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# RESIDENTIAL BATHROOM REMODEL

## INTRODUCTION

Bathroom remodels generally require permits. The following information can be used as a guideline for the bathroom requirements. Bathroom remodels require compliance with the following:

2019 California Residential Code (CRC);
2019 California Mechanical Code (CMC);
2019 California Energy Code (CEnC);
2019 California Existing Building Code (CEBC);
The City of Agoura Hills local amendments
2019 California Electric Code (CEC);
2019 California Plumbing Code (CPC);
2019 California Fire Code (CFC);
2019 California Green Building Standards Code (CGBSC);

A bathroom remodel includes the removal and replacement and/or relocation of vanity cabinets, toilets, sinks, tubs & showers, replacement/changes to the lighting or removal & replacement of the wallboard. The replacement of the towel bars, mirrors, paint, and floor coverings where no other work is included is considered a maintenance item and no permit is required for these items.

The following details the minimum requirements of the bathroom electrical, mechanical and plumbing systems:

## ELECTRICAL

- Bathroom receptacle outlets shall be supplied by at least one 20-ampere branch circuit. Such circuits shall have no outlets other than as provided in CEC 550.13(E)(2). [CEC 550.12(E)]
- All 125- volt, single-phase, 15- and 20- ampere receptacles installed in bathrooms shall have ground-fault circuit-interrupter protection for personnel. [CEC 210.8(A)(1)]
- In addition to the number of branch circuits required by other parts of this section, at least one 120-volt, 20-ampere branch circuit shall be provided to supply the bathroom(s) receptacle outlet(s). Such circuits shall have no other outlets. [CEC 210.11(C)(3)]

  **Exception:** Where the 20-ampere circuit supplies a single bathroom, outlets for other equipment within the same bathroom shall be permitted to be supplied in accordance with 21 0.23 (A)(1) and (A)(2).

- In dwelling units, at least one receptacle outlet shall be installed in bathrooms within 3 feet of the outside edge of each basin. The receptacle outlet shall be located on a wall or partition that is adjacent to the basin or basin countertop, located on the countertop, or installed on the side or face of the basin cabinet. In no case shall the receptacle be located more than 12 inches below the top of the basin or basin countertop. Receptacle outlet assemblies listed for use in countertops shall be permitted to be installed in the countertop. [CEC 210.52(D)]
- At least one wall switch-controlled lighting outlet shall be installed in every habitable room and bathroom. [CEC 210.70(A)(1)]
- Ground-fault circuit-interrupter protection for personnel shall be provided for cables installed in electrically heated floors of bathrooms and in hydromassage bathtub locations. [CEC 424.44(G)]
- At least one receptacle outlet shall be installed in bathrooms within 36 inches of the outside edge of each basin. The receptacle outlet shall be located above or adjacent to the basin location. This receptacle shall be in addition to any receptacle that is a part of a luminaire or appliance. The receptacle shall not be enclosed within a bathroom cabinet or vanity. [CEC 550.13(D)(9)]
- For the connection of pipe heating cable(s), a receptacle outlet shall be located on the underside of the unit connected to an interior branch circuit, other than a small appliance branch circuit. It shall be permitted to use a bathroom receptacle circuit for this purpose. [CEC 550.13(E)(2)]
- Luminaires, switches, receptacles, and other electrical equipment located in the same room, and not directly associated with a hydromassage bathtub, shall be installed in accordance with the requirements of Chapters 1 through 4 in this Code covering the installation of that equipment in bathrooms. [CEC 680.72]

**MECHANICAL**

- Each bathroom (with shower and/or tub) shall be mechanically ventilated and shall comply with the following
  - Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
  - Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control.
    - Humidity controls shall be capable of adjustment between a relative humidity range of less than or equal to 50 percent to a maximum of 80 percent. A humidity control may utilize manual or automatic means of adjustment.
    - A humidity control may be a separate component to the exhaust fan and is not required to be integral. (i.e. built-in)

  NOTE: Lighting integral to bathroom exhaust fans shall comply with the California Energy Code. [CMC 402.5; CGBSC 4.506.1]

- Except where a whole house energy recovery system is used, a mechanical exhaust fan vented to the outdoors shall be provided in each room containing a bathtub, shower, or tub/shower combination. The ventilation rate shall be not less than 50 cfm intermittent operation and 20 cfm for continuous operation. Fans shall comply with the Energy Star Program. [CMC Appendix E 605.2]
- Bathroom and laundry room exhaust ducts shall be permitted to be of gypsum wallboard subject to the limitations of Section 602.5. [CMC 504.6]

**PLUMBING**

- Residential buildings undergoing permitted alterations, additions or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval. [CPC 401.3]
- The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-type Toilets.
  NOTE: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush. [CBGSC 4.303.1.1]
- The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons per minute at 20 psi. [CGBSC 4.303.1.4.1]
- Showerheads shall have a maximum flow rate of 1.8 gallons per minute measured at 80 psi and shall be certified to the performance criteria of the U.S. EPA Waterseries Specifications for showerheads [CPC 408.2]
- When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.
  - Note: A hand held shower shall be considered a showerhead. [CGBSC 4.303.1.3.2]
- Shower and tub/shower control valves shall be pressure balancing/thermostatic. These valves shall be installed at the point of use. [CPC 408.3]
- Minimum interior shower size is 1024 square inches (must encompasses a 30” circle). [CPC 408.6]
- Fixtures shall be set level and in proper alignment with reference to adjacent walls. No water closet or bidet shall be set neither closer than 15” from its center to a side wall or obstruction nor closer than 30” center to center to a similar fixture. The clear space in front of a water closet, lavatory or bidet shall be not less than 24”. [CPC 402.5] No Urinal shall be set closer than 12” from its center to the side wall or partition nor closer than 24” center to center.
- The maximum hot water temperature discharging from the bathtub and whirlpool bathtub filler shall be limited to 120°F. The water heater thermostat shall not be considered a control for meeting this provision. [CPC 409.4]
- Bathtub and shower floors and walls above bathtubs with installed shower heads and in shower compartments shall be finished with a nonabsorbent surface. Such surfaces shall extend to a height of not less than 6 feet above the floor. [CRC R307.2]

