

Pre-Inspection Checklist for Potable Hot Water Boilers

Notice: This checklist reflects the most common violations our field inspectors encounter when performing an inspection on potable hot water boiler installations built to the American Society of Mechanical Engineers (ASME) Heating Boiler Code. It is highly suggested that all boiler industry personnel have access to a current set of applicable codebooks and jurisdiction laws, such as: the ASME Code Section IV and Section VI for Heating Boilers; the National Board Inspection Code (NBIC); the New Jersey Statutes Annotated, N.J.S.A. 34:7-1, N.J.S.A. 34:7-14; and the New Jersey Administrative Code, N.J.A.C. 12:90.

A potable water heater (ASME HLW stamped) is considered a boiler when it supplies potable hot water for commercial purposes at pressures not exceeding 160 psi and temperatures not exceeding 210°F; except that such water heaters are exempted when they are less than the following limitations:

- (1) *Heat input of 200,000 Btu/hr*
- (2) *Water temperature of 210°F*
- (3) *Nominal water-containing capacity of 120 gallons*

REFERENCE

COMPLIANCE
YES NO

Controls

Section IV HLW-701	Each individual automatically fired water heater, in addition to the operating control used for normal water heater operation, shall have a separate high temperature limit actuated combustion control that will automatically cut off the fuel supply. The temperature range of the high temperature limit control shall not allow a setting over 210°F.	<input type="checkbox"/>	<input type="checkbox"/>
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Installation Requirements

Section IV HLW-800	Each water heater shall have at least one officially rated temperature and pressure safety relief valve or at least one officially rated safety relief valve.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-800	No safety relief valve shall be smaller than NPS ¾ inch.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-800	The safety relief valve pressure setting shall be less than or equal to the maximum allowable working pressure of the water heater.	<input type="checkbox"/>	<input type="checkbox"/>

REFERENCE**COMPLIANCE**
YES NO**Installation Requirements (continued)**

Section IV HLW-800	The required relieving capacity in Btu/hr of the safety relief valve shall not be less than the maximum allowable input.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-801	Safety relief valves shall be connected to the top of water heaters or directly to a tapped or flanged opening in the water heater.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-801	Safety relief valves shall be installed with their spindles upright and vertical with no horizontal connecting pipe, except that when the safety relief valve is mounted directly on the water heater vessel with no more than 4 inch maximum interconnecting piping, the valve may be installed in the horizontal position with the outlet pointed down.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-801	No piping or fitting used to mount the safety relief valve shall be of a nominal pipe size less than that of the valve inlet.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-801	Safety relief valves shall not be connected to an internal pipe in the water heater or a cold water feed line connected to the water heater.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-801	No shutoff of any description shall be placed between the safety relief valve and the water heater, or on the discharge pipes between such valves and the atmosphere.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-801	When a discharge pipe is used, its internal cross-sectional area shall be not less than the full area of the valve outlet.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-801	The discharge from safety relief valves shall be so arranged that there will be no danger of scalding attendants.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-801	The safety relief valve discharge shall be as short and straight as possible and so arranged as to avoid undue stress on the valve.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-805	Water supply shall be introduced into a water heater through an independent water supply connection.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-805	Feed water shall not be introduced through openings or connections provided for cleaning, safety relief valves, drain, or temperature gage.	<input type="checkbox"/>	<input type="checkbox"/>

REFERENCE

COMPLIANCE
YES NO

Installation Requirements (continued)

Section IV HLW-809	Provisions shall be made for the expansion and contraction of hot water mains connected to water heaters by providing substantial anchorage at suitable points and by providing swing joints when water heaters are installed in batteries.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-810	Each water heater shall have a bottom drain pipe connection fitted with a valve or cock connected to the lowest water space practicable. The minimum size bottom drain valve shall be 3/4 inch.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-810	Any discharge piping connected to the bottom drain connection shall be full size to the point of discharge.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-820	Each installed water heater shall have a thermometer so located and connected that it shall be easily readable.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-820	The thermometer shall be so located that it shall at all times indicate the temperature of the water in the water heater at or near the outlet.	<input type="checkbox"/>	<input type="checkbox"/>

NOTE: Make certain that all items listed above are in compliance prior to requesting an inspection on a new or reinstalled boiler.