

Press release – 21.11.2018

## Production capacity increase with Fives technologies

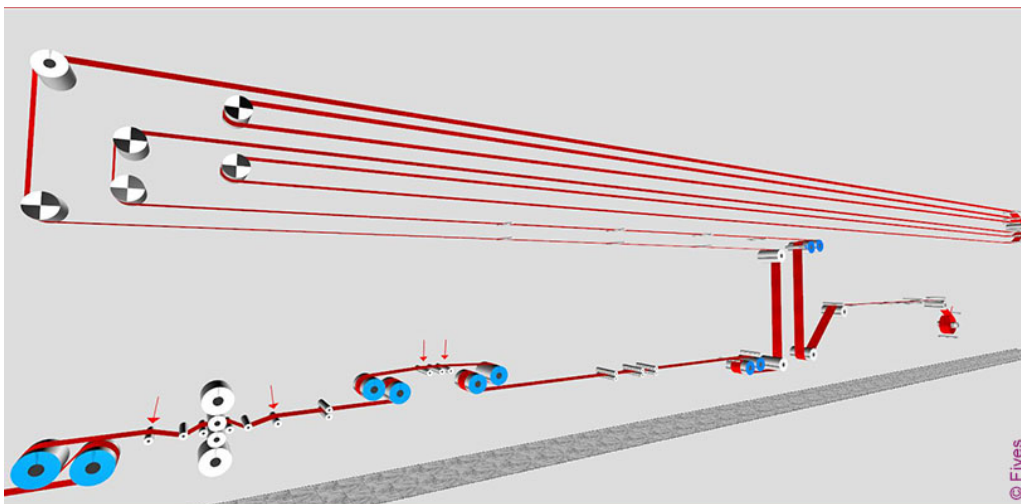
Steel Dynamics, one of the largest domestic steel producers and metals recyclers in the United States, has contracted Fives, an international engineering group, to upgrade the continuous galvanizing line №2 (CGL №2) at the Flat Roll Group Columbus Division located in Mississippi, USA.

The project aims to increase production capacity of CGL №2 by increasing the maximum strip speed. The basis for the capacity increase was developed utilizing Fives' specialty software, DMS OptiLine™ which simulates the complete operation of a strip processing line. DMS OptiLine™ calculates the requested characteristics of each motor of the line to guarantee the required line tension during operation at the targeted increased speed, as well as during line acceleration and deceleration.

The line speed increase requires mechanical and cleaning equipment upgrades in order to achieve quality product output. A new entry section configuration was employed including new bridle rolls, deflector rolls and a burr masher. The cleaning section is to be upgraded with a high pressure hot water system, additional spray degreasing capacity and a new rinsing brush machine.

Moreover, Fives will supply a new DMS rotary shear at the exit section of the line to achieve fast cutting of the strip for improved exit time cycle. The DMS rotary shear is a plug-and-play system. It cuts the strip while moving, and is synchronized with the line speed, thus guaranteeing higher production with optimum strip end quality.

The equipment is foreseen to be designed and supplied within 12 months in order to launch a revamped line by November 2019.



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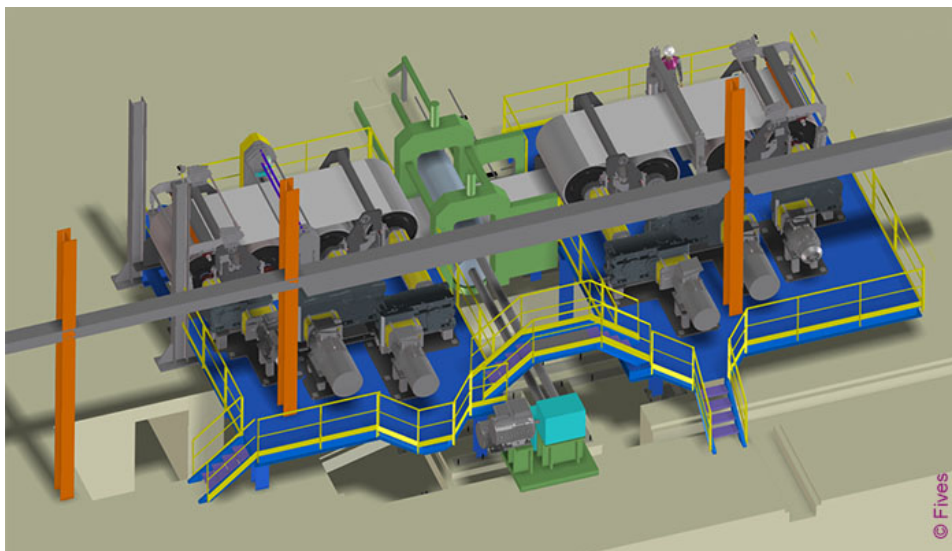
## Fives revamps a skin-pass mill for safe and easy operation

Lusosider Aços Planos, Portugal, entrusted Fives to revamp the bridge rolls in the skin-pass section for its continuous galvanizing line (CGL) which has already been revamped by the group.

The revamping project aims to increase operation reliability and facilitate maintenance. Fives will replace the existing combination of the entry gearbox and exit bridge rolls of the skin-pass with newly designed bridge rolls and will provide individual motorization for each motorized roll. A new DMS burr masher will be installed as part of the project, and an existing zinc bath gauge will be relocated to fit the new configuration.

The new equipment will be designed, delivered and commissioned by July 2019.

Lusosider, a part of the world integrated industrial complex CSN, has been a long-term partner of Fives. In 2000, it contracted the group to revamp the existing CGL to increase the line capacity to produce low carbon steel for construction. In 2016, in order to increase further capacity, Fives revamped the horizontal furnace of the line and installed an additional jet cooling unit.



Steel



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#### About Fives

As an industrial engineering group with a heritage of over 200 years, Fives designs and supplies machines, process equipment and production lines for the world's largest industrial players in various sectors such as steel, aerospace and special machining, aluminium, automotive and manufacturing industries, cement, energy, logistics and glass. Since its foundation, Fives has always put innovations at the core of its development strategy, by investing into R&D to design and create pioneering technologies that anticipate industrials' needs in terms of profitability, performance, quality, safety and respect for the environment. Fives has also adopted a collaborative approach, built on partnerships and joint ventures with public and private players (start-ups, major groups, laboratories and research bodies, universities, etc.) to contribute to building the factories of the future. In 2017, Fives achieved €1.9 billion of sales and employed close to 8,700 people in about thirty countries. In Steel, Fives' goal is to help steelmakers enhance their performance and the subsequent competitiveness. As a supplier of complete solutions for strip processing lines, reheating and heat treatment furnaces, Fives has developed reliable & innovative technologies and offers a range of expert service, from the layout of a facility to upgrade services, including the design and manufacture of mechanical, thermal, automation and surface treatment technologies.



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