

Sec. 29-232-90. Safety valves

(a) Each steam boiler shall have one or more ASME/National Board certified safety valves of the spring poptype adjusted and sealed to discharge at a pressure not to exceed 15 psi. Seals shall be attached in a manner to prevent the valve from being taken apart without breaking the seal. The safety valves shall be arranged so that they cannot be reset to relieve at a higher pressure than the maximum allowable working pressure of the boiler. A body drain connection below seat level shall be provided by the manufacturer and this drain shall not be plugged during or after field installation. For valves exceeding 2 in. pipe size, the drain hole or holes shall be tapped not less than 3/8 in. pipe size. For valves less than 2 in., the drain hole shall not be less than 1/4 in. in diameter.

(b) No safety valve for a steam boiler shall be smaller than 3/4 in. unless the boiler and radiating surfaces consist of a self-contained unit. No safety valve shall be larger than 4 1/2 in. The inlet opening shall have an inside diameter equal to, or greater than, the seat diameter.

(c) The minimum relieving capacity of the valve or valves shall be governed by the capacity marking on the boiler.

(d) The minimum valve capacity in pounds per hour shall be the greater of that determined by dividing the maximum BTU output at the boiler nozzle obtained by the firing of any fuel for which the unit is installed by 1000, or shall be determined on the basis of the pounds of steam generated per hour per square foot of boiler heating surface as given in Table 2. In many cases a greater relieving capacity of valves than the minimum specified by these rules will have to be provided. In every case, the requirements of (e) shall be met.

Table 2

Minimum pound of steam per hour per square foot of heating surface.

	<i>Firetube Boilers</i>	<i>Watertube Boilers</i>
Boiler heating surface:		
Hand fired	5	6
Stoker fired	7	8
Oil, gas or pulverized fuel fired	8	10
Waterwall heating surface:		
Hand fired	8	8
Stoker Fired	10	12
Oil, Gas or pulverized fuel fired	14	16

NOTES: (1) When a boiler is fired only by a gas having a heat value not in excess of 200 BTU per cubic foot, the maximum safety valve or relief valve relieving capacity may be based on the values given for hand fired boilers above.

(2) The minimum safety valve or relief valve relieving capacity for electric boilers shall be three and one-half lbs. per hour per kilowatt input.

(3) For heating surface determination see A.S.M.E. Code, section IV, para. HG-403.

(e) The safety valve capacity for each steam boiler shall be such that with the fuel burning equipment installed, and operating at maximum capacity, the pressure cannot rise more than

5 psi above the maximum allowable working pressure.

(f) When operating conditions are changed, or additional boiler heating surface is installed, the valve capacity shall be increased, if necessary, to meet the new conditions and be in accordance with (e). When additional valves are required, they may be installed on the outlet piping provided there is no intervening valve.

(g) If there is any doubt as to the capacity of the safety valve, an accumulation test shall be run. (See ASME Code, Section VI, Recommended Rules for Care and Operation of Heating Boilers.)

(h) No valve of any description shall be placed between the safety valve and the boiler, nor on the discharge pipe between the safety valve and the atmosphere. The discharge pipe shall be at least full size and be fitted with an open drain to prevent water lodging in the upper part of the safety valve or in the discharge pipe. When an elbow is placed on the safety valve discharge pipe, it shall be located close to the safety valve outlet or the discharge pipe shall be securely anchored and supported. All safety valve discharges shall be located or piped as not to endanger persons working in the area.

(Effective August 25, 1987)