

TOWN OF TIBURON BUILDING DIVISION

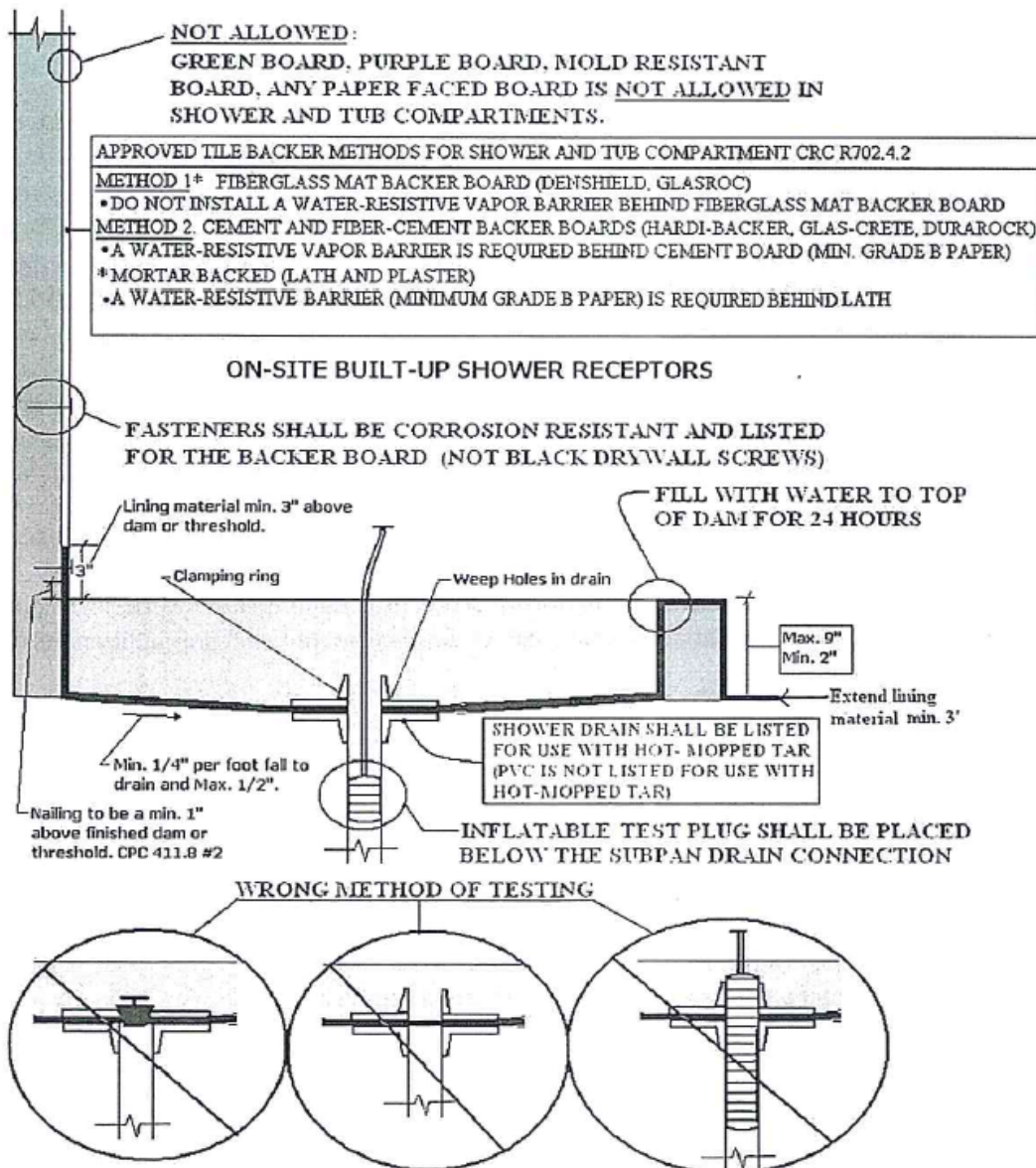
RESIDENTIAL BATHROOM REMODEL-GENERAL REQUIREMENTS

The information provided in this document is general and intended as a guide only. Each project is unique and additional requirements may be enforced as deemed necessary.

