

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MESA, MARICOPA COUNTY, ARIZONA, RELATING TO PUBLIC HEALTH AND SAFETY, REPEALING TITLE 4, BUILDING REGULATION, CHAPTER 3, MESA RESIDENTIAL CODE, SECTION 1 INTERNATIONAL RESIDENTIAL CODE ADOPTED AND SECTION 2 PENALTY CLAUSE OF THE MESA CITY CODE; ADOPTING THE 2018 INTERNATIONAL RESIDENTIAL CODE BY REFERENCE; ADOPTING AMENDMENTS TO CERTAIN PROVISIONS IN THE 2018 INTERNATIONAL RESIDENTIAL CODE; ADDING A NEW TITLE 4, CHAPTER 3, SECTION 1 MESA RESIDENTIAL CODE AND 2 PENALTY CLAUSE; AND AN EFFECTIVE DATE OF FEBRUARY 10, 2019.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MESA, MARICOPA COUNTY, ARIZONA as follows:

Section One. REPEAL.

That Title 4, Chapter 3, Section 1 and Section 2 as amended, of the Mesa City Code is repealed.

Section Two. ADOPTION BY REFERENCE.

SECTION 4-3-1. That Title 4, Chapter 3, Section 1 of the Mesa City Code shall now read as follows:

The following publications are hereby adopted by reference as if set out at length in this Code, three copies of which shall be filed in the office of the City Clerk and kept available for public use and inspection:

The 2018 International Residential Code, including:

Appendix H – PATIO COVERS

Section Three. AMENDMENTS TO THE 2018 INTERNATIONAL RESIDENTIAL CODE.

That Title 4, Chapter 3, Section 2 of the Mesa City Code shall now read as follows:

Note: <u>Underlined</u> indicates proposed addition and Strikethrough indicates deletions to the text.

(A) CHAPTER 1 ADMINISTRATION

Section 101.1 of the 2018 International Residential Code is amended to read, in its entirety, as follows:

101.1 Title. These ~~provisions~~ regulations shall be known as the ~~*International Residential Code*~~ of [NAME OF JURISDICTION] *Mesa Residential Code*, hereinafter referred to as “this code.”

Section 101.2 through 114.2 of the 2018 International Residential Code is deleted in its entirety.

(B) CHAPTER 2 DEFINITIONS

(1) Section 202 Definitions shall be amended by revising definitions and adding new definitions to read as follows:

Fire Separation Distance: The distance measured from the ~~building~~ face of the wall framing to one of the following:

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

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

R-5 Occupancies. Detached one and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with separate means of egress and their accessory structures.

(C) CHAPTER 3 BUILDING PLANNING is amended as follows:

(1) Section R301.2 Climatic and geographic design criteria. Climatic and geographic design criteria is amended by replacing Table R301.2(1) with the completed table and adding two new footnotes to read as follows:

Ground Snow Load	Wind Speed (mph) (e, k, l)	Seismic Design Category (g)	Subject to Damage From				Winter Design Temp (f)	Ice Shield Under-Layment Required (i)	Flood Hazards (h)	Air Freezing Index (j)	Mean Annual Temp (k)
			Weathering (a)	Frost line depth (b)	Termite (c)	Decay (d)					
0	90,3S 76,fm	B	Negligible	12	Moderate To Heavy	None to Slight	+32°F	N/A	See Maricopa County	0	+71.2°F

(4244,4636)

(All footnotes to the original Table are to remain unchanged)

P. 3S is the 3-second gust wind speed (m.p.h.)

Q. fm is the fastest mile wind speed (m.p.h.)

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(2) **Section R301.5** Live Load is amended by Revising Table R301.5 as follows: Change live load for “Sleeping rooms” from 30 psf to 40 psf, and the live load for Habitable attics and attics with fixed stairs from 30 psf to 40 psf.

MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS
(in pounds per square foot)

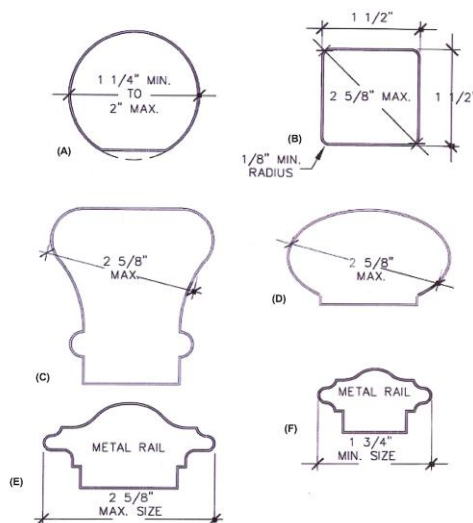
USE	LIVE LOAD
Uninhabitable attics without storage ^b	10
Uninhabitable attics with limited storage ^{b, g}	20
Habitable attics and attics served with fixed stairs	30 40
Balconies (exterior) and decks ^e	40
Fire escapes	40
Guards and handrails ^d	200 ^h
Guard in-fill components ^f	50 ^h
Passenger vehicle garages ^a	50 ^h
Rooms other than sleeping rooms	40
Sleeping rooms	30 40
Stairs	40 ^c

