

CONTINUOUS CASTING

THE OPPORTUNITY

In the production of semi-finished steel products in continuous casting machines, temperature measurements are a daily challenge. Control of the secondary cooling step is a key aspect in this process. Precise temperature control during the cool-down process is indispensable in the production of steel grades.

Continuous casting is the process where the molten steel is cooled and solidified into billets or slabs. The core is still usually molten with a hard outer shell.

Molten metal is transferred from the ladle into a tundish, where it is slowly tapped into the casting machine. The mold in which the steel slips into is water cooled.

The operator's challenge is to keep the steel within the channel and control the cooling rate. This can be difficult due to variations in the tundish temperature.

Depending on the steel grade and charge, the process of cooling the strands is critical. Different groups of steel grades have different sets of target temperatures which require a control range from 600 to 1200°C. Temperatures above or below the specified tolerances will result in downgrading of the product and thus adversely affect the line yield.

This is why the monitoring the temperature values in the run-out section of the strand is critical to good process control. This ensures a high surface quality and optimum microstructure of the strands.

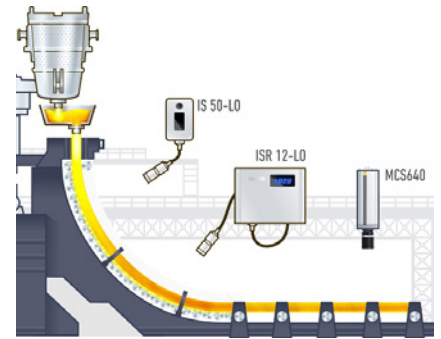


OUR SOLUTION

Our infrared solutions accurately measure cooling requirements of slabs, billets, or blooms to ensure product uniformity and provide equipment operators with immediate temperature information that is critical to the cooling process. Advanced Energy's Impac pyrometers and Mikron thermal imagers monitor the temperature as the molten metal pours down the mold.

Advanced Energy offers very specific pyrometers and accessories to address the harsh environment surrounding in the casting area. This includes steam, high temperatures, and harsh water spray. The pyrometers and imagers need to stay clean and cool in this area. The temperature readings help the operators control the speed of the process and the amount of cooling sent through the mold. This helps the quality of the slab and billets.

The Mikron MCS640 thermal imager, with its accurate hot-edge detection imaging and temperature profiling capabilities, can control continuous casting processes better than any other imaging method.



Pyrometer and thermal imaging options



Mikron MCS640



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PRECISION | POWER | PERFORMANCE

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