**Section 890.1230 Safety Devices**

a) All equipment used for heating water or storing hot water shall be provided, at the time of installation of the equipment, with the required relief valve or valves to protect against excessive or unsafe temperature and pressure. This shall be achieved by installing either a pressure relief valve and a temperature relief valve or by installing a combination pressure-temperature relief valve.

b) Pressure and Temperature Relief Valves

1) Pressure Relief Valves. Pressure relief valves shall have an ASME relief rating to meet the pressure conditions specified on the equipment served. They shall be installed in the cold water supply line to the heating equipment served, except where scale formation from hard water may be encountered, in which case they shall be installed in the hot water supply line from the heating equipment served. There shall not be a shut-off valve between the pressure relief valve and the tank. Except when an alternate design is approved by the Department in writing pursuant to Section 890.140(a)(2) or 890.1940, the pressure relief valve shall be set to open at a maximum of the working pressure rating of the water heater, but shall not exceed 150 psi. Each pressure relief valve shall have a test lever.

2) Temperature Relief Valves. Temperature relief valves shall bear the Canadian Standard Association (CSA) relief rating, expressed in British Thermal Units (BTU) of heat input per hour, for the equipment served. They shall be installed so that the temperature-sensing element is immersed in the hottest water within the top 6 inches of the tank. The valve shall be set to open full when the stored water temperature is 210 degrees Fahrenheit.

c) Combination Pressure-Temperature Relief Valves

1) Combination pressure-temperature relief valves shall comply with the applicable requirements listed in Appendix A.Table A (Approved Standards for Plumbing Appliances/Appurtenances/Devices) for individual pressure and individual temperature relief valves, shall be installed so that the temperature sensing element is immersed in the hottest water within the top 6 inches of the tank, and shall have a test lever.

2) A check valve or shut-off valve shall not be installed between any safety device and the hot water equipment, nor shall there be any shut-off valve in the discharge pipe from the relief valve. (See Appendix I.Illustrations N and O.)

3) Energy cut-off devices shall not be used in lieu of subsections (c)(1) and (2) and shall be of a design to properly serve the intended use of the plumbing appliance, appurtenance or device. Exception: Instantaneous cut-off devices are exempted or may be used.

d) Relief Discharge Outlet

1) A relief discharge outlet shall be installed and be indirectly connected to waste. The discharge pipe from the relief valve shall not be located so as to create a safety hazard or to discharge so as to cause damage to the building or its contents. The relief valve shall not discharge through a wall into the outside atmosphere or where there is a possibility of freezing.

2) No reduced coupling, valve or any other restriction that would impede the flow of discharge shall be installed in the discharge line of any relief valve. The discharge line shall be installed from the relief valve to within 6 inches of the floor or receptor and the end of the line shall not be threaded.

3) Any piping used for discharge from the relief valve shall be of metallic material, shall comply with Appendix A. Table A (Approved Materials for Water Distribution Pipe) for potable water piping, and shall drain continuously downward to the outlet.

4) The discharge piping shall discharge indirectly into a floor drain, hub drain, service sink, sump or a trapped and vented P-trap that is located in the same room as the water heater. (See Sections 890.1010 and 890.1050(a), (b) and (c).) The trap shall have a deep seal to protect against evaporation or shall be fed by means of a priming device designed and installed for that purpose. The use of a light grade oil in the trap will retard evaporation.

e) Pressure Marking – Hot Water Storage Tank. Hot water storage tanks shall be permanently marked in an accessible place with the maximum allowable working pressure.

f) Vacuum Relief Valve. If a hot water storage tank or water heater is located at an elevation above the fixture outlets in the hot water system, or if the storage tank or water heater is bottom fed, a vacuum relief valve as listed in Appendix A.Table A (Approved Standards for Plumbing Appliances/Appurtenances/Devices) shall be installed on the storage tank or heater.

g) Multiple Temperature Hot Water Systems. These systems shall be provided with thermostatic mixing valves to control the desired temperatures.

(Source: Amended at 38 Ill. Reg. 9940, effective April 24, 2014)