EXPRESS TERMS
FOR
PROPOSED BUILDING STANDARDS
OF THE
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
REGARDING THE ADOPTION BY REFERENCE OF THE
2012 EDITION OF THE UNIFORM PLUMBING CODE
WITH PROPOSED AMENDMENTS INTO THE 2013 CALIFORNIA PLUMBING CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 5

(HCD 05/12)

The Department of Housing and Community Development (HCD) proposes to adopt the 2012 edition of the Uniform Plumbing Code (UPC) for codification and effectiveness into the 2013 edition of the California Plumbing Code (CPC) as presented on the following pages, including any necessary amendments. HCD further proposes to:

- Repeal the 2009 edition of the Uniform Plumbing Code;
- Repeal the 2010 edition of the California Plumbing Code, which includes amendments to the model code that are no longer necessary;
- Repeal or amend building standards that are not addressed by a model code;
- Relocate or codify existing adopted and necessary amendments to the model code into the format of the model code proposed for adoption, the action of which has no regulatory effect; adopt new necessary amendments to the model code proposed for adoption; and/or
- Adopt new building standards that are not addressed by the model code proposed for adoption.

LEGEND FOR EXPRESS TERMS:

1. **UPC language with new California amendments:** UPC language shown in normal Arial 9 point; California amendments to UPC text shown *underlined and in italics*.
2. **Existing California amendments or code language being modified:** *All such language shown in italics, modified language is underlined or shown in ~~strikeout~~.*
3. **Text not being modified:** All language not displayed in full is shown as "…" (i.e. ellipsis).
4. **Repealed text**: All language shown in ~~strikeout.~~
5. **Amended, adopted or repealed language after public hearing:** All such language appears in double underline or ~~double strikeout~~.
6. **Notation:** Authority and Reference citations are provided at the end of each chapter.

NOTE OF EXPLANATION:

For the **2012 Triennial Code Adoption Cycle**, the Express Terms are displayed as follows:

- PART 1 includes the California Amendments HCD proposes to bring forward from the 2010 California Plumbing Code **with changes** as shown, and also identifies the model code standards from the 2012 Uniform Plumbing Code HCD proposes for adoption into the 2013 California Plumbing Code.

- PART 2 displays the standards HCD proposes to bring forward from the 2010 California Plumbing Code **without change**, except for nonsubstantive editorial corrections, for adoption into the 2013 California Plumbing Code; the text is provided for context and for the convenience of the code users.

SUMMARY OF REGULATORY ACTION
** PART 1 **

HCD PROPOSES TO:

- Adopt sections from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code **with amendment**.

- Adopt standards from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code **without amendment**.

- Bring forward existing California Amendments contained in Chapter 1, Administration, Division I, California Administration from the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code **with amendment**.

- Bring forward existing California Amendments from the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code **with renumbering of amendments.**

- Repeal California Amendments from the 2010 California Plumbing Code and **not** bring those amendments forward into the 2013 California Plumbing Code.

** PART 2 **

NOTE: *The language in Part 2 is brought forward from the previous code adoption cycle* ***without change,*** *except for nonsubstantive editorial corrections, and displayed for context and for the convenience of code users.*

HCD PROPOSES TO:

- Bring forward existing California Amendments from the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code **without amendment**.

- Bring forward existing California Amendments from the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code **with editorial corrections**.

** PART 1 **

1. HCD proposes to bring forward existing California Amendments in Ch. 1, Section 1.1.1 from the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code with amendment as follows:

NOTE: *See Part 2 of this document for existing California Amendments proposed to be brought forward from the 2010 CPC for adoption into the 2013 CPC.*

CHAPTER 1
ADMINISTRATION
DIVISION I
CALIFORNIA ADMINISTRATION

1.1.1 Title. *These regulations shall be known as the California Plumbing Code, may be cited as such and will be referred to herein as "this code." The California Plumbing Code is Part 5 of twelve parts of the official compilation and publication of the adoption, amendment, and repeal of plumbing regulations to the California Code of Regulations, Title 24, also referred to as the California Building Standards Code. This part incorporates by adoption the ~~2009~~ 2012 Uniform Plumbing Code of the International Association of Plumbing and Mechanical Officials with necessary California amendments.*

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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2. HCD proposes to adopt Ch. 1, Administration, Section 103.1.1 only, from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code, Ch. 1, Division II, Administration without amendment:

DIVISION II
ADMINISTRATION

103.1.1 Exempt Work. … (No change to text)

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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3. HCD proposes to adopt Ch. 2 from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code with amendment as follows:

NOTE: *See Part 2 of this document for existing California Amendments proposed to be brought forward from the 2010 CPC for adoption into the 2013 CPC.*

CHAPTER 2
DEFINITIONS

203.0 -**A**-

Approved. Acceptable to the Authority Having Jurisdiction.

Exception: (HCD 1 & HCD 2) *"Approved" means meeting the approval of the Enforcing Agency, except as otherwise provided by law, when used in connection with any system, material, type of construction, fixture or appliance as the result of investigations and tests conducted by the agency, or by reason of accepted principles or tests by national authorities, or technical, health, or scientific organizations or agencies.*

Notes*:*

(1) See Health and Safety Code Section 17920 for "Approved" as applied to residential construction and buildings or structures accessory thereto, as referenced in Sections 1.8.2.

(2) See Health and Safety Code Section 17921.1 for "Approved" as applied to the use of hotplates in residential construction referenced in Sections 1.8.2.

~~*(3) See Health and Safety Code Section 17921.3 for "Approved" as applied to low-flush water closets in residential construction, as referenced in Sections 1.8.2.*~~

~~*(4)*~~ *(3) See Health and Safety Code Section 19966 for "Approved" as applied to Factory-Built Housing as referenced in Sections 1.8.3.2.5.*

~~*(5)*~~ *(4) See Health and Safety Code Section 18201 for "Approved" as applied to Mobilehome Parks as referenced in Section 1.8.2.*

~~*(6)*~~ *(5) See Health and Safety Code Section 18862.1 for "Approved" as applied to Special Occupancy Parks as referenced in Section 1.8.2.*

205.0 -**C**-

Clothes Washer System (HCD 1). *A gray water system utilizing only a single domestic clothes washing machine in a one- or two family dwelling.*

Complex System (HCD 1). *Gray water systems that discharge over 250 gallons (947 L) per day.*

206.0 -**D**-

Disposal Field (HCD 1). *An intended destination for gray water, including but not limited to, a mulch basin or receiving landscape feature, gray water leach field, or other approved method of disposal.*

209.0 -**G**-

~~**Gray Water.** Untreated waste water that has not come into contact with toilet waste, kitchen sink waste, dishwasher waste or similarly contaminated sources. Gray water includes waste water from bathtubs, showers, lavatories, clothes washers, and laundry tubs. Also known as grey water, graywater, and greywater.~~

Graywater (HCD 1). *Pursuant to Health and Safety Code Section 17922.12, "graywater" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Graywater" includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.*

***Note**: For the purpose of applying the standards contained in this code, "Graywater" as defined above, has the same meaning as "gray water", "grey water", and "greywater".*

***Gray Water System (HCD 1).** A system designed to collect gray water on-site for reuse or distribution to an irrigation or disposal field. A gray water system may include, on-site treated nonpotable water devices or equipment, tanks, valves, filters, pumps or other appurtenances along with piping and receiving landscape.*

211.0 -**I**-

***Irrigation Field (HCD 1).** An intended destination for gray water in the receiving landscape, including but not limited to, a drip irrigation system, mulch basin, or other approved method of dispersal for irrigation purposes.*

215.0 -**M**-

~~**Mulch Basin.** A subsurface catchment area for gray water that is filled with mulch and of sufficient depth and volume to prevent ponding, surfacing, or runoff.~~

***Mulch Basin (HCD 1).** A subsurface type of irrigation or disposal field filled with mulch or other approved permeable material of sufficient depth, length, and width to prevent ponding or runoff. A mulch basin may include a basin around a tree, a trough along a row of plants, or other shapes necessary for irrigation or disposal.*

217.0 -**O**-

~~**On-Site Treated Nonpotable Water.** Nonpotable water, including gray water that has been collected, treated, and intended to be used on-site and is suitable for direct beneficial use.~~

***On-Site Treated Nonpotable Water (HCD 1).** Nonpotable water that has been collected, treated, and intended to be used on-site and is suitable for direct beneficial use. Sources for on-site treated nonpotable water include, but are not limited to, gray water; rainwater; stormwater; reclaimed (recycled) water; cooling tower blow-down water; and foundation drainage.*

220.0 -**R**-

~~**Rainwater.** Natural precipitation that has not been contaminated by use.~~

***Rainwater (HCD 1).** Precipitation on any public or private parcel that has not entered an offsite storm drain system or channel, a flood control channel, or any other stream channel, and has not previously been put to beneficial use.*

~~**Rainwater Catchment System.** A system that utilizes the principal of collecting, storing, and using rainwater from a rooftop or other manmade, aboveground collection surface. Also known as a rainwater harvesting system.~~

***Rainwater Catchment System (HCD 1)** A facility designed to capture, retain, and store rainwater flowing off a building, parking lot, or any other manmade impervious surface for subsequent onsite use. Rainwater catchment system is also known as "Rainwater Harvesting System" or "Rainwater Capture System."*

***Receiving Landscape (HCD 1).** Includes features such as soil, basins, swales, mulch, and plants.*

~~**Reclaimed (Recycled) Water.** Nonpotable water provided by a water/wastewater utility that, as a result of tertiary treatment of domestic wastewater, meets requirements of the public health Authority Having Jurisdiction for its intended uses.~~

***Reclaimed (Recycled) Water (HCD 1).** Nonpotable water that meets California Department of Public Health statewide uniform criteria for disinfected tertiary recycled water. Reclaimed (recycled) water is also known as "recycled water" or "reclaimed water".*

221.0 -**S**-

***Simple System (HCD 1).** A gray water system serving one-and two-family dwellings, townhouses, or other occupancies with a discharge of 250 gallons (947 L) per day or less. Simple systems exceed a clothes washer system.*

~~**Single-Family Dwelling.** A building designed to be used as a home by the owner of such building, which shall be the only dwelling located on a parcel of ground with the usual accessory buildings.~~

222.0 -**T**-

Treated Gray Water (HCD 1). *Nonpotable water meeting the definition of "gray water" collected and treated on-site suitable for direct beneficial use.*

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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4. HCD proposes to adopt Ch. 3 from the 2012 Uniform Plumbing Code, except Sections 301.2.1, 301.2.1.1 and 301.2.1.2, into the 2013 California Plumbing Code without amendment: *(*See Informative Note Below)*

NOTE: *See Part 2 of this document for existing California Amendments proposed to be brought forward from the 2010 CPC for adoption into the 2013 CPC.*

CHAPTER 3
GENERAL REGULATIONS

Informative Note

The following California Amendments from the 2010 California Plumbing Code, Sections 316.1.6 and 316.2.4, are proposed to be repealed as shown below and relocated into Chapter 6 of the 2013 California Plumbing Code:

316.1.6 Solvent Cement Plastic Pipe Joints. Plastic pipe and fittings designed to be joined by solvent cementing shall comply with applicable standards referenced in Table 14-1.

ABS pipe and fittings shall be cleaned and then joined with solvent cement(s).

CPVC pipe and fittings shall be cleaned and then joined with listed primer(s) and solvent cement(s).

Exceptions:

(1) Listed solvent cements that do not require the use of primer shall be permitted for use with CPVC pipe and fittings, manufactured in accordance with ASTMD 2846, one-half (1⁄2) inch (15 mm) through two (2) inches (50 mm) in diameter.

~~***(2) (HCD 1 & HCD 2)*** *Low VOC One-Step Cement that does not require the use of primer shall be utilized with CPVC pipe and fittings, manufactured in accordance with ASTM D 2846, Standard for Chlorinated Poly Plastic Hot- and Cold-Water Distribution Systems, 1⁄2 inch through 2 inches in diameter.*~~

PVC pipe and fittings shall be cleaned and joined with primer(s) and solvent cement(s).

A solvent cement transition joint between ABS and PVC building drain and building sewer shall be made using a listed transition solvent cement.

~~***(HCD 1 & HCD 2)*** *Plastic pipe and fittings joined with solvent cement shall utilize Low VOC primer(s), if a primer is required and Low VOC solvent cement(s) as defined in Section 214.0.*~~

… (No change to text)

~~***316.2.4 Dielectric Unions. (HCD 1 & HCD 2)*** *Dielectric unions shall be used at all points of connection where there is a dissimilarity of metals.*~~

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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5. HCD proposes to adopt Ch. 4 from the 2012 Uniform Plumbing Code, except Sections 422.2, 422.4 and 422.5, into the 2013 California Plumbing Code with amendment as follows:

NOTE: *See Part 2 of this document for existing California Amendments proposed to be brought forward from the 2010 CPC for adoption into the 2013 CPC.*

CHAPTER 4
PLUMBING FIXTURES AND FIXTURE FITTINGS

402.1 Flush volumes for low-consumption and water-saver water closets and urinals shall be in accordance with applicable standards referenced in Table 14-1. ~~***(HCD 1 & HCD 2)*** *Flow rates for shower heads and faucets shall meet the requirements of this section and applicable standards referenced in Table 14-1.*~~

~~***402.1.1 Shower Heads (HCD 1 & HCD 2)*** *Shower heads shall be designed and installed so that they will not exceed a water supply flow rate of 2.5 gallons (9.4 liters) per minute measured at 80 psi.*~~

~~***402.1.2 Faucets (HCD 1 & HCD 2)*** *Faucets at kitchens, lavatories, wetbars, laundry sinks, or other similar use fixtures shall be designed and manufactured so that they will not exceed a water supply flow rate of 2.2 gallons (8.3 liters) per minute measured at 60 psi.*~~

~~***402.2.1 Water Closets after January 1, 1994 (HCD 1 & HCD 2)*** *Water closets, either flush tank, flushometer tank, or flushometer valve operated sold or installed after January 1, 1994, shall use no more than an average of 1.6 gallons (6.1 liters) of water per flush. See Health and Safety Code Section 17921.3*~~

> ~~***402.2.2.2 Availability (HCD 1 & HCD 2)*** *Between July 1, 2011, and January 1, 2014, the requirements of Section 402.2.2 may be temporarily suspended on a case by case basis by action of the enforcing agency should such agency determine that an insufficient number of water closets are available.*~~

~~***402.3.1 Urinals after January 1, 1994 (HCD 1 & HCD 2)*** *Urinals and associated flushometer valves sold or installed after January 1, 1994, shall use no more than an average of one gallon (3.8 liters) per flush. See Health and Safety Code Section 17921.3.*~~

~~***402.3.2 Urinals on or after July 1, 2011 (HCD 1 & HCD 2)*** *Urinals and associated flushometer valves sold or installed on or after July 1, 2011, shall use no more than 0.5 gallons (1.9 liters) per flush and meet performance criteria as established in ASME A112.19.2.*~~

~~***402.3.3 Nonwater Supplied Urinals (Waterless Urinals) (HCD 1 & HCD 2)*** *Waterless urinals sold or installed in this state shall comply with all of the following requirements:*~~

~~*(1) Meet performance, testing, and labeling requirements established by ASME A112.19.19-2006 for vitreous china non-water supplied urinals.*~~
~~*(2) Be listed by an ANSI accredited third-party certification agency to ASME A112.19.19-2006.*~~
~~*(3) Follow cleaning and maintenance procedures established by the manufacturer.*~~
~~*(4) Conform to reference standards in Table 14-1 for non-vitreous ceramic or plastic urinal fixtures.*~~
~~*(5) Provide water distribution and fixture supply piping, sized as required elsewhere in this code, roughed-in immediately adjacent to each waterless urinal fixture installed.*~~

~~*For additional information, see Health and Safety Code Section 17921.4.*~~

… (No change to text)

~~**(407.6 Installations for Persons with Disabilities)**~~ **402.7 Accessible Plumbing Facilities.** Where accessible facilities are required in applicable building regulations, the facilities shall be installed in accordance with those regulations. ***(HCD 1-AC)*** *For specific requirements regarding accommodations for persons with disabilities, see California Code of Regulations, Title 24, Part 2, Chapter 11A* ~~*and/or Chapter 11B as applicable*~~*.*

… (No change to text)

403.3 Urinals. Urinals shall have an average water consumption not to exceed ~~1~~ *0.5* gallon*s* (~~*4*~~ *2* L) of water per flush.

403.3.1 Nonwater Urinals. Nonwater urinals shall be listed and comply with the applicable standards referenced in Table 1401.1. Nonwater urinals shall have a barrier liquid sealant to maintain a trap seal. Nonwater urinals shall permit the uninhibited flow of waste through the urinal to the sanitary drainage system. Nonwater urinals shall be cleaned and maintained in accordance with the manufacturer's instructions after installation. Where nonwater urinals are installed they shall have a water distribution line rough-in to the urinal location to allow for the installation of an approved backflow prevention device in the event of a retrofit.
For additional information, see Health and Safety Code Section 17921.4.

403.3.1.1 Nonwater Urinal Drainage Connections. *Where nonwater urinals are installed, not less than one water supplied fixture rated at not less than 1 drainage fixture unit (DFU) shall be installed upstream on the same drain line to facilitate drain line flow and rinsing.*

403.4 Metered Faucets. Self-closing or self-closing metering faucets shall be installed on lavatories intended to serve the transient public, such as those in, but not limited to, service stations, train stations, airports, restaurants, and convention halls. Metered faucets shall deliver a maximum of 0.2~~6~~*5* gallons (0.9~~8~~*5* L) of water per use.

… (No change to text)

403.6 Kitchen Faucets. (HCD 1) *The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons (6.81 L) per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons (8.32L) per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons (6.81 L) per minute at 60 psi.*

Note: *Where faucets meeting the maximum flow rate of 1.8 gpm (6.81 L) are unavailable, aerators or other means may be used to achieve reduction.*

403.7 Residential lavatory faucets. (HCD 1) *The maximum flow rate of residential lavatory faucets shall not exceed 1.5 gallons (5.68 L) per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons (3.03 L) per minute at 20 psi.*

403.8 Lavatory faucets in common and public use areas. (HCD 1 & HCD 2) *The maximum flow rate of lavatory faucets, installed in common and public use areas (outside of dwellings or sleeping units) in residential buildings, shall not exceed 0.5 gallons (1.89 L) per minute at 60 psi.*

… (No change to text)

408.2 Water Consumption. ~~Showerheads shall have a maximum flow rate of not more than 2.5 gpm at 80 psi (0.16L/s at 552 kPa), in accordance with ASME A112.18.1/CSA B125.1.~~ ***(HCD 1)*** *Showerheads shall have a maximum flow rate of 2.0 gallons (7.57 L) per minute measured at 80 psi and must comply with Division 4.3 of the California Green Building Standards Code (CALGreen).*

… (No change to text)

~~**(411.6)**~~ **408.5 Finished Curb or Threshold.** Where a shower receptor has a finished dam, curb, or threshold it shall not be less than 1 inch (25.4 mm) lower than the sides and back of such receptor. In no case shall a dam or threshold be less than 2 inches (51 mm) or exceeding 9 inches (229 mm) in depth where measured from the top of the dam or threshold to the top of the drain. Each such receptor shall be provided with an integral nailing flange to be located where the receptor meets the vertical surface of the finished interior of the shower compartment. The flange shall be

watertight and extend vertically not less than 1 inch (25.4 mm) above the top of the sides of the receptor. The finished floor of the receptor shall slope uniformly from the sides towards the drain not less than 1⁄4 inch per foot (20.8 mm/m) nor more than 1⁄2 inch per foot (41.8 mm/m).

Thresholds shall be of sufficient width to accommodate a minimum 22 inch (559 mm) door. Shower doors shall open so as to maintain not less than a 22 inch (559 mm) unobstructed opening for egress.

Exceptions:
(1) Showers that are designed to be in accordance with the accessibility standards listed in Table 1401.1.

(HCD 1-AC) *Specific requirements regarding accommodations for persons with disabilities are contained in California Code of Regulations, Title 24, Part 2, Chapter 11A ~~and/or Chapter 11B as applicable~~. Table ~~(14-1)~~ 1401.1 does not contain the correct accessibility standards for use in California.*

*(*2) A cast iron shower receptor flange shall be not less than 0.3 of an inch (8 mm) in height.

(3) For flanges not used as a means of securing, the sealing flange shall be not less than 0.3 of an inch (8 mm) in height.

~~(411.7)~~ 408.6 Shower Compartments. Shower compartments, regardless of shape, shall have a minimum finished interior of 1,024 square inches (0.6606 m^2) and shall also be capable of encompassing a 30 inch (762 mm) circle. The minimum required area and dimensions shall be measured at a height equal to the top of the threshold and at a point tangent to its centerline. The area and dimensions shall be maintained to a point of not less than 70 inches (1,778 mm) above the shower drain outlet with no protrusions other than the fixture valve or valves, shower head, soap dishes, shelves and safety grab bars, or rails. Fold-down seats in accessible shower stalls shall be permitted to protrude into the 30 inch (0.76 m) circle.

Exceptions:
(1) Showers that are designed to comply with *Chapter 11A ~~or 11B~~ of the California Building Code.*

(2) The minimum required area and dimension shall not apply for a shower receptor having overall dimensions of not less than 30 inches (762 mm) in width and 60 inches (1,500 mm) in length.

(3) ***(HCD 1-AC)*** *Specific requirements regarding accommodations for persons with disabilities are contained in California Code of Regulations, Title 24, Part 2, Chapter 11A ~~and/or Chapter 11B as applicable~~. ICC/ANSI A117.1, Standard for Accessible and Usable Buildings and Facilities, does not contain the correct accessibility standards for use in California.*

… (No change to text)

~~(413.0)~~ 421.0 Fixtures and Fixture Fittings for Persons with Disabilities.

421.1 General. Plumbing fixtures and fixture fittings for persons with disabilities shall comply with the appropriate standards referenced in Table 1401.1 of this code. ***(HCD 1-AC)*** *Specific requirements regarding accommodations for persons with disabilities are contained in California Code of Regulations, Title 24, Part 2, Chapter 11A ~~and/or Chapter 11B as applicable~~. Table ~~14-1~~ 1401.1 does not contain the correct accessibility standards for use in California.*

… (No change to text)

~~(TABLE 4-1)~~ TABLE 422.1
MINIMUM PLUMBING FACILITIES[1]

Each building shall be provided with sanitary facilities, including provisions for persons with disabilities as prescribed by the Department Having Jurisdiction. Table 422.1 applies to new buildings, additions to a building, and changes of occupancy or type in an existing building resulting in increased occupant load.

For requirements for persons with disabilities, Chapter 11A ~~or 11B~~ of the California Building Code shall be used.

Exceptions:
(1) ***(HCD 1-AC & HCD 2)*** *For applications listed in Sections 1.8.2.1.2 and 1.8.2.1.3 regulated by the Department of Housing and Community Development, each building shall be provided with sanitary facilities, including provisions for persons with disabilities as prescribed by the Department. Covered multifamily dwellings required to be accessible to persons with disabilities shall comply with California Code of Regulations, Title 24, Part 2, Chapter 11A. Permanent buildings in mobilehome parks and special occupancy parks required to be accessible by persons with disabilities, shall comply with California Code of Regulations, Title 24, Part 2, Chapter 11B.*

(2) ***(HCD 1)*** *For limited density owner-built rural dwelling sanitary facilities, the type, design and number of facilities as required and approved by the local health official shall be provided to the dwelling sites. It shall not be required that such facilities be located within the dwelling.*

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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6. HCD proposes to adopt Ch. 5 from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code without amendment:

NOTE: *See Part 2 of this document for existing California Amendments proposed to be brought forward from the 2010 CPC for adoption into the 2013 CPC.*

CHAPTER 5
WATER HEATERS

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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7. HCD proposes to adopt Ch. 6 from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code with amendment as follows:

NOTE: *See Part 2 of this document for existing California Amendments proposed to be brought forward from the 2010 CPC for adoption into the 2013 CPC.*

CHAPTER 6
WATER SUPPLY AND DISTRIBUTION

~~***(601.4) (HCD 1 & HCD 2)*** *All sources for drinking water shall be maintained in a clean and sanitary condition. Drinking fountains and portable water dispensers shall not be located in toilet rooms.*~~

~~**604.13.1 PEX-AL-PEX and PE-AL-PE.** Fittings used with PEX-AL-PEX and PE-AL-PE piping shall be manufactured to and marked in accordance with the standard for the fittings referenced in Table 14-1.~~

~~***(HCD 1 & HCD 2, BSC)*** *PEX-AL-PEX is not adopted for use in potable water supply and distribution systems.*~~

~~**604.13.2 Water Heater Connections.** PEX-AL-PEX or PE-AL-PE tubing shall not be installed within the first eighteen (18) inches (457 mm) of piping connected to a water heater.~~

~~***(HCD 1 & HCD 2, BSC)*** *PEX-AL-PEX is not adopted for use in potable water supply and distribution systems.*~~

605.4.2 Solvent Cement Joints. Solvent cement joints for CPVC pipe and fittings shall be clean from dirt and moisture. Solvent cements in accordance with ASTM F 493, requiring the use of a primer shall be orange in color. The primer shall be colored and be in accordance with ASTM F 656. Listed solvent cement in accordance with ASTM F 493 that does not require the use of primers, yellow or red in color, shall be permitted for pipe and fittings manufactured in accordance with ASTM D 2846, ½ of an inch (15 mm) through 2 inches (50 mm) in diameter. Apply primer where required inside the fitting and to the depth of the fitting on pipe. Apply liberal coat of cement to the outside surface of pipe to depth of fitting and inside of fitting. Place pipe inside fitting to forcefully bottom the pipe in the socket and hold together until joint is set.

