



1. **Permits are Required** for new and replacement water heaters. (503.0 C.P.C. 2007) Contact the Building and Safety Department to obtain needed permit.
2. **Inspection is Required** after the water heater is installed to verify compliance within the minimum safety requirements of the code regarding; location of water heater, combustion air, venting & vent cap, seismic protection/strapping, access and working space around water heater and other appliances, clearances to combustibles, gas piping supply with sediment trap and connections, temperature and pressure relief valve and discharge piping to outside, water and gas hand shut off valves, water piping and connections, metallic piping continuously bonded, to meet required Energy Compliance and if required by location 18" elevation, vehicle damage protection and drain pan with drain. (504.2 C.P.C. 2007)
3. **Prohibited Locations** Do not install water heaters which depend on the combustion of fuel in rooms used for sleeping purposes, bathroom, closet or other confined space opening into a bedroom, bathroom, or under a stairway landing. (505.1 C.P.C. 2007)
4. **Seismic Bracing System** shall be installed to provide protection from displacement due to earthquake motion. Water heater shall be anchored/secured with a code approved restraint system consisting of strapping the upper and lower 1/3's of the water heater, minimum 4" above gas control valve & 4" below side T & P outlet. (508.2 C.P.C. 2007 & 17958.5 Health & Safety Code)
5. **Temperature and Pressure Relief Valve & Discharge Line** Water Heaters shall be installed with a T & P relief valve that is ran in rigid metal piping from T&P valve to the outside of the building with slope and the end of the pipe not more than 2' feet nor less than 6" above the ground or flood level of the area receiving the discharge and pointing downward. The discharge line shall not be trapped or have a valve installed, and the terminating end shall not be threaded. (505.6 & 608.5 C.P.C. 2007)
6. **Combustion Air Vents** within 12" of top and bottom of enclosure is required where enclosure has volume less than 50 C.F. per 1000 B.T.U. / H of all appliances within enclosure. Minimum area per opening shall be based on 1" square inch per 4000 B.T.U. / H of input capacity, with minimum screen mesh of a ¼". (507 C.P.C. 2007)
7. **Venting System** shall be constructed, sized appropriately and installed to code and per manufactures installation instructions; in no case shall vent piping be smaller than required for water heater's draft diverter or venting outlet. (510.10.3 C.P.C. 2007)
8. **Venting Clearance** Single wall metal vent piping shall be installed in a manner to provide 6" clearance from combustible materials and shall be secured together with Tex screws or rivets. Single wall vent piping shall not be installed in a confined space, and only installed below fire stop flashing. Type B Double wall vent piping shall be installed in a manor to provide 1" clearance from combustible materials and shall not be secured together with Tex screws or rivets. (510.10.7 C.P.C. 2007)
9. **Vent Pipe Termination** shall not terminate less than 12" above roof, additional height required if roof pitch is greater than 6:12 slope, nor shall a vent terminate less than 8' from any second story exterior wall. Vent termination in all other cases not to terminate any less than 2' above any structure within 10'. Other venting rules may apply see section (508.6 C.P.C. 2007)
10. **Gas Appliance Connectors** shall not exceed 3' in length and shall not be reused per manufactures installation instructions. Gas connectors shall be attached to a hand shut-off type gas valve and be properly sized to B.T.U. rating of water heater.
11. **Sediment Trap** shall be installed to gas supply at water heater control valve with a T fitting and a minimum 3" nipple in length with cap for sediment trap and in a manner that requires the gas to change direction. (1212.7 C.P.C. 2007)
12. **Metallic Piping to be Bonded** continuously with copper bonding wire and bonding clamps, to cold, hot, and gas lines to tie systems together at water heater, using a #8 for 100 amp service and a #6 for 200 amp services. (250.104 C.E.C. 2007)
13. **Water Piping Insulation** shall be installed 5' on the cold and 5' on the hot water supplies at water heater when possible, and to maintain 6" clearance from vent and flue. NOTE: if water heater has a re-circulating pump system the entire length of circulating piping loop will need to be insulated. (2005 California Energy Commission Mandatory Requirements)
14. **State Energy Regulations** requires the following: If the water heater has an EF of less than 0.58 an R-12 water heater blanket is required (internal insulation can not be used to satisfy this mandatory requirement.) For water heaters with 0.58 EF or higher, no blanket is required. The blanket should be securely attached around the water heater. The top of the water heater should not be insulated and a cut out in the blanket should be provided for combustible air intake and controls. (2005 California Energy Commission Mandatory Requirements)
15. **Installation Instructions** for water heater to be on site and readily available for reference. (508.26 C.P.C. 2007)
16. **Working Platform** A level working surface not less than 30"x 30" shall be provided for service. (509.4.4 C.P.C 2007)
17. **Thermal-Expansion Tank System** may be required to protect water heater and water piping system from excess pressure due to thermal-expansion and set per manufacturer's intallation instructions. (608.3 C.P.C. 2007 & 1 006.0 C.M.C. 2007)
18. **Water Heater Stand** or built in platform is required when water heater is installed in a garage to elevate water heater a minimum 18" above grade. Stands or platforms to be anchored and secured appropriately. (508.14 C.P.C. 2007)
19. **Vehicle Protection** must be provided where subject to mechanical damage, post or built-in platform. (508.14 C.P.C. 2007)
20. **Drain-Pan** shall be required when a water heater and/or tank is installed in a location where it could cause damage; in case of failure/leak to floor, sub-floor, drywall, or platform. Drain pan shall be installed with a minimum ¾" drain outlet and discharge that drains to the exterior of the building or approved location. (508.4 C.P.C. 2007)

NOTE: Discharge from T & P relief valve can not terminate into water heater drain pan. (508.5 C.P.C. 2007)