



RESIDENTIAL BATHROOM REMODEL GENERAL REQUIREMENTS

The following is a list of general requirements for residential water heaters and boilers based on the below building codes. The information provided in this document is generalized and is intended as a guide only. Each project is unique, and additional requirements may be enforced as deemed necessary. Please contact the Building Division for additional information about your specific project.

All projects that deviate from the minimum code requirements may apply for approval as Alternative Materials, Design, and Methods as described in **2022 California Residential Code R104.11**.

Applicable Building Codes:

- 2022 California Building Code (CBC)
- 2022 California Residential Code (CRC)
- 2022 California Mechanical Code (CMC)
- 2022 California Electrical Code (CEC)
- 2022 California Plumbing Code (CPC)
- 2022 California Energy Code (CEnc)
- 2022 California Green Building Standards Code (CalGreen)
- Town of Tiburon Municipal Code

WARNING

Smoke and Carbon Monoxide Alarms must be installed at the time of inspection. See **2022 CRC R315** and **2022 CRC R314** where these alarms are required, appropriate locations, and other pertinent information.

- **Battery operated smoke detectors over ten years old must be replaced.** If date is not indicated on an existing alarm, it must be replaced.

INSPECTIONS

Required Inspections

- **All trades:** Framing, shear walls, rough mechanical, rough plumbing, rough electrical and fire/draft blocking.
- **Insulation:** If applicable.
- **Drywall/ Wet wall** (backerboard): Screw quality and spacing.
- **Final:** smoke and carbon monoxide alarms, torque new breakers, GFCI test, remove debris from crawl space.

Miscellaneous inspections:

- **Tile Lath:** when possible, combine this inspection with shower pan inspection.
- **Tests:** Torque test for new breaks, DWV water test, shower pan test, sink test, and tub test (filled slightly above overflow).

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Framing

- The minimum ceiling height in a bathroom is 7' feet. See **2022 CBC 1208.2**.
- Overcutting of sole or plates to accommodate plumbing pipes shall be repaired with 1-1/2" wide metal strap and fastened with a min. of six 16d nails on each side cut. See **2022 CBC 2308.5.8**.
- Install blocking for rails and cabinets.
- Install fire blocking at ceiling and floor penetrations, top, and bottoms of walls. See **2022 CBC 718.1**.
- Approved fire blocking materials: approved foam and caulking shall be certified materials that resist the free passage of flame and the products of combustion (such as touch 'n seal gun foam ii and listed fire blocking caulk. See **2022 CBC 718.2.1** and **718.2.5**.
- Fire blocking shall be installed at openings around vents, pipes, tub & shower traps, ducts, chimneys, and fireplaces at ceiling and floor levels with approved materials. See **2022 CBC 718.2.5**.
- Tub waste openings in framed construction to crawl spaces shall be protected from rodent intrusion with no openings greater than 1/2". See **FIGURE A-1** for an approved method of protection/access. See **2022 CPC 312.12.3**.

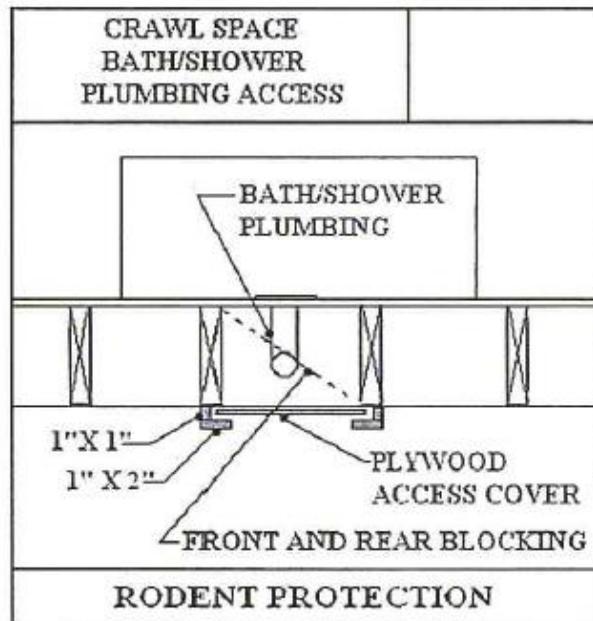


FIGURE A-1

Mechanical

- Each bathroom containing a bathtub, shower or tub/shower combination shall be mechanically ventilated for purposes of humidity control. **NOTE:** Window operation is not a permissible method of providing bathroom exhaust for humidity control. See **2022 CRC R303.3.1**.
- Bathroom fan exhaust shall terminate a min. of 3' from property line and 3' from any openings into a building. See **2022 CMC 502.2.1**.
- Exhaust fans with integral/combo lighting system shall be switched separately from lighting system. Lighting integral to an exhaust fan must be high efficacy. See **2022 CEnC 150 (k)2.G**.
- Exhaust fans at shower shall be listed for wet location. See **2022 CEC 314.15**.
- In-line booster fans are considered an Alternate Method and shall be pre-approved by Town of Tiburon prior to installation. This method is discouraged because of accessibility and maintenance issues. (Not allowed in under floor/crawlspace areas.)