(***HCD 1 & HCD 2)*** *Low VOC One-Step Cement that does not require the use of primer shall be utilized with CPVC pipe and fittings, manufactured in accordance with ASTM D 2846, ~~Standard for Chlorinated Poly Plastic Hot- and Cold-Water Distribution Systems ½ inch through 2 inches in diameter~~.*

(Special Note: Text brought forward from the 2010 CPC, Section 316.1.6, and adopted with editorial modification into the 2013 CPC, Section 605.4.2)

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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8. HCD proposes to adopt Ch. 7 from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code without amendment: *(*See Informative Note Below*)

NOTE: *See Part 2 of this document for existing California Amendments proposed to be brought forward from the 2010 CPC for adoption into the 2013 CPC.*

Informative Note

The following California Amendments from the 2010 California Plumbing Code, Sections 705.1.7, 705.1.9 and 705.2.5, are proposed to be repealed as shown below and not carried forward into the 2013 California Plumbing Code:

CHAPTER 7
SANITARY DRAINAGE

705.1.7 Elastomeric Gasketed and Rubber-Ring Joints. Elastomeric gasketed and rubber-ring joints shall comply with the applicable standards referenced in Table 14-1.

~~Exception: (HCD 1 & HCD 2)~~ *~~Compliance with an approved nationally recognized installation standard complying with Section 310.4 of this code and approved by the Enforcing Agency is acceptable.~~*

… (No change to text)

705.1.9 Hubless Cast-Iron Pipe Joints. Joints for hubless cast-iron soil pipe and fittings shall conform to applicable standards referenced in Table 14-1 and shall not be considered as slip joints.

~~Exception: (HCD 1 & HCD 2)~~ *~~Compliance with an approved nationally recognized installation standard complying with Section 310.4 of this code and approved by the Enforcing Agency is acceptable.~~*

… (No change to text)

~~(705.2.5) ABS and PVC Pipe. (HCD 1 & HCD 2)~~ *~~Joints in ABS and PVC pipe shall be made as provided in Section 316.1.6 of this code.~~*

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

9. HCD proposes to adopt Ch. 8 from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code without amendment:

CHAPTER 8
INDIRECT WASTES

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

10. HCD proposes to adopt Ch. 9 from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code without amendment:

NOTE: *See Part 2 of this document for existing California Amendments proposed to be brought forward from the 2010 CPC for adoption into the 2013 CPC.*

CHAPTER 9
VENTS

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

11. HCD proposes to adopt Ch. 10 from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code without amendment:

NOTE: *See Part 2 of this document for existing California Amendments proposed to be brought forward from the 2010 CPC for adoption into the 2013 CPC.*

CHAPTER 10
TRAPS AND INTERCEPTORS

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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12. HCD proposes to adopt Ch. 11 from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code without amendment:

NOTE: *See Part 2 of this document for existing California Amendments proposed to be brought forward from the 2010 CPC for adoption into the 2013 CPC.*

CHAPTER 11
STORM DRAINAGE

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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13. HCD proposes to adopt Ch. 12 from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code without amendment:

CHAPTER 12
FUEL GAS PIPING

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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14. HCD proposes to NOT adopt Ch. 13 from the 2012 Uniform Plumbing Code.

CHAPTER 13
HEALTH CARE FACILITIES AND MEDICAL GAS AND VACUUM SYSTEMS

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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15. HCD proposes to adopt Ch. 14 from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code with amendment as follows:

CHAPTER 14
REFERENCED STANDARDS

TABLE 1401.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTIONS
…			
NSF 350 – 2011	*Onsite Residential and Commercial Water Reuse Treatment Systems*	*Miscellaneous*	*1601.7, 1604.10.2*
…			

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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16. HCD proposes to NOT adopt Ch. 15 from the 2012 Uniform Plumbing Code.

CHAPTER 15
FIRESTOP PROTECTION

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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17. HCD proposes to adopt Ch. 16 from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code with amendment as follows:

CHAPTER 16
ALTERNATE WATER SOURCES FOR NONPOTABLE APPLICATIONS

Intent

The provisions of this chapter are intended to:

1. *Conserve water by facilitating greater reuse of laundry, shower, lavatory and similar sources of discharge for irrigation and/or indoor use.*
2. *Reduce the number of non-compliant gray water systems by making legal compliance easily achievable.*
3. *Provide guidance for avoiding potentially unhealthful conditions.*
4. *Provide an alternative way to relieve stress on a private sewage disposal system by diverting the gray water.*

1601.0 General.

1601.1 Applicability. *Except as otherwise provided for in this chapter, the provisions of this code shall be applicable to alternate water source system installation.* The provisions of this chapter shall apply to the construction, alteration, *discharge, use* and repair of alternate water source systems for nonpotable applications.

1601.1.1 Allowable Use of Alternate Water. Where approved or required by the Authority Having Jurisdiction, alternate water sources (reclaimed (recycled) water, rainwater, gray water and on-site treated nonpotable *gray* water) shall be permitted to be used in lieu of potable water for the applications identified in this chapter.

~~**1601.2 System Design.** Alternate water source systems in accordance with this chapter shall be designed by a person registered or licensed to perform plumbing design work. Components, piping, and fittings used in an alternate water source system shall be listed.~~

1601.2 System Design. *Alternate water source systems complying with this chapter shall be designed by a person who demonstrates competency to design the alternate water source system as required by the Enforcing Agency. The Enforcing Agency may also require plans and specifications to be prepared by a licensed design professional for Complex Systems. Components, piping, and fittings used in any alternate water source system shall be listed.*

~~**Exceptions:**~~

~~(1) A person registered or licensed to perform plumbing design work is not required to design rainwater catchment systems used for irrigation with a maximum storage capacity of 360 gallons (1363 L).~~

~~(2) A person registered or licensed to perform plumbing design work is not required to design rainwater catchment systems for single family dwellings where outlets, piping, and system components are located on the exterior of the building.~~

~~(3) A person registered or licensed to perform plumbing design work is not required to design gray water systems having a maximum discharge capacity of 250 gallons per day (gal/d) (15.77 L/s) for single family and multi-family dwellings.~~

~~(4) A person registered or licensed to perform plumbing design work is not required to design an on-site treated nonpotable water system for single family dwellings having a maximum discharge capacity of 250 gal/d (15.77 L/s).~~

1601.3 Permit. It shall be unlawful for a person to construct, install, alter, or cause to be constructed, installed, or altered an alternate water source system in a building or on a premise without first obtaining a permit to do such work ~~from the Authority Having Jurisdiction~~. *Prior to commencing the issuance of permits for indoor gray water systems pursuant to state requirements relating to gray water, a city, county, city and county or other local agency shall seek consultation with the local public health department to ensure that local public health concerns are addressed in local standards or ordinances, or in issuing permits. See California Water Code Section 14877.3.*

Exception~~s~~:

~~(1) A permit is not required for exterior rainwater catchment systems used for outdoor drip and subsurface irrigation with a maximum storage capacity of 360 gallons (1363 L).~~

(2) A plumbing permit is not required for rainwater catchment systems for single family dwellings where outlets, piping, and system components are located on the exterior of the building. This does not exempt the need for permits where required for electrical connections, tank supports, or enclosures.

A construction permit shall not be required for a clothes washer system meeting the requirements of Section 1602.1.1.

1601.4 Component Identification. System components shall be properly identified as to the manufacturer.

1601.5 Maintenance and Inspection. Alternate water source systems and components shall be inspected and maintained in accordance with Section 1601.5.1 through Section 1601.5.3 *the manufacturer's recommendations and/or as required by the enforcing agency*.

1601.5.1 Frequency. Alternate water source systems and components shall be inspected and maintained in accordance with Table 1601.5 unless more frequent inspection and maintenance is required by the manufacturer.

1601.5.2 Maintenance Log. A maintenance log for gray water, rainwater, and on-site treated nonpotable water systems is required to have a permit in accordance with Section 1601.3 and shall be maintained by the property owner and be available for inspection. The property owner or designated appointee shall ensure that a record of testing, inspection and maintenance in accordance with Table 1601.5 is maintained in the log. The log will indicate the frequency of inspection and maintenance for each system.

1601.5.3 ***1601.5.1*** **Maintenance Responsibility.** The required maintenance and inspection of alternate water source systems shall be the responsibility of the property owner unless otherwise required by the Authority Having Jurisdiction.

1601.6 Operation and Maintenance Manual. An operation and maintenance manual for gray water, rainwater, and on-site treated water systems required to have a permit in accordance with Section 1601.3 shall be supplied to the building owner by the system designer *or installer*. The operating and maintenance manual shall include the following:

(1) Detailed diagram *Diagram(s)* of the entire system and the location of system components.

(2) Instructions on operating and maintaining the system.

(3) Details *Instructions* on maintaining the required water quality as determined by the Authority Having Jurisdiction *for on-site treated nonpotable water systems.*

(4) Details on *startup, shutdown, and* deactivating the system for maintenance, repair, or other purposes.

(5) Applicable testing, inspection, and maintenance frequencies in accordance with Table *Section* 1601.5.

(6) A method of contacting the *installer and/or* manufacturer(s).

(7) *Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.*

1601.7 Minimum Water Quality Requirements. The minimum water quality for alternate water source systems shall meet the applicable water quality requirements for the intended application as determined by the public health Authority Having Jurisdiction. In the absence of water quality requirements, the EPA/625/R-04/108 contains recommended water reuse guidelines to assist regulatory agencies develop, revise, or expand alternate water source water quality standards *for on-site treated nonpotable gray water systems, the following water quality requirements shall apply:*

1) For owner occupied single family dwellings NSF/ANSI 350.

2) For R-1 and R-2 occupancies, the California Department of Public Health statewide uniform criteria for disinfected tertiary recycled water as provided in California Code of Regulations, Title 22, Section 60301.230.

Exceptions:

(1) Water treatment is not required for rainwater catchment systems used for aboveground irrigation with a maximum storage capacity of 360 gallons (1363 L).

~~(2)~~ Water treatment is not required for gray water used *in a disposal field or* for subsurface *or subsoil* irrigation.

~~(3) Water treatment is not required for rainwater catchment systems used for subsurface or drip irrigation.~~

~~TABLE 1601.5~~
~~MINIMUM ALTERNATE WATER SOURCE TESTING, INSPECTION, AND MAINTENANCE FREQUENCY~~

~~DESCRIPTION~~	~~MINIMUM FREQUENCY~~
~~Inspect and clean filters and screens, and replace (where necessary).~~	~~Every 3 months~~
~~Inspect and verify that disinfection, filters and water quality treatment devices and systems are operational and maintaining minimum water quality requirements as determined by the Authority Having Jurisdiction.~~	~~In accordance with manufacturer's instructions, and the Authority Having Jurisdiction.~~
~~Inspect and clear debris from rainwater gutters, downspouts, and roof washers.~~	~~Every 6 months~~
~~Inspect and clear debris from roof or other aboveground rainwater collection surfaces.~~	~~Every 6 months~~
~~Remove tree branches and vegetation overhanging roof or other aboveground rainwater collection surfaces.~~	~~As needed~~
~~Inspect pumps and verify operation.~~	~~After initial installation and every 12 months thereafter~~
~~Inspect valves and verify operation.~~	~~After initial installation and every 12 months thereafter~~
~~Inspect pressure tanks and verify operation.~~	~~After initial installation and every 12 months thereafter~~
~~Clear debris from and inspect storage tanks, locking devices, and verify operation.~~	~~After initial installation and every 12 months thereafter~~
~~Inspect caution labels and marking.~~	~~After initial installation and every 12 months thereafter.~~
~~Inspect and maintain mulch basins for gray water irrigation systems.~~	~~As needed to maintain mulch depth and prevent ponding and runoff.~~
~~Cross-connection inspection and test*~~	~~After initial installation and every 12 months thereafter.~~
~~*The cross-connection test shall be performed in the presence of the Authority Having Jurisdiction in accordance with the requirements of this chapter.~~	

1601.8 Material Compatibility. Alternate water source systems shall be constructed of materials that are compatible with the type of pipe and fitting materials, water treatment, and water conditions in the system.

1601.9 System Controls. Controls for pumps, valves, and other devices that contain mercury that come in contact with alternate water source water supply shall not be permitted.

1602.0 Gray Water Systems.

1602.1 General. The provisions of this section shall apply to the construction, alteration, and repair of gray water systems. *A city, county, or city and county or other local government may adopt, after a public hearing and enactment of an ordinance or resolution, building standards that are more restrictive than the gray water building standards adopted in this code. For additional information, see Health and Safety Code Section 18941.7.*

(A) All gray water systems shall be designed with a diverter valve to allow the user to direct the flow to the building sewer and either the irrigation field or disposal field, whichever is used. The means of changing the direction of the gray water shall be clearly labeled and readily accessible to the user.

(B) Water used to wash diapers or similarly soiled or infectious garments or other prohibited contents shall be diverted by the user to the building sewer.

(C) Gray water shall not be used in spray irrigation, allowed to pond or runoff and shall not be discharged directly into or reach any storm sewer system or any surface body of water.

(D) Human contact with gray water or the soil irrigated by gray water shall be minimized and avoided, except as required to maintain the gray water system. The discharge point of any gray water subsoil irrigation or subsurface irrigation field shall be covered by at least 2 inches (51 mm) of mulch, rock, or soil, or a solid shield to minimize the possibility of human contact.

(E) Gray water may be released above the ground surface provided at least two (2) inches (51 mm) of mulch, rock, or soil, or a solid shield covers the release point. Other methods which provide equivalent separation are also acceptable.

(F) Gray water shall not contain hazardous chemicals derived from activities such as cleaning car parts, washing greasy or oily rags, or disposing of waste solutions.

***(HCD 1)** The prohibition in Subsection (F) includes, but is not limited to, home photo labs or other similar hobbyist or home occupational activities.*

(G) Exemption from construction permit requirements of this code shall not be deemed to grant authorization for any gray water system to be installed in a manner that violates other provisions of this code or any other laws or ordinances of the enforcing agency.

(H) An operation and maintenance manual shall be provided to the owner. Directions shall indicate that the manual is to remain with the building throughout the life of the system and upon change of ownership or occupancy.

(I) A gray water system shall not be connected to any potable water system without an air gap, reduced-pressure principle backflow preventer, or other physical device which prevents backflow and shall not cause ponding or runoff of gray water.

***1602.1.1 (HCD 1) Clothes Washer System.** A clothes washer system in compliance with all of the following is exempt from the construction permit specified in Section 1.8.4.1 and may be installed or altered without a construction permit:*

1. *If required, notification has been provided to the enforcing agency regarding the proposed location and installation of a gray water irrigation or disposal system.*
2. *The design shall allow the user to direct the flow to the irrigation or disposal field or the building sewer. The direction control of the gray water shall be clearly labeled and readily accessible to the user.*
3. *The installation, change, alteration, or repair of the system does not include a potable water connection or a pump and does not affect other building, plumbing, electrical, or mechanical components including structural features, egress, fire-life safety, sanitation, potable water supply piping, or accessibility.*

   ***Note:** The pump in a clothes washer shall not be considered part of the gray water system.*
4. *The gray water shall be contained on the site where it is generated.*
5. *Gray water shall be directed to and contained within an irrigation or disposal field.*
6. *Ponding or runoff is prohibited and shall be considered a nuisance.*
7. *Gray water may be released above the ground surface provided at least two (2) inches (51 mm) of mulch, rock, or soil, or a solid shield covers the release point. Other methods which provide equivalent separation are also acceptable.*
8. *Gray water systems shall be designed to minimize contact with humans and domestic pets.*
9. *Water used to wash diapers or similarly soiled or infectious garments shall not be used and shall be diverted to the building sewer.*
10. *Gray water shall not contain hazardous chemicals derived from activities such as cleaning car parts, washing greasy or oily rags, or disposing of waste solutions from home photo labs or similar hobbyist or home occupational activities.*
11. *Exemption from construction permit requirements of this code shall not be deemed to grant authorization for any gray water system to be installed in a manner that violates other provisions of this code or any other laws or ordinances of the enforcing agency.*
12. *An operation and maintenance manual shall be provided to the owner. Directions shall indicate that the manual is to remain with the building throughout the life of the system and upon change of ownership or occupancy.*

***1602.1.2 Simple System.** Simple systems exceed a clothes washer system and shall comply with the following:*

1. *The discharge capacity of a gray water system shall be determined by Section 1602.8. Simple systems have a discharge capacity of 250 gallons (947 L) per day or less.*

2. Simple systems shall require a construction permit unless exempted from a construction permit by the Enforcing Agency. The Enforcing Agency shall consult with the water purveyor for any public water system (as defined in Health and Safety Code Section 116275) providing drinking water to the dwelling before allowing an exemption from a construction permit.

3. The design of simple systems shall meet generally accepted gray water system design criteria.

***1602.1.3 Complex System.** Any gray water system that is not a clothes washer system or simple system shall comply with the following:*

1. The discharge capacity of a gray water system shall be determined by Section 1602.8. Complex systems have a discharge capacity over 250 gallons (947 L) per day.

2. Complex systems shall require a construction permit unless exempted from a construction permit by the Enforcing Agency. The Enforcing Agency shall consult with the water purveyor for any public water system (as defined in Health and Safety Code Section 116275) providing drinking water to the dwelling before allowing an exemption from a construction permit.

1602.2 System Requirements.

1602.2.1 Discharge. Gray water shall be permitted to be diverted away from a sewer or private sewage disposal system, and discharge to a subsurface irrigation or subsoil irrigation system*, or disposal field*. The gray water shall be permitted to discharge to a mulch basin for ~~single family and multi family dwellings~~ *residential occupancies*. Gray water shall not be used to irrigate root crops or food crops intended for human consumption that come in contact with soil.

1602.2.2 Surge Capacity. Gray water systems shall be designed to have the capacity to accommodate peak flow rates and distribute the total amount of estimated gray water on a daily basis to a subsurface irrigation field, subsoil irrigation field, *disposal field,* or mulch basin without surfacing, ponding, or runoff. A surge tank is required for systems that are unable to accommodate peak flow rates and distribute the total amount of gray water by gravity drainage. The water discharge for gray water systems shall be determined in accordance with Section 1602.8.1.

***Exception:** It is not the intent of this section to require that all gray water must be handled by an irrigation field or disposal field. It is acceptable for excess gray water to be diverted to the building sewer through a diverter valve or overflow drain as permitted in this chapter.*

1602.2.3 Diversion. The point of diversion of gray water to the sanitary drainage system shall occur downstream of fixture traps and vent connections through an approved ~~gray water~~ diverter valve. The ~~gray water~~ diverter *valve* shall be installed in ~~an~~ *a readily* accessible location and clearly indicate the direction of flow.

1602.2.4 Backwater Valves. Gray water drains subject to backflow shall be provided with a backwater valve *at the point of connection to the building sewer system,* so located as to be accessible for inspection and maintenance.

1602.3 Connections to Potable and Reclaimed (Recycled) Water Systems. Gray water systems shall have no ~~direct~~ *unprotected* connection to a potable water supply, on-site treated nonpotable water supply, or reclaimed (recycled) water systems. Potable, on-site treated nonpotable, ~~or~~ reclaimed (recycled) water*, or rainwater* is permitted to be used as makeup water for a non-pressurized storage tank provided the connection is protected by an airgap*, reduced-pressure principle backflow preventer, or other physical device which prevents backflow* in accordance with this code.

1602.4 Location. No gray water system or part thereof shall be located on a lot other than the lot that is the site of the building or structure that discharges the gray water, nor shall a gray water system or part thereof be located at a point having less than the minimum distances indicated in Table 1602.4.

***Exception**: When there exists a lawfully recorded perpetual and exclusive covenant to an easement appurtenant and right-of-way between adjoining land-owners of two or more contiguous lots to discharge gray water from one lot to an adjoining lot.*

TABLE 1602.4
LOCATION OF GRAY WATER SYSTEM~~7~~

MINIMUM HORIZONTAL DISTANCE IN CLEAR REQUIRED FROM	SURGE TANK (feet)	SUBSURFACE AND SUBSOIL IRRIGATION FIELD AND MULCH ~~BED~~ *BASIN* (feet)	*DISPOSAL FIELD*
Building structures[1]	5[~~2,3~~,9]	2[~~3~~, 8]	*5*
Property line adjoining private property	5	5[8]	*5*
Water supply wells[~~4~~]	50	100	*100*
Streams and lakes[~~4~~]	50	~~50~~ *100*[~~5~~,*10*]	*100*[~~5~~]
Sewage pits or cesspools	5	5	*5*
Sewage disposal field[10]	5	4[6]	*4*[~~6~~]
Septic tank	0	5	*5*
On-site domestic water service line	5	~~5~~ *0*	*0*
Pressurized public water main[~~7~~]	10	10	*10*[~~7~~]

For SI units: 1 foot = 304.8 mm

Notes:

1 ~~Including~~ *Building structures do not include* porches and steps, whether covered or uncovered, breezeways, roofed carports, *roofed porte cocheres,* roofed patios, carports, covered walks, covered driveways, and similar structures or appurtenances.

2 The distance shall be permitted to be reduced to 0 feet for aboveground tanks where first approved by the Authority Having Jurisdiction.

3 ~~Reference to a 45 degree (0.79 rad) angle from foundation~~. *Underground tanks shall not be located within a 45 degree angle from the bottom of the foundation, or they shall be designed to address the surcharge imposed by the structure. The distance may be reduced to six (6) inches (153 mm) for aboveground tanks when first approved by the enforcing agency.*

4 Where special hazards are involved, the distance required shall be increased as directed by the Authority Having Jurisdiction.

5 These minimum clear horizontal distances shall apply between the irrigation or disposal field and the ocean mean higher high tide line.

6 Add 2 feet (610 mm) for each additional foot of depth in excess of 1 foot (305 mm) below the bottom of the drain line.

7 For parallel construction or for crossings, approval by the Authority Having Jurisdiction shall be required.

8 The distance shall be permitted to be reduced to 1½ feet (457 mm) for drip and mulch basin irrigation systems.

9 The distance shall be permitted to be reduced to 0 feet for surge tanks of 75 gallons (284 L) or less.

~~10~~ ~~Where irrigation or disposal fields are installed in sloping ground, the minimum horizontal distance between a part of the distribution system and the ground surface shall be 15 feet (4572 mm).~~

10 *The minimum horizontal distance may be reduced to 50 feet (15,240 mm) for irrigation or disposal fields utilizing gray water which has been filtered prior to entering the distribution piping.*

1602.5 Plot Plan Submission. No permit for a gray water system shall be issued until a plot plan with data satisfactory to the Authority Having Jurisdiction has been submitted and approved.

Exception (HCD 1)*: A construction permit shall not be required for a clothes washer system in compliance with Section 1602.1.1.*

1602.6 Prohibited Location. Where there is insufficient lot area or inappropriate soil conditions for adequate absorption ~~to prevent the ponding, surfacing, or runoff of the gray water, as determined by the Authority Having Jurisdiction~~, no gray water system shall be permitted. ~~A gray water system is not permitted on a property in a geologically sensitive area as determined by the Authority Having Jurisdiction.~~

1602.7 Drawings and Specifications. The Authority Having Jurisdiction ~~shall~~ *may* require the following information to be included with or in the plot plan before a permit is issued for a gray water system, or at a time during the construction thereof:

(1) Plot plan drawn to scale and completely dimensioned, showing lot lines and structures, direction and approximate slope of surface, location of present or proposed retaining walls, drainage channels, water supply lines, wells, paved areas and structures on the plot, number of bedrooms and plumbing fixtures in each structure, location of private sewage disposal system and expansion area or building sewer connecting to the public sewer, and location of the proposed gray water system.

(2) Details of construction necessary to ensure compliance with the requirements of this chapter, together with a full description of the complete installation, including installation methods, construction, and materials ~~in accordance with the Authority Having Jurisdiction~~.

(3) Details for holding tanks shall include dimensions, structural calculations, bracings, and such other pertinent data as required.

(4) A log of soil formations and groundwater level as determined by test holes dug in proximity to the proposed irrigation *and/or disposal* area, together with a statement of water absorption characteristics of the soil at the proposed site as determined by approved percolation tests.

Exceptions:

(1) The Authority Having Jurisdiction shall permit the use of Table 1602.~~4~~10 in lieu of percolation tests.

(2) The enforcing agency may waive the requirement for identification of groundwater level and/or soil absorption qualities based on knowledge of local conditions.

(3) The absence of groundwater in a test hole three (3) vertical feet (915 mm) below the deepest irrigation or disposal point shall be sufficient to satisfy this section unless seasonal high groundwater levels have been documented to rise to within this area.

(5) Distance between the plot and surface waters such as lakes, ponds, rivers or streams, and the slope between the plot and the surface water, where in close proximity.

1602.8 Procedure for Estimating Gray Water Discharge. Gray water systems shall be designed to distribute the total amount of estimated gray water on a daily basis. The water discharge for gray water systems shall be determined in accordance with Section 1602.8.1 or Section 1602.8.2.

Exception: *It is not the intent of this section to require that all gray water must be handled by an irrigation field or disposal field. It is acceptable for excess gray water to be diverted to the building sewer through a diverter valve or overflow drain as permitted in this chapter.*

1602.8.1 ~~Single Family Dwellings and Multi-Family Dwellings.~~ *Residential Occupancies.* The gray water discharge for ~~single family and multi-family dwellings~~ *residential occupancies* shall be calculated by water use records, calculations of local daily per person interior water use, or the following procedure:

(1) The number of occupants of each dwelling unit shall be calculated as follows:

First Bedroom	2 occupants
Each additional bedroom	1 occupant

(2) The estimated gray water flows of each occupant shall be calculated as follows:

Showers, bathtubs and lavatories	25 gallons (95 L) per day/occupant
Laundry	15 gallons (57 L) per day/occupant

(3) The total number of occupants shall be multiplied by the applicable estimated gray water discharge as provided above and the type of fixtures connected to the gray water system.

1602.8.2 Commercial, Industrial, and Institutional Occupancies. The gray water discharge for commercial, industrial, and institutional occupancies shall be calculated by utilizing the procedure in Section 1602.8.1, water use records, or other documentation to estimate gray water discharge.

1602.8.3 Daily Discharge. *Gray water systems using tanks shall be designed to minimize the amount of time gray water is held in the tank and shall be sized to distribute the total amount of estimated gray water on a daily basis.*

Exception: *Approved on-site treated nonpotable gray water systems*.

