

**DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT  
DIVISION OF CODES AND STANDARDS**


9342 Tech Center Drive, Suite 500, Sacramento, CA 95826  
P.O. Box 277820, Sacramento, CA 95827-7820  
1-800-952-8356 / FAX (916) 263-3383  
From TDD Phones 1-800-735-2929  
[www.hcd.ca.gov](http://www.hcd.ca.gov)



May 21, 2019

**INFORMATION BULLETIN 2019-02 (SHL, FBH, MH)**

**TO:** Local Code Enforcement Agencies  
Third-Party Agencies  
Interested Parties  
State Agencies and Departments  
Division Staff

**FROM:**  Richard Weinert, Deputy Director  
Division of Codes and Standards

**SUBJECT:** Recycled Water Supply Systems  
Invalidation of the California Department of Housing and  
Community Development's Amendments to the  
2016 California Plumbing and 2016 Green Building  
Standards Codes, Parts 5 and 11, Title 24, California  
Code of Regulations

The purpose of this Information Bulletin is to bring attention to the invalidation of mandatory recycled water system building standards for outdoor landscape irrigation promulgated by the California Department of Housing and Community Development (HCD) and the California Building Standards Commission (CBSC) for the 2016 California Plumbing Code and 2016 California Green Building Standards Code. These building standards became effective July 1, 2018 and are related to the implementation of Assembly Bill 2282 (Chapter 606, Statutes of 2014) and the requirements for recycled water systems.

The CBSC issued Information Bulletin (19-02) on May 10, 2019, which provides details, including background, on the recycled water system regulations promulgated by HCD and the CBSC and their subsequent invalidation. This information is included as Attachment A and may also be accessed on the CBSC's website at:  
<https://www.dgs.ca.gov/BSC/News>.

If you have any questions or concerns regarding this Information Bulletin, please contact Emily Withers, Codes and Standards Administrator II, at (916) 263-2998 or [Emily.Withers@hcd.ca.gov](mailto:Emily.Withers@hcd.ca.gov).

Attachment

**BUILDING STANDARDS COMMISSION**

2525 Natomas Park Drive, Suite 130  
Sacramento, California 95833-2936  
(916) 263-0916 FAX (916) 263-0959



## **CALIFORNIA BUILDING STANDARDS COMMISSION INFORMATION BULLETIN 19-02**

**DATE:** May 10, 2019

**TO:** LOCAL BUILDING DEPARTMENTS  
STATE AGENCIES AND DEPARTMENTS  
INTERESTED PARTIES

**SUBJECT:** RECYCLED WATER SUPPLY SYSTEMS  
INVALIDATION OF BSC-CG AND HCD AMENDMENTS TO THE  
2016 CALIFORNIA PLUMBING AND GREEN BUILDING  
STANDARDS CODES, PARTS 5 AND 11, TITLE 24, CALIFORNIA  
CODE OF REGULATIONS

This information bulletin serves to announce the invalidation of mandatory recycled water building standards for outdoor landscape irrigation applicable to specified new residential and nonresidential construction, promulgated by the California Building Standards Commission (CBSC) and the Department of Housing and Community Development (HCD) during the 2016 Intervening Code Adoption Cycle.

Please be advised that specified provisions of the 2016 California Plumbing and Green Building Standards Codes (Parts 5 and 11, Title 24, California Code of Regulations), which became effective July 1, 2018, have been invalidated and are now vacated. The invalidated sections of these codes are identified in Exhibits 1 and 2, which are enclosed with this Information Bulletin and may also be viewed on the following CBSC website page: [2016 Intervening Code Adoption Cycle 45-day public comment period](#)

### **BACKGROUND**

Pursuant to [AB 2282 \(Gatto, Chapter 606, Statutes of 2014\)](#), CBSC and HCD conducted multiple public workshops in order to research, develop, and propose for adoption building standards to amend the 2016 California Plumbing Code (CPC) and Green Building Standards Code (CALGreen). Following the CBSC Code Advisory Committee meetings and public comment periods, the CBSC approved the amendments at its June 20, 2017, meeting. These building standards were included with the publication of the 2016 Intervening Code Supplement (blue pages) and became

effective on July 1, 2018, applicable in jurisdictions with recycled water available from a purveyor, as specified.

As noted above, pursuant to the Peremptory Writ of Mandate which accompanies this bulletin, the building standards adopted by CBSC and HCD pursuant to AB 2282 have been declared invalid and are vacated (see enclosures).

Questions or comments regarding the subject of this information bulletin should be directed to this office at either (916) 263-0916 or via e-mail at [cbsc@dgs.ca.gov](mailto:cbsc@dgs.ca.gov) .

A handwritten signature in black ink, appearing to read 'MMA', with a horizontal line extending to the right.

Mia Marvelli  
Executive Director

Enclosures

1 ALEXANDER B. CVITAN (SBN 81746),  
Email: alc@rac-law.com  
2 AARON LAWRENCE (SBN 258813), Members of  
Email: aaronl@rac-law.com  
3 REICH, ADELL & CVITAN,  
A Professional Law Corporation  
4 3550 Wilshire Blvd, Suite 2000  
Los Angeles, California 90010  
5 Telephone: (213) 386-3860  
Facsimile: (213) 386-5583

6 Attorneys for Petitioner  
7

8 SUPERIOR COURT OF CALIFORNIA  
9 FOR THE COUNTY OF LOS ANGELES

10  
11 SOUTHERN CALIFORNIA DISTRICT  
COUNCIL OF LABORERS,

12 Petitioner,

13 vs.  
14

15 CALIFORNIA BUILDING STANDARDS  
COMMISSION; DEPARTMENT OF  
HOUSING AND COMMUNITY  
16 DEVELOPMENT; DEPARTMENT OF  
WATER RESOURCES; and DOES 1-100

17 Respondents.  
18

CASE NO.: BS171958

~~[PROPOSED]~~  
PEREMPTORY WRIT OF MANDATE

Assigned for all purposes to  
Hon. Judge Mary H. Strobel

Date: March 5, 2019  
Time: 9:30 a.m.  
Dept.: 82 (Mosk)

Action Filed: Dec. 21, 2017

19  
20  
21  
22 TO RESPONDENTS CALIFORNIA BUILDING STANDARDS COMMISSION and  
23 DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT;

24 WHEREAS Petitioner, SOUTHERN CALIFORNIA DISTRICT COOUNCIL OF  
25 LABORERS, served and filed herein its duly verified petition for a writ of mandate, and hearings  
26 were held herein on March 5, 2019;

27 WHEREAS Petitioner has no other plain, speedy, and adequate remedy in the ordinary  
28 course of law;

1 WHEREAS Respondents CALIFORNIA BUILDING STANDARDS COMMISSION and  
2 DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT substantially failed to  
3 comply with the Administrative Procedure Act (APA), Government Code sections 11340, *et seq.*,  
4 specifically with the disclosure obligations of Government Code sections 11346.2(b)(5)(A),  
5 11346.2(b)(5)(B), and 11346.5(a)(8), when they adopted the recycled water system regulations  
6 (“Rules”) pursuant to AB 2282 (2014), Health & Safety Code §§ 17921.5, 18940.6.

