

SB 745 – Draft Nonresidential Building Standards

LEGEND for DRAFT STANDARDS

- Existing California amendments appear upright.
- Amended or new California amendments appear underlined.
- Repealed California language appears upright and in ~~strikeout~~.
- Ellipses (...) indicate existing text remains unchanged.
- Descriptive, non-amendment text is in brackets and is *[red and italicized.]*

2028 CALIFORNIA GREEN BUILDING STANDARDS CODE, TITLE 24, PART 11

Chapter 2 – Definitions

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[“Direct potable reuse project” and “indirect potable reuse project” are terms used in Section 5.303.1, Exception 1, and are defined here.]

DIRECT POTABLE REUSE PROJECT. A project meeting the definition of “Direct potable reuse project” in Title 22 section 64669.05 (a)(10).

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INDIRECT POTABLE REUSE PROJECT. A project meeting the definition of “Groundwater Replenishment Reuse Project” in Title 22 section 60301.390, or a project meeting the definition of “Surface Water Source Augmentation Project” in Title 22 section 60301.851.

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[The following definition of on-site treated nonpotable water is the same as the definition adopted by BSC-CG in the California Plumbing Code. This definition may change before the final standards are proposed for adoption, but it intended to unify the meaning of the term in both codes.]

ON-SITE TREATED NONPOTABLE WATER. 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, graywater, rainwater, stormwater, reclaimed (recycled) water, cooling tower blow-down water, condensate recovery water, and foundation drainage.

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Chapter 5 – Nonresidential Mandatory Measures

DIVISION 5.3 – WATER EFFICIENCY AND CONSERVATION

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SECTION 5.302 – DEFINITIONS

5.302.1 Definitions. The following are defined in Chapter 2.

EVAPOTRANSPIRATION ADJUSTMENT FACTOR (ETAF).

DIRECT POTABLE REUSE PROJECT.

GRAYWATER.

INDIRECT POTABLE REUSE PROJECT.

METERING FAUCET.

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO).

ON-SITE TREATED NONPOTABLE WATER.

POTABLE WATER.

SPECIAL LANDSCAPE AREA (SLA). [DSA-SS]

SUBMETER.

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[The following changes to Section 5.305 would bring many of the voluntary electives from voluntary Division A5.3 into the mandatory CALGreen standards as options for compliance. However, like the existing voluntary standards, only one option must be selected for a project to comply. The range of different options to choose from allows project teams to select a pathway to compliance that best suits their project. Exceptions have been provided to avoid impacting communities which already utilize municipal-scale water reuse projects in their potable water supply or which already have ordinances in place requiring the installation of water reuse systems. An exception has also been provided for projects where all the options for compliance are infeasible.]

SECTION 5.305 – WATER REUSE SYSTEMS ~~(Reserved)~~

5.305.1 Potable water usage reduction. [BSC-CG] Newly constructed nonresidential buildings shall comply with one option in either Section 5.305.2 or Section 5.305.3.

Exceptions:

1. Where the potable water supply serving the project is delivered by a public water system which utilizes water or water sources from an indirect potable reuse project, or a direct potable reuse project, this section does not apply.
2. Where all systems and installations described in Sections 5.305.2 and 5.305.3 are determined to be not feasible for the project as demonstrated by the project design team and approved by the authority having jurisdiction, no system or installation is required. A system or installation may not be feasible due to costs exceeding 10% of total project cost; lack of rainwater, gray water, or recycled water resources at the project site; physical constraints of the project site; or other considerations approved by the authority having jurisdiction.
3. For projects where any system described in Sections 5.305.2 and 5.305.3 is required to be provided by locally adopted building standards, no additional system or installation is required by this section.

5.305.2 Indoor water use options.

[Section 5.305.2.1 contains an option relocated from elective section A5.303.4.1.]

5.305.2.1 Nonwater urinals. Where one or more urinals are provided throughout the project, all urinals shall be nonwater urinals complying with Section 412.0 of the California Plumbing Code. Nonwater urinals with drain cleansing action (formerly urinal, hybrids) as defined in Chapter 2 shall be considered nonwater urinals.

