

**CALIFORNIA PLUMBING CODE – MATRIX ADOPTION TABLE
CHAPTER 16A - NON-POTABLE WATER REUSE SYSTEMS**

(Matrix Adoption Tables are non-regulatory, intended only as an aid to the user. See Chapter 1 for state agency authority and building application.)

| Adopting Agency | BSC | SFM | HCD | | | DSA | | | OSHPD | | | | BSCC | DPH | AGR | DWR | CA | SL | SLC |
|--|-----|-----|-----|---|------|-----|----|-------|-------|---|---|---|------|-----|-----|-----|----|----|-----|
| | | | 1 | 2 | 1-AC | AC | SS | SS/CC | 1 | 2 | 3 | 4 | | | | | | | |
| Adopt Entire Chapter | | | | | | | | | | | | | | | | | | | |
| Adopt Entire Chapter as amended (amended sections listed below) | | | | | | | | | | | | | | | | | | | |
| Adopt only those sections that are listed below | | | | | | | | | | | | | | | | | | | |
| Chapter/Section | | | | | | | | | | | | | | | | | | | |
| Part II | | | | | | | | | | | | | | | | | | | X |

CHAPTER 16A

NON-POTABLE WATER REUSE SYSTEMS

Part II [DWR]

1613A.0 Recycled Water Systems – General.

- (A) The provisions of Part II of this chapter shall apply to the installation, construction, alteration, and repair of recycled water systems intended to supply water closets, urinals, trap primers for floor drains, floor sinks and other allowed uses. The recycled water system shall not have any connections to the potable water system except via an air gap approved by the Authority Having Jurisdiction or via a temporary connection to the potable system for initial testing of the recycled water system piping.
- (B) No permit for any recycled water system shall be issued until complete plumbing plans, with appropriate data satisfactory to the Authority Having Jurisdiction, have been submitted and approved. No changes or connections shall be made to either the recycled water system or the potable water system within any site containing a recycled water system without approval by the Authority Having Jurisdiction. See Section 1620A.0 for further details.
- (C) Before the building is occupied, the installer shall perform an initial cross-connection test in the presence of the Authority Having Jurisdiction or other authorities having jurisdiction. The test shall be ruled successful before final approval is granted.
- (D) A recycled water system shall be designed by a person registered or licensed to perform plumbing design work.

1614A.0 Definitions.

Recycled Water. Non-potable water that meets California Department of Public Health statewide uniform criteria for disinfected tertiary recycled water. Recycled water is also known as reclaimed water.

1615A.0 Permit.

It shall be unlawful for any person to construct, install, alter, or cause to be constructed, installed, or altered any recycled water system within a building or on a premises without first obtaining a permit to do such work from the Authority Having Jurisdiction. Section 13553 of the Water Code specifies structures where indoor use of recycled water is allowed. These structures include commercial, retail and office buildings, theaters, auditoriums, condominium projects, schools, hotels, apartments, barracks, dormitories, jails, prisons, reformatories, and other structures as determined by the State Department of Public Health.

1616A.0 Drawings and Specifications.

- (A) Drawings and specifications for recycled water systems shall be in accordance with the requirements identified in Chapter 1, General Code Provisions, of the California Plumbing Code.
- (B) The drawings and specifications shall provide sufficient detail to determine compliance with the requirements of this chapter and the California Plumbing Code.

1617A.0 Pipe Material/Pipe Identification.

Recycled water pipe shall comply with Sections 1617A.1 and 1617A.2.

1617A.1 Pipe Materials. Recycled water pipe, valves and fittings shall conform to the requirements of Sections 604.0, and 606.0.

1617A.2 Color and Information. Recycled water systems shall have a purple background with black uppercase lettering with the words “CAUTION: RECYCLED WATER, DO NOT DRINK.”

All recycled water pipe shall be permanently marked to identify that it contains recycled water. This may be accomplished by labeling piping using purple-colored (Pantone color #512) adhesive Mylar PVC tape along the entire length of the pipe or using non-metallic pipe manufactured with purple integral to the material. For either material, the identification system shall be installed so the wording above is clearly visible.

1618A.0 Installation.

- (A) The recycled water piping system shall not include any hose bibbs. Only quick couplers that differ from those used on the potable water system shall be used on the recycled water piping system.
- (B) The recycled water system and the potable water system within the building shall be provided with the required appurtenances (valves, air/vacuum relief valves, etc.) to allow for testing as required for cross connection test in Section 1620A.0.
- (C) Recycled water pipes laid in the same trench or crossing building sewer or drainage piping shall be installed in compliance with Sections 609.0 and 720.0 of this code. Recycled water pipes shall be protected similar to potable water pipes.

1619A.0 Signs.

- (A) **Commercial, Industrial and Institutional Room Entrance Signs.** All rooms in commercial, industrial, and institutional occupancies using recycled water for water closets and/or urinals shall be identified with signs. Each sign shall contain one-half (½) inch (12.7

mm) letters of a highly visible color on a contrasting background. The location of the sign(s) shall be such that the sign(s) shall be visible to all users. The signs shall contain the following text:

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

(B) **Equipment Room Signs.** Each room containing recycled water equipment shall have a sign posted with the following wording in one (1) inch (25.4 mm) letters on a purple background:

**CAUTION
RECYCLED WATER,
DO NOT DRINK.
DO NOT CONNECT TO DRINKING WATER
SYSTEM.**

**NOTICE
CONTACT BUILDING MANAGEMENT
BEFORE
PERFORMING ANY WORK ON
THIS WATER SYSTEM.**

This sign shall be posted in a location that is visible to anyone working on or near recycled water equipment.

