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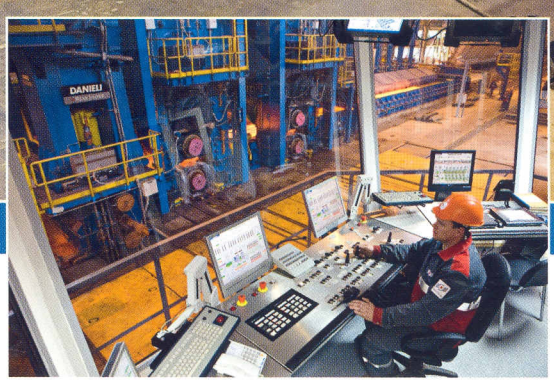
Thin slab casting and rolling technology



The evolution from first generation plants to recent applications

Contents Volume 34 No. 1 – February 2011

Cover photo:
Rolling mill of the fTSC plant at OMK, Russia, to produce 1-mm-thin hot strip in API grades for Arctic applications

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Editorial

Columns

Topical themes

Thin slab casting and rolling technology was originally developed as a low cost alternative to the conventional process route. Since the first pioneering applications in the 1980ies, thin slab casting and rolling plants have largely overcome the original limitations. This article describes the different available solutions for specific market needs and gives an outlook on future potentials.

Cokemaking

A new pushing management system allows various oven criteria and parameters to be examined during coke pushing. This solution also includes features for precise control, positioning and interlocking of mobile coke oven battery equipment. The result is improved scheduling of coke oven maintenance activities, safer operations and thus higher plant productivity.

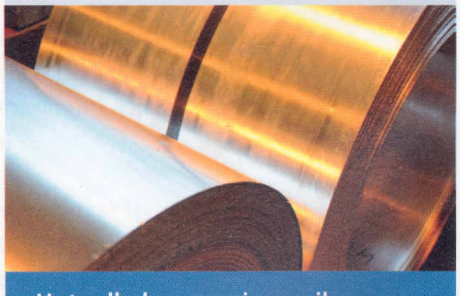
Steelmaking

Vacuum arc degassing has been an established technology for more than 40 years. Some design improvements have enhanced the competitive status of this secondary metallurgy technology as a useful and modern alternative to a ladle furnace and vacuum degassing facility.

Hot rolling

Direct hot rolling of thin slabs may be followed by a well defined cooling pattern to produce hot strip from high strength multiphase steel. This article highlights the mechanical properties of hot rolled DP steel from CSP® production, i.e. the homogeneous structural and mechanical properties all along the strip.

ThyssenKrupp together with a German research group have jointly developed an innovative concept for the production of magnesium coils using a casting-rolling line to manufacture flat strip directly from molten magnesium. With significantly lower costs than the conventional route for flat magnesium, this is an extremely cost-efficient process.



Hot rolled magnesium coils produced at MgF

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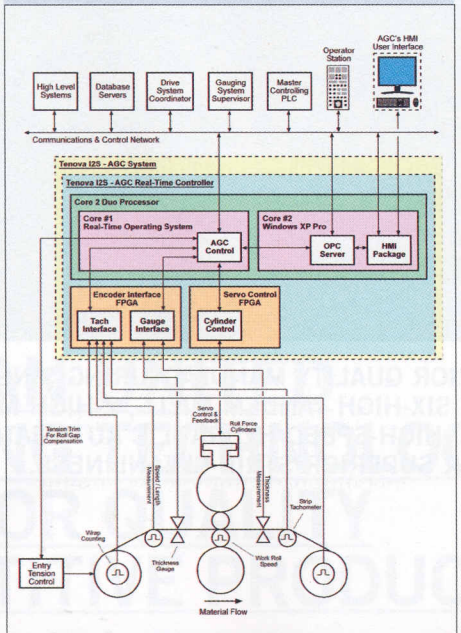
Strip processing

Cold rolling – Automation



Automatic gauge control system architecture

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