

## **TAB B-4**

### **INTERNATIONAL SUITE OF CODES**

The University has adopted the 2018 International Suite of Codes, and the 2017 National Electric Code (NFPA 70), as design criteria for all renovation and new construction projects. Amendments to these Codes have also been adopted. These Codes and Amendments are herein incorporated into the University's *Manual of Design and Specification Standards (DSS)*, and are listed below:

#### **2018 Edition**

- International Fire Code, as amended by the University of Arizona
- International Building Code, as amended by the University of Arizona
- International Existing Building Code, as amendment by the University of Arizona
- International Mechanical Code, as amended by the University of Arizona
- International Plumbing Code, as amended by the University of Arizona
- International Fuel Gas Code, as amended by the University of Arizona
- International Residential Code, as amended by the University of Arizona

#### **2017 Edition**

- National Electric Code (NFPA 70), as amended by the University of Arizona

#### **Amendments**

- IFC - 2018 -UA
- IBC - 2018 - UA
- IEBC - 2018 - UA
- IMC - 2018 - UA
- IPC - 2018 - UA
- IFGC - 2018 - UA
- IRC - 2018 - UA
- NEC - 2017 - UA

**End of TAB B-4**

*University of Arizona*

AMENDMENTS TO THE  
INTERNATIONAL FIRE CODE  
2018 EDITION

The following provisions of the International Fire Code, 2018 Edition, as published by the International Code Council, Inc. are hereby revised as follows:

**CHAPTER 1**  
**SCOPE AND ADMINISTRATION**

**[A] Section 101.1 Title.** Revise as follows:

Insert: [NAME OF JURISDICTION] as, "**University of Arizona**"

**[A] Section 104.10 Fire investigations.** Revise as follows:

Change the paragraph, "The fire code official, the fire department or other responsible authority shall have the authority to investigate the cause, origin and circumstances of any fire, explosion or other hazardous condition. Information that could be related to trade secrets or processes shall not be made part of the public record except as directed by a court of law." To read, "**The fire code official shall have the authority to investigate the cause, origin and circumstances of any fire, explosion or other hazardous condition. Information that could be related to trade secrets or processes shall not be made part of the public record except as directed by a court of law.**"

**[A] Section 104.10.1 Assistance from other agencies.** Revise as follows:

Change, "Police and other enforcement agencies" to read, "**The University Police Department, the responding fire department and other enforcement agencies**".

**[A] SECTION 109 BOARD OF APPEALS.** Revise as follows:

Delete this section, and all subsequent subsections, (in its entirety) and replace with:

**"[A] SECTION 109 BOARD OF APPEALS.**

**The Arizona State Fire Marshal shall hear and decide appeals of orders, decisions or determinations made by the fire code official relative to the application and interpretation of this code."**

**[A] Section 110.4 Violation Penalties.** Revise as follows:

Insert: [SPECIFY OFFENSE] as, "**civil offense**". Insert: [AMOUNT] as, "**not more than one thousand**". Delete the sentence "**or by imprisonment not exceeding [NUMBER OF DAYS], or both such fine and imprisonment**". At the end of the paragraph add, "**Per ARS§ 37-1391**".

**[A] Section 112.4 Failure to comply.** Is hereby **DELETED** (in its entirety) and **REPLACED** with:

**"[A] Section 112.4 Failure to comply.** Any person, who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be guilty of violating ARS§ **37-1391**."

**CHAPTER 2**  
**DEFINITIONS**

**Section 202 General Definitions.**

**FIRE CODE OFFICIAL.** Revise as follows:

Delete this definition (in its entirety) and replace it with:

“The University of Arizona Fire Marshal, or a duly authorized representative.”

**“QUALIFIED PERSON.** One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated to the AHJ his/her ability to solve or resolve problems relating to the subject matter, the work, or the project.”

## CHAPTER 3 GENERAL REQUIREMENTS

**Section 307.3 Extinguishment authority.** Revise as follows:

After, “fire code official,” add “or responding fire department fire chief.”

**Section 311.5 Placards.** Revise as follows:

Change, “Any vacant or abandoned buildings or structure determined to be unsafe pursuant to Section 110 of this code shall be marked as required by Sections 311.5.1 through 311.5.5.”, to read: “When determined by the fire code official, any vacant or abandoned buildings or structure determined to be unsafe pursuant to Section 110 of this code shall be marked as required by Sections 311.5.1 through 311.5.5.”

**Section 313.1 General.** Revise as follows:

Add to **Exceptions:**

4. “Use of LP-gas-powered equipment in accordance with NFPA 58.”

**Section 313.2 Group R occupancies.** Revise as follows:

Change “Vehicles powered by flammable liquids, Class II combustible liquids, or compressed flammable gases shall not be stored within the living space of Group R buildings.” To read, “Vehicles powered by flammable liquids, Class II combustible liquids, or compressed flammable gases shall not be stored or repaired within the living space of Group R buildings.”

## CHAPTER 4 EMERGENCY PLANNING AND PREPAREDNESS

**Section 403.12.1.2 Duties.** Revise as follows:

Add to duties:

“4. Fire watch personnel shall not be required or permitted, while on duty, to perform any duties other than those specified by the fire code official.”

## CHAPTER 5 FIRE SERVICE FEATURES

**Section 503.2.1 Dimensions.** Revise as follows:

Change, “an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).” To read, an unobstructed vertical clearance of not less than 15 feet (4572 mm).

**Section 503.2.3 Surface.** Revise as follows:

Change, “Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities.” To read, “Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus, per Section D102.1, and shall be surfaced so as to provide all-weather driving capabilities”.