7 WHEREAS the Rules subject to this writ are set forth in the following regulations (or  
8 portions thereof, as indicated in the attached exhibits): Title 24, Part 5, Chapter 2, Sections 205.0,  
9 206.0, 220.0; Chapter 6, Section 601.2; Chapter 15, Sections 1501.1.1.1, 1501.1.1.2, 1501.6,  
10 1501.7, 1501.10, and 1501.15; and Title 24, Part 11, Chapter 2, Section 202; Chapter 4, Section  
11 4.305.1; and Chapter 5, Sections 5.305.1, 5.305.1.1, 5.305.1.2. The affected Rules are indicated by  
12 strikethroughs in the following exhibits to this writ:

- 13 • Exhibit 1: Revision Record for the State of California Supplement, 2016 Title 24, Part 5,  
14 California Plumbing Code (July 1, 2018) (excerpts); and
- 15 • Exhibit 2: Revision Record for the State of California Supplement, 2016 Title 24, Part  
16 11, California Green Building Standards Code (July 1, 2018) (excerpts).

17 THEREFORE, the Rules are hereby declared invalid for substantial failure to comply with  
18 the APA, and Respondents are hereby directed, immediately after receipt of this writ, to vacate the  
19 Rules. Respondents are further directed, immediately after receipt of this writ, to mail notice of this  
20 ruling, including a copy of this writ, to the same persons specified in Government Code section  
21 11346.4(a)(1) – (4), and to post notice of this ruling, including a copy of this writ, on their agency  
22 websites in the same manner as a notice required under Government Code sections 11346.4(a)(6)  
23 and 11340.85(c), until such date as the 2022 California Plumbing Code and the 2022 California  
24 Green Code have been posted on their websites (anticipated date: July 1, 2022), after which date the  
25 posting made pursuant to this writ may be removed.

26 ///

27 ///

28 ///

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

Respondents are further commanded to make and file a return to this writ, no later than thirty (30) days after the issuance of this writ, showing what Respondents have done to comply with this writ.

Witness the Honorable ~~Mary H. Strobel~~, Judge of the Superior Court.

Attest my hand and the seal of this court this 16<sup>th</sup> day of April, 2019.



Sherrri Carter  
Clerk

By: N. Alguin-Lattana  
Deputy Clerk

# **EXHIBIT 1**



**REVISION RECORD  
FOR THE STATE OF CALIFORNIA  
SUPPLEMENT**

**July 1, 2018**

**2016 Title 24, Part 5 California Plumbing Code**

**General Information:**

1. The date of this Supplement is for identification purposes only. See the History Note Appendix on the backside or accompanying page.
2. This supplement is issued by the California Building Standards Commission in order to provide new and/or replacement pages containing recently adopted provisions for California Code of Regulations, Title 24, Part 5, of the 2016 California Plumbing Code. Instructions are provided below.
3. Health and Safety Code Section 18938.5 establishes that only building standards in effect at the time of the application for a building permit may be applied to the project plans and construction. This rule applies to both adoptions of building standards for Title 24 by the California Building Standards Commission, and local adoptions and ordinances imposing building standards. The new building standards provided with the enclosed blue supplement pages must not be enforced before the effective date.
4. Not all code text on the enclosed blue supplement pages is a new building standard. New, amended, or repealed building standards are identified by margin symbols. An explanation of margin symbols is provided in the code before the Table of Contents.
5. You may wish to retain the superseded material with this revision record so that the prior wording of any section can be easily ascertained.

Title 24, Part 5

Remove Existing Pages

Insert Blue-Colored Pages

xxv – xlii  
1 – 2  
5 – 18  
27 – 28  
31 – 44  
47 – 50  
53 – 54  
57 – 74  
  
129 – 132  
145 – 146  
149 – 150  
169 – 170  
173 – 174  
305 – 318  
  
327 – 332  
483 – 488  
495 – 496  
501 – 502  
507 – 508

**NOTE:** The pages below reflect definitions and code sections that have been invalidated pursuant to the writ of mandate and judgment in *So. Cal. Dist. Council of Laborers v. Bldg. Stds. Comm'n*, L.A. Cty. Super. Ct., Case No. BS171958.

xxv – xlii  
1 – 2  
5 – 18  
27 – 28  
31 – 44  
47 – 50  
53 – 54  
57 – 74  
74.1 – 74.2  
129 – 132  
145 – 146  
149 – 150  
169 – 170  
173 – 174  
305 – 318  
318.1 – 318.4  
327 – 328  
483 – 488  
495 – 496  
501 – 502  
507 – 508

DEFINITIONS

**Complex System [BSC-CG, HCD 1].** *Gray water systems that discharge over 250 gallons (947 L) per day.*

**Condensate.** The liquid phase produced by condensation of a particular gas or vapor.

**Conductor.** A pipe inside the building that conveys storm water from the roof to a storm drain, combined building sewer, or other approved point of disposal.

**Confined Space.** A room or space having a volume less than 50 cubic feet per 1000 British thermal units per hour (Btu/h) (4.83 m<sup>3</sup>/kW) of the aggregate input rating of all fuel-burning appliances installed in that space.

**Construction Documents.** Plans, specifications, written, graphic, and pictorial documents prepared or assembled for describing the design, location, and physical characteristics of the elements of a project necessary for obtaining a permit.

**Construction Site [BSC-CG & HCD 1].** *A parcel of land bounded by lot line(s) or a designated portion of a public right-of-way where construction is taking place. A construction site may include, but not be limited to, buildings and accessory structures, walks, sidewalks, curbs, curb-ramps, parking facilities, planting areas, pools, promenades, exterior gathering or assembly areas, raised or depressed paved areas, open spaces, golf courses, and/or landscape areas.*

**Contamination.** An impairment of the quality of the potable water that creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids, or waste. Also defined as High Hazard.

**Continuous Vent.** A vertical vent that is a continuation of the drain to which it connects.

**Continuous Waste.** A drain connecting the compartments of a set of fixtures to a trap or connecting other permitted fixtures to a common trap.

**Covered Multifamily Dwellings [HCD 1-AC].** *See Section 1.8.2.1.2.*

**Copper Alloy.** A homogenous mixture of two or more metals in which copper is the primary component, such as brass and bronze.

**CPVC.** Chlorinated Polyvinyl Chloride.

**Critical Care Area.** See Patient Care Room. [NFPA 99:3.3.3.1]

**Critical Level.** The critical level (C-L or C/L) marking on a backflow prevention device or vacuum breaker is a point conforming to approved standards and established by the testing laboratory (usually stamped on the device by the manufacturer) that determines the minimum elevation above the flood-level rim of the fixture or receptor served at which the device may be installed. Where a backflow prevention device does not bear a critical level marking, the bottom of the vacuum breaker, combination valve, or the bottom of such approved device shall constitute the critical level.

**Cross-Connection.** A connection or arrangement, physical or otherwise, between a potable water supply system and a plumbing fixture or a tank, receptor, equipment, or device, through which it may be possible for nonpotable, used, unclean, polluted, and contaminated water, or other substances to enter into a part of such potable water system under any condition.

206.0

- D -

**Debris Excluder.** A device installed on the rainwater catchment conveyance system to prevent the accumulation of leaves, needles, or other debris in the system.

