

Kansas Administrative Regulations

Department of Labor

Article 52.—Low Pressure Heating Boilers

49-52-5. Safety valves.

(a) Each steam boiler shall have one or more ASME or national board-approved and certified safety valves of the spring pop-type adjusted and sealed to discharge at a pressure not to exceed 15 psig. Seals shall be attached in a manner that prevents 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 two inches of pipe size, the drain hole or holes shall be tapped not less than $\frac{3}{8}$ inch pipe size. For valves less than two inches, the drain hole shall not be less than $\frac{1}{4}$ inch in diameter.

(b) A safety valve for a steam boiler shall not be smaller than $\frac{1}{2}$ inch unless the boiler and radiating surfaces consist of a self-contained unit. A safety valve shall not be larger than $4\frac{1}{2}$ inches. 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)(1) The minimum valve capacity in pounds per hour shall be the greater of the valves determined by either of the following:

(A) Dividing the maximum BTUH output at the boiler nozzle obtained by the firing of any fuel for which the unit is installed by 1,000; or

(B) using the pounds of steam generated per hour per square foot of boiler heating surface as given in the following table:

**Minimum pounds of steam per hour
per square foot of heating surface**

Boiler heating surface:	Fi retube boilers	Wat ertube boilers
Hand-fired	5	6
Stoker-fired	7	6
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

(2) When a boiler is fired only by gas with a heat value not in excess of 200 BTUH per cubic feet, the minimum safety valve or safety relief valve relieving capacity shall be based on the value given for hand-fired boilers above.

(3) The minimum safety valve or safety relief valve relieving capacity for electric boilers shall be 3½ pounds per hour per kilowatt input.

(4) The amount of heating surface in a boiler shall be determined according to the provisions of ASME code section IV, paragraph 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 psig 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 in accordance with subsection (e). When additional valves are required, they may be installed on the outlet piping if 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 in accordance with the ASME code, section VI.

(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 safety valve shall be installed in a vertical position.

(i) The discharge pipe shall be at least full size and shall 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, the elbow 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 in a manner that will not endanger persons working in the area. When discharge piping is directed downward, the pipe shall terminate six inches above floor level. Plastic discharge piping shall not be used.

(j) When two or more safety valve discharge lines are connected together, the cross-sectional area of the common discharge line shall equal or exceed the cross-sectional area of the combined safety valve discharge outlets.

(Authorized by and implementing K.S.A. 1998 Supp. 44-916; effective May 1, 1987; amended April 28, 2000.)

***** Authenticated Kansas Administrative Regulation *****