

## Code Check Plumbing and Mechanical 5<sup>th</sup>

### Select CA Amendments

Page 6: ABS & PVC limited to max 2 stories. This provision was not adopted in the IRC, but was adopted as a CA amendment to the UPC for residential occupancies. See **CPC 701.2 (2)a**: *ABS and PVC installations are limited to not more than two stories in areas of residential accommodations.* (HCD 1 & HCD 2)

Page 17: Nonpotable water system outlets to be marked “CAUTION: NONPOTABLE WATER. DO NOT DRINK”. The use of the words for labeling was not adopted by HCD 1 and HCD 2 for residential occupancies. Rather, the use of the international symbol for nonpotable water is required at the points of use. This is the Glass symbol with a circle and slash. <<<Insert Graphic Here>>>. See **CPC 601.3.2: Color and Information: [HCD 1 and HCD 2]** *An international symbol of a glass in a circle with a slash shall be provided similar to that shown in Figure 601 for all nonpotable water systems.*

Page 17: Mechanical ASSE 1010 water hammer arrestors (not air chambers) req'd near quick-close valves (DW or CW). This provision is not adopted in CA by HCD for residential occupancies. See **CPC 609.10: Water Hammer (not adopted by HCD)**. Some jurisdictions, such as San Francisco, have their own requirements for air chambers.

Page 17: All materials must meet NSF 61 and be approved. CA amends this to give the local Authority Having Jurisdiction (AHJ) the specific power to approve CPVC use in residential occupancies. See CPC 604.1.1 Local Authority to Approve CPVC Pipe Within Residential Buildings Under Specified Conditions. [HCD 1 & HCD 2] The local responsible building official of any city, county, or city and county, shall authorize by permit the use of CPVC for hot and cold water distribution systems within the interior of residential buildings provided all the following conditions are satisfied:

- (a) **Permit Conditions.** Any building permits issued pursuant to Section 604.1.1 shall be conditioned on compliance with the mitigation measures set forth in this section.
- (b) **Approved Materials.** *Only CPVC plumbing material listed in as an approved material and installed in accordance with this code may be used.*
- (c) **Installation and Use.** *Any installation and use of CPVCC material pursuant to this section shall comply with all the applicable requirements of this code and the manufacturer’s installation instructions.*
- (d) **Certification of Compliance.** *Prior to issuing a building permit pursuant to Section 604.1.1, the building official shall require as part of the permitting process that the contractor, or the appropriate plumbing subcontractors, provide written certifications (1) that is required in subdivision (e) and (2) that he or she will comply with the flushing procedures and worker safety measures of this code and the manufacturer’s installation instructions.*
- (e) **Worker Safety.** *Any contractor applying for a building permit that includes the use of CPVC plumbing material authorized pursuant to this section shall include in the permit application a signed written certification stating that:*
  1. *They are aware of the health and safety hazards associated with CPVC plumbing installations.*

2. *They have included in their Injury and Illness Prevention Plan the hazards associated CPVC plumbing pipe installation; and*
  3. *The worker safety training elements of their Injury and Illness Prevention Plan meet the Department of Industrial Relation's guidelines.*
- (f) **Findings of Compliance.** *The building official shall not give final permit approval of any CPVC plumbing materials installed pursuant to Section 604.1.1 unless he or she finds that the material has been installed in compliance with this code and the manufacturer's installation instructions.*
- (g) **Penalties.** *Any contractor or subcontractor found to have failed to comply with the flushing, ventilation, and glove requirements of this code and the manufacturer's installation instructions shall be subject to the penalties in Health and Safety Code Division 13, Part 1.5, Chapter 6 (Section 17995 et seq.). In addition, if the conduct of any building inspection, the building official finds that the ventilation and glove requirements of this code, are being violated, such building officials shall cite the contractor or subcontractor for that violation.*
- (h) **Special Requirements for CPVC Installation within Residential Structures. [HCD 1]** *In additions to other requirements in the California Plumbing Code and this Appendix for the installation of CPVC Solvent Cemented Hot and Cold Water Distributions Systems, all installations of CPVC pipe within residential structures shall meet the following:*
- (i) **Flushing Procedures. [HCD 1]** *All installations of CPVC pipe within residential structures shall be flushed twice over a period of at least one (1) week. The pipe system shall first be flushed for at least 10 minutes and then filled and allowed to stand for no less than 1 week, after which all the branches of the pipe system must be flushed long enough to empty the contained volume. All the time of the fill, each fixture shall a removeable tag stating:  
"This new plumbing system was first filled on (date) by (name). The California Department of Housing and Community Development requires the system be flushed after standing at least one week after the fill date specified above, the water must be allowed to run for at least two minutes prior to use for human consumption. This tag may not be removed prior to flushing except by the homeowner."*
- (j) **Worker Safety Measures. [HCD 1]** *Mechanical ventilation sufficient to maintain exposures below the relevant exposure limits established by state regulation shall be provided in enclosed spaces. This ventilation shall be directed at the breathing zone of the worker installing the pipe. Where mechanical ventilation is not practical, respirators, suitable for organic vapors, shall be used. For the purposes of this subdivision, an enclosed space is defined as:*
1. *A space less than 100 square feet of floor area under a ceiling with a height of 10 feet or less, and which does not have openings (consisting of doors, windows, or unfinished walls) on at least two sides;*
  2. *Crawl spaces having a height of less than three feet;*
  3. *Enclosed attics that have a roof and ceiling; or*
  4. *Trenches having a depth of greater than 24 inches.*

