

## **SECTION 504 SAFETY DEVICES**

### **504.1 Antisiphon devices.**

An approved means, such as a cold water “dip” tube with a hole at the top or a vacuum relief valve installed in the cold water supply line above the top of the heater or tank, shall be provided to prevent siphoning of any storage water heater or tank.

### **504.2 Vacuum relief valve.**

Bottom fed water heaters and bottom fed tanks connected to water heaters shall have a vacuum relief valve installed. The vacuum relief valve shall comply with ANSI Z21.22.

### **504.3 Shutdown.**

A means for disconnecting an electric hot water supply system from its energy supply shall be provided in accordance with Chapter 27 of the *Florida Building Code, Building*. A separate valve shall be provided to shut off the energy fuel supply to all other types of hot water supply systems.

### **504.4 Relief valve.**

All storage water heaters operating above atmospheric pressure shall be provided with an approved, self-closing (levered) pressure relief valve and temperature relief valve or combination thereof. The relief valve shall conform to ANSI Z21.22. The relief valve shall not be used as a means of controlling thermal expansion.

#### **504.4.1 Installation.**

Such valves shall be installed in the shell of the water heater tank. Temperature relief valves shall be so located in the tank as to be actuated by the water in the top 6 inches (152 mm) of the tank served. For installations with separate storage tanks, the valves shall be installed on the tank and there shall not be any type of valve installed between the water heater and the storage tank. There shall not be a check valve or shutoff valve between a relief valve and the heater or tank served.

#### **504.5 Relief valve approval.**

Temperature and pressure relief valves, or combinations thereof, and energy cutoff devices shall bear the label of an approved agency and shall have a temperature setting of not more than 210°F (99°C) and a pressure setting not exceeding the tank or water heater manufacturer’s rated working pressure or 150 psi (1035 kPa), whichever is less. The relieving capacity of each pressure relief valve and each temperature relief valve shall equal or exceed the heat input to the water heater or storage tank.

#### **504.6 Relief outlet waste.**

The outlet of a pressure, temperature or other relief valve shall not be directly connected to the drainage system.

##### **504.6.1 Discharge.**

The relief valve shall discharge full size to a safe place of disposal such as the floor, water heater pan, outside the building or an indirect waste receptor. The discharge pipe shall not have any trapped sections and shall have a visible air gap or air gap fitting located in the same room as the water heater. **The discharge shall be installed in a manner that does not cause personal injury to occupants in the immediate area or structural damage to the building.**

**504.6.2 Materials.**

Relief valve discharge piping shall be of those materials listed in Section [605.4](#) or shall be tested, rated and approved for such use in accordance with ASME A112.4.1. Piping from safety pan drains shall be of those materials listed in Table [605.4](#).

**504.7 Required pan.**

Where water heaters or hot water storage tanks are installed above the ground floor space, in attics or ceiling areas, or within the habitable space, the tank or water heater shall be installed in a galvanized steel or other metal pan of equal corrosion resistance having a minimum thickness of 24 gage, 0.0276 inch (0.70 mm). Electric water heaters shall be installed in a metal pan as herein required or in a high-impact plastic pan of at least 0.0625 inch (1.59 mm) thickness.

**504.7.1 Pan size and drain.**

The pan shall not be less than 1½ inches (38 mm) deep and shall be of sufficient size and shape to receive all dripping or condensate from the tank or water heater. The pan shall be drained by an indirect waste pipe having a minimum diameter of ¾ inch (19 mm).

**504.7.2 Pan drain termination.**

The pan drain shall extend full-size and terminate over a suitably located indirect waste receptor or floor drain or extend to the exterior of the building and terminate not less than 6 inches (152 mm) and not more than 24 inches (610 mm) above the adjacent ground surface.