode system is a ground rod or pipe as covered in Section E3608.2, the grounding electrode conductor shall not be required to be larger than 6 AWG copper or 4 AWG aluminum. Where the sole grounding electrode system is the footing steel as covered in Section E3608.1.2, the grounding electrode conductor shall not be required to be larger than 4 AWG copper conductor.~~

SECTION E3603
SERVICE, FEEDER AND GROUNDING ELECTRODE CONDUCTOR SIZING

E3603.1 Grounded and ungrounded service conductor size.
Service and feeder conductors supplied by a single-phase, 120/240-volt system shall be sized in accordance with Sections E3603.1.1 through E3603.1.4 and Table 3705.1.
E3603.1.1 For a service rated at 100 through 400 amperes, the service conductors supplying the entire load associated with a one-family dwelling, or the service conductors supplying the entire load associated with an individual dwelling unit in a two-family dwelling, shall have an ampacity of not less than 83 percent of the service rating.
E3603.1.2 For a feeder rated at 100 through 400 amperes, the feeder conductors supplying the entire load associated with a one-family dwelling, or the feeder conductors supplying the entire load associated with an individual dwelling unit in a two-family dwelling, shall have an ampacity of not less than 83 percent of the feeder rating.
E3603.1.3 A feeder for an individual dwelling unit shall not be required to have an ampacity greater than that specified in Sections E3603.1.1 and E3603.1.2.
E3603.1.4 The grounded conductor ampacity shall be not less than the maximum unbalance of the load and the size of the grounded conductor shall be not smaller than the required minimum grounding electrode conductor size specified in Table E3603.4. [310.15(B)(7)]

Table E3603.4
GROUNDING ELECTRODE CONDUCTOR SIZE[a, b, c, d, e, f]

SIZE OF LARGEST UNGROUNDED SERVICE-ENTRANCE CONDUCTIOR OR EQUIVALENT AREA FOR PARALLEL CONDUCTORS (AWG/kcmil)		SIZE OF GROUNDING ELECTRODE CONDUCTOR (AWG/kcmil)	
Copper	**Aluminum or copper-clad aluminum**	**Copper**	**Aluminum or copper-clad aluminum**
2 or smaller	1/0 or smaller	8	6
1 or 1/0	2/0 or 3/0	6	4
2/0 or 3/0	4/0 or 250	4	2
Over 3/0 through 350	Over 250 through 500	2	1/0
Over 350 through 600	Over 500 through 900	1/0	3/0

a. If multiple sets of service-entrance conductors connect directly to a service drop, set of overhead service conductors, set of underground service conductors, or service lateral, the equivalent size of the largest service- entrance conductor shall be determined by the largest sum of the areas of the corresponding conductors of each set.

b. Where there are no service-entrance conductors, the grounding electrode conductor size shall be determined by the equivalent size of the largest service-entrance conductor required for the load to be served.

c. Where protected by a ferrous metal raceway, grounding electrode conductors shall be electrically bonded to the ferrous metal raceway at both ends. [250.64(E)(1)]

d. An 8 AWG grounding electrode conductor shall be protected with rigid metal conduit, intermediate metal conduit, rigid polyvinyl chloride (Type PVC) nonmetallic conduit, rigid thermosetting resin (Type RTRC) nonmetallic conduit, electrical metallic tubing or cable armor. [250.64(B)]

e. Where not protected, 6 AWG grounding electrode conductor shall closely follow a structural surface for physical protection. The supports shall be spaced not more than 24 inches on center and shall be within 12 inches of any enclosure or termination. [250.64(B)]

f. Where the sole grounding electrode system is a ground rod or pipe as covered in Section E3608.3, the grounding electrode conductor shall not be required to be larger than 6 AWG copper or 4 AWG aluminum. Where the sole grounding electrode system is the footing steel as covered in Section E3608.1.2, the grounding electrode conductor shall not be required to be larger than 4 AWG copper conductor. [250.66(A) and (B)]

