SSAB, Tunnplåt AB, Sweden

300 t/h steel reheating furnace, walking beam type

Customer: SSAB, Tunnplåt AB, Borlänge, Sweden
Main contractor: SSAB, Tunnplåt AB, Borlänge, Sweden
End user: SSAB, Tunnplåt AB, Borlänge, Sweden
ICS contribution: Main technology supplier based on HTB burners and HiTAC combustion technology
ICS reference: ICS003
Capacity: 300 t/h, 128.76 MW (in total)
Commissioning: July/August 2008

Description
SSAB Tunnplåt AB is a part of SSAB Group a global producer of high strength steel. The steelworks are located in Borlänge in Sweden. Project covered revamping of the furnace with a new HTB (High Temperature Burner) combustion system in four of eight zones: 3, 4, 7 and 8. Zone 1 and 2 was rebuilt in 2006 using the same technology (HTB/HiTAC). Revamped furnace is a part of steel sheet production plant where steel slabs are rolled. Investor’s expectation was to reduce the NO\textsubscript{X} emission down to 62 ppm normalized to 5% of O\textsubscript{2} (excepting Zone 5/6) to meet the current authorities demands without lowering in the same time the overall firing capacity of the furnace and production capacities.

Installation
The installation consists of 3 sets of HTB divided into 4 zones. All burners are propane or LPG fired and after certain changes can be Natural Gas fired as well. The recuperated combustion air is used with the temperature in the range of 590 - 640°C. Zone temperature is between 1100 - 1270°C.

ICS scope of supply
- Zone 3 – upper heating zone: 
  8 x HTB-DL2.8 (2800 kW) – all burners equipped with hot condition mode only,
- Zone 4 – bottom heating zone: 
  9 x HTB-DL2.7 (2675 kW) – 5 burners with cold and hot condition mode and 4 burners with hot condition mode only,
- Zone 7 and 8 - bottom soaking zones:
  9 x HTB-DL1.2 (1150 kW) – all burners with cold and hot condition mode,
- burner fittings,
- detailed engineering of combustion system,
- control system description,
- detailed documentation of burner and zone piping,
- engineering support at erection and commissioning.

Advantages
- NO\textsubscript{X} emission reduction down to less than 62 ppm compared to 125 ppm before any HTB burners installation,
- uniform temperature field and heat flux in the furnace,
- improvement in product quality due to very even temperature in the furnace in comparison to the previous combustion system,
- unit fuel consumption reduction due to longer lifetime of the refractory on the skid system (lower thermal loss, lower and stable waste steam production between yearly maintenance stops).

Company close-up
ICS Industrial Combustion Systems mission is delivering proven, reliable, innovative combustion solutions to heavy industry customers throughout the Europe.

ICS’s offer includes:
- combustion systems for metallurgy as well as heat treatment for steel and non-ferrous metals industry,
- combustion systems for ceramic industry,
- combustion systems for petrochemical industry,
- waste gas incineration systems.

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