**Section 505.1 Address numbers.** Revise as follows:

Delete section (in its entirety) and replace with:

“New and existing buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. Address numbers shall be 6” on all R-3 and R-4 occupancies, 12” on all other structures less than 50’ from the near edge of the street or road, 15” on structures more than 50’ from the near edge of the street or road. Address numbers shall be placed on the building or on a pedestal sign approved by the fire code official, visible from both directions of travel along the fire apparatus access road. Where required by the fire code official, address numbers shall be provided in additional approved locations to facilitate emergency response.”

**Section 507.3 Fire flow.** Revise as follows:

Change, “Fire flow requirements for buildings or portions of buildings and facilities shall be determined by an approved method.” To read, “**Fire flow requirements for buildings or portions of buildings and facilities shall be in accordance with Appendix B**”.

**Section 507.5.1.1 Hydrant for standpipe systems.** Revise as follows:

Delete this section (in its entirety) and replace with the following:

“**Section 507.5.1.1 Hydrant for standpipe systems.** Buildings equipped with a standpipe system installed in accordance with Section 905 or where the automatic fire sprinkler system is equipped with a fire department connection, shall have a fire hydrant within 100 feet (30 m) of the fire department connections.

**Exception:** The distance shall be permitted to exceed 100 feet (30 m) where approved by the *fire code official*.”

Add the following section:

“**Section 507.5.7 Reflective pavement markers.** Fire hydrants shall be identified by the installation of approved blue reflective pavement markers.”

## CHAPTER 9 FIRE PROTECTION AND LIFE SAFETY SYSTEMS

**Section 901.4 Installation.** Revise as follows:

Change, “Required systems shall be extended, altered, or augmented as necessary to maintain and continue protection whenever the building is altered, remodeled or added to. Alterations to fire protection systems shall be done in accordance with applicable standards.” To read, “**Fire protection systems shall be extended, altered,** or augmented as necessary to maintain and continue protection whenever the building is altered, remodeled or added to. Alterations to fire protection systems shall be done in accordance with applicable standards.”

### SECTION 903 AUTOMATIC SPRINKLER SYSTEMS

**Section 903.2 Where required.** Revise as follows:

Change, “*Approved automatic sprinkler systems* in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12.” To read, “*Approved automatic sprinkler systems* in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12, **and in all new construction and major renovations, alterations and additions, as defined in the University of Arizona Construction and Renovation Permitting Procedure (adopted: July 2011), unless approved by the fire code official. In all new construction, major and minor renovations, alterations and additions, where the fire code official has determined the public safety of an existing or proposed activity, building or structure, or for the safety of the occupants thereof, that are not specifically provided for by this code, shall be determined by the fire code official in accordance with section 102.9 of this code.**”

**Section 903.3.1.3 NFPA 13D sprinkler system.** Revise as follows:

Add the following at the end of the paragraph:

“Automatic sprinkler systems shall provide coverage for attached garages and under the horizontal projections of any part of the roof enclosed on 3 sides and greater than 4 feet in depth.”

Add the following section:

“**Section 903.4.4.** Provide electronic pressure monitoring of the supply and system sides of the fire sprinkler system using 24VDC ¼”NPT 4-20ma transducers that provide a range of 0-300psi with a burst rating of at least 400psi. They shall be installed in the same location as the system and supply pressure gauges. Each pressure transducer shall be monitored.”

**Section 904.12.2 System interconnection.** Add the following to the end of the first sentence: “...and to all electrical receptacles located within the perimeter of the protected exhaust hood.”

## **SECTION 907 – FIRE ALARM AND DETECTION SYSTEMS**

**907.2 Where required—new buildings and structures.** Add the following sentence to the end of the first paragraph: “*Class A fire alarm systems* shall be installed in all new buildings, structures, and renovation projects where the scope of demolition and construction covers at least any single floor of a building. Concurrent small renovations on multiple floors of a building where the cumulative scope of work in square feet is greater than the largest single floor of the building shall also install a *Class A fire alarm system*.”

**907.5.2.2 Emergency voice/alarm communication systems.** Revise as follows: before the last sentence of the first paragraph, add, “Emergency voice/alarm systems shall be installed in all new buildings, structures, and renovation projects where the scope of demolition and construction covers at least any single floor of a building. Concurrent small renovations on multiple floors of a building where the cumulative scope of work in square feet is greater than the largest single floor of the building shall also install an emergency voice/alarm system.”

## **CHAPTER 10 MEANS OF EGRESS**

### **SECTION 1010 DOORS, GATES AND TURNSTILES**

**[B] Section 1010.1.9.8.1 Delayed egress locking system, #6.3.** Revise as follows:

Add the following at the end of the paragraph: “Lettering shall be at least 1 inch (25 mm) in height and shall have a stroke of not less than 1/8 inch (3.2 mm), on a contrasting background.”

**[BE] Section 1010.1.9.9 Access-controlled egress doors, #4.** Revise as follows:

After the words, “PUSH TO EXIT” in the second sentence add, “Lettering shall be at least 1 inch (25 mm) in height and shall have a stroke of not less than 1/8 inch (3.2 mm), on a contrasting background.”

**[BE] Section 1010.1.10.1 Installation.** Revise as follows:

Add the following:

“5. Panic or fire exit hardware shall be the only locking device on the door except where otherwise permitted in this code.”

## **CHAPTER 31 TENTS, TEMPORARY SPECIAL EVENT STRUCTURES AND OTHER MEMBRANE STRUCTURES**

### **SECTION 3103 – TEMPORARY TENTS AND MEMBRANE STRUCTURES**

**Section 3103.8 Access, Location and Parking.** Revise as follows:

Change this section by adding, “**when required by the fire code official**”. To the end of the paragraph.

