

London, June 28, 2022

Outokumpu invests in new casting technology supplied by Primetals Technologies

- **Outokumpu has signed a contract with Primetals Technologies for two caster molds and two Mold Expert Fiber systems**
- **Mold Expert Fiber is a new technology for getting an “inside look” into continuous casting molds**
- **Outokumpu will use this technology to increase knowledge about mold flow and to aid the development of new steel grades**

Finnish stainless steel producer Outokumpu recently placed an order with Primetals Technologies for two new molds and two new Mold Expert Fiber systems. The equipment will be supplied to Outokumpu's two single-strand slab casters at its site in Tornio, located in the north-western part of Finland. Startup is scheduled for April 2023. As a global market leader in stainless steel, Outokumpu wants to use Primetals Technologies' expertise and technology to take its proficiency in casting stainless steel to a new level.

A growing portfolio

The variety of stainless steel grades in Outokumpu's product portfolio is constantly increasing as more complex and specialized steels are introduced and produced. At the same time, quality levels for standard products are also increasing as the products are used in more demanding applications.

“To be able to successfully expand our product portfolio, to further improve product quality, and to ensure safe production, Outokumpu has decided to invest in cutting-edge technology for mold temperature measurement,” says Mika Näätäsaari, project manager at Outokumpu's plant in Tornio.

“The new technology provides us with a new type of visualization of the mold. This is of great importance because the mold is where the slab's surface quality is determined. Also, Mold Expert Fiber gives us the

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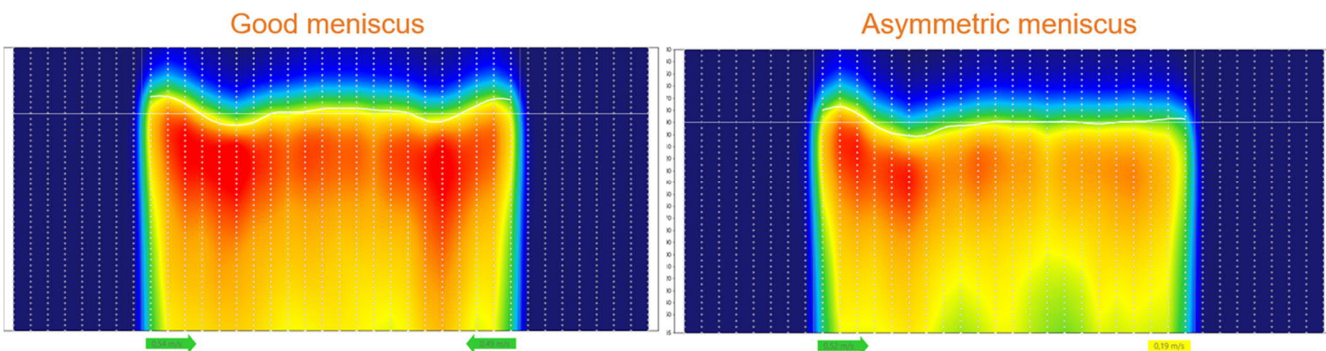
possibility to control the casting process and the solidification of the steel to a greater extent,” says Marko Petäjärvi, development engineer for casting at Outokumpu.

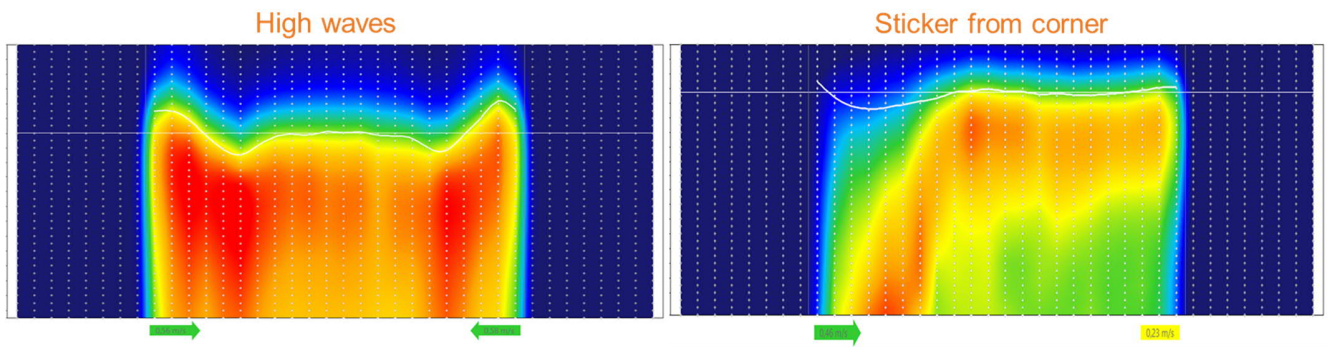
Mold Expert Fiber’s core aim is to alarm operators to the possibility of a caster-mold breakout at the earliest possible stage. The system will also deliver information that up until now was unattainable, for example data on the exact mold level across the whole width of the mold and the liquid steel’s movements inside the mold. Therefore, the Mold Expert Fiber system will be a main tool for Outokumpu for developing new steel grades.

Thousands of measuring points

The two systems that will be supplied to the Tornio plant feature 1,786 measuring points per mold, which is more than 30 times more sensors compared with conventional thermocouple measuring. The secret behind this abundance of measuring points is fiber technology – Fiber Bragg Gratings (FBG) which reflect light are burned into the fiber, and when the temperature changes, they reflect the light differently. These changes can be measured with great accuracy and visualized. As a result, the measuring points are producing a real time thermal image of what is going on inside the mold.

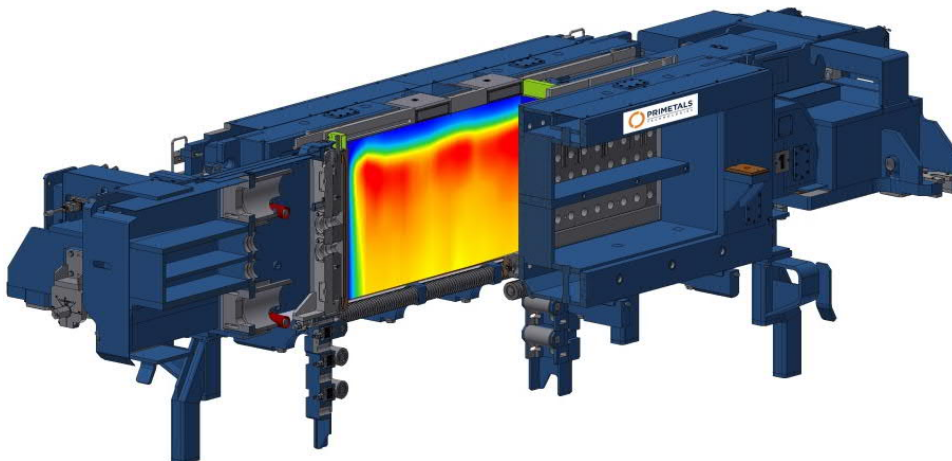
“The thermal image shows the meniscus’ shape – ideally it should look like small symmetric waves. However, these waves shouldn’t be too weak nor too intense”, says Martin Schuster, product manager for Mold Expert Fiber at Primetals Technologies.





A fiber-based future

The scope of supply includes detail engineering, mechanical engineering, manufacturing, commissioning, and a one-year service deal. This means that for the first 12 months after purchase, Primetals Technologies will support Outokumpu in handling and analyzing the rich amount of slab casting data.



Mold Expert Fiber technology by Primetals Technologies.

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