**Department [HCD 1, HCD 2 and 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 a 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.*

**Design Flood Elevation.** The elevation of the "design flood," including wave height, relative to the datum specified on the community's legally designated flood hazard map. In areas designated as Zone AO, the design flood elevation is the elevation of the highest existing grade of the building's perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number is taken as being equal to 2 feet (610 mm).

**Developed Length.** The length along the center line of a pipe and fittings.

**Diameter.** Unless specifically stated, "diameter" is the nominal diameter as designated commercially.

**Direct-Vent Appliances.** Appliances that are constructed and installed so that air for combustion is derived directly from the outdoors and flue gases are discharged to the outdoors. [NFPA 54:3.3.6.3]

**Disinfected Tertiary Recycled Water [BSC-CG, HCD 1, DWR].** *Filtered and subsequently disinfected wastewater that meets the approved method of treatment and minimum level of water quality specified in California Code of Regulations, Title 22, Division 4, Chapter 3 for the purpose of direct beneficial use.*

**Disposal Field [BSC-CG & 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.*

**Domestic Sewage.** The liquid and water-borne wastes derived from the ordinary living processes, free from industrial wastes, and of such character as to permit satisfactory disposal, without special treatment, into the public sewer or by means of a private sewage disposal system.

**Downspout.** The rain leader from the roof to the building storm drain, combined building sewer, or other means of disposal located outside of the building. See Conductor and Leader.

**Drain.** A pipe that carries waste or waterborne wastes in a building drainage system.

**Drainage System.** Includes all the piping within public or private premises that conveys sewage, storm water, or other liquid wastes to a legal point of disposal, but does not include the mains of a public sewer system or a public sewage treatment or disposal plant.

where the fixtures are intended for the use of a family or an individual.

**Private Sewage Disposal System.** A septic tank with the effluent discharging into a subsurface disposal field, into one or more seepage pits, or into a combination of subsurface disposal field and seepage pit or of such other facilities as may be permitted under the procedures set forth elsewhere in this code.

**Private Sewer.** A building sewer that receives the discharge from more than one building drain and conveys it to a public sewer, private sewage disposal system, or other point of disposal.

**Proportioning System for Medical Air USP.** A central supply that produces medical air (USP) reconstituted from oxygen USP and nitrogen NF by means of a mixer or blender. [NFPA 99:3.3.104.1]

**Public or Public Use.** Applies to plumbing fixtures that are not defined as private or private use.

**Public Sewer.** A common sewer directly controlled by public authority.

**Push Fit Fitting.** A mechanical fitting where the connection is assembled by pushing the tube or pipe into the fitting and is sealed with an o-ring.

**PVC.** Polyvinyl Chloride.

**PVDF.** Polyvinylidene Fluoride.

## 219.0 - Q -

**Quick-Disconnect Device.** A hand-operated device that provides a means for connecting and disconnecting a hose to a water supply and that is equipped with a means to shut off the water supply where the device is disconnected.

## 220.0 - R -

**Rainwater [BSC-CG & 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 [BSC-CG & 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."

**Rainwater Storage Tank.** The central component of the rainwater catchment system. Also known as a cistern or rain barrel.

**Receptor.** An approved plumbing fixture or device of such material, shape, and capacity as to adequately receive the discharge from indirect waste pipes, so constructed and located as to be readily cleaned.

**Receiving Landscape [BSC-CG & HCD 1].** Includes features such as soil, basins, swales, mulch, and plants.

**Reclaimed (Recycled) Water [BSC-CG, HCD 1 & DWR].** Nonpotable water that meets California State Water Resources Control Board statewide uniform criteria for dis-

infected tertiary recycled water. Reclaimed (recycled) water is also known as "recycled water" or "reclaimed water".

**Recycled Water Supply System. [BSC-CG, HCD-1, & DWR]** The building supply pipe, the water distribution pipes, and the necessary connecting pipes, fittings, control valves, back-flow prevention devices, and all appurtenances carrying or supplying reclaimed (recycled) water in or adjacent to the building or within the premises.

**Registered Design Professional.** An individual who is registered or licensed by the laws of the state to perform such design work in the jurisdiction.

**Regulating Equipment.** Includes valves and controls used in a plumbing system that are required to be accessible or readily accessible.

**Relief Vent.** A vent, the primary function of which is to provide circulation of air between drainage and vent systems or to act as an auxiliary vent on a specially designed system.

**Remote Outlet.** Where used for sizing water piping, it is the furthest outlet dimension, measuring from the meter, either the developed length of the cold-water piping or through the water heater to the furthest outlet on the hot-water piping.

**Rim.** See Flood-Level Rim.

**Riser.** A water supply pipe that extends vertically one full story or more to convey water to branches or fixtures.

**Roof Drain.** A drain installed to receive water collecting on the surface of a roof and to discharge it into a leader, downspout, or conductor.

**Roof Washer.** A device or method for removal of sediment and debris from a collection surface by diverting initial rainfall from entry into the cistern(s). Also known as a first flush device.

**Roughing-In.** The installation of all parts of the plumbing system that can be completed prior to the installation of fixtures. This includes drainage, water supply, gas piping, vent piping, and the necessary fixture supports.

## 221.0 - S -

**Sand Interceptor.** See Interceptor (Clarifier).

**Scavenging.** Evacuation of exhaled mixtures of oxygen and nitrous oxide. [NFPA 99:3.3.160]

**SCFM.** Standard cubic feet per minute. [NFPA 99:3.3.161]

**Scrub Sink [OSHPD 1, 2, 3, & 4].** Is a sink used to wash and scrub the hands and arms during the septic preparation for surgery and equipped with a supply spout and controls as required for a handwashing fixture. Sensor operated fixtures shall be capable of functioning during loss of normal power.

**SDR.** An abbreviation for "standard dimensional ratio," which is the specific ratio of the average specified outside diameter to the minimum wall thickness for outside controlled diameter plastic pipe.

**Scam, Welded.** See Joint, Welded.

**Seepage Pit.** A lined excavation in the ground which receives the discharge of a septic tank so designed as to permit the effluent from the septic tank to seep through its bottom and sides.

## CHAPTER 6

### WATER SUPPLY AND DISTRIBUTION

#### 601.0 General.

**601.1 Applicability.** This chapter shall govern the materials, design, and installation of water supply systems, including methods and devices used for backflow prevention.

- » **601.2 Hot and Cold Water Required.** 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) 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, DWR] For all residential occupancies, alternate water sources may be allowed as specified in Chapter 15 of this code in addition to potable water.*
- (4) *[BSC-CG, DWR] For non-residential occupancies, alternate water sources may be allowed as specified in Chapter 15 of this code.*
- (5) *[BSC-CG, DWR] Where a public agency requires a building to use recycled water to flush water closets and urinals in accordance with California Water Code 13554.*

In occupancies where plumbing fixtures are installed for private use, hot water shall be required for bathing, washing, laundry, cooking purposes, dishwashing or maintenance. In occupancies where plumbing fixtures are installed for public use, hot water shall be required for bathing and washing purposes. This requirement shall not supersede the requirements for individual temperature control limitations for public lavatories and public and private bidets, bathtubs, whirlpool bathtubs, and shower control valves.

- » **601.3 Identification of a Potable and Nonpotable Water System.** In buildings where potable water and nonpotable water systems are installed, each system shall be clearly identified in accordance with Section 601.3.1 through Section 601.3.5.

