4-3-1: INTERNATIONAL RESIDENTIAL CODE ADOPTED (4244,4636,4790,5055)

4-3-2: PENALTY CLAUSE (4244,4636)

4-3-1: INTERNATIONAL RESIDENTIAL CODE ADOPTED: (4244,4636)
That certain document known as the International Residential Code, which has been published as a Code in book form by the International Code Council and entitled International Residential Code for One- and Two-Family Dwellings, 2006 Edition, together with the following appendix thereto: (4244,4636)

Appendix G
Swimming Pools, Spas, and Hot Tubs. Amended. (4244,4636)

Appendix H
Patio Covers. (4636)

Appendix O
Gray Water Recycling Systems. Amended. (4636)

Appendix Q

are hereby referred to, adopted, and made a part hereof as if fully set forth in this Section, with the following changes in and amendments to said Code: (4244,4636)

(A) Section R101.1 Title is amended to read as follows: (4244)

R101.1 Title. These regulations shall be known as the "Mesa Residential Code," may be cited as such, and will be referred to herein as "this Code." For administration of this Code, refer to Title 4, Chapter 1, the Mesa Administrative Code. (4244)

(B) Sections R101.2 through R114.2 inclusive are deleted in their entirety. (4244)

(C) Section R202 Definitions shall be amended by revising definitions and adding new definitions to read as follows: (4244,4636)

**DWELLING:** Any building that contains one or two dwelling units used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that are occupied for living purposes. See R-5 definition. (4636)

**DWELLING UNIT:** A single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation. See R-5 definition. (4636)
EMERGENCY ESCAPE AND RESCUE OPENING: An operable window, door, or similar device that provides for a means of escape that opens directly into a public street, public alley, yard, or court and provides access for rescue in the event of an emergency. (4244)

EXTERIOR WALL: An above-grade wall that defines the exterior boundaries of a building. Includes between-floor spandrels, peripheral edges of floors, roof and basement knee walls, dormer walls, gable end walls, walls enclosing a mansard roof, and basement walls with an average below-grade wall area that is less than fifty percent (50%) of the total opaque area of that enclosing side. (4244)

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. (4636)

TOWNHOUSE: A single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from foundation to roof and with open space on at least two sides. See R-5 definition.

(D) Section R301.2 Climatic and Geographic Design criteria is amended by replacing Table R301.2(1) with the completed table and adding two new footnotes as follows: (4244,4636)

(All footnotes to the original Table are to remain unchanged.) (4244)

K. 3S is the 3-second gust wind speed (m.p.h.) (4636)
L. fm is the fastest mile wind speed (m.p.h.) (4636)

<table>
<thead>
<tr>
<th>Ground Snow Load</th>
<th>Wind Speed (mph)</th>
<th>Seismic Design Category (g)</th>
<th>Subject to Damage From</th>
<th>Winter Design Temp (f)</th>
<th>Ice Shield Under-Layment Required (l)</th>
<th>Flood Hazards (h)</th>
<th>Air Freezing Index (j)</th>
<th>Mean Annual Temp (k)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>90.3S 76.fm</td>
<td>B</td>
<td>Negligible</td>
<td>12</td>
<td>None to Slight</td>
<td>+32°F</td>
<td>N/A</td>
<td>+71.2°F</td>
</tr>
</tbody>
</table>

(E) Section R301.5 Live Load is amended by revising Table R301.5 as follows: (4244)

Change live load for "Sleeping rooms" from thirty (30) psf to forty (40) psf, add "Habitable Attics," and show a live load of forty (40) psf for such attics. (4244)
(F) Table R302.1 Exterior Walls is amended to read as follows:

Table R302.1
Exterior Walls

<table>
<thead>
<tr>
<th>Exterior Wall Element</th>
<th>Minimum Fire-Resistance Rating</th>
<th>Minimum Fire Separation Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Walls</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Fire-Resistance Rated)</td>
<td>1 hour with exposure from both sides&lt;sup&gt;A&lt;/sup&gt;</td>
<td>0 feet</td>
</tr>
<tr>
<td>(Not Fire-Resistance Rated)</td>
<td>0 hours</td>
<td>5 feet</td>
</tr>
<tr>
<td><strong>Projections</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Fire-Resistance Rated)</td>
<td>1 hour on the underside&lt;sup&gt;A&lt;/sup&gt;</td>
<td>2 feet</td>
</tr>
<tr>
<td>(Not Fire-Resistance Rated)</td>
<td>0 hours</td>
<td>4 feet</td>
</tr>
<tr>
<td><strong>Openings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Allowed</td>
<td>N/A</td>
<td>&lt; 3 feet</td>
</tr>
<tr>
<td>25% Maximum of Wall Area</td>
<td>0 hours</td>
<td>3 feet</td>
</tr>
<tr>
<td>Unlimited</td>
<td>0 hours</td>
<td>5 feet</td>
</tr>
<tr>
<td><strong>Penetrations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>Comply with Section R317.3&lt;sup&gt;A&lt;/sup&gt;</td>
<td>&lt; 5 feet</td>
</tr>
</tbody>
</table>

