REVISION RECORD
FOR THE STATE OF CALIFORNIA
ERRATA

January 1, 2014

2013 Title 24, Part 5, California Code of Regulations

General Information:

1. The date of this erratum is for identification purposes only. See the History Note Appendix on the backside or accompanying page.

2. This erratum is issued by the California Building Standards Commission in order to correct non-substantive printing errors or omissions in California Code of Regulations, Title 24, Part 5, of the 2013 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. An erratum to Title 24 is a non-regulatory correction because of a printing error or omission that does not differ substantively from the official adoption by the California Building Standards Commission. Accordingly, the corrected code text provided by this erratum may be applied on and after the stated effective date.

4. You may wish to retain the superseded material with this revision record so that the prior wording of any section can be easily ascertained.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

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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	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Chapter/Section																			
Division I – California Administration																			
1.1.1	X	X	X	X	X		X	X	X	X	X	X							
1.1.2	X	X	X	X	X		X	X	X	X	X	X							
1.1.3	X	X	X	X	X		X	X	X	X	X	X							
1.1.4	X	X	X	X	X		X	X	X	X	X	X							
1.1.5	X	X	X	X	X		X	X	X	X	X	X							
1.1.6	X	X	X	X	X		X	X	X	X	X	X							
1.1.7	X	X	X	X	X		X	X	X	X	X	X							
1.1.8	X	X	X	X	X		X	X	X	X	X	X							
1.1.9	X	X	X	X	X		X	X	X	X	X	X							
1.1.10	X	X	X	X	X		X	X	X	X	X	X							
1.1.11	X	X	X	X	X		X	X	X	X	X	X							
1.1.12	X	X	X	X	X		X	X	X	X	X	X							
1.2.0	X																		
1.3.0													X						
1.4.0																	X		
1.6.0															X				
1.7.0														X					
1.8.0			X	X	X														
1.9.0						X													
1.9.1						X													
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1.9.2.1							X												
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1.13.0																X			
Division II - Administration																			
101.0 - 103.1.1									X	X	X	X							
103.1.2 and subsections			X	X					X	X	X	X							
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CHAPTER 1
ADMINISTRATION
DIVISION I
CALIFORNIA ADMINISTRATION

1.1.0 General.

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

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

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

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

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

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

1. *State-owned buildings, including buildings constructed by the Trustees of the California State University, and to the extent permitted by California laws, buildings designed and constructed by the Regents of the University of California, and regulated by the Building Standards Commission. See Section 1.2.0 for additional scope provisions.*
2. *Local detention facilities regulated by the Corrections Standards Authority. See Section 1.3.0 for additional scope provisions.*
3. *Barbering, cosmetology or electrolysis establishments, acupuncture offices, pharmacies, veterinary facilities, and structural pest control locations regulated by the Department of Consumer Affairs. See Section 1.4.0 for additional scope provisions.*
4. *Reserved for the California Energy Commission. See Section 1.5.0 for additional scope provisions.*
5. *Dairies and places of meat inspection regulated by the Department of Food and Agriculture. See Section 1.6.0 for additional scope provisions.*
6. *Organized camps, laboratory animal quarters, public swimming pools, radiation protection, commissaries serving mobile food preparation vehicles, and wild animal quarantine facilities regulated by the Department of Public Health. See Section 1.7.0 for additional scope provisions.*
7. *Hotel, motels, lodging houses, apartment houses, dwellings, dormitories, condominiums, shelters for homeless persons, congregate residences, employee housing, factory-built housing, and other types of dwellings containing sleeping accommodations with or without common toilets or cooking facilities. See Section 1.8.2.1.1 for additional scope provisions.*
8. *Accommodations for persons with disabilities in buildings containing newly constructed covered multifamily dwellings, new common use spaces serving existing covered multifamily dwellings, additions to existing buildings where the addition alone meets the definition of "COVERED MULTIFAMILY DWELLINGS," and common use spaces serving covered multifamily dwellings which are regulated by the Department of Housing and Community Development. See Section 1.8.2.1.2 for additional scope provisions.*
9. *Permanent buildings and permanent accessory buildings or structures constructed within mobilehome parks and special occupancy parks regulated by the Department of Housing and Community Development. See Section 1.8.2.1.3 for additional scope provisions.*
10. *Accommodations for persons with disabilities regulated by the Division of the State Architect. See Section 1.9.1 for additional scope provisions.*

11. *Public elementary and secondary schools, community college buildings, and state-owned or state-leased essential service buildings regulated by the Division of the State Architect. See Section 1.9.2 for additional scope provisions.*
12. *Reserved for the State Historical Building Safety Board with the Division of the State Architect.*
13. *General acute care hospitals, acute psychiatric hospitals, skilled nursing and/or intermediate care facilities, clinics licensed by the Department of Public Health, and correctional treatment centers regulated by the Office of Statewide Health Planning and Development. See Section 1.10.0 for additional scope provisions.*
14. *Applications regulated by the Office of State Fire Marshal include but are not limited to following in accordance with Section 1.11.0:*
    1. *Buildings or structures used or intended for use as an:*

       1.1 Asylum, jail, prison.

       1.2 Mental hospital, hospital, home for the elderly, children's nursery, children's home or institution, school or any similar occupancy of any capacity.

       1.3. Theater, dancehall, skating rink, auditorium, assembly hall, meeting hall, nightclub, fair building, or similar place of assemblage where 50 or more persons may gather together in a building, room or structure for the purpose of amusement, entertainment, instruction, deliberation, worship, drinking or dining, awaiting transportation, or education.

       1.4. Small family day care homes, large family day-care homes, residential facilities and residential facilities for the elderly, residential care facilities.

       1.5. State institutions or other state-owned or state-occupied buildings.

       1.6. High rise structures.

       1.7. Motion picture production studios.

       1.8. Organized camps.

       1.9. Residential structures.
    2. *Tents, awnings or other fabric enclosures used in connection with any occupancy.*
    3. *Fire alarm devices, equipment and systems in connection with any occupancy.*
    4. *Hazardous materials, flammable and combustible liquids.*
    5. *Public school automatic fire detection, alarm and sprinkler systems.*
    6. *Wildland-urban interface fire areas.*
15. *Public libraries constructed and renovated using funds from the California Library Construction and Renovation Bond Act of 1988 and regulated by the State Librarian. See Section 1.12.0 for additional scope provisions.*
16. *Graywater systems regulated by the Department of Water Resources. See Section 1.13.0 for additional scope provisions.*
17. *For applications listed in Section 1.9.1 regulated by the Division of the State Architect – Access Compliance, outdoor environments and uses shall be classified according to accessibility uses described in Chapter 11A, 11B, and 11C.*
18. *Marine Oil Terminals regulated by the California State Lands Commission. See Section 1.14.0 for additional scope provisions.*

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

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

1.1.6 Non-Building Standards, Orders, and Regulations.

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

1.1.7 Order of Precedence and Use.

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

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

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

1.1.8 City, County, or City and County Amendments, Additions or Deletions. *The provisions of this code do not limit the authority of city, county, or city and county governments to establish more restrictive and reasonably necessary dif-*

1.8.4 Permits, Fees, Applications, and Inspections.

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

Exceptions:

1. *Work exempt from permits as specified in Chapter 1, Administration, Division II, Section 103.1.1 (1)-(2) of this code.*
2. *Changes, alterations, or repairs of a minor nature not affecting structural features, egress, sanitation, safety, or accessibility as determined by the enforcing agency.*

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

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

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

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

Exceptions:

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

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

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

1.8.5 Right of Entry for Enforcement.

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

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

1.8.6 Local Modification by Ordinance or Regulation.

1.8.6.1 General. *Subject to other provisions of law, a city, county, or city and county may make changes to the provisions adopted by the Department of Housing and Community Development. If any city, county, or city and county does not amend, add, or repeal by local ordinances or regulations the provisions published in this code or other regulations promulgated by the Department of Housing and Community Development, those provisions shall be applicable and shall become effective 180 days after publica-*

tion by the California Building Standards Commission. Amendments, additions, and deletions to this code adopted by a city, county, or city and county pursuant to California Health and Safety Code Sections 17958.5, 17958.7, and 18941.5, together with all applicable portions of this code, shall also become effective 180 days after publication of the California Building Standards Code by the California Building Standards Commission.