- » **601.3.1 Potable Water.** Green background with white lettering.

**601.3.2 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 Section 601.3.3, 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 comply with Table 601.3.2. *[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.*



FIGURE 601  
INTERNATIONAL SYMBOL

The background color and required information shall be indicated every 20 feet (6096 mm) but not less than once per room, and shall be visible from the floor level.

TABLE 601.3.2  
MINIMUM LENGTH OF COLOR FIELD AND SIZE OF LETTERS

OUTSIDE DIAMETER OF PIPE OR COVERING (inches)	MINIMUM LENGTH OF COLOR FIELD (inches)	MINIMUM SIZE OF LETTERS (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

For SI units: 1 inch = 25.4 mm

**601.3.3 Alternate Water Sources.** Alternate water source systems shall have a purple (Pantone color No. 512, 522C, or equivalent) background with uppercase lettering and shall be field or factory marked as follows:

- (1) Gray water systems shall be marked in accordance with this section with the words "CAUTION: NONPOTABLE GRAY WATER, DO NOT DRINK" in black letters.
- (2) Reclaimed (recycled) water systems shall be marked in accordance with this section with the words:



# CHAPTER 15

## ALTERNATE WATER SOURCES FOR NONPOTABLE APPLICATIONS

**Intent**

The provisions of this chapter are intended to:

1. Conserve potable water by facilitating greater reuse of laundry, shower, lavatory and similar sources of discharge, or by the use of alternate water sources, where available.
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.

1501.0 General

1501.1 Applicability [BSC-CG, DWR & HCD 1]. The provisions of this chapter shall apply to the construction, alteration, discharge, use and repair of alternate water source systems for nonpotable applications.

1501.1.1 Allowable Use of Alternate Water. Where approved or required by the Authority Having Jurisdiction, alternate water sources [reclaimed (recycled) water, gray water, and on-site treated nonpotable water] shall be permitted to be used in lieu of potable water for the applications identified in this chapter.

~~1501.1.1.1 Outdoor Recycled Water Supply Systems. All newly constructed residential and nonresidential developments, where disinfected tertiary recycled water is available from a municipal source to a construction site, shall be provided with both a potable water supply system and a recycled water supply system. The recycled water supply system shall allow the use of reclaimed (recycled) water for aboveground and subsurface irrigation to all landscape irrigation systems.~~

~~For the purposes of Section 1501.1.1.1, when a recycled water supply pipe is located within 300 feet (91 440 mm) from a construction site boundary, it shall be considered that reclaimed (recycled) water is available from a municipal source.~~

**Exceptions:**

- (1) ~~Service areas in which the only reclaimed (recycled) water is used for potable purposes, or in which net nonpotable deliveries are anticipated to remain level or decrease as a result of the potable reuse project.~~
- (2) ~~Where access to disinfected tertiary recycled water is not feasible and/or cost-efficient, as determined by the Authority Having Jurisdiction in consultation with the recycled water purveyor.~~

*Note: A city, county, or city and county, in consultation with the recycled water purveyor, may further reduce the area for the mandate to install recycled water supply systems if the recycled water purveyor is unable to accommodate new services or unable to provide uninterrupted service.*

*(3) A potable water supply system is not required for landscape irrigation if the landscape irrigation system is supplied with recycled water at the time of final inspection.*

*(4) Potable water may be used with the recycled water supply system on a temporary basis, as allowed by the Authority Having Jurisdiction in consultation with the recycled water purveyor.*

~~1501.1.1.2 Technical Requirements for Outdoor Recycled Water Supply Systems. Recycled water supply systems for outdoor applications shall meet the requirements of this code, and the California Code of Regulations, Title 17, Division 1, Chapter 5, Subchapter 1, Title 22, Division 4, Chapter 3, and Title 23, Division 2, Chapter 2.7, as applicable.~~

1501.2 System Design [BSC-CG, HCD 1, DWR]. Alternate water source systems shall be designed in accordance with this chapter by a registered design professional or who demonstrates competency to design the alternate water source system as required by the Authority Having Jurisdiction. Components, piping, and fittings used in any alternate water source system shall be listed.

**Exceptions: [BSC-CG, HCD 1]**

- (1) A registered design professional is not required to design gray water systems having a maximum discharge capacity of 250 gallons per day (gal/d) (0.011 L/s) for single family and multi-family dwellings.
- (2) A registered design professional 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 (0.011 L/s).
- (3) Irrigation design plans shall meet the requirements of the California Code of Regulations, Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance.

1501.3 Permit [BSC-CG, HCD 1, DWR]. 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 its premises without first obtaining a permit to do such work from the Authority Having Jurisdiction. No changes or connections shall be made to either the alternate water source system or the

**TABLE 1501.5 [BSC]  
RECOMMENDED MINIMUM ALTERNATE WATER SOURCE TESTING, INSPECTION, AND MAINTENANCE FREQUENCY**

DESCRIPTION	MINIMUM FREQUENCY
Inspect and clean filters and screens, and replace (where necessary).	In accordance with manufacturer's instructions, and/or the Authority Having Jurisdiction, or 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 pumps and verify operation.	In accordance with manufacturer's instructions, and/or the Authority Having Jurisdiction, or after installation and every 12 months thereafter.
Inspect valves and verify operation.	In accordance with manufacturer's instructions, and/or Authority Having Jurisdiction, or after installation and every 12 months thereafter.
Inspect pressure tanks and verify operation.	In accordance with manufacturer's instructions, and/or the Authority Having Jurisdiction, or after installation and every 12 months thereafter.
Clear debris from and inspect storage tanks, locking devices, and verify operation.	In accordance with manufacturer's instructions, and/or the Authority Having Jurisdiction, or after installation and every 12 months thereafter.
Inspect caution labels and marking.	In accordance with manufacturer's instructions, and/or the Authority Having Jurisdiction, or after 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*	In accordance with this chapter, and/or the Authority Having Jurisdiction, or after 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, unless site conditions do not require it. Alternate testing requirements shall be permitted by the Authority Having Jurisdiction.

potable water system within a site containing an alternate water source system without approval by the Authority Having Jurisdiction.

**Exception: [BSC-CG, HCD 1]** A construction permit shall not be required for a clothes washer system meeting the requirements of Section 1502.1.1.

1501.4 **Component Identification.** System components shall be properly identified as to the manufacturer.

1501.5 **Maintenance and Inspection [BSC-CG, HCD 1, DWR].** Alternate water source systems and components shall be inspected and maintained in accordance with the manufacturer's recommendations and/or as required by the Authority Having Jurisdiction. [BSC-CG] Where no manufacturer's recommendations exist, additional recommendations are listed in Table 1501.5.

**Exception: [DWR]** Recycled water supply systems that are within or a part of a building shall comply with Section 1503.15.

1501.5.1 **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.

1501.6 **Operation and Maintenance Manual [BSC-CG, HCD 1, DWR].** An operation and maintenance manual for gray water, on-site treated nonpotable water, and recycled water supply systems required to have a permit in accordance with Section 1501.3, Section 1503.2 and Section 1504.2 shall be supplied to the building owner by the

system designer or installer. The operating and maintenance manual shall include the following:

- (1) Diagram(s) of the entire system and the location of system components.
- (2) Instructions on operating and maintaining the system.
- (3) Instructions on maintaining the required water quality 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 Section 1501.5 [DWR] or Section 1503.15 as applicable.
- (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.