1602.9 Gray Water System Components. Gray water system components shall comply with ~~Section 1602.9.1 through Section 1602.9.7~~ *this chapter*.

1602.9.1 Surge Tanks. Where installed, surge tanks shall be in accordance with the following:

(1) Surge tanks shall be constructed of solid, durable materials not subject to excessive corrosion or decay and shall be watertight. *Above ground surge tanks shall be protected from direct sunlight or shall be*

constructed of UV resistant materials including but not limited to heavily tinted or opaque plastic, fiberglass, lined metal, concrete and wood. Surge tanks constructed of steel shall be approved by the Authority Having Jurisdiction, provided such tanks are in accordance with approved applicable standards.

(2) Each surge tank shall be vented in accordance with this code. The vent size shall be determined based on the total gray water fixture units as outlined in this code.

(3) Each surge tank shall have an access opening with lockable gasketed covers or approved equivalent to allow for inspection and cleaning.

(4) Each surge tank shall have its rated capacity permanently marked on the unit. In addition, a sign stating ~~GRAY WATER, DANGER UNSAFE WATER~~ *GRAY WATER SYSTEM, CAUTION – UNSAFE WATER* shall be permanently marked on the holding tank.

(5) Each surge tank shall have an overflow drain. The overflow drains shall have permanent connections to the building drain or building sewer, upstream of septic tanks. The overflow drain shall not be equipped with a shutoff valve.

(6) The overflow drainpipes shall not be less in size than the inlet pipe. Unions or equally effective fittings shall be provided for piping connected to the surge tank.

(7) Surge tank shall be structurally designed to withstand anticipated earth or other loads. Surge tank covers shall be capable of supporting an earth load of not less than 300 pounds per square foot (lb/ft^2) (1465 kg/m^2) where the tank is designed for underground installation.

(8) Where a surge tank is installed underground, the overflow system shall be designed so that the tank overflow will gravity drain to the existing sewer line or septic tank. The tank shall be protected against sewer line backflow by a backwater valve installed in accordance with this code.

(9) Surge tanks shall be installed on dry, level, well-compacted soil where underground or on a level 3 inch (76 mm) thick concrete slab *or other approved method* where aboveground.

(10) Surge tanks shall be anchored to prevent against overturning where installed aboveground. Underground tanks shall be ballasted, anchored, or otherwise secured, to prevent the tank from floating out of the ground where empty. The combined weight of the tank and hold down system shall meet or exceed the buoyancy forces of the tank.

(11) ***(HCD 1)*** *An overflow drain and backwater valve is not required on a clothes washer system.*

~~**1602.9.2 Gray Water Pipe and Fitting Materials.** Aboveground and underground building drainage and vent pipe and fittings for gray water systems shall comply with the requirements for aboveground and underground sanitary building drainage and vent pipe and fittings in this code. These materials shall extend not less than 2 feet (610 mm) outside the building.~~

1602.9.2 Animals and Insects. *Gray water tank openings shall be protected to prevent the entrance of insects, birds, or rodents into the tank and piping systems. Screens installed on vent pipes, inlets, and overflow pipes shall have an aperture of not greater than 1/16 of an inch (1.6 mm) and shall be close fitting.*

~~**1602.9.3 Subsoil Irrigation Field Materials.** Subsoil irrigation field *and disposal field* piping shall be constructed of perforated high-density polyethylene pipe, perforated ABS pipe, perforated PVC pipe, or other approved materials, provided that sufficient openings are available for distribution of the gray water into the trench area. Material, construction, and perforation of the pipe shall be in accordance with the appropriate absorption field drainage piping standards and shall be approved by the Authority Having Jurisdiction.~~

1602.9.3 Freeze Protection. *Tanks and piping installed in locations subject to freezing shall be provided with an approved means of freeze protection.*

~~**1602.9.4 Subsurface Irrigation Field and Mulch Basin Supply Line Materials.** Materials for gray water piping outside the building shall be polyethylene or PVC. Drip feeder lines shall be PVC or polyethylene tubing.~~

~~**1602.9.5 Valves.** Valves shall be accessible.~~

~~**1602.9.6 Trap.** Gray water piping discharging into the surge tank or having a direct connection to the sanitary drain or sewer piping shall be downstream of an approved water seal type trap(s). Where no such trap(s) exists, an approved vented running trap shall be installed upstream of the connection to protect the building from possible waste or sewer gases.~~

~~**1602.9.7 Backwater Valve.** A backwater valve shall be installed on gray water drain connections to the sanitary drain or sewer.~~

1602.10 Subsurface Irrigation System Zones. Irrigation or disposal fields shall be permitted to have one or more valved zones. Each zone shall be of a size to receive the gray water anticipated in that zone.

1602.10.1 Required Area of Subsurface Irrigation Fields, Subsoil Irrigation Fields and Mulch Basins. The minimum effective irrigation area of subsurface irrigation fields, subsoil irrigation fields, and mulch basins shall be determined by Table 1602.10 for the type of soil found in the excavation, based upon a calculation of estimated gray water discharge pursuant to Section 1602.8. For a subsoil irrigation field, the area shall be equal to the aggregate length of the perforated pipe sections within the valved zone multiplied by the width of the proposed subsoil irrigation field.

TABLE 1602.10
DESIGN OF SIX TYPICAL SOILS

TYPE OF SOIL	MINIMUM SQUARE FEET OF IRRIGATION/*LEACHING* AREA PER 100 GALLONS OF ESTIMATED GRAY WATER DISCHARGE PER DAY	MAXIMUM ABSORPTION CAPACITY IN GALLONS PER SQUARE FOOT OF IRRIGATION/LEACHING AREA FOR A 24-HOUR PERIOD
Coarse sand or gravel	20	5.0
Fine sand	25	4.0
Sandy loam	40	2.5
Sandy clay	60	1.7
Clay with considerable sand or gravel	90	1.1
Clay with small amounts of sand or gravel	120	0.8

For SI units: 1 square foot = 0.0929 m^2, 1 gallon per day = 0.000043 L/s

1602.10.2 Determination of Maximum Absorption Capacity. The irrigation field and mulch basin size shall be based on the maximum absorption capacity of the soil and determined using Table 1602.10. For soils not listed in Table 1602.10, the maximum absorption capacity for the proposed site shall be determined by percolation tests or other method acceptable to the Authority Having Jurisdiction. A gray water system shall not be permitted, where the percolation test shows the absorption capacity of the soil is unable to accommodate the maximum discharge of the proposed gray water irrigation system.

Exception: *The enforcing agency may waive the requirement for identification of groundwater level and/or soil absorption qualities based on knowledge of local conditions.*

1602.10.3 Groundwater Level. No excavation for an irrigation field, disposal field, or mulch basin shall extend within 3 feet (914 mm) vertical of the highest known seasonal groundwater level nor to a depth where gray water contaminates the groundwater or surface water. The applicant shall supply evidence of groundwater depth to the satisfaction of the Authority Having Jurisdiction.

Note: *The absence of groundwater in a test hole three (3) vertical feet (915 mm) below the deepest irrigation or disposal point shall be sufficient to satisfy this section unless seasonal high groundwater levels have been documented to rise to within this area.*

~~**1602.11 Subsurface and Subsoil Irrigation Field, and Mulch Basin Design and Construction.**~~
~~Subsurface and subsoil irrigation field, and mulch basin design and construction shall be in accordance with Section 1602.11.1 through Section 1602.11.3. Where a gray water irrigation system design is predicated on soil tests, the subsurface or subsoil irrigation field or mulch basin shall be installed at the same location and depth as the tested area.~~

~~**1602.11.1 Subsurface Irrigation Field.** A subsurface irrigation field shall comply with Section 1602.11.1.1 through Section 1602.11.1.6.~~

~~**1602.11.1.1 Minimum Depth.** Supply piping, including drip feeders, shall be not less than 2 inches (51 mm) below finished grade and covered with mulch or soil.~~

1602.11.1.2 Filter. Not less than 140 mesh (105 micron) filter with a capacity of 25 gallons per minute (gpm) (1.58 L/s), or equivalent shall be installed. Where a filter backwash is installed, the backwash and flush discharge shall discharge into the building sewer or private sewage disposal. Filter backwash and flush water shall not be used.

TABLE 1602.11
SUBSURFACE IRRIGATION DESIGN
CRITERIA FOR SIX TYPICAL SOILS

TYPE OF SOIL	MAXIMUM EMITTER DISCHARGE (gallons per day)	MINIMUM NUMBER OF EMITTERS PER GALLON OF ESTIMATED GRAY WATER DISCHARGE PER DAY* (gallons per day)
Sand	1.8	0.6
Sandy loam	1.4	0.7
Loam	1.2	0.9
Clay loam	0.9	1.1
Silty clay	0.6	1.6
Clay	0.5	2.0

For SI units: 1 gallon per day = 0.000043 L/s

*The estimated gray water discharge per day shall be determined in accordance with Section 1602.8 of this code.

1602.11.1.3 Emitter Size. Emitters shall be installed in accordance with the manufacturer's installation instructions. Emitters shall have a flow path of not less than 1200 microns (μ) (1200 μm) and shall not have a coefficient of manufacturing variation (Cv) exceeding 7 percent. Irrigation system design shall be such that emitter flow variation shall not exceed 10 percent.

1602.11.1.4 Number of Emitters. The minimum number of emitters and the maximum discharge of each emitter in an irrigation field shall be in accordance with Table 1602.11.

1602.11.1.5 Controls. The system design shall provide user controls, such as valves, switches, timers, and other controllers, to rotate the distribution of gray water between irrigation zones.

1602.11.1.6 Maximum Pressure. Where pressure at the discharge side of the pump exceeds 20 pounds-force per square inch (psi) (138 kPa), a pressure-reducing valve able to maintain downstream pressure not exceeding 20 psi (138 kPa) shall be installed downstream from the pump and before an emission device.

1602.11.2 Mulch Basin. A mulch basin shall comply with Section 1602.11.2.1 through Section 1602.11.2.4.

1602.11.2.1 Single Family and Multi-Family Dwellings. The gray water discharge to a mulch basin is limited to single family and multi-family dwellings.

1602.11.2.2 Size. Mulch basins shall be of sufficient size to accommodate peak flow rates and distribute the total amount of estimated gray water on a daily basis without surfacing, ponding or runoff. Mulch basins shall have a depth of not less than 10 inches (254 mm) below finished grade. The mulch basin size shall be based on the maximum absorption capacity of the soil and determined using Table 1602.10.

1602.11.2.3 Minimum Depth. Gray water supply piping, including drip feeders, shall be not less than 2 inches (51 mm) below finished grade and covered with mulch.

1602.11.2.4 Maintenance. The mulch basin shall be maintained periodically to retain the required depth and area, and to replenish the required mulch cover.

1602.11.3 Subsoil Irrigation Field. Subsoil irrigation fields shall comply with Section 1602.11.3.1 through Section 1602.11.3.3.

1602.11.3.1 Minimum Pipe Size. Subsoil irrigation field distribution piping shall be not less than 3 inches (80 mm) diameter.

~~**1602.11.3.2 Filter Material and Backfill.** Filter material, clean stone, gravel, slag, or similar material acceptable to the Authority Having Jurisdiction, varying in size from 3/4 of an inch (19.1 mm) to 2-1/2 inches (64 mm) shall be placed in the trench to the depth and grade in accordance with Table 1602.11.3. The perforated section of subsoil irrigation field distribution piping shall be laid on the filter material in an approved manner. The perforated section shall then be covered with filter material to the minimum depth in accordance with Table 1602.11.3. The filter material shall then be covered with porous material to prevent closure of voids with earth backfill. No earth backfill shall be placed over the filter material cover until after inspection and acceptance.~~

~~**1602.11.3.3 Subsoil Irrigation Field Construction.** Subsoil irrigation fields shall be constructed in accordance with Table 1602.11.3. Where necessary on sloping ground to prevent excessive line slopes, irrigation lines shall be stepped. The lines between each horizontal leaching section shall be made with approved watertight joints and installed on natural or unfilled ground.~~

~~**TABLE 1602.11.3**~~
~~**SUBSOIL IRRIGATION FIELD CONSTRUCTION**~~

~~**DESCRIPTION**~~	~~**MINIMUM**~~	~~**MAXIMUM**~~
~~Number of drain lines per valved zone~~	~~1~~	~~-~~
~~Length of each perforated line~~	~~-~~	~~100 feet~~
~~Bottom width of trench [1]~~	~~12 inches~~	~~18 *24* inches~~
~~Spacing of lines, center to center~~	~~4 feet~~	~~-~~
~~Depth of earth cover of lines~~	~~10 inches~~	~~-~~
~~Depth of filter material cover of lines~~	~~2 inches~~	~~-~~
~~Depth of filter material beneath lines~~	~~3 inches~~	~~-~~
~~Grade of perforated lines level~~	~~level~~	~~3 inches per 100 feet~~

~~For SI units: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 inch per foot = 83.3 mm/m~~

1602.11 Irrigation, Disposal Field and Mulch Basin Construction.

Irrigation fields, disposal fields and mulch basins used in gray water systems shall comply with this section. Gray water systems may contain either a irrigation field or a disposal field or a combination of both. This section is not intended to prevent the use of other methods of gray water irrigation or disposal approved by the enforcing agency.

1602.11.1 Mulch Basin. *A mulch basin may be used as an irrigation or disposal field. Mulch basins shall be sized in accordance with Table 1602.10 and of sufficient depth, length and width to prevent ponding or runoff during the gray water surge of a clothes washer, bathtub or shower. Mulch must be replenished as required due to decomposition of organic matter. Mulch basins will require periodic maintenance, reshaping or removal of dirt to maintain surge capacity and to accommodate plant growth and prevent ponding or runoff.*

1602.11.2 Irrigation Field. *The provisions of this section are not intended to prevent the use of any appropriate material, appliance, installation, device, design or method of construction. If an alternate design is not available, the following provisions may be used as guidance in the design of a gray water irrigation field:*

(1) Filters used in gray water irrigation systems shall be as specified by the manufacturer's installation instructions for the design flow rate and intended use. The filter backwash and flush discharge shall be contained and disposed of into the building sewer system, septic tank or, with approval of the enforcing agency, a separate mini-leachfield sized to accept all the backwash and flush discharge water. Filter backwash water and flush water shall not be used for any purpose. Sanitary procedures shall be followed when handling filter backwash and flush discharge or gray water.

(2) Emitters shall be designed to resist root intrusion and shall be of a design recommended by the manufacturer for the intended gray water flow and use. For emitter ratings, refer to Irrigation Equipment Performance Report, Drip Emitters and Micro-Sprinklers, Center for Irrigation Technology, California State University, 5730 N. Chestnut Avenue, Fresno, California 93740-0018.

(3) Each irrigation zone shall be designed to include no less than the number of emitters specified in Table 1602.11 or through a procedure designated by the enforcing agency. Minimum spacing between emitters is in any direction shall be sufficient to prevent surfacing or runoff.

(4) The system design shall provide user controls, such as valves, switches, timers and other controllers, as appropriate, to rotate the distribution of gray water between irrigation zones.

(5) All drip irrigation supply lines shall be polyethylene tubing or PVC Class 200 pipe or better and Schedule 40 fittings. All joints shall be pressure tested at 40 psi (276 kPa), and shown to be drip tight for five minutes, before burial. All supply piping shall be covered to a minimum depth of two (2) inches (51 mm) of mulch or soil. Drip feeder lines can be poly or flexible PVC tubing and shall be covered to a minimum depth of two (2) inches (51 mm) of mulch or soil.

(6) Where pressure at the discharge side of the pump exceeds 20 psi (138 kPa), a pressure-reducing valve able to maintain downstream pressure no greater than 20 psi (138 kPa) shall be installed downstream from the pump and before any emission device.

(7) Each irrigation zone shall include a flush valve/antisiphon valve to prevent back siphonage of water and soil.

TABLE 1602.11
SUBSURFACE IRRIGATION DESIGN
CRITERIA FOR SIX TYPICAL SOILS

TYPE OF SOIL	MAXIMUM EMITTER DISCHARGE (gallons per day)	MINIMUM NUMBER OF EMITTERS PER GALLON OF ESTIMATED GRAY WATER DISCHARGE PER DAY*
Sand	1.8	0.6
Sandy loam	1.4	0.7
Loam	1.2	0.9
Clay loam	0.9	1.1
Silty clay	0.6	1.6
Clay	0.5	2.0

For SI units: 1 gallon per day = 0.000043 L/s

*The estimated gray water discharge per day shall be determined in accordance with Section 1602.8 of this code.

1602.11.3 Disposal Field. *The provisions of this section are not intended to prevent the use of any appropriate material, appliance, installation, device, design or method of construction. If an alternate design is not available the following provisions may be used as guidance in the design of a gray water disposal field:*

(A) Disposal systems shall be not less than three (3) inches (80 mm) in cross sectional dimension and shall be constructed of perforated high-density polyethylene pipe, perforated ABS pipe, perforated PVC pipe, leaching chambers or other approved materials, provided that sufficient openings are available for distribution of the gray water into the trench area. Material, construction, and perforation shall be in compliance with the appropriate absorption fields drainage standards and shall be approved by the enforcing agency.

(B) Filter material, clean stone, gravel, slag, or similar filter material acceptable to the enforcing agency, varying in size from three-quarter (3/4) inch (19.1 mm) to two and one-half (2-1/2) inches (64 mm) shall be placed in the trench to the depth and grade required by this section. The perforated section shall be laid on the filter material in an approved manner. The perforated section shall then be covered with filter material to the minimum depth required by this section. The filter material shall then be covered with untreated building paper, straw, or similar porous material to prevent closure of voids with earth backfill. No earth backfill shall be placed over the filter material cover until after inspection and acceptance.

Exception: *Manufactured leaching chambers shall be installed in compliance with the manufacturer's installation instructions.*

(C) Disposal fields shall be constructed in accordance with Table 1602.11.3.

(D) When necessary on sloping ground to prevent excessive line slopes, disposal lines shall be stepped or installed on the contour lines of the slope. The lines between each horizontal leaching section shall be made with approved water-tight joints and installed on natural or unfilled ground.

TABLE 1602.11.3
SUBSOIL IRRIGATION FIELD CONSTRUCTION

DESCRIPTION	MINIMUM	MAXIMUM
Number of drain lines per valved zone[1]	1	-
Length of each perforated line [1]	-	100 feet
Bottom width of trench [1]	12 inches	*24* inches
Spacing of lines, center to center [1]	4 feet	-
Depth of earth cover of lines	10 inches	-
Depth of filter material cover of lines	2 inches	-
Depth of filter material beneath lines [1]	3 inches	-
Grade of perforated lines level	level	3 inches per 100 feet

For SI units: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 inch per foot = 83.3 mm/m

[1] *Manufactured leaching chambers shall be installed in compliance with the manufacturer's installation instructions.*

1602.12 Gray Water System Color and Marking Information. Pressurized gray water distribution systems shall be identified as containing nonpotable water in accordance with Section 601.2 of this code. *Marking shall be at intervals not to exceed 5 feet (1,524 mm). Gray water distribution piping upstream of any connection to an irrigation or disposal field or a distribution valve shall be identified with the words "CAUTION: NONPOTABLE GRAY WATER, DO NOT DRINK".*

1602.13 Special Provisions.

~~**1602.13**~~ ***1602.13.1.*** **Other Collection and Distribution Systems.** Other collection and distribution systems shall be approved ~~by the local Authority Having Jurisdiction,~~ as allowed by Section 301.2 of this code.

~~**1602.13.1 Higher Requirements.** Nothing contained in this chapter shall be construed to prevent the Authority Having Jurisdiction from requiring compliance with higher requirements than those contained herein, where such higher requirements are essential to maintain a safe and sanitary condition.~~

1602.13.2 Future Connections. *Gray water stub-out plumbing may be allowed for future connection prior to the installation of irrigation lines and landscaping. Stub-out shall be permanently marked in accordance with Section 601.2 of this code.*

1602.14 Testing. Building drains and vents for gray water systems shall be tested in accordance with this code. Surge tanks shall be filled with water to the overflow line prior to and during inspection. Seams and joints shall be left exposed, and the tank shall remain watertight. A flow test shall be performed through the system to the point of gray water discharge. Lines and components shall be watertight up to the point of the irrigation perforated and drip lines.

1602.15 Maintenance. Gray water systems and components shall be maintained in accordance with ~~Table~~ *Section* 1601.5.

~~**1603.0 Reclaimed (Recycled) Water Systems.**~~ ***1603.0 Reserved***

~~**1603.1 General.** The provisions of this section shall apply to the installation, construction, alteration, and repair of reclaimed (recycled) water systems intended to supply uses such as water closets, urinals, trap primers for floor drains and floor sinks, aboveground and subsurface irrigation, industrial or commercial cooling or air conditioning and other uses approved by the Authority Having Jurisdiction.~~

~~**1603.2 Permit.** It shall be unlawful for a person to construct, install, alter, or cause to be constructed, installed, or altered a reclaimed (recycled) water system within a building or on a premises without first obtaining a permit to do such work from the Authority Having Jurisdiction.~~

~~**1603.2.1 Plumbing Plan Submission.** No permit for a reclaimed (recycled) water system shall be issued until complete plumbing plans, with data satisfactory to the Authority Having Jurisdiction, have been submitted and approved.~~

~~**1603.3 System Changes.** No changes or connections shall be made to either the reclaimed (recycled) water system or the potable water system within a site containing a reclaimed (recycled) water system without approval by the Authority Having Jurisdiction.~~

1603.4 Connections to Potable or Reclaimed (Recycled) Water Systems. Reclaimed (recycled) water systems shall have no connection to a potable water supply or alternate water source system. Potable water is permitted to be used as makeup water for a reclaimed (recycled) water storage tank provided the water supply inlet is protected by an airgap or reduced-pressure principle backflow preventer in accordance with this code.

1603.5 Initial Cross-Connection Test. A cross-connection test is required in accordance with Section 1603.11.2. Before the building is occupied or the system is activated, the installer shall perform the initial cross-connection test in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction. The test shall be ruled successful by the Authority Having Jurisdiction before final approval is granted.

1603.6 Reclaimed (Recycled) Water System Materials. Reclaimed (recycled) water supply and distribution system materials shall comply with the requirements of this code for potable water supply and distribution systems, unless otherwise provided for in this section.

1603.7 Reclaimed (Recycled) Water System Color and Marking Information. Reclaimed (recycled) water systems shall have a colored background and marking information in accordance with Section 601.2 of this code.

1603.8 Valves. Valves, except fixture supply control valves, shall be equipped with a locking feature.

1603.9 Installation.

1603.9.1 Hose Bibbs. Hose bibbs shall not be allowed on reclaimed (recycled) water piping systems located in areas accessible to the public. Access to reclaimed (recycled) water at points in the system accessible to the public shall be through a quick-disconnect device that differs from those installed on the potable water system. Hose bibbs supplying reclaimed (recycled) water shall be marked with the words: "CAUTION: NONPOTABLE RECLAIMED WATER, DO NOT DRINK," and the symbol in Figure 1603.9

FIGURE 1603.9

1603.9.2 Required Appurtenances. The reclaimed (recycled) water system and the potable water system within the building shall be provided with the required appurtenances (e.g., valves, air/vacuum relief valves, etc.) to allow for deactivation or drainage as required for a cross-connection test in accordance with Section 1603.11.2.

1603.9.3 Same Trench as Potable Water Pipes. Reclaimed (recycled) water pipes shall be permitted to be run or laid in the same trench as potable water pipes with a 12 inches (305 mm) minimum vertical and horizontal separation where both pipe materials are approved for use within a building. Where piping materials do not meet this requirement the minimum horizontal separation shall be increased to 60 inches (1524 mm). The potable water piping shall be installed at an elevation above the reclaimed (recycled) water piping. Reclaimed (Recycled) water pipes laid in the same trench or crossing building sewer or drainage piping shall be installed in accordance with this code for potable water piping.

1603.10 Signs. Rooms and water closet tanks in buildings using reclaimed (recycled) water shall be in accordance with Section 1603.10.1 and Section 1603.10.2.

1603.10.1 Commercial, Industrial, and Institutional Restroom Signs. A sign shall be installed in restrooms in commercial, industrial, and institutional occupancies using reclaimed (recycled) water for water closets, urinals, or both. Each sign shall contain ½ of an inch (12.7 mm) letters of a highly visible color on a contrasting background. The location of the sign(s) shall be such that the sign(s) shall be visible to users. The location of the sign(s) shall be approved by the Authority Having Jurisdiction and shall contain the following text:
TO CONSERVE WATER, THIS BUILDING USES RECLAIMED (RECYCLED) WATER TO FLUSH TOILETS AND URINALS.

1603.10.2 Equipment Room Signs. Each room containing reclaimed (recycled) water equipment shall have a sign posted with the following wording in 1 inch (25.4 mm) letters:
CAUTION: NONPOTABLE RECLAIMED (RECYCLED) WATER, DO NOT DRINK.
DO NOT CONNECT TO DRINKING WATER SYSTEM. NOTICE: CONTACT BUILDING MANAGEMENT BEFORE PERFORMING ANY WORK ON THIS WATER SYSTEM.

1603.11 Inspection and Testing. Reclaimed (recycled) water systems shall be inspected and tested in accordance with Section 1603.11.1 and Section 1603.11.2.

1603.11.1 Supply System Inspection and Test. Reclaimed (Recycled) water systems shall be inspected and tested in accordance with this code for testing of potable water piping.

1603.11.2 Annual Cross-Connection Inspection and Testing. An initial and subsequent annual inspection and test shall be performed on both the potable and reclaimed (recycled) water systems. The potable and reclaimed (recycled) water system shall be isolated from each other and independently inspected and tested to ensure there is no cross-connection in accordance with Section 1603.11.2.1 through Section 1603.11.2.4.

1603.11.2.1 Visual System Inspection. Prior to commencing the cross-connection testing, a dual system inspection shall be conducted by the Authority Having Jurisdiction and other authorities having jurisdiction as follows:
(1) Meter locations of the reclaimed (recycled) water and potable water lines shall be checked to verify that no modifications were made, and that no cross-connections are visible.
(2) Pumps and equipment, equipment room signs, and exposed piping in equipment room shall be checked.
(3) Valves shall be checked to ensure that valve lock seals are still in place and intact. Valve control door signs shall be checked to verify that no signs have been removed.