Reasons:
Section E3603 and Table E3603.1 were replaced with new language and a revised table E3603.4. (The revised table is taken from the 2014 NEC table 250.66 and lists grounding electrode sizes) This mirrors the changes to the 2014 edition of the NEC, section 310.15(b) (7). Previous code allowed feeders to be sized according to the table which had a built in deration factor based on assumed load diversity that in turn allowed a smaller feeder conductor or wire size as compared to a non-residential application. New code takes away the table but still allows for diversity with an initial 83% deration factor (which is the same as the previous table) and requires conductor selection from Table 3705.1 (NEC 310.15(B) 16) This change makes it clear that the grounded and ungrounded feeder conductors need to be sized using appropriate calculations with deration factors which will insure proper selection for the job.

Cost Impact:
Most projects will not see any cost change, some will see an increase.

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

ACTION TAKEN:

2015 Code Committee				Date: 2/2/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 3/17/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 5/19/16
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Neighborhoods, Housing and Development Subcommittee				Date: 6/21/2016
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 9/7/2016
☐ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 IRC
Section E3908.8

Submitted by: Phoenix Planning and Development Department Code Committee

R3908.8 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:

(1) A copper, aluminum, or copper-clad aluminum conductor. This conductor shall be solid or stranded; insulated, covered, or bare; and in the form of a wire or a busbar of any shape.

(2) Rigid metal conduit.

(3) Intermediate metal conduit.

(4) Electrical metallic tubing <u>with an additional equipment grounding conductor</u>.

(5) Listed flexible metal conduit meeting all the following conditions:
- a. The conduit is terminated in listed fittings.
- b. The circuit conductors contained in the conduit are protected by overcurrent devices rated at 20 amperes or less.
- c. The combined length of flexible metal conduit and flexible metallic tubing and liquidtight flexible metal conduit in the same ground-fault current path does not exceed 1.8 m (6 ft).
- d. If used to connect equipment where flexibility is necessary to minimize the transmission of vibration from equipment or to provide flexibility for equipment that requires movement after installation, an equipment grounding conductor shall be installed.

(6) Listed liquidtight flexible metal conduit meeting all the following conditions:
- a. The conduit is terminated in listed fittings.
- b. For metric designators 12 through 16 (trade sizes 3/8 through 1/2), the circuit conductors contained in the conduit are protected by overcurrent devices rated at 20 amperes or less.
- c. For metric designators 21 through 35 (trade sizes 3/4 through 1-1/4), the circuit conductors contained in the conduit are protected by overcurrent devices rated not more than 60 amperes and there is no flexible metal conduit, flexible metallic tubing, or liquidtight flexible metal conduit in trade sizes metric designators 12 through 16 (trade sizes 3/8 through 1/2) in the ground-fault current path.
- d. The combined length of flexible metal conduit and flexible metallic tubing and liquidtight flexible metal conduit in the same ground-fault current path does not exceed 1.8 m (6 ft).
- e. If used to connect equipment where flexibility is necessary to minimize the transmission of vibration from equipment or to provide flexibility for equipment that requires movement after installation, an equipment grounding conductor shall be installed.

(7) Flexible metallic tubing where the tubing is terminated in listed fittings and meeting the following conditions:
- a. The circuit conductors contained in the tubing are protected by overcurrent devices rated at 20 amperes or less.
- b. The combined length of flexible metal conduit and flexible metallic tubing and liquidtight flexible metal conduit in the same ground-fault current path does not exceed 1.8 m (6 ft).

(8) Armor of Type AC cable as provided in 320.108.

(9) The copper sheath of mineral-insulated, metal-sheathed cable.