*Installers of CPVC pipe within residential structures shall use non-latex thin gauge (4 millimeters) nitrile gloves, or other gloves providing an equivalent or better degree of protection during the installation of CPVC plumbing systems. Gloves shall be provided to all workers by the contractor, or plumbing subcontractor, and shall be replaced upon contamination by cements.*

Page 25: Provide method of removal of unburned gas for appliances installed in a pit or basement where gas could collect. Liquified Petroleum gas is heavier than air and can pool at floor level. The UPC and UMC required a means to drain pooled LP gas at on time. Currently editions are silent on the issue of LP gas appliances in pits or basements. Historically, many jurisdictions have required a means to drain pooled gas to the exterior. CA modified the CA Mechanical Code to require a means of removal for pooled gases. The CA Fire Code includes similar language in CFC 6103.2.1.1. **CMC 303.7.1 Liquified Petroleum Gas Appliances.** [HCD 1 & HCD 2] *Liquified-petroleum gas-burning appliances shall not be installed in a pit, basement or similar location where heavier-than-air gas might collect. Appliances so fueled, shall not be installed in an above-grade, under-floor space or basement unless such location is provided with an approved means for removal of unburned gas.*

Page 39: Ducts completely inside the building envelope (do not require insulation). In CMC 604.1 EX (2), ducts or plenums located inside the thermal envelope do not require insulation if they loss/gain would not increase overall energy usage. However, the CA Energy Code modifies this section. In Section 150 Mandatory Residential Provisions under, (m) requires all ducts in conditioned spaces must include R-4.2 insulation.

See **CEC 150(m):** .... *Portions of supply-air and return air ducts and plenums of a space heating or cooling system shall either be insulated to a minimum installed level of R-6.0 (or any higher level required by CMC section 605) or a minimum installed level of R-4.2 when entirely in conditioned space as confirmed through field verification and diagnostic testing in accordance with the requirements of Reference Residential Appendix RA3.104.3.S...*

Page 45: **Unvented Room Heaters** Install AMI & leave manuals w/unit. Unvented room heaters are allowed in the UMC and in non-residential occupancies in the CMC. However, the CMC specifically bans unvented fuel-burning room heaters in residential (Group R) occupancies.

**See CMC 916.2.1 Prohibited Installations:** [HCD1 & HCD 2] *Unvented fuel-burning room heaters shall not be installed, used, maintained or permitted to exist in a Group R occupancy.*

**Also See CMC 916.2.1.1 Unvented Room Heaters:** [HCD1 & HCD 2] *Unvented fuel-burning room heaters shall not be installed, used, maintained or permitted to exist in a Group R occupancy.*

Page 45: **Vented Gas Fireplace Heaters:** Comply w/same rules as above for decorative fireplaces. The CMC modifies this requirement to require that all vented gas fireplaces in residential occupancies be direct vent appliances. The CA Green Building (CalGreen) code has had this requirement since the 2005 edition.

See **CMC 912.2 (1):** [HCD 1 & HCD 2] *Any newly installed gas fireplaces shall be a direct-vent sealed - combustion type.*

Also See **CGBC: Residential Mandatory Measures. 4.503.1 General.** *Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.*

Page 47: **Exterior Air Supply (Masonry or Factory-Built)** Exterior air intake no higher than elevation of firebox EXC: Listed component of factory-built fireplace

The provisions for fireplaces are in Chapter 10 of the CA Residential Code. The CRC modifies the requirements to clarify that the air intake must be a listed component of the factory-built fireplace and that it must be installed in accordance with the manufacturer's installation instructions.

See **CRC 1006.1.1 Factory-built fireplaces**. *Exterior combustion air ducts for the factory-built fireplace shall be a listed component of the fireplace and shall be installed in accordance with the fireplace manufacturer's instructions.*