1501.7 **Minimum Water Quality Requirements [BSC-CG, HCD 1, DWR].** The minimum water quality for alternate water source systems shall meet the applicable water quality requirements for the intended application as determined by the Authority Having Jurisdiction. Water quality requirements for on-site treated nonpotable graywater shall comply with Section 1504.10.2. ~~Recycled water shall comply with the water quality requirements of Section 1503.14.~~

**Exception:** Water treatment is not required for gray water used in a disposal field or for subsurface or subsoil irrigation.

» 1501.8 **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.

» 1501.9 **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.

*1501.10 Signage [BSC-CG, HCD 1, HCD 2, HCD 1-AC, & DWR]. Signage for on-site treated nonpotable gray water shall comply with Section 1501.10.1 and Section 1501.10.2. Signage for reclaimed (recycled) water shall comply with Section 1503.12.*

**1501.10.1 Commercial, Industrial, Institutional, and Residential Restroom Signs.** A sign shall be installed in restrooms in commercial, industrial, and institutional occupancies, and in residential common use areas using on-site treated nonpotable gray water for water closets, urinals, or both. Signs shall comply with all applicable requirements of the California Building Code. Each sign shall contain the following text:

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

**1501.10.2 Equipment Room Signs.** Each room containing on-site treated nonpotable gray water equipment shall have a sign posted in a location that is visible to anyone working on or near nonpotable gray water equipment with the following wording in 1 inch (25.4 mm) letters:

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

» 1501.11 **Inspection and Testing.** Alternate water source systems shall be inspected and tested in accordance with Section 1501.11.1 and Section 1501.11.2, and/or as required by the Authority Having Jurisdiction.

*Exception: [DWR] Recycled water supply systems that are within or a part of a building shall comply with Section 1503.13.*

**1501.11.1 Supply System Inspection and Test.** Alternate water source systems shall be inspected and tested in accordance with this code for testing of potable water piping.

**1501.11.2 Cross-Connection Inspection and Testing.** An initial inspection and test shall be performed on both the potable and alternate water source systems. The potable and alternate water source system shall be isolated from each other and independently inspected and tested to ensure there is no cross-connection in accordance with Section 1501.11.2.1 through Section 1501.11.2.3.

**1501.11.2.1 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 alternate water source 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 the valve lock seals are still in place and intact. Valve control door signs shall be checked to verify that no signs have been removed.

**1501.11.2.2 Cross-Connection Test.** A cross-connection test shall be performed in the presence of the Authority Having Jurisdiction or 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 alternate water source 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 alternate water source system is empty. The minimum period the alternate water source 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 the alternate water source distribution systems but in no case shall that period be less than 1 hour.
- (3) The drain on the alternate water source system shall be checked for flow during the test and all fixtures, potable and alternate water source, shall be tested and inspected for flow. Flow from an alternate water source system outlet indicates a cross-connection. No flow from a potable water outlet shall indicate that it is connected to the alternate water source system.
- (4) The potable water system shall then be depressurized and drained.
- (5) The alternate water source system shall then be activated and pressurized. *When an alternate water source is not available for the initial test, a temporary connection to a potable water supply shall be required. At the conclusion of the test, the temporary connection to the potable water supply shall be disconnected.*
- (6) The alternate water source 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 alternate water source, shall be tested and inspected for flow. Flow from a potable water system outlet indicates a cross-connection. No flow from an alternate water source 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.

**1501.11.2.3 Discovery of Cross-Connection.** In the event that a cross-connection is discovered, the following procedure shall be activated immediately:

- (1) *Notify the Authority Having Jurisdiction of the cross connection.*
- (2) The alternate water source piping to the building and its premises shall be shut down at the meter, and the alternate water source riser shall be drained.
- (3) Potable water piping to the building and its premises shall be shut down at the meter.
- (4) The cross-connection shall be uncovered and disconnected.
- (5) The building and its premises shall be retested in accordance with Section 1501.11.2.1 and Section 1501.11.2.2.
- (6) The potable water system shall be chlorinated with 50 parts-per-million (ppm) chlorine for 24 hours.
- (7) 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.

**1501.11.2.4 Annual Inspection.** An annual inspection of the alternate gray water source system, following the procedures listed in Section 1501.11.2.1 shall be required. Annual cross-connection testing, following the procedures listed in Section 1501.11.2.2 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.

**1501.12 Separation Requirements.** Underground alternate water source service piping other than gray water shall be

separated from the building sewer in accordance with this code. Treated nonpotable 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 horizontal piping materials do not comply with 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 treated nonpotable water piping.

**1501.13 Abandonment.** Alternate water source systems that are no longer in use or fail to be maintained in accordance with Section 1501.5 shall be abandoned. Abandonment shall comply with Section 1501.13.1 and Section 1501.13.2.

**1501.13.1 General.** An abandoned system or part thereof covered under the scope of this chapter shall be disconnected from remaining systems, drained, plugged, and capped in an approved manner.

**1501.13.2 Underground Tank.** An underground water storage tank that has been abandoned or otherwise discontinued from use in a system covered under the scope of this chapter shall be completely drained and filled with earth, sand, gravel, concrete, or other approved material or removed in a manner satisfactory to the Authority Having Jurisdiction.

**1501.14 Sizing.** Unless otherwise provided for in this chapter, alternate water source piping shall be sized in accordance with Chapter 6 for sizing potable water piping.

~~**1501.15 Hose Bibbs for Single-Family Dwellings [HCD-1].** Hose bibbs shall not be allowed on reclaimed (recycled) water piping systems for single-family dwelling units.~~

**1502.0 Gray Water Systems [BSC-CG].** Gray water systems shall be verified in accordance with the California Green Building Standards Code (CALGreen), Chapter 5, Division 5.3.

**1502.1 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 flow 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



## **EXHIBIT 2**

# REVISION RECORD FOR THE STATE OF CALIFORNIA

## SUPPLEMENT

July 1, 2018

### 2016 Title 24, Part 11, California Green Building Standards Code

#### General Information:

1. The date of this supplement is for identification purposes only. See the History Note Appendix at the end of the code.
2. This supplement is issued by the California Building Standards Commission in order to provide new and/or replacement pages containing recently adopted provisions for California Code of Regulations, Title 24, Part 11, of the 2016 *California Green Building Standards Code*. Instructions are provided below.
3. Health and Safety Code Section 18938.5 establishes that only building standards in effect at the time of the application for a building permit may be applied to the project plans and construction. This rule applies to both adoptions of building standards for Title 24 by the California Building Standards Commission and local adoptions and ordinances imposing building standards. The new building standards provided with the enclosed blue supplement pages must not be enforced before the effective date.
4. Not all code text on the enclosed blue supplement pages is a new building standard. New, amended, or repealed building standards are identified by margin symbols. An explanation of margin symbols is provided in the code before the table of contents.
5. You may wish to retain the superseded material with this revision record so that the prior wording of any section can be easily ascertained.

