



## **OPAL FOR CONTINUOUS CASTING**

### THE PROVEN DIMENSION IN OPTICAL ALIGNMENT

Optical measurement has been an established aspect of industrial and plant construction for years. Use of laser technology in particular is preferred because of its high measuring accuracy, which is achieved through precise control and evaluation of laser signals. This system is also of growing importance in the area of quality assurance and repair and maintenance because of its ease of use.

Primetals Technologies, which has pioneered innovative processes, technologies and automation in the steelworks sector, now has a proven optical laser measuring system for continuous casting equipment alignment which takes its place in the series of existing mechatronic packages (for example OsciBoy and WamBoy). The system is based on a wide range of different customer requirements such as measuring accuracy and ease of handling, and can be integrated in the maintenance of new or existing plants.

#### **YOUR CHALLENGE**

Covering a wide range of steel grades and section sizes whilst ensuring maximum quality and equipment lifetimes demands high standards in terms of the precision of the continuous casting strand guide system, especially the strand guide rollers. In order to be able to guarantee optimum roller position, a quick and easy roller alignment system is required. This also helps reduce time and costs. Another requirement is an intelligent system for handling of the electronically recorded measuring data over the entire product life-cycle as the basis for Plant Condition Monitoring.

#### **OUR SOLUTION**

With Opal, Primetals Technologies offers an integrated optical laser measuring system for the exact alignment of strand guide rollers which achieves extremely high measuring accuracies even under the harshest operating conditions in steelworks. It is based on the automated measurement and recording of the roller positions. A setting log is generated from this data for each roller and strand guide module. This allows a precise comparison between nominal and actual roller positions to be made.

The intuitive human-machine interface and the automated measuring process guarantee easy handling and reduced measuring times during maintenance. The Opal software ensures observance of the necessary service and maintenance intervals for the system components.



Opal robust equipment case



Mobile HMI for Data Acquisition



Laser Receiver with wireless data transmission

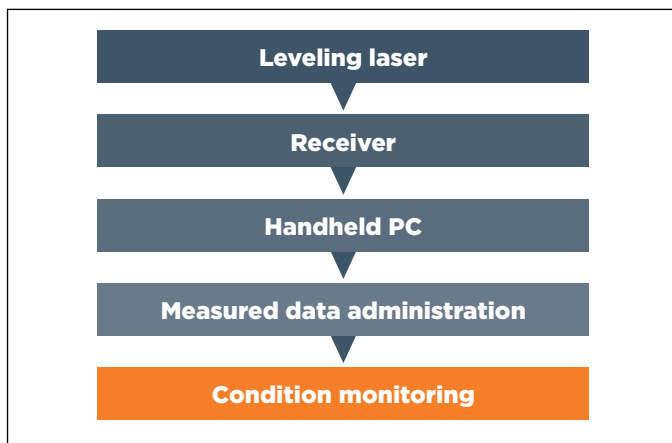
### SYSTEM CONCEPT

Opal is based on a high-precision leveling laser that generates a horizontal laser plane in 3-dimensional space. This is used as reference for measuring the strand guide components. A laser receiver with integrated microcontroller records the measured values and passes them on to the control processor by wireless transmission. The measured data are automatically analyzed and saved using the Opal software and a test report of the completed measurement is then generated automatically from this data, this ensures traceability at any time.

In addition to the measuring software, the system also has an intelligent measured data management system with which Plant Condition Monitoring is possible. This allows the strand guide components to be monitored throughout the entire product life-cycle.

### MAIN BENEFITS

- Perfect roller positioning – thanks to high measuring accuracy
- Adapted for use in the steelworks environment
- Automated measuring process – guaranteed easy handling and reduced measuring times
- Can be integrated in new and existing plants – more than 10 references worldwide
- Electronic data management system – enables Plant Condition Monitoring



Opal system concept



Laser source for high precise measurement

**Primetals Technologies Austria GmbH**  
A joint venture of Mitsubishi Heavy Industries and partners

Turmstrasse 44 | 4031 Linz | Austria  
[primetals.com](http://primetals.com)

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