<sup>A</sup> = Where the side-yard encroachments are in compliance with Title 11-13-2(E) 2, 3 & 4 and approved by the Building Safety Director, through the code modification process, the fire-resistance rating may be 0-hours when the apposing side-yard setback of the adjoining lot is in compliance with the setback requirements of Title 11 of the Mesa City Code. (4790)

(G) Section R309.1 Opening Protection is amended to read as follows: (4244,4636)

R309.1 Opening Protection. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than one and three-eighths inches (1-3/8”) (35 mm) in thickness, solid or honeycomb core steel doors not less than one and three-eighths inches (1-3/8”) (35 mm) thick, or twenty- (20-) minute fire-rated doors. Doors providing opening protection shall be self-closing and self-latching. (4244)

R309.1.1 Duct Penetration. Ducts in the garage and ducts penetrating the walls or ceilings separating the dwelling from the garage shall be constructed of a minimum No. 26 gauge (0.48 mm) sheet steel or other approved material and shall have no openings into the garage. (4244)

(H) Section R311.5 Stairways is amended by adding a new exception at the end of Section R311.5.6.2 to read as follows: (4244,4636)

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”). (4244)
(I) Section R311.5 Stairways is amended by adding a new paragraph at the end of Section R311.5.6.3 to read as follows: (4244,4636)

3. Handrail shapes complying with Figure 311.5(1), (A) through (F), shall be approved as providing equivalent graspability meeting the requirements of this Section. Other shapes complying with this Section shall also be permissible. (4244)

(J) Section R313.2.1 Alterations, Repairs and Additions is amended to read as follows:

R313.2.1 Alterations, Repairs, and Additions.
When alterations, repairs or additions associated with the living space that requires the issuance of a permit 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; the smoke alarms shall be interconnected and hard wired. (4636)

EXCEPTIONS:

1. Where the alteration or repair does not result in the removal of interior ceiling or wall finishes throughout the dwelling, battery operated smoke alarms installed according to Section 313.1, 313.2 and the manufacturers' specifications may be substituted for the hard wired and interconnected smoke alarms. (4636)

2. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding or the addition or replacement of windows or doors, the addition of a porch, deck, patio, carport to garage conversion, repair or replacement of mechanical systems, gas, sewer, and water piping, repair or replacement of appliances, electrical service upgrades, addition of a detached accessory structure or similar type work, are exempt from the requirements of this section. (4636)

(K) Section R317.2.4 Structural Independence is amended to read as follows:

R317.2.4 Structural Independence. Each individual townhouse shall be structurally independent. (4636)

EXCEPTIONS:

1. Foundations supporting exterior walls or common walls. (4636)

2. Structural roof and wall sheathing from each unit may fasten to the common wall framing. (4636)

3. Nonstructural wall coverings. (4636)

4. Flashing at termination of roof covering over common wall. (4636)

5. Townhouses separated by common 2-hour fire-resistive-rated wall as provided in Section R317.2. (4636)

6. Post tensioned slabs and foundations. (4636)

(L) Section R320.1 Subterranean Termite Control is amended to read as follows: (4244,4636)

R320.1 Subterranean Termite Control. In all areas, protection shall be by chemical soil treatment, pressure-preservation-treated wood in accordance with the AWPA Standards listed in Section R319.1, naturally termite-resistant wood, or physical barriers (such as metal or plastic termite shields), or any combination of these methods. (4244)

R320.1.1 Quality Marks. Lumber and plywood required to be pressure preservatively treated in accordance with Section R320 shall bear the quality mark of an approved inspection agency which maintains continuing supervision, testing, and inspection over the quality of the product and which has been approved by an accreditation body which complies with the requirements of the American Lumber Standard Committee treated wood program. (4244)
Section R322 Accessibility is amended by deleting Section R322.1 Scope entirely and inserting a new Section R322.1 No-Step Entrance to read as follows: (4244,4636)

R322.1 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 as follows 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: (4244)

1. A continuous no-step path connecting each subdivision sales office or public way to an entrance of the unit. (4244)

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. (4244)

3. The running slope of such route shall not exceed one to twelve (1:12). (4244)

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. (4244)

5. A minimum thirty-two-inch (32") clear-opening door with a threshold not exceeding one-half inch (1/2"). (4244)

6. Identification by readily viewable signage. (4244)

Section R322 Accessibility is amended by adding a new subparagraph R322.2 Model Home Sales Office Restrooms at the end of the section to read as follows: (4244,4636)

R322.2 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: (4244)

1. Converting one (1) ground-floor model home restroom into an ADA-accessible unisex facility; or (4244)

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. (4244,4636)