#### Title 24, Part 11

Remove Existing Pages	Insert Blue-Colored Pages
3 and 4	3 and 4
7 through 14	7 through 14
19 through 22	19 through 22
25 and 26	25 and 26
33 through 52	33 through 52.2
	64.1 through 64.30
73 and 74	73 and 74
83 and 84	83 and 84
87 and 88	87 and 88
95 through 98	95 through 98
107 and 108	107 and 108
121 through 138	121 through 138.2
183 and 184	183 and 184

NOTE: The pages below reflect definitions and code sections that have been invalidated pursuant to the writ of mandate and judgment in *So. Cal. Dist. Council of Laborers v. Bldg. Stds. Comm'n*, L.A. Cty. Super. Ct., Case No. BS171958.

## DEFINITIONS

computed from sound spectral data to which A-weighting adjustments have been made.

**BALANCE.** To proportion flows within the distribution system, including submains, branches and terminals, according to design quantities.

**BIORETENTION.** A shallow depression that utilizes conditioned soil and vegetation for the storage, treatment or infiltration of storm water runoff.

**BROWNFIELD SITE.** Real property, the expansion, redevelopment or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant, with certain legal exclusions and additions.

*Note:* See the full text at the EPA's website.

**1 BTU/HOUR.** British thermal units per hour, also referred to as Btu. The amount of heat required to raise one pound of water one degree Fahrenheit per hour, a common measure of heat transfer rate. A ton of refrigeration is 12,000 Btu, the amount of heat required to melt a ton (2,000 pounds) of ice at 32° Fahrenheit.

**BUILDING COMMISSIONING.** A systematic quality assurance process that spans the entire design and construction process, including verifying and documenting that building systems and components are planned, designed, installed, tested, operated and maintained to meet the owner's project requirements.

**BUILDING ENVELOPE.** The ensemble of exterior and demising partitions of a building that enclose conditioned space.

**CALIFORNIA BUILDING CODE.** The current version of the *California Building Code*.

**CALIFORNIA ELECTRICAL CODE.** The current version of the *California Electrical Code*.

**CALIFORNIA ENERGY CODE.** The current version of the *California Energy Code*, unless otherwise specified.

**CALIFORNIA MECHANICAL CODE.** The current version of the *California Mechanical Code*.

**CALIFORNIA PLUMBING CODE.** The current version of the *California Plumbing Code*.

**CALIFORNIA RESIDENTIAL CODE.** The current version of the *California Residential Code*.

**CHLOROFLUOROCARBON (CFC).** A class of compounds primarily used as refrigerants, consisting of only chlorine, fluorine and carbon.

**COMMUNITY NOISE EQUIVALENT LEVEL (CNEL) HIGHWAY.** A metric similar to the day-night average sound level (L<sub>dn</sub>), except that a 5 decibel (dB) adjustment is added to the equivalent continuous sound exposure level for evening hours (7 p.m. to 10 p.m.) in addition to the 10 dB nighttime adjustment used in the L<sub>dn</sub>.

**COMPACT DISHWASHER.** A dishwasher that has a capacity of less than eight place settings plus six serving pieces as specified in ANSI/AHAM DW-1.

**COMPOSITE WOOD PRODUCTS.** Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products"

does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists or finger-jointed lumber, all as specified in California Code of Regulations (CCR), Title 17, Section 93120.1(a).

*Note:* See CCR, Title 17, Section 93120.1.

**CONDITIONED FLOOR AREA.** The floor area (in square feet) of enclosed conditioned space on all floors of a building, as measured at the floor level of the exterior surfaces of exterior walls enclosing the conditioned space.

**CONDITIONED SPACE.** A space in a building that is either directly conditioned or indirectly conditioned.

**CONDITIONED SPACE, DIRECTLY.** An enclosed space that is provided with wood heating, is provided with mechanical heating that has a capacity exceeding 10 Btu/hr-ft<sup>2</sup>, or is provided with mechanical cooling that has a capacity exceeding 5 Btu/hr-ft<sup>2</sup>, unless the space-conditioning system is designed for a process space. (See Process Space.)

**CONDITIONED SPACE, INDIRECTLY.** Enclosed space, including but not limited to, unconditioned volume in atria, that (1) is not directly conditioned space; and (2) either (a) has a thermal transmittance area product (UA) to directly conditioned space exceeding that to the outdoors or to unconditioned space and does not have fixed vents or openings to the outdoors or to unconditioned space, or (b) is a space through which air from directly conditioned spaces is transferred at a rate exceeding three air changes per hour.

**CONSTRUCTION SITE.** A parcel of land bounded by lot line(s) or a designated portion of a public right-of-way where construction is taking place. A construction site may include, but not be limited to, buildings and accessory structures, walks, sidewalks, curbs, curb ramps, parking facilities, planting areas, pools, promenades, exterior gathering or assembly areas, raised or depressed paved areas, open spaces, golf courses, and/or landscape areas.

**COOL PAVEMENT(S).** Includes, but is not limited to, high albedo pavements and coatings, vegetative surfaces, porous or pervious pavements that allow water infiltration, and pavements shaded by trees and other sources of shade.

**COOLING EQUIPMENT.** Equipment used to provide mechanical cooling for a room or rooms in a building.

**CUTOFF LUMINAIRES.** Luminaires whose light distribution is such that the candela per 1000 lamp lumens does not numerically exceed 25 (2.5 percent) at an angle of 90 degrees above nadir, and 100 (10 percent) at a vertical angle of 80 degrees above nadir. This applies to all lateral angles around the luminaire.

**DAY-NIGHT AVERAGE SOUND LEVEL (L<sub>dn</sub>).** The A-weighted equivalent continuous sound exposure level for a 24-hour period with a 10 dB adjustment added to sound levels occurring during nighttime hours (10 p.m. to 7 a.m.).

**DECIBEL (dB).** A measure on a logarithmic scale of the magnitude of a particular quantity (such as sound pressure, sound power, sound intensity) with respect to a reference quantity.

**DEMAND HOT WATER RECIRCULATION SYSTEM.** A hot water recirculation system requiring manual activation

and equipped with a thermostat that will automatically shut off the recirculation pump when the water temperature reaches a preset level at the point of use.

**DEVELOPMENT FOOTPRINT.** The total area of the building footprint, hardscape, access roads and parking.

**DEWATERING.** Pumping of uncontaminated or treated groundwater for construction activities.

**DIRECT-VENT APPLIANCE.** A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.

**DISINFECTED TERTIARY RECYCLED WATER.** ~~Filtered and subsequently disinfected wastewater that meets the approved method of treatment and minimum level of water quality specified in California Code of Regulations, Title 22, Division 4, Chapter 3 for the purpose of direct beneficial use.~~

**DISPOSAL.** The management of solid waste through land-filling or transformation at permitted solid waste facilities.

**DIVERSION.** Activities which reduce or eliminate the amount of solid waste from solid waste disposal for purposes of this code.

**ELECTRIC VEHICLE (EV).** An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are considered electric vehicles. For purposes of the *California Electrical Code*, off-road, self-propelled electric vehicles, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats, and the like, are not included.

**ELECTRIC VEHICLE (EV) CHARGER.** Off-board charging equipment used to charge an electric vehicle.

**ELECTRIC VEHICLE CHARGING SPACE (EV SPACE).** A space intended for future installation of EV charging equipment and charging of electric vehicles.

