Self condition monitoring of continuous casting machines

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Abstract

This report contains the joint contributions of the collaborative ECSC project between Corus UK Ltd, Teesside Technology Centre (Coordinator) and Chorus NL bv, IJmuiden Technology Centre, Sidenor I+D, IRSID, Aceralia and Labein.

The aim of this project has been to develop new and existing techniques of monitoring the condition of continuous casting machines on both an online and regular off-line basis, thus giving reliable cost-effective methods to provide and improved maintenance programme, as well as a quality alarm for billet, bloom and slab casters.

Work has been carried out on monitoring of critical areas of casters, development of offline monitoring and online monitoring techniques, analysis and interpretation of data. Off-line developments have included in-chain strand condition monitoring (SCM), improved interpretation of SCM data, and mould oscillation monitoring.

Further analysis employing performance indicators for predicting surface and internal cracking has been carried out. Laboratory and plant tests have been completed on measurement of sump position by nail shooting. Online monitoring developments include tundish/mould argon, mould oscillation, strand guide deflection and cooling, strand temperature measurement and drive currents with aspects being examined on slab, bloom and billet casters.

Additional information

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