**3103.12.4 Doors.** Revise as follows:

Change the first sentence, “Exit doors shall swing in the direction of exit travel.” To read, “**Exit doors shall swing in the direction of exit travel and shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware.**”

## **CHAPTER 35 WELDING AND OTHER HOT WORK**

### **SECTION 3503 – GENERAL REQUIREMENTS**

**SECTION 3503.2 Hot work program permit.** Revise as follows:

Delete this section (in its entirety) and replace with the following:

**“SECTION 3503.2 Hot work program permit.** Hot work permits shall be issued by the University of Arizona permit program, unless authorized by the fire code official.”

**Section 3504.2.6 Fire extinguisher.** Revise as follows: Add the following sentence at the end of the section: “**The fire extinguisher(s) shall be readily accessible without climbing stairs or ladders.**”

## **CHAPTER 56 EXPLOSIVES AND FIREWORKS**

**Section 5604.5.3.3 Use.** Revise as follows:

Change the second sentence, “Where two Type 3 magazines are located at the same blasting site, one magazine shall be used solely for the storage of detonators.” To read, “Where two Type 3 magazines are located at the same blasting site, one magazine shall **be** used solely for the storage of detonators.”

### **SECTION 5704 STORAGE**

**Section 5704.2.13.1.3 Out of service for one year.** Revise as follows:

Change, “Underground tanks that have been out of service for a period of one year shall be removed from the ground in accordance with Section 5704.2.14 or abandoned in place in accordance with Section 5704.2.13.1.4.” To read, “**Underground tanks that have been out of service for a period of one year shall be removed from the ground in accordance with Section 5704.2.14 or when approved by the fire code official, abandoned in place in accordance with Section 5704.2.13.1.4.**”

**Section 5704.3.3.3 Clear means of egress.** Revise as follows:

Change, “Storage of any liquids, including stock for sale, shall not be stored near or be allowed to obstruct physically the route of egress.” To read, “Storage of any liquids, including stock for sale, shall not be stored **within 10 feet of an exit door** or be allowed to obstruct physically the route of egress.”

### **SECTION 5706 SPECIAL OPERATIONS**

**Section 5706.5.4.5 Commercial, industrial, government or manufacturing.** Revise as follows:

Add the following subsections:

- “26. Prior to removal of the fuel cap, the bond wire cable shall be securely clamped to the vehicle being fueled.
27. At no time shall the fueling hose extend across a trafficable lane without florescent traffic cones conspicuously placed so that all vehicle traffic is blocked. Vehicles shall not drive over any delivery hose.
28. Fuel expansion space shall be provided in each motor vehicle tank to prevent overflow.
29. The fuel cap of the vehicle being fueled shall be replaced prior to disconnecting the bonding cable.”

**Section 5706.6 Tank vehicles and vehicle operation.** Revise as follows:

Delete this section (in its entirety) and replace with the following:

“**Section 5706.6 Tank vehicles and vehicle operation.** Tank vehicles shall be utilized and operated in accordance with the following:

1. The tank vehicle shall be road worthy, licensed by the Department of Motor Vehicles, and meet Arizona Department of Transportation requirements.
2. To ensure proper operation, a daily inspection of the tank vehicle shall be conducted by appropriately qualified and trained personnel. Any equipment or devices found to be defective shall be taken out-of-service immediately and repaired or replaced.
3. The tank vehicle shall be equipped with a readily accessible, operational emergency shut-off valve.
4. Sections 5706.6.1 through 5706.6.4.”

**The following Appendix Requirements are adopted with the following exceptions:**

## **APPENDIX B FIRE-FLOW REQUIREMENTS FOR BUILDINGS**

Add the following section:

“**Section B104.1.1 Residential.** The fire-flow calculation area for single family residences shall be the total floor area of all floor levels within exterior walls, and under the horizontal projections of any part of the roof enclosed on 3 sides and greater than 4 feet in depth.”

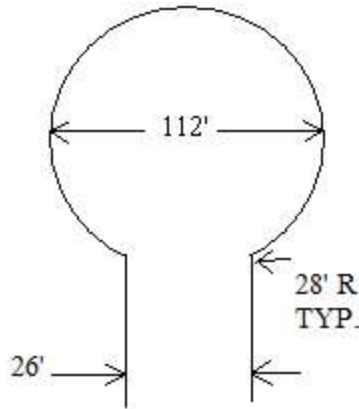
**Section B105.2 Building other than one- and two-family dwellings.** Revise as follows: Change, “**Exception:** A reduction in required fire-flow of up to 75 percent, as approved,” to read: “**Exception:** A reduction in required fire-flow of 75 percent, as approved,”

## **APPENDIX C FIRE HYDRANT LOCATIONS AND DISTRIBUTIONS**

## **APPENDIX D FIRE APPARATUS ACCESS ROADS**

**Figure D103.1 DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND** Revise as follows:

Add the following:



"112-FOOT DIAMETER CUL-DE-SAC"

**Section D103.6 Signs.** Revise as follows:

Delete this section (in its entirety) and replace with the following:

**"Section D103.6 Signs.** Every fire apparatus access roadway required under this section shall be posted with signs installed at points not more than one-hundred fifty (150) feet apart along the length of the required fire apparatus access roadway or as approved by the Fire Marshal. The bottom of every such sign shall not be less than seven (7) feet or more than ten (10) feet from the ground surface level. Signs shall be posted to face the direction of travel. Materials and locations of each sign shall be indicated in the plans submitted to the Fire Marshal for approval prior to installation.

The required sign shall be the international NO PARKING sign with a standard sign size (width and height) of 12 x 18 inches (300 x 450 mm), on a white reflective background. The international NO PARKING symbol shall be a black P, six inches high. Underneath the NO PARKING symbol, in one-and-five-eighths inch high and one-quarter inch stroke, in red lettering it shall read:

FIRE ACCESS  
TOW-AWAY



Only fire apparatus access roadways required under the authority of this section or as approved by the fire marshal may be posted or identified with the approved sign shown above. Unauthorized signs shall be removed at the owner's expense."