Applicable Building Codes:

- 2019 California Building Code (CBC) based on the 2018 International Building Code
- 2019 California Residential Code (CRC)
- 2019 California Mechanical Code (CMC)
- 2019 California Electrical Code (CEC)
- 2019 California Plumbing Code (CPC)
- 2019 California Energy Code (CEnc)
- Town of Tiburon Municipal Code

Top three frequently missed/inspection failures:
1. WRONG BACKER BOARD 2. WRONG FASTENERS 3. WRONG TEST PLUG



WARNING

- Failure to complete items below prior to inspection may result in a reinspection fee.

NOT ALLOWED

- As of January 1, 2008, per CBC all **paperbacked gypsum board products such as “Green board”, “Purple board”, and “Mold Resistance board” is prohibited in shower and tub compartments and shall not be used as backer for tile lath or concrete/hardy board.** Recommend DensShield Tile Backer.
- 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.)
- Air admittance valves are not allowed.

SMOKE AND CARBON MONOXIDE ALARMS

All work exceeding \$1,000 required Listed/State Fire Marshal approved:

- **Photoelectric* smoke alarms** be installed at each level, and in each sleeping room and outside of each sleeping area in the immediate vicinity of the bedrooms.
***Dual sensor** (Photo/Ion) alarms shall be used if located not less than 20ft from a kitchen, fireplace or wood burning stove.
- **Smoke detectors over ten years must be replaced.** If date is not indicated on existing smoke alarm it must be replaced.
- ***Carbon Monoxide** alarms installed outside of each separate dwelling unit sleeping area in the immediate vicinity of the bedroom(s) and on every level of a dwelling unit including basements. CRC R315.2 see attached illustration for location of alarm instructions.

PHASING WORK AND INSPECTIONS

- **Two or more bathrooms:** all work shall be ready for inspection unless phasing of work is indicated on permit and plans
- When phasing of work is not indicated on permit and plans at time of inspection, a correction will be issued requiring contractor to revise plans and pay additional inspection fees. The fees will be assessed based on additional time spent to complete the inspection process for phased work. Inspector shall sign off on partial work if approved. Contractor shall revise plans/permit, and pay additional fees prior to scheduling next inspection.

REQUIRED TOT INSPECTIONS

- **All trades:** rough mechanical, plumbing, electrical, and framing.
- **Insulation:** if applicable.
- **Drywall/ tile backer**
- **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.
- **Shower Pan:** water test.

INSPECTIONS

Mechanical

- Exhaust fans are required in all bathrooms, even if operable window is installed. CA Energy Efficiency standards § 150.
- Bathroom fan exhaust shall terminate a min. of 3' from property line and 3' from any openings into a building CMC 504.3.1

- Exhaust fans with integral/combo lighting system shall be switched separately from lighting system OR have a lighting system that can be manually turned on and off while allowing the fan to continue to operate for an extended period of time. Lighting integral to an exhaust fan must be high-efficacy. CA Energy Code § 150.
- Exhaust fans at shower shall be listed for wet location and shall be GFCI protected.

Electrical

- Nail plate protection required when hole edge is 1-1/4" from face of framing.
- ***Tamper resistant receptacles in dwelling units** in all areas specified in 210.52 every kitchen, family room, dining room, living room, parlor, library, den, sunroom, bedroom, recreation area, **bathroom**, garage, basement, laundry and outdoor area, all 125-volt, 15- and 20-amp receptacles shall be listed tamper resistant receptacles. CEC 406.11, 210.52
- An upgrade of the existing electrical service may be required based on the number of and ampacity of new and existing circuits. CEC 220.
- Check electrical panel for new wiring and labeling.
- Circuit breakers match manufacturer of panel requirements. **Contractor shall torque at final inspection.**
- Min. (1) 20 amp circuit for bathroom receptacles CEC210.11(C) (3).
- GFCI protection shall be provided for all outlets in bathrooms, with at least one outlet 36" inches of the outside edge of each basin. CEC 210-8(a), (1) and 210-52(d).
- Light fixtures in wet locations shall be protected by GFCI circuit CEC 410.4(A) (D) (per the manufacturer's installation instructions).
- Separate circuits for lights and receptacle outlets. CEC 210-11(c) (3).