(10) Type MC cable that provides an effective ground-fault current path in accordance with one or more of the following:

a. It contains an insulated or uninsulated equipment grounding conductor in compliance with 250.118(1)

b. The combined metallic sheath and uninsulated equipment grounding/bonding conductor of interlocked metal tape–type MC cable that is listed and identified as an equipment grounding conductor

c. The metallic sheath or the combined metallic sheath and equipment grounding conductors of the smooth or corrugated tube-type MC cable that is listed and identified as an equipment grounding conductor

(11) Cable trays as permitted in 392.10 and 392.60.

(12) Cablebus framework as permitted in 370.3.

(13) Other listed electrically continuous metal raceways and listed auxiliary gutters.

(14) Surface metal raceways listed for grounding.

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, 2008 NEC, with updated code language from the 2012 IRC.

Cost Impact: Minimal additional cost due to additional grounding conductor.

ACTION TAKEN:

2012 Code Committee				Date: 11/19/2012
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 2/12/2013
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 2/21/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code (IRC) Appendix Adoption

Submitted by: Phoenix Planning & Development Department Code Committee
Proposal: Adopt the following Appendix Chapters:

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
Reason: Continues factory-built building requirements

Appendix G – Swimming Pools
Reason: Continues pool barrier requirements and provides safety requirements for prevention of entrapment.

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 Mitigation
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 - ICC IRC / NEC Cross Reference
Reason: Useful information for inspectors and customers.

ACTION TAKEN:			
2012 Code Committee			Date: 11/19/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board			Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Council Subcommittee			Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
City Council Action			Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code (IRC)
Proposed Amendments to IRC Appendix E

Submitted by: Phoenix Planning & Development Department Code Committee

Appendix E
~~Manufactured Housing Used as Dwellings~~
Factory Built Buildings

Replace entire Appendix E with the following text:

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 ARS 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.

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

ACTION TAKEN:

2012 Code Committee				Date: 11/6/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code (IRC) Appendix G

Submitted by: Phoenix Planning & Development Department Code Committee

Appendix G
SWIMMING POOLS

Replace Appendix G with the following section:

SECTION AG101
GENERAL
AG101.1 General. The provisions of this appendix shall control the design and construction of swimming pools, spas and hot tubs installed in or on the lot of a one and two-family dwelling.

~~**AG101.2 Pools in flood hazard areas.** Pools that are located in flood hazard areas established by Table R301.2(1), including above-ground pools, on-ground pools and in-ground pools that involve placement of fill, shall comply with Section AG101.2.1 or AG101.2.2.~~

~~**Exception:** Pools located in riverine flood hazard areas which are outside of designated floodways.~~

> ~~**AG101.2.1 Pools located in designated floodways.** Where pools are located in designated floodways, documentation shall be submitted to the *building official* which demonstrates that the construction of the pool will not increase the design flood elevation at any point within the *jurisdiction*.~~
> ~~**AG101.2.2 Pools located where floodways have not been designated.** Where pools are located where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed pool will not increase the design flood elevation more than 1 foot (305 mm) at any point within the *jurisdiction*.~~

SECTION AG102
DEFINITIONS

AG102.1General. For the purposes of these requirements, the terms used shall be defined as follows and as set forth in Chapter 2.

ABOVE-GROUND/ON-GROUND POOL. See Swimming pool.

BARRIER. A fence, wall, building wall or combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool.

HOT TUB. See Swimming pool.

IN-GROUND POOL. See Swimming pool.

RESIDENTIAL. That which is situated on the premises of a detached one or two-family dwelling or a one-family townhouse not more than three stories in height.

SPA, NONPORTABLE. See Swimming pool.

SPA, PORTABLE. A nonpermanent structure intended for recreational bathing, in which all controls, water-heating and water-circulating equipment are an integral part of the product.

SWIMMING POOL. Any structure intended for swimming or recreational bathing that contains water over 24 inches (610mm) deep. This includes in-ground, above ground and on-ground swimming pools, hot tubs, ~~and~~ spas, and fixed in place wading pools.

SWIMMING POOL, INDOOR. A swimming pool which is totally contained within a structure and surrounded on all four sides by walls of said structure.