Section R324 Flood-Resistant Construction, is amended by revising R324.1 to read as follows:

R324. General. 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 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. (4636)

The remainder of R324 is not amended. (4636)
Chapter 3, Building Planning is amended by adding a new Section R325 (Security Standards) at the end of the chapter to read as follows: (4244,4636)

Section R325 Security Standards. (4244,4636)

R325.1 Requirements. All dwelling units shall conform to the following minimum security requirements: (4244,4636)

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. (4244)

2. All exterior swinging doors shall be of solid core or metal skin construction, including the nonglazed portion of exterior glass insert doors. (4244)

3. Open spaces between trimmers and wood exterior doorjambs 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. (4244)

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. (4244)

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. (4244)

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: (4244)

   (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 (4244)

   (b) Have a wrench-resistant collar, and (4244)

   (c) Have fasteners which thread into the cylinder body. (4244)

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. (4244)

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. (4244)
7. All garage doors not equipped with a power-operated mechanism shall be equipped with at least two (2) locking devices of the following types: (4244)

(a) Throw bolt or flush bolt; (4244)

(b) Cylinder-type lock; (4244)

(c) Padlock and hasp; (4244)

(d) Electrical-power-operated mechanism with automatic locking device. (4244)

(e) All garage doors shall be capable of being unlocked and operable from inside the garage without the use of electrical power. (4244)

(f) 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. (4244)

R325.2. The requirements of this Section are not intended to prevent the use of any device, hardware, or method of construction not specifically prescribed when such alternate device, hardware, or method of construction provides equivalent security, subject to the approval of the Building Safety Director. (4244,4636)

R325.3. The requirements of this Section are not intended to prevent egress, and devices shall not be installed in a manner to prevent proper egress through doors or bedroom windows as required. (4244,4636)

(Q) Chapter 3 Building Planning is amended by adding a new Section R326 Fire Department access and water supply at the end of the section to read as follows:

R326 Fire Department Access and Water Supply. (4636)

R326.1 General. Buildings and structures shall have Fire Department access roads according to the Mesa Fire Code Section 503 and fire protection water supplies according to the Mesa Fire Code Section 508. (4636)

(R) Section R403.1 General is amended to read as follows:

R403.1 General. All exterior walls shall be supported on continuous solid or fully grouted masonry or concrete 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. (4636)

EXCEPTION: Patio and carport enclosures, livable or non-livable, are not required to provide a continuous exterior footing. Existing load bearing post and beam construction shall remain in place. (4636)
(S) Section R404.1.6 Height Above Finished Grade is amended to read as follows:

R404.1.6 Height Above Finished Grade. Concrete and masonry foundation walls shall extend above the finished grade adjacent to the foundation at all points a minimum of four (4) inches (102 mm) where masonry veneer is used and minimum of six (6) inches (152 mm) elsewhere. (4636)

EXCEPTION: Patio and carport enclosures, livable or non-livable, shall extend above the finished grade adjacent to the patio or carport slab turn down a minimum of three (3) inches (76 mm) per Section R403.1 amended. (4636)

(T) Section R401.4 Soil Tests is amended by adding a new subparagraph to read as follows: (4244,4636)

R401.4.2 Compressible or Shifting Soil. In lieu of a complete geotechnical evaluation, when top or subsoils are compressible or shifting, such soils shall be removed to a depth and width sufficient to assure stable moisture content in each active zone and shall not be used as fill nor stabilized within each active zone by chemical, dewatering, or presaturation. (4244)

(U) Table R401.4.1 is amended to read as follows:

TABLE R401.4.1
PRESUMPTIVE LOAD-BEARING VALUES OF FOUNDATION MATERIALS^A

<table>
<thead>
<tr>
<th>Class of Material</th>
<th>Load-Bearing Pressure (Pounds Per Square Foot)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline Bedrock</td>
<td>12,000</td>
</tr>
<tr>
<td>Sedimentary and Foliated Rock</td>
<td>4,000</td>
</tr>
<tr>
<td>Sandy Gravel and / or Gravel (GW and GP)</td>
<td>3,000</td>
</tr>
<tr>
<td>Sand, Silty Sand, Clayey Sand, Silty Gravel and Clayey Gravel (SW, SP, SM, SC, GM and GC)</td>
<td>2,000^B</td>
</tr>
<tr>
<td>Clay, Sandy Clay, Silty Clay, Clayey Silt, Silt and Sandy Silt (CL, ML, MH and CH)</td>
<td>1,500^B</td>
</tr>
</tbody>
</table>

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 PSF are likely to be present at the site, the allowable bearing capacity shall be determined by a soils investigation.