1603.11.2.2 Cross-Connection Test. The procedure for determining cross-connection shall be followed by the applicant in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction to determine whether a cross-connection has occurred as follows:
(1) The potable water system shall be activated and pressurized. The reclaimed (recycled) water system shall be shut down, depressurized, and drained.
(2) The potable water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the reclaimed (recycled) water system is empty. The minimum period the reclaimed (recycled) water system is to remain depressurized shall be determined on a case-by-case basis, taking into account the size and complexity of the potable and reclaimed (recycled) water distribution systems, but in no case shall that period be less than 1 hour.
(3) The drain on the reclaimed (recycled) water system shall be checked for flow during the test and fixtures, potable and reclaimed (recycled), shall be tested and inspected for flow. Flow from a reclaimed (recycled) water system outlet indicates a cross-connection. No flow from a potable water outlet shall indicate that it is connected to the reclaimed (recycled) water system.
(4) The potable water system shall then be depressurized and drained.
(5) The reclaimed (recycled) water system shall then be activated and pressurized.
(6) The reclaimed (recycled) water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the potable water system is empty. The minimum period the potable water system is to remain depressurized shall be determined on a case-by-case basis, but in no case shall that period be less than 1 hour.
(7) Fixtures, potable and reclaimed (recycled), shall be tested and inspected for flow. Flow from a potable water system outlet indicates a cross-connection. No flow from a reclaimed (recycled) water outlet will indicate that it is connected to the potable water system.
(8) The drain on the potable water system shall be checked for flow during the test and at the end of the test.
(9) Where there is no flow detected in the fixtures which would indicate a cross-connection, the potable water system shall be repressurized.

1603.11.2.3 Discovery of Cross-Connection. In the event that a cross-connection is discovered, the following procedure, in the presence of the Authority Having Jurisdiction, shall be activated immediately:
(1) Reclaimed (recycled) water piping to the building shall be shut down at the meter, and the reclaimed (recycled) water riser shall be drained.
(2) Potable water piping to the building shall be shut down at the meter.
(3) The cross-connection shall be uncovered and disconnected.

~~(4) The building shall be retested following procedures listed in Section 1603.11.2.1 and Section 1603.11.2.2.~~
~~(5) The potable water system shall be chlorinated with 50 parts-per-million (ppm) chlorine for 24 hours.~~
~~(6) The potable water system shall be flushed after 24 hours, and a standard bacteriological test shall be performed. Where test results are acceptable, the potable water system shall be permitted to be recharged.~~

~~**1603.11.2.4 Annual Inspection.** An annual inspection of the reclaimed (recycled) water system, following the procedures listed in Section 1603.11.2.1 shall be required. Annual cross-connection testing, following the procedures listed in Section 1603.11.2.2 shall be required by the Authority Having Jurisdiction, unless site conditions do not require it. In no event shall the test occur less than once in 4 years. Alternate testing requirements shall be permitted by the Authority Having Jurisdiction.~~

~~**1603.12 Sizing.** Reclaimed (recycled) water piping shall be sized in accordance with this code for sizing potable water piping.~~

1604.0 On-Site Treated Nonpotable *Gray* Water Systems.

1604.1 General. The provisions of this section shall apply to the installation, construction, alteration, and repair of on-site treated nonpotable *gray* water systems intended to supply uses such as water closets, urinals, trap primers for floor drains and floor sinks, above and belowground irrigation, and other uses approved by the Authority Having Jurisdiction.

Other approved nonpotable water sources, including swimming pool backwash operations, air conditioner condensate, rainwater, cooling tower blow-down water, foundation drainage, steam system condensate, fluid cooler discharge water, food steamer discharge water, combination oven discharge water, industrial process water, and fire pump test water may be permitted to be collected for re-use by gray water systems, as approved for the intended application.

1604.2 Plumbing Plan Submission. No permit for an on-site treated nonpotable *gray* water system shall be issued until complete plumbing plans, with data satisfactory to the Authority Having Jurisdiction, have been submitted and approved.

1604.3 System Changes. No changes or connections shall be made to either the on-site treated nonpotable *gray* water system or the potable water system within a site containing an on-site treated nonpotable *gray* water system without approval by the Authority Having Jurisdiction.

1604.4 Connections to Potable or Reclaimed (Recycled) Water Systems. On-site treated nonpotable *gray* water systems shall have no *unprotected* connection to a potable water supply or reclaimed (recycled) water source system. Potable or reclaimed (recycled) water is permitted to be used as makeup water for a non-pressurized storage tank provided the makeup water supply is protected by an airgap*, reduced-pressure principle backflow preventer, or other physical device which prevents backflow* in accordance with this code.

1604.5 Initial Cross-Connection Test. A cross-connection test is required in accordance with Section 1604.12.2. Before the building is occupied or the system is activated, the installer shall perform the initial cross-connection test in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction. The test shall be ruled successful by the Authority Having Jurisdiction before final approval is granted.

1604.6 On-Site Treated Nonpotable *Gray* Water System Materials. On-site treated nonpotable *gray* water supply and distribution system materials shall comply with the requirements of this code for potable water supply and distribution systems, unless otherwise provided for in this section.

1604.7 On-Site Treated Nonpotable *Gray* Water Devices and Systems. Devices or equipment used to treat on-site treated nonpotable *gray* water in order to maintain the minimum water quality requirements determined by the Authority Having Jurisdiction shall be listed or labeled (third-party certified) by a listing agency (accredited conformity assessment body) and approved for the intended application.

1604.8 On-Site Treated Nonpotable *Gray* Water System Color and Marking Information. On-site treated *nonpotable gray* water systems shall have a colored background and marking information in accordance with Section 601.2 of this code.

1604.9 Valves. Valves, except fixture supply control valves, shall be equipped with a locking feature.

1604.10 Design and Installation. The design and installation of on-site treated nonpotable *gray water* systems shall be in accordance with Section 1604.10.1 through Section 1604.10.5.

1604.10.1 Listing Terms and Installation Instructions. On-site treated nonpotable *gray* water systems shall be installed in accordance with the terms of its listing and the manufacturer's installation instructions.

1604.10.2 Minimum Water Quality. On-site treated nonpotable *gray* water supplied to toilets or urinals or for other uses in which it is sprayed or exposed shall be disinfected. Acceptable disinfection methods shall include chlorination, ultraviolet sterilization, ozone, or other methods as approved by the Authority Having Jurisdiction. The minimum water quality for on-site treated nonpotable *gray* water systems shall meet the applicable water quality requirements for the intended applications as determined by the public health Authority Having Jurisdiction. *In the absence of local water quality requirements for on-site treated nonpotable gray water, Section 1601.7 shall apply.*

1604.10.3 Deactivation and Drainage. The on-site treated nonpotable *gray* water system and the potable water system within the building shall be provided with the required appurtenances (e.g., valves, air/vacuum relief valves, etc.) to allow for deactivation or drainage as required for a cross-connection test in accordance with Section 1604.12.2.

1604.10.4 Near Underground Potable Water Pipe. On-site treated nonpotable *gray* water pipes shall be permitted to be run or laid in the same trench as potable water pipes with a 12 inch (305 mm) minimum vertical and horizontal separation where both pipe materials are approved for use within a building. Where piping materials do not meet this requirement the minimum separation shall be increased to 60 inches (1524 mm). The potable water piping shall be installed at an elevation above the on-site treated nonpotable *gray* water piping.

1604.10.5 Required Filters. A filter permitting the passage of particulates no larger than 100 microns (100 µm) shall be provided for on-site treated nonpotable *gray* water supplied to water closets, urinals, trap primers, and drip irrigation system.

1604.10.6 Disinfection. *Where the intended use of on-site treated non potable gray water requires disinfection and/or other treatment, on-site treated nonpotable gray water shall be disinfected as needed to ensure the required water quality is obtained at the point of use. Where chlorine is used for disinfection or treatment, water shall be tested for residual chlorine in accordance with ASTM D 1253.*

1604.11 Signs. Signs in buildings using on-site treated nonpotable *gray* water shall comply with Section 1604.11.1 and Section 1604.11.2 *and shall also comply with the applicable requirements of the California Building Code*.

1604.11.1 Commercial, Industrial, ~~and~~ Institutional, and *Residential* Restroom Signs. A sign shall be installed in restrooms in commercial, industrial, and institutional occupancies*, and shall also be installed in residential common use area restrooms* using on-site treated *nonpotable gray* water for water closets, urinals, or both. Each sign shall contain ~~1/2 of an inch (12.7 mm) letters of a highly visible color on a contrasting background. The location of the sign(s) shall be such that the sign(s) shall be visible to users. The location of the sign(s) shall be approved by the Authority Having Jurisdiction and shall contain~~ the following text:

TO CONSERVE WATER, THIS BUILDING USES ON-SITE TREATED NONPOTABLE *GRAY* WATER TO FLUSH TOILETS AND URINALS.

1604.11.2 Equipment Room Signs. Each room containing on-site treated *gray* water equipment shall have a sign posted with the following wording in 1 inch (25.4 mm) letters:

CAUTION ON-SITE TREATED NONPOTABLE *GRAY* WATER, DO NOT DRINK. DO NOT CONNECT TO DRINKING WATER SYSTEM. NOTICE: CONTACT BUILDING MANAGEMENT BEFORE PERFORMING ANY WORK ON THIS WATER SYSTEM.

This sign shall be posted in a location that is visible to anyone working on or near on-site treated nonpotable *gray* water equipment.

1604.12 Inspection and Testing. On-site treated nonpotable *gray* water systems shall be inspected and tested in accordance with Section 1604.12.1 and Section 1604.12.2 *and/or as required by the Authority Having Jurisdiction*.

1604.12.1 Supply System Inspection and Test. On-site treated nonpotable *gray* water systems shall be inspected and tested in accordance with this code for testing of potable water piping.

1604.12.2 ~~Annual~~ Cross-Connection Inspection and Testing. An initial ~~and subsequent annual~~ inspection and test shall be performed on both the potable and on-site treated nonpotable *gray* water systems. The potable and on-site treated nonpotable *gray* water system shall be isolated from each other and independently inspected and tested to ensure there is no cross-connection in accordance with Section 1604.12.2.1 through Section 1604.12.2.4.

1604.12.2.1 Visual System Inspection. Prior to commencing the cross-connection testing, a dual system inspection shall be conducted by the Authority Having Jurisdiction and other authorities having jurisdiction as follows:

(1) Pumps and equipment, equipment room signs, and exposed piping in equipment room shall be checked.

(2) Valves shall be checked to ensure that valve lock seals are still in place and intact. Valve control door signs shall be checked to verify that no signs have been removed.

1604.12.2.2 Cross-Connection Test. The procedure for determining cross-connection shall be followed by the applicant in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction to determine whether a cross-connection has occurred as follows:

(1) The potable water system shall be activated and pressurized. The on-site treated nonpotable *gray* water system shall be shut down and completely drained.

(2) The potable water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the on-site treated nonpotable *gray* water system is empty. The minimum period the on-site treated nonpotable *gray* water system is to remain depressurized shall be determined on a case-by-case basis, taking into account the size and complexity of the potable and on-site treated *gray* water distribution systems, but in no case shall that period be less than 1 hour.

(3) Fixtures, potable and on-site treated, shall be tested and inspected for flow. Flow from an on-site treated *gray* water system outlet indicates a cross-connection. No flow from a potable water outlet shall indicate that it is connected to the on-site treated *gray* water system.

(4) The drain on the on-site treated nonpotable *gray* water system shall be checked for flow during the test and at the end of the test.

(5) The potable water system shall then be completely drained.

(6) The on-site treated nonpotable *gray* water system shall then be activated and pressurized.

(7) The on-site treated nonpotable *gray* water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the potable water system is empty. The minimum period the potable water system is to remain depressurized shall be determined on a case-by-case basis, but in no case shall that period be less than 1 hour.

(8) Fixtures, potable and on-site treated nonpotable, shall be tested and inspected for flow. Flow from a potable water system outlet indicates a cross-connection. No flow from an on-site treated *gray* water outlet will indicate that it is connected to the potable water system.

(9) The drain on the potable water system shall be checked for flow during the test and at the end of the test.

(10) Where there is no flow detected in the fixtures which would indicate a cross-connection, the potable water system shall be repressurized.

1604.12.2.3 Discovery of Cross-Connection. In the event that a cross-connection is discovered, the following procedure, in the presence of the Authority Having Jurisdiction, shall be activated immediately:

(1) On-site treated nonpotable *gray* water piping to the building shall be shut down at the ~~meter~~ *source* and the on-site treated *gray* water riser shall be drained.

(2) Potable water piping to the building shall be shut down at the meter.

(3) The cross-connection shall be uncovered and disconnected.

(4) The building shall be retested in accordance with procedures listed in Section 1604.12.2.1 and Section 1604.12.2.2.

(5) The potable water system shall be chlorinated with 50 ppm chlorine for 24 hours.

(6) The potable water system shall be flushed after 24 hours, and a standard bacteriological test shall be performed. Where test results are acceptable, the potable water system shall be permitted to be recharged.

~~**1604.12.2.4 Annual Inspection.** An annual inspection of the on-site treated nonpotable water system be required in accordance with Section1604.12.2.1. Annual cross-connection testing in accordance with Section 1604.12.2.2 shall be required by the Authority Having Jurisdiction, unless site conditions do not require it. The test shall occur no less than once every 4 years. Alternate testing requirements shall be permitted by the Authority Having Jurisdiction.~~

1604.13 Sizing. On-site treated nonpotable *gray* water piping shall be sized in accordance with Section 610.0 of this code.

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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18. HCD proposes to repeal Ch. 16A, Part I from the 2010 California Plumbing Code and NOT bring forward into the 2013 California Plumbing Code:

~~**CHAPTER 16A**~~
~~**NON-POTABLE WATER REUSE SYSTEMS**~~
~~**Part I *(HCD 1)***~~

~~***Intent***~~

~~*This part is applicable to occupancies under the authority of the Department of Housing and Community Development as specified in Section 108.2.1.1 and is intended to:*~~

~~*1. Conserve water by facilitating greater reuse of laundry, shower, lavatory and similar sources of discharge for irrigation and/or indoor use.*~~
~~*2. Reduce the number of non-compliant graywater systems by making legal compliance easily achievable.*~~
~~*3. Provide guidance for avoiding potentially unhealthful conditions.*~~
~~*4. Provide an alternative way to relieve stress on a private sewage disposal system by diverting the graywater.*~~

~~**1601*A*.0 Graywater Systems – General.**~~
~~(A) Except as otherwise provided for in this chapter, the provisions of this code shall be applicable to gray water installation. *The provisions of this part shall apply to the construction, alteration, discharge, use, and repair of graywater systems. The graywater system shall not be connected to any potable water system without an air gap or other physical device which prevents backflow and shall not cause the ponding or runoff of graywater. A city, county, or city and county or other local government may, after a public hearing and enactment of an ordinance or resolution, further restrict or prohibit the use of graywater systems. For additional information, see Health and Safety Code Section 18941.7.*~~
~~(B) *The type of system shall be determined by the location, discharge capacity, soil type, and ground water level. The system shall be designed to handle graywater discharged from the building and may include tank(s) and other appurtenances necessary to ensure proper function of the system.*~~
~~***Note:** It is not the intent of this section to require that all graywater must be handled by an irrigation field or disposal field. It is acceptable for excess graywater to be diverted to the building sewer through the overflow required pursuant to Section 1609A.O (E).*~~
~~(C) No graywater system or part thereof shall be located on any lot other than the lot that is the site of the building or structure that discharges the graywater, nor shall any graywater system or part thereof be located at any point having less than the minimum distances indicated in Table 16*A*-1.~~
~~***Exception:** When there exists a lawfully recorded perpetual and exclusive covenant to an easement appurtenant and right-of-way between adjoining land-owners of two or more contiguous lots to discharge graywater from one lot to an adjoining lot.*~~

(D) No *construction* permit for any graywater system shall be issued until a plot plan with appropriate data satisfactory to the *Enforcing Agency* has been submitted and approved. When there is insufficient lot area or inappropriate soil conditions to *prevent the ponding or runoff* of the graywater, as determined by the *Enforcing Agency*, no graywater system shall be *allowed*.

Exception: *A construction permit shall not be required for a clothes washer system which does not require cutting of the existing plumbing piping provided it is in compliance with Section 1603A.1.1.*

(E) All graywater systems shall be designed to allow the user to direct the flow to either the irrigation or disposal field or the building sewer. The means of changing the direction of the graywater shall be clearly labeled and readily accessible to the user.

(F) Water used to wash diapers or similarly soiled or infectious garments or other prohibited contents shall be diverted by the user to the building sewer.

(G) Graywater shall not be used in spray irrigation, allowed to pond or runoff and shall not be discharged directly into or reach any storm sewer system or any surface body of water.

(H) Human contact with graywater or the soil irrigated by graywater shall be minimized and avoided, except as required to maintain the graywater system. The discharge point of any graywater irrigation or disposal field shall be covered by at least (2) inches (51 mm) of mulch, rock, or soil, or a solid shield to minimize the possibility of human contact.

(I) Graywater shall not be used to irrigate root crops or edible parts of food crops that touch the soil.

1602*A*.0 Definitions.

Clothes Washer System. *A graywater system utilizing only a single domestic clothes washing machine in a one- or two-family dwelling.*

Complex System. *Graywater systems that discharge over 250 gallons (947 L) per day.*

Disposal Field. *An intended destination for graywater including but not limited to a mulch basin or receiving landscape feature, graywater leach field, or other approved method of disposal.*

Graywater. *Pursuant to Health and Safety Code Section 17922.12, "graywater" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Graywater" includes but is not limited to wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.*

Graywater System. *A system designed to collect graywater and transport it out of the structure for distribution in an Irrigation or Disposal Field. A graywater system may include tanks, valves, filters, pumps or other appurtenances along with piping and receiving landscape.*

Irrigation Field. *An intended destination for graywater in the receiving landscape including but not limited to a drip irrigation system, mulch basin, or other approved method of dispersal for irrigation purposes.*

Mulch. *Organic waste material including but not limited to leaves, prunings, straw, pulled weeds and wood chips. Mulch shall be permeable enough to allow rapid infiltration of graywater.*

Mulch Basin. *A type of irrigation or disposal field filled with mulch or other approved permeable material of sufficient depth, length and width to prevent ponding or runoff. A mulch basin may include a basin around a tree, a trough along a row of plants or other shapes necessary for irrigation or disposal.*

Receiving Landscape. *Includes features such as soil, basins, swales, mulch, and plants.*

Simple System. *A graywater system serving a one- or two-family dwelling with a discharge of 250 gallons (947 L) per day or less. Simple systems exceed a clothes washer system.*

Treated Graywater. *Nonpotable water collected and treated on-site suitable for direct beneficial use.*

1603*A*.0 Permit.

A written construction permit shall be obtained from the Enforcing Agency prior to the erection, construction, reconstruction, installation, relocation or alteration of any graywater system that requires a permit.

Exception: *A construction permit shall not be required for a clothes washer system which does not require cutting of the existing plumbing piping provided it is in compliance with Section 1603A.1.1.*

1603A.1 System Requirements.

~~***1603A.1.1 Clothes Washer System.*** *A clothes washer system in compliance with all of the following is exempt from the construction permit specified in Section 108.4.1 and may be installed or altered without a construction permit:*~~

1. ~~*If required, notification has been provided to the Enforcing Agency regarding the proposed location and installation of a graywater irrigation or disposal system.*~~
   ~~***Note:*** *A city, county, or city and county or other local government may, after a public hearing and enactment of an ordinance or resolution, further restrict or prohibit the use of graywater systems. For additional information, see Health and Safety Code Section 18941.7.*~~
2. ~~*The design shall allow the user to direct the flow to the irrigation or disposal field or the building sewer. The direction control of the graywater shall be clearly labeled and readily accessible to the user.*~~
3. ~~*The installation, change, alteration or repair of the system does not include a potable water connection or a pump and does not affect other building, plumbing, electrical or mechanical components including structural features, egress, fire-life safety, sanitation, potable water supply piping or accessibility.*~~
   ~~***Note:*** *The pump in a clothes washer shall not be considered part of the graywater system.*~~
4. ~~*The graywater shall be contained on the site where it is generated.*~~
5. ~~*Graywater shall be directed to and contained within an irrigation or disposal field.*~~
6. ~~*Ponding or runoff is prohibited and shall be considered a nuisance.*~~
7. ~~*Graywater may be released above the ground surface provided at least two (2) inches (51 mm) of mulch, rock, or soil, or a solid shield covers the release point. Other methods which provide equivalent separation are also acceptable.*~~
8. ~~*Graywater systems shall be designed to minimize contact with humans and domestic pets.*~~
9. ~~*Water used to wash diapers or similarly soiled or infectious garments shall not be used and shall be diverted to the building sewer.*~~
10. ~~*Graywater shall not contain hazardous chemicals derived from activities such as cleaning car parts, washing greasy or oily rags, or disposing of waste solutions from home photo labs or similar hobbyist or home occupational activities.*~~
11. ~~*Exemption from construction permit requirements of this code shall not be deemed to grant authorization for any graywater system to be installed in a manner that violates other provisions of this code or any other laws or ordinances of the Enforcing Agency.*~~
12. ~~*An operation and maintenance manual shall be provided. Directions shall indicate the manual is to remain with the building throughout the life of the system and indicate that upon change of ownership or occupancy, the new owner or tenant shall be notified the structure contains a graywater system.*~~

~~***1603A.1.2 Simple System.*** *Simple systems exceed a clothes washer system and shall comply with the following:*~~

1. ~~*The discharge capacity of a graywater system shall be determined by Section 1606A.0. Simple systems have a discharge capacity of 250 gallons (947 L) per day or less.*~~
2. ~~*Simple systems shall require a construction permit, unless exempted from a construction permit by the Enforcing Agency. The Enforcing Agency shall consult with any public water system (as defined in Health and Safety Code, Section 116275) providing drinking water to the dwelling before allowing and exemption from a construction permit.*~~
3. ~~*The design of simple systems shall be acceptable to the Enforcing Agency and shall meet generally accepted graywater system design criteria.*~~

~~***1603A.1.3 Complex System.*** *Any graywater system that is not a clothes washer system or simple system shall comply with the following:*~~

1. ~~*The discharge capacity of a graywater system shall be determined by Section 1606A.0. Complex systems have a discharge capacity over 250 gallons (947 L) per day.*~~
2. ~~*Complex systems shall require a construction permit, unless exempted from a construction permit by the Enforcing Agency. The Enforcing Agency shall consult with any public water system (as defined in Health and Safety Code, Section 116275) providing drinking water to the dwelling before allowing and exemption from a construction permit.*~~
3. ~~*A complex system shall be designed by a person who can demonstrate competence to the satisfaction of the Enforcing Agency.*~~

Table 1603A.1.4
CONSTRUCTION PERMIT REQUIREMENTS

Type of System	***Permit Requirements***
Clothes Washer System	*No construction permit required if conditions in Section 1603A.1.1 are met.*
Simple System	*Permit and plans required unless exempted by Enforcing Agency.*
Complex System	*Permit and plans required unless exempted by Enforcing Agency.*
Treated Graywater	*Permit and plans required unless exempted by Enforcing Agency.*

1604*A*.0 Drawings and Specifications.
Graywater systems for which a construction permit is required may be subject to submittal of plans and details of the proposed graywater system necessary to ensure compliance with the requirements of this chapter. Identification of the groundwater level and soil absorption qualities at the site shall be included in the plans or provided to the Enforcing Agency.
Exception: *The Enforcing Agency may waive the requirement for identification of groundwater level and/or soil absorption qualities based on knowledge of local conditions.*

1604A.1 Groundwater Depth. *Verification of ground water levels which exceed three (3) vertical feet (915 mm) from the deepest irrigation or disposal point of the proposed graywater system shall not be required.*
Note: *The absence of groundwater in a test hole three (3) vertical feet (915 mm) below the deepest irrigation or disposal point shall be sufficient to satisfy this section unless seasonal high groundwater levels have been documented to rise to within this area.*

1605*A*.0 Inspection and Testing.

(A) Inspection. *A graywater system for which a construction permit is required shall be subject to inspection by the Enforcing Agency and such construction or work shall remain accessible and exposed for inspection purposes until approved.*
At the time of final inspection, an operation and maintenance manual shall be provided. Directions shall indicate the manual is to remain with the building throughout the life of the system and upon change of ownership, the new owner shall be notified the structure contains a graywater system

(B) Testing.
(1) Tanks shall be filled with water to the overflow line prior to and during inspection. Seams and joints shall be left exposed, and the tank shall remain watertight.
(2) A flow test shall be performed through the system to the point of graywater *irrigation or disposal*. Lines and components shall be watertight.

1606*A*.0 Procedure for Estimating Graywater Discharge.

(A) Single Family Dwellings and Multi-Family Dwellings. The graywater discharge for single family and multi-family dwellings shall be calculated by *estimates of graywater use based on* water use records, calculations of local daily per person interior water use, or the following procedure:

1. The number of occupants of each dwelling unit shall be calculated as follows:
First Bedroom 2 occupants
Each additional bedroom 1 occupant

2. The estimated graywater flows of each occupant shall be calculated as follows:
Showers, bathtubs and wash basins 25 GPD (95 LPD)/occupant
Laundry 15 GPD (57 LPD)/occupant

3. The total number of occupants shall be multiplied by the applicable estimated graywater discharge as provided above and the type of fixtures connected to the graywater system.

(B) Daily Discharge – Graywater systems *using tanks* shall be designed to *minimize the amount of time graywater is held in the tank and shall be sized to* distribute the total amount of estimated graywater on a daily basis.

***Exception**: Treated graywater systems when approved by the Enforcing Agency.*

1607*A*.0 Required Area of Irrigation or Disposal Fields.