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

1. *The express findings shall be made available as a public record.*
2. *A copy of the modification and express finding, each document marked to cross-reference the other, shall be filed with the California Building Standards Commission for a city, county, or a city and county, and with the Department of Housing and Community Development for fire protection districts.*
3. *The California Building Standards Commission has not rejected the modification or change.*

Nothing in this section shall limit the authority of fire protection districts pursuant to California Health and Safety Code Section 13869.7(a).

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

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

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

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

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

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

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

1.8.7.3 Department of Housing and Community Development. *The Department of Housing and Community Development may approve alternates for use in the erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal, or demolition of an apartment house, hotel, motel, lodging house, dwelling, or an accessory thereto. The consideration and approval of alternates shall comply with the following:*

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

1.8.8 Appeals Board.

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

CALIFORNIA PLUMBING CODE – MATRIX ADOPTION TABLE
CHAPTER 3 - GENERAL REGULATIONS

(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	X						X	X											
Adopt Entire Chapter as amended (amended sections listed below)		X	X	X					X	X	X	X							
Adopt only those sections that are listed below																			
Chapter/Section																			
301.2			X	X															
301.2.1			†	†															
301.2.1.1			†	†															
301.2.1.2			†	†															
301.5			X	X															
303.1 Exception			X																
304.1 Exception			X																
310.9									X	X	X	X							
310.10									X		X	X							
310.11		X																	
310.12									X	X		X							
313.8									X	X	X	X	X						
319.0									X	X	X	X							

The state agency does not adopt sections identified by the following symbol: †

CHAPTER 3
GENERAL REGULATIONS

301.0 Materials – Standards and Alternates.

301.1 Minimum Standards. Pipe, pipe fittings, traps, fixtures, material, and devices used in a plumbing system shall be listed or labeled (third-party certified) by a listing agency (accredited conformity assessment body) and shall comply with the approved applicable recognized standards referenced in this code, and shall be free from defects. Plastic pipe and the fittings used for plastic pipe, other than those for gas, shall meet the requirements of NSF 14. Unless otherwise provided for in this code, materials, fixtures, or devices used or entering into the construction of plumbing systems, or parts thereof, shall be submitted to the Authority Having Jurisdiction for approval.

301.1.1 Marking. Each length of pipe and each pipe fitting, trap, fixture, material, and device used in a plumbing system shall have cast, stamped, or indelibly marked on it the manufacturer's mark or name, which shall readily identify the manufacturer to the end user of the product. Where required by the approved standard that applies, the product shall be marked with the weight and the quality of the product. Materials and devices used or entering into the construction of plumbing and drainage systems, or parts thereof, shall be marked and identified in a manner satisfactory to the Authority Having Jurisdiction. Such marking shall be done by the manufacturer. Field markings shall not be acceptable.

301.1.2 Standards. Standards listed or referred to in this chapter or other chapters cover materials that will conform to the requirements of this code, where used in accordance with the limitations imposed in this or other chapters thereof and their listing. Where a standard covers materials of various grades, weights, quality, or configurations, the portion of the listed standard that is applicable shall be used. Design and materials for special conditions or materials not provided for herein shall be permitted to be used only by special permission of the Authority Having Jurisdiction after the Authority Having Jurisdiction has been satisfied as to their adequacy. A list of accepted plumbing material standards is referenced in Table 1401.1. IAPMO Installation Standards are referenced in Appendix I for the convenience of the users of this code. They are not considered as a part of this code unless formally adopted as such by the Authority Having Jurisdiction.

301.1.3 Existing Buildings. In existing buildings or premises in which plumbing installations are to be altered, repaired, or renovated, the Authority Having Jurisdiction has discretionary powers to permit deviation from the provisions of this code, provided that such proposal to deviate is first submitted for proper determination in order that health and safety requirements, as they pertain to plumbing, shall be observed.

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

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

301.2.1 Testing. The Authority Having Jurisdiction shall have the authority to require tests, as proof of equivalency.

301.2.1.1 Tests. Tests shall be made in accordance with approved or applicable standards, by an approved testing agency at the expense of the applicant. In the absence of such standards, the Authority Having Jurisdiction shall have the authority to specify the test procedure.

301.2.1.2 Request by Authority Having Jurisdiction. The Authority Having Jurisdiction shall have the authority to require tests to be made or repeated where there is reason to believe that a material or device no longer is in accordance with the requirements on which its approval was based.

301.3 Flood Hazard Areas. Plumbing systems shall be located above the elevation in accordance with the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher.

Exception: Plumbing systems shall be permitted to be located below the elevation in accordance with the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher, provided that the systems are designed and installed to prevent water from entering or accumulating within their components and the systems are constructed to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to such elevation.

301.3.1 Flood Hazard Areas Subject to High- Velocity Wave Action. Plumbing systems in buildings located in flood hazard areas subject to high-velocity wave action shall be in accordance with the requirements of Section 301.3, and plumbing systems, pipes, and fixtures shall not be mounted on or penetrate through walls that are intended to breakaway under flood loads in accordance with the building code.

301.4 Alternative Engineered Design. An alternative engineered design shall comply with the intent of the provisions of this code and shall provide an equivalent level of quality, strength, effectiveness, fire resistance, durability, and safety. Material, equipment, or components shall be designed and installed in accordance with the manufacturer's installation instructions.

301.4.1 Permit Application. The registered professional engineer shall indicate on the design documents that the plumbing system, or parts thereof, is an alternative engineered design so that it is noted on the construction permit application. The permit and permanent permit records shall indicate that an alternative engineered design was part of the approved installation.

301.4.2 Technical Data. The registered professional engineer shall submit sufficient technical data to substantiate the proposed alternative engineered design and to prove that the performance meets the intent of this code.

301.4.3 Design Documents. The registered professional engineer shall provide two complete sets of signed and sealed design documents for the alternative engineered design for submittal to the Authority Having Jurisdiction. The design documents shall include floor plans and a riser diagram of the work. Where appropriate, the design documents shall indicate the direction of flow, pipe sizes, grade of horizontal piping, loading, and location of fixtures and appliances.

301.4.4 Design Approval. An approval of an alternative engineered design shall be at the discretion of the Authority Having Jurisdiction. The exercise of this discretionary approval by the Authority Having Jurisdiction shall have no effect beyond the jurisdictional boundaries of said Authority Having Jurisdiction. An alternative engineered design so approved shall not be considered as in accordance with the requirements, intent, or both of this code for a purpose other than that granted by the Authority Having Jurisdiction.

301.4.5 Design Review. The Authority Having Jurisdiction shall have the authority to require testing of the alternative engineered design in accordance to Section 301.4.6, including the authority to require an independent review of the design documents by a registered professional engineer selected by the Authority Having Jurisdiction and at the expense of the applicant.

301.4.6 Inspection and Testing. The alternative engineered design shall be tested and inspected in accordance with the submitted testing and inspection plan and the requirements of this code.

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

302.0 Iron Pipe Size (IPS) Pipe.

302.1 General. Iron, steel, brass, and copper pipe shall be standard-weight iron pipe size (IPS) pipe.

303.0 Disposal of Liquid Waste.

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

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

304.0 Connections to Plumbing System Required.

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

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

305.0 Damage to Drainage System or Public Sewer.

305.1 Unlawful Practices. It shall be unlawful for a person to deposit, by any means whatsoever, into a plumbing fixture, floor drain, interceptor, sump, receptor, or device, which is connected to a drainage system, public sewer, private sewer, septic tank, or cesspool, any ashes; cinders; solids; rags; inflammable, poisonous, or explosive liquids or gases; oils; grease; or any other thing whatsoever that is capable of causing damage to the drainage system or public sewer.

306.0 Industrial Wastes.

306.1 Detrimental Wastes. Wastes detrimental to the public sewer system or detrimental to the functioning of the sewage treatment plant shall be treated and disposed of as found necessary and directed by the Authority Having Jurisdiction.

306.2 Safe Discharge. Sewage or other waste from a plumbing system that is capable of being deleterious to surface or subsurface waters shall not be discharged into the ground or into a waterway unless it has first been rendered safe by some acceptable form of treatment in accordance with the Authority Having Jurisdiction.

307.0 Location.

307.1 System. Except as otherwise provided in this code, no plumbing system, drainage system, building sewer, private sewage disposal system, or parts thereof shall be located in a lot other than the lot that is the site of the building, structure, or premises served by such facilities.

307.2 Ownership. No subdivision, sale, or transfer of ownership of existing property shall be made in such manner that the area, clearance, and access requirements of this code are decreased.

308.0 Improper Location.

308.1 General. Piping, fixtures, or equipment shall not be so located as to interfere with the normal use thereof or with the normal operation and use of windows, doors, or other required facilities.

