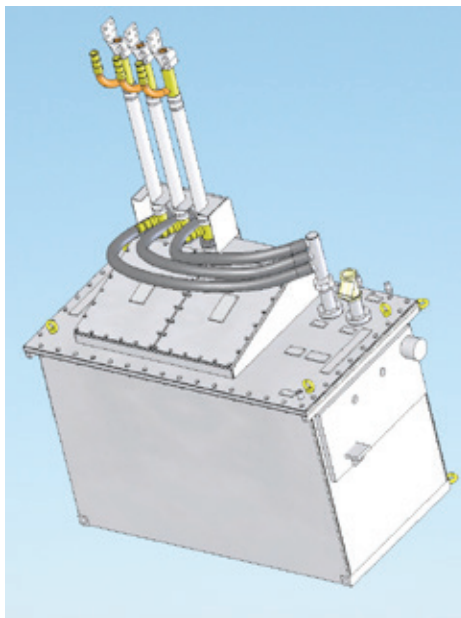


Reference story

ABB's strand electromagnetic stirrer for slab casting, Slab SEMS, ensures high quality ferritic stainless steel at Outokumpu Tornio Works



“We are delighted with the cooperation between Outokumpu and ABB people in this project”, says Kari Enbuske, Project Manager at Outokumpu Tornio Works.

Summary

Outokumpu Tornio Works purchased a Slab SEMS from ABB in 2010 in order to be able to produce high quality ferritic stainless steel. The stirring system was commissioned in 2011 and the first metallurgical evaluation of the results was conducted by the end of that same year. Since the installation, ABB's Slab SEMS ORC 1560 has been running successfully, providing great value for the customer.

Customer

Located in Tornio, a town and municipality in Lapland, Finland, Outokumpu Tornio Works is one of Europe's largest production facilities for stainless steel. It produces hot rolled and cold rolled coils and sheets cut from coil, with an annual output of one million tonnes.

Up to 85 percent of the products are exported all around the world, but the key market is the EU. The Tornio site consists of ferrochromium smelting, two steel melting shops, one hot rolling mill and two cold rolling mills.

Highlights

By using ABB's Slab SEMS system ORC 1560, the equiaxed zone created in the produced ferritic stainless steel slabs is very much to the satisfaction of the customer. This has enabled Outokumpu Tornio Works to considerably decrease ridging and roping defects in the final products; rolled stainless steel sheets, and has helped to establish the company as one of the world's leading producers of high quality ferritic stainless steel.

Scope of supply

ABB supplied one complete Slab SEMS system, unit type ORC 1560, including the main auxiliary components, frequency converters and water cooling system. ABB also undertook the training of Outokumpu personnel and was responsible for the commissioning of the complete installation of the stirring system.



1 Jari Savolainen, Research Engineer | 2 Excellent result with ABB's Slab SEMS for AISI 430 | 3 Kari Enbuske, Project Manager

“The high percentage of equiaxed zone we have achieved by using ABB's Slab SEMS has a positive influence on the roping index for the AISI 430 final products,” says Jari Savolainen, Research Engineer at the Research Center of Outokumpu Tornio Works.

Excellent metallurgical results

The excellent metallurgical results achieved by using ABB's Slab SEMS are being well received by the people at Outokumpu Tornio Works.

“The high percentage of equiaxed zone we have achieved by using ABB's Slab SEMS has a positive influence on the roping index for the AISI 430 final products,” says Jari Savolainen, Research Engineer at the Research Center of Outokumpu Tornio Works.

Benefits

- The high stirring force imposed produces a very long stirred zone resulting in good quality slabs.
- The high percentage of equiaxed zone has a decreasing effect on the ridging and roping index for the final products of AISI 430.
- The stirrer is located outside the rollers for easy operation.

Cooperation between ABB and the customer

The installation and commissioning of the ABB Slab SEMS system took place very smoothly thanks to the close cooperation between both Outokumpu and ABB personnel. The customer has expressed its appreciation of the work done by the people at ABB involved in the project.

What is Slab SEMS?

The Slab SEMS for slab casting is located under the mold outside the support rollers. It is mainly used for the production of ferritic stainless steels and for electric steels with high silicon content. The Slab SEMS gives a high degree of equiaxed solidification which is beneficial for the surface quality of the rolled steel sheets.

For more information please contact:

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