



RESIDENTIAL **KITCHEN** 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:** Screw quality and spacing.
- **Final:** smoke and carbon monoxide alarms, and GFCI test.

Miscellaneous inspections:

- **Tests:** Torque test for new breakers, DWV water test, and gas pipe test.

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Framing

- The minimum ceiling height in a kitchen is 7' feet. See **2022 CBC 1208.2**.
- Clear passageway minimum 36" between counter fronts and appliances or counters and walls. See **2022 CBC 1208.1**.
- 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**.

Mechanical

Appliances

- Provisions for range must be present either as a capped off gas line or 220 volt outlet installed in wall. If stove is to be wired directly, it shall be hooked up during an inspection.
- Kitchen range clearance to combustibles or metal cabinets shall have a vertical clearance of 30." The clearance may be reduced to 24." See **2022 CMC 920.3.2** or **2022 CMC 920.4.2**.
- Listed **built-in cooking appliances** cannot interfere with combustion air, accessibility for operation, and servicing. They must also be installed so that the cooking top, broiler pan, or oven racks are level. See **2022 CMC 920.4.1** and **2022 CMC 920.4.3**.
- Interior **Open-Top Broiler Units** must be provided with a metal ventilating hood not less than 0.0122 of an inch thick with a clearance of not less than ¼ of an inch between the hood and the underside of combustible material or metal cabinets. A clearance of at least 24 inches shall be maintained between the cooking top and the combustible material or metal cabinet, and the hood shall be at least as wide as the open-top broiler unit and centered over the unit. See **2022 CMC 922.3**.

Ducting

- A mechanical exhaust directly to the outdoors must be provided in each kitchen. The fan must be a demand-controlled mechanical exhaust system. Enclosed kitchens may use a continuous mechanical exhaust system. See **2022 CMC 405.4** and **2022 CEnC 150.0(o)1G**.
- Range exhaust shall terminate a min. of 3' from property line, 10' from a forced air inlet, and 3' from any openings into a building. See **2022 CMC 502.2.1**.
- Exhausts openings terminating to the outdoors shall be covered with a corrosion resistant screen having not less than ¼ of an inch openings and not more than ½ of an inch openings. Exhaust ducts must also be equipped with backdraft dampers or with motorized dampers that automatically shut where the systems or spaces served are not in use. See **2022 CMC 502.1** and **2022 CMC 504.1.1**.
- Ducts used for domestic kitchen range or cooktop ventilation must be metal with smooth interior surfaces. Also, ducts must be supported at each change of direction. See **2022 CMC 504.3** and **2022 CMC 603.3**.
- Joints and seams for duct systems shall be made substantially airtight by means of tapes, mastics, gasketing, or other means. Crimp joints for round ducts shall have a contact lap of not less than 1 ½ inches and shall be mechanically fastened by means of not less than three sheet-metal screws equally spaced around the joint. See **2022 CMC 9603.9**.

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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)**.
- Sheathing of non-metallic cable must extend ¼" into a box with the sheathing. See **2022 CEC 314.17(2)**.
- 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, where installed to serve the countertop surfaces. See **2022 CEC 210.8 (A)**.
- Receptacles within six feet of a sink's top inside edge must have GFCI protection, including wet bars. See **2022 CEC 210.8 (A)(7)**.
- Built-in dishwashers and trash compactors must have cord-and-plug connections be labeled. Both must be terminated with a grounding-type attachment plug and must be accessible. See **2022 CEC 422.16(B) (2)**.
 - When a dishwasher's flexible cord passes through an opening, it must be protected by bushing or grommet. Dishwasher cords must be 3'-6' long.
 - Trash compactor cords must be 3'-4' long.
- Kitchens need (2) 20-amp small appliance branch circuits at countertop surfaces; additional circuits may be needed per equipment manufacturer's specifications. See **2022 CEC 210.52 (B) (3)**.
- Any one cord-and-plug-connected utilization equipment not fastened in place shall not exceed 80% of the branch-circuit ampere rating. See **2022 CEC 210.23**.
- All circuits must be legibly labeled in a circuit directory, located on the face or inside of a panel door. See **2022 CEC 408.4**.
- Circuit breakers must fulfill the manufacturer of the panel's requirements. Contractor shall torque at final inspection. See **2022 CEC 110.3(B)**.
- Systems using gas or propane cooktop to serve individual dwellings must include reserve a space at the main electrical service panel to allow for the installation of a double pole circuit breaker for a future electric cooktop installation. The reserved space must be permanently marked as "For Future 240V use." See **2022 CEnC 150.0(u)(2)**

Receptacle Outlet Locations: See **Figure A-1** for kitchen countertop receptacles

