

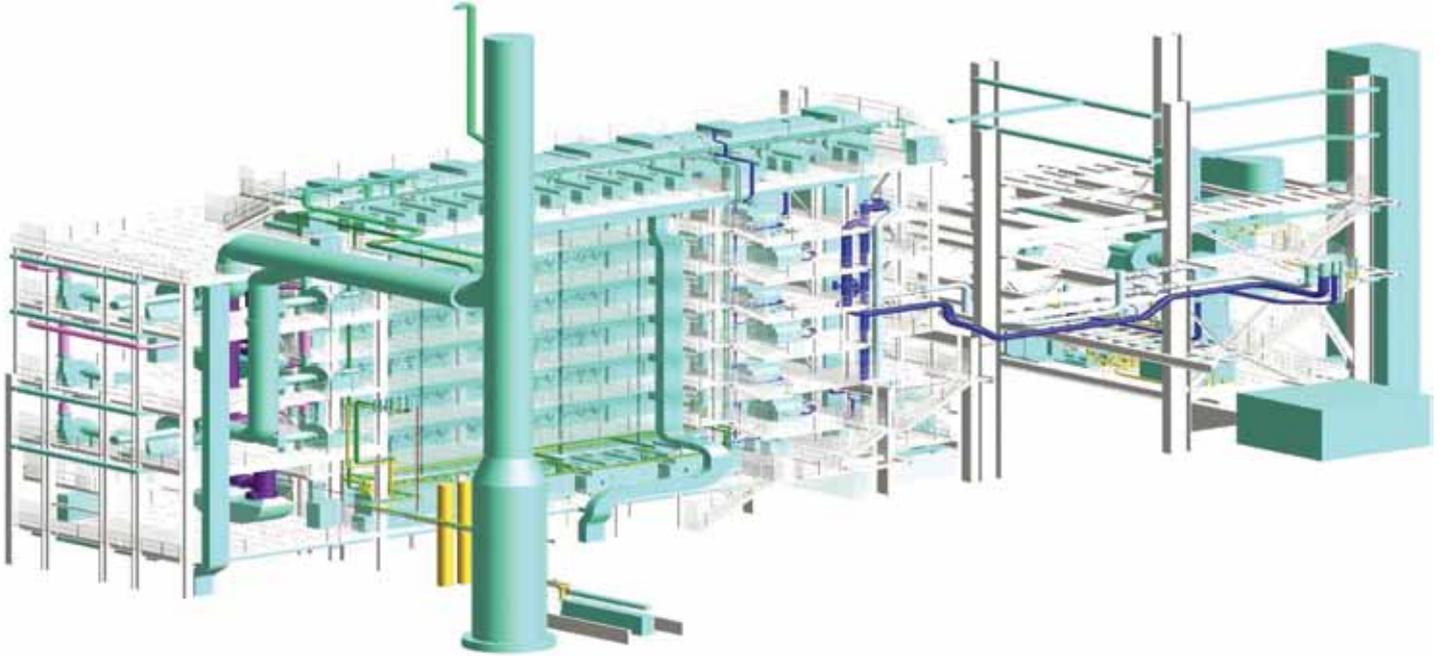
Continuous galvanizing line

Tianjin Ansteel Tiantie, China



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▲ Furnace layout

Furnace Design

This furnace consists of radiant tube heating and soaking zones which are equipped with double-P-type tubes and high efficient low NO_x recuperative burners. The burners are operated in on/off mode ensuring in all load cases an optimized combustion, condition for low emission

values and highest efficiency. To ensure a high degree of heat recovery, the waste gases of the burners heat up hot water which is used in the pre-cleaning section of the line. After the heating and soaking zones, the strip travels through the Gas Jet Cooling (GJC) where it is cooled to the required temperature before entering the

coating pot. The Gas Jet Cooling consists of individual cooler units located over two vertical passes where the H₂N_x furnace atmosphere is circulated via efficient heat exchangers and through profiled blowing nozzles on the strip to achieve cooling rates allowing the customer the production of all modern steel grades.



▲ The continuous galvanizing line (CGL) n°1 of TIANJIN ANSTEEL TIAN TIE in Tianjin started operation in June 2009. The All Radiant Tube (ART) furnace of this CGL has been designed and built by ANDRITZ Selas and allows the customer a high degree of flexibility due to its special design features.



▲ General view of the after pot cooling tower

Compact Design

The APC-tower has been designed in a way that its height is the same than the furnace height. This very compact design represented major savings for the customer in terms of building and overhead crane cost and ensures at the same time the cooling requirement and strip stability for the complete production range.

Automation and Control

The furnace control system has been completely designed and programmed by ANDRITZ Automation Group and is characterised by all modern control and automation functions.

The installed mathematical model ensures that the optimized operation modes are applied during all transitional stages, avoiding any quality problems and increasing through put during these phases. In addition, it ensures a common line operation

throughout all shifts and stabilizes quality parameters, essential for all customers.

The furnace allows a wide range of production and the two pot system and retractable snout ensure a quick change after from zinc to zinc-aluminum coatings. The close, constructive and successful cooperation between ANSTEEL TIANTIE and ANDRITZ Selas was one of the major elements to extend the relationship and to build as well a new CAL furnace at the same site which started its operation in 2010.



▲ Radiant tube furnace equipped with latest technology burners

CGL as CAL

Special sealing equipment, located near the retractable snout, allows the customer to run the CGL as well as continuous annealing line (CAL) which has been proven its benefits during a long unavailability of the pots. This flexibility is highly appreciated by the customer.



Operation of the CGL as CAL ▲

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Technical data

- Capacity 320,000 tons/year
- Strip thickness 0.25-1.6 mm
- Strip width 700-1,250 mm
- Process section speed Maximum 180 m/min
- Steel grades CQ, DQ, DDQ,
CQ340-HSS, CQ440-HSS, DQ-HSS
- Operation with GI and GL products



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