	<b>CITY OF AGOURA HILLS</b> <b>BUILDING &amp; SAFETY DIVISION</b> 30001 LADYFACE COURT AGOURA HILLS, CA 91301	PHONE: (818) 597-7334 FAX: (818) 597-7352 <a href="http://www.AgouraHillsCity.org">www.AgouraHillsCity.org</a>	
<b>WATER HEATER INSTALLATION INFORMATION</b>		<b>IH-04</b>	<b>4-15-22</b>

## GENERAL

- **Permit process.** Single-family and duplex property owners can obtain a water heater permit online at [https://cap.cityah.org/EnerGov\\_Prod/selfservice#/home](https://cap.cityah.org/EnerGov_Prod/selfservice#/home).
- **Prohibited locations.** Gas-fired water heaters use fuel combustion for heat. For safety, do NOT install them in bathrooms, clothes closets, rooms used for sleeping, or in any closet or confined space that opens into a bathroom or bedroom.  
*Exception:* Direct vent water heaters.
- **Under stairways and landings.** Where not prohibited by other regulations, water heaters may be located under a stairway or landing.
- **In a garage.** Gas or electric water heaters that generate a glow, spark, or flame capable of igniting flammable vapors may be installed in a garage if the pilots, burners, or heating elements and switches are elevated at least 18 inches above the floor; any stand or platform base must be adequately anchored to the floor. If the water heater installed within a garage is enclosed in a separate, approved compartment that is accessed only from outside of the garage, it may be installed at floor level provided that the required combustion air is drawn from outside.
- **In attics and other spaces that require a safe pan.** Locating a storage tank water heater in an attic or space where a leak could cause damage is prohibited UNLESS you install an approved safe pan below the water heater with a minimum ¾-inch drain to an approved, readily visible location.

## TRAPPING, BRACING & ANCHORING (CPC 507.2)


A water heater can move or tip during an earthquake, resulting in a gas piping leak or broken water lines that could flood and damage floors and walls. State law (AB 1890) requires all new and replacement water heaters be strapped, braced, or anchored. Listed straps for water heater may be used instead of the methods outlined below when installed per the manufacturer's instructions.

- **Strapping.** Water heaters require bracing in proportion to their sizes: 52-gallon unit - 2 straps; 75-gallon unit - 3 straps; 100-gallon unit - 4 straps  
*Upper strap* - Place 9 inches from the top of the unit or within the upper one-third of the unit.  
*Lower strap* - Place at least 4 inches above the controls and within the lower one-third of the unit.
- **Bracing.** Division of the State Architect (DSA) recommends using one of these bracing methods:  
*Tape Method* - Use minimum 24-gauge plumber's tape to encircle the water heater and use lag screws to bolt it to a 2x4-inch ledger (required) that is bolted to the wall framing.  
*Conduit Method* - Use a round thinwall conduit along with 24-gauge (min.) plumber's tape, bolts, and lag screws.
- **Anchoring.** Follow the instructions provided by the water heater manufacturer.

## TEMPERATURE AND PRESSURE RELIEF (T&P) VALVE (CPC 608.3)

In addition to primary temperature controls, storage-type water heaters and hot water boilers must have a combination **temperature and pressure relief valve** (T&P valve) that is constructed, listed, and installed in accordance with nationally recognized standards and the following requirements:

- Each T&P valve must be an approved type with a drain.
- A union must be installed in the drain line near the water heater to facilitate removal and replacement of the water heater or the T&P valve.  
*Exception:* If a water heater can be replaced without adversely affecting the drainpipe installation, the union may be omitted.
- No shutoff valve shall be installed in the relief valve drain line system.
- The drain provided from T&P valves must not be smaller than the relief valve outlet, and must be made from galvanized

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steel, hard-drawn copper piping and fittings, OR be a listed relief valve drain tube with fittings that will not reduce the internal bore of the piping.

- The piping shall extend from the valve to the outside of the building with the end of the pipe pointing downward, not more than 2 feet nor less than 6 inches above the ground. It is not acceptable to terminate the T&P in the underfloor area.
- When a water heater is located in a garage, the T&P drainpipe may terminate in the garage. The piping must extend from the valve to within 12 inches but not less than 6 inches above the floor and point downward.
- Water heaters not located in a garage cannot terminate the T&P drain in the garage. These drain lines must terminate to the outside.
- T&P drainage piping must run independently from other drainage piping. For example, it is not acceptable to combine T&P drains with A/C condensate drainage piping or water heater drain pan piping. Also, it is not acceptable to terminate the T&P drain into a water heater drain pan.
- The T&P drain must not be connected to the sanitary sewer.
- No part of such drain shall be trapped.
- The terminal end of the drainpipe must not be threaded.
- For water heaters installed in a basement or in locations where it is not possible for the T&P relief to achieve gravity drainage, a special provision for drainage is allowed.
- You must install an expansion tank in a closed system, such as a house with a pressure reducing valve at the water service.

**WATER HEATER VENTING & COMBUSTION AIR (CPC 509.6.3.2, CPC 509.6.2.1, CPC 506.4.1)**

- Shall extend in a generally vertical direction with offsets not exceeding 45 degrees, except that a gravity vent may have only one offset not more than 60 degrees.
- Angles greater than 45 degrees from the vertical is considered a horizontal run. The total horizontal run of a vent, plus the length of horizontal vent connector, shall not exceed 75 percent of the vertical height.
- Vent offsets shall be supported for their weight and shall be installed to maintain proper clearance, prevent physical damage, and to prevent separation of the joints.
- The venting connector shall have a minimum slope of not less than ¼" per foot measured from the appliance vent collar to the vent.
- Gravity-type vent system, other than listed appliance otherwise, shall terminate not less than 5 feet above the highest vent collar which it serves, (Due to draw).
- Listed vent caps, connectors, buckets, pipe, etc.
- Single wall vents shall be connected with a minimum of 3 sheet metal screws at the joints, spaced equally apart.
- Double wall vents that snap together shall not also be screwed together or it will destroy the integrity of the vent.
- Vents shall terminate above the roof surface at a listed cap or listed roof assembly. Provide at least 8 feet horizontal clearance from any opening into the building.
- Two permanent openings, one commencing within 12 inches of the top and one commencing within 12 inches of the bottom of the water heater enclosure shall be provided. The openings shall communicate directly, or by ducts, with the outdoors or spaces that freely communicate with the outdoors. Combustion air openings shall not be less than 100 square inches.

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**Water Heater Detail**

