



Carbon Baking Furnace Combustion and Control System

E2SL completed a project for Premier Refractories International Limited which included the design, supply, installation and commissioning of the combustion and control system for the Millennium Furnace.

→ Aim

To supply a new combustion and control system for an open furnace that was to replace an existing and worn out closed top furnace with an aim of greater production capacity.

→ Scope of Work

PRIL had designed a new open topped furnace, in house, and required a new combustion and control system. This system was to incorporate one set, or “fire”, of furnace hardware that includes one exhaust rack, one start-up rack, three high heat racks, two cooling racks, a set of ducting to carry the off-gases to the environmental clean-up system (an RTO), multi-fuel (Natural Gas and LPG) distribution network and control system that integrated the RTO and new furnace controls using a wired network distributed control system on each rack and wireless connection to a mobile HMI.

The new equipment was required to be simple in operation where the position of the various racks was automatically verified and operating requirements uploaded to the rack, e.g. temperature ramp, where local control was exercised even in the event of a network failure. In addition close control of furnace temperature was required particularly in the important ramp to temperature and through the pitch evolution and burn part of the cycle.

This system was designed, manufactured, installed and commissioned and set to work in 2000.

→ Benefits

The system met all objectives of ease and reliability of operation, control of temperature ramp and extraction of all fume to the ductwork and on to the RTO.

→ Images



Fig.1 Exhaust rig



Fig.2 Cooling rig

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