309.0 Workmanship.

309.1 Engineering Practices. Design, construction, and workmanship shall be in accordance with accepted engineering practices and shall be of such character as to secure the results sought to be obtained by this code.

309.2 Concealing Imperfections. It is unlawful to conceal cracks, holes, or other imperfections in materials by welding, brazing, or soldering or by using therein or thereon a paint, wax, tar, solvent cement, or other leak-sealing or repair agent.

309.3 Burred Ends. Burred ends of pipe and tubing shall be reamed to the full bore of the pipe or tube, and chips shall be removed.

309.4 Installation Practices. Plumbing systems shall be installed in a manner that is in accordance with this code, applicable standards, and the manufacturer's installation instructions.

310.0 Prohibited Fittings and Practices.

310.1 Fittings. No double hub fitting, single or double tee branch, single or double tapped tee branch, side inlet quarter bend, running thread, band, or saddle shall be used as a drainage fitting, except that a double hub sanitary tapped tee shall be permitted to be used on a vertical line as a fixture connection.

310.2 Drainage and Vent Piping. No drainage or vent piping shall be drilled and tapped for the purpose of making connections thereto, and no cast-iron soil pipe shall be threaded.

310.3 Waste Connection. No waste connection shall be made to a closet bend or stub of a water closet or similar fixture.

310.4 Use of Vent and Waste Pipes. Except as hereinafter provided in Section 908.0, Section 909.0, and Section 910.0, no vent pipe shall be used as a soil or waste pipe, nor shall a soil or waste pipe be used as a vent. Also, single-stack drainage and venting systems with unvented branch lines are prohibited.

310.5 Obstruction of Flow. No fitting, fixture and piping connection, appliance, device, or method of installation that obstructs or retards the flow of water, wastes, sewage, or air in the drainage or venting systems, in an amount exceeding the normal frictional resistance to flow, shall be used unless it is indicated as acceptable in this code or is approved in accordance with Section 301.1 of this code. The enlargement of a 3 inch (76 mm) closet bend or stub to 4 inches (102 mm) shall not be considered an obstruction.

310.6 Dissimilar Metals. Except for necessary valves, where inter-membering or mixing of dissimilar metals occurs, the point of connection shall be confined to exposed or accessible locations.

310.7 Direction of Flow. Valves, pipes, and fittings shall be installed in correct relationship to the direction of flow.

310.8 Screwed Fittings. Screwed fittings shall be ABS, cast-iron, copper, copper alloy, malleable iron, PVC, steel, or other approved materials. Threads shall be tapped out of solid metal or molded in solid ABS or PVC.

310.9 [OSHPD 1, 2, 3 & 4] *Drainage piping over operating and delivery rooms, nurseries, food preparation centers, food-serving facilities, food storage areas, and other sensitive areas shall be kept to a minimum and shall not be exposed. Special precautions shall be taken to protect these areas from possible leakage from necessary overhead drainage piping systems. Piping over switchboards, panel boards, and motor control centers are subject to restrictions of the California Electrical Code where applicable.*

310.10 [OSHPD 1, 3 & 4] *Floor drains shall not be installed in operating and delivery rooms. Floor drains with self-priming traps may be installed in cystoscopic rooms.*

310.11 [SFM] *For applications listed in Section 111 regulated by the Office of the State Fire Marshal, plastic piping shall not be exposed as a portion of the interior room finish in a building or structure if the piping has a flame-spread rating exceeding 75 when tested in accordance with ASTM E 84-77a, "Test for Surface Burning Characteristics of Building Materials."*

310.12 [OSHPD 1, 2 & 4] Services/Systems and Utilities. *Refer to Section 1224.4.1, California Building Code.*

311.0 Independent Systems.

311.1 General. The drainage system of each new building and of new work installed in an existing building shall be separate and independent from that of any other building, and, where available, every building shall have an independent connection with a public or private sewer.

Exception: Where one building stands in the rear of another building on an interior lot, and no private sewer is available or can be constructed to the rear building through an adjoining court, yard, or driveway, the building drain from the front building shall be permitted to be extended to the rear building.

312.0 Protection of Piping, Materials, and Structures.

312.1 General. Piping passing under or through walls shall be protected from breakage. Piping passing through or under cinders or other corrosive materials shall be protected from external corrosion in an approved manner. Approved provisions shall be made for expansion of hot water piping. Voids around piping passing through concrete floors on the ground shall be sealed.

312.2 Installation. Piping in connection with a plumbing system shall be so installed that piping or connections will not be subject to undue strains or stresses, and provisions shall be made for expansion, contraction, and structural settlement. No plumbing piping shall be directly embedded in concrete or masonry. No structural member shall be seriously weakened or impaired by cutting, notching, or otherwise, as defined in the building code.

312.3 Building Sewer and Drainage Piping. No building sewer or other drainage piping or part thereof, constructed of materials other than those approved for use under or within a building, shall be installed under or within 2 feet (610 mm) of a building or structure, or less than 1 foot (305 mm) below the surface of the ground.

312.4 Corrosion, Erosion, and Mechanical Damage. Piping subject to corrosion, erosion, or mechanical damage shall be protected in an approved manner.

312.5 Protectively Coated Pipe. Protectively coated pipe shall be inspected and tested, and a visible void, damage, or imperfection to the pipe coating shall be repaired in accordance with Section 312.0.

312.6 Freezing Protection. No water, soil, or waste pipe shall be installed or permitted outside of a building or in an exterior wall unless, where necessary, adequate provision is made to protect such pipe from freezing.

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

312.8 Waterproofing of Openings. Joints at the roof around pipes, ducts, or other appurtenances shall be made watertight by the use of lead, copper, galvanized iron, or other approved flashings or flashing material. Exterior wall openings shall be made watertight. Counterflashing shall not restrict the required internal cross-sectional area of the vent.

312.9 Steel Nail Plates. Plastic and copper piping penetrating framing members to within 1 inch (25.4 mm) of the exposed framing shall be protected by steel nail plates not less than No. 18 gauge (0.0478 inches) (1.2 mm) in thickness. The steel nail plate shall extend along the framing member not less than 1½ inches (38 mm) beyond the outside diameter of the pipe or tubing.

Exception: See Section 1210.3.3.

312.10 Sleeves. Sleeves shall be provided to protect piping through concrete and masonry walls and concrete floors.

Exception: Sleeves shall not be required where openings are drilled or bored.

312.10.1 Building Loads. Piping through concrete or masonry walls shall not be subject to a load from building construction.

312.10.2 Exterior Walls. In exterior walls, annular space between sleeves and pipes shall be sealed and made watertight, as approved by the Authority Having Jurisdiction. A penetration through fire-resistive construction shall be in accordance with Section 312.7.

312.10.3 Firewalls. A pipe sleeve through a firewall shall have the space around the pipe completely sealed with an approved fire-resistive material in accordance with other codes.

312.11 Structural Members. A structural member weakened or impaired by cutting, notching, or otherwise shall be reinforced, repaired, or replaced so as to be left in a safe structural condition in accordance with the requirements of the building code.

312.12 Rodentproofing. Strainer plates on drain inlets shall be designed and installed so that no opening exceeds ½ of an inch (12.7 mm) in the least dimension.

312.12.1 Meter Boxes. Meter boxes shall be constructed in such a manner that rats cannot enter a building by following the service pipes from the box into the building.

312.12.2 Metal Collars. In or on buildings where openings have been made in walls, floors, or ceilings for the passage of pipes, such openings shall be closed and protected by the installation of approved metal collars securely fastened to the adjoining structure.

312.12.3 Tub Waste Openings. Tub waste openings in framed construction to crawl spaces at or below the first floor shall be protected by the installation of approved metal collars or metal screen securely fastened to the adjoining structure with no opening exceeding ½ of an inch (12.7 mm) in the least dimension.

313.0 Hangers and Supports.

313.1 Suspended Piping. Suspended piping shall be supported at intervals not to exceed those shown in Table 313.1.

313.2 Piping Support. Piping shall be supported in such a manner as to maintain its alignment and prevent sagging.

313.3 Underground Piping. Piping in the ground shall be laid on a firm bed for its entire length; where other support is otherwise provided, it shall be approved in accordance with Section 301.0 of this code.

313.4 Strength. Hangers and anchors shall be of sufficient strength to support the weight of the pipe and its contents. Piping shall be isolated from incompatible materials.

