



GILA COUNTY COMMUNITY DEVELOPMENT

STAFF REPORT

Dated May 21, 2014

SIGNIFICANT CHANGES IN THE BUILDING CODES

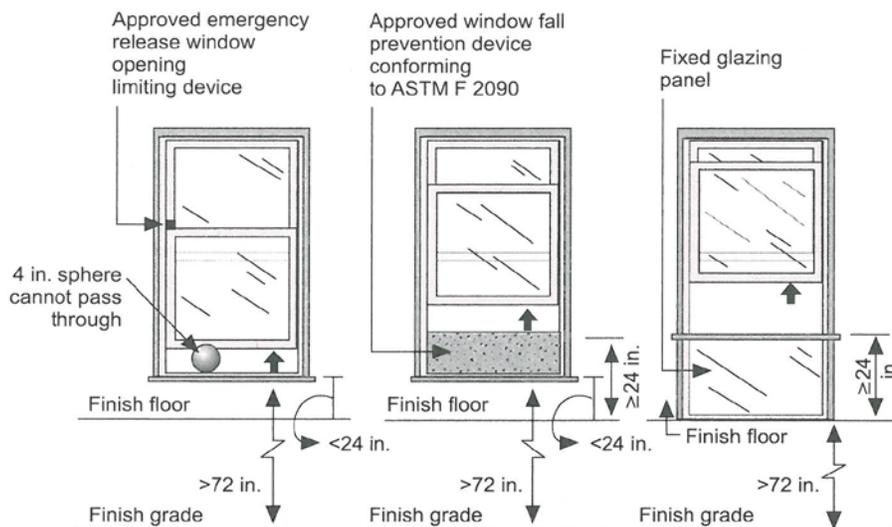
Summarizing some of the differences between the existing building codes and the proposed codes.



2003 to 2012 International Residential Code

(Estimated costs for material (not labor) where provided are for an average 2,200 square foot single family residence)

R 312.2 Window fall protection: In dwelling units, if any part of the clear opening area of an operable window is located more than 72 inches above the finished floor grade, code requires that the lowest part of the clear opening be at least 24 inches above the floor surface of the room in which it is located. An alternative allowed by code when window openings are less than 24 inches above the floor surface is to install a barrier or limit the dimensions of the window opening so that a 4 inch sphere cannot pass through. *The intent of this provision is to prevent small children from falling out open windows.*



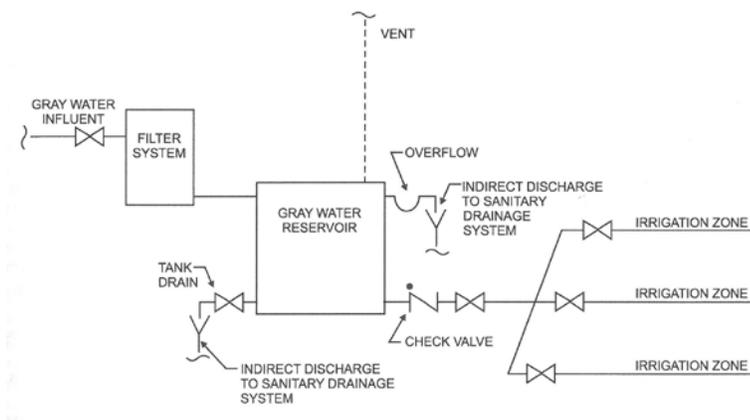
R315.1 Carbon monoxide alarms: For new or existing dwellings where work requiring a permit is required, a carbon monoxide alarm shall be installed outside of each sleeping area in the immediate vicinity of the bedrooms when fuel-fired appliances are installed and when dwelling units have attached garages.

Since it is impossible to see, taste or smell the toxic fumes, carbon monoxide can kill occupants before they are aware it is in their homes. *The carbon monoxide alarm has been proven as an effective early warning device. Fuel-fired appliances and automobiles parked in attached garages are two sources of carbon monoxide most commonly found in a dwelling. Estimated material cost is \$20.00 for a battery model and \$40.00 for a direct wired model.*