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Electrical

Rough-in and Circuits

- Nail plate protection required when hole edge is 1-1/4" from face of framing. See **2022 CEC 300.4 (A)(1)**.
- An upgrade of the existing electrical service may be required based on the number of and ampacity of new and existing circuits. See **2022 CEC 220**.
- All 125-volt through 250-volt receptacles installed and supplied by single-phase branch circuits rated 150 volts or less to ground shall have ground-fault circuit-interrupter protection and be tamper-resistant. See **2022 CEC 210.8 (A)**.
- Min. (1) 20 amp circuit for bathroom receptacles. See **2022 CEC 210.11(C) (3)**.
- Min. (1) receptacle outlet for bathrooms within 3ft of the outside edge of each sink basin, but located not more than 12" below the top of the basin or basin counter top. See **2022 CEC 210.52(D)**.
- Separate circuits for lights and receptacle outlets. See **2022 CEC 210.23(A)**.
- Light fixtures in wet or damp locations shall be installed so that water cannot enter or accumulate in wiring compartments, lamp holder, or other electrical parts. **2022 CEC 410.10 (A)**.
- Circuit breakers must fulfill the manufacturer of the panel's requirements. **Contractor shall torque at final inspection.** See **2022 CEC 110.3(B)**.

Lighting

- All hardwired lighting shall be high efficacy. See **2022 CEC 150.0(K)1**.
- Paddle fans, light tracks, pendants, or hanging light fixtures are not allowed within 3' horizontal and 8' vertical from tub and shower. See **2022 CEC 410.10 (D)(1)**.
- At least one installed luminaire shall be controlled by an occupancy sensor providing automatic-off functionality. See **2022 CEC 150.0(K)1. E**.
- All luminaries (fixtures) installed in wet locations shall be marked "Suitable for Wet Locations". Damp locations shall be marked "Suitable for Damp Locations" and shall have non-metallic trim. See **2022 CEC 410.10 (A)** and **2022 CEC 410.10(D) (2)**.
- Exhaust fans with integral/combo lighting system shall be switched separately from lighting system. Lighting integral to an exhaust fan must be high efficacy. See **2022 CEnC 150 (k)2.G**.
- Verify that light cans maintain air tightness with a gasket or caulk. See **2022 CEnC 150 (k)1Ciii**.

Plumbing

Water and waste piping

- Test piping system: drain waste, and vent system (DWV) shall be tested with no less than 10' of head water above the system for 15 minutes OR 5 psi air test for 15 minutes. ***Cannot use an air test** on plastic drainage waste, and vent (DWV) piping. See **2022 CPC 712.2, 2022 CPC 712.3, and 2022 CPC 723**.
- Air admittance valves are not allowed.
- Waste vents shall terminate vertically not less than 6" above roof, nor less than 1' from any vertical surface and 10' from or 3' above any opening such as windows, doors, air intake, nor less than 3' from any lot line. See **2022 CPC 906.1 and 2022 CPC906.2**.
- Venting shall be vertical until 6" above the flood rim of the fixture. See **2022 CPC 905.3**.
- Bathtub/whirlpools and shower valves shall be approved pressure- balanced or thermostatic mixing type adjusted to a maximum of 120 degrees. See **2022 CPC 408.3 and 2022 CPC 408.3.2**.
- Use listed fittings (i.e. water supply hoses). See **2022 CPC 604**.
- Accessible full way control valve installed for each sink. See **2022 CPC 606.5**.
- The sink's cleanout is accessible. See **2022 CPC 707.8**.
- Verify new penetrations at roof are properly sealed, flashed, and painted if required. See **2022 CPC 906.1 and 2022 CPC 906.5**.
- Provide a min. 12" access door for fixtures with concealed slip joint connections. See **2022 CPC 402.10**.
- Minimum 1" air gap separation between flood level of sink and tub water supply outlet. See **2022 CPC 603.2, Table 603.2**.

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Fixture fittings/ attachments

- All plumbing fixtures that are not in compliance with 2022 Calgreen Division 4.3 – WATER EFFICICENY AND CONSERVAITON in any residential property shall be replaced with water-conserving plumbing fixtures. See **2022 CalGreen 4.303.1 Note**
- Where two separate handles control the hot and cold water, the left-hand faucet shall control hot water. See **2022 CPC 417.5.**
- Showerheads must have a flow rate of 1.8gpm or less at 80 psi. See **2022 CalGreen 4.303.1.3**
 - When multiple showerheads, including a hand-held showerhead, may serve one shower compartment, the combined flow rate of the compartment’s total cannot exceed 1.8 gpm at 80 psi or the shower can be designed to allow only one shower outlet to be in operation at a time.