SWIMMING POOL, OUTDOOR. Any swimming pool which is not an indoor pool.

SECTION AG103
SWIMMING POOLS

AG103.1 In-ground pools. In-ground pools shall be designed and constructed in conformance with ANSI/NSPI-5 as listed in Section AG108.

AG103.2 Above-ground and on-ground pools. Above-ground and on-ground pools shall be designed and constructed in conformance with ANSI/NSPI-4 as listed in SectionAG108.

AG103.3 Pools in flood hazard areas.
In flood hazard areas established by Table R301.2(1), pools in coastal high-hazard areas shall be designed and constructed in compliance with ASCE 24.

SECTION AG104
SPAS AND HOT TUBS

AG104.1 Permanently installed spas and hot tubs. Permanently installed spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-3 as listed in Section AG108.

AG104.2 Portable spas and hot tubs. Portable spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-6.

SECTION AG105
BARRIER REQUIREMENTS

AG105.1 Application. The provisions of this chapter shall control the design of barriers for residential swimming pools, spas and hot tubs. These design controls are intended to provide protection against potential drowning's and near drowning's by restricting access to swimming pools, spas and hot tubs.

AG105.2 Outdoor swimming pool. It is the responsibility of the property owner and any other person in responsible charge of a swimming pool to ensure that the required swimming pool barrier, including all gates, doors, locks, latches, and other portions of the barrier are maintained safe and in good working order at all times. No person shall alter or remove any portion of a swimming pool barrier except to repair, reconstruct, or replace the barrier in compliance with the provisions of this section. All barriers shall be installed, inspected, and approved prior to plastering or filling with water. An outdoor swimming pool, including an in-ground, aboveground or on-ground pool, hot tub or spa shall be provided with a barrier which shall comply with the following:

1. The top of the barrier shall be at least ~~48 inches~~ 5 feet (~~1219~~ 1524 mm) above grade measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm) measured on the side of the barrier which faces away from the swimming pool. The maximum clearance at the bottom of the barrier may be increased to 4 inches (102 mm) when grade is a solid, non-removable surface. Where the top of the pool structure is above grade, such as an aboveground pool, the barrier may be at ground level, such as the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).

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

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

4. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1.75 inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

5. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

6. Maximum mesh size for chain link fences shall be a 2.25-inch (57 mm) square and ~~unless the fence is~~ provided with slats fastened at the top or the bottom which reduce the openings to not more than 1.75 inches (44 mm). The mesh shall not be less than 11 guage.

7. Where the barrier is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall not be more than 1.75 inches (44 mm).

8. Access gates shall comply with the requirements of Section AG105.2, Items 1 through 7, and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates ~~shall have a~~ need not be self-closing or self-latching and shall be equipped with a padlock or similar locking device. Where the release mechanism of the self-latching device is located less than 54 inches (1372 mm) from the bottom of the gate, the release mechanism and openings shall comply with the following:

   8.1. The release mechanism shall be located on the pool side of the gate at least 3 inches (76 mm) below the top of the gate, and

   8.2. The gate and barrier shall have no opening greater than 0.5 inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.

9. Where a wall of a dwelling serves as part of the barrier, one of the following conditions shall be met:

   9.1. The pool shall be equipped with a key operated powered safety cover in compliance with ASTM F1346. The keyed pool cover switch shall be located not less than 54 inches (1372 mm) above the floor or adjacent ground level and where the entire pool cover can be visually inspected; or

   ~~9.2. All doors with direct access to the pool through that wall shall be equipped with an alarm which produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed in accordance with UL 2017. The audible alarm shall activate within 7 seconds and sound continuously for a minimum of 30 seconds immediately after the door and /or its screen is opened and be capable of being heard throughout the house during normal house hold activities. The alarm shall automatically reset under all conditions. The alarm system shall be equipped with a manual means, such as touchpad or switch, to temporarily deactivate the alarm for a single opening. Such deactivation shall last for not more than 15 seconds. The deactivation switch(es) shall be located at least 54 inches (1372 mm) above the threshold of the door; or~~