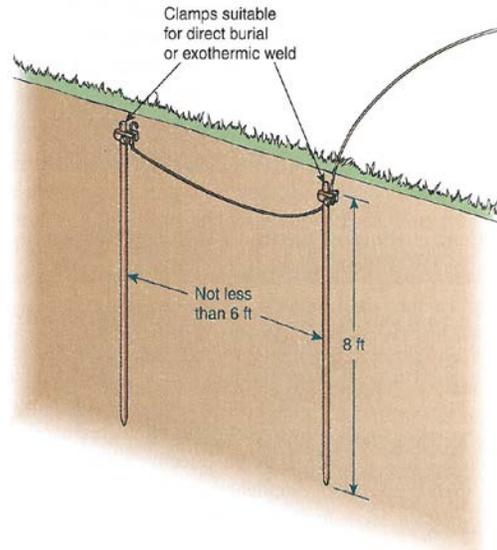


P2503.5. DWV systems testing & P2503.7 Water-supply system testing: Drain, waist, vent, and water-supply piping systems consisting of plastic piping can no longer be tested for leakage using air pressure. *Serious injuries have resulted from plastic piping exploding after being pressurized with air. This change can also be found in the 2012 International Plumbing Code.*

P3009 Gray Water Recycling Systems: This section allows gray water to be collected and stored for the purposes of flushing of water closets and for subsurface irrigation of landscaping. Above ground irrigation is still governed by ADEQ rules and not the building code. *Previously the code did not recognize gray water systems.*



E3608.4 Supplemental electrode required: Two ground rods a minimum of 6 feet apart are required unless a resistance to earth of 25 ohms or less can be measured. *Previously one ground rod was allowed if testing proved the required resistance was achieved. Now resistance testing is optional. This change can also be found in the 2011 National Electrical Code. Estimated material cost is \$25.00.*



E3902.12 Arc-fault circuit-interrupter (AFCI) protection: All 15 and 20 amp rated circuits supplying outlets in a dwelling must be arc-fault protected unless they are GFCI protected. This code requirement also applies to branch circuit wiring that is modified, replaced, or extended in existing dwellings. *Arc-fault protection devices have proven effective in detecting electrical arcing between conductors and disconnecting the circuit from the electrical supply prior to the start of a fire. Arc-fault protection of the circuit is achieved through the installation of an AFCI circuit breaker. Previously code only required arc-fault protection for outlets in bedrooms. Estimated material cost is \$610.00.*



E4002.14 Tamper-resistant receptacles: All 15 and 20 amp receptacles less than 5.5 feet above the floor, that are not part of a light or appliance, or dedicated for an appliance, are required to be of the tamper-resistant type. *These receptacle devices have an internal mechanism that blocks access to the plug prong openings except when a plug is inserted into the receptacle. The intent is to protect children who often insert objects into receptacles out of curiosity. Estimated material cost is \$45.00.*



2003 to 2012 International Building Code

703.7 Marking and identification of fire-resistance-rated assemblies: Fire walls, fire barriers, fire partitions, smoke barriers, or any other wall required to have protected openings or penetrations shall be effectively and permanently identified with signs or stenciling. *The concern is that these assemblies need to maintain their fire resistance over the life of the building. This identification will allow tradespeople, craftsmen, installers, maintenance workers or inspectors to know that the wall is a fire-resistance rated wall and openings or penetrations of it must be protected.*

908.7 Carbon monoxide alarms: Institutional groups such as hospitals and nursing homes and residential groups such as hotels and apartment houses will be required to install carbon monoxide alarms if fuel-burning appliances are located in the building or if the building has an attached garage. *This section follows the same rationale as section R315.1 in the International Residential Code.*

1013.8 Window sills: As with section R312.2 in the International Residential Code, this section deals with openings in windows located more than 72 inches above the finished grade or other surface below. *The same restrictions and alternatives apply but now include facilities such as multiple-family dwellings and apartment houses. The facilities listed in this code section have the highest potential for infants and toddlers being present for an extended period of time.*

1026.5 Location of exterior exit stairways and ramps: These stairways and ramps shall have a minimum fire separation distance of 10 feet measured from their exterior edge to adjacent lot lines and other buildings on the same lot unless the adjacent building exterior walls and openings are protected per code based on fire separation distance. *This section protects the uses of the exterior stairway or ramp from effects of fire in another building on the same lot or an adjacent lot. The separation also reduced the exposure to heat and smoke. The distance to a lot line is to provide to a future building that could be built on adjacent lot.*