Add the following section:

**Section D103.6.3 Dead-end fire apparatus access road turnarounds.**

"NO PARKING signs are required at the end of fire apparatus access road turnarounds.

**Exception:** If 112-Foot Diameter Cul-de-sac is utilized, NO PARKING signs are not required to be posted."

**APPENDIX I**  
**FIRE PROTECTION SYSTEMS – NONCOMPLIANT CONDITIONS**

**APPENDIX L**  
**FIRE PROTECTION SYSTEMS – NONCOMPLIANT CONDITIONS**

**University of Arizona**  
AMENDMENTS TO THE  
**INTERNATIONAL BUILDING CODE**  
**2018 EDITION**

The following provisions of the International Building Code, 2018 Edition, as published by the International Code Council, Inc. are hereby revised as follows:

**CHAPTER 1**  
**SCOPE AND APPLICATION**

**Section 101.1** Revise as follows: Title.

Insert: [NAME OF JURISDICTION] as, "*University of Arizona.*"

**Section 101.4 Referenced codes.** Change, "The other codes listed in Sections 101.4.1 through 101.4.7, and referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference."

To read, "*The other codes listed in Sections 101.4.1 through 101.4.7, as locally amended, and referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference.*"

**Section 101.4.3 Plumbing.**

*Delete the last sentence, "The provisions of the International Private Sewage Disposal Code shall apply to private sewage disposal systems."*

**Section 101.4.4 Property maintenance.** *Delete this section in its entirety.*

**Section 101.4.6 Energy.** Delete this section in its entirety, and add the following section:

*"Section 101.4.6 Electrical. The provisions of the National Electrical Code, 2017 edition, shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto."*

**Section 105.1.1 Annual permit.** *Delete this section in its entirety.*

**Section 105.1.2 Annual permit records.** *Delete this section in its entirety.*

**Section 105.2 Work exempt from permit.** Revise as follows:

Change,

**"Building:**

2. Fences not over 7 feet (2134 mm) high."

To read,

**"Building:**

2. Fences not over 7 feet (2134 mm) high and masonry or concrete walls not over 6 feet (1829 mm) high, which do not retain earth."

**Electrical:** Revise as follows: Add the following after item 3:

**"Other items:**

1. *Power for amusement devices and carnival rides in place on a site for less than 30 calendar days and not connected to a utility company's facilities.*

2. Repair or replacement of fixed motors and transformers of the same type and rating in the same location.
3. Temporary decorative lighting.
4. Repair or replacement of current-carrying parts of any switch, contactor, control device, or overcurrent device of the required capacity in the same location.
5. Electrical wiring, devices, appliances, apparatus or equipment operating at less than 25 volts and not capable of supplying more than 50 volt-amps of energy.
6. Devices used in manufacturing, processing or fabricating.”

## **Mechanical.**

Add the following item number:

“8. Replacement of evaporative coolers with like coolers.”

**111.2 Certificate issued.** REVISE Section by ADDING the following to the end of the Section: **Exception:** Approved final inspections for International Residential Code, group “A” and “B” occupancies less than 4,000 SF in area, and group “U” occupancy structures shall constitute the certificate of occupancy.

## **CHAPTER 9 FIRE PROTECTION AND LIFE SAFETY SYSTEMS**

### **SECTION 903 AUTOMATIC SPRINKLER SYSTEMS**

**Section 903.2 Where required.** Revise as follows: Change, “*Approved automatic sprinkler systems* in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12.” To read, “*and in all new construction and major renovations, alterations and additions, as defined in the University of Arizona Construction and Renovation Permitting Procedure (adopted: July 2011), unless approved by the fire code official. In all new construction, major and minor renovations, alterations and additions, where the fire code official has determined the public safety of an existing or proposed activity, building or structure, or for the safety of the occupants thereof, that are not specifically provided for by this code, shall be determined by the fire code official in accordance with section 102.9 of the International Fire Code.*”

**[F] Section 903.3.1.3 NFPA 13D sprinkler system.** Revise as follows: Add the following at the end of the paragraph:

“Automatic sprinkler systems shall provide coverage for attached garages and under the horizontal projections of any part of the roof enclosed on 3 sides and greater than 4 feet in depth.”

Add the following section:

“**[F] Section 903.4.4.** Provide electronic pressure monitoring of the supply and system sides of the fire sprinkler system using 24VDC ¼” NPT 4-20ma transducers that provide a range of 0-300psi with a burst rating of at least 400psi. They shall be installed in the same location as the system and supply pressure gauges. Each pressure transducer shall be monitored.”

**[F] Section 904.12.2 System interconnection.** Revise as follows: Add the following to the end of the first sentence: “...and to all electrical receptacles located within the perimeter of the protected exhaust hood.”

### **SECTION 907 – FIRE ALARM AND DETECTION SYSTEMS**

**907.2 Where required—new buildings and structures.** Add the following sentence to the end of the first paragraph: “*Class A fire alarm systems* shall be installed in all new buildings, structures, and renovation projects where the scope of demolition and construction covers at least any single floor of a

building. Concurrent small renovations on multiple floors of a building where the cumulative scope of work in square feet is greater than the largest single floor of the building shall also install a *Class A fire alarm system*.”

## CHAPTER 10 MEANS OF EGRESS

### SECTION 1010 DOORS, GATES AND TURNSTILES

**Section 1010.1.9.8.1 Delayed egress locks.** Revise as follows: add the following at the end of the paragraph 6: “6.4 Lettering shall be at least 1 inch (25 mm) in height and shall have a stroke of not less than 1/8 inch (3.2 mm), on a contrasting background.”