(V) Section R401.5 Compressible or Shifting Soil is deleted in its entirety. (4244,4636)
Section R609 Grounded Masonry is amended by adding a new Subsection R609.5 Unburned Clay Masonry at the end to read as follows: (4244,4636)

R609.5.1 General. The use of un-reinforced masonry consisting of unburned clay units (adobe) shall be limited to buildings of Group R, Division 3 and Group U occupancies of no more than one (1) story in height, unless design and structural calculations are submitted by a registered architect or engineer and approved by the Building Safety Director. (4244)

R609.5.2 Bolts. Bolt values shall not exceed those set forth in Table 609.5.1. (4244)

<table>
<thead>
<tr>
<th>DIAMETER OF BOLTS (Inches)</th>
<th>EMBEDMENTS (Inches) x 25.4 for mm</th>
<th>SHEAR (Pounds) x 4.45 for N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5/8</td>
<td>12</td>
<td>200</td>
</tr>
<tr>
<td>3/4</td>
<td>15</td>
<td>300</td>
</tr>
<tr>
<td>7/8</td>
<td>18</td>
<td>400</td>
</tr>
<tr>
<td>1</td>
<td>21</td>
<td>500</td>
</tr>
<tr>
<td>1 - 1/8</td>
<td>24</td>
<td>600</td>
</tr>
</tbody>
</table>

R609.5.3 Walls. The height of every laterally unsupported wall on unburned clay units shall not be more than ten (10) times the thickness of such walls. Exterior walls, which are laterally supported with those supports located no more than twenty-four feet (24') apart, are allowed a minimum thickness of sixteen inches (16"). Interior walls are allowed a minimum thickness of twelve inches (12"). Designed walls may be a minimum thickness of ten inches (10") provided the h/t ratio of ten (10) is maintained. (4244)

R609.5.4 Compressible Strength. The unit(s) shall have an average compressive strength of three hundred (300) pounds per square inch when tested in accordance with ASTM C67. One (1) sample out of five (5) may have a compressive strength of not less than two hundred fifty (250) pounds per square inch. (4244)

R609.5.5 Modulus of Rupture. The unit shall average fifty (50) pounds per square inch in modulus of rupture when tested according to the following procedure: (4244)

1. A cured unit shall be laid over cylindrical supports two inches (2") in diameter, two inches (2") from each end, and extending across the full width of the unit. (4244)

2. A cylinder two inches (2") in diameter shall be laid midway between and parallel to the supports. (4244)
3. Load shall be applied to the cylinder at the rate of five hundred (500) pounds per minute until rupture occurs. (4244)

4. The modulus of rupture is equal to:

\[
\frac{3WL}{1Bd^2}
\]

\( W = \) Load of rupture in pounds  
\( L = \) Distance between supports in inches  
\( B = \) Width of brick in inches  
\( d = \) Thickness of brick in inches  

(4244)

R609.5.6 Soil. The soil used shall contain not less than twenty-five percent (25%) and not more than forty-five percent (45%) of material passing a No. 200 mesh sieve. The soil shall contain sufficient clay to bind the particles together and shall not contain more than two-tenths of one percent (0.2%) of water soluble salts. (4244)

R609.5.7 Classes of Adobe. (4244)

R609.5.7.1 Treated Adobes. The term "treated" shall mean adobes made of soil to which certain admixtures are added in the manufacturing process in order to limit the adobe's water absorption in order for it to comply with paragraph R609.5.11 as follows. Exterior walls constructed of treated adobe require no additional protection. Stucco is not required. (4244)

R609.5.7.2 Untreated Adobes. Untreated adobes are adobes that do not meet the water absorption specifications of paragraph R609.5.11 below. This shall hold even if some water absorption protective agent has been added. The determination as to whether an adobe is treated or untreated is to test for compliance with paragraph R609.5.11 below. Exterior walls of untreated adobe are allowed but must comply with paragraph R609.5.16 requiring Portland cement plaster applied to the outside. Use of untreated adobes is prohibited within four inches (4") above the finished floor grade unless an approved vapor barrier is used between wall and stem. Treated adobes may be used for the first four inches (4") above finished floor grade without a vapor barrier. (4244)

R609.5.7.3 Other Types of Adobe. This Section applies to construction with all types of adobe including rammed earth and poured earth adobe. The types of adobe shall meet the specifications in this Section or similar specifications which are approved by the Building Safety Director. (4244)

R609.5.8 Mortar. Where treated adobe is required, mortar shall be treated or may be Type M or S. Where adobes are allowed to be untreated, any adobe mortar may be used and/or Type M, S, or N. Mortar "bedding" joints shall be full-slush type, with partially open "head" joints allowable if surface is to be plastered. All joints shall be bonded (overlapped) a minimum of four inches (4"). (4244)

R609.5.9 Sampling. Each of the tests prescribed in this Section shall be applied to five (5) sample units selected at random from each five thousand (5,000) bricks to be used. (4244)
R609.5.10 Moisture Content. The moisture content of the unit shall not be more than four percent (4%) by weight. (4244)