2003 to the 2012 International Existing Building Code

202 UNSAFE: *The definition of unsafe was rewritten to include “or in which the structure or individual structural members meet the definition of Dangerous” and “a vacant structure that is not secured against entry shall be deemed unsafe”.*



2002 to 2011 National Electrical Code

110.24 Available Fault Current: Service equipment in other than dwelling units shall be legibly marked in the field with the maximum available fault current. When modifications to the electrical installation occur that affect the maximum available fault current at the service, the maximum available fault current shall be verified or recalculated as necessary to ensure the service equipment ratings are sufficient. *Fault current is a term used to describe a situation in which the flow of current that is traveling through an electrical circuit is not within a normal range. Equipment must have an interrupting rating or short-circuit current rating equal to or greater than the available fault current if it is to be used safely.*

250.32 (B) Ground Systems: An equipment ground is required with all feeders and branch circuits that supply a building or structure. *Installing an equipment grounding conductor helps ensure that normal circuit current is not imposed on continuous metal paths such as conduit and water or gas piping but only on the insulated grounded or neutral conductor. The previous code did not require an equipment ground.*

406.13 Tamper-Resistant Receptacles in Guest Rooms and Guest Suites: All 15 and 20 ampere receptacles located in guest rooms and suites shall be listed tamper-resistant receptacles. *As noted in R4002.14 of the International Residential Code, this requirement is an effort to protect children.*

406.16 Tamper-Resistant Receptacles in Child Care Facilities: All 15 and 20 ampere receptacles shall be listed tamper-resistant receptacles. *To protect children.*

690.31(E)(1) Direct-Current Photovoltaic Source and Output Circuits Inside a Building: DC conductors in conduit shall not be installed within 10 inches of the roof decking or sheathing except where directly below the roof surface covered by the photovoltaic modules and associated equipment. *Energized DC conductors pose a threat to firemen when installed too close to the underside of the roof since standard procedure is to cut ventilation holes in the roof when there is a fire.*

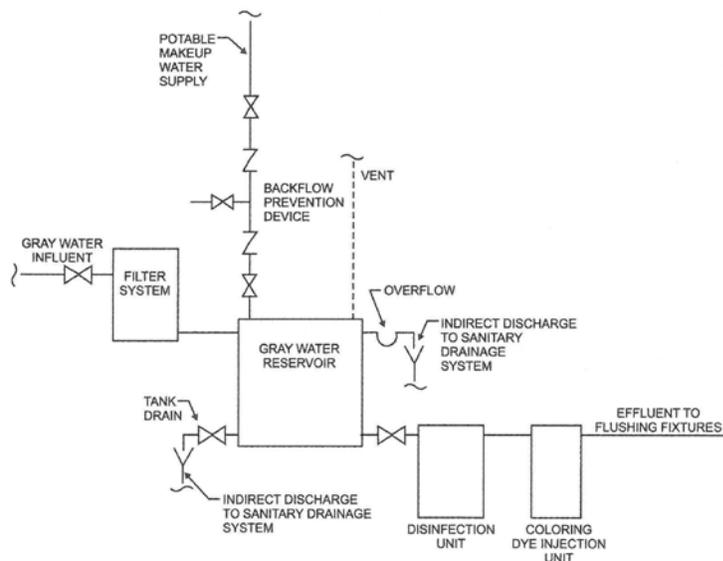


2006 to 2012 International Plumbing Code

606.7 Labeling of water distribution pipes in bundles: Each pipe in a bundle shall be identified using stenciling or commercially available pipe labels. The identification shall indicate the pipe contents and the direction of flow in the pipe. Each pipe should be labeled every 25 feet not less than one label on each pipe in every room, space or story. *Unlabeled bundled water piping presents major problems during renovations and repairs. With the addition of gray-water systems, pipe identification becomes more critical since not all water piping will be potable water piping.*

607.2 Hot or tempered water supply to fixtures: The maximum length of a hot or tempered water pipe shall not exceed 50 feet. *Due to a significant amount of water that can be wasted by a fixture user waiting for hot water, the maximum length was reduced from 100 feet. Inconvenience as well as water and energy costs were listed as reasons for the change.*

Chapter 13 Gray Water Recycling Systems: This chapter addresses the use of gray water for flushing of water closets and urinals, and subsurface landscape irrigation. Above ground irrigation requires a “Reuse” permit from ADEQ and is not covered by this code. *Previously gray water recycling systems had to be specifically adopted to be part of the code.*