**Section 1010.1.9.9 Sensor release of electrically locked egress doors. #4.** Revise as follows: After the words, “PUSH TO EXIT” in the second sentence add, “Lettering shall be at least 1 inch (25 mm) in height and shall have a stroke of not less than 1/8 inch (3.2 mm), on a contrasting background.”

**Section 1010.1.10.1 Installation.** Revise as follows:

Add the following:

“5. Panic or fire exit hardware shall be the only locking device on the door except where otherwise permitted in this code.”

## CHAPTER 11 ACCESSIBILITY

**Section 1102.1 Design.** Revise as follows: change, “Buildings and facilities shall be designed and constructed to be accessible in accordance with this code and ICC A117.1.” To read, “Buildings and facilities shall be designed and constructed to be accessible in accordance with this code, Arizona Revised Statutes (ARS§41-1492.02) and ICC A117.1.”

## CHAPTER 16 STRUCTURAL DESIGN

### SECTION 1609 WIND LOADS

**Section 1609.1.1 Determination of wind loads.** REVISE Section by ADDING the following after the last paragraph:

Per the Basic Wind Speed Figures, use the following:

Risk Category I – 100 mph

Risk Category II – 105 mph

Risk Category III – 110 mph

Risk Category IV – 115 mph

**ADD new Section 1609.5.1.1** as follows:

“**1609.5.1.1 Uplift resistance to minimize microburst effects.** In addition to requirements in ASCE 7, minimum uplift resistance shall be determined by either method 1 or 2 below:

1. **Design-based wind uplift criteria** Wind uplift requirements shall be determined by using the design wind value of 110 mph within Table 2308.7.5 for the continuous load path transmitting the uplift forces from the rafter or truss ties to the foundation.
2. **Prescriptive-based wind uplift criteria** (Please note that the requirements of this Section are in addition to those required for the structural connection of wood members)

- a. **Conventionally-framed wood or cold-formed steel structures** All bearing wall vertical connections shall be clipped with either approved structural sheathing or approved clips to provide a continuous load path from the joist or truss through the ledger or top plate to the bottom wall plate. Where clips are used, they shall be minimum Simpson H2.5 (A34 at ledger), or equivalent load capacity, of configuration to match connection and spaced at intervals not to exceed 24." At openings, lower cripple studs do not require clipping but king/trimmer studs require double clips at bottom and upper cripples require both full clipping to header as well as header to king stud. All platform framing requires either strapping listed for the purpose or continuous sheathing over rim joist from stud to stud vertically at each floor level. All non-bearing exterior walls shall be clipped as above except that the spacing may be extended not to exceed every other stud.
- b. **Masonry or concrete structures** If lateral design requires larger anchors or more conservative spacing, these may be used in lieu of those called out in this Section.
  - i. **Roof bearing on wall top plate** Top plates shall be secured to masonry or concrete walls with minimum 0.5" anchor bolts embedded minimum 7" and spaced at intervals not to exceed 48." Each joist or truss shall be clipped to plate at bearing with minimum Simpson H2.5 or equivalent load capacity and of configuration to match connection. Gable end joists or trusses shall also be clipped at intervals not to exceed 48."
  - ii. **Roof bearing on wall ledger** Joists or trusses bearing on a wall ledger shall be secured to masonry or concrete walls with minimum Simpson PA123 purlin anchors or equal with equivalent load capacity listed for the application and embedded into wall per listing at intervals not to exceed 48". Nonbearing roof diaphragm edges shall have the outermost joist or truss likewise anchored to the wall through blocking.
- c. **Structural steel structures** Structural steel buildings shall have roof members attached by either welds, bolts, screws or other similarly approved connections at intervals not to exceed 48". Ledger designs shall connect to roof trusses with strapping listed for the purpose at intervals not to exceed 48" on all diaphragm sides. If lateral design requires larger anchors or more conservative spacing, these may be used in lieu of those called out in this Section.

## SECTION 1610 SOIL LATERAL LOADS

Add the following section:

**"Section 1610.1.1 Presumptive active pressure.** For typical unsaturated soils within Pima County, a presumptive active lateral pressure of 35 psf per foot of depth may be used without a geotechnical report. Level backfill is assumed with this active pressure. Surcharges shall be applied as necessary."

## CHAPTER 17 SPECIAL INSPECTIONS AND TESTS

### SECTION 1705 REQUIRED SPECIAL INSPECTIONS AND TESTS

**Section 1705.4 Masonry Construction.** REVISE Section by ADDING a new exception item 4 as follows:

4. Non-essential facilities designed in accordance with Section 2107 with allowable masonry stresses reduced by one half and the maximum value of  $f'm$  limited to 1500 psi for concrete or clay masonry. The following limitations shall apply to this exception:

1. The unsupported height (or length)- to- thickness ratio of a building wall shall not exceed 20
2. The soil retaining height for a wall retaining wall shall not exceed 4'-0' measured from the top of footing for an 8-inch-thick wall or 6'-0' for a 12- inch- thick wall.
3. The height- to- thickness ratio shall not exceed 10 for a cantilevered masonry fence or combination masonry fence and retaining wall as measures from the top of footing to the top of the wall. If a combination retaining/fence wall consist of more than one wall thickness, the smallest thickness shall be used in determining the height-to-thickness ratio

Any portion or portions of a structure in which the design masonry stresses exceed one half the allowable masonry stresses, shall require Special Inspection for that portion or portions of the structure.