   9.~~3~~2. ~~Other means of protection, such as self-closing doors with self-latching devices, which are approved by the governing body, shall be acceptable so long as the degree of protection afforded is not less than the protection afforded by Item 9.1 or 9.2 described above.~~ All doors leading from the dwelling unit or guest room, directly into a yard with a swimming pool, shall swing away from the pool, shall be self closing and self latching, and shall be equipped with a locking device. The

release mechanism for the latch or a secondary locking device, shall be located not less than 54 inches (1372 mm) above the floor. A locking latch which uses a key, electronic opener, or integral combination lock may be located at any height on the door. Sliding doors shall not form any part of a required barrier unless the self-closing and self-latching mechanism is specifically approved.

Windows used for emergency escape or rescue which face into a yard with a swimming pool shall be equipped with a latching device located not less than 54 inches (1372 mm) above the floor. All other operable dwelling unit windows facing into a yard with a swimming pool shall be equipped with a screwed in place wire mesh screen, a keyed lock that prevents opening the window more than 4 inches (102 mm), or a latching device not less than 54 inches (1372 mm) above the floor.

10. Where an aboveground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps:

    10.1. The ladder or steps shall be capable of being secured in an inaccessible position with a~~,~~ lock~~ed~~ or latch located 54 inches (1372 mm) above the adjacent ground level ~~removed to prevent access~~, or

    10.2. The ladder or steps shall be surrounded by a barrier which meets the requirements of Section AG105.2, Items 1 through 9. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter (102 mm) sphere.

11. Where there are natural barriers between properties, such as lakes and solid rock vertical cliffs not less than 10 feet (3048 mm) in height and a slope of not less than 1 horizontal to 10 vertical, fence barriers shall not be required between properties where the natural barriers exist. To ensure proper natural barriers are maintained, barrier fences shall project a minimum of 24 inches (610 mm) into lakes to where there is at least 24 inches (610 mm) depth from the lake surface to the top of the submerged horizontal member or the lake bottom when there is no submerged horizontal member. There shall be no horizontal member less than 45 inches above the lake surface. Where the solid rock cliff extends above the property, the intersecting barriers, with the solid rock cliff, shall not allow passage of a 4 inch diameter (102 mm) sphere.

AG105.3 Indoor swimming pool. All walls surrounding an indoor swimming pool shall comply with Section AG105.2,
Item 9.

AG105.4 Prohibited locations. Barriers shall be located not less than 45 inches (1143 mm), measured horizontally from ~~so as to prohibit~~ permanent structures, equipment or similar objects so as to prohibit them from being used to climb the barriers.

AG105.5 Barrier exceptions.

1. For portable ~~S~~spas and ~~or~~ hot tubs with a safety cover which complies with ASTM F 1346, as listed in Section AG10~~7~~8, shall be exempt from the provisions of this appendix.
2. For spas and hot tubs, a hard safety cover which is latched or locked may be used provided the spa or hot tub is not more than 8 feet (2.44 m) in width at any point.
3. Existing swimming pools located on a one-family dwelling property on or before May 4, 1990, need not be retroactively fitted with a barrier between the dwelling and the pool provided all occupants of the dwelling are at least six years of age or older. All other portions of the swimming pool barrier separating properties shall be installed and maintained as required by Section 105.2.

