

ABSTRACT

Today a lot of steam is used for people needs. For example, steam is used for healthy like spa therapy. Others, steam is used for powerplant as a power source to work the machine like generator. The one which used a steam for power is fire tube steam. Based on this facts, writer want to design a fire tube steam boiler which is able to operating fire tube steam. The pressure of design fire tube steam boiler is 14 atm, assumed that pressure of inlet water is 1 atm, temperature of inlet water is 80 °C, temperature of saturated steam is 195 °C, temperature of superheated steam is 200 °C with 5 ton/hour capacity.

In this design, writer observed a real fire tube steam boiler in PG. Gondang Baru Klaten. There are main components that design for fire tube steam boiler : furnace, fire tube, superheater and stack. From the design of fire tube steam boiler, writer gets technical data for each main component, such as : heat capacity is 11.387.219 kJ/hour, fuel capacity is 564,9 kg/hour. Hopefully, with that data, its can be designed an efficient fire tube steam boiler.