(C) Where tank-type toilets (water closets) are flushed with recycled water, a permanent sign (such as plastic or stainless steel) shall be installed inside the tank to warn that the water within the tank is not a suitable emergency water supply. The sign shall be labeled:

RECYCLED WATER – DO NOT DRINK

(D) **Valve Access Door Signs.** Each recycled water valve within a wall shall have its access door into the wall equipped with a warning sign approximately six (6) inches by six (6) inches (152 mm x 152 mm) with wording in one-half (½) inch (12.7 mm) letters on a purple background. The size, shape, and format of the sign shall be substantially the same as that specified in subsection (B) above. The signs shall be attached inside the access door frame and shall hang in the center of the access door frame. This sign requirement shall be applicable to any and all access doors, hatches, etc., leading to recycled water piping and appurtenances.

(E) **Valve Seals.** The master recycled water shut-off valve and/or the recycled water meter curb cock and each valve within a wall shall be sealed after the recycled water system has been approved and placed into operation. These seals shall be either crimped lead wire seal or plastic break away seal which, if broken after system approval, shall be deemed conclusive evidence that the recycled water system has been accessed. The

seals shall be purple, numbered, and contain the words “RECYCLED WATER”, and shall be supplied by the recycled water purveyor, or by other arrangements acceptable to the Authority Having Jurisdiction.

1620A.0 Inspection and Testing.

(A) Recycled water piping shall be inspected and tested as outlined in this code for testing of potable water piping.

(B) The recycled water system shall be inspected and tested in accordance to the following: (a) an initial cross-connection test before the initial operation of the recycled water system; (b) an annual visual system inspection; (c) a cross-connection test as required pursuant to Section 60316(a), Title 22, California Code of Regulations; (d) a cross-connection test when there is material reason to believe that the potable water and/or recycled water system separation has been compromised; and (e) a cross-connection test following remediation of a discovered cross-connection. A material reason to believe that the system has been compromised may be based on, but is not limited to, evidence gathered: (a) during a visual inspection performed pursuant to Section 1620A.0, or (b) as a result of an inspection performed following complaints of water quality or flow conditions consistent with a compromised system.

An initial Cross-Connection test and subsequent Annual Visual System Inspection shall be performed as follows:

(1) **Annual Visual System Inspection.** A visual system inspection shall be conducted annually by the Authority Having Jurisdiction or other authorities having jurisdiction.

(i) Meter locations of the recycled water and potable water lines shall be checked to verify that no modifications were made, and that no cross-connections are visible.

(ii) All pumps and equipment, equipment room signs, and exposed piping in the equipment room shall be checked.

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

(iv) If the visual inspection indicates that the recycled water plumbing has been modified, a Cross-Connection Test is required.

(2) **Cross-Connection Test.** The applicant shall perform the Cross-Connection Test as required pursuant to the first paragraph in Section 1620A.0(B).

The test shall be conducted in the presence of the Authority Having Jurisdiction or other authorities having jurisdiction to determine whether a cross-connection occurred.

Alternate inspection and testing requirements may be allowed by the Authority Having Jurisdiction for residential, institutional or industrial buildings where shutting off the water is not practical. The recycled water purveyor or other designated appointee may substitute for the Authority Having Jurisdiction in the above mentioned inspection and tests.

- (i) The potable water system shall be activated and pressurized. The *recycled* water system shall be shut down and completely *depressurized*.
- (ii) The potable water system shall remain pressurized *while the recycled water system is depressurized*. The minimum period the *recycled* water system is to remain depressurized shall be determined on a case-by-case basis, taking into account the size and complexity of the potable and *recycled* water distribution systems.
- (iii) *All* fixtures, potable and *recycled*, shall be tested and inspected for flow. Flow from any *recycled* water system outlet shall indicate a cross-connection. No flow from a potable water outlet would indicate that it may be connected to the *recycled* water system.
- (iv) The drain on the *recycled* water system shall be checked for flow during the test and at the end of the period.
- (v) The potable water system shall then be completely *depressurized*.
- (vi) The *recycled* water system shall then be activated and pressurized. *For the initial test, a temporary connection to a potable water supply will be required to test the recycled water system plumbing. At the conclusion of the test, the temporary connection to the potable water supply shall be disconnected.*
- (vii) The *recycled* water system shall remain pressurized while the potable water system is *depressurized*. The minimum period the potable water system is to remain depressurized shall be determined on a case-by-case basis.
- (viii) *All* fixtures, potable and *recycled*, shall be tested and inspected for flow. Flow from any potable water system outlet shall indicate a cross-connection. No flow from a *recycled* water outlet would indicate that it is connected to the potable water system.
- (ix) The drain on the potable water system shall be checked for flow during the test and at the end of the period.
- (x) If there is no flow detected in any of the fixtures that would have indicated a cross-connection, the potable water system shall be repressurized.

(3) Cross-Connection Discovered. In the event that a cross-connection is discovered, the following procedure shall be activated immediately:

- (i) *Recycled* water piping to the building shall be shut down at the meter, and the *recycled* water riser shall be drained.
- (ii) Potable water piping to the building shall be shut down at the meter.
- (iii) The cross-connection shall be uncovered and disconnected.
- (iv) The building shall be retested following procedures listed in Sections 1620A.0 (B)(1) and (B)(2) above.
- (v) The potable water system shall be chlorinated with fifty (50) ppm chlorine for twenty-four (24) hours.
- (vi) The potable water system shall be flushed after twenty-four (24) hours, and a standard bacteriological test shall be performed. If test results are acceptable, the potable water system shall be permitted to be recharged.

Alternate testing requirements shall be permitted by the Authority Having Jurisdiction.

1621A.0 Sizing.

Recycled water piping shall be sized as outlined in this code for sizing potable water piping.