**ELECTRIC VEHICLE CHARGING STATION (EVCS).** One or more electric vehicle charging spaces served by electric vehicle charger(s) or other charging equipment allowing charging of electric vehicles. Electric vehicle charging stations are not considered parking spaces.

**ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE).** The conductors, including the ungrounded, grounded, and equipment grounding conductors and the electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

**EMBODIED ENERGY.** The energy used for raw material extraction, transportation, manufacturing, assembly, installation and disposal during the life of a product, including the potential energy stored within the product.

**ENERGY BUDGET.** The sum of the annual TDV energy consumption for energy use components included in the performance compliance approach for the Standard Design

Building, as established in the Alternative Calculation Method Reference Manual approved by the Energy Commission and calculated by Compliance Software certified by the Energy Commission.

**ENERGY COMMISSION.** The California State Energy Resources Conservation and Development Commission.

**ENERGY DESIGN RATING.** The sum of the annual TDV energy consumption for energy use components included in the performance compliance approach for the Standard Design Building (Energy Budget) and the annual time dependent valuation (TDV) energy consumption for lighting and components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics) and accounting for the annual TDV energy offset by an on-site renewable energy system. The Design Rating is calculated by Compliance Software certified by the Energy Commission.

**ENERGY EQUIVALENT (NOISE) LEVEL ( $L_{eq}$ ).** The level of a steady noise which would have the same energy as the fluctuating noise level integrated over the time period of interest.

**ENFORCING AGENCY.** The designated department or agency as specified by statute or regulation.

**EUTROPHICATION.** The excessive growth of aquatic plants, especially algae, producing bacteria which consume nearly all of the oxygen required to sustain fauna and other flora.

**EVAPOTRANSPIRATION ADJUSTMENT FACTOR (ETAf).** [DSA-SS] An adjustment factor when applied to reference evapotranspiration that adjusts for plant factors and irrigation efficiency, which are two major influences on the amount of water that needs to be applied to the landscape.

**EXFILTRATION.** The uncontrolled outward air leakage from inside a building, including leakage through cracks and interstices, around windows and doors, and through any other exterior partition or duct penetration.

**EXPRESSWAY.** An arterial highway for through traffic which may have partial control of access, but which may or may not be divided or have grade separations at intersections.

**FLOOR AREA RATIO.** Gross square footage of all structures on a site divided by gross square footage of the site.

**FOOTPRINT AREA.** [DSA-SS] The total area of the furthest exterior wall of the structure projected to natural grade, not including exterior areas such as stairs, covered walkways, patios and decks.

**FREEWAY.** A divided arterial highway with full control of access and with grade separations at intersections.

**FRENCH DRAIN.** A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar pervious material used to collect or channel drainage or runoff water.

**GEOHERMAL.** Renewable energy generated by deep-earth water or steam.

**GLOBAL WARMING POTENTIAL (GWP).** The radiative forcing impact of one mass-based unit of a given greenhouse gas relative to an equivalent unit of carbon dioxide over a given period of time. Carbon dioxide is the reference compound with a GWP of one.

treated to remove waste matter, attaining a quality that is suitable to use the water again.

**RECYCLED WATER SUPPLY SYSTEM.** ~~The building supply pipe, the water distribution pipes, and the necessary connecting pipes, fittings, control valves, backflow prevention devices, and all appurtenances carrying or supplying reclaimed (recycled) water in or adjacent to the building or within the premises.~~

**RESIDENTIAL BUILDING.** See "LOW-RISE RESIDENTIAL BUILDING" or "HIGH-RISE RESIDENTIAL BUILDING."

**RESILIENT FLOORING.** Refers to nontextile flooring materials which have a relatively firm surface, yet characteristically have "give" and "bounce back" to their original surface profile from the weight of objects that compress its surface. Resilient flooring materials are made in various shapes and sizes including both tile and roll form. Common types of resilient flooring include but are not limited to:

1. Vinyl composition tile.
2. Vinyl tile and sheet flooring.
3. Linoleum tile and sheet.
4. Cork tile and sheet flooring.
5. Rubber tile and sheet flooring.
6. Polymeric poured seamless flooring.
7. Other types of non-textile synthetic flooring.

**RE-USE.** The use, in the same form as it was produced, of a material which might otherwise be discarded.

**SCHRADER ACCESS VALVES.** Access fittings with a valve core installed.

**SHORT RADIUS ELBOW.** Pipe fitting installed between two lengths of pipe or tubing to allow a change of direction, with a radius 1.0 times the pipe diameter.

**SINGLE OCCUPANT SPACES.** Private offices, workstations in open offices, reception workstations, and ticket booths.

**SOLAR ACCESS.** The ratio of solar insolation including shade to the solar insolation without shade. Shading from obstructions located on the roof or any other part of the building shall not be included in determination of annual solar access.

**SOLAR REFLECTANCE.** A measure of the fraction of solar energy that is reflected by a surface (measured on a scale of zero to one).

**SOLAR REFLECTANCE INDEX (SRI).** A measure of a material surface's ability to reflect solar heat, as shown by a small temperature rise. It includes both solar reflectance and thermal emittance and is quantified such that a standard black surface (solar reflectance 0.05, thermal emittance 0.90) is zero and a standard white surface (solar reflectance 0.80, thermal emittance 0.90) is 100.

**SOLID WASTE.**

- (a) All putrescible and nonputrescible solid, semisolid and liquid wastes, including garbage, trash, refuse,

paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated or chemically fixed sewage sludge which is not hazardous waste, manure, vegetable or animal solid and semisolid wastes, and other discarded solid and semisolid wastes.

- (b) "Solid waste" does not include any of the following wastes:

- (1) Hazardous waste, as defined in *Public Resources Code* Section 40141.
- (2) Radioactive waste regulated pursuant to the Radiation Control Law (Chapter 8, commencing with Section 114960, of Part 9 of Division 104 of the *Health and Safety Code*).
- (3) Medical waste regulated pursuant to the Medical Waste Management Act (Part 14 commencing with Section 117600) of Division 104 of the *Health and Safety Code*. Untreated medical waste shall not be disposed of in a solid waste landfill, as defined in *Public Resources Code* Section 40195.1. Medical waste that has been treated and deemed to be solid waste shall be regulated pursuant to this division.

**SPECIAL LANDSCAPE AREA (SLA).** [DSA-SS] An area of the landscape dedicated solely to edible plants, planting areas used for educational purposes, recreational areas, areas irrigated with recycled water, water features using recycled water, and where turf provides a playing surface or gathering space.

**STANDARD DISHWASHER.** A dishwasher that has a capacity equal to or greater than eight place settings plus six serving pieces as specified in ANSI/AHAM DW-1.

**SUBMETER.** A meter installed subordinate to a site meter. Usually used to measure water intended for one purpose, such as landscape irrigation. For the purposes of *CALGreen*, a dedicated meter may be considered a submeter.

**SUPERMARKET.** For the purposes of Section 5.508.2, a supermarket is any retail food facility with 8,000 square feet or more conditioned area, and that utilizes either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units.

**TENANT-OCCUPANTS.** Building occupants who inhabit a building during its normal hours of operation as permanent occupants, such as employees, as distinguished from customers and other transient visitors.