**WHIRLPOOL/SPA TUBS**

- Bathtubs and whirlpool bathtubs shall comply with ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4, CSA B45.5/IAPMO Z124, or CSA B45.12/IAPMO Z402. Whirlpool bathtubs shall comply with ASME A112.19.7/CSA B45.10. Pressure sealed doors within a bathtub or whirlpool bathtub enclosure shall comply with ASME A112.19.15. [CPC 409.1]
- Bathtubs and whirlpool bathtubs shall have a waste outlet and fixture tailpiece not less than 1 ½ inches in diameter. Fixture tailpieces shall be constructed from the materials specified in Section 701.2 for drainage piping. Waste outlets shall be provided with an approved stopper or strainer. [CPC 409.2]
- The water supply to a bathtub and whirlpool bathtub filler valve shall be protected by an air gap or in accordance with Section 417.0. [CPC 409.5]
- Bathtubs and whirlpool bathtubs shall be installed in accordance with the manufacturer's installation instructions. Access openings shall be of size and opening to permit the removal and replacement of the circulation pump. [CPC 409.6]
    - Whirlpool pump access located in the crawl space shall be located not more than 20 feet (6096 mm) from an access door, trap door, or crawl-hole.
    - The circulation pump shall be located above the crown weir of the trap.
    - The pump and the circulation piping shall be self-draining to minimize water retention. Suction fittings on whirlpool bathtubs shall be listed in accordance with ASME A 112.19.7/ CSA B45.10
    - Flexible PVC hoses and tubing intended to be used on whirlpool bathtub water circulation systems or pneumatic systems shall be in accordance with IAPMO Z1033. [CPC 409.6.1]

**BIDETS**

- Bidets shall comply with the ASME A112.19.2/CSA B45.1 or ASME A112.19.3/CSA B45.4. [CPC 410.1]
- The water supply to the bidet shall be protected by an air gap or in accordance with Section 603.3.2, Section 603.3.5, or Section 603.3.6. [CPC 410.2]
- The maximum hot water temperature discharging from a bidet shall be limited to 110°F (43°C) by a device that is in accordance with ASSE 1070/ASME A 112.1070/CSA B 125.70. Water heater thermostats shall not be considered a control for meeting this provision [CPC 410.3]

**ARC-FAULT CIRCUIT-INTERRUPTER PROTECTION**

- Arc-fault circuit-interrupter protection shall be provided as required in 210.12(A),(B) and (C).
- For new or modified, replaced, or extended circuits the arc-fault circuit interrupter shall be installed in a readily accessible location. [CEC 210.12]

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**SMOKE ALARMS & CARBON MONOXIDE ALARMS:**

In single family residences and multi-family residences (townhomes, condominiums, and apartments), installation of smoke alarms and carbon monoxide alarms is required prior to the final inspection as follows:

**Smoke Alarms:** Where alterations, repairs or additions requiring a permit occur, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings. Smoke alarms shall comply with NFPA 72 and listed in accordance with UL 217. Combination smoke and carbon monoxide alarms shall be listed in accordance with UP217 and UL2034. Systems and components shall be California State Fire Marshal Listed and approved in accordance with California Code of Regulations, Title 19, Division 1 for the purpose which they are installed. Unless previously installed, smoke alarms are required in each sleeping room, outside each separate sleeping area in the immediate vicinity of the bedroom, on each additional story of the dwelling. In existing buildings, alarms may be solely battery operated where alterations or repairs do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for building wiring without the removal of interior finishes. Where more than one smoke alarm is required to be installed, the alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit, except where alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for interconnection without the removal of interior finishes. The alarms shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed. [CRC R314]

**Carbon Monoxide Alarms:** For existing buildings and new construction, carbon monoxide alarms shall be provided in dwelling units if the dwelling unit contains a fuel fired appliance or fireplace OR the dwelling unit has an attached garage. Where an addition is made to an existing dwelling or a fuel burning heater, appliance or fireplace is added to an existing dwelling, not previously required to be provided with carbon monoxide alarms, new carbon monoxide alarms shall be installed outside each separate sleeping area in the immediate vicinity of the bedrooms, on every occupiable level of a dwelling unit, including basements. Where a fuel burning appliance is located within a bedroom or its attached bedroom, a carbon monoxide alarm shall be installed within the bedroom. In existing dwelling units a carbon monoxide alarm is permitted to be solely battery operated where repairs or alterations do not result in the removal of wall and ceiling finishes or there is no access by means of attic, basement or crawl space. Where more than one carbon monoxide alarm is required to be installed, the alarms shall be interconnected in a manner that activation of one alarm shall activate all of the alarms in the individual unit, except where repairs do not result in the removal of wall and ceiling finishes, there is no access by means of attic, basement or crawl space, and no previous method for interconnection existed. [CRC R315]