Safety glazing

- All windows less than 60” from any standing surface in tubs, shower enclosures, and adjacent to doors require safety glazing. See **2022 CRC R308.4, 2022 CBC 2406.4.3, and 2022 CBC 2406.4.5.**

Shower/Tub Compartment: See **FIGURE A-2**

- Shower and Tub Compartment Approved Tile Back Methods. See **2022 CRC R702.4.2.**
 - **Fasteners:** cement, fiber-cement or glass mat gypsum backers shall be secured with its listed fasteners AND shall be corrosion resistant in shower/tub compartments. See **2022 CRC 702.4.2.**
 - **Method 1:** Fiberglass mat backer board (DensSheild, GlasRoc)
 - Do not install a water-resistive vapor barrier behind fiberglass mat backer board.
 - **Method 2:** Cement and fiber-cement backer boards (Hardi-backer, Glas-crete, and Durarock).
 - A water resistive vapor barrier is required behind cement board (min. grade B paper)
- **Water resistant gypsum board/ green board/purple board shall not be used** in shower or bathtub compartments and where there will be direct exposure to water or in areas subject to continuous high humidity. See **2022 CRC R702.3.7.1.**
- Mortar backed (lath and plaster)
 - A water resistive barrier (min. grade B paper) is required behind lath.
- Shower enclosure doors shall open outward and maintain 22” clearance. See **2022 CRC 408.5.**
- Shower compartment min. 1024 sq. in. and encompasses a 30” circle. See **2022 CPC 408.6.**
- Threshold/dam shall not be less than 2 inches and not more than 9 inches measured from top of the drain. See **2022 CPC 408.5.**
- Showers with horizontal surfaces such as permanent seating, curb, and shelving shall be lined with durable and water-tight materials such as ice and water shield membrane, sheet plastic, lead, or copper. See **2022 CPC 408.7.**
- Maintain the area and dimensions of 70” above the shower drain. See **2022 CPC 408.6.**
 - **Exception:** the min. required area and dimension shall not apply for a shower receptor having overall dimensions of not less than 30” wide by 60” long. See **2022 CPC 408.6.**
- Bathtub/shower compartments shall have nonabsorbent surface extending **72”** above the floor. See **2022 CRC R307.2**
- Caulk must be installed at joints between a tub’s contact with walls and/or floors. See **2022 CPC 402.2.**
- All showers shall have a smooth, hard, nonabsorbent surface to structural elements used in such walls shall be of a type that is not adversely affected by moisture. See **2022 CRC R307.2.**
- Shower door or rod shall be installed prior to final.