**TEST.** A procedure to determine quantitative performance of a system or equipment.

**THERMAL EMITTANCE.** The relative ability of a surface to radiate absorbed heat (measured on a scale of 0 to 1).

**TIME DEPENDENT VALUATION (TDV) ENERGY.** The time varying energy caused to be used by the building to provide space conditioning and water heating and for specified buildings lighting. TDV energy accounts for the energy used at the building site and consumed in producing and in delivering energy to a site, including, but not limited to, power generation, transmission and distribution losses.



## CHAPTER 4

# RESIDENTIAL MANDATORY MEASURES

### Division 4.3 – WATER EFFICIENCY AND CONSERVATION

#### SECTION 4.301 GENERAL

**4.301.1 Scope.** The provisions of this chapter shall establish the means of conserving water used indoors, outdoors and in wastewater conveyance.

#### SECTION 4.302 DEFINITIONS

**4.302.1 Definitions.** Reserved.

#### SECTION 4.303 INDOOR WATER USE

**4.303.1 Water conserving plumbing fixtures and fittings.** Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:

**4.303.1.1 Water closets.** The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-type Toilets.

**Note:** The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.

**4.303.1.2 Urinals.** The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.

**4.303.1.3 Showerheads.**

**4.303.1.3.1 Single showerhead.** Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

**4.303.1.3.2 Multiple showerheads serving one shower.** When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.

**Note:** A hand-held shower shall be considered a showerhead.

**4.303.1.4 Faucets.**

**4.303.1.4.1 Residential lavatory faucets.** The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons per minute at 20 psi.

**4.303.1.4.2 Lavatory faucets in common and public use areas.** 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 per minute at 60 psi.

**4.303.1.4.3 Metering faucets.** Metering faucets when installed in residential buildings shall not deliver more than 0.25 gallons per cycle.

**4.303.1.4.4 Kitchen faucets.** The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

**Note:** Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.

**4.303.2 Standards for plumbing fixtures and fittings.** Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code*, and shall meet the applicable standards referenced in Table 1701.1 of the *California Plumbing Code*.

#### SECTION 4.304 OUTDOOR WATER USE

**4.304.1 Outdoor potable water use in landscape areas.** After December 1, 2015, new residential developments with an aggregate landscape area equal to or greater than 500 square feet shall comply with one of the following options:

1. A local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent; or
2. Projects with aggregate landscape areas less than 2,500 square feet may comply with the MWELO's Appendix D Prescriptive Compliance Option.

**Notes:**

1. The Model Water Efficient Landscape Ordinance (MWELO) and supporting documents are available at: <http://www.water.ca.gov/wateruseefficiency/landscapeordinance/>
2. A water budget calculator is available at: <http://www.water.ca.gov/wateruseefficiency/landscapeordinance/>

#### SECTION 4.305 WATER REUSE SYSTEMS

**4.305.1 Recycled water supply systems.** Newly constructed residential developments, where disinfected tertiary recycled water is available from a municipal source to a construction site, may be required to have recycled water supply systems installed, allowing the use of recycled water for residential landscape irrigation systems. See Chapter 15 of the *California Plumbing Code*.

adopted by the Department of Water Resources (DWR) per Government Code Section 65595 (c).

2. The California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) commencing with Section 490 of Chapter 2.7, Division 2, Title 23, *California Code of Regulations*.

**5.304.3 Outdoor water use in rehabilitated landscape projects equal to or greater than 2,500 square feet.** Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check, or design review shall comply with Section 5.304.2, Item 1 or 2.

**5.304.4 Outdoor water use in landscape areas of 2,500 square feet or less.** Any project with an aggregate landscape area of 2,500 square feet or less may comply with the performance requirements of MWELO or conform to the prescriptive compliance measures contained in MWELO's Appendix D.

**5.304.5 Graywater or rainwater use in landscape areas.** For projects using treated or untreated graywater or rainwater captured on site, any lot or parcel within the project that has less than 2,500 square feet of landscape and meets the lot or parcel's landscape water requirement (Estimated Total Water Use) entirely with treated or untreated graywater or through stored rainwater captured on site is subject only to Appendix D Section (5).

**Notes:**

1. DWR's Model Water Efficient Landscape Ordinance, definitions and supporting documents are available at the following link: <http://water.ca.gov/wateruseefficiency/landscapeordinance/>
2. A water budget calculator is available at the following link: <http://water.ca.gov/wateruseefficiency/landscapeordinance/>
3. The MWELO prescriptive compliance measure Appendix D may be found at the following link: <http://water.ca.gov/wateruseefficiency/landscapeordinance/>. In addition, a copy of MWELO Appendix D may be found in Chapter 8 of this code.

**5.304.6 Outdoor potable water use in landscape areas [DSA-SS].** For public schools and community colleges, landscape projects as described in Sections 5.304.6.1 and 5.304.6.2 shall comply with the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) commencing with Section 490 of Chapter 2.7, Division 2, Title 23, *California Code of Regulations*, except that the evapotranspiration adjustment factor (ETAF) shall be 0.65 with an additional water allowance for special landscape areas (SLA) of 0.35.

**Exception:** Any project with an aggregate landscape area of 2,500 square feet or less may comply with the prescriptive measures contained in Appendix D of the MWELO.

**5.304.6.1 Newly constructed landscapes. [DSA-SS]** New construction projects with an aggregate landscape area equal to or greater than 500 square feet.

**5.304.6.2 Rehabilitated landscapes. [DSA-SS]** Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 1,200 square feet.

**SECTION 5.305  
WATER REUSE SYSTEMS**

**5.305.1 Recycled water supply systems.** Recycled water supply systems shall be installed in accordance with Sections 5.305.1.1, 5.305.1.2, and the *California Plumbing Code*.

**5.305.1.1 Outdoor recycled water supply systems.** All newly constructed nonresidential developments, where disinfected tertiary recycled water is available from a municipal source to a construction site, shall be provided with both a potable water supply system and a recycled water supply system. The recycled water supply system shall allow the use of reclaimed (recycled) water for aboveground and subsurface irrigation to all landscape irrigation systems.

For the purposes of Section 5.305.1.1, when a recycled water supply pipe is located within 300 feet from a construction site boundary, it shall be considered that reclaimed (recycled) water is available from a municipal source.

**Exceptions:**

1. Service areas in which the only reclaimed (recycled) water is used for potable purposes, or in which net nonpotable deliveries are anticipated to remain level or decrease as a result of the potable reuse project.
2. Where access to disinfected tertiary recycled water is not feasible and/or cost efficient, as determined by the authority having jurisdiction in consultation with the recycled water purveyor.
 

**Note:** A city, county, or city and county, in consultation with the recycled water purveyor, may further reduce the area for the mandate to install recycled water supply systems if the recycled water purveyor is unable to accommodate new services or unable to provide uninterrupted service.
3. A potable water supply system is not required for landscape irrigation if the landscape irrigation system is supplied with recycled water at the time of final inspection.
4. Potable water may be used with the recycled water supply system on a temporary basis, as allowed by the authority having jurisdiction in consultation with the recycled water purveyor.

**5.305.1.2 Technical requirements for outdoor recycled water supply systems.** Recycled water supply systems for outdoor applications shall meet the requirements of this code, and the *California Code of Regulations*, Title 17, Division 1, Chapter 5, Subchapter 1; Title 22, Division 4, Chapter 3; and Title 23, Division 2, Chapter 2.7, as applicable.