## CHAPTER 18 SOILS AND FOUNDATIONS

### SECTION 1806 PRESUMPTIVE LOAD-BEARING VALUES OF SOILS

Add the following section:

**“Section 1806.2.1 Presumptive coefficient of friction:**

For typical unsaturated soils, a presumptive coefficient of friction of 0.30 for lateral sliding resistance may be used without a geotechnical report. Friction resistance may be used in conjunction with passive pressure to resist sliding forces.”

## CHAPTER 18 SPECIAL CONSTRUCTION

### SECTION 3109 SWIMMING POOLS AND HOT TUBS

**Section 3109 Swimming pool enclosures and safety devices.** Revise as follows:

Delete section and subsections (in its entirety) and Replace with:

“Arizona Administrative Code, Title 18, Chapter 5, Article 2. Public and Semipublic Swimming Pools and Spas as well as A.R.S. §36.”

**The following Appendix Requirements are adopted:**

### APPENDIX I: PATIO COVERS

**University of Arizona**  
**AMENDMENTS TO THE**  
**INTERNATIONAL EXISTING**  
**BUILDING CODE**  
**2018 EDITION**

**CHAPTER 1**  
**SCOPE AND APPLICATION**

Revise as follows: **Delete chapter 1 with the exception of section 101.1 through 101.4, 116, and 117.**  
(Deleted sections are administered by 2018 IBC, Chapter 1)

**Section 117.2 Notices and orders. DELETE Section in its entirety.**

## University of Arizona

### AMENDMENTS TO THE INTERNATIONAL MECHANICAL CODE 2018 EDITION

The following provisions of the International Mechanical Code, 2018 Edition, as published by the International Code Council, Inc. are hereby revised as follows:

#### Chapter 1 Administration

Revise as follows:

Delete chapter 1 with the exception of section 101.1 and 107.

**Section 101.1** Revise as follows: Title.

Insert: [NAME OF JURISDICTION] as, "*University of Arizona.*"

#### Chapter 4 Ventilation

**Section 403.7 Balancing.** Revise as follows:

Delete the second sentence and replace with the following:

"Ventilation systems shall be balanced by individuals holding current certification from the Associated Air Balance Council (AABC), the National Environmental Balancing Bureau (NEBB) or other *approved* agencies."

#### Chapter 9 Specific Appliances, Fireplaces and Solid Fuel-Burning Equipment

Add the following new section:

**"Section 928.2 Water conservation.** Evaporative cooling systems shall be provided with a recirculating water system. Any bleed off rate used by the system shall be limited to that recommended by the manufacturer. Once-through evaporative cooling systems using potable water shall not be permitted."

Add the following new section:

**"Section 929 Water cooled refrigeration/heat removal systems—water conservation.** A water-cooled refrigeration system or heat removal system, (defined as refrigeration or heat removal system using water, all, or in part, for condensing a refrigerant), shall not discharge more than three gallons of water per nominal ton per hour into an approved sanitary disposal system. Wastewater discharge shall be accomplished by the use of an air gap, as described in the *International Plumbing Code*. Each water-cooled system shall be provided with one or more of the following water-saving devices: (a) a cooling tower; or (b) an evaporative condenser; or (c) an *approved* water circulating device."

#### Chapter 10

## **Boilers, Water Heaters and Pressure Vessels**

**Section 1001.1 Scope.** Revise as follows:

Delete Exception 7 (in its entirety) and replace with the following:

“Any boiler or lined water heater in excess of 200,000 BTU shall be subject to inspection by federal or state inspections. See Arizona Boiler Rules for regulations, Title 20, Chapter 5.”

**Section 1004.1 Standards.** Revise as follows:

Delete all text after the second sentence and add the following:

“Boilers shall be designed and constructed in accordance with the ASME *Boiler and Pressure Vessel Code*, and Arizona Boiler Rules, Title 20 Chapter 5.”

## **Chapter 11 Refrigeration**

**Section 1109.1 Testing Required.** Revise as follows:

Delete “pure” in exception 3 and replace with “**purge.**”

## University of Arizona

### AMENDMENTS TO THE INTERNATIONAL PLUMBING CODE 2018 EDITION

The following provisions of the International Plumbing Code, 2018 Edition, as published by the International Code Council, Inc. are hereby revised as follows:

#### Chapter 1 Scope and Administration

Revise as follows: Delete chapter 1 with the exception of section 101.1 and 107.

**Section 101.1** Revise as follows: Title.

Insert: [NAME OF JURISDICTION] as, "*University of Arizona.*"

#### Chapter 3 General Regulation

**Section 305.4.1 Sewer depth.** Revise as follows: Insert: [NUMBER] as "**12**" in both locations.

**Section 312.1 Required tests.** Revise as follows: Delete the last two sentences of the first paragraph which read "*After the plumbing fixtures have been set and their traps filled with water, the entire drainage system shall be submitted to final tests. The code official shall require the removal of any cleanouts if necessary, to ascertain whether the pressure has reached all parts of the system.*"

**Section 314.2.1 Condensate disposal.** REVISE Section by ADDING the following at the end of the paragraph:

"Condensate disposal shall be allowed to terminate as follows:

1. Into an approved fixture tailpiece, funnel drain, waste air gap fitting, floor sink, slop sink, and laundry tray.
2. At or below grade outside the building in an area capable of absorbing the condensate flow without surface drainage.
3. Over roof drains, gutters, or downspouts that connect to drainage pipes, provided they terminate at or above grade in an area capable of absorbing the condensate flow without surface drainage."

#### Chapter 4 Fixtures, Faucets and Fixture Fittings

**410.4 Substitution.** REVISE section by ADDING a second sentence to read: "*When a single drinking fountain is required, it may be substituted with a point of use water cooler or dispenser.*"

**ADD new section 412.11 to read:**

"**412.11 Automatic faucets.** New or replacement faucets serving lavatories in all buildings other than R3 occupancies, individual units in R2 occupancies, or International Residential Code structures shall be provided with automatic faucets in accordance with 419.6."