313.5 Piping, Fixtures, Appliances, and Appurtenances. Piping, fixtures, appliances, and appurtenances shall be adequately supported in accordance with this code, the manufacturer's installation instructions, and in accordance with the Authority Having Jurisdiction.

313.6 Hanger Rod Sizes. Hanger rod sizes shall be no smaller than those shown in Table 313.6.

TABLE 313.6
HANGER ROD SIZES

PIPE AND TUBE SIZE (inches)	ROD SIZE (inches)
½ – 4	⅜
5 – 8	½
10 – 12	⅝

For SI units: 1 inch = 25.4 mm

313.7 Gas Piping. Gas piping shall be supported by metal straps or hooks at intervals not to exceed those shown in Table 1210.2.4.1.

313.8 [OSHPD 1, 2, 3 & 4] *Refer to Title 24, Part 2 of the California Building Code for seismic anchorage and bracing requirements and accommodations for building displacements.*

314.0 Trenching, Excavation, and Backfill.

314.1 Trenches. Trenches deeper than the footing of a building or structure and paralleling the same shall be not less than 45 degrees (0.79 rad) therefrom, or as approved in accordance with Section 301.0 of this code.

314.2 Tunneling and Driving. Tunneling and driving shall be permitted to be done in yards, courts, or driveways of a building site. Where sufficient depth is available to permit, tunnels shall be permitted to be used between open-cut trenches. Tunnels shall have a clear height of 2 feet (610 mm) above the pipe and shall be limited in length to one-half the depth of the trench, with a maximum length of 8 feet (2438 mm). Where pipes are driven, the drive pipe shall be not less than one size larger than the pipe to be laid.

314.3 Open Trenches. Excavations required to be made for the installation of a building drainage system or part thereof, within the walls of a building, shall be open trench work and shall be kept open until the piping has been inspected, tested, and accepted.

314.4 Excavations. Excavations shall be completely backfilled as soon after inspection as practicable. Precaution shall be taken to ensure compactness of backfill around piping without damage to such piping. Trenches shall be backfilled in thin layers to 12 inches (305 mm) above the top of the piping with clean earth, which shall not contain stones, boulders, cinderfill, frozen earth, construction debris, or other materials that will damage or break the piping or cause corrosive action. Mechanical devices such as bulldozers, graders, etc., shall be permitted to then be used to complete backfill to grade. Fill shall be properly compacted. Precautions shall be taken to ensure permanent stability for pipe laid in filled or made ground.

315.0 Joints and Connections.

315.1 Unions. Approved unions shall be permitted to be used in drainage piping where accessibly located in the trap seal or between a fixture and its trap in the vent system, except underground or in wet vents, at a point in the water supply system, and in gas piping as permitted by Section 1211.5.

315.2 Prohibited Joints and Connections. A fitting or connection that has an enlargement, chamber, or recess with a ledge, shoulder, or reduction of pipe area that offers an obstruction to flow through the drain shall be prohibited.

315.2.1 Obstruction. No fitting or connection that offers abnormal obstruction to flow shall be used. The enlargement of a 3 inch (76 mm) closet bend or stub to 4 inches (102 mm) shall not be considered an obstruction.

316.0 Increasers and Reducers.

316.1 General. Where different sizes of pipes and fittings are to be connected, the proper size increasers or reducers or reducing fittings shall be used between the two sizes. Brass or cast-iron body cleanouts shall not be used as a reducer or adapter from cast-iron drainage pipe to iron pipe size (IPS) pipe.

317.0 Food-Handling Establishments.

317.1 General. Food or drink shall not be stored, prepared, or displayed beneath soil or drain pipes, unless those areas are protected against leakage or condensation from such pipes reaching the food or drink as described below. Where building design requires that soil or drain pipes be located over such areas, the installation shall be made with the least possible number of joints and shall be installed so as to connect to the nearest adequately sized vertical stack with the provisions as follows:

(1) Openings through floors over such areas shall be sealed watertight to the floor construction.

(2) Floor and shower drains installed above such areas shall be equipped with integral seepage pans.

(3) Soil or drain pipes shall be of an approved material as listed in Table 1401.1 and Section 701.1. Materials shall comply with established standards. Cleanouts shall be extended through the floor construction above.

(4) Piping subject to operation at temperatures that will form condensation on the exterior of the pipe shall be thermally insulated.

(5) Where pipes are installed in ceilings above such areas, the ceiling shall be of the removable type, or shall be provided with access panels in order to form a ready access for inspection of piping.

318.0 Test Gauges.

318.1 General. Tests in accordance with this code, which are performed utilizing dial gauges, shall be limited to gauges having the following pressure graduations or incrementations.

318.2 Pressure Tests (10 psi or less). Required pressure tests of 10 pounds-force per square inch (psi) (69 kPa) or less shall be performed with gauges of 0.10 psi (0.69 kPa) incrementation or less.

318.3 Pressure Tests (greater than 10 psi to 100 psi). Required pressure tests exceeding 10 psi (69 kPa) but less than or equal to 100 psi (689 kPa) shall be performed with gauges of 1 psi (7 kPa) incrementation or less.

318.4 Pressure Tests (exceeding 100 psi). Required pressure tests exceeding 100 psi (689 kPa) shall be performed with gauges incremented for 2 percent or less of the required test pressure.

318.5 Pressure Range. Test gauges shall have a pressure range not exceeding twice the test pressure applied.

319.0 ***[Not permitted for OSHPD 1, 2, 3 & 4]*** **Medical Gas and Vacuum Systems.**

319.1 General. Such piping shall be installed, tested, and verified in accordance with the applicable standards referenced in Table 1401.1 and the requirements of Chapter 13. The Authority Having Jurisdiction shall require evidence of the competency of the installers and verifiers.

TABLE 313.1
HANGERS AND SUPPORTS

MATERIALS	TYPES OF JOINTS	HORIZONTAL	VERTICAL
Cast	Lead and Oakum	5 feet, except 10 feet where 10 foot lengths are installed[1, 2, 3]	Base and each floor, not to exceed 15 feet
	Compression Gasket	Every other joint, unless over 4 feet then support each joint[1, 2, 3]	Base and each floor, not to exceed 15 feet
Cast-Iron Hubless	Shielded Coupling	Every other joint, unless over 4 feet then support each joint[1,2,3,4]	Base and each floor, not to exceed 15 feet
Copper Tube and Pipe	Soldered or Brazed	1½ inches and smaller, 6 feet; 2 inches and larger, 10 feet	Each floor, not to exceed 10 feet[5]
Steel and Brass Pipe for Water or DWV	Threaded or Welded	¾ inch and smaller, 10 feet; 1 inch and larger, 12 feet	Every other floor, not to exceed 25 feet[5]
Steel, Brass, and Tinned Copper Pipe for Gas	Threaded or Welded	½ inch, 6 feet; ¾ inch and 1 inch, 8 feet; 1¼ inches and larger, 10 feet	½ inch, 6 feet; ¾ inch and 1 inch, 8 feet; 1¼ inches every floor level
Schedule 40 PVC and ABS DWV	Solvent Cemented	All sizes, 4 feet; allow for expansion every 30 feet[3,6]	Base and each floor; provide mid-story guides; provide for expansion every 30 feet[6]
CPVC	Solvent Cemented	1 inch and smaller, 3 feet; 1¼ inches and larger, 4 feet	Base and each floor; provide mid-story guides[6]
Lead	Wiped or Burned	Continuous Support	Not to exceed 4 feet
Copper	Mechanical	In accordance with standards acceptable to the Authority Having Jurisdiction	
Steel and Brass	Mechanical	In accordance with standards acceptable to the Authority Having Jurisdiction	
PEX	Cold Expansion, Insert and Compression	1 inch and smaller, 32 inches; 1¼ inches and larger, 4 feet	Base and each floor; provide mid-story guides
PEX-AL-PEX	Metal Insert and Metal Compression	½ inch, ¾ inch, 1 inch } All sizes 98 inches	Base and each floor; provide mid-story guides
PE-AL-PE	Metal Insert and Metal Compression	½ inch, ¾ inch, 1 inch } All sizes 98 inches	Base and each floor; provide mid-story guides
Polypropylene (PP)	Fusion weld (socket, butt, saddle, electrofusion), threaded (metal threads only), or mechanical	1 inch and smaller, 32 inches; 1¼ inches and larger, 4 feet	Base and each floor; provide mid-story guides

For SI units: 1 inch = 25.4 mm, 1 foot = 304.8 mm

Notes:

1 Support adjacent to joint, not to exceed 18 inches (457 mm).

2 Brace not to exceed 40 foot (12 192 mm) intervals to prevent horizontal movement.

3 Support at each horizontal branch connection.

4 Hangers shall not be placed on the coupling.

5 Vertical water lines shall be permitted to be supported in accordance with recognized engineering principles with regard to expansion and contraction, where first approved by the Authority Having Jurisdiction.