Plumbing

- 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. CPC 712.2, CPC 723.
- **Tub test:** fill water slightly above over flow. (Fill tubs prior to inspection).
- 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. Side wall vent may not terminate under vented soffit. CPC 906.1
- Venting shall be vertical until 6" above the flood rim of the fixture. CPC 904.3.
- Bathtub/whirlpools and shower valves shall be approved pressure- balanced or thermostatic mixing type adjusted to a maximum of 120 degrees. CPC418, 414.
- Use listed fittings (i.e. water supply hoses) CPC 604.
- Accessible full way control valve installed for each sink. CPC 605.5.
- Check that sink cleanout is accessible.
- Contractor to water test sinks at time of inspection.
- Verify new penetrations at roof are properly sealed, flashed, and painted if required.
- Provide a min. 12" access door for fixtures with concealed slip joint connections. CPC 404.2.

Framing

- The minimum ceiling height in a bathroom is 7' feet. 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 mi. six 16d nails on each side cut. CBC 2308.9.8.
- Use 2x6 studs when plumbing pipes are over 3". The maximum hole size is 3-5/8" for 2x6 and 2-1/8" for 2x4 studs. CBC 2308.9.11.
- Blocking for rails and cabinets.
- **Fire blocking at ceiling and floor penetrations, top, and bottoms of walls.**
- Approved 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. CBC 717.2.5, 712.4.2.2
- 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. CBC 717.2.5, 712.4.2.2

Rodent Protection

- 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-2** for an approved method of protection/access. CPC 313.12.4

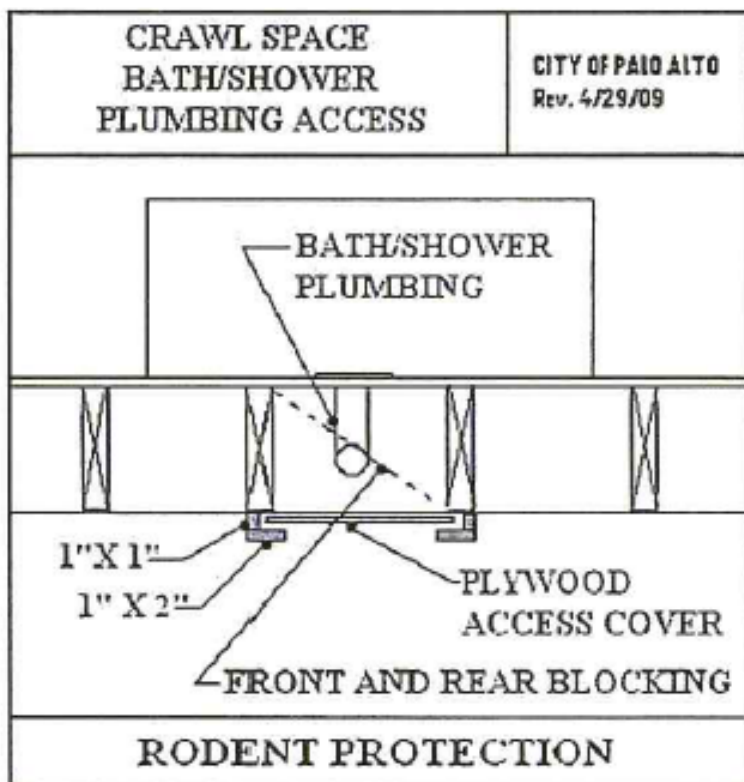


FIGURE A-2

Lighting

- Hanging light fixtures are not allowed within 3' horizontal and 8' vertical from tub and shower. CEC 410.4 (d).

Frequently Missed/ Inspection Failure

- All hardwired lighting shall be high efficacy OR controlled by a MANUAL-ON motion sensor. CEC 150 (K).
- 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. CEC 410.4 (A)
- **Fan and light fan combo shall be separately switched** from lights and may require GFCI protection in wet/damp locations. Install per manufacturers instructions (provide inspector with manufacturer instructions). Energy Code § 150.
- Verify that light cans are **air tight** at top floor ceiling or attic space, and **IC** rated if recessed into insulated ceilings.

Water closet and bidets (WC)

- WC shall have an average water consumption of 1.28 gallons per flush. CPC 402.2.
- Provide caulking at the bottom of all water closets. CPC 407.2.
- WC spaces shall be at least 30 inches wide; 15" min from wall or other obstruction to center of WC nor closer than 30" center to any similar fixture, with at least 24 inches clear in front of the WC. CPC 407.6.
- Caulk around the base of the water closet.