## Chapter 5 Water Heaters

**Section 504.7.1 Pan size and drain.** Revise as follows: Add the following at the end of the second sentence: “A drain shall not be required for replacement water heaters in locations where no previously installed drain is available.”

## Chapter 6 Water Supply and Distribution

**Table 604.3 Water distribution system design criteria required capacity at fixture supply pipe outlets.** Revise the last column heading to read “Static Pressure”.

**Section 608.16.4 Connections to automatic fire sprinkler systems and standpipe systems.** Revise as follows:

Delete this section, and all subsequence subsections, (in its entirety) and replace with:

“The potable water supply to automatic fire sprinkler and standpipe systems shall be protected against backflow in accordance with ARS § 41-2168.”

**Section 609.6 Clinical, hydrotherapeutic and radiological equipment.** Revise as follows:

Add a second sentence to read:

“If water is used for cooling or heat removal, it shall comply with the *International Mechanical Code*, amended Section 929.”

## Chapter 7 Sanitary Drainage

**Section 701.2 Connection to sewer required.** Revise as follows:

Delete, “in accordance with the *International Private Sewage Disposal Code*”.

**Section 707.1 Prohibited joints.** Revise as follows:

Item 5. Change, “Solvent-cement joints between different types of plastic pipe.”

To read, “Solvent-cement joints between different types of plastic pipe, unless the solvent-cement is listed for the purpose.”

**Section 714.1 Sewage backflow.** Revise as follows:

Delete section (in its entirety) and replace with:

“Where the finish floor elevation is less than 12 inches above the elevation of the next upstream manhole cover in the sewer, a backwater valve shall be installed in the building drain or branch of the building drain serving that floor. Floors discharging from above that reference point shall not discharge through the same back water valve.”

## Chapter 9 Sanitary Drainage

**Section 903.1 Roof extension.** Revise as follows:

Insert: [NUMBER] as “6” inches.

## **Chapter 10**

### **Traps, Interceptors and Separators**

**Section 1002.4 Trap seals.** Revise as follows:

Add a second sentence to read:

**“Where a trap seal is subject to loss by evaporation, a trap seal primer valve or a trap seal protection device shall be installed.”**

**Section 1003.3 Grease interceptors.** Revise as follows:

Delete this section, and all subsequent subsections, (in its entirety) and replace with:

**“Section 1003.3 Grease interceptors.** Grease interceptors shall comply with the requirements of the Arizona County Health Department in which the building is located.”

## **Chapter 13**

### **Nonpotable Water Systems**

Revise as follows:

Delete chapter and replace with the following:

**“Regulated under Arizona Administrative Code (A.A.C.) Title 18, Chapter 9.”**

**The following Appendix Requirements are adopted with the following exceptions:**

**APPENDIX B: RATES OF RAINFALL FOR VARIOUS CITIES.**

Add **“Tucson..... 3.0,”** under, **“Arizona”**.

**University of Arizona**

**AMENDMENTS TO THE  
INTERNATIONAL FUEL GAS CODE  
2018 EDITION**

The following provisions of the International Fuel Gas Code, 2018 Edition, as published by the International Code Council, Inc. are hereby revised as follows:

**CHAPTER 1  
SCOPE AND ADMINISTRATION**

**Section 101.1 Title.** Revise as follows:

Insert: [NAME OF JURISDICTION] as, “**University of Arizona**”

**Chapter 1 Administration.** Revise as follows:

**Delete chapter 1 with the exception of sections 101.2.4 and 107.**

## University of Arizona

### AMENDMENTS TO THE INTERNATIONAL RESIDENTIAL CODE 2012 EDITION

The following provisions of the International Residential Code, 2018 Edition, as published by the International Code Council, Inc. are hereby revised as follows:

#### Chapter 1 Administration

**Section R101.1 Title.** Revise as follows:

Insert: [NAME OF JURISDICTION] as, "*University of Arizona.*"

Add the following section:

**"Section R102.8 Fire flow and fire access.**

New construction under this code shall conform to the *International Fire Code* Sections 102.5 Application of Residential Code, 503 Fire Apparatus Access Roads, 507.3 Fire Flow, 3310 Access for Fire Fighting, 3312 Water Supply for Fire Fighting, Appendix B Fire-Flow Requirements for Buildings and Appendix D Fire Apparatus Access Roads."

**Section R105.2 Work exempt from permit.** Revise as follows:

**Building:**

2. Add to the end of this sentence:

"and masonry or concrete walls not over 7'-0" (1682 mm) high, which do not retain earth."

**Section R110.3 Certificate issued.** Revise as follows:

At the end of this section add the sentence:

"The building final inspection approval shall be the Certificate of Occupancy for detached single family residences."

#### Chapter 3 Site Conditions

**Table R301.2(1) Climatic and Geographic Design Criteria.** Revise as follows:

Ground Snow Load	Less 4000 ft 0 psf
	4 to 5000 ft 20 psf
	7 to 8000 ft 60 psf
	Over 8000 ft 80 psf
Topographic effects	As Required
Wind Speed	150 mph 3 second gust
Seismic Design Category	Category B within the City of Tucson, outside City of Tucson, refer to local codes
Weathering	Up to 4,000 ft-Negligible Above 4,000 ft-Moderate
Frost Line Depth	Up to 4,000 ft-0 in Above 4,000 ft-24 in

Winter Design Dry Bulb Temperature	Under 4,000 feet elevation - 35° F 4,000 feet & above - 4°F
Summer Design Dry Bulb Temp	Under 4,000 feet elevation - 105° F 4,000 feet & above - 90°F
Summer Design Wet Bulb Temp	Under 4,000 feet elevation - 66° F 4,000 feet & above - 61°F
Climate zone	Under 4,000 feet elevation – 2B 4,000 feet & above – 5B

## Chapter 8 Roof-Ceiling Construction

**Section R802.11.1 Uplift resistance.** REVISE section by DELETING section in its entirety and ADDING the following: Uplift resistance to minimize microburst effects shall be determined by either method 1 or 2 below:

1. Design-based wind uplift criteria Wind uplift requirements shall be determined by using the design wind value of 115 mph within Table R802.11 for the continuous load path transmitting the uplift forces from the rafter or truss ties to the foundation.
2. Prescriptive-based wind uplift criteria (Please note that the requirements of this section are in addition to those required for the structural connection of wood members).