6 See the appropriate IAPMO Installation Standard for expansion and other special requirements.

CALIFORNIA PLUMBING CODE – MATRIX ADOPTION TABLE
CHAPTER 4 - PLUMBING FIXTURES AND FIXTURE FITTINGS

(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)	X		X	X			X	X	X	X	X	X		X	X		X		
Adopt only those sections that are listed below					X	X							X						
Chapter/Section																			
Note Under Title						X													
403.2 & subsections			X	X															
403.3.1 & subsections			X	X															
403.6			X																
403.7			X																
403.8			X	X															
408.2			X																
408.5 Exception 1					X														
408.6 Exception 3					X														
413.3									X	X	X	X							
415.1			X																
421.1					X														
422.2			†	†															
422.2.1 & Exception									X	X	X	X							
422.4			†	†															
422.5			†	†															
422.6																	X		
422.7																	X		
422.8																			
422.9														X					
Table A	X						X	X											
Table 422.1	X		X	X	X	X	X	X	X	X	X	X							
Table 422.1 Minimum Plumbing Facilities (Footnote-4)							X	X											
Table 4-2									X	X	X	X							
Table 4-3	X														X				
Table 4-4	X													X					

The state agency does not adopt sections identified by the following symbol: †

CHAPTER 4

PLUMBING FIXTURES AND FIXTURE FITTINGS

Note: *In addition the requirements of this chapter, which provide access to, or egress from, buildings or facilities where accessibility is required for applications listed in Section 109, of the California Building Code, regulated by the Division of the State Architect– Access Compliance shall also comply with Chapter 11A for public housing and Chapter 11B for public accommodations under authority cited by Gov. Code §4450 and in reference cited by Gov. Code §4450 through 4461, 12955.1 and H&SC §18949.1, 19952 through 19959.*

401.0 Materials – General Requirements.

401.1 Quality of Fixtures. Plumbing fixtures shall be constructed of dense, durable, non-absorbent materials and shall have smooth, impervious surfaces, free from unnecessary concealed fouling surfaces. Except as permitted elsewhere in this code, fixtures shall comply with the quality and design of nationally recognized applicable standards referenced in Table 1401.1.

401.2 Lead. Sheet lead shall be not less than the following:

For safe pans not less than 4 pounds per square foot (lb/ft^2) (19 kg/m^2) or 1/16 of an inch (1.6 mm) thick. (See Table 1401.1)

402.0 Installation.

402.1 Cleaning. Plumbing fixtures shall be installed in a manner to afford easy access for repairs and cleaning. Pipes from fixtures shall be run to the nearest wall.

402.2 Joints. Where a fixture comes in contact with the wall or floor, the joint between the fixture and the wall or floor shall be made watertight.

402.3 Securing Fixtures. Floor-outlet or floor-mounted fixtures shall be rigidly secured to the drainage connection and to the floor, where so designed, by screws or bolts of copper, brass, or other equally corrosion-resistant material.

402.4 Wall-Hung Fixtures. Wall-hung fixtures shall be rigidly supported by metal supporting members so that no strain is transmitted to the connections. Flush tanks and similar appurtenances shall be secured by approved non-corrosive screws or bolts.

402.5 Setting. Fixtures shall be set level and in proper alignment with reference to adjacent walls. No water closet or bidet shall be set closer than 15 inches (381 mm) from its center to a side wall or obstruction nor closer than 30 inches (762 mm) center to center to a similar fixture. The clear space in front of a water closet or bidet shall be not less than 24 inches (610 mm). No urinal shall be set closer than 12 inches (305 mm) from its center to a side wall or partition nor closer than 24 inches (610 mm) center to center.

Exception: The installation of paper dispensers or accessibility grab bars shall not be considered obstructions.

402.6 Flanged Fixture Connections. Fixture connections between drainage pipes and water closets, floor outlet service sinks and urinals shall be made by means of approved brass, hard lead, ABS, PVC, or iron flanges caulked, soldered, solvent cemented; rubber compression gaskets; or screwed to the drainage pipe. The connection shall be bolted with an approved gasket, washer, or setting compound between the fixture and the connection. The bottom of the flange shall be set on an approved firm base.

Wall-mounted water closet fixtures shall be securely bolted to an approved carrier fitting. The connecting pipe between the carrier fitting and the fixture shall be an approved material and designed to accommodate an adequately sized gasket. Gasket material shall be neoprene, felt, or similar approved types.

402.6.1 Closet Rings (Closet Flanges). Closet rings (closet flanges) for water closets or similar fixtures shall be of an approved type and shall be bronze, copper, hard lead, cast-iron, galvanized malleable iron, ABS, PVC, or other approved materials. Each such closet ring (closet flange) shall be approximately 7 inches (178 mm) in diameter and, where installed, shall, together with the soil pipe, present a 1½ inch (38 mm) wide flange or face to receive the fixture gasket or closet seal.

Caulked-on closet rings (closet flanges) shall be not less than ¼ of an inch (6.4 mm) thick and not less than 2 inches (51 mm) in overall depth.

Closet rings (closet flanges) shall be burned or soldered to lead bends or stubs, shall be caulked to cast-iron soil pipe, shall be solvent cemented to ABS and PVC, and shall be screwed or fastened in an approved manner to other materials.

Closet bends or stubs shall be cut off so as to present a smooth surface even with the top of the closet ring before rough inspection is called.

Closet rings (closet flanges) shall be adequately designed and secured to support fixtures connected thereto.

402.6.2 Securing Closet Flanges. Closet screws, bolts, washers, and similar fasteners shall be of brass, copper, or other listed, equally corrosion-resistant materials. Screws and bolts shall be of a size and number to properly support the fixture installed.

402.6.3 Securing Floor-Mounted, Back-Outlet Water Closet Bowls. Floor-mounted, back-outlet water closet bowls shall be set level with an angle of 90 degrees (1.57 rad) between the floor and wall at the centerline of the fixture outlet. The floor and wall shall have a flat mounting surface not less than 5 inches (127 mm) to the right and left of the fixture outlet centerline. The fixture shall be secured to the wall outlet flange or drainage connection and to the floor by corrosion-resistant screws or bolts. The closet flange shall be secured to a firm base.

Where floor-mounted, back-outlet water closets are used, the soil pipe shall be not less than 3 inches (80 mm) in diameter. Offset, eccentric, or reducing floor flanges shall not be used.

402.7 Accessible Plumbing Facilities. Where accessible facilities are required in applicable building regulations, the facilities shall be installed in accordance with those regulations. ***[HCD 1-AC]*** *For specific requirements regarding accommodations for persons with disabilities, see California Code of Regulations, Title 24, Part 2, Chapter 11A.*

402.8 Supply Fittings. The supply lines and fittings for every plumbing fixture shall be so installed as to prevent backflow in accordance with Chapter 6.

402.9 Installation. Water-conserving fixtures shall be installed in strict accordance with the manufacturer's installation instructions to maintain their rated performance.

402.10 Design and Installation of Plumbing Fixtures. Plumbing fixtures shall be installed such that fixture fittings shall be in accordance with the backflow prevention requirements of ASME A112.18.1/CSA B125.1. These requirements shall not be compromised by the designated fixture fitting mounting surface.

402.11 Slip Joint Connections. Fixtures having concealed slip joint connections shall be provided with an access panel or utility space not less than 12 inches (305 mm) in its least dimension and so arranged without obstructions as to make such connections accessible for inspection and repair.

402.12 Future Fixtures. Where provisions are made for the future installation of fixtures, those provided for shall be considered in determining the required sizes of drain pipes. Construction for future installations shall be terminated with a plugged fitting or fittings. Where the plugged fitting is at the point where the trap of a fixture is installed, the plumbing system for such fixture shall be complete and be in accordance with the plumbing requirements of this code.

403.0 Water-Conserving Fixtures and Fittings.

403.1 Flush Volumes. Flush volumes for low-consumption and water-saver water closets and urinals shall comply with applicable standards referenced in Table 1401.1.