[Section 5.305.2.2 contains options relocated from elective sections A5.303.5 and A5.305.1.]

5.305.2.2 Indoor recycled water supply systems. Where disinfected tertiary recycled water is available from a municipal source to the project site, both a potable water supply system and recycled water supply system shall be provided for indoor uses.

Where disinfected tertiary recycled water is anticipated to become available to the project site in the future, the project shall be pre-plumbed indoors with dual piping for potable and nonpotable recycled water.

The system shall allow for indoor uses of reclaimed (recycled) water per Section 1505.1.1 of the California Plumbing Code. Recycled water supply systems shall be installed in accordance with the California Plumbing Code, and shall meet the requirements of the California Code of Regulations, Title 22, Division 4, Chapter 3.

[Section 1505.1.1 of the CPC indicates the following indoor uses: water closets, urinals, trap primers for floor drains and floor sinks, industrial or commercial cooling

or air conditioning and other uses as generally allowed in Title 22, Div. 4, Chap. 3. These include commercial laundries, commercial car washes where the public is excluded from the washing process, industrial processes, or industrial or commercial cooling systems.]

[Section 5.305.2.3 contains an option relocated from elective section A5.305.1.]

5.305.2.3 On-site treated nonpotable water for indoor applications. An on-site treated nonpotable water system shall be provided. Where an on-site treated nonpotable water system is planned to be installed on the project site in the future, the project shall be pre-plumbed with dual piping for potable and on-site treated nonpotable water.

On-site treated nonpotable water systems shall allow indoor uses of on-site treated nonpotable water per Section 1506.1 of the California Plumbing Code and shall be installed in accordance with Section 1506.0 of the California Plumbing Code. Black water systems shall meet the requirements of the California Code of Regulations, Title 22, Division 4, Chapter 3.5.

5.305.3 Outdoor water use options.

[Section 5.305.3.1 provides an option for compliance similar to the standards previously developed pursuant to AB 2282. Section 5.305.3.1 contains an option relocated from elective section A5.305.2.]

5.305.3.1 Outdoor recycled water supply systems. Where disinfected tertiary recycled water is available from a municipal source to the project site, a recycled water supply system for outdoor uses shall be provided.

Where disinfected tertiary recycled water is anticipated to become available to the project site in the future, the project shall be pre-plumbed for nonpotable recycled water. Potable water may be used with the recycled water supply on a temporary basis, as allowed by the authority having jurisdiction.

The system shall allow for outdoor uses of reclaimed (recycled) water per Section 1505.1.1 of the California Plumbing Code. Recycled water supply systems for outdoor applications shall be installed in accordance with the California Plumbing Code, and shall meet the requirements of the California Code of Regulations, Title 22, Division 4, Chapter 3; and Title 23, Division 2, Chapter 2.7, as applicable.

[Section 5.305.3.2 contains an option relocated from elective section A5.305.1.]

5.305.3.2 Rainwater catchment systems. A rainwater catchment system shall be provided to supply irrigation. Rainwater catchment systems shall be installed in accordance with Chapter 16 of the California Plumbing Code.

[Section 5.305.3.3 contains an option relocated from elective section A5.305.1.]

5.305.3.3 On-site treated nonpotable water irrigation system.

An on-site treated nonpotable water system shall be provided to supply irrigation. Where an on-site treated nonpotable water system is planned to be installed on the project site in the future, the project shall be pre-plumbed for on-site treated nonpotable water irrigation.

On-site treated nonpotable water irrigation systems shall be installed in accordance with Section 1506.0 of the *California Plumbing Code*. Black water systems shall meet the requirements of the *California Code of Regulations*, Title 22, Division 4, Chapter 3.5.

[Section 5.305.3.4 contains an option relocated from elective section A5.304.8.]

5.305.3.4 Simple or complex gray water systems. A simple gray water system complying with Section 1503.1.2 of the *California Plumbing Code* or a complex gray water system complying with Section 1503.1.3 of the *California Plumbing Code* shall be provided to supply onsite irrigation using gray water collected from bathtubs, showers, bathroom wash basins and laundry water.