Irrigation or disposal fields may have one or more valved zones. Each zone must be of adequate size to receive the graywater anticipated in that zone. No irrigation or disposal field shall extend within three (3) vertical feet (915 mm) of the highest known seasonal groundwater, or to a depth where graywater contaminates the groundwater, ocean water or surface water. The applicant shall supply evidence of groundwater depth to the satisfaction of the Enforcing Agency.

***Note:** The absence of groundwater in a test hole three (3) vertical feet (915 mm) below the deepest irrigation or disposal point shall be sufficient to satisfy this section unless seasonal high groundwater levels have been documented to rise to within this area.*

1608*A*.0 Determination of Maximum Absorption Capacity.

(A) Wherever practicable, *irrigation or disposal* field size shall be computed from Table 16*A*-2.

(B) In order to determine the absorption quantities of questionable soils other than those listed in Table 16*A*-2, the proposed site may be subjected to percolation tests acceptable to the *Enforcing Agency.*

***Exception:** Irrigation fields in compliance with Section 1611A.2, which only utilize drip type emitters.*

(C) When a percolation test is required, no graywater system shall be permitted if the test shows the absorption capacity of the soil is *unable to accommodate the intended discharge of the proposed graywater system.*

***Exception:** The Enforcing Agency may waive the requirement for percolation tests based on knowledge of local conditions or accept other testing methods.*

1609*A*.0 Tank Construction.

(A) *When system design includes a tank*, *specifications for the tank shall be* submitted to the *Enforcing Agency* for approval. Such plans shall show all dimensions and other pertinent data.

(B) *Tanks* shall be constructed of solid, durable materials not subject to excessive corrosion or decay and shall be water-tight.

(C) Each tank shall be vented as required by Chapter 9 of this code, shall *be sealed against vermin and mosquitoes, and have an* access opening to allow for inspection and cleaning.

(D) Each tank shall have its rated capacity permanently marked on the unit. In addition, a sign stating "GRAYWATER IRRIGATION SYSTEM, *CAUTION* — UNSAFE WATER" shall be permanently marked on the holding tank.

(E) Each tank shall have an *overflow drain*. The overflow drain shall have a permanent connection to the building drain or building sewer, upstream of septic tanks, if any. The overflow drain shall not be equipped with a shutoff valve.

(F) The overflow *drain* shall not be less in size than the inlet pipe. The vent size shall be determined based on the total graywater fixture units as outlined in Table 7-5 of this code. Unions or equally effective fittings shall be provided for all piping connected to the holding tank.

(G) Each tank shall be structurally designed to withstand all anticipated earth or other loads. *Tank* covers shall be capable of supporting an earth load of not less than three hundred (300) pounds per square foot (1,464.7 kg/m^2) when the tank is *used* for underground installation.

(H) *The overflow* system must be designed so that the tank overflow will gravity drain to the existing sewer line or septic tank. The tank shall be protected against sewer line backflow by a backwater valve.

(I) An overflow drain and backwater valve is not required on a clothes washer system.

1610*A*.0 Graywater Systems.

Graywater systems shall comply with Sections 1610*A*.1 through *1610A.3*.

1610*A*.1 Pipe Materials. Graywater pipe, valves and fittings shall conform to the requirements of Sections 604.0, 605.0 and 606.0.

1610*A*.2 Identification. *Graywater distribution piping upstream of any connection to an irrigation or disposal field or a distribution valve shall be identified with the words "CAUTION: NONPOTABLE WATER, DO NOT DRINK." Marking shall be at intervals not to exceed five (5) feet (1,524 mm).*

1610*A*.3 Valves. All valves shall be accessible. A backwater valve installed pursuant to this code shall be provided on all tank drain connections to the sanitary drain or sewer piping.

1611*A*.0 Irrigation, Disposal Field *and Mulch Basin* Construction.
Irrigation fields, disposal fields and mulch basins used in graywater systems shall comply with this section. Graywater systems may contain either a irrigation field or a disposal field or a combination of both. This section is not intended to prevent the use of other methods of graywater irrigation or disposal approved by the Enforcing Agency.

1611A.1 Mulch Basin *A mulch basin may be used as an irrigation or disposal field. Mulch basins shall be sized in accordance with Table 16A-2 and of sufficient depth, length and width to prevent ponding or runoff during the graywater surge of a clothes washer, bathtub or shower. Mulch must be replenished as required due to decomposition of organic matter. Mulch basins will require periodic maintenance, reshaping or removal of dirt to maintain surge capacity and to accommodate plant growth and prevent ponding or runoff.*

1611A.2 Irrigation Field. *The provisions of this section are not intended to prevent the use of any appropriate material, appliance, installation, device, design or method of construction. If an alternate design is not available, the following provisions may be used as guidance in the design of a graywater irrigation field:*

(1) Filters used in graywater irrigation systems shall be as specified by the manufacturer's installation instructions for the design flow rate and intended use. The filter backwash and flush discharge shall be contained and disposed of into the building sewer system, septic tank or, with approval of the Enforcing Agency, a separate mini-leachfield sized to accept all the backwash and flush discharge water. Filter backwash water and flush water shall not be used for any purpose. Sanitary procedures shall be followed when handling filter backwash and flush discharge or graywater.

(2) Emitters shall be designed to resist root intrusion and shall be of a design recommended by the manufacturer for the intended graywater flow and use. For emitter ratings, refer to Irrigation Equipment Performance Report, Drip Emitters and Micro-Sprinklers, Center for Irrigation Technology, California State University, 5730 N. Chestnut Avenue, Fresno, California 93740-0018.

(3) Each irrigation zone shall be designed to include no less than the number of emitters specified in Table 16A-3, or through a procedure designated by the Enforcing Agency. Minimum spacing between emitters is in any direction shall be sufficient to prevent surfacing or runoff.

(4) The system design shall provide user controls, such as valves, switches, timers and other controllers, as appropriate, to rotate the distribution of graywater between irrigation zones.

(5) All drip irrigation supply lines shall be polyethylene tubing or PVC Class 200 pipe or better and Schedule 40 fittings. All joints shall be properly solvent-cemented, inspected and pressure tested at 40 psi (276 kPa), and shown to be drip tight for five minutes, before burial. All supply piping shall be covered to a minimum depth of two (2) inches (51 mm) of mulch or soil. Drip feeder lines can be poly or flexible PVC tubing and shall be covered to a minimum depth of two (2) inches (51 mm) of mulch or soil.

(6) Where pressure at the discharge side of the pump exceeds 20 psi (138 kPa), a pressure-reducing valve able to maintain downstream pressure no greater than 20 psi (138 kPa) shall be installed downstream from the pump and before any emission device.

(7) Each irrigation zone shall include a flush valve/antisiphon valve to prevent back siphonage of water and soil.

1611A.3 Disposal Field. *The provisions of this section are not intended to prevent the use of any appropriate material, appliance, installation, device, design or method of construction. If an alternate design is not available the following provisions may be used as guidance in the design of a graywater disposal field:*

(A) *Disposal systems* shall be not less than three (3) inches (80 mm) in *cross sectional dimension* and shall be constructed of perforated high-density polyethylene pipe, perforated ABS pipe, perforated PVC pipe, *leaching chambers* or other approved materials, provided that sufficient openings are available for distribution of the graywater into the trench area. Material, construction, and perforation shall be in compliance with the appropriate absorption fields drainage standards and shall be approved by the *Enforcing Agency*.

(B) Filter material, clean stone, gravel, slag, or similar filter material acceptable to the *Enforcing Agency*, varying in size from three-quarter (3/4) inch (19.1 mm) to two and one-half (2 1/2) inches (64 mm) shall be placed in the trench to the depth and grade required by this section. The perforated section shall be laid on the filter material in an approved manner. The perforated section shall then be covered with filter material to the minimum depth required by this section. The filter material shall then be covered with untreated building paper, straw, or similar

porous material to prevent closure of voids with earth backfill. No earth backfill shall be placed over the filter material cover until after inspection and acceptance.

Exception. *Manufactured leaching chambers shall be installed in compliance with the manufacturer's installation instructions.*

(C) *Disposal* fields shall be constructed as follows (See chart below)

	Minimum	**Maximum**
Number of drain lines per valved zone[1]	1	—
Length of each perforated line[1]	—	100 ft. (30,840 mm)
Bottom width of trench[1]	12 in. (305 mm)	*24 in. (610 mm)*
Spacing of lines, center to center[1]	4 ft. (1219 mm)	—
Depth of earth cover of lines	*2 in. (51 mm)*	—
Depth of filter material cover of lines	2 in. (51 mm)	—
Depth of filter material beneath lines[1]	3 in. (76 mm)	—
Grade of perforated lines	level	3 in./100 ft. (2 mm/m)

[1] *Manufactured leaching chambers shall be installed in compliance with the manufacturer's installation instructions.*

(D) When necessary on sloping ground to prevent excessive line slopes, disposal lines shall be stepped *or installed on the contour lines of the slope.* The lines between each horizontal leaching section shall be made with approved water-tight joints and installed on natural or unfilled ground.

1612A.0 Special Provisions.

(A) Other collection and distribution systems shall be permitted by the local *Enforcing Agency*, as allowed by Section *108.7* of this code.

(B) Nothing contained in this chapter shall be construed to prevent a *city, county, or city and county or other local government from, after a public hearing and enactment of an ordinance or resolution, further restricting or prohibiting the use of graywater systems. For additional information, see Health and Safety Code Section 18941.7.*

(C) Graywater stub-out plumbing may be allowed for future connection prior to the installation of irrigation lines and landscaping. Stub-out shall be permanently marked "GRAYWATER STUB-OUT, CAUTION – UNSAFE WATER".

1612A.1 Indoor Use of Treated Graywater.

Graywater shall not be allowed for indoor use, such as flushing toilets and urinals, unless treated by an on-site water treatment system approved by the Enforcing Agency. For the purposes of this section, graywater treated by an on-site water treatment system shall be considered "Treated Graywater". Treated graywater and treated graywater systems shall comply with the provisions of this code except as otherwise provided in this chapter and all of the following:

(1) The treated graywater shall have a separate tank sized to minimize the length of time it is retained.

(2) A maintenance and operation manual for the treatment system shall be kept at the location of the system.

(3) Treated graywater intended for use indoors shall meet the California Department of Public Health statewide uniform criteria for disinfected tertiary recycled water as provided in California Code of Regulations, Title 22 Section 60301.230.

(4) The treated graywater system shall be installed, inspected and tested as specified for recycled water systems in Sections 1618A.0 and 1620.0A.

~~***Table 16A-1***~~
~~***LOCATION OF GRAYWATER SYSTEM***~~

~~***MINIMUM HORIZONTAL DISTANCE REQUIRED FROM:***~~	~~***TANK***~~	~~***IRRIGATION FIELD***~~	~~***DISPOSAL FIELD***~~
	~~***Feet/mm***~~	~~***Feet/mm***~~	~~***Feet/mm***~~
~~*Building structures*~~[1]	~~*5 (1,524 mm)*~~[2]	~~*2 (610 mm)*~~	~~*5 (1,524 mm)*~~
~~*Property line adjoining private property*~~	~~*5 (1,524 mm)*~~	~~*1.5 feet (458 mm)*~~	~~*5 (1,524 mm)*~~
~~*Water supply wells*~~[3]	~~*50 (15,240 mm)*~~	~~*100 (30,480 mm)*~~	~~*100 (30,480 mm)*~~
~~*Streams and lakes*~~[3]	~~*50 (15,240 mm)*~~	~~*100 (30,480 mm)*~~[4,5]	~~*100 (30,480 mm)*~~[4]
~~*Sewage pits or cesspools*~~	~~*5 (1,524 mm)*~~	~~*5 (1,524 mm)*~~	~~*5 (1,524 mm)*~~
~~*Sewage disposal field*~~	~~*5 (1,524 mm)*~~	~~*4 (1,219 mm)*~~[6]	~~*4 (1,219 mm)*~~[6]
~~*Septic tank*~~	~~*0 (0)*~~	~~*5 (1,524 mm)*~~	~~*5 (1,524 mm)*~~
~~*Onsite domestic water service line*~~	~~*5 (1,524 mm)*~~	~~*0 (0 mm)*~~	~~*0 (0 mm)*~~
~~*Pressurized public water main*~~	~~*10 (3,048 mm)*~~	~~*10 (3,048 mm)*~~[7]	~~*10 (3,048 mm)*~~[7]

~~[1] *Building structures does not include porches and steps, whether covered or uncovered, breezeways, roofed porte cocheres, roofed patios, carports, covered walks, covered driveways, and similar structures or appurtenances.*~~
~~[2] *Underground tanks shall not be located within a 45 degree angle from the bottom of the foundation, or they shall be designed to address the surcharge imposed by the structure. The distance may be reduced to six (6) inches (153 mm) for aboveground tanks when first approved by the Enforcing Agency.*~~
~~[3] *Where special hazards are involved, the distance required shall be increased as directed by the Enforcing Agency.*~~
~~[4] *These minimum clear horizontal distances shall also apply between the irrigation or disposal field and the ocean mean higher hightide line.*~~
~~[5] *The minimum horizontal distance may be reduced to 50 feet (15,240 mm) for irrigation fields utilizing graywater which has been filtered prior to entering the distribution piping.*~~
~~[6] *Plus two (2) feet (610 mm) for each additional foot of depth in excess of one (1) foot (305 mm) below the bottom of the drain line.*~~
~~[7] *For parallel construction or crossings, approval by the Enforcing Agency shall be required.*~~

~~*Table 16A-2*~~
~~*DESIGN CRITERIA OF SIX TYPICAL SOILS*~~

~~*Type of Soil*~~	~~*Square Feet*~~	~~*Gallons*~~	~~*Square Meters*~~	~~*Liters*~~
	~~*Minimum square feet of irrigation/leaching area per 100 gallons of estimated graywater discharge per day*~~	~~*Maximum absorption capacity in gallons per square foot of irrigation/leaching area for a 24-hour period*~~	~~*Minimum square meters of irrigation/leaching area per liter of estimated graywater discharge per day*~~	~~*Maximum absorption capacity in liters per square meter of irrigation/leaching area for a 24-hour period*~~
~~*Coarse sand or gravel*~~	~~*20*~~	~~*5.0*~~	~~*0.005*~~	~~*203.7*~~
~~*Fine sand*~~	~~*25*~~	~~*4.0*~~	~~*0.006*~~	~~*162.9*~~
~~*Sandy loam*~~	~~*40*~~	~~*2.5*~~	~~*0.010*~~	~~*101.8*~~
~~*Sandy clay*~~	~~*60*~~	~~*1.7*~~	~~*0.015*~~	~~*69.2*~~
~~*Clay with considerable sand or gravel*~~	~~*90*~~	~~*1.1*~~	~~*0.022*~~	~~*44.8*~~
~~*Clay with small amounts of sand or gravel*~~	~~*120*~~	~~*0.8*~~	~~*0.030*~~	~~*32.6*~~

~~*Table 16A-3*~~
~~*SUBSURFACE DRIP DESIGN CRITERIA OF SIX TYPICAL SOILS*~~

~~*TYPE OF SOIL*~~	~~*MAXIMUM EMITTER DISCHARGE (GAL/DAY)*~~	~~*MINIMUM NUMBER OF EMITTERS PER GPD OF GRAYWATER PRODUCTION*~~
~~*1.Sand*~~	~~*1.8*~~	~~*0.6*~~
~~*2.Sandy loam*~~	~~*1.4*~~	~~*0.7*~~
~~*3.Loam*~~	~~*1.2*~~	~~*0.9*~~
~~*4.Clay loam*~~	~~*0.9*~~	~~*1.1*~~
~~*5.Silty clay*~~	~~*0.6*~~	~~*1.6*~~
~~*6.Clay*~~	~~*0.5*~~	~~*2.0*~~

~~*Use the daily graywater flow calculated in Section 1606A.0 to determine the number of emitters per line.*~~

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

19. HCD proposes to adopt Ch. 17 from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code as follows:

CHAPTER 17
NONPOTABLE RAINWATER CATCHMENT SYSTEMS

1701.0 General.

1701.1 Applicability. The provisions of this chapter shall apply to the installation, construction, alteration, and repair of nonpotable rainwater catchment systems. *In addition, applicable provisions in Chapter 16, Sections 1601.0 through 1601.9 for "Alternate Water Sources for Nonpotable Applications" shall apply to rainwater catchment systems.*

1702.0 Nonpotable Rainwater Catchment Systems.

1702.1 General. The installation, construction, alteration, and repair of rainwater catchments systems intended to supply uses such as water closets, urinals, trap primers for floor drains and floor sinks, irrigation, industrial processes, water features, cooling tower makeup and other uses shall be approved by the Authority Having Jurisdiction.

1702.2 Plumbing Plan Submission. No permit for a rainwater catchment system shall be issued until complete plumbing plans, with appropriate data satisfactory to the Authority Having Jurisdiction, have been submitted and approved. No changes or connections shall be made to either the rainwater catchment or the potable water system within a site containing a rainwater catchment water system without approval by the Authority Having Jurisdiction.

1702.2.1 Permit. *It shall be unlawful for a person to construct, install, alter, or cause to be constructed, installed, or altered, a nonpotable rainwater catchment system in a building or on a premise without first obtaining a permit to do such work from the Authority Having Jurisdiction.*

Exceptions:

(1) A permit is not required for exterior rainwater catchment systems used for outdoor non-spray irrigation with a maximum storage capacity of 5000 gallons (18,927 L) where the tank is supported directly upon grade and the ratio of height to diameter or width does not exceed 2 to 1 and it does not require electrical power or a makeup water supply connection.

(2) A permit is not required for exterior rainwater catchment systems used for spray irrigation with a maximum storage capacity of 360 gallons (1363 L).

1702.3 System Changes. No changes or connections shall be made to either the rainwater catchment system or the potable water system within a site containing a rainwater catchment system requiring a permit without approval by the Authority Having Jurisdiction.

1702.4 Connections to Potable or Reclaimed (Recycled) Water Systems. Rainwater catchment systems shall have no ~~direct~~ *unprotected* connection to a potable water supply or alternate water source system. Potable or reclaimed (recycled) water is permitted to be used as makeup water for a rainwater catchment system provided the potable or reclaimed (recycled) water supply connection is protected by an airgap or reduced-pressure principle backflow preventer in accordance with this code.

1702.5 Initial Cross-Connection Test. Where a portion of a rainwater catchment system is installed within a building, a cross-connection test is required in accordance with Section 1702.11.2. Before the building is occupied or the system is activated, the installer shall perform the initial cross-connection test in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction. The test shall be ruled successful by the Authority Having Jurisdiction before final approval is granted.

1702.6 Sizing. Rainwater catchment system distribution piping for indoor applications shall be sized as outlined in this code for sizing potable water piping. The design and size of rainwater drains, gutters, conductors, and leaders shall be in accordance with Chapter 11 of this code.

1702.7 Rainwater Catchment System Materials. Rainwater catchment system materials shall comply with Section 1702.7.1 through Section 1702.7.4.

1702.7.1 Water Supply and Distribution Materials. Rainwater catchment water supply and distribution materials shall comply with the requirements of this code for potable water supply and distribution systems, unless otherwise provided for in this section.

1702.7.2 Rainwater Catchment System Drainage Materials. Materials used in rainwater catchment drainage systems, including gutters, downspouts, conductors, and leaders shall comply be in accordance with the requirements of this code for storm drainage.

1702.7.3 Storage Tanks. Rainwater storage tanks shall comply with Section 1702.9.5.

~~**1702.7.4 Collection Surfaces.** The collection surface shall be constructed of a hard, impervious material.~~

1702.8 Rainwater Catchment Water System Color and Marking Information. Rainwater catchment systems shall have a colored background in accordance with Section 601.2. Rainwater catchment systems shall be marked, in lettering in accordance with Section 601.2, with the words: "CAUTION: NONPOTABLE RAINWATER WATER, DO NOT DRINK."

1702.9 Design and Installation.

1702.9.1 Outside Hose Bibbs. Outside hose bibbs shall be allowed on rainwater piping systems. Hose bibbs supplying rainwater shall be marked with the words: "CAUTION: NONPOTABLE WATER, DO NOT DRINK" and Figure 1702.9.

Figure 1702.9

1702.9.2 Deactivation and Drainage for Cross- Connection Test. The rainwater catchment system and the potable water system within the building shall be provided with the required appurtenances (e.g., valves, air or vacuum relief valves, etc.) to allow for deactivation or drainage as required for a cross-connection test in accordance with Section 1702.11.2.

~~**1702.9.3 Collection Surfaces.** Rainwater shall be collected from roof surfaces. Rainwater catchment system shall not collect rainwater from:~~
~~(1) Vehicular parking surfaces.~~
~~(2) Surface water runoff.~~
~~(3) Bodies of standing water.~~

1702.9.3 Collection Surfaces. *Rainwater shall be collected from roof surfaces, or other manmade, above-ground impervious collection surfaces. Rainwater collected from surface water runoff, vehicular parking surfaces or manmade surfaces at or below grade shall comply with the water quality requirements for on-site treated nonpotable gray water in Section 1604.0.*

Exception: *Collected rainwater or storm water used exclusively for subsurface landscape irrigation.*

1702.9.3.1 Prohibited Discharges. Overflows and bleed-off pipes from roof-mounted equipment and appliances shall not discharge onto roof surfaces that are intended to collect rainwater.

1702.9.4 Minimum Water Quality. The minimum water quality for harvested rainwater shall meet the applicable water quality requirements for the intended applications as determined by the Authority Having Jurisdiction. ~~No treatment is required for rainwater used for subsurface or non-sprinkled surface irrigation where the maximum storage volume is less than 360 gallons (1363 L).~~ *In the absence of water quality requirements for harvested rainwater, Table 1702.9.4 shall apply*.

1702.9.4.1 Disinfection. *Where the initial quality of the collected rainwater requires disinfection or other treatment or both, the collected rainwater shall be treated as necessary to ensure the required water quality is delivered at the point of use. Where chlorine is used for disinfection or treatment, water shall be tested for residual chlorine in accordance with ASTM D 1253. The levels of residual chlorine shall not exceed the levels allowed for the intended use in accordance with the requirements of the local enforcing agency.*

TABLE 1702.9.4
MINIMUM TREATMENT AND WATER QUALITY FOR RAINWATER

Application	***Minimum Treatment***	***Minimum Water Quality***
Car washing	*Debris excluder or other approved means in compliance with Section 1702.9.10* *100 Micron (100 µm) in compliance with Section 1702.9.11 for drip irrigation*	*N/A*
Surface, subsurface and drip irrigation	*Debris excluder or other approved means in compliance with Section 1702.9.10* *100 Micron (100 µm) in compliance with Section 1702.9.11 for drip irrigation*	*N/A*
Spray irrigation where the maximum storage volume is less than 360 gallons (1363 L)	*Debris excluder or other approved means in compliance with Section 1702.9.10*	*N/A*
Spray irrigation where the maximum storage volume is equal to or greater than 360 gallons (1363 L)	*Debris excluder or other approved means in compliance with Section 1702.9.10*	*Escherichia coli: < 100 CFU/100 ml* *Turbidity: < 10 NTU*
Urinal and water closet flushing, clothes washing, and trap priming	*Debris excluder or other approved means in compliance with Section 1702.9.10* *100 Micron (100 µm) in compliance with Section 1702.9.11*	*Escherichia coli: < 100 CFU/100 ml* *Turbidity: < 10 NTU*
Ornamental fountains and other water features	*Debris excluder or other approved means in compliance with Section 1702.9.10*	*Escherichia coli: < 100 CFU/100 ml* *Turbidity: < 10 NTU*
Cooling tower make up water	*Debris excluder or other approved means in compliance with Section 1702.9.10* *100 Micron (100 µm) in compliance with Section 1702.9.11*	*Escherichia coli: < 100 CFU/100 ml* *Turbidity: < 10 NTU*

1702.9.5 Rainwater Storage Tanks. Rainwater storage tanks shall be constructed and installed in accordance with Section 1702.9.5.1 through Section ~~1702.9.5.7~~ *1702.9.5.8*.

1702.9.5.1 Construction. Rainwater storage shall be constructed of solid, durable materials not subject to excessive corrosion or decay and shall be watertight. Storage tanks shall be approved by the Authority Having Jurisdiction, provided such tanks are in accordance with approved applicable standards.

1702.9.5.2 Location. Rainwater storage tanks shall be permitted to be installed above or below grade.

1702.9.5.3 Above Grade. Above grade storage tanks shall be of an opaque material, approved for aboveground use in direct sunlight or shall be shielded from direct sunlight. Tanks shall be installed in an accessible location to allow for inspection and cleaning. The tank shall be installed on a foundation or platform that is constructed to accommodate loads in accordance with the building code.

1702.9.5.4 Below Grade. Rainwater storage tanks installed below grade shall be structurally designed to withstand anticipated earth or other loads. Holding tank covers shall be capable of supporting an earth load of not less than 300 pounds per square foot (lb/ft2) (1465 kg/m2) where the tank is designed for underground installation. Below grade rainwater tanks installed underground shall be provided with manholes. *Below grade storage tanks, located outside of the building, shall be provided with either a manhole not less than 24 inches (610 mm) square or a manhole with an inside diameter of not less than 24 inches (610 mm) Service ports in manhole covers shall be not less than 8 inches (203 mm) in diameter.* The manhole opening shall be located a minimum of 4 inches (102 mm) above the surrounding grade. The surrounding grade shall be sloped away from the manhole. Underground tanks shall be ballasted, anchored, or otherwise secured, to prevent the tank from floating out of the ground where empty. The combined weight of the tank and hold down system should meet or exceed the buoyancy force of the tank.

1702.9.5.5 Drainage and Overflow. Rainwater storage tanks shall be provided with a means of draining and cleaning. The overflow drain shall not be equipped with a shutoff valve. The overflow outlet shall discharge as required by in accordance with this code for storm drainage systems. Where discharging to the storm drainage system, the overflow drain *and tank drain* shall be protected from backflow of the storm drainage system by a backwater valve or other approved method. *Backwater valves shall be installed so that access is provided to the working parts for service and repair.*

1702.9.5.5(A) Overflow Outlet Size. The overflow outlet shall be sized to accommodate the flow of the rainwater entering the tank and not less than the aggregate cross-sectional area of inflow pipes.

