

HIGH EFFICIENCY AND ULTRA-LOW-EMISSIONS

Advanced burner technology for thyssenkrupp's hot-dip galvanizing plant

thyssenkrupp Steel recently inaugurated its newest continuous galvanizing line 10 (FBA 10) in Dortmund, Germany. The plant sets a global benchmark in energy efficiency and low-emission heating.

By using modern regenerative burners from WS Wärmeprozessestechnik GmbH in double-P radiant tubes, the new continuous galvanizing line at thyssenkrupp Steel typically saves between 15% and 30% fuel as compared with conventionally heated furnaces. At the same time, particularly low NO_x emission values are achieved, thanks to the patented FLOX® combustion process. Due to its high efficiency and the excellent temperature uniformity of the radiant tubes used, the heating system also creates a perfect basis for a later switch to green fuels such as hydrogen.

With a total of three vertical strip-processing lines, the thyssenkrupp plant in Dortmund is one of the world's most modern locations for the annealing and surface finishing of steel strip. Together, the three lines can process up to 2,000,000 metric tons of steel per year.

WS already delivered nearly 800 modern gas burners to the Dortmund location,

making it one of the most advanced and environmentally friendly sites worldwide. Regarding the regenerative burners used for FBA10, Dr. Clemens Trachternach, team leader of FBA 10, says: "It is the best technology available on the market, which we are installing in order to really future-



REGEMAT® 250 in Double-P-Tube (Picture: WS Wärmeprozessestechnik GmbH)

proof the plant and still safely undercut the emission limits many, many years from now."

Crucial to meeting this goal is the decades of experience at WS with the multiple award-winning and patented FLOX® technology, which is already successfully in use in tens of thousands of burners worldwide. The FLOX® combustion technology allows highly efficient burners to be operated with particularly low NO_x emission levels. "It is our ambition at WS, to provide solutions for all continuously operated strip lines which can reliably attain NO_x emissions well below 100 mg/Nm³, with simultaneously high combustion efficiency over 80% and which are, already today, suited for a future with green combustion gases" says Dr.-Ing. Wüning, President of WS Wärmeprozessestechnik GmbH.

WS Wärmeprozessestechnik GmbH

Dortmund: competence center for hot-dip galvanizing and surface technologies

The new hot-dip galvanizing line at thyssenkrupp Steel's Dortmund location, FBA 10, was inaugurated in October 2022. Since, the FBA 10 line has gone into technical ramp up. With now two modern strip processing lines, Dortmund will become the European center for high-quality hot-dip galvanized steel strip products.

At the new line, thyssenkrupp Steel can produce top-quality surfaces for vehicles, for example, and also offer the highly innovative zinc-magnesium products, which thanks to their low application thickness save both materials and costs, as well as being sustainable. Overall, thyssenkrupp has further strengthened its portfolio of stronger and thinner premium steels with the new plant.

With the investment of over a quarter of a billion euros, Dortmund is consolidating its position as a center for high-quality surface technologies. Together with FBA 8, which is in operation just a few meters away from and adjacent to the new FBA 10, around one million metric tons of hot-dip galvanized products will roll off the two state-of-the-art lines in the future. The FBA 10 line will produce around 600,000 metric tons of hot-dip galvanized steel per year. A wide range of grades will be produced in almost all strength classes for outer panels and structural components, as well as selected industrial products.

thyssenkrupp Steel Europe