Safety glazing

- Safety glazing at all windows less than 60" above bottom of tub and shower floor and at shower enclosures, panels, and door (check for bug) CRC R308.4, CBC 2403.2, 2406.4.

Fixture fittings/ attachments

- Vacuum breakers required for handheld shower head. CPC 603.0
- Where two separate handles control the hot and cold water, the left hand faucet shall control hot water. CPC 415.0

Airgap (Sink and Tub)

- Minimum 1" air gap separation between flood level of sink and tub water supply outlet. CPOC 603.2.1, table 6-3

Steam shower

- See Steam shower checklist for all general requirements/ recommendations.
- Steam shower: verify light is listed for steam shower/ vapor proof, GFCI protected, and has electrical disconnect for steam generator.

Hydro massage

- Hydro massage bathtubs motors shall be accessible, on a dedicated circuit with their own GFCI circuit and bonded with minimum 8 AWG copper wire. CEC 680.72 and 74, CPC 414.1.
- Hydro massage tubs- provide access for motor (CPC 414), GFCI receptacle (CEC 680.70) and separate circuits for motor and heater if required.

Insulation

- Behind bathtubs at exterior walls.
- IC-Rated recessed lights shall be covered with insulation.

Shower Compartment

- See [FIGURE A-1]
SHOWER AND TUB COMPARTMENT APPROVED TILE BACKER METHODS CRC R702.4.2

METHOD 1: * Fiberglass mat backer board (DensShield, 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 Duralock).

- A water resistive vapor barrier is required behind cement board (min. grade B paper)
- 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 CPC 411.6
- Shower compartment min. 1024 sq. in. encompassing a 30" circle CPC 411.7
- Threshold/dam shall not be less than 2 inches and not more than 9 inches measured from top of the drain. CPC 411.6
- Shall encompass a 30" circle. CPC 411.7
- *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. CPC 411.8
- Maintain minimum area and dimensions 70" above the shower drain. CPC 411.7
Exception: the min. required area and dimension shall not apply where an existing bathtub is replaced by a shower having an overall dimension of 30" wide by 60" long. CPC 411.7
- *Bathtub/shower compartments shall have non absorbent surface extending 72" above the floor. CRC 307.2
- Shower door or rod shall be installed prior to final.

Frequently Missed/ Inspection Failure (See Tile Lath Guidelines)

- **Base for tile in shower and tub compartments:** cement, fiber-cement or glass mat gypsum backers shall be used as a base for wall and ceiling panels in showers and bathtub compartments and shall be installed per manufacturer's recommendations. 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.
- **Base for tile water closet compartment walls:** water-resistant gypsum board/green board/purple board shall be installed per manufacturer's recommendations. CRC R702.3.8, CBC 2509.2
- **Water resistant gypsum board/ green board/purple board shall not be used in the following locations:**
 - In shower or bathtub compartments. CRC R702.3.8.1
 - Where there will be direct exposure to water or in areas subject to continuous high humidity. CRC R702.4
 - On ceilings where frame exceeds 12" on center for ½" wall board and more than 16" on center for 5/8" water-resistant drywall. CRC R702.3.8
- **On-site built-up shower receptors:** all lining, hot-mopped or other approved materials shall be pitched ¼" 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. CPC 411.8
- **Factory built shower receptors:** No shower receptor shall be installed unless it conforms to acceptable standards/listed as referenced in CPC tables 14-1. The flange shall be watertight and extend vertically a min. of 1" above top of sides of the receptor. CPC 411.6
- 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. CPC 411.1 and 404.1
- 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. CPC411.8 (1)(2)
- All shower compartments, regardless of shape, shall have a minimum finished interior of 1024 square inches and shall be capable of encompassing a 30" circle. **Exception:** where existing bathtub is replaced by a shower receptor having min. overall dimensions of 30" wide by 60" long. CPC 411.7 and expectation no. 2.
- All showers, in all occupancies, 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. CRC R307.2, CBC 1210.3
- Thresholds shall be of sufficient width to accommodate a minimum 22" door. CPC 411.6
- **Curbless shower pan:** extend approved water proofing material to a min 4' beyond threshold and maintain a ¼" fall per foot for 4" to drain. Note: recommend extending water proofing over entire bathroom area.

Frequently Missed/ Inspection Failure

- **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. CPC 411.8.1
- At the time of inspection, qualified persons with proper tools shall remove test plug and demonstrate weep hole function.