1702.9.5.6 Opening and Access Protection.

1702.9.5.6(A) Animals and Insects. Rainwater tank openings shall be protected to prevent the entrance of insects, birds, or rodents into the tank *and piping systems. Screens installed on vent pipes, inlets, and overflow pipes shall have an aperture of not greater than 1/16 of an inch (1.6 mm) and shall be close fitting*.

1702.9.5.6(B) Human Access. *A minimum of one access opening shall be provided to allow inspection and cleaning.* Rainwater tank *manholes and* access openings ~~exceeding 12 inches (305 mm) in diameter~~ shall be secured ~~to prevent tampering and unintended entry~~ by either a lockable device or other approved method *to prevent unauthorized access.*

1702.9.5.7 Venting. *Rainwater tanks shall be provided with a vent sized in accordance with this code, and based on the size of the tank influent pipe. Tank vent pipes shall not be connected to the sanitary drainage system vents.*

~~**1702.9.5.7**~~ ***1702.9.5.8*** **Marking**. Rainwater tanks shall be permanently marked with the capacity and the language: “NONPOTABLE RAINWATER.” Where openings are provided to allow a person to enter the tank, the opening shall be marked with the following language: “DANGER-CONFINED SPACE.”

1702.9.6 Pumps. Pumps serving rainwater catchment systems shall be listed. Pumps supplying water to water closets, urinals, and trap primers shall be capable of delivering not less than 15 pounds-force per square inch (psi) (103 kPa) residual pressure at the highest and most remote outlet served. Where the water pressure in the rainwater supply system within the building exceeds 80 psi (552 kPa), a pressure reducing valve reducing the pressure to 80 psi (552 kPa) or less to water outlets in the building shall be installed in accordance with this code.

1702.9.7 Roof Drains. Primary and secondary roof drains, conductors, leaders, and gutters shall be designed and installed in accordance with this code.

1702.9.8 Water Quality Devices and Equipment. Devices and equipment used to treat rainwater to maintain the minimum water quality requirements determined by the Authority Having Jurisdiction shall be listed or labeled (third-party certified) by a listing agency (accredited conformity assessment body) and approved for the intended application.

1702.9.9 Freeze Protection. Tanks and piping installed in locations subject to freezing shall be provided with an approved means of freeze protection.

1702.9.10 Debris Removal. The rainwater catchment conveyance system shall be equipped with a debris excluder or other approved means to prevent the accumulation of leaves, needles, other debris and sediment from entering the storage tank. Devices or methods used to remove debris or sediment shall be accessible and sized and installed in accordance with manufacturer's installation instructions.

1702.9.11 Required Filters. A filter permitting the passage of particulates no larger than 100 microns (100 µm) shall be provided for rainwater supplied to water closets, urinals, trap primers, and drip irrigation systems.

1702.9.12 Roof Gutters. Gutters shall maintain a minimum slope and be sized in accordance with this code.

1702.10 Signs. Signs in buildings using rainwater water shall be in accordance with Section 1702.10.1 and Section 1702.10.2 *and shall also comply with the applicable requirements of the California Building Code*.

1702.10.1 Commercial, Industrial, ~~and~~ Institutional, *and Residential* Restroom Signs. A sign shall be installed in restrooms in commercial, industrial, and institutional occupancies*, and shall also be installed in residential common use area restrooms* using nonpotable rainwater for water closets, urinals, or both. Each sign shall contain ~~1/2 of an inch (12.7 mm) letters of a highly visible color on a contrasting background. The location of the sign(s) shall be such that the sign(s) shall be visible to users. The number and location of the signs shall be approved by the Authority Having Jurisdiction and shall contain~~ the following text:

TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO FLUSH TOILETS AND URINALS.

1702.10.2 Equipment Room Signs. Each equipment room containing nonpotable rainwater equipment shall have a sign posted with the following wording in 1 inch (25.4 mm) letters: CAUTION NONPOTABLE ~~RAIN~~WATER, DO NOT DRINK. DO NOT CONNECT TO DRINKING WATER SYSTEM. NOTICE: CONTACT BUILDING MANAGEMENT BEFORE PERFORMING ANY WORK ON THIS WATER SYSTEM. This sign shall be posted in a location that is visible to anyone working on or near rainwater water equipment.

1702.11 Inspection and Testing. Rainwater catchment systems shall be inspected and tested in accordance with Section 1702.11.1 through and Section 1702.11.2.

1702.11.1 Supply System Inspection and Test. Rainwater catchment systems shall be inspected and tested in accordance with the applicable provisions of this code for testing of potable water and storm drainage systems.

1702.11.2 ~~Annual~~ Cross-Connection Inspection and Testing. An initial ~~and subsequent annual~~ inspection and test required in accordance with Section 1702.5 shall be performed on both the potable and rainwater catchment water systems. The potable and rainwater catchment water system shall be isolated from each other and independently inspected and tested to ensure there is no cross-connection in accordance with Section 1702.11.2.1 through Section 1702.11.2.4.

1702.11.2.1 Visual System Inspection. Prior to commencing the cross-connection testing, a dual system inspection shall be conducted by the Authority Having Jurisdiction and other authorities having jurisdiction as follows:

(1) Pumps, equipment, equipment room signs, and exposed piping in equipment room shall be checked.

1702.11.2.2 Cross-Connection Test. The procedure for determining cross-connection shall be followed by the applicant in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction to determine whether a cross connection has occurred as follows:

(1) The potable water system shall be activated and pressurized. The rainwater catchment water system shall be shut down and completely drained.
(2) The potable water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the rainwater catchment water system is empty. The minimum period the rainwater catchment water system is to remain depressurized shall be determined on a case-by-case basis, taking into account the size and complexity of the potable and rainwater catchment water distribution systems, but in no case shall that period be less than 1 hour.
(3) Fixtures, potable and rainwater, shall be tested and inspected for flow. Flow from a rainwater catchment water system outlet shall indicate a cross-connection. No flow from a potable water outlet shall indicate that it is connected to the rainwater water system.
(4) The drain on the rainwater catchment water system shall be checked for flow during the test and at the end of the period.
(5) The potable water system shall then be completely drained.
(6) The rainwater catchment water system shall then be activated and pressurized.
(7) The rainwater catchment water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the potable water system is empty. The minimum period the potable water system is to remain depressurized shall be determined on a case-by-case basis, but in no case shall that period be less than 1 hour.
(8) Fixtures, potable and rainwater catchment, shall be tested and inspected for flow. Flow from a potable water system outlet shall indicate a cross-connection. No flow from a rainwater catchment water outlet shall indicate that it is connected to the potable water system.
(9) The drain on the potable water system shall be checked for flow during the test and at the end of the period.
(10) Where there is no flow detected in the fixtures which would indicate a cross-connection, the potable water system shall be repressurized.

1702.11.2.3 Discovery of Cross-Connection. In the event that a cross-connection is discovered, the following procedure, in the presence of the Authority Having Jurisdiction, shall be activated immediately:

(1) Rainwater catchment water piping to the building shall be shut down at the ~~meter~~ *supply source(s),* and the rainwater water riser shall be drained.
(2) Potable water piping to the building shall be shut down at the meter.
(3) The cross-connection shall be uncovered and disconnected.
(4) The building shall be retested following procedures listed in Section 1702.11.2.1 and Section 1702.11.2.2.
(5) The potable water system shall be chlorinated with 50 ppm chlorine for 24 hours.
(6) The potable water system shall be flushed after 24 hours, and a standard bacteriological test shall be performed. Where test results are acceptable, the potable water system shall be permitted to be recharged.

~~**1702.11.2.4 Annual Inspection.** An annual inspection of the rainwater catchment water system, following the procedures listed in Section 1702.11.2.1 shall be required. Annual cross-connection testing, following the procedures listed in Section 1702.11.2.2 shall be required by the Authority Having Jurisdiction, unless site conditions do not require it. In no event shall the test occur less than once in 4 years. Alternate testing requirements shall be permitted by the Authority Having Jurisdiction.~~

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

20. HCD proposes to adopt Appendix A from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code without amendment:

APPENDIX A
RECOMMENDED RULES FOR SIZING THE WATER SUPPLY SYSTEM

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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21. HCD proposes to NOT adopt Appendix B from the 2012 Uniform Plumbing Code.

APPENDIX B
EXPLANATORY NOTES ON COMBINATION WASTE AND VENT SYSTEMS

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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22. HCD proposes to NOT adopt Appendix C from the 2012 Uniform Plumbing Code.

APPENDIX C
ALTERNATE PLUMBING SYSTEMS

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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23. HCD proposes to adopt Appendix D from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code without amendment:

APPENDIX D
SIZING STORMWATER DRAINAGE SYSTEMS

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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24. HCD proposes to NOT adopt Appendix E from the 2012 Uniform Plumbing Code.

APPENDIX E
MANUFACTURED/MOBILE HOME PARKS AND RECREATIONAL VEHICLE PARKS

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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25. HCD proposes to NOT adopt Appendix F from the 2012 Uniform Plumbing Code.

APPENDIX F
FIREFIGHTER BREATHING AIR REPLENISHMENT SYSTEMS

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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26. HCD proposes to NOT adopt Appendix G from the 2012 Uniform Plumbing Code.

APPENDIX G
SIZING OF VENTING SYSTEMS SERVING APPLIANCES EQUIPPED WITH DRAFT HOODS, CATEGORY I APPLIANCES, AND APPLIANCES LISTED FOR USE WITH TYPE B VENTS

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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27. HCD proposes to adopt Appendix H from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code without amendment:

APPENDIX H
PRIVATE SEWAGE DISPOSAL SYSTEMS (FORMERLY APPENDIX K)

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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28. HCD proposes to adopt Appendix I from the 2012 Uniform Plumbing Code into the 2013 California Plumbing Code without amendment:

NOTE: *See Part 2 of this document for existing California Amendments proposed to be brought forward from the 2010 CPC for adoption into the 2013 CPC.*

APPENDIX I
INSTALLATION STANDARDS

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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29. HCD proposes to NOT adopt Appendix J from the 2012 Uniform Plumbing Code.

APPENDIX J
COMBINATION OF INDOOR AND OUTOOR COMBUSTION AND VENTILATION OPENING DESIGN

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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30. HCD proposes to NOT adopt Appendix K from the 2012 Uniform Plumbing Code.

APPENDIX K
POTABLE RAINWATER CATCHMENT SYSTEMS

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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31. HCD proposes to NOT adopt Appendix L from the 2012 Uniform Plumbing Code.

APPENDIX L
GREEN PLUMBING CODE SUPPLEMENT

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

** PART 2 **

NOTE: *The language in Part 2 is brought forward from the previous code adoption cycle without change, except for nonsubstantive editorial corrections, and is displayed for context and for the convenience of the code users.*

32. HCD proposes to bring forward existing California Amendments in Ch. 1, Administration, Division I, California Administration from the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code with an editorial correction of Sections 1.8.3.1 and 1.8.6.1 as follows:

CHAPTER 1
ADMINISTRATION
DIVISION I
CALIFORNIA ADMINISTRATION

1.1.0 General

1.1.1 Title. (See Part 1)

1.1.2 Purpose. *The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, access to persons with disabilities, sanitation, adequate lighting and ventilation, and energy conservation; safety to life and property from fire and other hazards attributed to the built environment; and to provide safety to fire fighters and emergency responders during emergency operations.*

1.1.3 Scope. *The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout the State of California.*

1.1.3.1 Non-State-Regulated Buildings, Structures, and Applications. *Except as modified by local ordinance pursuant to Section 1.1.8, the following standards in the California Code of Regulations, Title 24, Parts 2, 2.5, 3, 4, 5, 6, 9, 10 and 11 shall apply to all occupancies and applications not regulated by a state agency.*

1.1.3.2 State-Regulated Buildings, Structures, and Applications. *The model code, state amendments to the model code and/or state amendments where there are no relevant model code provisions shall apply to the following buildings, structures, and applications regulated by state agencies ~~as referenced in the Matrix Adoption Tables and~~ as specified in Section 1.2.0 through 1.14.0, except where modified by local ordinance pursuant to Section 1.1.8. When adopted by a state agency, the provisions of this code shall be enforced by the appropriate enforcing agency, but only to the extent of authority granted to such agency by the state legislature.*

Note: *See Preface to distinguish the model code provisions from the California provisions.*

1. *State-owned buildings, including buildings constructed by the Trustees of the California State University, and to the extent permitted by California laws, buildings designed and constructed by the Regents of the University of California, and regulated by the Building Standards Commission. See Section 1.2.0 for additional scope provisions.*
2. *Local detention facilities regulated by the Corrections Standards Authority. See Section 1.3.0 for additional scope provisions.*
3. *Barbering, cosmetology or electrolysis establishments, acupuncture offices, pharmacies, veterinary facilities, and structural pest control locations regulated by the Department of Consumer Affairs. See Section 1.4.0 for additional scope provisions.*
4. *Reserved for the California Energy Commission. See Section 1.5.0 for additional scope provisions.*
5. *Dairies and places of meat inspection regulated by the Department of Food and Agriculture. See Section 1.6.0 for additional scope provisions.*

6. *Organized camps, laboratory animal quarters, public swimming pools, radiation protection, commissaries serving mobile food preparation vehicles, and wild animal quarantine facilities regulated by the Department of Public Health. See Section 1.7.0 for additional scope provisions.*
7. *Hotels, motels, lodging houses, apartment houses, dwellings, dormitories, condominiums, shelters for homeless persons, congregate residences, employee housing, factory-built housing~~,~~ and other types of dwellings containing sleeping accommodations with or without common toilets or cooking facilities. See Section 1.8.2.1.1 for additional scope provisions.*
8. *Accommodations for persons with disabilities in buildings containing newly constructed covered multifamily dwellings, new common use spaces serving existing covered multifamily dwellings, additions to existing buildings where the addition alone meets the definition of "COVERED MULTIFAMILY DWELLINGS," and common-use spaces serving covered multifamily dwellings which are regulated by the Department of Housing and Community Development. See Section 1.8.2.1.2 for additional scope provisions.*
9. *Permanent buildings and permanent accessory buildings or structures constructed within mobilehome parks and special occupancy parks regulated by the Department of Housing and Community Development. See Section 1.8.2.1.3 for additional scope provisions.*
10. *Accommodations for persons with disabilities regulated by the Division of the State Architect. See Section 1.9.1 for additional scope provisions.*
11. *Public elementary and secondary schools, community college buildings and state-owned or state-leased essential service buildings regulated by the Division of the State Architect. See Section 1.9.2 for additional scope provisions.*
12. *Reserved for the State Historical Building Safety Board with the Division of the State Architect. See Section 1.9.3 for additional scope provisions.*
13. *General acute care hospitals, acute psychiatric hospitals, skilled nursing and/or intermediate care facilities, clinics licensed by the Department of Public Health and correctional treatment centers regulated by the Office of Statewide Health Planning and Development. See Section 1.10 for additional scope provisions.*
14. *Applications regulated by the Office of State Fire Marshal include but are not limited to the following in accordance with Section 1.11.0:*
    1. *Buildings or structures used or intended for use as an:*
        - *1.1. Asylum, jail, prison.*
        - *1.2. Mental hospital, hospital, home for the elderly, children's nursery, children's home or institution, school or any similar occupancy of any capacity.*
        - *1.3. Theater, dancehall, skating rink, auditorium, assembly hall, meeting hall, nightclub, fair building or similar place of assemblage where 50 or more persons may gather together in a building, room or structure for the purpose of amusement, entertainment, instruction, deliberation, worship, drinking or dining, awaiting transportation, or education.*
        - *1.4. Small family day care homes, large family day-care homes, residential facilities and residential facilities for the elderly, residential care facilities.*
        - *1.5. State institutions or other state-owned or state-occupied buildings.*
        - *1.6. High rise structures.*
        - *1.7. Motion picture production studios.*
        - *1.8. Organized camps.*
        - *1.9. Residential structures.*
    2. *Tents, awnings or other fabric enclosures used in connection with any occupancy.*
    3. *Fire alarm devices, equipment and systems in connection with any occupancy.*
    4. *Hazardous materials, flammable and combustible liquids.*
    5. *Public school automatic fire detection, alarm and sprinkler systems.*
    6. *Wildland-urban interface fire areas.*
15. Public libraries constructed and renovated using funds from the California Library Construction and Renovation Bond Act of 1988 and regulated by the State Librarian. See Section 1.12.0 for additional scope provisions.
16. *Gray water systems regulated by the Department of Water Resources. See Section 1.13.0 for additional scope provisions.*
17. *For Applications listed in Section 1.9.1 regulated by the Division of the State Architect – Access Compliance, outdoor environments and uses shall be classified according to accessibility uses described in Chapter 11A, 11B and 11C.*
18. *Marine Oil Terminals regulated the State Lands Commission. See Section 1.14.0 for additional scope provisions.*

1.1.4 Appendices. *Provisions contained in the appendices of this code shall not apply unless specifically adopted by a state agency or adopted by a local enforcing agency in compliance with Health and Safety Code Section 18901 et seq. for Building Standards Law, Health and Safety Code Section 17950 for State Housing Law and Health and Safety Code Section 13869.7 for Fire Protection Districts. See Section 1.1.8 of this code.*

1.1.5 Referenced Codes. *The codes, standards and publications adopted and set forth in this code, including other codes, standards and publications referred to therein are, by title and date of publication, hereby adopted as standard reference documents of this code. When this code does not specifically cover any subject related to building design and construction, recognized architectural or engineering practices shall be employed. The National Fire Codes, standards and the Fire Protection Handbook of the National Fire Protection Association are permitted to be used as authoritative guides in determining recognized fire prevention engineering practices.*

1.1.6 Non-Building Standards, Orders and Regulations. *Requirements contained in the Uniform Plumbing Code, or in any other referenced standard, code or document, which are not building standards as defined in Health and Safety Code Section 18909 shall not be construed as part of the provisions of this code. For non-building standards, orders, and regulations, see other titles of the California Code of Regulations.*

1.1.7 Order of Precedence and Use.

1.1.7.1 Differences. *In the event of any differences between these building standards and the standard reference documents, the text of these building standards shall govern.*

1.1.7.2 Specific provisions. *Where a specific provision varies from a general provision, the specific provision shall apply.*

1.1.7.3 Conflicts. *When the requirements of this code conflict with the requirements of any other part of the California Building Standards Code, Title 24, the most restrictive requirements shall prevail.*

1.1.8 City, County, or City and County Amendments, Additions or Deletions.
The provisions of this code do not limit the authority of city, county, or city and county governments to establish more restrictive and reasonably necessary differences to the provisions contained in this code pursuant to complying with Section 1.1.8.1. The effective date of amendments, additions, or deletions to this code by city, county, or city and county filed pursuant to Section 1.1.8.1 shall be the date filed. However, in no case shall the amendments, additions or deletions to this code be effective any sooner than the effective date of this code.

Local modifications shall comply with Health and Safety Code Section 18941.5 for Building Standards Law, Health and Safety Code Section 17958 for State Housing Law or Health and Safety Code Section 13869.7 for Fire Protection Districts.

1.1.8.1 Findings and Filings.

1. *The city, county, or city and county shall make express findings for each amendment, addition or deletion based upon climatic, topographical, or geological conditions.*

   Exception: *Hazardous building ordinances and programs mitigating unreinforced masonry buildings.*

2. *The city, county, or city and county shall file the amendments, additions, or deletions expressly marked and identified as to the applicable findings. Cities, counties, cities and counties, and fire departments shall file the amendments, additions or deletions, and the findings with the California Building Standards Commission at 2525 Natomas Park Drive, Suite 130, Sacramento, CA 95833.*

3. *Findings prepared by fire protection districts shall be ratified by the local city, county, or city and county and filed with the California Department of Housing and Community Development, Division of Codes and Standards, P.O. Box 1407, Sacramento, CA 95812-1407 or 1800 3rd Street, Room 260, Sacramento, CA 95811.*

1.1.9 Effective Date of this Code. *Only those standards approved by the California Building Standards Commission that are effective at the time an application for building permit is submitted shall apply to the plans and specifications for, and to the construction performed under, that permit. For the effective dates of the provisions contained in this code, see the History Note page of this code.*

1.1.10 Availability of Codes. *At least one complete copy each of Titles 8, 19, 20, 24, and 25 with all revisions shall be maintained in the office of the building official responsible for the administration and enforcement of this code. Each state department concerned and each city, county, or city and county shall have an up-to-date copy of the code available for public inspection. See Health and Safety Code Section 18942 (d)(1) and (2).*

1.1.11 Format. *This part fundamentally adopts the Uniform Plumbing Code by reference on a chapter-by-chapter basis. ~~Such adoption is reflected in the Matrix Adoption Table of each chapter of this part. When the Matrix Adoption Tables make no reference to a specific chapter of the Uniform Plumbing Code, such chapter of the Uniform Plumbing Code is not adopted as a portion of this code.~~ When a specific chapter of the Uniform Plumbing Code is not printed in the code and is marked "Reserved", such chapter of the Uniform Plumbing Code is not adopted as a portion of this code. When a specific chapter of the Uniform Plumbing Code is marked "Not Adopted by the State of California" but appears in the code, it may be available for adoption by local ordinance.*

Note: *Matrix Adoption Tables at the front of each chapter may aid the code user in determining which chapter or sections within a chapter are applicable to buildings under the authority of a specific state agency, but they are not considered regulatory.*

1.1.12 Validity. *If any chapter, section, subsection, sentence, clause or phrase of this code is for any reason held to be unconstitutional, contrary to statute, exceeding the authority of the state as stipulated by statutes or otherwise inoperative, such decision shall not affect the validity of the remaining portion of this code.*

… (No change to text)

1.8.0 Department of Housing and Community Development. (HCD)

1.8.1 Purpose. *The purpose of this code is to establish minimum requirements to protect the health, safety, and general welfare of the occupants and the public by governing the erection, construction, reconstruction, enlargement, conversion, alteration, repair, moving, removal, demolition, sanitation, ventilation and maintenance or use of plumbing equipment or systems.*

1.8.2 Authority and Abbreviations.

1.8.2.1 General. *The Department of Housing and Community Development is authorized by law to promulgate and adopt building standards and regulations for several types of building applications. ~~These applications are grouped and identified by abbreviation in the Matrix Adoption Tables to show which model code sections and amendments are applicable to each application.~~ The applications under the authority of the Department of Housing and Community Development are listed in Sections 1.8.2.1.1 through 1.8.2.1.3.*

1.8.2.1.1 Housing Construction.
Application *- Hotels, motels, lodging houses, apartment houses, dwellings, dormitories, condominiums, shelters for homeless persons, congregate residences, employee housing, factory-built housing and other types of dwellings containing sleeping accommodations with or without common toilet or cooking facilities including accessory buildings, facilities, and uses thereto. Sections of this code which pertain to applications listed in this section are identified ~~in the Matrix Adoption Table~~ using the abbreviation "HCD 1".*

Enforcing Agency - *Local building department or the Department of Housing and Community Development.*

Authority Cited: *Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.*

Reference: *Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.*

1.8.2.1.2 Housing Accessibility.
Application *– ~~Covered multifamily dwellings~~ "COVERED MULTIFAMILY DWELLINGS" as defined in Chapter 11A of the California Code of Regulations, Title 24, Part 2, also known as the California Building Code (CBC) including, but not limited to, lodging houses, dormitories, timeshares, condominiums, shelters for homeless persons, congregate residences, apartment houses, dwellings, employee housing, factory-built housing and other types of dwellings containing sleeping accommodations with or without common toilet or cooking facilities. Sections of this code identified ~~in the Matrix Adoption Table~~ by the abbreviation "HCD 1-AC" require specific accommodations for "PERSONS WITH DISABILITIES" as defined in Chapter 11A of the CBC. The application of such provisions shall be in conjunction with other requirements of this code and*

apply only to newly constructed "COVERED MULTIFAMILY DWELLINGS" as defined in Chapter 11A of the CBC. "HCD 1-AC" applications include, but are not limited to, the following:

1. *All newly-constructed "COVERED MULTIFAMILY DWELLINGS" as defined in Chapter 11A of the CBC.*
2. *New "COMMON USE AREAS" as defined in Chapter 11A of the CBC serving existing covered multifamily dwellings.*
3. *Additions to existing buildings, where the addition alone meets the definition of "COVERED MULTIFAMILY DWELLINGS" as defined in Chapter 11A of the CBC.*
4. *Common use areas serving covered multifamily dwellings.*
5. *Where any portion of a building's exterior is preserved, but the interior of the building is removed, including all structural portions of floors and ceilings, the building is considered a new building for determining the application of CBC, Chapter 11A.*

HCD 1-AC building standards generally do not apply to public use areas or public accommodations such as hotels and motels. Public use areas, public accommodations and housing which is publicly funded as defined in Chapter 2 of the CBC are subject to the Division of the State Architect (DSA-AC) and are referenced in Section 1.9.1.

***Enforcing Agency**—Local building department or the Department of Housing and Community Development.*

***Authority Cited:** Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.*

***Reference:** Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.*

1.8.2.1.3 Permanent Buildings in Mobilehome Parks and Special Occupancy Parks.

***Application** - Permanent buildings, and permanent accessory buildings or structures, constructed within mobilehome parks and special occupancy parks that are under the control and ownership of the park operator. Sections of this code which pertain to applications listed in this section are identified ~~in the Matrix Adoption Table~~ using the abbreviation "HCD 2".*

***Enforcing Agency**— Local building department or other local agency responsible for the enforcement of Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 for mobilehome parks and Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 for special occupancy parks; or the Department of Housing and Community Development.*

***Authority Cited:** Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11 and 19990; and Government Code Section 12955.1.*

***Reference:** Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.*

1.8.3 Local Enforcing Agency

***1.8.3.1 Duties and Powers.** The building department of every city, county, or city and county shall enforce all the provisions of law, this code, and the other rules and regulations promulgated by the Department of Housing and Community Development pertaining to the installation, erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal, demolition, or arrangement of apartment houses, hotels, motels, lodging houses and dwellings, including accessory buildings, facilities, and uses thereto.*

The provisions regulating the erection and construction of dwellings and appurtenant structures shall not apply to existing structures as to which construction is commenced or approved prior to the effective date of these regulations. Requirements relating to use, maintenance and occupancy shall apply to all dwellings and

appurtenant structures approved for construction or constructed before or after the effective date of this code.

