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Advanced manufacturing and improved performances of hot rolling mill edger rolls (EdgerRolls)

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As the time between roll changes is continuously increasing due to improved performances of roughing rolls, a newer problem is that the performance of the edger roll becomes a bottleneck inducing strip defects crises and mill (unplanned) stoppages only to change the edger rolls. Additionally, worldwide the supply of edger rolls is becoming a problem. Especially for European hot strip mills this major concern becomes critical as only one roll supplier remains for the supply of small cast alloyed steel edger rolls. Moreover, the ecological footprint of traditional production, transport and usage of edger rolls is quite poor, as they are scrapped after just a few mill campaigns.

To tackle this situation a European funded project called EdgerRolls (RFCS-2023-02-PDP 101157368) has been launched in July 2024. The main objective of this project is to improve the performance of edger rolls through different approaches. A first one is the improvement of the cooling as well as testing the implementation of lubrication for the edgers. A second approach is an evaluation of the edger geometries through modelling. Finally, alternative manufacturing and repair methods adapted to edger rolls are also considered. To evaluate the impact of different applied changes, a monitoring procedure and tool will be developed as well as a roll profile measurement.

The project will also contribute to suppress edge slivers, one of the main uncontrolled defects in hot rolling. These defects occur with an increased wear of the edger rolls and limit campaign lengths. Edger roll wear and caliber condition are the main contributing factors to the severity of the defect.

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