



Cover photo:
CSP hot strip mill at Severstal
Columbus USA

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MPT INTERNATIONAL

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A. Hannewald

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Topical themes

R. Degel, M. Kalisch, J. Kunze, A. Warczok

48 Slag cleaning reactor for metal recovery in copper production

A new invention for improving slag cleaning shows great potential above all for the non-ferrous industry. A newly developed reactor is suitable for the recovery of ferro-alloys, the recycling of steel mill waste and the reconditioning of waste deposits. This article presents the fundamental principles of the technology and the latest results of pilot-scale tests carried out at a Chilean copper producer.

Steelmaking

*D. Riedinger, A. Opfermann,
A. Vogel*

22 The time balance of the electric arc furnace

The time balance of an EAF contains information about the utilization and makes the production process and its interruptions transparent. However, many steelplants worldwide do not seem to use a concise and accurate time balance to control their process. This article explains the concept of a systematic time balance of the EAF process as an example for all other steelplant processes (ladle furnace, vacuum treatment, casting) and the necessary delay recording which is an important part of the time balance.



Balanced processes enable high plant utilization

Continuous casting

*M. Fabbro, A. Chiogna,
G. Cappellari*

30 Steelmaking and casting at the new minimill of Siderurgica Balboa

The new minimill for billets, blooms and beam blanks comprises a steelmaking plant with a capacity of about 1.2 million t/year, a medium section mill for 750,000 t/year beams and large-size profiles and a multi-line superflexible mill for 500,000 t/year round bars, spooled bar-in-coils, wire rod coils and small and medium sections. This article presents in detail the operational and technological characteristics of the main equipment.

38 State-of-the-art slab caster started up at Cosipa in Brazil

A new slab caster for the Brazilian flat-steel producer Companhia Siderúrgica Paulista (Cosipa) is equipped with design features unique in South America. This caster, which is capable of producing approximately 1.2 million t/year of high-quality slabs, is the first caster in this region with a LiquiRob robot on the casting platform and "thickness-on-demand" capability.

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20 Steel production has been decreasing worldwide since September

World crude steel production reached 1,329.7 million t in 2008. This is a decrease of 1.2% compared to 2007. However, 2008 is the second consecutive year that world steel production has been over 1,300 million t. The EU steel market is severely impacted by the recession and will be facing an unprecedented downturn this year. Following a forecast 15% drop in 2009, some growth in apparent consumption is foreseen for 2010.

Cold rolling

F.-P. Deland, K. Oetzel, S. Willems

42 Cold rolling mill for electrical steel

The German rolling mill supplier Sundwig - a member of the Andritz group - is building a combined 4-high/S6-high reversing mill, specially designed for silicon steel with 0.5 to 4% Si content. The S6-high mode allows the use of very small work rolls laterally guided by individually adjustable side support rolls. Commissioning of this rolling mill will take place in the first quarter of 2009.

Surface treatment

R. Fackert

44 Measurement and control of coatings and layers

Modern measuring and control systems enable the layers of inorganic and organic coatings of strip products to be measured and controlled with utmost precision. The strips can be uniformly coated over their complete width and length and the production lines can be run reliably at the lower tolerance levels of the coating thicknesses. The systems increase the production rate while reducing material and energy consumption.

Environmental protection

52 Recovery of acid and oxide by-products from spent pickling liquor

The recovery of hydrochloric acid from spent pickling liquor by pyrohydrolysis is not only environmentally advantageous in that it removes the need to neutralise and dispose of spent acid and that it reduces water consumption. It is also highly cost-effective, as it eliminates disposal costs, reduces the cost of replacement acid and generates a valuable oxide by-product.



Combined 4-high/S6-high reversing mill