



RESIDENTIAL WATER HEATERS

BUILDING INSPECTION REQUIREMENTS

A plumbing permit is required for the replacement of an existing water heater. Permits are required prior to installation or replacement of water heaters.

The following are general requirements for water heater replacements based on the 2019 California Plumbing Code. This document is intended to provide general information, contact the Building Inspection Division for any questions or additional information.

Seismic Straps (CPC 507.2) - Water heaters require two seismic straps; one located within the top 1/3 of the water heater unit and one at the bottom 1/3. The bottom strap must be located at least 4" away from the water heater controls. (CPC 507.2)

Several seismic strap kits are available commercially. Any platform supporting the water heater must be secured to the structure or the slab. Additional blocking at the water heater may be required to resist horizontal displacement.

Venting (CPC 509.6, 509.8, 509.10) - All vent piping that runs through ceilings, floors, or walls shall be double-wall metal pipe, unless specified otherwise in manufacturer's installation instructions. The vent and the water heater must maintain clearance from combustibles materials (such as wall framing or roofing) as required by the manufacturer, which is typically 1" minimum. The vent shall terminate a minimum 1' above the roof, be installed with flashing through the roof, and terminate in a listed and approved vent cap. Vents shall also terminate a minimum of 3' above any building opening (door, operable window, etc.) within 3' of the termination. Venting shall extend in a generally vertical direction with offsets not exceeding 45° except one 60° offset is permitted. Vents may require additional supports depending on the material and design.

Temperature & Pressure Relief Valve (CPC 608.5) - All water heaters have temperature and pressure (T&P) relief valves that are galvanized steel, hard-drawn copper, or CPVC. Each valve shall be drained to the exterior, terminate toward the ground maintaining between 6" and 24" of clearance from the ground, and point downward. The diameter of the valve opening (generally 3/4") must be maintained to the termination of the drain. Relief valve drains shall not terminate in a crawl space or an over-flow pan. No part of such drainpipe shall be trapped or subject to freezing, and the terminal end of the drain shall not be threaded. When approved by the Chief Building Official, such drain may terminate at other locations (i.e. laundry tub, floor sink, or floor drain).

Located in a Garage (CPC 507.13) - Water heaters located in a garage must be elevated so the pilot light and controls are at least 18" above the garage floor surface (unless the unit is listed as flammable vapor ignition resistant). If subject to vehicular damage, adequate barriers must be installed (e.g. 4" diameter steel pipe filled with concrete installed in a footing measuring 12" in diameter and 3' deep and extending a minimum of 2'9" above the finished floor).

Located in a Bedroom, Bathroom, or Bedroom Closet (CPC 504.1) - The water heater shall be direct vent or located in a closet provided with a listed self-closing, gasketed door and all combustion air shall be obtained from outdoors. The water heater closet shall not be used for any other purpose.

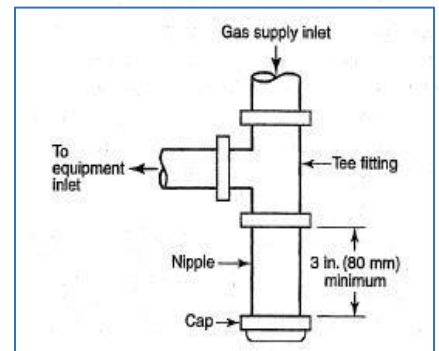
Located in Attic (CPC 508.4) - The water heater shall be accessible through an opening and passageway at least large as the largest component of the appliance, and not less than 22" by 30". Where the height of passageway is less than 6', the distance from the passageway access to appliance shall not exceed 20' measured along the centerline of the passageway. The passageway shall be unobstructed and shall have solid flooring not less than 24" wide. A level working platform not less than 30" by 30" shall be provided in front of the service side of the appliance. A permanent 120-volt receptacle outlet and lighting fixture shall be installed near the appliance. The switch controlling the lighting fixture shall be located at the entrance to the passageway.

Located in an Attic or furred Space (507.5) - If located in an attic or furred space (closet) where leaking could cause damage to underlying wood framing, the water heater must be set in a 1 1/2 "minimum deep pan constructed of water tight corrosion resistant material. The pan must be fitted with a minimum 3/4" drain that drains to an approved location. The T&P line is not allowed to terminate at this pan or be connected to it.

Combustion Air (CPC 506) - Combustion air must be maintained per the California Plumbing Code. When the appliance is located in an unconfined space (e.g. garage) the combustion air can be used from that area. When located in a closet, combustion air must be provided at a minimum of two openings (one within 12" of the top of the water heater and one within 12" of the bottom) sized at 100 square inches each.

Sediment Trap (CPC 1210.6) - A sediment trap shall be installed on the gas line downstream of the appliance shut-off valve and as close to inlet of the equipment as practical.

Tankless Water Heater - Tankless water heaters shall be listed by a approved testing agency (UL, UPC, etc.) and be installed in accordance with the manufacturer's requirements. Category II stainless venting material and larger gas supply lines may be required based on the manufacturer's specifications/recommendations.



NOTE: PG&E requires a minimum horizontal clearance of 36" between the gas meter and a tankless water heater when located on the same wall.

Inspections	
<ol style="list-style-type: none"> One final inspection is required after all work has been completed. 	