



City of Santa Clara

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WATER HEATER (TANKLESS) GUIDELINES – 2016 CPC & CEC

These guidelines cover any Tankless Water Heater (TWH) installation, whether new construction or replacement. Tankless Water Heater installations shall comply with all of the provisions as required by the current California Plumbing Code (CPC), California Mechanical Code (CMC), and any applicable City Ordinances or Policies. The manufacturer's installation instruction for the TWH and the listed venting system must be available at the jobsite for **all** inspections.

Provide gas line sizing calculations and isometric riser diagram of the gas delivery piping system for the TWH with permit application.

Tankless Water Heater Location:

- Most TWHs are installed in garages, basements, or on exterior walls of garages or structures. TWHs may be installed in bedroom or bathroom closets **ONLY** if they are of the direct-vent type or they are in a closet dedicated solely to the TWH, with self-closing gasketed doors and all combustion air from the exterior (CPC 504.1).
- A TWH may be located in an attic when all requirements for a Code compliant installation are met including required access, clearances to combustibles, lighting with a switch near the attic entry, and an adjacent receptacle.
- A TWH shall not be installed in locations where damage to the supporting structure would occur from an undetected leak unless a water tight corrosion resistant pan is installed beneath the TWH with a minimum ¾ inch diameter drain line discharging to an approved location. (2013 CPC Sec.507.5)
- If listed for exterior installation, a TWH may be located at a side or back wall if not otherwise restricted by Planned Development requirements, CC&R's, or the Planning Division of the City of Santa Clara.

Tankless Water Heater Venting and Installation:

- Most TWHs use positive pressure (forced) vents. Such vents shall comply with the vent manufacturer's installation instructions for Category III and IV appliances. Most are stainless steel due to the slightly acidic content of the condensate. Most do not allow common vent with other appliances. All positive pressure vent pipes shall be sealed air tight at each joint from flue collar to termination. *Type B venting material is not acceptable for positive pressure vents.*
- Listed pressure-only relief valves (PRVs) shall be installed as required by the manufacturer.
- CPVC piping used with any TWH shall be installed with restrictions as required by TWH or CPVC manufacturer, whichever is most restrictive.
- Condensate drains need not comply with the same requirements as for AC condensate, and are allowed to discharge onto soil. They should not discharge over hardscaped (concrete) surfaces or walkways.

Tankless Water Heater Electrical:

- Gas-fired TWH units usually require a 120-volt receptacle for operation of the thermostatic controls.
- When installed in a garage, the power for these gas-fired units may be provided by an adjacent GFCI-protected receptacle.
- When installed outdoors, the receptacle must be GFCI protected and listed Weather-Resistive (WR) with a weatherproof "bubble cover" or be hard wired with a disconnect switch in sight of the unit.
- Cords on outdoor THWs must be listed as suitable for a wet location and for sunlight resistance. If the last letter of the letter code printed on the cord is a "W" the cord is compliant.
- Attic or basement installations will require a 120-volt receptacle and switched luminaire at or near the TWH. The switch for the luminaire must be located adjacent to the attic or basement access.
- *All new electrical work requires an electric permit.*

Gas Piping:

- A TWH generally requires a significantly greater quantity of gas than a storage tank heater. Typically, a dedicated gas line must be installed from the gas meter to the TWH and a larger gas meter may be required. To properly size gas piping use the appropriate Table in Chapter 12 of the current CPC.
- All new and altered gas piping systems must be pressure tested as prescribed by code. See Form A-17 **Gas Line Test** handout.

Combustion Air:

- TWH installations shall comply with manufacturer's requirements and current CPC and CMC requirements for combustion and make-up air or be the direct-vent type. Properly sized combustion air vents are to be located commencing within the upper 12" of an enclosure and commencing within the lower 12" from the bottom of an enclosure.