

TYPE
CASE
STUDY

INDUSTRY
STEEL
MANUFACTURING

LOCATION
SÃO PAULO,
BRAZIL



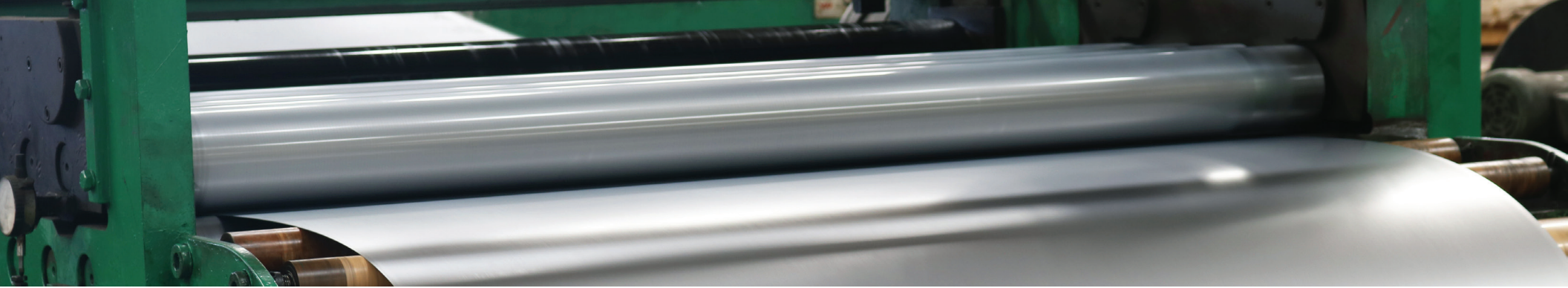
GERDAU EXPANDS AUTONOMOUS PRODUCTION WITH PLEX PROCESS FLOWS

The steel manufacturer leveraged Rockwell's MES solutions to save time and increase efficiency

With a history spanning more than 125 years, Gerdau is Brazil's largest steel producer and one of the leading producers of long steel and special steel in the world. In Brazil, Gerdau also produces iron ore for its own use, as well as flat steel.

Guided by its purpose of empowering people who build the future, Gerdau's operations throughout the Americas employ more than 30,000 people. The largest recycler in Latin America, scrap is an

important raw material for Gerdau, which uses it for around 70% of the steel it produces. Every year, Gerdau transforms 10 million tons of scrap into a variety of steel products. As a result of its sustainable production matrix, Gerdau currently has one of the industry's lowest average greenhouse gas emissions (CO₂e), amounting to half the global industry average. Gerdau's shares are listed on the São Paulo (B3) and New York (NYSE) stock exchanges.



CHALLENGE

- Difficulty managing orders and inventory across multiple disconnected legacy systems, leading to limited real-time visibility.
 - Lack of consolidated KPI reporting, requiring teams to manually pull metrics from each plant.
 - Limited integration capabilities and minimal flexibility for custom reporting or data structuring.
 - No strategic technology roadmap for the legacy systems, creating concerns about scalability and future readiness.
 - Inability to prevent overweight steel bundles from being produced or shipped, resulting in customer complaints and costly rework.
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SOLUTION

- Plex Manufacturing Execution System (MES)
- Plex Quality Management System (QMS)
- Plex Supply Chain Planning (SCP)
- Plex Process Flows



RESULTS

- Avoided an estimated \$30,000 in development costs by using Plex Process Flows to replicate a work-request copying feature internally.
 - Reduced manual quality-control work by automating status updates for 10–30 bundles at a time, saving teams significant time during each review cycle.
 - Prevented repeated customer complaints and costly rework by automatically placing overweight bundles on hold before shipment—protecting both customer satisfaction and operational efficiency.
 - Increased process reliability by running scheduled automations every 15 minutes, ensuring continuous monitoring without additional labor.
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Gerdau is a global steel manufacturer with more than 125 years of history and deep expertise in producing high-quality steel products. Its North American Special Steel division supplies engineered special bar quality (SBQ) steel to automotive, commercial vehicle, construction, agriculture, and energy markets. With

operations across four U.S. plants and a division headquarters in Michigan, the company plays a critical role in supplying components such as steering racks, camshafts, and crankshafts for internal combustion and electric vehicles.