R609.5.11 Absorption. A dried four-inch (4") cube cut from a sample unit shall absorb not more than two and one-half percent (2-1/2%) moisture by weight when placed upon a constantly water-saturated porous surface for seven (7) days. (4244)

R609.5.12 Shrinkage Cracks. No units shall contain more than three (3) shrinkage cracks, and no shrinkage crack shall exceed two inches (2") in length or one-eighth inch (1/8") in width. (4244)

R609.5.13 Use. No adobe shall be laid in the wall until it has properly dried, which in no event shall be sooner than three (3) weeks after the adobe was made. (4244)

R609.5.14 Foundations. Adobes shall not be used for foundation or basement walls. All adobe walls, except as noted under Group M buildings, shall have a continuous concrete footing at least eight inches (8") thick and not less than two inches (2") wider on each side than the foundation stem walls above. All foundation walls that support adobe units shall extend to an elevation not less than eight inches (8") above the finished grade. Foundation walls shall be at least as thick as the exterior wall as specified in R404.1.5.1. Where stem wall insulation is used, a variance is allowed for the stem wall width to be two inches (2") smaller than the width of the adobe wall it supports. (4244)

R609.5.15 Bond Beams. All exterior adobe walls shall have a continuous concrete bond beam with a minimum width of ten inches (10") and a minimum depth of ten inches (10"). All concrete bond beams shall be reinforced with a minimum of two (2) No. 4 reinforcing rods. (4244)

R609.5.16 Plastering. All untreated adobe shall have all exterior walls plastered on the outside with Portland cement plaster, minimum thickness of three-fourths inches (3/4") in accordance with R703.6. Protective coatings other than plaster are allowed, provided such coating is equivalent to Portland cement in protecting the untreated adobes against deterioration and/or loss of strength due to water. Metal wire mesh minimum twenty- (20-) gauge by one-inch (1") opening shall be securely attached to the exterior adobe wall surface by nails or staples with penetration of one and one-half inches (1-1/2"). Such mesh fasteners shall have a minimum spacing of sixteen inches (16") from each other. All exposed wood surfaces in adobe walls shall be treated with an approved wood preservative before the application of wire mesh. (4244)

R609.5.17 Piers. A minimum twenty-eight-inch (28") wall section shall be required between openings and openings shall not be placed within twenty-eight inches (28") of exterior corners. (4244)

R609.5.18 Partitions of Wood. Partitions of wood shall be constructed as specified in Chapter 6. Wood partitions shall be nailed to nailing blocks laid up in the adobe wall or bolted through the adobe wall the height of the partition, with one-half-inch (1/2")-diameter bolts at twenty-four inches (24") on center with large washers or plates, or other approved methods. (4244)

R609.5.19 Wood Lintels. Wood lintels designed to support all imposed loads are permitted up to a maximum span of six feet (6') and shall have a minimum twelve-inch (12") bearing. (4244)
Section R703.6.2.1 Weep Screeds is amended to read as follows:

R703.6.2.1 Weep Screeds. A minimum 0.019-inch (0.5 mm) (No. 26 galvanized sheet gage), corrosion-resistant weep screed or plastic weep screed, with a minimum vertical attachment flange of 3-1/2 inches (89 mm) shall be provided at or below the foundation plate line on exterior stud walls in accordance with ASTM C 926. The weep screed shall be placed a minimum of 4 inches (102 mm) above the earth or 2 inches (51 mm) above paved areas and shall be of a type that will allow trapped water to drain to the exterior of the building. The weather-resistant barrier shall lap the attachment flange. The exterior lath shall cover and terminate on the attachment flange of the weep screed. (4636)

EXCEPTION: At no-step entries to a residence a weep screed may be installed over an approved drain channel. The drain channel shall drain to an approved area. (4636)

Section R903.4 Roof Drainage is amended by replacing Section 903.4.1 entirely to read as follows:

R903.4.1 Overflow Drains and Scuppers. Where roof drains are required, overflow drains having the same size as the roof drains shall be installed with the inlet flow line located two inches (2") (51 mm) above the low point of the roof, or overflow scuppers having three (3) times the size of the roof drains and having minimum opening of four inches (4") (102 mm) shall be installed in the adjacent parapet walls with the inlet flow located two inches (2") (51 mm) above the low point of the roof served. The installation and sizing of overflow drains, leaders, and conductors shall comply with the Mesa Plumbing Code. (4244)

Overflow drains shall discharge to an approved location and shall not be connected to the roof drain lines. (4244)

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 927 for additional restrictions on masonry fireplaces. (4636)

Section R1004.3 Decorative Shrouds is amended to read as follows:

R1004.3 Decorative Shrouds. Decorative shrouds shall not be installed at the termination of chimneys for factory-built fireplaces except where the shrouds are listed and labeled for use with the specific factory-built fireplace system and installed in accordance with the manufacturer's installation instructions. (4636)

