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Electrical steel strip processing lines for high quality materials



tenova
STRIP PROCESSING

Scrap preheating and charging system

750 mm diameter bloom caster



Cover photo:

Coating section of the electrical steel strip processing line at NLMK, commissioned and supplied by Tenova Strip Processing, Milan, Italy

Contact: www.tenovagroup.com

E-mail: stripprocessing@it.tenovagroup.com

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Topical themes

L. Bonagiunti, F. Leonardi, D. Rizzo

76 Electrical steel thermoflattening lines for high quality materials

During the last few years, electrical steel producers have been striving to improve the electro-magnetic properties of their material, following the ever stricter regulations worldwide on energy saving and reduction of environmental emissions. Tenova group has recently participated in the upgrading programme of the NLMK group by supplying and commissioning the new insulation coating and thermoflattening line No. 6.

Raw materials

H. Kimura, M. Ozawa, J. R. da Costa, R. N. B. Braga, G. E. da Silva, R. C. da Silva, C. E. de Souza

28 Dedusting system for the ArcelorMittal Monlevade sintering plant's primary mixer

The wet gas of the primary mixer is heated by gases from the sinter cooler and, then, introduced into the inlet duct of the ESP. The innovation here is the use of hot gases from the cooler to adapt the mixture for collection in the ESP.

Steelmaking

K. Rummler, A. Tunaboylu, D. Ertas

32 Scrap preheating and continuous charging system for EAF meltshops

A newly developed environmental preheating and continuous charging system (EPC) combines the advantages of 100% scrap preheating and continuous scrap feeding through its chambers, without the need of EAF roof opening. EPC prevents any dust emission and heat loss during furnace charging.

Continuous casting

46 Predicting critical operating conditions during continuous casting

The new software tool "MouldScreen" models the properties of the flux film in the mould. It identifies and visualizes critical conditions that may lead to cracking, breakouts and other quality problems and enables countermeasures to be taken at an early stage.

48 Slab casting optimized at Outokumpu by innovative laser measurement

The Finnish steel giant installed an innovative laser measuring system to improve the production process for slabs. Warpage of the slabs after cooling can already be taken into account during the production process.

Hot rolling

K. Kawakami, W.-J. Ammerling

50 The new 3-roll reducing & sizing block 435⁺⁺ implemented in the bar mill at SMK, Japan

Another type of 3-roll reducing & sizing blocks (RSB) has been developed that is even stronger than the 370⁺⁺ heavy duty RSB for bar sizes up to dia. 100 mm. The 435⁺⁺ and the equivalent C-modules are designed to finish bar sizes up to dia. 130 mm with SBQ accuracy.

C. Travaglini, M. Rinaldi, E. Franceschini, I. Grgic, M. Stoppa, A. Chittaro, M. Truant

38 750 mm diameter bloom caster for high-quality steel grades at Acciaierie Bertoli Safau

The world's first dia. 750 mm continuous casting machine is capable of producing a wide range of products typical of the ingot casting production route. Excellent bloom surface quality has been achieved, even for products with critical carbon contents of 0.15 to 0.20%. The whole product features low internal segregation.

Tubemaking

F. Lagac, M. Caldonazzo

60 Experience gathered in the operation of the 12¾" tube welding plant at Arvedi

Minimized changing times, high flexibility, superior quality and challenging products – these were requirements Arvedi Tubi Acciaio had placed on the investment in a new 12¾" ERW tube welding line for large wall thicknesses. The article features the technical details and the first production results.

Strip processing

A. Kapellner, J. Ziemendorff

68 "Galv twins": two new galvanizing lines started up at Voestalpine Stahl, Austria

These two lines are the most recent step in broadening the capability of Voestalpine Stahl to supply the galvanized products market, ranging from sectors such as building to automotive exposed parts, with products as demanding as AHSS, TRIP and DP grades.

80 Photovoltaics to be coil coated on steel strips for construction elements

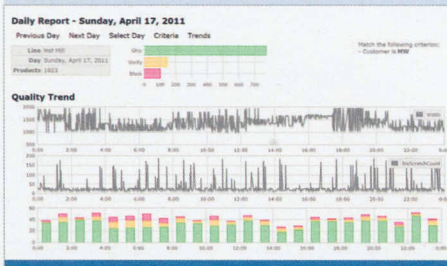
ThyssenKrupp and Konarka are planning joint development of organic photovoltaics for steel construction elements. The idea is to integrate the organic photovoltaic technology into the production process for construction elements.

Quality assurance

F. Lücking

82 First installation of the new web-based quality analysis and reporting software

Quinlogic announces the first successful installation of its new web analysis and reporting software (WA) at ThyssenKrupp. It offers online access to consolidated quality data for management, customer support, quality and process experts.



Quality data on hand even on mobile devices like the iPad

86 Production and product optimization using the new Surface Master inspection technology

Being the latest generation in surface inspection solutions, the system not only assures best possible surface quality, but also helps to optimize the entire flat steel manufacturing process.

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