

BCAB

Building Code Advisory Board of Palm Beach County

TECHNICAL ADVISORY

Issued on 08-27-08
by Building Code Advisory Board

Subject: Thermal expansion valves and tanks

This technical advisory is intended to address frequent failures of thermal expansion relief valves in certain areas of the Palm Beach County.

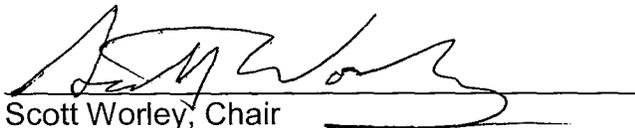
As water is heated, it expands in volume. In a typical water distribution system, this water would expand into the water service and into the public main. But when backflow preventers or check valves are installed to protect the public supply, the heated water is prevented from expanding. This results in an increase in system pressure, which can cause stress on plumbing components, and increase the likelihood of leaks and failures.

Section 607.3 of the Florida Plumbing Code requires "*a means of controlling increased pressure caused by thermal expansion . . .*" The two most common methods of thermal expansion control are expansion tanks (usually installed at the water heater), and auxiliary pressure relief valves (usually installed outside on the incoming water service.) These relief valves – not to be confused with the water heater's T&P valve – are often adjustable, and should be set for 80 psi. If the system pressure exceeds 80 psi, the relief valve opens and water is discharged to the surrounding area.

Failures have occurred when these pressure relief valves are installed in areas with high water pressure. In some areas, it is not uncommon for the street pressure to approach or exceed 80 psi at certain periods, which can cause the valve to discharge. And once the pressure recedes, the change is so gradual that the spring mechanism may not shut properly, and the valve continues to weep. This has resulted in customer complaints to repair or replace the valve due to water being wasted.

The BCAB recommends that, in areas with high street water pressures, thermal expansion tanks be utilized in lieu of pressure relief valves for single-family residential applications. The initial cost is slightly higher, but the failure rate is much lower.

For Building Code Advisory Board


Scott Worley, Chair

The Building Code Advisory Board of Palm Beach County was created by a Special Act of the Florida Legislature, at the request of the building code enforcement and construction industries. The purpose of the Board is to advise the Board of County Commissioners and local governments concerning the adoption of building codes and their enforcement throughout the County. The Act also granted Palm Beach County special powers concerning building codes, in the interest of the public's health, safety and general welfare.

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