Energy Performance Assessment of Boilers

A step to reduce the steam cost

TUV India -
Boiler Efficiency Testing

Some boiler plants are so fully instrumented and staffed that it is always possible to ascertain without difficulty what efficiency is being "attained. At the other end of the scale there are boilers equipped only with the instruments required by law. When fuel costs are a serious consideration, boiler plant manufacturers are nearly always faced with contractual obligations to meet specified efficiencies on tests after the erection of new plant, and the user during the subsequent life of the boiler is also likely to be interested in the results of periodic efficiency checks.

Performance of the boiler, like efficiency and evaporation ratio reduces with time, due to poor combustion, heat transfer fouling and poor operation and maintenance. Deterioration of fuel quality and water quality also leads to poor performance of boiler. Efficiency testing helps to find out how far the boiler efficiency drifts away from the best efficiency. Any observed abnormal deviations could therefore be investigated to pinpoint the problem area for necessary corrective action. Hence it is necessary to find out the current level of efficiency for performance evaluation, which is a pre requisite for energy conservation action in industry.

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Why Performance Test

The purpose of the boiler performance test is to determine actual performance and efficiency of the boiler and compare it with design values or norms. It is an indicator for tracking day to-day and season-to-season variations in boiler efficiency and energy efficiency improvements.

Reference Standards

- British standards, BS845: 1987
- ASME Standard: PTC-4-1 Power Test Code for Steam Generating Units
- European Standard: BS EN 12953-11:2003 - Shell boilers for acceptance tests

Our Approach

Basically Boiler efficiency can be tested by the following methods:

1) The Direct Method: Where the energy gain of the working fluid (water and steam) is compared with the energy content of the boiler fuel.
2) The Indirect Method: Where the efficiency is the difference between the losses and the energy input.

TUV India's energy experts offer a set of sophisticated measuring instruments to measure the key parameters accurately. This helps them to derive the boiler efficiency test and recommend energy saving opportunities wherever possible.

The efficiency of a boiler is quoted as a percentage of useful heat available, expressed as a percentage of the total energy potentially available by burning the fuel. This is expressed on the basis of gross calorific value (GCV).

Our Expertise – TUV India

- Conducted extensive Boiler Efficiency Tests and closely associated with several energy conservation projects in the industrial sector.

- Pool of experienced boiler expert to conduct Boiler Performance Assessment for all types of steam boilers in the industries, for e.g. Chemical & Petrochemical, Cement, Power, Sugar, Paper & pulp, Textile, Pesticides, Dairy, Food Processing, Breweries, Pharmaceutical, Fertilizer, Paints, Engineering, Ceramic, Synthetic Fibers and Hotel etc.

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