EXCEPTION: Decorative shrouds built completely of non-combustible material, complying with the specific factory-built fireplace system clearances and approved by the Director of Building Safety. (4636)

Section R1004 Factory-Built Fireplaces is amended by adding a new paragraph at the end of the section to read as follows: (4244,4636)

R1004.5 Fireplace Restrictions. Refer to the Mesa Mechanical Code Section 927 for additional restrictions on masonry fireplaces. (4244,4636)
Section R1005.2 Decorative Shrouds is amended to read as follows:

R1005.2 Decorative Shrouds. Decorative shrouds shall not be installed at the termination of factory-built chimneys except where the shrouds are listed and labeled for use with the specific factory-built chimney system and installed in accordance with the manufacturer's installation instructions. (4636)

EXCEPTION: Decorative shrouds built completely of non-combustible material, complying with the specific factory-built fireplace system clearances and approved by the Building Official. (4636)

Chapter 11 - Energy Efficiency is hereby adopted in its entirety. (4244, 4636, 5055)

Section N1103.2 Insulation is amended by adding new exceptions: (5055)

Exceptions:

Supply and return ducts may be insulated to a minimum of R-6 when one or more of the following conditions is met: (5055)

1. Minimum SEER rating of space heating/cooling system is 14. (5055)
2. Maximum U-factor is 0.60 and maximum SHGC is 0.27 for all fenestration products. (5055)
3. Wall insulation minimum R-value is R-19. (5055)

Section N1103 systems is amended by adding a new section 1103.7 at the end to read as follows: (5055)

N1103.7 Equipment Efficiency. Space heating, space cooling, and hot water heating systems shall meet the prevailing federal minimum standards for efficiency rating. (5055)

Section M1307 Appliance Installation is amended by adding a new Section M1307.6 at the end to read as follows: (4244, 4636, 5055)

M1307.6 Liquefied Petroleum Appliances. LPG appliances shall not be installed in attics, pits, or other locations that may cause ponding or retention of gas. (4244)

Section 1401.3 sizing is amended by adding manual “S” to the calculation methodologies. (5055)

Section G2401.1 Application is amended by revising the Exception to read as follows: (4244, 4636, 5055)

EXCEPTION: As an alternative to the provisions of this Code, fuel-gas piping systems, fuel-gas utilization equipment, and related accessories in existing buildings that are undergoing repairs, alterations, changes in occupancy, or construction of additions shall be permitted to comply with the provisions of the Mesa Existing Building Code. (4244)
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.

Section G2406.2 is amended by adding a new subparagraph G2406.2.1 at the end to read as follows:

G2406.2.1 Liquefied Petroleum Appliances. LPG appliances shall not be installed in attics, pits, or other locations that may cause ponding or retention of gas.

Section P2603 Structural and Piping Protection is amended by adding a new Subsection P2603.7 to read as follows:

P2603.7 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.

Section P2803.6.1 Requirements of Discharge Pipe is amended by changing the wording, "...not more than six inches (6") (152 mm) above the floor." to read "...a minimum of six inches (6") (152 mm) but not more than twenty-four inches (24") (610 mm) above the floor or grade."

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

P3001.4 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.

Section E3305.3 Clearance Over Panel Boards shall be amended to read as follows:

A dedicated space directly over a panelboard that extends from the panelboard to the ceiling or to a height of 6 feet (1829 mm) above the panelboard, whichever is lower, and has a width and depth equal to the equipment shall be dedicated and kept clear of equipment unrelated to the electrical equipment. Piping, ducts or equipment unrelated to the electrical equipment shall not be installed in such dedicated space. The area above the dedicated space shall be permitted to contain foreign systems, provided that protection is installed to avoid damage to the electrical equipment from condensation, leaks and breaks in such foreign systems.
(PP) Section E3305.6 Illumination is deleted in its entirety. (4636, 5055)

(QQ) Section 3501.2 Number of services is amended to read as follows: (5055)

One-family dwellings shall be supplied by only one service. Two-family dwellings 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. (4636)

(RR) Section E3603.4 Bathroom Branch Circuits is amended to read as follows: (5055)

E3603.4 bathroom branch circuits. A minimum of one 20-ampere branch circuit shall be provided to supply bathroom receptacle outlet(s). Such circuits shall have no other outlets. (4636)

A 20-ampere branch circuit supplying the receptacles in more than one bathroom may supply the undercounter receptacle required by section E3801.12. (4636)

(SS) Section E3801 Receptacle Outlets is amended by adding a new section at the end to read as follows: (5055)

E3801.12 Water Conservation Receptacle. At least one receptacle outlet shall be installed undercounter at the sink or lavatory most remote from the water heater or adjacent to the water heater, within 2 (two) feet of the inlet/outlet piping. (4636)