- Kitchen countertops and work surfaces, 12" or wider, require a receptacle outlet. See **2022 CEC 210.52 (C)**.
- Receptacle outlets along counter wall spaces must be installed within 24" from one another or from a sink, range, or counter-mounted cooking unit. See **2022 CEC 210.52 (C)(1)**.
- Receptacles shall be mounted no more than 20" above the counter top nor more than 12" below it. Receptacles that are inaccessible due to appliances fastened in place do not satisfy outlet requirements. See **2022 CEC 210.52 (C)(3)**
- In every kitchen, family room, dining room, and parlor, receptacle outlets shall be installed so all wall spaces are within 6 feet of a receptacle outlet. See **2022 CEC 210.52 (A)**.
- **Island and peninsular** countertops and work surfaces must comply with the following.
 - At least one outlet shall be provided for the first 9 ft² (3'x3') of the **island** countertop or work surface. See **2022 CEC 210.52 (C)(2)(a)**.
 - At least one receptacle outlet shall be located within 2 ft of the outer end of a **peninsular** countertop or work surface. See **2022 CEC 210.52 (C)(2)(b)**.
 - A receptacle outlet shall be provided for every additional 18 ft² (4'3" x4'3") of an **island or peninsular** countertop or work surface. See **2022 CEC 210.52 (C)(2)(a)**.
- Systems using gas or propane cooktop to serve individual dwellings must include a dedicated 240 volt branch circuit within 3 feet from the cooktop with no obstructions. The branch circuit conductors must be a rated at 50 amps minimum. The blank cover must be identified as "240V ready." See **2022 CEnC 150.0(u)(1)**

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Lighting

- All hardwired lighting shall be high efficacy. See **2022 CEC 150.0(k)1**.
- Verify that light cans maintain air tightness with a gasket or caulk. See **2022 CEnC 150 (k)1Ciii**.
- Lighting in Dining Rooms, Kitchens, and other habitable spaces must have readily accessible wall-mounted dimming controls. See **2022 CEnC 150.0(k)2F**.
 - Exception: controlled by an occupancy or vacancy sensor providing automatic-off functionality.

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**.
- Unless prohibited by structural conditions, venting must be vertical until 6" above the floor rim of a fixture. See **2022 CPC 905.3**.
- Waste vents shall terminate vertically not less than 6" above roof, nor less than 12" from any vertical surface and 10' from, or not less than 3' above, an openable window, door, air intake, nor less than 3' from any lot line. See **2022 CPC 906.1** and **2022 CPC 906.2**.
- Verify that new penetrations at roof are properly sealed, flashed, and painted if required. See **2022 CPC 906.1** and **2022 CPC 906.5**.
- A control valve must be installed immediately ahead of each water-supplied appliance or slip joint. Parallel water distribution fixtures may either provide a control valve immediately ahead of each fixture or installed at a readily accessible manifold. See **2022 CPC 606.5**.
- Provide a min. 12" access door for fixtures with concealed slip joint connections. See **2022 CPC 402.10**.
- **Listed air gap fittings** are required on the discharge side of a domestic dishwashing machine and be mounted on the counter top. See **2022 CPC 807.3**.

Gas Piping

- When passing through an exterior wall, piping must be protected from corrosion and must be sealed around its circumference at the point of exterior penetration to prevent the entry of water, insects, or rodents. When using pipe sleeves, annular spaces between gas piping, the pipe sleeve, and between the sleeve and the wall openings must be sealed. See **2022 CPC 1210.3**.
- In atmospheres with corrosive environments (direct contact or within the immediate vicinity of a beach), gas piping and fittings must be coated with a corrosion-resistant material. See **2022 CPC 1210.3.1**.
- Repairs and additions must be pressure tested and minor additions may instead be tested with a leak-detecting fluid or other leak-detecting method. See **2022 CPC 1213.1.2**.
 - New branches may pressure test only the newly installed branches. See **2022 CPC 1213.1.3**.
- A pressure test for gas piping may use air, CO₂, or nitrogen. See **2022 CPC 1213.3**.
 - CSST piping carrying gas pressures over 3.5kPam the test pressure must be at least 30psi for 30 minutes.
 - Non-welded piping and non-CSST piping must carry at least 10-psi for 15 minutes.
- Test gauges must follow **2022 CPC 318.0** and cannot exceed a maximum pressure range of 15psi. See **2022 CPC 318.5**.
- Each appliance, connected to gas piping, requires an accessible, approved manual shutoff valve that is located within 6 feet of the sole appliance it serves. If a connector is used, the connector must be downstream from the manual shutoff valve and must be in the same room as the appliance. See **2022 CPC 1212.6**.
 - CSST piping cannot connect to appliances that are not fixed in place. See **2022 CPC 1212.1(5)**.