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Appendix A5 Nonresidential Voluntary Measures

DIVISION A5.3 – WATER EFFICIENCY AND CONSERVATION

SECTION A5.301 – GENERAL

[Division A5.3 has not had scoping language for several cycles. The following change would add scoping language similar to the language last published in the 2010 edition.]

A5.301.1 Scope. The provisions of this chapter shall establish additional voluntary standards for conserving water used indoors, outdoors and in wastewater conveyance.

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[The following changes to Section A5.303 would eliminate the water use percentage reduction targets (12%, 20%, and 25%) from the CALGreen voluntary standards. The intent is that greater water use reduction will now be part of the mandatory CALGreen standards in Section 5.305. When the voluntary percentage reduction targets were originally included in CALGreen the baseline flow rates for plumbing fixtures were much higher, but these have since been reduced. As a result, further flow rate reduction beyond the baseline may not be practical given available plumbing fixtures and may not provide adequate flow for fixtures and plumbing systems to function sufficiently. This

change would also better align the nonresidential CALGreen standards with the residential CALGreen standards, as the voluntary percentage reduction targets were removed from the residential sections several rulemaking cycles ago. A number of other elective sections are being removed from the voluntary standards because an equivalent elective has been added to the mandatory standards in Section 5.305. Language is added such that the electives in Section 5.305 can be selected to satisfy the voluntary Tier 1 and Tier 2 requirements.]

SECTION A5.303 – INDOOR WATER USE

Table A5.303.2.2 Water Use Baseline (Performance Method)³

FIXTURE TYPE	BASELINE FLOW RATE	DURATION	DAILY USES	OCCUPANTS²
Showerheads	1.8 gpm @ 80 psi	5 min.	4	X ^{2a}
Lavatory faucets nonresidential	0.5 gpm @ 60 psi	.25 min.	3	X
Kitchen faucets	1.8 gpm @ 60 psi	4 min.	4	X ^{2b}
Replacement aerators	2 gpm @ 60 psi			X
Wash fountains	1.8 gpm/20 [rim space (in.) @ 60 psi]			X
Metering faucets	0.20 gallons/cycle	.25 min.	3	X
Metering faucets for wash fountains	0.20 gallons/cycle/20 [rim space (in.) @ 60 psi]	.25 min.	1 male ¹ -3 female	X
Gravity tank type water closets	1.28 gallons/flush	1 flush	1 male ¹ -3 female	X
Flushometer tank water closets	1.28 gallons/flush	1 flush	1 male ¹ -3 female	X
Flushometer valve water closets	1.28 gallons/flush	1 flush	1 male ¹ -3 female	X
Electromechanical hydraulic water closets	1.28 gallons/flush	1 flush	1 male ¹ -3 female	X
Urinals	0.5 or 0.125 ⁴ gallons/flush	1 flush	2 male	X

1. The daily use number shall be increased to three if urinals are not installed in the room.

2. Refer to Table 4-1, Chapter 4, 2025 California Plumbing Code, for occupant load factors.

- a. ~~Shower use by occupants depends on the type of use of a building or portion of a building, e.g., total occupant load for a health club, but only a fraction of the occupants in an office building as determined by the anticipated number of users.~~
- b. ~~Kitchen faucet use is determined by the occupant load of the area served by the fixture.~~
- 3. ~~Use worksheet WS-1 to calculate baseline water use.~~
- 4. ~~Floor-mounted urinals @ 0.5 GPF or wall-mounted urinals @ 0.125 GPF.~~

~~A5.303.2.3.1 Tier 1 – 12-percent savings.~~

~~A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 12 percent shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fitting as required by the California Building Standards Code. The 12-percent reduction in potable water use shall be demonstrated by one of the following methods:~~

- 1. ~~Prescriptive method. Each plumbing fixture and fitting shall not exceed the maximum flow rate at greater than or equal to 12-percent reduction as specified in Table A5.303.2.3.1; or~~
- 2. ~~Performance method. A calculation demonstrating a 12-percent reduction in the building “water use baseline” as established in Table A5.303.2.2 shall be provided.~~