(TT) Section E3802.1 Bathroom Receptacles is amended to read as follows: (5055)

All 125-volt, single-phase, 15- and 20-ampere receptacles installed in bathrooms shall have ground-fault circuit-interrupter protection for personnel. (4636)

EXCEPTION: Receptacle installed to comply with E3801.12 (4636)

(UU) Section E3802.12 Arc-fault Protection of Bedroom Outlets is amended to read as follows: (5055)

E3802.12 arc-fault protection of bedroom outlets. All branch circuits that supply 120-volt, single-phase, 15 and 20 ampere outlets installed in dwelling unit bedrooms shall be protected by an arc-fault circuit interrupter used to provide protection of the entire branch circuit. (4636)

EXCEPTION: Smoke detector outlets. (4636)

(VV) Section E3807.8 Cables shall be amended to read as follows: (5055)

E3807.8 Cables. Where cables are used, each cable shall be secured to the cabinet, panelboard, cutout box, or meter socket enclosure. (4636)
EXCEPTION:

1. Cables with entirely nonmetallic sheaths shall be permitted to enter the top of a surface-mounted enclosure through one or more sections of rigid raceway not less than 18 inches (457 mm) nor more than 10 feet (3048 mm) in length, provided all the following conditions are met:

1.1 Each cable is fastened within 12 inches (305 mm), measured along the sheath, of the outer end of the raceway. (4636)

1.2 The raceway extends directly above the enclosure and does not penetrate a structural ceiling. (4636)

1.3 A fitting is provided on each end of the raceway to protect the cable(s) from abrasion and the fittings remain accessible after installation. (4636)

1.4 The raceway is sealed or plugged at the outer end using approved means so as to prevent access to the enclosure through the raceway. (4636)

1.5 The cable sheath is continuous through the raceway and extends into the enclosure beyond the fitting not less than 1/4 inch (6.4 mm). (4636)

1.6 The raceway is fastened at its outer end and at other points in accordance with section E3702.1. The applicable article. (4636)

1.7 The allowable cable fill shall not exceed that permitted by table E3807.8. A multiconductor cable having two or more conductors shall be treated as a single conductor for calculating the percentage of conduit fill area. For cables that have elliptical cross sections, the cross-sectional area calculation shall be based on the major diameter of the ellipse as a circle diameter. (4636)

2. Cables with entirely nonmetallic sheaths shall be permitted to enter the rear of a surface mounted enclosure provided all of the following are met:

2.1 Each cable is fastened within 8 inches, measured along the sheath, of the entrance of the enclosure with a bending radius of greater than five times the diameter of the cable. (4636)

2.2 Penetrations through combustible materials at the rear of the enclosure shall consist of a fitting, such as a PVC male adapter, that shall extend through the exterior wall membrane. (4636)

2.3 The cable sheath shall extend a minimum of ¼ inch (6.4 mm) into the enclosure. (4636)

2.4 Cable fill shall not exceed 60% percent of the opening(s). Where fill exceeds 60% percent additional openings shall be used. (4636)

2.5 Openings shall not be filled with any material to prevent the dissipation of heat through the opening(s). (4636)
Table E4001.3 Flexible Cord Length is amended to read as follows: (5055)

**TABLE E4001.3**

**FLEXIBLE CORD LENGTH**

<table>
<thead>
<tr>
<th>APPLIANCE</th>
<th>MINIMUM CORD LENGTH (INCHES)</th>
<th>MAXIMUM CORD LENGTH (INCHES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITCHEN WASTE DISPOSAL</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>BUILT-IN DISHWASHER</td>
<td>36</td>
<td>48</td>
</tr>
<tr>
<td>TRASH COMPACTOR</td>
<td>36</td>
<td>48</td>
</tr>
<tr>
<td>RANGE HOODS</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>PUMP PER E3801.12</td>
<td>18</td>
<td>48</td>
</tr>
</tbody>
</table>

(4636)

Chapter 43 Referenced Standards are amended as follows: (5055)

AAMA, WDMA, CSA: Replace 101/I.S.2/A440-05 with 101/I.S.2/A440-08, 450-00 with 450-06, and 506-00 with 506-06 and add 711-07 (5055)

ACCA: Add manual S-04, residential equipment selection (5055)

ICC: IECC reference is replaced with IECC-09 (5055)

UL: 727-98 is replaced with 727-06, 1995-98 is replaced with 1995-05 and add 731-95 (5055)

Add a new Chapter 44 Fire Protection to read as follows: (5055)
CHAPTER 44

FIRE PROTECTION

FP4401.1 General.

