IDC Interstand Dimension Control
A Success at Fundia Boxholm, Sweden

Fundia
Fundia, one of Europe’s leading manufacturers of long steel products, is not only a successful supplier of a portfolio of more than 2,000 products in different steel grades, but also a world-class supplier of close-tolerance round products.

The company’s fine section mill, the world’s first digitally controlled mill built in 1977, has been successively modernized with ABB’s Rolling Mill Control, RMC. In order to maintain market leadership with regard to tolerances, yield and availability, Fundia decided to invest in ABB’s IndustrialIT Interstand Dimension Control system, IDC.

Summary
Fierce competition among steel producers leads to a constant need for product improvements in order to stay in the market. ABB’s Interstand Dimension Control, IDC, provides a tool for the continuous improvement and control of the rolling process for round long products.

The benefits of IDC can be summarized as follows:
- Tighter tolerances head to tail
- Fast product and dimension change
- Improved yield, fewer cobbles and down grades
- Improved availability, more time for rolling
- Early indication of abnormal mill condition
- Operator tool for process understanding
- More consistent mill setup
- Improved pass schedules
**Tolerances**

The IDC system has exceeded Fundia’s expectations regarding the tolerance specifications for round products: ±0.075 mm for Ø20 mm bars. With the help of the IDC system Fundia is maintaining a tolerance of ±0.04 mm. This is less than half that normally obtained with sizing mills.

“The alternative to invest in sizing mills is not only considerably more expensive but also requires more space in the mill,” says Ulf Wuopio, Fundia Boxholm Plant Manager. “Our sales staff are getting very positive feedback from the market for this new level of tight tolerances,” Mr. Wuopio continues.

**The question: revamp or replace the mill completely?**

An old rolling mill layout, once state of the art, has limitations compared to new greenfield plants.

Today's mill can be equipped with more mechanical actuators for fast and accurate adjustment of guides, roll gaps, crossed rolls, etc.

An old mill can obviously also be mechanically revamped, but an economical first step is to upgrade the control system with IDC.

The IDC system controls the width by adjusting the interstand speed. This adjustment is not dependent on the condition of the mechanical equipment.

As no mill stand changes are needed, the installation and commissioning of the U-gauge sensors and IDC system can take place during normal production.

**Tool for the operators**

“The U-gauge sensors not only provide the control system with dimensional feedback, but also give the rollers guidance about the wear of the mechanical equipment,” says Michael Ljungblad, Production Manager. “By observing the floor-mounted graphical displays, the rollers get early warnings of abnormalities in the rolling and can make the necessary adjustments to the mechanical equipment before a cobbler occurs.

“Today our pass schedules are more accurate due to feedback...
from the IDC system. Time needed to reach and obtain correct tolerances is reduced. All in all this helps to make the mill more profitable."

Without IDC, the operators have to rely on “burning wood”, caliper gauges (a dangerous measurement method), looking at/observing the material slag side, listening to noise, etc. The end results are very much dependent on the skill of the roller. Consistent feedback from the U-gauges is of great assistance to the roller.

There are always different ways of making adjustments in a plant, and it is well known that individuals set up a mill differently. Now, with the U-gauge sensors, all the operators/rollers can see the result of an adjustment, and everyone can agree on common procedures.

**Project team involvement**

Today’s operators/rollers need more information to do their job in order to produce competitive products. Equipment can be modernized or replaced, but it is too often forgotten that the mill crew must also have a better understanding of what is happening in the mill. A project team, including rollers, was formed at Fundia Boxholm, sharing a common interest and with high expectations of what could be achieved with IDC. They were therefore ready to use the true measurement of the bar easily available either on the mill floor or in the rollers’ room when the system was commissioned.

**The success**

The successful results achieved are attributable to the Fundia crew’s competence, their process know-how and dedication to the rolling of world-class products and the unique IDC concept from ABB, another ABB First in Rolling Mills.
Proud management in front of samples of the Fundia Special Bar product portfolio.

Quality Certificates.

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