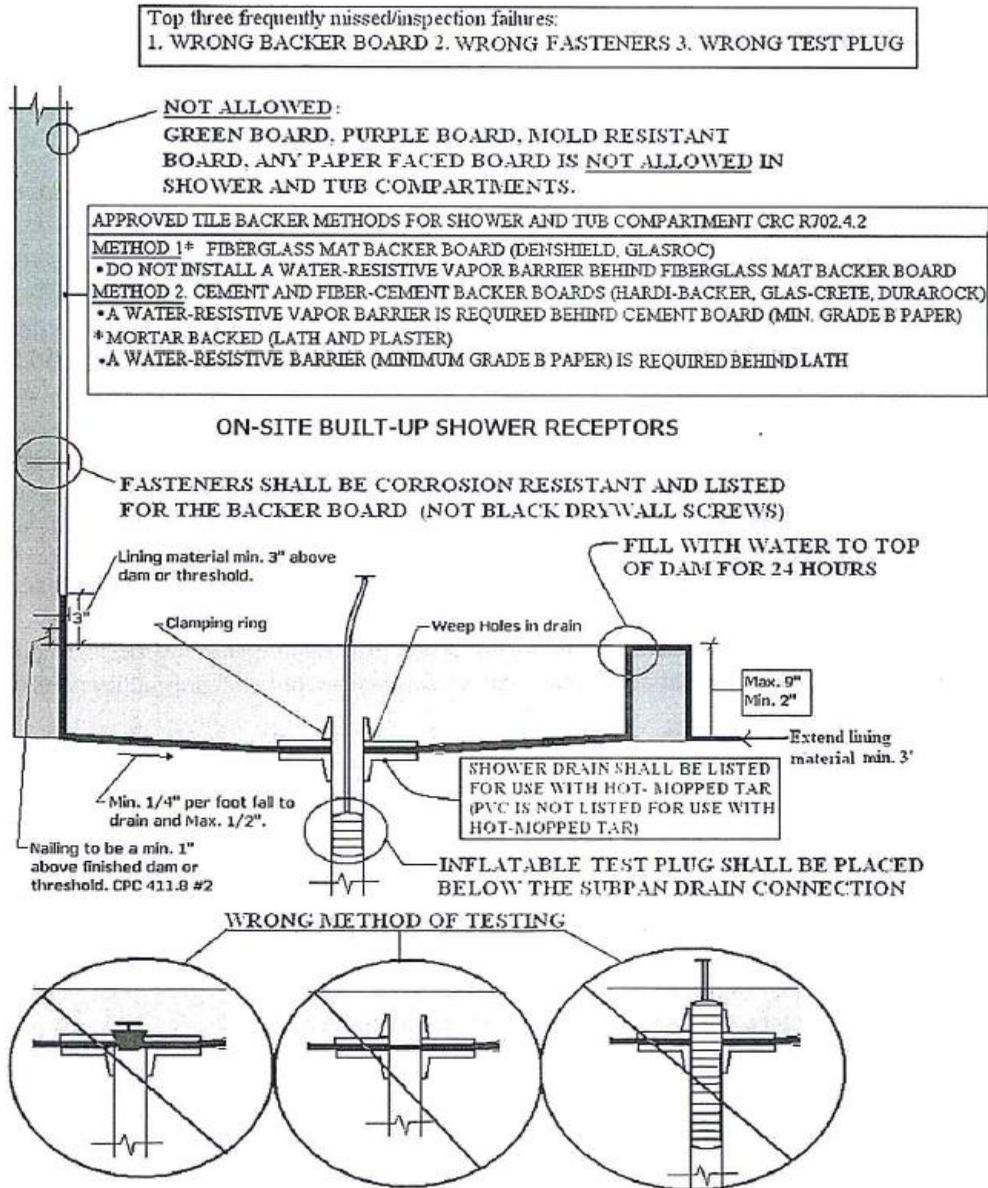


FIGURE A-2

Shower Pan

- **Inspection for shower pan receptor** shower receptors shall be tested for water tightness by filling with water to the level of the rough threshold. The test plug shall be placed that both upper and undersides of the sub-pan shall be subjected to the test at the point where it is clamped to the drain, Test shall be 24 hours min. See **2022 CPC 408.7.5**.
- At the time of inspection, qualified persons with proper tools shall remove test plug and demonstrate weep hole function.
- **Curbless shower pan:** extend approved water proofing material to a min 4' beyond threshold and maintain a 1/4" fall per foot for 4" to drain. Note: recommend extending water proofing over entire bathroom area.
- Linings shall be fastened to an approved backing and shall not be nailed or perforated at any point which may be less than 1 inch above the finished dam or threshold. See **2022 CPC 408.7**.

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Shower Receptors

- **On-site built-up shower receptors:** all lining, hot-mopped or other approved materials shall be pitched $\frac{1}{4}$ " per foot to weep holes in the sub drain of a smooth and solidly formed sub-base. All such lining materials shall extend upward on the rough jambs of the shower opening to a point no less than three inches above the top of the finished dam or threshold and shall extend outward over the top of the rough threshold and be turned over and fastened on the outside face of both the rough threshold and the jambs. No perforations/ nails lower than 1" above dam. See **2022 CPC 408.7**.
- **Factory built shower receptors:** The flange shall be watertight and extend vertically a min. of 1" above top of sides of the receptor. See **2022 CPC 408.5**.
- Floor drains shall be considered plumbing fixtures and each such drain shall be provided with an approved type strainer. Floor drains, floor receptors, and shower drains shall be of an approved type, suitably flanged to provide a watertight joint in the floor. See **2022 CPC 418.2** and **2022 CPC 408.4**.

Hydromassage / Steam Showers

- Installation of hydro massage bathtub motors and steams shower generators must be in accordance with manufacturer's installation instructions. Their manufacturer's installation and operating instructions must be attached to the appliance. See **2022 CPC 303.1**.
- Hydromassage bathtub motors shall be accessible, on a dedicated circuit with their own GFCI circuit and bonded with minimum 8 AWG copper wire. See **2022 CEC 680.70** and **2022 CPC 409.6**.

Water closet and bidets

- Water closets shall have an average water consumption of 1.28 gallons per flush. See **2022 CPC 411.2**.
- Water closet spaces shall be at least 30 inches wide; 15" min from wall or other obstruction to center of the water closet nor closer than 30" center to any similar fixture, with at least 24 inches clear in front of the water closet. See **2022 CPC 402.5**.
- Caulk around the base of wall and floor mounted water closets. See **2022 CPC 402.2**.