

ISSN 0935-7254

# MPT

## INTERNATIONAL

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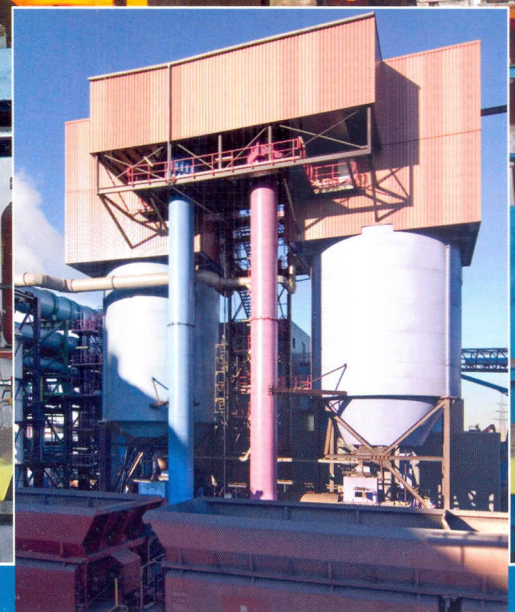
December  
2011



### Improved safety on the casting floor



Wide plate mill at JYXC  
Special Steel



BF burdening technology  
for Thyssen Krupp



**Cover photo:**

The Siemens VAI solution for robotics in steel plants is called LiquiRob.

Contact: [www.siemens.com/metals](http://www.siemens.com/metals)

# MPT

INTERNATIONAL

## Editorial

*A. Hannewald*

- 1 **Advanced rolling technologies**

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## Topical themes

*M. Hirschmanner, J. Blumenschein, H. Ebner, M. Hügel, S. Pfeil, A. Priesner, R. Scheidegger*

- 34 **Improved safety and systematic procedures on the casting floor using advanced robotics**

In steel plants LiquiRob robotics improve operational safety and increase precision of measurement and sampling. The first two installations in continuous casting have been running for several years at Posco, Korea, and Companhia Siderurgica Paulista, Brazil. Recently, the first installation worldwide at an electric arc furnace had its start-up at Riva Neuves-Maisons, France.

## Company profile

- 18 **Well settled Danieli continues international business expansion**

Compared to the previous financial year, the Danieli group's revenues are up 21 per cent. The financial year 2010/2011 saw an increase in sales especially for the steel making division. Through investments in production facilities in Thailand, China and India, Danieli group has actively continued its internationalization programme.

## Ironmaking

- 20 **New burdening technology for the Duisburg-Hamborn ironmaking site of ThyssenKrupp in Germany**

In the course of the new construction of blast furnace No. 8 at ThyssenKrupp Steel Europe in Duisburg-Hamborn, Germany, a completely new conveyor burdening system was built. In addition, the burdening equipment of the adjacent blast furnace No. 9 was comprehensively refurbished and modernized. With this new and refurbished equipment, ThyssenKrupp Steel Europe sets new standards within the framework of an extremely efficient blast furnace concept.

## Steelmaking

*D. Masoero, P. Clerici, D. Zuliani, J. Maiolo, V. Scipolo*

- 22 **Innovation for reduced transformation costs and environmental impact**

Tenova's holistic approach to steelmaking optimization and control provides major potential for improving steel quality, productivity, conversion costs, environmental performance and safety. The deeper understanding of the EAF and BOF steelmaking processes and operation will contribute to more efficient operations and to the development of future optimization strategies.

## Thin slab casting & rolling

*C. Bilgen, C. Klein, C. Klinkenberg, J. Müller*

- 42 **A new concept for thin-slab casting and direct rolling technology**

The newly developed CSP® flex technology enables the production of thicker, high-strength micro-alloyed pipe grades. It increases the capacity of a 2-strand plant up to 4 million t/year and allows the production of thin hot strip in an endless mode as well as a further reduction in energy consumption. CSP® flex technology is characterized by its modular design with an expanded range of caster designs and the innovative variable hot mill.

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## 16 World Steel Association short range outlook for 2011 – 2012

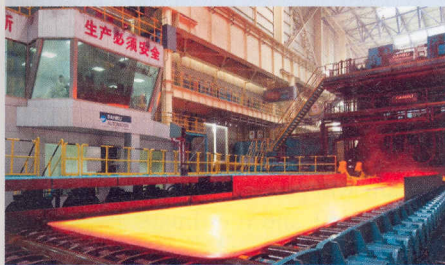
World Steel Association forecasts that apparent steel use will increase by 6.5% to 1,398 million t in 2011. In 2012, it is forecast that world steel demand will grow further by 5.4%. This suggests that by 2012, steel use in the developed world will still be at 15% below the 2007 level whereas in the emerging and developing economies, it will be 44% above. In 2012, the emerging and developing economies will account for 73% of world steel demand.

## Hot rolling

*E. Crisà*

### 48 New wide plate mill at JYXC Special Steel, China

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.



Thermo-mechanically rolled products are part of the product mix

*M. Zuccato, M. Tomba*

### 52 New generation finishing block technology for bar mills

The new generation finishing block – called 2XTechnology® – has been developed with the objectives in mind to achieve higher yields in new and revamped rolling mills while reducing investment efforts. After a first commercial installation the newly developed mill stand has proven to achieve higher productivity and better quality.

## Tubemaking

### 54 4-roll sizing and finishing technology for seamless pipes

Danieli Centro Tube has recently developed FRT™ (four roll technology) – new flexible equipment for the sizing-finishing process in seamless pipe production. Among other benefits, the technology provides better outside diameter tolerances and wall thickness distributions. Also higher outside diameter reduction per stand can be performed. The first operational prototype unit was installed in the R&D laboratory at the Danieli headquarters in Buttrio (Udine), Italy.



Prototype with three 4-roll stands at the Danieli R&D laboratories