2006 to the 2012 International Fuel Gas Code

401.9 Identification: Each length of pipe and tubing and each pipe fitting utilized in a fuel gas system shall bear the identification of the manufacturer. *The product installed must be able to be traced back to the manufacturer in case there is an issue with the material or its listing.*

401.10 Third-party testing and certification: Piping, tubing and fittings shall either be tested by an approved third-party testing agency or certified by an approved third-party certification agency. *This requirement will make it easier for builders, designers, and code officials to determine that materials comply with the appropriate product standards.*

404.1 Installation of materials: All materials shall be installed in strict accordance with the standards under which the materials are accepted and approved. In the absence of such installation procedures, the manufacturer's instructions shall be followed. Where requirements of referenced standards or manufacturer's instructions do not conform to the minimum provisions of this code, the provisions of this code shall apply. *The code has expanded its content to include many additional types of piping and fittings that are now allowed.*



2003 to the 2012 International Mechanical Code

306.1 Access for maintenance and replacement: Appliances shall be accessible for inspection, service, repair and replacement without disabling the function of a fire-resistance-rated assembly or removing permanent construction, other appliances, venting systems or any other piping or ducts not connected to the appliance being inspected, serviced, repaired or replaced. A level working space at least 30 inches deep and 30 inches wide shall be provided in front of the control side to service an appliance. *This section expands on providing access to an appliance and a minimum working space.*

306.3 Appliances in attics – Exception 2: Where the passageway is unobstructed and not less than 6 feet high and 22 inches wide for its entire length, the passageway shall be not greater than 50 feet in length. *The 50 foot length is an increase from 20 feet due to there being less danger of lengthy exposure to extreme temperatures if the service personnel can walk erected and unimpeded to the equipment rather than crawling.*

506.3.2.5 Grease duct test: Prior to use or concealment of any portion of a grease duct system, a leakage test shall be performed. *This requirement has been added.*



2000 Uniform Swimming Pool, Spa and Hot Tub Code to the 2012 International Swimming Pool and Spa Code

The 2000 Uniform Swimming Pool, Spa and Hot Tub Code dealt mostly with the plumbing of water and waste lines, gas piping, and venting of pool water heaters. The scope of the 2012 International Swimming Pool and Spa Code is much broader and deals with defining classes of public and private pools, type of ladders and egress, construction of pools, barrier requirements, and references the International Building, Residential, Plumbing, and Mechanical Codes as well as the National Electrical Code.



ICC A117.1-2009 Standard for Accessible and Usable Buildings and Facilities

This standard includes the clarifications, revisions, and additions currently contained in the 2010 ADA Standards for Accessible Design issued by the Department of Justice. In addition the ICC A117.1-2009 offers close to 500 figures and tables and is compatible with the International Building Codes. The 2010 ADA Standards for Accessible Design will take precedence over this standard when there is conflict. A117.1 is an American National Standards Institute (ANSI) standard which was first published in 1961. ANSI oversees the creation, publication and use of thousands of norms and guidelines and offers accrediting programs that assess conformance to standards.

Additional Information:

1. *The Building Safety Advisory and Appeals Board has recommended that the 2009 International Energy Conservation Code (IECC) not be considered for adoption at this time. Reasons discussed included the additional cost to owners of residential dwellings and habitable additions and commercial buildings, the difficulty of meeting the requirements of the code, and that there is currently no State of Arizona requirement to adopt the code. The A & A Board may consider a recommendation to adopt the 2009 IECC or possibly only portions of the code next year if the economy continues to improve.*

2. The Building Safety Advisory and Appeals Board following the recommendation of the Building Official, decided to not consider the 2012 International Wildland Urban Interface Code for adoption. The Building Official's decision to not recommend adoption of the code was based on the overall restrictiveness of the code in relation to the property owner's use of their land and the increased cost to the home builder.

3. The Building Safety Advisory and Appeals Board determined it would be beneficial to submit to the Board of Supervisors the revised Building Permit Fee Schedule separately from the new Building Code Ordinance due to the large amount of information contained in the ordinance. The Building Official plans to submit the revised Building Permit Fee Schedule to the Board of Supervisors by year end 2014. The current fee schedule will remain in effect after adoption of the new Building Code Ordinance until a revised schedule is approved by the Board of Supervisors.