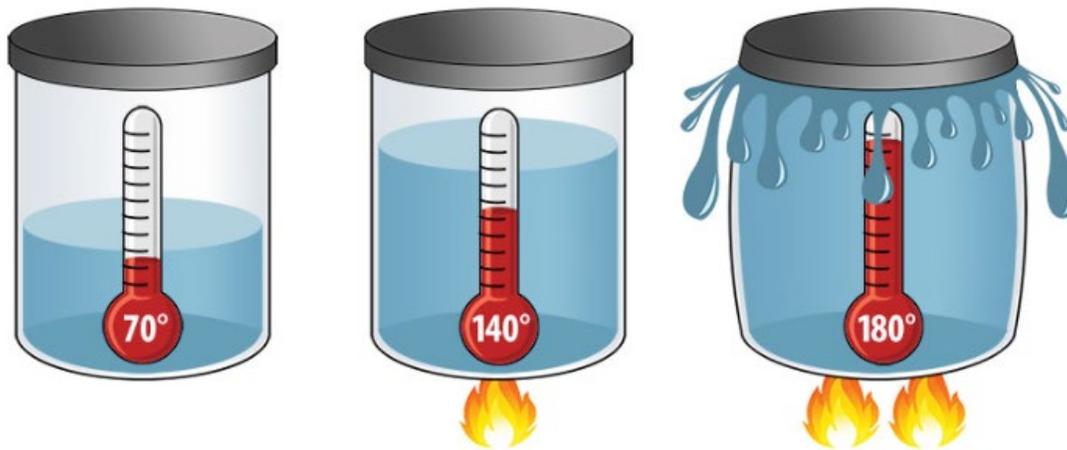


What Is Thermal Expansion?

...and what can I do about it?



Thermal expansion is among the more serious of plumbing concerns, but one that many homeowners know little about because many homes aren't at risk.

Water expands when heated. And, unlike air, water can't be compressed, so the expanded water needs extra space. For a standard tank home water heater, this means when a full tank of water is heated up, it may require more space than is available in the tank. This is a distinct problem in any "closed" water system. A closed system exists when there is a one-way valve present on your water inlet.

Robertson County Water Supply Corporation installs check valves on the Member's side of the meter for all new services to prevent backflow that could potentially contaminate the public water supply. This creates a closed system for the Member. If a Member chooses to install a pressure reducing valve on their service line, a closed system is created for the Member.

If your home has a check valve, a pressure reducing valve, a backflow prevention valve, or anything else installed on your water inlet that prevents backflow of water, your plumbing system is considered closed. In other words, the water in your household plumbing forms a closed loop and has no way back into the public supply pipes.

The pressure added to a closed system by thermal expansion can cause costly damages to pipes, fittings, seals, and solenoid switches. Standard tank water heaters can find their lives severely shortened, or can possibly pose a safety hazard, if precautions aren't taken. Tankless or on-demand water heaters are exempt from this concern.

Robertson County Water Supply Corporation requires the installation of a means of controlling thermal expansion caused by the increased pressure of hot water in closed-loop domestic plumbing. Standard water heaters are equipped with a pressure relief "pop off" valve, but these often fail since they are never tested and if they are tested they tend to leak. All Members with a standard tank home water heater shall install and maintain adequate thermal expansion chamber or thermal expansion pressure relief valves on their water heater.