



AMERICA'S BOILER COMPANY

EFFICIENCY DEFINITIONS

THERMAL EFFICIENCY

The effectiveness of the boiler as a heat exchanger. It is the ability of the boiler to exchange heat through tubes and furnace, by radiation, conduction and convection, to the transfer medium (water). A few of the factors affecting thermal efficiency are heating surface, tube number and diameter, furnace tube length and diameter.

COMBUSTION EFFICIENCY

This is a measure of the ability of the burner to effectively and completely burn the fuel, coupled with the thermal efficiency of the boiler. Burners requiring high amounts of excess air to provide flame stability will be less efficient. Combustion efficiency does not take into account heat loss to the surrounding air through the boiler jacket and piping.

FUEL TO STEAM EFFICIENCY

Sometimes referred to as overall efficiency. This is a ratio of heat output to heat input. This includes boiler jacket and piping losses to surrounding environment. It is the percent of useable heat in the steam (or hot water) compared to the heat input supplied by the burner. It is also defined as the combustion efficiency less boiler jacket and piping loss (radiation and convection losses). Since fuel-to-steam efficiency reflects the portion of actual usable heat supplied to the system, it is most useful when comparing performance of similar equipment, or when doing fuel savings analysis.