Contribution ID: **67** Type: **Oral Presentation**

Influence of the rotation parameters on the solidification conditions during mechanical stirring

Tuesday, 24 September 2024 14:10 (20 minutes)

The concept of the mechanical stirring technology was developed by INTECO to investigate the influence of mechanical rotation conditions on the solidification structure and to evaluate whether a similar or greater positive effect can be achieved than with electromagnetic stirring (EMS). The great advantage of the mechanical stirring effect compared to the EMS system is that forced convection occurs at the solid-liquid interface at every point in the strand or ingot over the entire length, regardless of the size dimensions, right into the centre. In the production of larger dimensions, electromagnetic stirring to some extend reaches its technical limits, as extremely high electrical power must be installed to achieve a sufficient stirring effect, especially if a stirring effect is to be achieved in the core.
This paper describes the mechanical stirring process including innovative technological key features and provides an overview over two series of trials with two different materials and a total of 12 tests Furthermore, first laboratory results of section sizes of 194,1 mm dia. are discussed and presented.

Speaker Country

Austria

Primary authors: HOLZGRUBER, Thomas (INTECO melting and casting technologies GmbH); Dr HOLZGRUBER, Harald (INTECO melting and casting technologies GmbH); BAF, Stefano (INTECO melting and casting technologies GmbH); SCHERIAU, Alexander (INTECO melting and casting technologies GmbH)

Presenter: HOLZGRUBER, Thomas (INTECO melting and casting technologies GmbH)

Session Classification: Session 4

Track Classification: Metallurgical Applications of MHD