(3) **Section R311.7.8.4 Continuity** is amended by adding an exception #3 at the end to read as follows:

3. Handrails for stairways within a dwelling unit shall be permitted to be discontinuous between the top and bottom of a flight of stairs where the ends of the discontinued rail are returned to a wall or post and the maximum distance between the ends of discontinued rails is not greater than four inches (4”).

(4) **Section R311.7 Grip size** is amended by adding a new paragraph at the end of Section R311.7.8.5 to read as follows:

3. Handrail shapes complying with Figure 311.7 (1), (A) through (F), shall be approved as providing equivalent grasp ability meeting the requirements of this Section. Other shapes complying with this Section shall also permissible.



(5) **Section R313 Automatic Fire Sprinkler Systems** is amended by deleting R313.2 and R313.2.1.

~~R313.2 One and two family dwellings automatic fire sprinkler systems. An Automatic residential fire sprinkler system shall be installed in one and two family dwellings.~~

~~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.~~

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

(6) **Section R320 Accessibility** is amended by adding two new Sections R320.2 and R320.3 to read as follows:

R320.2 No-Step Entrance. At least one (1) model home dwelling unit in every model home complex, as defined in the City of Mesa Zoning Ordinance, shall have a no-step entrance to serve as a demonstration of the builder's method of providing a no-step entry as an option for new home construction. Model dwellings selected to demonstrate this option, and all dwelling units providing this option, shall be served by a route of travel meeting the following requirements:

1. A continuous no-step path connecting each subdivision sales office or public way to an entrance of the unit.
2. A route of travel that consists of a firm stable, and slip-resistant surface with a minimum continuous width of thirty-six inches (36") and a minimum clear height of seven feet (7') above the route.
3. The running slope of such route shall not exceed one to twelve (1:12).
4. A minimum forty-eight inches by forty-eight inches (48" X 48") maneuvering space on the exterior side of the door constructed with less than two percent (2%) slope in any direction.
5. A minimum thirty-two inch (32") clear-opening door with a threshold not exceeding one-half inch (½").
6. Identification by readily viewable signage.

R320.3 Model Home Sales Office Restrooms. If public restrooms are provided for residential development models, such restroom facilities shall be accessible and shall be provided by either of the following methods:

1. Converting one (1) ground-floor model home restroom into an ADA-accessible unisex facility; or
2. Providing one (1) ADA-accessible unisex portable toilet and hand-washing unit located on an accessible route. The accessible portable toilet facility shall be removed when the Sales Office is permanently closed.

(7) **Section R322 Flood Resistant Construction** is amended by revising R322.1 to read as follows:

R322.1 General. Buildings and structures constructed in whole or in part in flood hazard areas, including A or V Zones and Coastal A Zones, as establish in Table R301.2(1), and substantial improvements and repair of substantial damage of buildings and structures in

~~flood hazard areas, shall be designed and constructed in accordance with the provisions contained in this section. Buildings and structures that are located in more than one flood hazard area shall comply with the provisions associated with the most restrictive flood hazard area. Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE24.~~ Buildings, structures, appliances, equipment and system installations located in flood hazard areas shall comply with all Maricopa County Planning and Development Department regulations. No reference to flood hazard requirements in this chapter, or the technical codes, shall be construed as allowing installations in violation of Maricopa County Planning and Development Department regulations. Where conflicts exist between the requirements of this chapter and the Maricopa County Planning and Development Department regulations, the Maricopa County Planning and Development regulations shall govern.

(8) Adding two (2) new Sections; Section R328 Security Standards and Section R329 Fire Department Access and Water Supply.

Section R328 Security Standards.

R328.1 Requirements. All dwelling units shall conform to the following minimum-security requirements:

1. All main or front-entry doors shall be arranged so that the occupant has a view of the area immediately outside the door without opening the door. Such view may be provided by a door viewer having a field of view of not less than one hundred eighty (180) degrees or through windows.
2. All exterior swinging doors shall be of solid core, fiberglass or metal skin construction, including the nonglazed portion of exterior glass insert doors.
3. Open spaces between trimmers and wood exterior doorjamb shall be solid shimmed, extending not less than six inches (6") above and below the deadbolt strike plate. Deadbolt strike plates for exterior door locks shall be attached to wood jambs with not less than two (2) No. 8 by two-inch (2") screws or when attached to metal jambs, shall be attached with not less than two (2) No. 8 machine screws.
4. Exterior doors with hinge pins exposed on the outside shall use nonremovable pin hinges or standard pin hinges with the pins modified to prevent the removal of the door from the exterior.
5. All exterior sliding doors shall be constructed and installed so as to prohibit the raising, sliding or removal of the sliding section from the track while in the closed and locked position. The stationary section shall not be removable from the outside. Such sliding doors shall be provided with an auxiliary or additional locking device operable from the inside without the use of a key or special knowledge or effort.
6. All exterior swinging doors and doors from a dwelling to an attached garage shall be equipped with a deadbolt lock. Such deadbolt locks shall:
 - (a) Have a minimum one-inch (1") bolt throw and receiving strike-plate hole one-quarter inch (1/4") deeper than the projected bolt throw, and
 - (b) Have a wrench-resistant collar, and
 - (c) Have fasteners which thread into the cylinder body.
7. Deadbolt locks installed on the front or main-entry door shall be key operated from the exterior and operable from the inside without the use of a key.
8. Exterior windows shall be constructed and installed so as to prohibit raising, sliding, or removal of the moving section while in the closed and locked position. A passive window panel shall have weather-strip molding or glazing bead which is not easily removed from the outside to prevent removal of the window glass.
9. All garage doors not equipped with a power-operated mechanism shall be equipped with at least two (2) locking devices of the following types:

- (a) Throw bolt of flush bolt;
- (b) Cylinder-type lock;
- (c) Padlock and hasp;
- (d) Electrical-power-operated mechanism with automatic locking device;
- 10. All garage doors shall be capable of being unlocked and operable from inside the garage without the use of electrical power.
- 11. Access doors to attic space shall be located in the interior of the dwelling unit or within a secured enclosed room or garage, provided that if no interior location is available, a metal access door secured with a steel hasp and a heavy-duty lock may be located on the exterior.

Section R329 Fire Department Access and Water Supply.

R329.1 General. Buildings and structures shall have fire department access in accordance with the Mesa Fire Code Section 503 and fire protection water supplies in accordance with the Mesa Fire Code Section 508.

(D) **CHAPTER 4 FOUNDATIONS** is amended as follows:

(1) **Table 401.4.1** is amended as follows:

**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 <u>1,500^b</u>
Clay, Sandy Clay, Silty Clay, Clayey Silt, Silt and Sandy Silt (CL, ML, MH and CH)	1,500 ^b

For SI: 1 pound per square foot = 0.0479 kPa

- a. Where soil tests are required by Section R401.4, the allowable bearing capacities of the soil shall be part of the recommendations.
- b. Where the building official determines that in-place soils with an allowable bearing capacity of less than 1,500 psf are likely to be present at the site, the allowable bearing capacity shall be determined by a soils investigation.

(2) **Section R403 Footings** has been amended by adding an exception to read as follows:

R403.1 General. All exterior walls shall be supported on continuous solid or fully grouted masonry or concrete footings, crushed stone footings, wood foundations, or other approved structural systems which shall be of sufficient design to accommodate all loads according to Section R301 and to transmit the resulting loads to the soil within the limitations as determined

from the character of the soil. Footings shall be supported on undisturbed natural soils or engineered fill. Concrete footings shall be designed and constructed in accordance with the provisions of Section R403 or in accordance with ACI 332.

Exception:

Existing patio and carports, 400 square feet or less, that are enclosed and occupied as livable and/or non-livable areas are not required to provide a continuous exterior footing when the existing load bearing post and beam construction remains in place.

(E) CHAPTER 10 CHIMNEYS AND FIREPLACES is amended as follows:

- (1) **Section R1001 Masonry Fireplaces** is amended by adding a new subsection at the end of the section as follows:

R1001.13 Fireplace Restrictions. Refer to the Mesa Mechanical Code Section 930 for additional restrictions on masonry fireplaces.

- (2) **R1004 Factory-Built Fireplaces** is amended by adding a new subsection at the end of the section to read as follows:

R1004.6 Fireplace Restrictions. Refer to the Mesa Mechanical Code Section 930 for additional restrictions on masonry fireplaces.

(F) CHAPTER 11 ENERGY EFFICIENCY is amended as follows:

- (1) A new Section N1101.4.1 has been added at the end of Section N1101.

