

---

London, September 5, 2019

## Primetals Technologies receives FAC for automation upgrades at Gerdau Ouro Branco and conducts Industry 4.0 study

- **New level 1 and level 2 systems for billet caster improve quality, reduce maintenance efforts and operating costs**
- **New level 2 system for two blast furnaces saves fuel and reducing agents while improving hot metal quality**
- **Industry 4.0 study assesses digital maturity level and provides roadmap to digital steel plant**

In late March, Primetals Technologies received the Final Acceptance Certificates (FACs) for automation upgrades conducted on a third-party 6-strand billet caster and two blast furnaces of Gerdau Ouro Branco in Minas Gerais, Brazil. The caster project included the upgrade of outdated level 1 and level 2 systems, resulting in quality improvements, reduced maintenance requirements and operating cost savings. Blast furnaces #1 and #2 were outfitted with a new level 2 process optimization system with a short payback period of several months. On the one hand the solution saves fuel and reducing agents, and on the other hand it improves the hot metal quality. In addition, Gerdau contracted Primetals Technologies to assess two of their facilities regarding their digital maturity level within the scope of an Industry 4.0 study, and to provide a roadmap towards a smart steel production.

The level 2 system installed at a 6-strand billet caster encompass basic functionalities like material tracking, heat pacing, cutting schedule and process set-point generation as well as the implementation of the Equipment Expert, which is a preventive maintenance tool for the caster equipment. Advanced process models for the caster include the DynaSpeed secondary cooling model, Quality Expert Express Edition used for product quality rating, a billet cut-length optimization and the Intermix model for calculation of the heat volume concentration and incompatible strand portions along the strand.

In the course of upgrading the billet caster's level 1 system, Primetals Technologies undertook the migration of an obsolete third-party platform to the latest state-of-the-art controllers, using a special migration kit in order to reduce risk and consequently shortening the shutdown period. Existing frequency converters were replaced by new components. A new HMI(Human Machine Interface) system, using a virtual server concept was also supplied. In addition, the existing low performance field networks were replaced by Ethernet IP, and the operation desks and panels were modernized.

The level 2 systems for the two blast furnaces #1 and #2 enables all optimization functions to work within a virtualized server concept, allowing for high-availability hardware redundancy. The system offers data recording, data visualization and long term data archiving functionality. Control of blast furnace raw material supply and material distribution within the shaft is model based, as is the optimized control of the hot stoves system. Also, expert systems for automatic operation of blast furnace in closed-loop mode, and for preparing the blast furnaces for intermediate maintenance shut-downs were introduced. Finally, a recently developed slag optimization model was included in the level 2 system.

The Industry 4.0 Study conducted by Primetals Technologies consisted of the assessment of an integrated process route from blast furnace to continuous casting and the assessment of an EAF route from scrap handling to long rolled products. The assessments were performed in a holistic manner, including an investigation of metallurgical models and tools for better and more repeatable process execution, automation and system requirements, production planning and digital assistance systems, all with regards to product quality, traceability and consistency. Based on the results of this assessment a roadmap was provided by Primetals Technologies, which will assist Gerdau to further transform its production site in Ouro Branco to meet their goal of becoming a smart steel production.

Gerdau S.A., headquartered in São Paulo, is the largest Brazilian steel producer and one of the major suppliers of long steel in the Americas and of special steel in the world and possesses an installed capacity of 21.7 million tons of steel per year. The company is present in 10 countries in the Americas. Gerdau Ouro Branco, located in the Brazilian state of Minas Gerais, is Gerdau's largest steel mill. Its product mix includes billets, slabs, blooms, beam-blanks, wire-rod, carbochemicals, hot coils and plates. The installed capacity of the Ouro Branco plant is 4.5 million metric tons per year.



The new level 1 and level 2 systems from Primetals Technologies for the billet caster of Gerdau Ouro Branco in Brazil improve the quality, reduce maintenance efforts and operating costs.

This press release and a press photo are available at [www.primetals.com/press/](http://www.primetals.com/press/)

**Contact for journalists:**

Dr. Rainer Schulze: [rainer.schulze@primetals.com](mailto:rainer.schulze@primetals.com)

Tel: +49 9131 9886-417

Follow us on Twitter: [twitter.com/primetals](https://twitter.com/primetals)

**Primetals Technologies, Limited**  
A joint venture of Siemens, Mitsubishi Heavy Industries and Partners  
Communications  
Head: Gerlinde Djumlija

Chiswick Park, Building 11, 566 Chiswick High Road  
W4 5YS London  
United Kingdom

**Primetals Technologies, Limited** headquartered in London, United Kingdom is a worldwide leading engineering, plant-building and lifecycle services partner for the metals industry. The company offers a complete technology, product and service portfolio that includes integrated electrics, automation and environmental solutions. This covers every step of the iron and steel production chain, extending from the raw materials to the finished product – in addition to the latest rolling solutions for the nonferrous metals sector. Primetals Technologies is a joint venture of Mitsubishi Heavy Industries (MHI) and Siemens. Mitsubishi-Hitachi Metals Machinery (MHMM) - an MHI consolidated group company with equity participation by Hitachi, Ltd. and the IHI Corporation - holds a 51% stake and Siemens a 49% stake in the joint venture. The company employs around 7,000 employees worldwide. Further information is available on the Internet at [www.primetals.com](http://www.primetals.com).

**Gerdau** is the largest Brazilian producer of steel and a leading provider of long steel in the Americas and specialty steel in the world. In Brazil, the company also produces flat steel and iron ore, activities that extend the product mix offered to the market and the competitiveness of operations. Moreover, with more than 30,000 employees Gerdau is the largest recycler in Latin America and in the world, transforming every year millions of tons of scrap into steel and reinforcing its commitment to sustainable development of the regions where it operates. Present in 10 countries, the company describes itself as pioneer in the steel sector in the implementation of digital innovation initiatives. The Gerdau shares are listed on the São Paulo stock exchanges (B3), New York (NYSE) and Madrid (Latibex). Further information is available on the Internet at [www.gerdau.com](http://www.gerdau.com).