

Why do I need a permit to install a water heater?

There are several reasons why water heaters require permits for the initial installation and when they are replaced. The permit allows for the inspection of these water heaters. The inspections allow for the verification of the following:

1. The Authority Having Jurisdiction (the city of Glendale) is responsible for making sure that all plumbing products are in compliance with current codes and that they are installed as per the manufacturer's instructions.
2. Water heaters come in a variety of styles and sizes and while it is almost impossible to **purchase** a new one that does not comply with the recognized standards that have been set in place for the manufacturing of these devices, **it is possible to install them improperly.**
3. Electric water heaters need to be checked for proper wiring and clearance to combustibles.
4. Gas water heaters need to be checked for proper venting, combustion air, gas pipe sizing and clearance to combustibles.
5. All storage type water heaters, whether gas or electric, have what is called a temperature and pressure relief valve (T&P Valve) that is **required** to be installed. This valve limits the temperature to approximately 210 degrees F. and the pressure to approximately 150 psi. It works by sensing the temperature and when it exceeds the set limit it releases water from the valve which in turn allows cooler water to enter the heater and thereby reduce the temperature. It does the same thing for pressure by releasing pressure until the pressure is reduced to below the maximum pressure set point. This is a temporary fix to some sort of problem. That problem needs to be sorted out. When you see water leaking/dripping from the drain pipe on a T&P valve it is a clue that something is wrong. There may have been a spike in the incoming water pressure or the thermostat for the water heater may have malfunctioned briefly. Now that the T&P valve has done its job it may not reset properly and you have the inconvenience of dripping water. Some people have been known to plug or cap this drain line and solve this problem. This illegal and dangerous fix has now created a huge problem. The water heater has been turned into a potential missile. If the thermostat continues to malfunction (fail in the on position and constantly heat the water in the storage tank) and there is no way to relieve the pressure created by the ever expanding water (due to constant heating and the fact that T&P valve is now plugged or capped) "something else" will have to give way. That "something else" is the water heater itself. There are many documented stories of water heaters that have been turned into missiles and

have gone through floors and roofs of buildings and then traveled hundreds of feet through the air and landed hundreds of feet away. If you want to see what this looks like go to “YouTube” or “Myth busters” on the internet and look up “exploding water heaters” and watch the video.

6. One of the things that the inspectors check for on the T&P valve is that the drain line is not trapped. Trapping the drain line will have the same effect as plugging or capping it. That is, it will not allow the water to be released through it at its full capacity due to the fact that an obstruction has been created. (trap) The Uniform Plumbing Code does not state that this drain line needs to have slope to it, however, the installation instructions for the T&P valve state that the drain line must pitch downward.
7. Other things that are looked for are that the termination point of the T&P drain line is at least six (6) inches above finished grade and that it is not more than twenty four (24) inches above finished grade. The intent of the six (6) inch minimum distance required from the end of the pipe to the ground or grade level is to assure that the end of the potable relief valve discharge pipe will not be submerged or come in contact with any substance that could pollute or contaminate the potable water system. Also, so that the end of the pipe would not be accidentally covered by landscaping. The intent of the twenty four (24) inch maximum distance required from the end of the pipe to the ground or grade level is to prevent a person who could be close to the pipe at the time of discharge from being burned.
8. Water heaters, whether gas or electric, installed in garages also need to be either out of the way of the normal path of vehicles or behind barriers. They also need to have their ignition points (thermostats, heating elements, burners) raised to at least eighteen (18) inches above the garage floor.
9. **Fuel burning water heaters (gas, propane, oil) installed in bedrooms are allowed only if they comply with all of the requirements spelled out in the Plumbing Code currently adopted by the city of Glendale. (2006 Uniform Plumbing Code Section 505.1 through 505.3.2)**