403.2 Water Closets. Water closets, either flush tank, flushometer tank, or flushometer valve operated, shall have an average consumption not to exceed 1.6 gallons (6.0 Lpf) of water per flush.

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

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

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

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

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

403.3.1 Nonwater Urinals. ***[Not adopted for OSHPD 1, 2, 3, & 4]*** Nonwater urinals shall be listed and comply with the applicable standards referenced in Table 1401.1. Nonwater urinals shall have a barrier liquid sealant to maintain a trap seal. Nonwater urinals shall permit the uninhibited flow of waste through the urinal to the sanitary drainage system. Nonwater urinals shall be cleaned and maintained in accordance with the manufacturer's instructions after installation. Where nonwater urinals are installed they shall have a water distribution line rough-in to the urinal location to allow for the installation of an approved backflow prevention device in the event of a retrofit. *For additional information, see Health and Safety Code Section 17921.4.*

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

403.4 Metered Faucets. Self-closing or self-closing metering faucets shall be installed on lavatories intended to serve the transient public, such as those in, but not limited to, service stations, train stations, airports, restaurants, and convention halls. Metered faucets shall deliver a maximum of 0.*25* gallons (0.95 L) of water per use.

403.5 Pre-Rinse Spray Valve. Commercial food service pre-rinse spray valves shall have a maximum flow rate of 1.6 gallons per minute (gpm) at 60 pounds-force per square inch (psi) (6.0 L/m at 414 kPa) in accordance with ASME A112.18.1/CSA B125.1 and shall be equipped with an integral automatic shutoff.

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

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

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

TABLE 4-2
[OSHPD 1, 2, 3 & 4][24] MINIMUM PLUMBING FACILITIES

SPACE	HANDWASHING FIXTURE	SCRUB SINKS[3]	TOILETS	BATHTUBS OR SHOWERS	SERVICE SINKS[1]	CLINIC SINKS
Administration Lobby						
Public Toilet - Male	*1*[2]		*1*			
Public Toilet - Female	*1*[2]		*1*			
Airborne infection isolation room	*1*					
Airborne infection isolation anteroom	*1*[20]					
Airborne infection isolation toilet room	*1*[2]		*1*[5]	*1*[5]		
Cardiac Catheterization procedure room		*1*[4, 33]				
Central Sterile Supply	*1*[15]					
Cesarean/Delivery Service Space						
Labor Rooms	*1*[33]		*1*[9]	*1*[9]		
Recovery Room	*1*[33]					*1*
Drug distribution station	*1*					
Cesarean operating room		*2*[10, 33]				
Delivery room		*1*[10, 33]				
Staff lounge						
Staff Toilet - Male	*1*		*1:1-15*			
Staff Toilet - Female	*1*		*1:1-15*			
LDR or LDRP room	*1*[33]		*1*	*1*		
Waiting area/room						
Public Toilet - Male	*1*[2]		*1*			
Public Toilet - Female	*1*[2]		*1*			
Clinical Laboratory Service Space[11]	*1*					
Dietetic Service Space					*1*	
Kitchen	*1*[33]					
Food serving area	*1*[33]					
Food Preparation	*1*[33]					
Dietary Staff Toilet - Male	*1*[2]		*1:1-15*			
Dietary Staff Toilet - Female	*1*[2]		*1:1-15*			
Emergency Service Treatment room	*1*					
Open plan	*1:4 cubicles*					
Observation units	*1:4 cubicles*					
Trauma/Cardiac, Emergency surgery, Cystoscopy, Cast Room		*1*[4,33]				
Intensive Care Units[7]					*1*	*1*
Open plan	*1:3 beds*[33]					
Patient rooms[28]	*1*[33]					
Newborn Intensive Care Unit (NICU)	*1:4 bassinets*[17, 33]				*1*	*1*
Control station	*1*[33]					
Staff lounge						
Staff Toilet - Male	*1*[2]		*1:1-15*			
Staff Toilet - Female	*1*[2]		*1:1-15*			
Employee dressing rooms and lockers						
Staff Toilet - Male	*1*[2]		*1:1-15*			

SPACE	HANDWASHING FIXTURE	SCRUB SINKS[3]	TOILETS	BATHTUBS OR SHOWERS	SERVICE SINKS[1]	CLINIC SINKS
Staff Toilet - Female	*1*[2]		*1:1-15*			
Exam and treatment rooms	*1*					
Housekeeping room[1]					*1*	
Laboratories	*1*[15]					
Laundry soiled linen, receiving, holding and sorting	*1*					
Medicine preparation room	*1*[19]					
Morgue and Autopsy	*1*					
Nourishment area	*1+1*[2]					
Nuclear Medicine room	*1*					
Mold room	*1*					
Patient room	*1*					
Patient toilet and bath facilities[13]	*1*[2]		*1:4 beds*	*1:12*[16]		
Central bathing facility[16]			*1*	*1*		
Administration Center or Nurses' Stations[27]	*1*		*1*[12]			
Newborn/well baby nursery	*1:6 bassinets*[33]					
Workroom	*1*[33]					
Gastrointestinal endoscopy procedure room	*1*[33]					
Pediatric and Adolescent Unit toilet room	*1*[2,26]		*1*[26]			
Pharmacy	*1*[25]					
Staff Toilet - Male	*1*[2]		*1:1-15*			
Staff Toilet - Female	*1*[2]		*1:1-15*			
Compounding area for parenteral solutions	*1*					
Postanesthesia care units (PACU)						*1*
Open plan	*1:4 gurney spaces*[33]					
Individual rooms	*1*[33]					
Protective environment room	*1*[33]					
Protective environment anteroom	*1*[20,33]					
Protective environment toilet room	*1*[2]		*1*[5]	*1*[5]		
Psychiatric unit patient room	*1*		*1*			
Radiological/Imaging Services Space	*1*		*1*[29]			
Computerized tomography (CT)						
Ultrasound[8]			*1*[30]			
Angiography		*1*[4, 31]				
Fluoroscopy[8]			*1*[30]			
Staff Toilet[18] *- Male*	*1*[2]		*1:1-15*			
Staff Toilet[18] *- Female*	*1*[2]		*1:1-15*			
Rehabilitation Therapy Space						
Training toilet			*1*			
Physical therapy service space	*1*					
Occupational therapy service space	*1*					
Speech pathology	*1*					
Renal Dialysis Service Space	*1:4 stations*				*1*	
Bloodborne Infection Isolation Room	*1*					
Nurses' station	*1*					
Medication dispensing	*1*					
Home training room	*1*					

SPACE	HANDWASHING FIXTURE	SCRUB SINKS[3]	TOILETS	BATHTUBS OR SHOWERS	SERVICE SINKS[1]	CLINIC SINKS
Repair room[11]	*1*				*1*	
Dialysis Patient toilet	*1*		*1*			
Staff lounge						
Staff Toilet - Male	*1*		*1:1-15*	*1 shower*		
Staff Toilet - Female	*1*		*1:1-15*	*1 shower*		
Surgical Service Space		*2*[33]			*1*	
Staff clothing change areas						
Staff Toilet - Male	*1*[2]		*1*	*1 shower*		
Staff Toilet - Female	*1*[2]		*1*	*1 shower*		
Clean-up rooms	*1*					
Substerile area	*1*					
Anesthesia workroom	*1*					
Soiled workroom or soiled holding	*1*					*1*[34]
Cancer treatment/infusion therapy treatment	*1:4 stations*					
Utility/Work Room						
Clean[21]	*1*					
Soiled[22]	*1*					*1*[14]
Patient beds [Skilled Nursing/Intermediate Care Facilities][medical model]	*1:8*[2]		*1:6*	*1:20*		
Patient toilet and bath facilities[13] *[Correctional Treatment Center]*	*1:8*[2]		*1:6*	*1:12*		
Airborne infection isolation anteroom[6] *[Correctional Treatment Center]*	*1*[6]		*1*[6]	*1*[6]		
Airborne infection isolation anteroom [Correctional Treatment Center]	*1*					
Protective environment room[6] *[Correctional Treatment Center]*	*1*[6]		*1*[6]	*1*[6]		
Protective environment anteroom [Correctional Treatment Center]	*1*					

Notes:

[1] Each department or nursing unit shall be served by a housekeeping room equipped with a service sink. Departments may share service closets provided the departmental services are compatible. A dedicated housekeeping room shall be provided for the following services: Surgical/Catherization, ICU, NICU, nursery, dietary, renal dialysis and outpatient surgery.