For additional information regarding the use and occupancy of existing buildings and appurtenant structures, see California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1.

1.8.3.2 Laws, Rules, and Regulations. *Other than the building standards contained in this code, and notwithstanding other provisions of law, the statutory authority and location of the laws, rules, and regulations to be enforced by local enforcing agencies are listed by statute in Sections 1.8.3.2.1 through 1.8.3.2.5 below:*

1.8.3.2.1 State Housing Law. *Refer to the State Housing Law, California Health and Safety Code, Division 13, Part 1.5, commencing with Section 17910 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1, for the erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal, demolition, or arrangement of apartment houses, hotels, motels, lodging houses and dwellings, including accessory buildings, facilities, and uses thereto.*

1.8.3.2.2 Mobilehome Parks Act. *Refer to the Mobilehome Parks Act, California Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 and California Code of Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000 for mobilehome park administrative and enforcement authority, permits, plans, fees, violations, inspections and penalties both within and outside mobilehome parks.*

Exception: *Mobilehome parks where the Department of Housing and Community Development is the enforcing agency.*

1.8.3.2.3 Special Occupancy Parks Act. *Refer to the Special Occupancy Parks Act, California Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 and California Code of Regulations, Title 25, Division 1, Chapter 2.2, commencing with Section 2000 for special occupancy park administrative and enforcement authority, permits, fees, violations, inspections and penalties both within and outside of special occupancy parks.*

Exception: *Special occupancy parks where the Department of Housing and Community Development is the enforcing agency.*

1.8.3.2.4 Employee Housing Act. *Refer to the Employee Housing Act, California Health and Safety Code, Division 13, Part 1, commencing with Section 17000 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3, commencing with Section 600 for employee housing administrative and enforcement authority, permits, fees, violations, inspections and penalties.*

1.8.3.2.5 Factory-Built Housing Law. *Refer to the Factory-Built Housing Law, California Health and Safety Code, Division 13, Part 6, commencing with Section 19960 and California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, commencing with Section 3000 for factory-built housing administrative and enforcement authority, permits, fees, violations, inspections and penalties.*

1.8.4 Permits, Fees, Applications and Inspections.

1.8.4.1 Permits. *A written construction permit shall be obtained from the enforcing agency prior to the erection, construction, reconstruction, installation, relocation, or alteration of any plumbing system.*

Exceptions:

1. *Work exempt from permits as specified in Chapter 1, Administration, Division II, Sections 103.1.2.1 and 103.1.2.2 of this code.*

2. *Changes, alterations, or repairs of a minor nature not affecting structural features, egress, sanitation, safety, or accessibility as determined by the enforcing agency.*

Exemptions from permit requirements shall not be deemed to grant authorization for any work to be done in any manner in violation of other provisions of law or this code.

1.8.4.2 Fees. *Subject to other provisions of law, the governing body of any city, county, or city and county may prescribe fees to defray the cost of enforcement of rules and regulations promulgated by the Department of Housing and Community Development. The amount of the fees shall not exceed the amount reasonably necessary to administer or process permits, certificates, forms, or other documents, or to defray the costs of enforcement. For additional information, see State Housing Law, Health and Safety Code, Division 13, Part 1.5, Section 17951 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, Article 3, commencing with Section 6.*

1.8.4.3 Plan Review and Time Limitations. *Subject to other provisions of law, provisions related to plan checking, prohibition of excessive delays, and contracting with or employment of private parties to perform plan checking are set forth in the State Housing Law, Health and Safety Code Section 17960.1, and for employee housing, in Health and Safety Code Section 17021.*

1.8.4.3.1 Retention of Plans. *The building department of every city, county, or city and county shall maintain an official copy, microfilm, or electronic or other type of photographic copy of the plans of every building, during the life of the building, for which the department issued a building permit.*

Exceptions:

1. *Single or multiple dwellings not more than two stories and basement in height.*
2. *Garages and other structures appurtenant to buildings listed in Exception 1.*
3. *Farm or ranch buildings appurtenant to buildings listed in Exception 1.*
4. *Any one-story building where the span between bearing walls does not exceed 25 feet (7620 mm), except a steel frame or concrete building.*

All plans for common interest developments as defined in Section 1351 of the California Civil Code shall be retained. For additional information regarding plan retention and reproduction of plans by an enforcing agency, see Health and Safety Code Sections 19850 through 19852.

1.8.4.4 Inspections. *Construction or work for which a permit is required shall be subject to inspection by the building official and such construction or work shall remain accessible and exposed for inspection purposes until approved. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or other regulations of the Department of Housing and Community Development.*

1.8.5 Right of Entry for Enforcement.

1.8.5.1 General. *Subject to other provisions of law, officers and agents of the enforcing agency may enter and inspect public and private properties to secure compliance with the rules and regulations promulgated by the Department of Housing and Community Development. For limitations and additional information regarding enforcement, see the following:*

1. *For applications subject to State Housing Law as referenced in Section 1.8.3.2.1 of this code, refer to Health and Safety Code, Division 13, Part 1.5, commencing with Section 17910 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1.*
2. *For applications subject to the Mobilehome Parks Act as referenced in Section 1.8.3.2.2 of this code, refer to Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 and California Code of Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000.*
3. *For applications subject to the Special Occupancy Parks Act as referenced in Section 1.8.3.2.3 of this code, refer to Health and Safety Code Division 13, Part 2.3, commencing with Section 18860 and California Code of Regulations, Title 25, Division 1, Chapter 2.2, commencing with Section 2000.*
4. *For applications subject to the Employee Housing Act as referenced in Section 1.8.3.2.4 of this code, refer to Health and Safety Code, Division 13, Part 1, commencing with Section 17000 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3, commencing with Section 600.*
5. *For applications subject to the Factory-Built Housing Law as referenced in Section 1.8.3.2.5 of this code, refer to Health and Safety Code, Division 13, Part 6, commencing with Section 19960 and California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, commencing with Section 3000.*

1.8.6 Local Modification by Ordinance or Regulation.

1.8.6.1 General. *Subject to other provisions of law, a city, county, or city and county may make changes to the provisions adopted by the Department of Housing and Community Development. If any city, county, or city and county does not amend, add, or repeal by local ordinances or regulations the provisions published*

in this code or other regulations promulgated by the Department of Housing and Community Development, those provisions shall be applicable and shall become effective 180 days after publication by the California Building Standards Commission. Amendments, additions, and deletions to this code adopted by a city, county, or city and county pursuant to California Health and Safety Code Sections 17958.5, 17958.7 and 18941.5, together with all applicable portions of this code, shall also become effective 180 days after publication of the California Building Standards Code by the California Building Standards Commission.

1.8.6.2 Findings, Filings, and Rejections of Local Modifications. *Prior to making any modifications or establishing more restrictive building standards, the governing body shall make express findings and filings, as required by California Health and Safety Code Section 17958.7, showing that such modifications are reasonably necessary due to local climatic, geological, or topographical conditions. No modification shall become effective or operative unless the following requirements are met:*

1. *The express findings shall be made available as a public record.*
2. *A copy of the modification and express finding, each document marked to cross-reference the other, shall be filed with the California Building Standards Commission for a city, county, or a city and county, and with the Department of Housing and Community Development for fire protection districts.*
3. *The California Building Standards Commission has not rejected the modification or change. Nothing in this section shall limit the authority of fire protection districts pursuant to California Health and Safety Code Section 13869.7(a).*

1.8.7 Alternate Materials, Designs, Tests and Methods of Construction.

1.8.7.1 General. *The provisions of this code as adopted by the Department of Housing and Community Development are not intended to prevent the use of any alternate material, appliance, installation, device, arrangement, design or method of construction not specifically prescribed by this code. Consideration and approval of alternates shall comply with Section 1.8.7.2 for local building departments and Section 1.8.7.3 for the Department of Housing and Community Development.*

1.8.7.2 Local Building Departments. *The building department of any city, county, or city and county may approve alternates for use in the erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal, demolition or arrangement of an apartment house, hotel, motel, lodging house, or dwelling or an accessory structure, except for the following:*

1. *Structures located in mobilehome parks as defined in California Health and Safety Code Section 18214.*
2. *Structures located in special occupancy parks as defined in California Health and Safety Code Section 18862.43.*
3. *Factory-built housing as defined in California Health and Safety Code Section 19971.*

1.8.7.2.1 Approval of Alternates. *The consideration and approval of alternates by a local building department shall comply with the following procedures and limitations:*

1. *The approval shall be granted on a case-by-case basis.*
2. *Evidence shall be submitted to substantiate claims that the proposed alternate, in performance, safety, and protection of life and health, conforms to, or is at least equivalent to, the standards contained in this code and other rules and regulations promulgated by the Department of Housing and Community Development.*
3. *The local building department may require tests performed by an approved testing agency at the expense of the owner or owner's agent as proof of compliance.*
4. *If the proposed alternate is related to accessibility in covered multifamily dwellings or facilities serving "COVERED MULTIFAMILY DWELLINGS" as defined in Chapter 11A of the CBC, the proposed alternate must also meet the threshold set for "EQUIVALENT FACILITATION" as defined in Chapter 11A of the CBC.*

For additional information regarding approval of alternates by a local building department pursuant to the State Housing Law, see California Health and Safety Code Section 17951(e) and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1.

1.8.7.3 Department of Housing and Community Development. *The Department of Housing and Community Development may approve alternates for use in the erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal or demolition of an apartment house, hotel, motel, lodging*

house, dwelling, or an accessory thereto. The consideration and approval of alternates shall comply with the following:

1. *The department may require tests at the expense of the owner or owner's agent to substantiate compliance with the California Building Standards Code.*
2. *The approved alternate shall, for its intended purpose, be at least equivalent in performance and safety to the materials, designs, tests, or methods of construction prescribed by this code.*

1.8.8 Appeals Board.

1.8.8.1 General. *Every city, county, or city and county shall establish a process to hear and decide appeals of orders, decisions, and determinations made by the enforcing agency relative to the application and interpretation of this code and other regulations governing use, maintenance and change of occupancy. The governing body of any city, county, or city and county may establish a local appeals board and a housing appeals board to serve this purpose. Members of the appeals board(s) shall not be employees of the enforcing agency and shall be knowledgeable in the applicable building codes, regulations and ordinances as determined by the governing body of the city, county, or city and county.*

Where no such appeals boards or agencies have been established, the governing body of the city, county, or city and county shall serve as the local appeals board or housing appeals board as specified in California Health and Safety Code Sections 17920.5 and 17920.6.

1.8.8.2 Definitions. *The following terms shall for the purposes of this section have the meaning shown.*

Housing Appeals Board. *The board or agency of a city, county, or city and county which is authorized by the governing body of the city, county, or city and county to hear appeals regarding the requirements of the city, county, or city and county relating to the use, maintenance, and change of occupancy of buildings and structures, including requirements governing alteration, additions, repair, demolition, and moving. In any area in which there is no such board or agency, "housing appeals board" means the local appeals board having jurisdiction over the area.*

Local Appeals Board. *The board or agency of a city, county, or city and county which is authorized by the governing body of the city, county, or city and county to hear appeals regarding the building requirements of the city, county, or city and county. In any area in which there is no such board or agency, "local appeals board" means the governing body of the city, county, or city and county having jurisdiction over the area.*

1.8.8.3 Appeals. *Except as otherwise provided by law, any person, firm, or corporation adversely affected by a decision, order, or determination by a city, county, or city and county relating to the application of building standards published in the California Building Standards Code, or any other applicable rule or regulation adopted by the Department of Housing and Community Development, or any lawfully enacted ordinance by a city, county, or city and county, may appeal the issue for resolution to the local appeals board or housing appeals board as appropriate.*

The local appeals board shall hear appeals relating to new building construction and the housing appeals board shall hear appeals relating to existing buildings.

1.8.9 Unsafe Buildings or Structures.

1.8.9.1 Authority to Enforce. *Subject to other provisions of law, the administration, enforcement, actions, proceedings, abatement, violations and penalties for unsafe buildings and structures are contained in the following statutes and regulations:*

1. *For applications subject to State Housing Law as referenced in Section 1.8.3.2.1 of this code, refer to Health and Safety Code, Division 13, Part 1.5, commencing with Section 17910 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1.*
2. *For applications subject to the Mobilehome Parks Act as referenced in Section 1.8.3.2.2 of this code, refer to Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 and California Code of Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000.*
3. *For applications subject to the Special Occupancy Parks Act as referenced in Section 1.8.3.2.3 of this code, refer to Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 and California Code of Regulations, Title 25, Division 1, Chapter 2.2, commencing with Section 2000.*

4. *For applications subject to the Employee Housing Act as referenced in Section 1.8.3.2.4 of this code, refer to Health and Safety Code, Division 13, Part 1, commencing with Section 17000 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3, commencing with Section 600.*
5. *For applications subject to the Factory-Built Housing Law as referenced in Section 1.8.3.2.5 of this code, refer to Health and Safety Code, Division 13, Part 6, commencing with Section 19960 and California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, commencing with Section 3000.*

1.8.9.2 Actions and Proceedings. *Subject to other provisions of law, punishments, penalties and fines for violations of building standards are contained in the following statutes and regulations:*

1. *For applications subject to the State Housing Law as referenced in Section 1.8.3.2.1 of this code, refer to Health and Safety Code, Division 13, Part 1.5, commencing with Section 17910 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1.*
2. *For applications subject to the Mobilehome Parks Act as referenced in Section 1.8.3.2.2 of this code, refer to Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 and California Code of Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000.*
3. *For applications subject to the Special Occupancy Parks Act as referenced in Section 1.8.3.2.3. of this code, refer to Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 and California Code of Regulations, Title 25, Division 1, Chapter 2.2, commencing with Section 2000.*
4. *For applications subject to the Employee Housing Act as referenced in Section 1.8.3.2.4 of this code, refer to Health and Safety Code, Division 13, Part 1, commencing with Section 17000 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3, commencing with Section 600.*
5. *For applications subject to the Factory-Built Housing Law as referenced in Section 1.8.3.2.5 of this code, refer to Health and Safety Code, Division 13, Part 6, commencing with Section 19960 and California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, commencing with Section 3000.*

1.8.10 Other Building Regulations.

1.8.10.1 Existing Structures. *Notwithstanding other provisions of law, the replacement, retention, and extension of original materials and the use of original methods of construction for any existing building or accessory structure, or portions thereof, shall be permitted. For additional information, see California Health and Safety Code Sections 17912 and 17958.8.*

1.8.10.2 Moved Structures. *Subject to the requirements of California Health and Safety Code Sections 17922.3 and 17958.9, local ordinances or regulations relating to a moved residential or accessory structure shall, after July 1, 1978, permit the retention of existing materials and methods of construction so long as the structure does not become or continue to be a substandard building.*

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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33. HCD proposes to bring forward existing California Amendments from the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code with an editorial correction of Sections 214.0, 216.0, 222.0, 223.0 and 225.0 as follows:

203.0 **-A-**

… (No change to text)

Approved Testing Agency. An organization primarily established for purposes of testing to approved standards and approved by the Authority Having Jurisdiction.

(HCD 1 & HCD 2) *"Approved Testing Agency" is any agency which is determined by the enforcing agency, except as otherwise provided by statute, to have adequate personnel and expertise to carry out the testing of systems, materials, and construction fixtures or appliances.*

Authority Having Jurisdiction. The organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, installations, or procedures. The Authority Having Jurisdiction shall be a federal, state, local or other regional department or an individual such as a plumbing official, mechanical official, labor department official, health department official, building official, or others having statutory authority. In the absence of a statutory authority, the Authority Having Jurisdiction may be some other responsible party. This definition shall include the Authority Having Jurisdiction's duly authorized representative.

(HCD 1 & HCD 2) *"Authority Having Jurisdiction" shall mean "Enforcing Agency" as defined in Section 207.0 of this code.*

204.0 -B-

Building. A structure built, erected, and framed of component structural parts designed for the housing, shelter, enclosure, or support of persons, animals, or property of any kind.

Exceptions: (HCD 1 & HCD 2) *"BUILDING" shall not include the following:*

1. *Any mobilehome as defined in Health and Safety Code Section 18008.*
2. *Any manufactured home as defined in Health and Safety Code Section 18007.*
3. *Any commercial modular as defined in Health and Safety Code Section 18001.8 or any special purpose commercial modular as defined in Section 18012.5.*
4. *Any recreational vehicle as defined in Health and Safety Code Section 18010.*
5. *Any multifamily manufactured home as defined in Health and Safety Code Section 18008.7.*

For additional information, see Health and Safety Code Section 18908.

205.0 -C-

Covered Multifamily Dwellings (HCD 1-AC). *See Section 1.8.2.1.2.*

206.0 -D-

Department (HCD 1, HCD 2 & HCD 1-AC). *"Department" means the Department of Housing and Community Development.*

Department Having Jurisdiction. The Authority Having Jurisdiction, including any other law enforcement agency affected by any provision of this code, whether such agency is specifically named or not.

(HCD 1 & HCD 2) *"Department Having Jurisdiction" shall mean "Enforcing Agency" as defined in Section 207.0 of this code.*

207.0 -E-

Enforcing Agency (HCD 1, HCD 2 & HCD 1-AC). *"Enforcing Agency" is the designated department or agency as specified by statute or regulation.*

214.0 -L-

Labeled. Equipment or materials bearing a label of a listing agency (accredited conformity assessment body). See Listed (third-party certified).

(HCD 1 & HCD 2) *"Labeled" means equipment or materials to which has been attached a label, symbol or other identifying mark of an organization, approved by the Department, that maintains a periodic inspection program of production of labeled products, installations, equipment, or materials and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.*

Lavatory (HCD 1 & HCD 2). *"Lavatory" shall mean a plumbing fixture used for washing the hands, arms, face and head.*

Limited-Density Owner-Built <u>Rural</u> Dwelling (HCD 1). *"Limited-density Owner-built <u>Rural</u> Dwelling" shall mean any structure consisting of one or more habitable rooms intended or designed to be occupied by one family with facilities for living or sleeping, with use restricted to rural areas designated by local jurisdiction in compliance with the requirements of Health and Safety Code Section 17958.2.*

Listed (HCD 1 & HCD 2). *"Listed" means all products that appear in a list published by an approved testing or listing agency. For additional information, see Health and Safety Code Section 17920(h).*

Listing Agency – An agency accredited by an independent and authoritative conformity assessment body to operate a material and product listing and labeling (certification) system and that is accepted by the Authority Having Jurisdiction, which is in the business of listing or labeling. The system includes initial and ongoing product testing, a periodic inspection on current production of listed (certified) products, and makes available a published report of such listing in which specific information is included that the material or product conforms to applicable standards and found safe for use in a specific manner.

(HCD 1 & HCD 2) *"Listing Agency" means an agency approved by the department that is in the business of listing and labeling products, materials, equipment, and installations tested by an approved testing agency, and that maintains a periodic inspection program on current production of listed products, equipment, and installations, and that, at least annually, makes available a published report of these listings. For additional information, see Health and Safety Code Section 17920(i).*

Low VOC Cement (HCD 1 ~~& HCD 2~~). *Cement with a volatile organic compound (VOC) content of less than or equal to 490 g/L for CPVC Cement, 510 g/L for PVC Cement, and 325 g/L for ABS Cement, as determined by the South Coast Air Quality Management District's Laboratory Methods of Analysis for Enforcement Samples, Method 316A.*

Low VOC One-Step Cement (HCD 1 ~~& HCD 2~~). *Listed solvent cements that do not require the use of primer with a volatile organic compound (VOC) content of less than or equal to 490 g/L for CPVC Cement, 510 g/L for PVC Cement, and 325 g/L for ABS Cement, as determined by the South Coast Air Quality Management District's Laboratory Methods of Analysis for Enforcement Samples, Method 316A.*

Low VOC Primer (HCD 1 ~~& HCD 2~~). *Primer with a volatile organic compound (VOC) content of less than or equal to 550 g/L, as determined by the South Coast Air Quality Management District's Laboratory Methods of Analysis for Enforcement Samples, Method 316A.*

216.0 -N-

Nonwater Supplied Urinal ~~(Waterless Urinal)~~ (HCD 1 ~~& HCD 2~~). *A plumbing fixture which does not require water supply and is designed to receive and convey the uninhibited flow of liquid waste to the gravity drainage system.*

Nuisance. Includes, but is not limited to:
(1) A public nuisance known at common law or in equity jurisprudence.
(2) Where work regulated by this code is dangerous to human life or is detrimental to health and property.
(3) Inadequate or unsafe water supply or sewage disposal system.

(HCD 1 & HCD 2) *"Nuisance" shall mean any nuisance as defined in Health and Safety Code Section 17920(k).*

Notes*:*
1. *For applications subject to the Mobilehome Parks Act as referenced in Section 1.8.3.2.2 of this code, refer to California Code of Regulations, Title 25, Division 1, Chapter 2, for the definition of "Nuisance".*
2. *For applications subject to the Special Occupancy Parks Act as referenced in Section 1.8.3.2.3 of this code, refer to California Code of Regulations, Title 25, Division 1, Chapter 2.2, for the definition of "Nuisance".*

222.0 -T-

Testing Agency (HCD 1 ~~& HCD 2~~). *See "Approved Testing Agency".*

223.0 -U-

UPC (HCD 1 ~~& HCD 2~~). *"UPC" is the latest edition of the Uniform Plumbing Code, published by the International` Association of Plumbing and Mechanical Officials.*

225.0 **-W-**

Water Closet (HCD 1 ~~& HCD 2~~). *"Water Closet" is a plumbing fixture (which may be used for both solids and liquids) in which the waste matter is removed by flushing with water.*

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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34. HCD proposes to bring forward existing California Amendments from Ch. 3 of the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code with an editorial correction of Sections 301.2, 301.5 and 312.7 as follows:

NOTE: *The section numbers (shown in brackets) are from the 2010 California Plumbing Code and have been renumbered as shown in underline.*

CHAPTER 3
GENERAL REGULATIONS

301.2 Alternate Materials and Methods of Construction Equivalency. Nothing in this code is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this code. Technical documentation shall be submitted to the Authority Having Jurisdiction to demonstrate equivalency. The Authority Having Jurisdiction shall have the authority to approve or disapprove the system, method or device for the intended purpose. ***(HCD 1 ~~& HCD 2~~)*** *(See Section 1.8.7).*

However, the exercise of this discretionary approval by the Authority Having Jurisdiction shall have no effect beyond the jurisdictional boundaries of said Authority Having Jurisdiction. An alternate material or method of construction so approved shall not be considered as in accordance with the requirements, intent, or both of this code for a purpose other than that granted by the Authority Having Jurisdiction where the submitted data does not prove equivalency.

… (No change to text)

301.5 One- and Two-Family Dwellings. (HCD 1 ~~& HCD 2~~) *The provisions contained in this code shall not apply to one and two-family dwelling private sewage disposal systems and minimum plumbing facilities when alternate facilities or installations have been approved by the local health authority, provided that such alternative facilities or installations provide substantially equivalent or greater protection to health and safety.*

… (No change to text)

303.1 General. It shall be unlawful for a person to cause, suffer, or permit the disposal of sewage, human excrement, or other liquid wastes, in a place or manner, except through and by means of an approved drainage system, installed and maintained in accordance with the provisions of this code.

Exception: (HCD 1) *Limited-density owner-built rural dwellings. A water closet shall not be required when an alternate system is provided and has been approved by the local health official. Where an alternative to the water closet is installed, a system for the disposal or treatment of gray water shall be provided to the dwelling. Gray water systems shall be designed according to water availability, use and discharge. The design, use and maintenance standards of such systems shall be the prerogative of the local health official.*

… (No change to text)

304.1 General. Plumbing fixtures, drains, appurtenances, and appliances, used to receive or discharge liquid wastes or sewage, shall be connected properly to the drainage system of the building or premises, in accordance with the requirements of this code.

Exception: (HCD 1) *Limited-density owner-built rural dwellings. Where conventional plumbing, in all or in part, is installed within the structure, it shall be installed in accordance with the provisions of this code. Alternative materials and methods shall be permitted provided that the design complies with the intent of the code, and that such alternatives shall perform to protect health and safety for the intended purpose.*

~~**313.7**~~ **312.7. Fire-Resistant Construction.** Piping penetrations of fire-resistance-rated walls, partitions, floors, floor/ceiling assemblies, roof/ceiling assemblies, or shaft enclosures shall be protected in accordance with the requirements of the *California* Building Code.

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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35. HCD proposes to bring forward existing California Amendments from Ch. 4 of the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code with an editorial correction of Sections 403.2.1, 403.2.1.1 and 415.1 as follows:

NOTE: *The section numbers (shown in brackets) are from the 2010 California Plumbing Code and have been renumbered as shown in underline.*

CHAPTER 4
PLUMBING FIXTURES AND FIXTURE FITTINGS

~~(402.2.2)~~ 403.2.1 Water Closets on or after July 1, 2011. (HCD 1 & HCD 2) *Water closets, either flush tank, flushometer tank, or flushometer valve operated installed on or after July 1, 2011, shall have an effective flush volume in compliance with the following:*

(1) Single Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters) when tested in accordance with ASME A112.19.2, Standard for Vitreous China Plumbing Fixtures and Hydraulic Fixtures Requirements for Water Closets and Urinals.

(2) Dual Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters) when tested in accordance with ASME A112.19.2, Standard for Vitreous China Plumbing Fixtures and Hydraulic Fixtures Requirements for Water Closets and Urinals, and ASME A112.19.14, Standard for Six-Liter Water Closets Equipped with a Dual Flushing Device.

~~(402.2.2.1)~~ 403.2.1.1 Performance. (HCD 1 & HCD 2) *Water closets installed on or after July 2, 2011, shall meet or exceed the minimum performance criteria developed for certification of high-efficiency toilets under the WaterSense program sponsored by the U.S. Environmental Protection Agency (EPA).*

… (No change to text)

~~(406.5)~~ 415.0 Drinking Fountains.