2.1. Conventionally-framed wood or cold-formed steel structures All bearing wall vertical connections shall be clipped with either approved structural sheathing or approved clips to provide a continuous load path from the joist or truss through the ledger or top plate to the bottom wall plate. Where clips are used, they shall be minimum Simpson H2.5 (A34 at ledger), or equivalent load capacity, of configuration to match connection and spaced at intervals not to exceed 24". At openings, lower cripple studs do not require clipping but king/trimmer studs require double clips at bottom and upper cripples, require both full clipping to header as well as header to king stud. All platform framing requires either strapping listed for the purpose or continuous sheathing over rim joist from stud to stud vertically at each floor level.

All non-bearing exterior walls shall be clipped as above except that the spacing may be extended not to exceed every other stud.

2.2. Masonry or concrete structures If lateral design requires larger anchors or more conservative spacing, these may be used in lieu of those called out in this section. 2018 International Residential Code Page 3 of 6

2.2.1. Roof bearing on wall top plate Top plates shall be secured to masonry or concrete walls with minimum 0.5" embedded anchor bolts spaced at intervals not to exceed 48". Each joist or truss shall be clipped to plate at bearing with minimum Simpson H2.5 or equivalent load capacity and of configuration to match connection. Gable end joists or trusses shall also be clipped at intervals not to exceed 48".

2.2.2. Roof bearing on wall ledger Joists or trusses bearing on a wall ledger shall be secured to masonry or concrete walls with minimum Simpson PA123 purlin anchors or equal with equivalent load capacity listed for the application and embedded into wall per listing at intervals not to exceed 48". Nonbearing roof

diaphragm edges shall have the outermost joist or truss likewise anchored to the wall through blocking.

2.3. Structural steel structures Structural steel buildings shall have roof members attached by either welds, bolts, screws or other similarly approved connections at intervals not to exceed 48". Ledger designs shall connect to roof trusses with strapping listed for the purpose at intervals not to exceed 48" on all diaphragm sides. If lateral design requires larger anchors or more conservative spacing, these may be used in lieu of those called out in this section.

## **Chapter 11**

### **Energy Conservation**

Delete Chapter 11 (in its entirety).

## **Chapter 14**

### **Heating and Cooling Equipment and Appliances**

Add the following section: "**Section M1413.2 Water conservation.** Evaporative cooling systems shall be provided with a recirculating water system. Any bleed off rate used by the system shall be limited to that recommended by the manufacturer. Once-through evaporative cooling systems using potable water shall not be permitted."

## **Chapter 26**

### **General Plumbing Requirements**

**Section P2603.5.1 Sewer depth.** Revise as follows: Insert: [NUMBER] as "**12**," in both locations.

## **Chapter 28**

### **Water Heaters**

**Section P2801.6.1 Pan size and drain.** Revise as follows: Add the following at the end of the second sentence: "**A drain shall not be required for replacement water heaters in locations where no previously installed drain is available.**"

## **Chapter 29**

### **Water Supply and Distribution**

**Section P2902.5.4 Connection to automatic fire sprinkler systems.** Revise as follows: Delete this section (in its entirety) and replace with the following: "**The potable water supply to automatic fire sprinkler and standpipe systems shall be protected against backflow in accordance with ARS § 41-2168**"

## **Chapter 30**

### **Sanitary Drainage**

**Section P3003.2 Prohibited joints.** Revise as follows: Delete the period at the end of item 5 and add: "**, unless the solvent-cement is listed for the purpose.**"

**Section P3008.1 Sewage backflow.** Revise as follows: Delete section (in its entirety) and replace with: "**Where the finish floor elevation is less than 12 inches above the elevation of the next upstream manhole cover in the sewer, a backwater valve shall be installed in the building drain or branch of the building drain serving that floor. Floors discharging from above that reference point shall not discharge through the same back water valve.**"

**Section P3009 Subsurface landscape Irrigation Systems.** Delete section (in its entirety) and replace with: "**Shall comply with Arizona Administrative Code Title 18, Chapter 9.**"

## Chapter 32

### Traps

**Section P3201.2.1 Trap seals and trap seal protection.** Revise as follows:

Delete the second sentence and replace with: “Where a trap seal is subject to loss by evaporation, a trap seal primer valve or a trap seal protection device shall be installed.”

## Chapter 37

### Wiring Methods

### Section E3703

#### Required Branch Circuits

Add the following section:

**“Section E3703.7 Dishwasher and Garbage Disposer Branch Circuits – Dwelling Units.** In residential occupancies, dishwasher and garbage disposer may be on the same 20-ampere branch circuit.”

## APPENDIX H: PATIO COVERS

## APPENDIX J: EXISTING BUILDINGS AND STRUCTURES

**University of Arizona**

**AMENDMENTS TO THE  
NATIONAL ELECTRICAL CODE  
2017 EDITION**

The following provisions of the National Electrical Code, 2017 Edition, as published by the National Fire Protection Agency, Inc. are hereby revised as follows: **No Changes**.