Before implementing Plex, Gerdau's North American Special Steel division faced significant operational challenges tied to its legacy systems. Order and inventory tracking required navigating multiple disconnected systems, making it difficult to maintain accurate, real-time visibility across plants. KPI reporting was equally fragmented—teams had to manually pull metrics from each location, slowing decision-making and limiting the organization's ability to operate with a unified view of performance. Gerdau's Business Analyst, Joseph DelPup, noted, "There weren't great solutions for consolidated KPI reporting for each of our locations."

JOSEPH DELPUP

Business Analyst, Gerdau

Beyond visibility gaps, the legacy systems lacked modern integration capabilities and offered limited flexibility for custom reporting or data structuring. Most concerning, however, was the absence of a strategic technology roadmap. As digital transformation accelerated across manufacturing, Gerdau recognized that its existing systems were not positioned to evolve with new technologies or support future automation initiatives. This created urgency to adopt a platform that could scale with the business and enable continuous improvement.



Gerdau selected the [Plex Smart Manufacturing Platform](#) to modernize its operations and unify processes across its Special Steel division. Early benefits included streamlined reporting, improved order and inventory management, and the ability to leverage Plex's Structured Query Language (SQL) environment for custom reporting and analytics. But the most transformative shift came with the introduction of Plex Process Flows, a low-code automation capability that allowed Gerdau to build automated workflows without requiring software development expertise.

Process Flows was first introduced to Gerdau during a presentation at Automation Fair, where Rockwell Automation demonstrated how the tool could replicate—and even improve upon—custom offline applications the company had previously built. The promise of enabling non-developers to automate complex processes resonated immediately. As DelPup shared, “We can create these automation processes and scripts without having to develop or write any code...

it creates more opportunities for non-developers to get into automation creation.”

Using Process Flows, Gerdau implemented several high-impact automations. The most significant addressed a long-standing issue: preventing overweight steel bundles from being shipped to customers. While Plex could warn operators during production, it could not stop overweight bundles from being created. Gerdau built a scheduled Process Flow that scans newly completed bundles every 15 minutes and automatically places overweight containers on hold—preventing them from being shipped and protecting customer satisfaction. Additional automations streamlined quality workflows, such as automatically updating container statuses, and even enabled the company to avoid an estimated \$30,000 in development costs by using Process Flows to replicate a work-request copying feature that would have otherwise required custom engineering.



By leveraging Plex and its Process Flows technology, Gerdau significantly improved operational efficiency, reduced manual work, and strengthened quality control across its Special Steel division. Automations that once required manual intervention—such as updating container statuses or reviewing newly produced bundles—now run continuously in the background, saving teams time and reducing the risk of human error. The overweight-bundle automation alone has prevented repeated customer complaints and costly rework, serving as a reliable last line of defense before shipments leave the plant.

Financially, the company realized immediate value. The Process Flow developed to copy work requests replaced a proposed custom

enhancement estimated at \$30,000, delivering the same functionality at no additional cost. More broadly, the ability for non-developers to build automations has empowered teams, accelerated improvement cycles, and expanded the organization's capacity to innovate without relying on external development resources.

The company's creative use of Plex Process Flows demonstrates how manufacturers can unlock meaningful efficiency gains and quality improvements with the right digital tools. Together, Rockwell Automation and Gerdau continue to advance toward a more connected, agile, and future-ready manufacturing environment.

ABOUT PLEX

Plex, by Rockwell Automation, is a leader in cloud-delivered smart manufacturing solutions, empowering the world's manufacturers to make awesome products. Our platform gives manufacturers the ability to connect, automate, track, and analyze every aspect of their business to drive transformation. The Plex Smart Manufacturing Platform™ includes solutions for manufacturing execution (MES), ERP, quality, supply

chain planning and management, asset performance management, production monitoring, process automation and analytics to connect people, systems, machines and supply chains, enabling them to lead with precision, efficiency and agility. To learn more, visit www.plex.com