415.1 Application. Drinking fountains shall be self-closing and in accordance comply with NSF 61 and to the applicable standards referenced in Table 1401.1. ***(HCD 1 ~~& HCD 2~~)*** *Drinking fountains shall be installed and so regulated that a jet of water extending at least 2 inches (51 mm) in height from the water orifice shall be constantly available. The orifice shall not be accessible to the mouth of the drinker nor subject to immersion.*

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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36. HCD proposes to bring forward an existing California Amendment from Ch. 5 of the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code with an editorial correction as follows:

NOTE: *The section numbers (shown in brackets) are from the 2010 California Plumbing Code and have been renumbered as shown in underline.*

CHAPTER 5
WATER HEATERS

~~**(508.2)**~~ **507.2 Seismic Provisions.** *W*ater heaters shall be anchored or strapped to resist horizontal displacement due to earthquake motion. Strapping shall be at points within the upper one-third and lower one-third of its vertical dimensions. At the lower point, a distance of not less than 4 inches (102 mm) shall be maintained from the controls with the strapping.

Note: (HCD 1 & HCD 2) *Reference Health and Safety Code Section 19211(a) which addresses new, replacement, and existing water heaters.*

Section 19211(a) Notwithstanding Section 19100, all new and replacement water heaters, and all existing residential water heaters shall be braced, anchored, or strapped to resist falling or horizontal displacement due to earthquake motion. At a minimum, any water heater shall be secured in accordance with the California Plumbing Code, or modifications made thereto by a city, county, or city and county pursuant to Section 17958.5.

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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37. HCD proposes to bring forward existing California Amendments from Ch. 6 of the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code with editorial corrections as follows:

NOTE: *The section numbers (shown in brackets) are from the 2010 California Plumbing Code and have been renumbered as shown in underline.*

CHAPTER 6
WATER SUPPLY AND DISTRIBUTION

601.1 General. Except where not deemed necessary for safety or sanitation by the Authority Having Jurisdiction, each plumbing fixture shall be provided with an adequate supply of potable running water piped thereto in an approved manner, so arranged as to flush and keep it in a clean and sanitary condition without danger of backflow or

cross-connection. Water closets and urinals shall be flushed by means of an approved flush tank or flushometer valve.

Exceptions:

1. ***(HCD 1 & HCD 2)*** Listed fixtures that do not require water for their operation and are not connected to the water supply.
2. ***(HCD 1 & HCD 2)*** *For limited-density owner-built rural dwellings, potable water shall be available to the dwelling site, although such water need not be pressurized. Where water is not piped from a well, spring, cistern or other source, there shall be a minimum reserve of 50 gallons (189 L) of potable water available. Where water delivery is pressurized, piping shall be installed in accordance with the provisions of this chapter.*
3. ***(HCD 1 & HCD 2)*** *Where deemed not necessary for safety or sanitation by the Enforcing Agency.*
4. ***(HCD 1 & HCD 2)*** *Recycled water or treated gray water may be allowed as specified in Chapter 16 Part II of this code.*

… (No change to text)

601.2.2 Color and Information — Each system shall be identified with a colored pipe or band and coded with paints, wraps and materials compatible with the piping.

Except as required in Sections 601.2.2.1, nonpotable water systems shall have a yellow background with black uppercase lettering, with the words "CAUTION: NONPOTABLE WATER, DO NOT DRINK." Each nonpotable system shall be identified to designate the liquid being conveyed, and the direction of normal flow shall be clearly shown. The minimum size of the letters and length of the color field shall conform to Table 601.2.2.

(HCD 1 & HCD 2) *An international symbol of a glass in a circle with a slash through it shall be provided similar to that shown in Figure 601 for all nonpotable water systems.*

The background color and required information shall be indicated every twenty (20) feet (6,096 mm) but not less than once per room, and shall be visible from the floor level.

TABLE ~~(6-1)~~ 601.2.2
MINIMUM LENGTH OF COLOR FIELD AND SIZE OF LETTERS

OUTSIDE DIAMETER OF PIPE OR COVERING	MINIMUM LENGTH OF COLOR FIELD	MINIMUM SIZE OF LETTERS
(inches)	(inches)	(inches)
1/2 to 1-1/4	8	1/2
1-1/2 to 2	8	3/4
2-1/2 to 6	12	1-1/4
8 to 10	24	2-1/2
Over 10	32	3-1/2

FIGURE 601
INTERNATIONAL SYMBOL

~~(603.4.11)~~ 603.5.11 Nonpotable Water Piping. In cases where it is impractical to correct individual cross-connections on the domestic waterline, the line supplying such outlets shall be considered a nonpotable waterline. No drinking or domestic water outlets shall be connected to the nonpotable water line. Where possible, portions of the nonpotable water line shall be exposed, and exposed portions shall be properly identified in a manner satisfactory to the Authority Having Jurisdiction. Each outlet on the nonpotable waterline that is permitted to be used for drinking or domestic purposes shall be posted: "CAUTION: NONPOTABLE

WATER, DO NOT DRINK." ***(HCD 1 & HCD 2)*** *An international symbol of a glass in a circle with a slash through it shall be provided similar to that shown in Figure 601.*

… (No change to text)

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 of the following conditions are satisfied:*

(a) Permit Conditions. *Any building permit 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 as an approved material and installed in accordance with this code may be used.*

(c) Installation and Use. *Any installation and use of CPVC plumbing material pursuant to this section shall comply with all applicable requirements of this code and Section 1.2 of Appendix I of this code, Installation Standard for CPVC Solvent Cemented Hot and Cold Water Distribution Systems, IAPMO IS 20- ~~2006~~ 2010.*

(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 certification: (1) that is required in subdivision (e), and (2) that he or she will comply with the flushing procedures and worker safety measures set forth in Section 1.2 of Appendix I of this code, Installation Standard for CPVC Solvent Cemented Hot and Cold Water Distribution Systems, IAPMO IS ~~2006~~ 2010.*

(e) Worker Safety. *Any contractor applying for a building permit that includes the use of CPVC plumbing materials 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 with CPVC plumbing pipe installations; 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 the requirements of this code and that the installer has complied with the requirements in Section 1.2.1 of Appendix I of this code, Installation Standards for CPVC Solvent Cemented Hot and Cold Water Distribution Systems, IAPMO IS 2~~006~~ 2010.*

(g) Penalties. *Any contractor or subcontractor found to have failed to comply with the flushing requirements of Section 1.2.1 of Appendix I of this code or the ventilation~~,~~ and glove requirements of Section 1.2.2 of Appendix I of this code, Installation Standards for CPVC Solvent Cemented Hot and Cold Water Distribution Systems, IAPMO IS 2~~006~~ 2010 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 during the conduct of any building inspection the building official finds that the ventilation and glove requirements of Section ~~1.2.2~~ 2.7.1 of Appendix I of this code, "Special Requirements for CPVC Installation within Residential Buildings," are being violated, such building officials shall cite the contractor or subcontractor for that violation.*

604.1.2 PEX. *All installations of PEX pipe where it is the initial plumbing piping installed in new construction shall be flushed twice over a period of at least one week. The pipe system shall be first 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 fully empty the contained volume. This provision shall not apply to the installation of PEX pipe where it replaces an existing pipe system of any material.*

(1) *At the time of fill, each fixture shall have a removable tag applied stating:*

(a) *"This new plumbing system was first filled and flushed on _____ (date) by _____ (name). The State of California requires that the system be flushed after standing at least one*

week after the fill date specified above. If this system is used earlier than one week after the fill date, 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 the completion of the required second flushing, except by the building owner or occupant."

(2) *Prior to issuing a building permit to install PEX pipe, the building official shall require as part of the permitting process that the contractor, or the appropriate plumbing subcontractors, provide written certification that he or she will comply with the flushing procedures set forth in the code.*

(3) *The building official shall not give final permit approval of any PEX plumbing installation unless he or she finds that the material has been installed in compliance with the requirements of the code, including the requirements to flush and tag the systems.*

(4) *Any contractor or subcontractor found to have failed to comply with the PEX flushing requirements shall be subject to the penalties in Health and Safety Code, Division 13, Part 1.5, Chapter 6 (Section 17995, et seq.).*

… (No change to text)

~~**(604.14)**~~ **604.13 Water Heater Connectors.** Flexible metallic water heater connectors or reinforced flexible water heater connectors connecting water heating to the piping system shall be in accordance with the applicable standards referenced in Table 1401.1. Copper or stainless steel flexible connectors shall not exceed 24 inches (610 mm). PEX, PEX-AL-PEX, PE-AL-PE, or PE-RT tubing shall not be installed within the first 18 inches (457 mm) of piping connected to a water heater.

(HCD 1 & HCD 2) *PEX-AL-PEX is not adopted for use in potable water supply and distribution systems.*

~~**(604.13)**~~ **605.11 PEX-AL-PEX Plastic Tubing and Joints.** PEX-AL-PEX plastic pipe or tubing and fitting joining methods shall be installed in accordance with the manufacturer's installation instructions and shall comply with Section 605.11.1 and Section 605.11.1.1.

(HCD 1 & HCD 2) *PEX-AL-PEX is not adopted for use in potable water supply and distribution systems.*

~~**(316.1.6)**~~ **605.13.2 Solvent Cement Joints.** Solvent cement joints for PVC pipe and fittings shall be clean from dirt and moisture. Pipe shall be cut square and pipe shall be deburred. Where surfaces to be joined are cleaned and free of dirt, moisture, oil, and other foreign material, apply primer purple in color in accordance with ASTM F 656. Primer shall be applied until the surface of the pipe and fitting is softened. Solvent cements in accordance with ASTM D 2564 shall be applied to all joint surfaces. Joints shall be made while both the inside socket surface and outside surface of pipe are wet with solvent cement. Hold joint in place and undisturbed for 1 minute after assembly.

(*HCD 1)* *Plastic pipe and fittings joined with solvent cement shall utilize Low VOC primer*(s), *if a primer is required, and Low VOC solvent cement(s) as defined in Section 214.*

~~**(316.2.4)**~~ **605.16 Dielectric Unions.** Dielectric unions where installed at points of connection where there is a dissimilarity of metals shall be in accordance with ASSE 1079. ***(HCD 1 & HCD 2)*** *Dielectric unions shall be used at all points of connection where there is a dissimilarity of metals.*

(Special Note: Text brought forward from the 2010 CPC, Section 316.2.4, and adopted into the 2013 CPC, Section 605.16)

609.10 Water Hammer. ***(Not adopted by HCD)*** Building water supply systems…

TABLE ~~(6-4)~~ 604.1
MATERIALS FOR BUILDING SUPPLY AND WATER DISTRIBUTION WATER PIPING

Material	Building Supply Pipe and Fittings	Water Distribution Pipe and Fittings	Referenced Standard(s) Pipe	Referenced Standard(s) Fittings
Asbestos - Cement	X[1]	--	ASTM C 296	--
Brass	X	X	ASTM B 43, ASTM B 135	--
Copper	X	X	ASTM B 42, ASTM B 75 ASTM B 88, ASTM B 251 ASTM B 302, ASTM B 447	ASME B16.15, ASME B16.18, ASME B16.22, ASME B16.26
CPVC	X	X	ASTM D 2846. ASTM F 441 ASTM F 442	ASTM D 2846, ASTM F 437, ASTM F 438, ASTM F 439, ASTM F 1970
Ductile-Iron	X	X	AWWA C151	ASME B16.4, AWWA C110, AWWA C153
Galvanized Steel	X	X	ASTM A 53	--
Malleable Iron	X	X	--	ASME B16.3
PE	X[1]	--	ASTM D 2239, ASTM D 2737 ASTM D3035, AWWA C901 CSA B137.1	ASTM D 2609. ASTM D 2683, ASTM D 3261, ASTM F 1055, CSA B137.1
PE-AL-PE	X	X	ASTM F 1282, CSA B137.9	ASTM F 1282, ASTM F1974, CSA B137.9
PE-RT	X	X	ASTM F 2769	ASTM F 1807, ASTM F 2098, ASTM F 2159, ASTM F 2735, ASTM F 2769
PEX	X	X	ASTM F 876, ASTM F 877 CSA B137.5, AWWA C904[1]	ASSE 1061, ASTM F 877, ASTM F 1807, ASTM F 1960, ASTM F 1961, ASTM F 2080, ASTM F 2159, ASTM F 2735, CSA B137.5
PEX-AL-PEX [2]	X	X	ASTM F 1281, CSA B137.10, ASTM F 2262	ASTM F 1281, ASTM F 1974, ASTM F 2434, CSA B137.10
PP	X	X	ASTM F 2389, CSA B137.11	ASTM F 2389, CSA B137.11
PVC	X[1]	--	ASTM D 1785, ASTM D 2241, AWWA C900	ASTM D 2464, ASTM D 2466, ASTM D 2467, ASTM F 1970
Stainless Steel	X	X	ASTM A 269, ASTM A 312	--

[1] For Building Supply or cold-water applications.

[2] *The use of PEX-AL-PEX in potable water supply systems is not adopted.*

TABLE ~~(6-5)~~ 610.3
WATER SUPPLY FIXTURE UNITS (WSFU) AND MINIMUM FIXTURE BRANCH PIPE SIZES [3]

Appliances, Appurtenances or Fixtures [2]	Minimum Fixture Branch Pipe Size [1,4]	Private	Public	Assembly[6]
Bathtub or Combination Bath/Shower (fill)	½	4.0	4.0	
¾" Bathtub Fill Valve	¾	10.0	10.0	
Bidet	½	1.0		
Clothes washer	½	4.0	4.0	
Dental Unit, cuspidor	½		1.0	
Dishwasher	½	1.5	1.5	
Drinking Fountain or Water Cooler	½	0.5	0.5	0.75
Hose Bibb	½	2.5	2.5	
Hose Bibb, each additional [8]	½	1.0	1.0	
Lavatory	½	1.0	1.0	1.0
Lawn Sprinkler, each head [5]		1.0	1.0	
Mobile Home, each (minimum)[9]		12.0		
Sinks				
Bar	½	1.0	2.0	
Clinic Faucet	½		3.0	
Clinic Flushometer Valve with or without faucet	1		8.0	
Kitchen, domestic with or without dishwasher	½	1.5	1.5	
Laundry	½	1.5	1.5	
Service or Mop Basin	½	1.5	3.0	
Washup, each set of faucets	½		2.0	
Shower, per head	½	2.0	2.0	
Urinal, 1.0 GPF Flushometer Valve	¾	See Footnote 7		
Urinal, greater than 1.0 GPF Flushometer Valve	¾	See Footnote 7		
Urinal, flush tank	½	2.0	2.0	3.0
Wash Fountain, circular spray	¾		4.0	
Water Closet, 1.6 GPF Gravity Tank	½	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Tank	½	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Valve	1	See Footnote 7		
Water Closet, greater than 1.6 GPF Gravity Tank	½	3.0	5.5	7.0
Water Closet, greater than 1.6 GPF Flushometer Valve	1	See Footnote 7		

Notes:
1. Size of the cold branch pipe, or both the hot and cold branch pipes.
2. Appliances, appurtenances or fixtures not referenced in this table shall be permitted to be sized by reference to fixtures having a similar flow rate and frequency of use.
3. The listed fixture unit values represent their load on their cold water building supply. The separate cold water and hot water fixture unit value for fixtures having both hot and cold water connections shall be permitted to be each taken as three-quarter of the listed total value of the fixture.
4. The listed minimum supply branch pipe sizes for individual fixtures are the nominal (I.D.) pipe size.
5. For fixtures or supply connections likely to impose continuous flow demands, determine the required flow in gallons per minute (GPM), and add it separately to the demand (in GPM) for the distribution system or portions thereof.
6. Assembly (Public Use (See Table 422.1)).
7. When sizing flushometer systems, see Section 610.10.
8. Reduced fixture unit loading for additional hose bibbs is to be used only when sizing total building demand and for pipe sizing where more than one hose bibb is supplied by a segment of water-distribution pipe. The fixture branch to each hose bibb shall be sized on the basis of 2.5 fixture units.
*9. **(HCD 2)** For water supply fixture unit values related to mobilehome parks in all parts of the State of California, see California Code of Regulations, Title 25, Division 1, Chapter 2, Article 5, Section 1278. For water supply fixture unit values related to special occupancy parks in all parts of the State of California, see California Code of Regulations, Title 25, Division 1, Chapter 2.2, Article 5, Section 2278.*

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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38. HCD proposes to bring forward existing California Amendments from the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code with an editorial correction of Section 701.1 and Table 702.1 as follows:

NOTE: *The section numbers (shown in brackets) are from the 2010 California Plumbing Code and have been renumbered as shown in underline.*

CHAPTER 7
SANITARY DRAINAGE

Part I – Drainage Systems.

701.1 Drainage Piping. Materials for drainage piping shall be in accordance with one of the referenced standards in Table 701.1 except that:

~~(701.1.2.1)~~ (1) No galvanized wrought-iron or galvanized steel pipe shall be used underground and shall be kept not less than 6 inches (152 mm) aboveground.

~~(701.1.2.2)~~ (2) ABS and PVC DWV piping installations shall be installed in accordance with applicable standards referenced in Table 1401.1. Except for individual single-family dwelling units, materials exposed within ducts or plenums shall have a flame-spread index of a maximum of 25 and a smoke-developed index of a maximum 50, where tested in accordance with ASTM E 84 and UL 723.

(A) ***(HCD 1 & HCD 2)*** *ABS and PVC installations are limited to not more than two stories of areas of residential accommodation.*

(Special Note: Text brought forward from the 2010 CPC, Section 701.1.2.2, and adopted into the 2013 CPC, Section 701.1 (2) (A))

TABLE ~~(7-3)~~ 702.1
DRAINAGE FIXTURE UNIT VALUES (DFU)

… (No change to Table)

Notes:
1. Indirect waste receptors shall be sized based on the total drainage capacity of the fixtures that drain therein to, in accordance with Table 702.2(b).
2. Provide a two (2) inch (51 mm) minimum drain.
3. For refrigerators, coffee urns, water stations, and similar low demands.
4. For commercial sinks, dishwashers, and similar moderate or heavy demands.
5. Buildings having a clothes-washing area with clothes washers in a battery of three (3) or more clothes washers shall be rated at six (6) fixture units each for purposes of sizing common horizontal and vertical drainage piping.
6. Water closets shall be computed as six (6) fixture units where determining septic tank sizes based on Appendix H of this code.
7. Trap sizes shall not be increased to the point where the fixture discharge is capable of being inadequate to maintain their self-scouring properties.
8. Assembly (Public Use (See Table 422.1)).
9. ***(HCD 2)*** *For drainage fixture unit values related to mobilehome parks in all parts of the State of California, see California Code of Regulations, Title 25, Division 1, Chapter 2, Article 5, Section 1268. For drainage fixture unit*

values related to special occupancy parks in all parts of the State of California, see California Code of Regulations, Title 25, Division 1, Chapter 2.2, Article 5, Section 2268.

… (No change to text)

705.10.4 Transition Joint. A solvent cement transition joint between ABS and PVC building drain and building sewer shall be made using listed transition solvent cement. ***(HCD 1 & HCD 2)*** *Plastic pipe and fittings joined with solvent cement shall utilize Low VOC primer*(s), *if a primer is required, and Low VOC solvent cement(s) as defined in Section 214.*

(Special Note: Text was brought forward from the 2010 CPC, Section 316.1.6, and adopted into the 2013 CPC, Section 705.10.4)

713.4 Public Sewer Availability. The public sewer shall be permitted to be considered as not being available where such public sewer or a building or an exterior drainage facility connected thereto is located more than 200 feet (60 960 mm) from a proposed building or exterior drainage facility on a lot or premises that abuts and is served by such public sewer.

(HCD 1 ~~& HCD 2~~) *For residential occupancies, the public sewer may be considered as not being available by the Authority Having Jurisdiction.*

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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39. HCD proposes to bring forward existing California Amendments from Ch. 9 of the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code with an editorial renumbering of Sections 903.1.1 and 903.1.2 as follows:

NOTE: *The section numbers (shown in brackets) are from the 2010 California Plumbing Code and have been renumbered as shown in underline.*

CHAPTER 9
VENTS

~~(903.1.3)~~ 903.1.1 (HCD 1 & HCD 2) *ABS or PVC installations are limited to not more than two stories of areas of residential accommodation.*

~~(903.1.4)~~ 903.1.2* (*HCD 1 ~~& HCD 2~~) *All malleable iron vents shall be galvanized.*

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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40. HCD proposes to bring forward existing California Amendments from Ch. 10 of the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code with an editorial correction of Exception 2 as follows:

CHAPTER 10
TRAPS AND INTERCEPTORS

1003.1 General Requirements. Each trap, except for traps within an interceptor or similar device shall be self-cleaning. Traps for bathtubs, showers, lavatories, sinks, laundry tubs, floor drains, urinals, drinking fountains, dental units, and similar fixtures shall be of standard design, weight and shall be of ABS, cast brass, cast iron, lead, PP, PVC, or other approved material. An exposed and readily accessible drawn-brass tubing trap, not less than 17 B & S Gauge (0.045 inch) (1.1 mm), shall be permitted to be used on fixtures discharging domestic sewage.

Exceptions:

(1) Drawn-brass tubing traps shall not be used for urinals. Each trap shall have the manufacturer's name stamped legibly in the metal of the trap, and each tubing trap shall have the gauge of the tubing in addition to the manufacturer's name. Every trap shall have a smooth and uniform interior waterway.

*(2) **(HCD 1 & HCD 2)** Non-water supplied urinals conforming to ASME A112.19.19-2006 Standard for Vitreous China Nonwater Urinals, or reference standards in Table ~~(14-1)~~ 1401.1 for non-vitreous ceramic or plastic urinal fixtures.*

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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41. HCD proposes to bring forward existing California Amendments from Ch. 11 of the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code with an editorial renumbering of Section 1101.5 as follows:

***NOTE:** The section numbers (shown in brackets) are from the 2010 California Plumbing Code and have been renumbered as shown in underline.*

CHAPTER 11
STORM DRAINAGE

1101.3 Material Uses. Rainwater piping placed within the interior of a building or run within a vent or shaft shall be of cast-iron, galvanized steel, wrought iron, brass, copper, lead, Schedule 40 ABS DWV, Schedule 40 PVC DWV, stainless steel 304 or 316L (stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than six (6) inches (152 mm) above ground), or other approved materials, and changes in direction shall conform to the requirements of Section 706.0. ABS and PVC DWV piping installations shall be installed in accordance with IS 5 and IS 9. Except for individual single-family dwelling units, materials exposed within ducts or plenums shall have a flame-spread index of a maximum of 25 and a smoke-developed index of a maximum of 50, where tested in accordance with ASTM E84 and UL 723.

***(HCD 1 ~~& HCD 2~~)** ABS or PVC installations are limited to not more than two stories of areas of residential accommodation.*

… (No change to text)

~~(1105.1)~~ **1101.5 Subsoil Drains.** Subsoil drains shall be provided around the perimeter of buildings having basements, cellars, or crawl spaces or floors below grade. Such subsoil drains shall be permitted to be positioned inside or outside of the footing, shall be of perforated or open-jointed approved drain tile or pipe, not less than 3 inches (80 mm) in diameter, and shall be laid in gravel, slag, crushed rock, approved 3/4 inch (19.1 mm) crushed, recycled glass aggregate, or other approved porous material with not less than 4 inches (102 mm) surrounding the pipe on all sides. Filter media shall be provided for exterior subsoil piping.

Exception: (HCD 1 & HCD 2) *Subsoil drains are mandatory only when required by the Authority Having Jurisdiction due to geological conditions.*

… (No change to text)

1102.1.1 Inside of Conductors. The inside of conductors installed above ground level shall be of seamless copper water tube, Type K, L, or M; Schedule 40 copper pipe or Schedule 40 copper alloy pipe; Type DWV copper drainage tube; service weight cast-iron soil pipe or hubless cast-iron soil pipe; standard weight galvanized steel pipe; stainless steel 304 or 316L stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than 6 inches (152 mm) above ground; or Schedule 40 ABS or Schedule 40 PVC plastic pipe.

(HCD 1 ~~& HCD 2~~) *ABS or PVC installations are limited to not more than two stories of areas of residential accommodation.*

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.

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42. HCD proposes to bring forward existing California Amendments from Appendix I of the 2010 California Plumbing Code for adoption into the 2013 California Plumbing Code with an editorial correction as follows:

APPENDIX I
INSTALLATION STANDARDS

INSTALLATION STANDARD
FOR ABS BUILDING DRAIN, WASTE AND VENT PIPE AND FITTINGS
IAPMO IS 5-2006

… (No change to text)

2.2.6 Piping Installed in Fire Resistive Construction
All piping penetrations of fire resistance rated walls, partitions, floors, floor/ceiling assemblies, roof/ceiling assemblies, or shaft enclosures shall be protected in accordance with the requirements of the *California* Building Code *and* IAPMO Installation Standards. (UPC 313.7)

… (No change to text)

INSTALLATION STANDARD
FOR CPVC SOLVENT CEMENTED HOT AND COLD WATER DISTRIBUTION SYSTEMS
IAPMO IS ~~20-2006~~ 20-2010

1.2 Special Requirements for CPVC Installation within Residential Structures. (HCD 1)
In addition to the 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:

1.2.1 Flushing Procedures. *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 be first 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 fully empty the contained volume. At the time of the fill, each fixture shall have a removable tag applied stating:*

"This new plumbing system was first filled on (date) by (name). The California Department of Housing and Community Development requires that the system be flushed after standing at least one week after the fill date specified above. If the system is used earlier than one week after the fill date, 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."

1.2.2 Worker Safety Measures. *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 purpose of this subdivision, an enclosed space is defined as:*

(a) 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;
(b) Crawl spaces having a height of less than three feet;
(c) Enclosed attics that have a roof and ceiling; or
(d) Trenches having a depth 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 the CPVC plumbing system. Gloves shall be provided to all workers by the contractor, or plumbing subcontractor, and shall be replaced upon contamination by cements.

NOTE:
Authority Cited: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.

Reference: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.