

Technip Energies burner test facility

Continuous burner research and remote inspection



Duty vs. temperature cooling coil

Technip Energies operates a burner test facility in Rotterdam, The Netherlands. The facility comprises one furnace for testing at up to a 5-megawatt firing rate. A second furnace has been installed for testing smaller burner capacities (up to 1-megawatt firing rate).

Technip Energies performs continuous research on the performance of our proprietary burners, the LSV® and the TSWB®. The new test facility enables us to further develop and fine-tune our burners to achieve even lower emissions. It allows us to look at the performance of burners in a controlled radiant firebox environment. Within the testing furnace preheated combustion air is available for testing, with a temperature of up to 500°C.

The test furnace has 36 thermocouples to measure the outlet temperatures of the air-cooled radiant cooling coils. This information is used to derive an accurate burner heat flux profile. This ability to test and measure heat flux profiles is a great asset for studying burner flames and an important differentiator. Previously this information was based solely on visual information. In particular for the LSV® burner, the flame is hardly visible.



Burner flame visible through peephole



Remote inspection through smart glasses



Radiant cooling coils

Our proprietary CFD-NOx simulator is used for the computational fluid dynamics study of various aspects of the burner performance. In addition, the temperature data obtained from the test furnace can be directly linked to SPYRO®, our proprietary software for steam cracking yield prediction and complete furnace simulation of gas or liquid feedstocks. Remote witness and inspection of a burner performance test demonstration is also available using smart glasses and cameras.



Radiant coil inlets and outlets

Our R&D on proprietary burner design benefits greatly from the availability and quality of the data generated in the test furnace facility. This data will enable Technip Energies to further develop our products and expertise in this field, and result in being able to offer the latest developments in burners to our clients.



Fuel gas flow measurement

...to further develop and finetune our burners to achieve even lower emissions.



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