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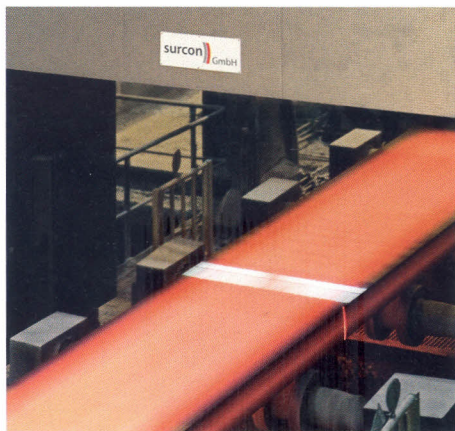
INTERNATIONAL

4

September
2013



**Quality assurance:
Topographic surface inspection system
for slabs and heavy plate**



Cover photo:
Slab surface inspection and edge contour detection at once at the continuous casting plant

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Editorial

A. Hannewald

- 3 Shaping tomorrow's process automation

Columns

- 8 International industry news
- 72 Technical innovations
- 77 Cartoon
- 78 Literature service
- 80 In the next issue
- 80 Imprint

Topical themes

R. Fackert, C. Mittag

52 Topographic surface inspection for slabs and heavy plate

Surface defects originating from the continuous casting process often persist throughout the entire process chain of strip and plate production. Therefore it is vital for the quality of the final product that the product surface be inspected throughout the complete process route from continuous casting through to the finished coil or plate. X-3Dvision can inspect slabs also immediately after the continuous casting process.

Ironmaking

30 ArcelorMittal Kryvyi Rih repairs blast furnace in record time

The largest producer of rolled steel in Ukraine has finished the overhaul of its blast furnace number seven after just 26 days. Similar overhauls have taken up to eight months in the past.

33 IronArc to revolutionize hot metal production

A new method for producing hot metal has been developed in collaboration with the Swedish steel group Ovako at the Hofors steel plant. The method, called IronArc, lowers CO₂ emissions significantly compared with blast furnace production.

P. Duarte, T. Scarnati, A. Martinis

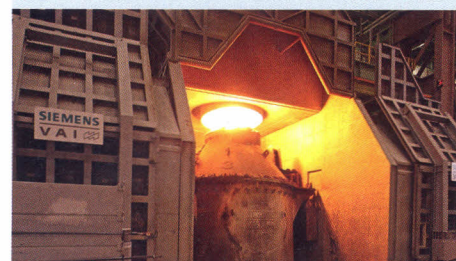
34 Higher DRI quality and higher EAF yields by optimized DRI making

The Energiron technology eliminates the need for an external gas reformer by carrying out the reforming, reduction and carburization reactions within the same furnace. The resulting DRI product is highly metallized and with comfortable carbon levels in the range of 3 – 5%. Due to this carbon and application of modern oxygen practices, the yield of the subsequent EAF meltshop is significantly higher than usual.

Steelmaking

38 Liquid steel production at Outokumpu Stainless in Calvert, Alabama, USA

For the new greenfield stainless steel works Siemens supplied an EAF, an AOD converter, secondary metallurgical facilities, and a continuous slab caster. The plant is designed to produce annually one million t of AISI 200, 300 and 400 grades of stainless steel.



AOD converter plant at Outokumpu, Calvert, USA

R. Bruckhaus, R. Fandrich

40 Current technology trends in steelmaking

Under the roof of German Steel Institute VDEh the Steelmaking Committee and the associated subcommittees have identified current trends and developments in steelmaking processes from a European point of view.

28 Lower order intake but higher sales for SMS group

During the financial year 2012, SMS group faced a down in order intake but an increase in revenues due to the completion of major plant building projects. After integration of Paul Wurth company, SMS group has continued its investments in its locations in Germany and abroad. For potential further expansion the group identifies electrics and automation, service, energy, and green technologies as growth fields.

Hot rolling

M. Guagnelli, P. Bobig

48 Thermo-mechanical rolling technology for the production of API 5L steel strip from thin slabs

The requirements on ductile to brittle transition temperature are the most important limiting factors for API 5L strip grades produced by the thin slab technology because of the difficulties in achieving a refined and homogeneous microstructure. The results obtained at the new OMK Vyksa minimill are very promising.

Automation

N. Ash

56 Process optimization for long product rolling mills

ProfileOpt has been developed to simulate and optimize the rolling process of bar mills or wire rod mills in the steel industry, and generate set points for these optimized rolling conditions.

U. Lettau

58 Analytical monitoring of production data

A Russian producer of longitudinally welded large-diameter steel tubes commissioned a new tube plant at its Chelyabinsk works. A data acquisition system from Iba AG was implemented for smooth process analysis.

Automation

62 IT toolbox to analyze processes and to reveal potential in the metals industries

Siemens Metals Technologies integrates its knowledge of metallurgy and plant design into the modular IT platform Simatic IT. The result is a new approach for transparency as well as for analysis of production and processes.

64 New process expert system optimizes production and energy efficiency

PlantStruxure PES from Schneider Electric allows industrial companies to meet automation needs while optimizing operations and energy management by connecting the field, process, and enterprise levels within a business.

Heat treatment

F. Brühl, T. Sagermann

66 Heat treatment technology as an integrated part of investment projects

It used to be standard practice for investors to split orders for new plants into three different packages, namely mechanical equipment, electrical equipment and heat treatment. However, the investing companies in the steel and aluminium industries are more and more interested in solutions integrating the overall plant, including the process know-how.

Advertisers' index

ABB AB	29
Andritz Sundwig GmbH	47
Aumund Fördertechnik GmbH	27
Automazioni Industriali Capitano srl	19
Braun Maschinenfabrik Gesellschaft m.b.H.	24
Castellini Officine Meccaniche S.p.A.	15
Combilift Ltd Co	71
Danieli S.P.A.	6,7
GLAMA Maschinenbau GmbH	39
Guild International Inc.	55
hpl-Neugnadenfelder Maschinenfabrik GmbH	37
IMS Messsysteme GmbH	31, 32
INTECO special melting technologies GmbH	9
JP Steel Plantech Co.	I.B.C.
Amandus Kahl GmbH & Co.KG	71
Maschinenfabrik Köppern GmbH & Co.KG	14
KSK Kuhlmann-System-Kühltechnik GmbH	61
LAP GmbH	23
Lechler GmbH	25
MICRO-EPSILON MESSTECHNIK GmbH & Co. KG	13
Pert srl	41
QuinLogic GmbH	63
Saar-Metallwerke GmbH	16
SGL CARBON GmbH	O.B.C.
SMS Siemag AG	I.F.C.
Stein Industrie-Anlagen	17
TML Technik GmbH	59
PAUL WURTH S.A.	21, 22
Verlag Stahleisen GmbH	24, 65, 70
Z & J Technologies GmbH	11, 12
Zumbach Electronic AG	18