~~Table A5.303.2.3.1 – Fixture Flow Rates (Prescriptive Method)~~

FIXTURE TYPE	BASELINE FLOW RATE²	MAXIMUM FLOW RATE AT ≥ 12 PERCENT REDUCTION
Showerheads	1.8 gpm @ 80 psi	1.6 gpm @ 80 psi
Lavatory faucets nonresidential³	0.5 gpm @ 60 psi	0.35 gpm @ 60 psi
Kitchen faucets³	1.8 gpm @ 60 psi	1.6 gpm @ 80 psi
Replacement aerators	2 gpm @ 60 psi	1.6 gpm/20 [rim space (in.) @ 60 psi]
Wash fountains	1.8 gpm/20 [rim space (in.) @ 60 psi]	0.18 gallons/cycle
Metering faucets	0.20 gallons/cycle	0.18 gallons/cycle 20 [rim space (in.) @ 60 psi]
Metering faucets for wash fountains	0.20 gallons/cycle/20 [rim space (in.) @ 60 psi]	1.12 gallons/flush¹
Gravity tank type water closets	1.28 gallons/flush	1.12 gallons/flush¹
Flushometer tank water closets	1.28 gallons/flush	1.12 gallons/flush¹

Flushometer valve water closets	1.28 gallons/flush	1.12 gallons/flush ¹
Electromechanical hydraulic water closets	1.28 gallons/flush	1.12 gallons/flush ¹
Urinals	0.5 or 0.125 ⁴ gallons/flush	0.44 or 0.11 gallons/flush

1. Includes water closets with an effective flush rate of 1.12 gallons or less when tested per ASME A 112.19.2 and ASME A 112.19.14.
2. See Table A5.503.2.2 for additional notes and references.
3. Where complying faucets are unavailable, aerators rated at 0.35 gpm or other means may be used to achieve reduction.
4. Floor-mounted urinals @ 0.5 GPF or wall-mounted urinals @ 0.125 GPF.

~~A5.303.2.3.2 Tier 2 – 20-percent savings.~~

A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20 percent shall be provided. A calculation demonstrating a 20-percent reduction in the building “water use baseline” as established in Table A5.303.2.2 shall be provided.

~~A5.303.2.3.3 25-percent savings.~~

A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 25 percent shall be provided. A calculation demonstrating a 25-percent reduction in the building “water use baseline” as established in Table A5.303.2.2 shall be provided.

~~A5.303.2.3.4 Nonpotable water systems for indoor use.~~

Utilizing nonpotable water systems (such as captured rainwater, treated graywater and recycled water) intended to supply water closets, urinals and other allowed uses, may be used in the calculations demonstrating the 12-, 20- or 25-percent reduction. The nonpotable water systems shall comply with the current edition of the *California Plumbing Code*.

~~A5.303.3~~ A5.303.1 Appliances and fixtures for commercial application.

Appliances and fixtures shall meet the following:

1. ...
2. Dishwashers shall meet the following water use standards:
 - a. Residential—ENERGY STAR.
 - i. Standard Dishwashers – ~~4.25~~ ≤ 3.2 gallons per cycle.

- ii. Compact Dishwashers – $3.5 \leq 2.0$ gallons per cycle.
[Change to reflect new ENERGY STAR standards.]
- b. Commercial—Shall be in accordance with ENERGY STAR requirements.
Refer to Table A5.303.3.

3. ...