    1. This exception does not eliminate an owner's responsibility for providing a temporary barrier or otherwise physically restricting visiting children's direct access from the dwelling to the swimming pool.
    2. This exception shall expire and the required permanent barrier shall be retroactively installed between the dwelling and the swimming pool whenever:

        1. One or more children under six years of age become occupants of the property
        2. There is a change of use or character to the primary building occupancy on the property

3. A new pool or spa is being installed on the same property including spa additions to the existing swimming pool.

SECTION AG106
ENTRAPMENT PROTECTION FOR SWIMMING POOL AND SPA SUCTION OUTLETS

~~**AG106.1 General.** Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.~~

AG106.1 Suction Entrapment Avoidance. Pools, spas, hot tubs, catch basins and other similar bather accessible bodies of water associated with swimming pool construction shall be designed to produce circulation throughout the body of water and provide means to protect against user suction entrapment in accordance with ANSI/APSP-7.

AG106.2 Surface skimming or perimeter overflow system. To avoid suction entrapment, fully submerged suction outlets (main drains) shall not be required is swimming pools, wading pools, spas, hot tubs and catch basins. Surface skimming or perimeter overflow system shall be permitted in lieu of fully submerged suction outlet fittings and shall provide 100% of the required system flow.

AG106.3 Fully submerged suction outlets (main drains). Fully submerged manufactured suction outlets (main drains) for use in swimming pools, wading pools, hot tubs and catch basins shall be listed by a nationally recognized testing laboratory in accordance with ASME/ANSI A112.19.9M.

Exception: Custom designed suction outlet fittings certified by a licensed professional engineer that conform to Section3. General requirements of ASME/ANSI A112.19.8M.

AG106.4 Methods of entrapment avoidance. Entrapment avoidance of fully submerged suction outlets can be achieved by one of the following methods:

AG106.4.1 Dual Drains. A minimum of two (2) suction outlets shall be provided for each pump or pumps in the suction outlet system, separated by a minimum of three feet (3') [91.44 cm] measured from center to center of suction pipes or located on two (2) different planes; i.e. one (1) on the bottom and one (1) on the vertical wall, or one (1) each on two (2) separate vertical walls. These suction outlets shall be plumbed such that water is drawn through them simultaneously through a common line to the system. Each suction outlet fitting shall be rated for the maximum system flow.

AG106.4.2 Channel Drain System. One or more channel gates shall be acceptable as protection against suction entrapment if they are 3 inches or greater in width and 31 inches or greater in length and fastened to prevent removal as specified in ASME/ANSI A112.19.8M.

AG106.4.3 Gravity flow system. A Gravity Flow system shall be acceptable as protection against suction entrapment if it has one or more submerged suction outlet(s) with approved cover/grates in any combination fed by gravity into a collection tank vented to atmosphere. However, a modulating float valve allowing direct suction is not permitted.

AG106.4.4 Combination Inlet/Outlet Fixtures for Swim Jets. Combination Inlet/Outlet Fixtures shall be acceptable as protection against suction entrapment for a Swim Jet system not related to the filtration system, if they are manufactured and have their own dedicated pump(s), and the suction outlet and the return are located in a single fitting.

AG106.4.5 Venturi Debris Removal Systems. Venturi Debris Removal Systems shall be acceptable as protection against suction entrapment if they are intended to remove debris through a single, floor mount suction outlet where low pressure is created by the entrainment of water within a deck mount canister that is not directly or indirectly connected to a pump's suction. The single action outlet shall have an approved cover/gate.

AG106.5 Shallow Water Suction Outlets. Where all suction fittings are located less than 24 inches below normal operating water level, one of the following shall be required:

1. gravity flow system

2. one (1) additional drain
3. vent system to atmosphere
4. suction vacuum release device tested and approved for the purpose by a nationally recognized testing laboratory in accordance with ASME A112.19.17.

AG106.6 Wall Vacuum Fittings. Where provided, the vacuum cleaner fitting(s) shall be located in an accessible position(s) at least 6 inches and no greater than 18 inches below the water level and shall comply with IAPMO SPS 4/ANSI/APSP-7.

