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## Shandong Iron & Steel orders Multipas annealing simulator from Primetals Technologies

- **Multipas is used for product development and process optimization in heat treatment plants**
- **Shortens the run-up phase of heat treatment plants**
- **System to be installed in the research center of the new iron and steel works**
- **Tenth order for an annealing simulator received by Primetals Technologies**

Shandong Iron and Steel Group Rizhao Co. Ltd., a Chinese steel producer, has ordered a Multipas (multipurpose annealing simulator) from Primetals Technologies. The system will be installed in the research center of the new iron and steel works under construction south of Rizhao. Multipas will be used there for product development and process optimization in heat treatment plants. One of the main reasons for awarding the order to Primetals Technologies was the universal usability of the annealing simulator. Its use shortens the run-up phase of heat treatment plants and simplifies their optimization. So far, this is the tenth order for a Multipas system. Commissioning is scheduled for September 2018.

Shandong Iron & Steel Group Rizhao Co., Ltd. is a subsidiary company of the Shandong Iron & Steel Group. It was founded in 2009 as a key component of the Shansteel Rizhao Quality Products Base and as the end processor for materials. The company is currently constructing a new integrated iron and steel works to the south of Rizhao on the coast of the Yellow Sea. A research center is being built on the site for product development and process optimization, which will also be equipped with rolling and annealing simulators.

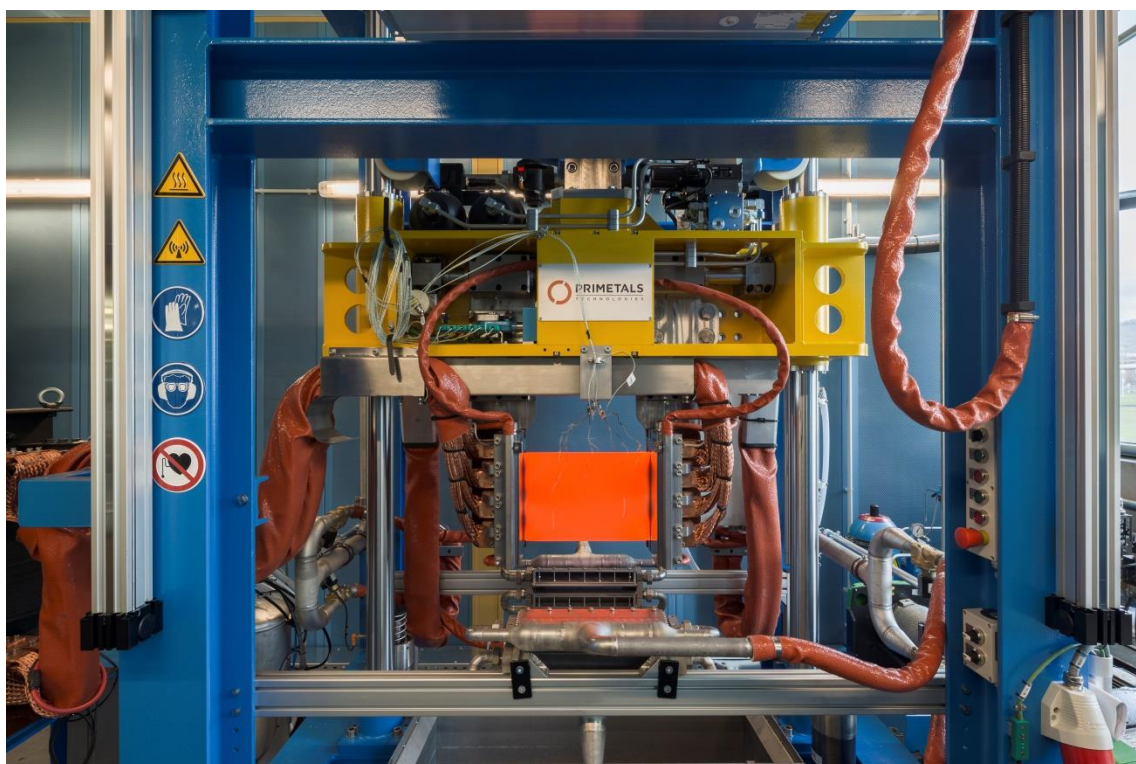
In a Multipas annealing simulator samples of cold-rolled plates with dimensions up to of 500 x 300 millimeters and a thickness of up to three millimeters are heated by conduction up to a temperature of 1,200°C by a maximum electric current of 8,000 amperes. Depending on the geometry of the sample, the heating rates are up to 100 kelvins per second. The samples can then be cooled in very different ways. The two main forms of cooling are gas jet cooling with cooling rates of up to 100 kelvins per second and water quenching. This method cools a sample with water at rates of up to 1,000 kelvins per

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second, which enables the microstructure to be "frozen". The sample is then examined in the laboratory. A Multipas is also equipped with spray water and mist jet nozzles, and fan cooling. The wide range of heating and cooling speeds is necessary in order to be able to simulate on a small scale all possible and future heat treatments in the large-scale plant.

The Multipas system is assembled in the Mechatronic Laboratory of Primetals Technologies in Linz, Austria. The laboratory also conducts all the functional tests and the preliminary acceptance by the customer. The Multipas system will be shipped to Rizhao at the end of June 2018. Specialists from Primetals Technologies will then install and commission the simulator. This is the tenth order for a Multipas system, which has already been supplied to customers in Austria, Germany, South Korea and China.



Multipas (multipurpose annealing simulator) from Primetals Technologies. A simulator of this type will be installed in the research laboratory of the new iron and steel works of the Shandong Iron and Steel Group Rizhao Co., Ltd. near Rizhao, China.

This press release and a press photo are available at

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