

FlexPad roll end hubs save time and money at Virginia structural steel mill

Case study – Gerdau Steel, U.S.A.

Challenge

The rolling stands at Gerdau Steel's structural mill were encountering unwanted and expensive downtime. There was constant maintenance and machining of the roll end hubs caused by highly concentrated rolling force overloads at the wear plates and centering rings resulting in premature failure of these components. Even with excellent maintenance involving machining of the roll end hubs every 12 to 18 months, there was unacceptably short operating life.

Solution

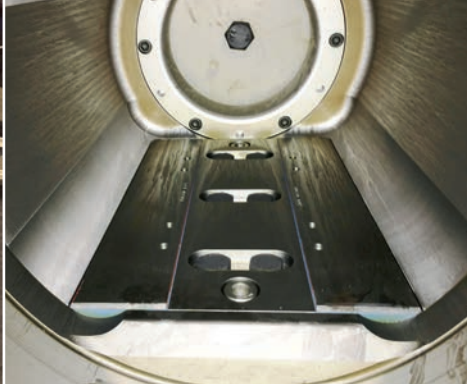
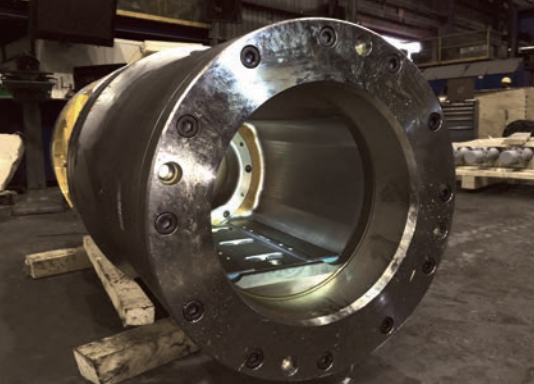
To prevent this costly downtime from the too-frequent wear plate changeouts and machining, Gerdau worked with Voith to install FlexPad, a new style of REH designed to maintain tight clearance with roll necks, thereby drastically reducing the hub overload potential.

Results

Gerdau Steel installed Voith FlexPad REH. These hubs are fitted with wear plates incorporating a flexible material allowing for elastic adjustment to maintain relative position to roll necks, which minimizes roll end hub and roll neck wear.

Thanks to this revolutionary design, Gerdau Steel's representatives were extremely happy with Voith's FlexPad performance – which, for their use, last much longer than conventional design hubs.

Beyond an extended lifetime, the new hubs from Voith did not experience broken bolts or wear plates, and the hub bodies did not need machining after the six-month changeout. Another significant benefit of the FlexPads is that they are expected to directly contribute to extending the life of connected driveline components.



Why FlexPad roll end hubs?

FlexPad REH, which provides smooth and balanced contact pressure all over the contact surface between the hub and roll neck, eliminate the metal to metal contact between wear plates and hub body that creates intense wear. The benefits of this innovative design include:

- On average, FlexPad reduces total cost of ownership by 20 percent
- Extended life of driveline components due to torque amplification factor reductions
- A longer working life compared to conventional design hubs, which creates a higher return on the investment
- Reduced maintenance costs due to much less frequent wear plate changes and protection of the hub body
- Far less downtime and no risk of wear plate bolt breakage
- Quick and easy wear plate replacement in situ, which can be scheduled based on FlexPad wear plate lifespan
- Voith's customization process makes FlexPad REH 100 percent compatible with existing universal joint shaft mechanical interfaces
- With fewer and shorter duration downtime, there are reduced operating costs and increased mill production and profitability

About Gerdau Steel

Gerdau Steel's structural steel mill in Petersburg, Virginia, is an eight stand SMS-designed medium section mill with Voith universal-joint shafts in operation since 1998. Each stand operates under intense, variable conditions that create very high REH wear. Gerdau Steel installed the customized FlexPad REH on a stand that has a 6400 horsepower motor connected to two 800-size Voith u-joint shafts. The company's first FlexPad REH were installed on a trial basis, and Gerdau was so pleased with the performance they installed FlexPad REH on a second stand. Measurements to check wear over several months show minimal changes.

Why partner with Voith?

Voith customizes the revolutionary FlexPad REH for each application, which allows reliable function with any roll neck geometry. In general, with FlexPad REH you can expect to greatly extend usage life versus your current REHs, regardless of your operating conditions.

As your exclusive FlexPad REH supplier, Voith will assign a primary account manager to support you through the process of achieving full benefits of your customized FlexPad installation.

Voith Turbo Inc., a Group Division of Voith, is a specialist for intelligent drive solutions, systems and comprehensive services. You can rely on the advanced technologies and solutions-driven expertise of Voith Turbo Inc.

“The wear we experienced with our conventional design roll end hubs caused unplanned and costly downtime at our mill. Voith introduced us to FlexPad REH and after a successful test run, we were convinced we had the product that provided us with the predictability and reliability we needed. Now we can schedule replacement of the FlexPad wear plates every six months or more, which is a far longer lifespan for wear plates and much increased REH operating life than for the previous conventional design REHs we used on this stand. Besides this, mill downtime required to replace FlexPad Wear Plates is only 2 hours whereas mill downtime to replace conventional design wear plates was as much as 8 hours.”

Walt Sabisky

Maintenance Supervisor, Gerdau Steel, Petersburg, Virginia

Voith Group
St. Poeltener Str. 43
89522 Heidenheim
Germany

www.voith.com

Contact:
Phone +1 717-767-3200
VTImetal_processing@voith.com



VOITH