[2] Conventional spouts and controls on hot-and cold-water supplies are acceptable. Aerators are not permitted. Non-aerating laminar flow devices are permitted. Nourishment areas shall have a handwashing fixture in or immediately accessible from the nourishment area, in addition to a nourishment sink.

[3] Scrub sinks shall be located outside of sterile procedure rooms. A minimum of two scrub sinks shall be provided in a surgical unit containing one operating room. Four scrub sinks shall be provided in surgical units containing two operating rooms. One additional scrub sink shall be provided per each additional operating room.

[4] The scrub sink is in addition to the required number for surgeries.

[5] The following fixtures shall be provided in airborne infection or protective environment rooms of hospitals only:

a. Within an adjoining toilet room, a lavatory, a shower containing a seat or a space for a shower chair, and toilet equipped with bedpan flushing attachment with a vacuum breaker.

b. A handwashing fixture within a separate anteroom.

[6] The following fixtures shall be provided in isolation rooms of correctional treatment centers only:

a. Within an adjoining toilet area, a handwashing fixture, a shower containing a seat or a space for a shower chair, and water closet equipped with bedpan flushing attachment with a vacuum breaker.

b. A handwashing fixture within a separate anteroom.

[7] Includes burn center spaces, acute respiratory-care service spaces, and coronary-care service spaces.

[8] A toilet room with handwashing fixture shall directly adjoin each procedure room.

[9] One toilet with lavatory and one shower may serve two labor rooms.

[10] One additional scrub sink for each additional cesarean or delivery operating room.

[11] Provide emergency eye-wash and shower.

[12] Conveniently located for staff use.

[13] Fixtures serving individual patient rooms shall not be considered as meeting the required ratios for bedrooms not served by individual adjoining toilet or bathrooms.

[14] The clinic sink may be deleted if all bedrooms in the nursing unit are provided with adjoining toilets with bedpan flushing devices.

[15] Conventional controls on hot-and cold-water supplies are acceptable. The water discharge points shall be 5 inches (127 millimeters) above the fixture rim. Aerators are not permitted. Non-aerating laminar flow devices are permitted.

[16] *A minimum of one bathtub is required on each floor of an acute care or acute psychiatric hospital providing skilled nursing or intermediate care services. Special bathing facilities/gurney shower shall be provided at a minimum ratio of one per 100 beds for acute care facilities.*

[17] *In a multiple-bed room, every bed position shall be within 20 feet (6 meters) of a hands-free handwashing fixture. Where an individual room concept is used, a handwashing fixture shall be provided within each infant care room.*

[18] *When three or more procedure rooms are provided.*

[19] *If a separate medicine room is provided, the room shall be equipped with a sink in addition to the nurses' station handwashing fixture. Hot-water supplies are optional.*

[20] *Not required when there is a handwash fixture in the patient bed room.*

[21] *Handwashing fixtures may be deleted if room is used for storage and holding only.*

[22] *If room is used only for temporary holding of soiled materials, clinic sink and work counter may be omitted. If the flushing-rim clinical sink is eliminated, facilities for cleaning bedpans shall be provided elsewhere.*

[23] *Toilet shall be equipped with a bedpan flushing attachment.*

[24] *Optional services approved by the licensing agency shall comply with the applicable space requirements of OSHPD 1 and 2.*

[25] *Shall be provided in each separate room where open medication is handled.*

[26] *Conveniently accessible throughout the unit.*

[27] *Includes rooms or areas within coronary and intensive-care units and postanethesia recovery rooms.*

[28] *Modular toilet/sink combination units located within a privacy curtain may be used within individual patient space or private room. The toilet fixture shall be completely contained within cabinetry when not in use, and shall be enclosed when flushed. Bedpan washers shall not be permitted in patient bedrooms.*

[29] *In service spaces with procedure rooms that do not have dedicated patient toilets, provide a minimum of one patient toilet room with a separate handwashing fixture within the service space.*

[30] *Toilet room shall be accessible from the procedure room.*

[31] *Scrub sink shall be located outside the staff entrance to the procedure room.*

[32] *Not used.*

[33] *Handwashing and scrub sink fixtures shall not be equipped with wrist or elbow blades but shall be equipped with sensor controls, or controls that do not involve contact with the upper extremities.*

[34] *If room is used only for temporary holding of soiled material, clinic sink and work counter may be omitted.*

TABLE 4-3

TYPE OF BUILDING OR OCCUPANCY	WATER CLOSETS (FIXTURES PER PERSON)		URINALS (TROUGH URINAL TO INDIVIDUAL URINAL EQUIVALENCE)	LAVATORIES (FIXTURES PER PERSON)	BATHTUBS OR SHOWERS FIXTURES PER PERSON)[7]	DRINKING FOUNTAINS (FIXTURES PER PERSON)[3]
	MALE	FEMALE	MALE			
Nonindustrial—office buildings, public buildings and similar establishments	*1 1-15 2 16-35 3 36-55 4 56-80 5 81-110 6 111-150 1 additional for each additional 40 employees or fraction thereof*	*1 1-15 2 16-35 3 36-55 4 56-80 5 81-110 6 111-150*	*Length of trough urinal — Number of individual urinals: 24" (610 mm) — 1 36" (914 mm) — 2 48" (1219 mm) — 2 60" (1524 mm) — 3*	*1 1-15 2 16-35 3 36-60 4 61-90 5 91-125 1 additional for each additional 4 employees or fraction thereof*	*1:10 persons per shift required to shower*	—
Industrial–factories, warehouses, loft buildings and similar establishments	*1 1-15 2 16-35 3 36-55 4 56-80 5 81-110 6 111-150 1 additional for each additional 40 employees or fraction thereof*	*1 1-15 2 16-35 3 36-55 4 56-80 5 81-110 6 111-150*	*24" (610 mm) — 1 36" (914 mm) — 2 48" (1219 mm) — 2 60" (1524 mm) — 3 72" (1829 mm) — 4*	*1 to 100 employees 1 per 10 Over 100 employees 1 additional for each additional 15 employees or fraction thereof*	*1:10 persons per shift required to shower*	—

Notes:

[1] *The figures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction thereof.*

[2] *Each water closet shall occupy a separate compartment which shall be equipped with a door, door latch and clothes hook. The door and the walls or partitions between fixtures shall be sufficient to assure privacy.*

[3] *Drinking fountains shall not be located in toilet rooms.*

[4] *Washing facilities shall be reasonably accessible to all employees.*

[5] *Toilet facilities shall be accessible to the employees at all times. Where practicable, toilet facilities should be within 200 feet (61 m) of locations at which workers are regularly employed and should not be more than one floor-to-floor flight of stairs from working areas.*

[6] *Urinals may be installed instead of water closets in toilet rooms to be used only by men provided that the number of water closets shall not be less than two thirds of the minimum number of toilet facilities specified. The length of trough urinals to the equivalent number of individual urinals shall be based on the above table.*

[7] *When there are less than five employees, separate toilet rooms for each sex are not required provided toilet rooms can be locked from the inside and contain at least one water closet.*

[8] *Twenty-four linear inches of wash sink or 18 inches of circular basin, when provided with water outlets for such space, shall be considered equivalent to one lavatory.*
Exception: *The requirements of Table 4-3 do not apply to mobile crews or to normally unattended work locations provided employees at these locations have immediately available transportation to nearby toilet facilities which meet the requirements of Table 4-3.*

CALIFORNIA PLUMBING CODE – MATRIX ADOPTION TABLE
CHAPTER 6 - WATER SUPPLY AND DISTRIBUTION

(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)	X		X	X			X	X	X	X	X	X			X				
Adopt only those sections that are listed below		X												X			X		
Chapter/Section																			
601.1 Exceptions			X	X												X			
601.2.2			X	X															
601.3																	X		
601.4															X				
601.5															X				
601.6															X				
601.7															X				
603.5.11			X	X															
603.5.15, Note		X																	
604.1 Exception									X	X	X	X							
Table 604.1	X		X	X			X	X						X	X				
Table 604.1 Asbestos - Cement							†	†											
604.1.1			X	X															
604.1.2			X	X															
604.11 Note			X	X															
604.13	X		X	X															
605.3.3.2									X	X	X	X							
605.4.2			X	X															
605.10 & subsections									X	X	X	X							
605.11	X		X	X															
605.13.2			X																
605.16			X	X					X	X	X	X							
606.8									X	X	X	X							
609.9									X	X	X	X							
609.10			†	†															
Table 610.3				X															
613.0 & subsections									X	X	X	X							
Table 613.1									X	X	X	X							
614.0 & subsections									X	X	X	X							
615.1 subsection									X	X	X	X							
615.2									X	X	X	X							
615.3									X	X	X	X							
615.4									X										