SECTION AG107 ABBREVIATIONS

AG107.1 General.
ANSI. American National Standards Institute
11 West 42nd Street, New York, NY 10036

ASTM. American Society for Testing and Materials
1916 Race Street, Philadelphia, PA 19103

NSPI. National Spa and Pool Institute
2111 Eisenhower Avenue, Alexandria, VA 22314
UL - Underwriters Laboratories, Inc.
333 Pfingsten Road
Northbrook, Illinois 60062-2096

SECTION AG108 STANDARDS

AG108.1 General.

ANSI/NSPI
ANSI/NSPI-3-99 Standard for Permanently Installed
Residential Spas AG104.1

ANSI/NSPI-4-99 Standard for Above-ground/On-ground
Residential Swimming Pools AG103.2

ANSI/NSPI-5-99 Standard for Residential In-ground
Swimming Pools. AG103.1

ANSI/NSPI-5-2003 Standard for Residential
Portable Spas. AG104.2

ANSI/ASME A112.19.8M-1987 Suction
Fittings for Use in Swimming Pools,
Wading Pools, Spas, Hot Tubs and
Whirlpool Bathing Appliances. AG106.2

ASTM
ASTM F 1346-91 (1996) Performance Specification
for Safety Covers and Labeling Requirements for
All Covers for Swimming Pools, Spas and
Hot Tubs. AG105.2, AG105.5

ASME
ASME A112.19.17 Manufacturers Safety Vacuum
Release Systems (SVRS) for Residential and
Commercial Swimming Pool, Spa, Hot Tub and
Wading Pool. AG106.3

IAPMO
IAPMO ~~SPS-4-2000~~ SPS-4-2009 Special Use Suction Fittings for swimming pools, spas and hot tubs (for suction side automatic swimming pool cleaners)…… AG106.6

~~**UL**~~
~~UL2017 -200 Standard for General-purpose Signaling Devices and Systems - with Revisions through June 2004~~
~~AG105.2~~

Reason:
Flood hazards are covered under the Phoenix city code. Changes conform to the Phoenix City Ordinances related to pool barriers. Entrapment protection changes give more detailed and prescriptive requirements to improve safety.

Cost Impact: Additional costs for barriers, however, this has been a Phoenix amendment since 1990

ACTION TAKEN:

2012 Code Committee				Date: 11/27/2012
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code (IRC) Appendix J

Submitted by: Phoenix Planning & Development Department Code Committee

Appendix J
EXISTING BUILDINGS AND STRUCTURES

AJ102.1 General. Regardless of the category of work being performed, the work shall not cause the structure to become unsafe or adversely affect the performance of the building; shall not cause an existing electrical, mechanical or plumbing system to become unsafe, hazardous, insanitary or overloaded; and unless expressly permitted by these provisions, shall not make the building any less conforming to this code or to any previously approved alternative arrangements than it was before the work was undertaken.

Reason: The section should also reference electrical modifications.

AJ102.1.1 Historic Buildings. The provisions of this code relating to the construction, repair, alteration, addition, restoration and movement of structures, and change of occupancy shall not be mandatory for historic buildings where such buildings are judged by the building official to not constitute a distinct life safety issue. Historic Buildings include any building or structure that is listed or preliminarily determined to be eligible for listing in the National Register of Historic Places; or determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

AJ401.2 Door and window dimensions. Minor reductions in the clear opening dimensions of replacement doors and windows that result from the use of different materials shall be allowed, whether or not they are permitted by this code.

Exception: Emergency escape and rescue openings.

If existing clear opening dimensions exceed the light and ventilation requirements of section R303 and for emergency escape and rescue openings in Section 310, the reduction in dimensions shall not make the windows non-compliant with these sections.

AJ501.2 Electrical service replacement or upgrade. Service to the one-family dwelling unit shall be a minimum of 100 amperes, three-wire capacity and service equipment shall be dead front having no live parts exposed whereby accidental contact could be made. ~~Type "S" fuses shall be installed when fused equipment is used.~~

Exception: Existing service of 60 amperes, three-wire capacity, and feeders of 30 ampere or larger two or three-wire capacity shall be accepted if adequate for the electrical load being served.