FP4401.2 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. (4636)

(ZZ) Section E4101.2 Definitions. Definitions are amended by revising the following definitions: (4244, 4579, 4636, 5055)

PERMANENTLY INSTALLED SWIMMING AND WADING POOLS: Those that are constructed in the ground or partially in the ground, and all others capable of holding water to a depth greater than eighteen inches (18") (430 mm), and all pools installed inside of a building regardless of water depth, whether or not served by electrical circuits of any nature. (4244)

STORABLE SWIMMING OR WADING POOL: Those that are constructed on or above the ground, are portable or temporary, and are capable of holding water with a maximum depth greater than twenty-four inches (24") (610 mm), or a pool constructed of nonmetallic, molded polymeric or fabric walls regardless of dimension. (4244)

(DDD) Section AG102.1 General is amended by amending the definition of swimming pool to read as follows: (4244, 4579, 4636, 5055)

SWIMMING POOL: Any structure intended for swimming, or recreational bathing, or wading that contains water over eighteen inches (18") (430 mm). This includes in-ground, aboveground, and on-ground pools, hot tubs, or spas, fountains, and fixed-in-place wading pools. (4244)

(BBB) Section AG105.2 Outdoor Swimming Pool is amended by amending subparagraph AG105.2.1 to read as follows: (4244, 4579, 4636, 5055)

1. The top of the barrier shall be at least five feet (5') (1,525 mm) above grade measured on the side of the barrier that faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be two inches (2") (51 mm) measured on the side of the barrier that faces away from the swimming pool. 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 the 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 four inches (4") (102 mm). (4244)
Section AG105.2 Outdoor Swimming Pool is amended by amending paragraph AG 105.2.9 to read as follows: (4579, 4636, 5055)

9. Where a wall of a dwelling serves as part of the barrier, one of the following conditions shall be met: (4579)

9.1 The pool shall be equipped with a powered safety cover in compliance with ASTM F1346; or (4579)

9.2 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 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 after the door and/or its screen, if present, are opened and be capable of being heard throughout the house during normal household 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. The alarm shall be installed in accordance with manufacturer's installation instructions which shall be submitted to the Building Safety Director for approval prior to installation; (4579)

9.3 Other means of protection, such as self-closing doors with self-latching devices, approved by the Building Safety Director, shall be acceptable so long as the degree of protection afforded is not less than the protection afforded by Subsection 1 or 2 above. Doors from garages shall be self-closing with self-latching devices. (4579)

(DDD) Section AG105 Barrier Requirements is amended by adding a new section at the end to read as follows: (4244, 4579, 4636, 5055)

AG105.6 Fountains. Outdoor fountains shall comply with the requirements of this Section. (4244)

(EEE) Section AG105 Barrier Requirements is amended by adding a new section at the end to read as follows: (4244, 4579, 4636, 5055)

AG105.7 Exceptions to Enclosure Requirements. The Building Safety Director may grant exceptions to the requirements of Section AG105 above based on an application and a determination that the proposed alternative is at least as safe as the Code requirements. The determination of the Building Safety Director may be appealed to the Building Board of Appeals. (4244)
(FFF) Section AG105 Barrier Requirements is amended by adding a new section at the end to read as follows: (4244, 4579, 4636, 5055)

AG105.8 Retroactivity. The enclosure requirements contained in this Section shall apply to existing conditions in accordance with the following: (4244)

AG105.8 Retroactivity.

AG105.8.1(A). An existing swimming pool or other body of water lawfully constructed prior to April 20, 1998, but which does not conform to these regulations, shall become subject to these regulations as a result of any alteration, addition, or expansion of a dwelling unit or guest room having access to such pool, that increases the livable floor area, and contains door openings providing direct access to the pool area. (4244)

AG105.8.2(B). The enclosure requirements specified in Section AG105 of this Section shall not apply to any existing subdivision perimeter fence, golf-course-view fence, or similar boundary fence lawfully constructed prior to April 20, 1998, in accordance with an approved Planned Area Development (PAD), or Development Master Plan (DMP). (4244)

(GGG) Section AG105 Barrier Requirements is amended by adding a new section at the end to read as follows: (4244, 4579, 4636, 5055)

AG105.9 Abatement of Public Nuisance. Failure to maintain a completely enclosed, fenced, or walled swimming pool or other contained body of water with a protective enclosure as specified in this Section adequate to prevent unauthorized ingress, and/or operational self-closing, self-latching gates, shall be deemed a nuisance and dangerous to the public health, safety, and welfare. The owner, owners, manager, tenant, and lessees shall jointly and severally be responsible to abate said nuisance. (4244)

(HHH) Section AO101.3 Permits is amended to read as follows: (5055)

AO101.3 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. (4636)

(III) A new Appendix R Unconventional Construction Methods is added at the end to read as follows: (5055)
Appendix R
Unconventional Construction Methods

Section R101
General

R101.1 General. Rammed earth, straw bales and sod used as building materials shall be considered to be acceptable alternative methods under the Mesa Residential Code where designed and constructed in compliance with the New Mexico State Building Code. (4790)

4-3-2: PENALTY CLAUSE: (4244,4636)
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. (4244,4636)