

# Thermal Expansion at Home

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## Exactly What is Thermal Expansion?

Thermal expansion is a major plumbing issue. However, many property owners aren't aware of this distinctive problem because many homes are not in danger. However, countless properties which might be in danger of acquiring this plumbing issue are not sufficiently covered mainly because code requirements are usually not enforced appropriately for old properties. Water particles will not compress when up against pressure or cold, although they do enlarge when faced with heat. In fact, water may expand by 1 / 2 a gallon or more in a 40 gallon water heater tank. This expansion might result in significant problems in a home that utilizes a closed plumbing system. Thermal expansion may result in depleted seals, broken solenoid valves, and ruptured pipes. Thermal expansion will also reduce the life expectancy of ones water heater and, if employing a gas or propane fueled water heater, could cause the water heater flue to collapse producing a carbon monoxide leak. It is critical to know if your residence employs a closed plumbing system and, if it does, the measures to take to safeguard the property from thermal expansion problems.

## How to Know if Ones House is at Risk



A home is in danger of thermal expansion issues if there is a closed plumbing system, instead of an open system. In an open plumbing system, water inside of pipes will be able to exit into the city water main by way of a supply line if taps aren't in use. However, in a closed plumbing system water has absolutely no way of getting out of the property. Closed systems have either a pressure reducing valve, backflow prevention valve, or a recirculating pump with a check valve. These valves are employed to stop backflow of water. Closed systems can be wonderful if the backflow from the house could contaminate the water supply. If your residence does make use of a closed plumbing system

and you are already taking precautions against thermal expansion issues and your T&P valve is dripping, you could have thermal expansion problems. The temperature and pressure relief valve can be found on the water heater, and is a smaller handle which opens automatically if the temperature or pressure inside the tank is above a fixed setting. The standard setting is 150 psi or 210 degrees fahrenheit. The T&P valve is an emergency valve and is not meant to be put to use frequently. If it leaks, you really should swap it immediately. Though, in case it continues to leak, it may be an indication of thermal expansion problems.

## Safeguarding One's Home from Thermal Expansion Problems

There are two main ways to avoid [thermal expansion](#) complications. When a closed plumbing system is integrated, a thermal expansion device is required by [Uniform Plumbing Code](#). An expansion tank is the standard method. An expansion tank attaches to the water heater tank and gives water overflow another area to go. There are two individual chambers in the expansion tank, one for air and one for water. Air is pumped in the expansion tank to correspond with the pressure of the water. Anytime the water is heated, if it expands too much, it is able to overflow in the tank. When it has cooled off or expanded to its maximum potential, the air inside the expansion tank forces the water back into the water supply.

Given that the air being pumped in an expansion tank has to coordinate the pressure in the water supply, it is critical that expansion tanks be pressurized correctly. One can find comprehensive manufacturer's guidelines for expansion tanks and it is really crucial to go by the directions exactly. To check the pressure of one's water, just use a water pressure gauge on the water coming out of any tap, and one may test the pressure of the tank by applying a tire air gauge. When the pressure is too low in the expansion tank, water can get in too easily, and when the pressure is too high water is not going to be able to get in easily enough.

Expansion tanks often have a max pressure of 150 psi and are sized based on the capacity of the water heater tank in addition to the incoming water supply pressure. It's essential to make certain you have the proper proportions for both prior to purchasing an expansion tank.

One may check the expansion tank's efficiency whenever the water heater isn't heating water. This is accomplished by merely tapping about the tank with your knuckles, a coin, a key or any other sort of gentle tapping equipment. It should sound generally hollow and echo slightly, but in cases where you are observing a shorter sound which resembles a kind of thud, the tank might have water in it. Check to see if there is, in fact, water in the tank by taking off the cap protecting the air valve. This kind of cap is similar to the ones seen on bike tires and auto tires. Press down on the pin to see if air or water comes out. If air comes out, everything is good, on the other hand, if water comes out you could need a different tank. When the rubber separating the air chamber from the water chamber has been damaged, water can fill up the air chamber, in which case, you are going to need to replace the tank. In case, when pressing down the pin nothing happens, no water or air comes out, the tank may not have sufficient air inside. This could throw off the pressure stability in the tank. In order to resolve this problem, turn to the manufacturer's instructions and utilize an air compressor to refill the air chamber.

Expansion tanks have to be serviced yearly. Water heaters also need to be serviced yearly, for that reason it would make sense to carry out both maintenance tasks together.

An additional way to protect your residence from thermal expansion are valves with discharge outlets. These



discharge outlets drain the extra water that the plumbing can not store. Toilet fill valves can also be a good precautionary measure. These valves drain water to the toilet tank whenever the water expands too far.

If you have a closed plumbing system and you already have an expansion tank, that's excellent! Nevertheless, remember to have the expansion tank as well as your water heater checked out annually. Still unclear regarding what sort of plumbing system is at your home? Find out immediately! Regardless if you have integrated safeguards in the home, thermal expansion issues can happen. Contact Water Heater Repair Memphis today to learn more about keeping your house guarded against thermal expansion issues.