N1101.4.1 RESNET Testing and Inspection Protocol. The Residential Energy Services Network (RESNET) Mortgage Industry National Home Energy Rating System Standards Protocol for third party testing and inspections, shall be deemed to meet the requirements of sections R402.4.1.1, R402.4.1.2 and R403.2.2, and shall meet the following conditions:

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

5. Alternate testing and inspection programs and protocols shall be allowed when approved by the Code Official.

(2) **Section N1103.3 Ducts** has been amended to read as follows:

N1103.3 Ducts. Ducts and air handlers shall be installed in accordance with Sections R403.3.1 through R403.3.7. ~~N1102.3.1 through N1103.3.8.~~

N1103.3.1 Insulation (Prescriptive) the Exception has been amended to read as follows:

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

Exception:

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

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

(3) **Table N1106.4** is amended to read as follows:

Table N1106.4 (R406.4)	
MAXIMUM ENERGY RATING INDEX	
CLIMATE ZONE	ENERGY RATING INDEX ^a
1	57
2	57 64
3	57

4	62
5	61
6	61
7	58
8	58

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

(G) CHAPTER 24 FUEL GAS is amended as follows:

Section G2404.7 Flood hazard is amended by adding the following at the end of the section.

G2404.7 Flood hazard. For structures located in flood hazard areas, the appliance, equipment and system installations regulated by this code shall be located at or above the elevation required by Section R322 for utilities and attendant equipment. Buildings, structures, appliances, equipment and system installations located in flood hazard areas shall comply with the Maricopa County Planning and Development Regulations. No reference to flood hazard requirements in this Chapter or the technical codes shall be construed as allowing installations in violation of Maricopa County Planning and Development Regulations. Where conflicts exist between the requirements of this Chapter and the Maricopa County Planning and Development Regulations, the Maricopa County Planning and Development Regulations shall govern.

(H) CHAPTER 26 GENERAL PLUMBING REQUIREMENTS is amended as follows:

Section P2603 Structural and Piping Protection is amended by adding a new Subsection P2603.6 to read as follows:

P2603.6 Underground nonmetallic water piping. Underground nonmetallic water piping larger than two (2) inches in diameter shall be installed with insulated copper tracer wire or other approved conductor located adjacent to the piping. Access shall be provided to the tracer wire or the tracer wire shall terminate above ground at each end of the nonmetallic piping. The tracer wire size shall be not less than 18 AWG and the insulation type shall be suitable for direct burial.

(I) Chapter 29 Water Supply and Distribution

Section P2910 Nonpotable water systems is amended by adding a subsection P2910.4.1 to read as follows:

P2910.4.1 Conflicts. No reference to requirements for gray water recycling systems in this appendix or the technical codes shall be construed as allowing installations in violation of Arizona Department of Environmental Quality requirements. Where conflicts exist between the requirements of this appendix and the Arizona Department of Environmental Quality requirements, the Arizona Department of Environmental Quality requirements shall govern.

(J) Chapter 30 Sanitary Drainage

Section P3001 General is amended by adding a new Subsection P3001.4 to read as follows:

P3001.4 Tracer Wire. Underground nonmetallic sanitary drainage piping larger than two (2) inches in diameter shall be installed with insulated copper tracer wire or other approved conductor located adjacent to the piping. Access shall be provided to the tracer wire or the tracer wire shall terminate above ground at each end of the nonmetallic piping. The tracer wire size shall be not less than 18 AWG and the insulation type shall be suitable for direct burial.

(K) Chapter 36 Services

Section E3601.2 Number of services is amended to read as follows:

E3601.2 Number of services. One-family dwellings dwelling units shall be supplied by only one service. Two-family dwellings units shall be supplied by a single service or two separate services. When more than one service is installed, a permanent plaque or directory shall be installed at each service-equipment location denoting the other service on the structure and the area served by each service.

(L) Chapter 45 FIRE PROTECTION IS A NEW CHAPTER

FP4501.1 One and Two-Family Dwelling Sprinkler Options. All contractors of one and two-family dwellings shall provide an option for residential fire sprinklers. The contractor or their agent shall provide an informational packet containing educational materials approved by the Mesa Fire Department, including a form explaining the option for residential sprinklers, to all prospective buyers and shall obtain a signed receipt for the educational materials from the prospective buyer. Upon the request and execution of a purchase agreement by the homebuyer, the contractor shall install the residential fire sprinklers. Such fire sprinkler systems shall comply with the requirements of NFPA 13D.

(M) CHAPTER 44 REFERENCED STANDARDS is amended to read as follows:

NFPA 13 – ~~46~~ 19 Installation of Sprinkler Systems

NFPA 13D – ~~46~~ 19 Installation of Sprinkler Systems in One-and Two-Family Dwellings and Manufactured Homes

NFPA 13R – ~~46~~19 Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height

NFPA 72 – ~~46~~ 19 National Fire Alarm Code

NFPA 211 – ~~46~~ 19 Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances

SECTION 4-3-2. PENALTY CLAUSE: Any person, firm, or corporation who shall violate any of the provisions of this Chapter of the Mesa City Code as amended shall be subject to all penalties and provisions of Section 4-1-9.

PASSED AND ADOPTED by the City Council of the City of Mesa, Maricopa County,
Arizona, this 7th day of January, 2019.

APPROVED:

Mayor

ATTEST:

City Clerk