~~A5.303.4 Water conserving plumbing fixtures and fittings.~~

~~A5.303.4.1 Nonwater urinals.~~ *[This is proposed to be relocated to 5.305.2.1.]*

~~Nonwater urinals with drain cleansing action are installed in accordance with the California Plumbing Code.~~

~~Where approved, nonwatery water urinals with drain cleansing action (formerly urinal, hybrids) as defined in Chapter 2, shall be considered waterless urinals.~~

~~A5.303.5 Dual plumbing.~~ *[This is proposed to be relocated to 5.305.2.2.]*

~~New buildings and facilities shall be dual plumbed for potable and recycled water systems for toilet flushing when recycled water is available as determined by the enforcement authority.~~

SECTION A5.304 – OUTDOOR WATER USE

~~A5.304.1 Reserved.~~

~~A5.304.2 A5.304.1 Outdoor water use. ...~~

~~A5.304.6 A5.304.2 Restoration of areas disturbed by construction. ...~~

~~A5.304.7 A5.304.3 Previously developed sites. ...~~

~~A5.304.8 Graywater irrigation system.~~ *[This is proposed to be relocated to 5.305.3.4.]*

~~Install a graywater collection system for onsite subsurface irrigation using graywater collected from bathtubs, showers, bathroom wash basins and laundry water. See California Plumbing Code.~~

~~SECTION A5.305 – WATER REUSE~~

~~A5.305.1 Nonpotable water systems.~~ *[This is proposed to be relocated to options in 5.305.2.2, 5.305.2.3, 5.305.3.2, and 5.305.3.3.]*

~~Nonpotable water systems for indoor and outdoor use shall comply with the current edition of the California Plumbing Code.~~

~~A5.305.2 Irrigation systems.~~ *[This is proposed to be relocated to 5.305.3.1.]*

~~Irrigation systems regulated by a local water efficient landscape ordinance or by the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELo) shall use recycled water.~~

DIVISION A5.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

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DIVISION A5.6 – VOLUNTARY TIERS

SECTION A5.601 – CALGREEN TIER 1 AND TIER 2

TABLE A5.601 – NONRESIDENTIAL BUILDINGS: GREEN BUILDING STANDARDS CODE PROPOSED PERFORMANCE APPROACH

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CATEGORY	ENVIRONMENTAL PERFORMANCE GOAL	TIER 1	TIER 2
DIVISION 5.3 Water Efficiency and Conservation	Indoor Water Use 	12% Savings 1 additional Elective <u>or options</u> from Division A5.3 <u>or Sections 5.305.2</u> <u>or 5.305.3</u>	20% Savings 3 additional Electives <u>or options</u> from Division A5.3 <u>or Sections 5.305.2</u> <u>or 5.305.3</u>

[This change will remove the water usage reduction calculations from the voluntary CALGreen Tiers shown on the checklist. Language is also added so that electives relocated from the voluntary tiers to the mandatory options for compliance in Section 5.305 can still be taken to meet the additional voluntary requirements. In addition to the options in Section 5.305, Tier 1 and Tier 2 requirements could be met using the following electives which would remain in the voluntary standards of Division A5.3: A5.303.3 (renumbered A5.303.1) Appliances and fixtures for commercial application; A5.304.2 (renumbered A5.304.1) Outdoor water use; A5.304.6 (renumbered A5.304.2) Restoration of areas disturbed by construction; A5.304.7 (renumbered A5.304.3) Previously developed sites.]

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A5.601.2 CALGreen Tier 1.

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A5.601.2.4 Voluntary measures for Tier 1. In addition to the provisions of Sections A5.601.2.1 and A5.601.2.3 above, compliance with the following voluntary measures from Appendix A5 is required for Tier 1:

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3. From Division A5.3,
 - a. ~~Comply with the 12 percent reduction for indoor potable water use in Section A5.303.2.3.1.~~
 - b. Comply with one additional option or elective measure selected from this division: or Sections 5.305.2 or 5.305.3.

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A5.601.3 CALGreen Tier 2.

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A5.601.3.4 Voluntary measures for Tier 2. In addition to the provisions of Sections A5.601.3.1 and A5.601.3.3 above, compliance with the following voluntary measures from Appendix A5 is required for Tier 2:

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3. From Division A5.3,
 - a. ~~Comply with the 20 percent reduction for indoor potable water use in Section A5.303.2.3.2.~~
 - b. Comply with three additional options or elective measures selected from this division: or Sections 5.305.2 or 5.305.3.

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