The state agency does not adopt sections identified by the following symbol: †

CALIFORNIA PLUMBING CODE – MATRIX ADOPTION TABLE
CHAPTER 7 - SANITARY DRAINAGE

(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	X						X	X											
Adopt Entire Chapter as amended (amended sections listed below)			X	X					X	X	X	X			X				
Adopt only those sections that are listed below																			
Chapter/Section																			
701.1(2) (a)			X	X															
701.1(2) (b)									X	X	X	X							
Table 702.1				X															
705.10.4			X	X															
710.3.1			X	X															
713.4			X																
717.2															X				
724.0															X				
725.0															X				
726.0															X				
727.0									X										

CALIFORNIA PLUMBING CODE – MATRIX ADOPTION TABLE
CHAPTER 14 - REFERENCED STANDARDS

(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		X							X	X	X	X							
Adopt Entire Chapter as amended (amended sections listed below)	X		X	X			X	X											
Adopt only those sections that are listed below																			
Chapter/Section																			
Table 1401.1	X		X	X			X	X											
ASTM E 119-2010b		†																	
ASTM E 814-2011		†																	
NSF 350-2011		†																	
UL 263-2003		†																	
UL 1479-2003		†																	

The state agency does not adopt sections identified by the following symbol: †

CHAPTER 17
NONPOTABLE RAINWATER CATCHMENT SYSTEMS

1701.0 General.

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

1702.0 Nonpotable Rainwater Catchment Systems.

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

1702.2 Plumbing Plan Submission. No permit for a rainwater catchment system shall be issued until complete plumbing plans, with data satisfactory to the Authority Having Jurisdiction, have been submitted and approved.

> ***1702.2.1 Permit.*** *It shall be unlawful for a person to construct, install, alter, or cause to be constructed, installed, or altered, a nonpotable rainwater catchment system in a building or on a premise without first obtaining a permit to do such work from the Authority Having Jurisdiction.*
>
> ***Exceptions:***
>
> *(1) A permit is not required for exterior rainwater catchment systems used for outdoor non-spray irrigation with a maximum storage capacity of 5000 gallons (18 927 L) where the tank is supported directly upon grade and the ratio of height to diameter or width does not exceed 2 to 1 and it does not require electrical power or a makeup water supply connection.*
>
> *(2) **[HCD 1 & HCD 2]** A permit is not required for exterior rainwater catchment systems used for spray irrigation with a maximum storage capacity of 360 gallons (1363 L).*

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

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

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

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

1702.7 Rainwater Catchment System Materials. Rainwater catchment system materials shall comply with Section 1702.7.1 through Section 1702.7.3.

> **1702.7.1 Water Supply and Distribution Materials.** Rainwater catchment water supply and distribution materials shall comply with the requirements of this code for potable water supply and distribution systems, unless otherwise provided for in this section.
>
> **1702.7.2 Rainwater Catchment System Drainage Materials.** Materials used in rainwater catchment drainage systems, including gutters, downspouts, conductors, and leaders shall be in accordance with the requirements of this code for storm drainage.
>
> **1702.7.3 Storage Tanks.** Rainwater storage tanks shall comply with Section 1702.9.5.

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

1702.9 Design and Installation.

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

FIGURE 1702.9

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

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

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

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

1702.9.4 Minimum Water Quality. The minimum water quality for harvested rainwater shall meet the applicable water quality requirements for the intended applications as determined by the Authority Having Jurisdiction. *In the absence of water quality requirements for harvested rainwater, Table 1702.9.4 shall apply.*

Exception: [BSC] *No treatment is required for rainwater used for non-spray irrigation where the maximum storage volume is less than 5000 gallons (18 927 L) where the tank is supported directly upon grade and the ratio of height to diameter or width does not exceed 2 to 1.*

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

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

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

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

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

1702.9.5.4 Below Grade. Rainwater storage tanks installed below grade shall be structurally designed to withstand anticipated earth or other loads. Holding tank covers shall be capable of supporting an earth load of not less than 300 pounds per square foot (lb/ft^2) (1465 kg/m^2) where the tank is designed for underground installation. Below grade rainwater tanks installed underground shall be provided with manholes. *Below grade storage tanks, located outside of the building, shall be provided with either a manhole not less than 24 inches (610 mm) square or a manhole with an inside diameter of not less than 24 inches (610 mm). Service ports in manhole covers shall be not less than 8 inches (203 mm) in diameter.* The manhole opening shall be located not less than 4 inches (102 mm) above the surrounding grade. The surrounding grade shall be sloped away from the manhole. Underground tanks shall be ballasted, anchored, or otherwise secured, to prevent the tank from floating out of the ground where empty. The combined weight of the tank and hold down system shall meet or exceed the buoyancy force of the tank.

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

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

1702.9.5.6 Opening and Access Protection.

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

1702.9.5.6(B) Human Access. *A minimum of one access opening shall be provided to allow*

TABLE 1702.9.4
MINIMUM TREATMENT AND WATER QUALITY FOR RAINWATER

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

inspection and cleaning. Rainwater tank *manholes and* access openings shall be secured by either a lockable device or other approved method *to prevent unauthorized access*.

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

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

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

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

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

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

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

1702.9.11 Required Filters. A filter permitting the passage of particulates not larger than 100 microns (100 µm) shall be provided for rainwater supplied to water closets, urinals, trap primers, and drip irrigation system*s*.

1702.9.12 Roof Gutters. Gutters shall maintain a minimum slope and be sized in accordance with Section 1106.3.

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

1702.10.1 Commercial, Industrial, Institutional, *and Residential* Restroom Signs. A sign shall be installed in restrooms in commercial, industrial, and institutional occupancies*, and shall also be installed in residential common use area restrooms* using nonpotable rainwater for water closets, urinals, or both. Each sign shall contain the following text:

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

1702.10.2 Equipment Room Signs. Each equipment room containing nonpotable rainwater equipment shall have a sign posted with the following wording in 1 inch (25.4 mm) letters:

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

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

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

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

1702.11.2 Cross-Connection Inspection and Testing. An initial inspection and test in accordance with Section 1702.5 shall be performed on both the potable and rainwater catchment water systems. The potable and rainwater catchment water systems shall be isolated from each other and independently inspected and tested to ensure there is no cross-connection in accordance with Section 1702.11.2.1 through Section 1702.11.2.3.

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

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

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

(1) The potable water system shall be activated and pressurized. The rainwater catchment water system shall be shut down and completely drained.

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

(3) Fixtures, potable and rainwater, shall be tested and inspected for flow. Flow from a rainwater catchment water system outlet shall indicate a cross-connection. No flow from a potable water outlet shall indicate that it is connected to the rainwater water system.

(4) The drain on the rainwater catchment water system shall be checked for flow during the test and at the end of the period.

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

(6) The rainwater catchment water system shall then be activated and pressurized.

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

(8) Fixtures, potable and rainwater catchment, shall be tested and inspected for flow. Flow from a potable water system outlet shall indicate a cross-connection. No flow from a rainwater catchment water outlet shall indicate that it is connected to the potable water system.

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

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

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

(1) Rainwater catchment water piping to the building shall be shut down at the *supply source(s)*, and the rainwater water riser shall be drained.

HISTORY NOTE APPENDIX

CALIFORNIA PLUMBING CODE
(TITLE 24, PART 5, CALIFORNIA CODE OF REGULATIONS)

For prior history, see the History Note Appendix to the California Plumbing Code (CPC), 2010 Triennial Edition effective January 1, 2011.

1. *(BSC 05/12, DSA-SS 05/12, HCD 05/12, OSHPD 06/12, SFM 06/12) Adoption by reference of the 2012 Uniform Plumbing Code (UPC) with necessary state amendments and repeal of the 2009 edition of the UPC. Effective on January 1, 2014.*

2. *(OSHPD 02/13 and 03/13) Change without regulatory effect to remove and make inoperable provisions regarding OSHPD 3SE as ordered by The Superior Court of California, County of Alameda (Case No. RG13681364) Rulemakings were approved by the California Building Standards Commission on November 6, 2013 and filed with the Secretary of State on November 7, 2013, effective December 7, 2013.*

3. *Errata to correct editorial errors within Chapters 1, 3, 4, 6, 7, 14 and 17 of this code. Effective Jan. 1, 2014.*