Reason:

- Section AJ102.1 should also reference electrical modification.
- AJ102.1.1 provides more flexibility when dealing with historic buildings on issues such as natural light and ventilation.
- Emergency escape openings should not be reduced if they are currently less that what current code requires. Also, openings should be allowed to be reduced to code minimums if the current areas exceed minimum area requirements.
- The section title includes the words replacement or upgrade to clarify the scope of this section applies only when the service is affected, not necessarily when an interior element is altered. The words one-

family is inserted to mirror language in E3502.1 which mirrors NEC 230.79(c), unless the exception to AJ501.5.2 applies. Deleted text referring to S fuses, because there is no reason to disallow type T or R fuses. This was recommended by the IEBC Subcommittee.

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

ACTION TAKEN:

2012 Code Committee				Date: 11/27/2012
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board Technical Subcommittee				Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Development Advisory Board				Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
Council Subcommittee				Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	
City Council Action				Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken	

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

BUILDING CONSTRUCTION CODE CHANGE PROPOSAL

Proposed Amendments to the 2012 International Residential Code (IRC) Appendix K

Submitted by: Phoenix Planning & Development Department Code Committee

Appendix K
SOUND TRANSMISSION

SECTION AK201
Sound Mitigation
GENERAL

AK201.1 General. New one and two – family and townhome residential construction shall be required to have sound mitigation due to noise generated by aircraft operations at Sky Harbor International airport.

The defined boundaries for airport sound mitigation requirements are shown in figure AK201.1 (a). The defined boundaries are composed of the three noise overlay areas:
Zone 1: 65-70dB DNL noise exposure area
Zone 2: 70-75dB DNL noise exposure area
Zone 3: >75dB DNL noise exposure area

SECTION AK202
REQUIREMENTS

AK202.1 General. All new structures referenced in AK 201.1 shall be sound mitigated so indoor noise levels do not exceed a DNL of 45 decibels in any zone. If any portion of a parcel is located in a zone, the structure on the parcel shall be sound mitigated. If a parcel is located in two zones, the structure shall be sound mitigated to the requirements of the higher zone.

AK202.2 Plans required. Plans shall be signed and sealed by an engineer licensed in Arizona with a proficiency in residential sound mitigation or noise control. The engineer shall note on the building plans: "The building design is capable of achieving the required Noise Level Reduction." A notice recorded with the Maricopa County Recorder shall be submitted with the plans at time of permit application. The notice shall state that the property is within an airport noise impact area and the property, as a result of the improvements, is not eligible for purchase through the Phoenix Sky Harbor International or any other Airport Community Noise Reduction Program. The recorded document shall be on a form approved by the City Attorney's Office.

AK 202.3 Airport Sound Mitigation Observation. The engineer of record is responsible for verifying that the construction meets the sound mitigation requirements for the zone in which the structure has been constructed. An airport sound mitigation observation certificate that has been signed and sealed by the engineer of record shall be present at the time of final inspection. The engineer shall note: "The structure as constructed complies with the Noise Level Reduction requirements for the overlay zone in which the structure has been constructed." The certificate shall be retained by the Planning and Development Department Records Section for the life of the building.

Figure AK201.1 (a)

Reasons:
Residential and Commercial buildings are located in the vicinity of the flight paths for commercial airlines at Sky Harbor Airport and are subjected to increased noise levels. This additional requirement reduces those levels per the City of Phoenix Zoning Code Section 644

Cost Impact: There is no additional cost because this has been in effect for several code cycles.			
ACTION TAKEN:			
2012 Code Committee			Date: 11/12/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board Technical Subcommittee			Date: 12/11/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Development Advisory Board			Date: 12/20/12
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
Council Subcommittee			Date: 4/16/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken
City Council Action			Date: 5/15/13
☒ Approved as submitted	☐ Modified and approved	☐ Denied	☐ No action taken