

Dillinger and ROGESA selects Midrex and Primetals for Major Decarbonization Project

MIDREX Flex Plant to produce 2.0 million tons of DRI per year

CHARLOTTE, NC, USA (October 11, 2024) – German steel producer Dillinger and ROGESA signed a contract with Midrex Technologies, Inc. (Midrex) and Primetals Technologies for the supply of a new production complex, including a direct reduced iron (DRI) plant and an EAF Ultimate electric arc furnace plant. The solutions from Midrex and Primetals will support Dillinger's goal of reducing CO₂ emissions by 4.8 million tons per year within six years.

Dillinger and ROGESA, a part of the SHS - Stahl-Holding-Saar (SHS), has launched an ambitious green steel transformation project to replace its current blast furnace-based production route in Dillingen. Having one supplier for the complete range of ironmaking and steelmaking facilities comes with several benefits for Dillinger and ROGESA, especially related to implementation works and tailor-made design features to accommodate the new plants alongside existing equipment.

“This partnership with Midrex and Primetals represents an important building block on the way to climate-friendly steel production here in Germany,” said Dr. Peter Maagh, Chief Technical Officer at Dillinger. “We are convinced that we can successfully launch our Power4Steel decarbonization project on schedule with such an experienced and reliable partner.”

The MIDREX Flex® Plant is designed to produce both hot direct reduced iron (HDRI) and cold direct reduced iron (CDRI), with an annual production capacity of 2 million tons. A consortium of Midrex and Primetals Technologies is responsible for the engineering and supply of mechanical as well as electrics and automation equipment. The mechanical scope includes a material handling system, a water treatment plant, auxiliary equipment, and training and advisory services. Primetals Technologies will also supply a complete basic (Level 1) and process optimization (Level 2) system. The DRIPAX expert system, which is included in the process automation scope, ensures the consistent high quality of the DRI produced.

“The transition to green steel production will not happen overnight, we will see a step-by-step process towards carbon neutrality,” said Andreas Viehböck, Head of Upstream Technologies at Primetals Technologies. “With this investment, Dillinger and ROGESA are set to reach its mid-to long-term goals in terms of decarbonization. The solutions from Primetals Technologies and Midrex will allow them to ramp up the use of hydrogen gradually while adapting to a changing energy landscape. We are very happy to support them on this endeavor and beyond.”

The MIDREX Flex technology is designed to operate at different ratios of natural gas and hydrogen, with up to 100 percent hydrogen. Initially, the plant will operate with a mix of natural gas and hydrogen, allowing for a carbon footprint reduction of more than 50 percent compared to blast furnace-based ironmaking. The MIDREX Flex plant will be implemented with hydrogen-ready equipment and piping, such as three stages of process gas compressors. Moreover, it features a hot transport conveyor to utilize the valuable heat of the HDRI for direct charging into the electric arc furnace at the Dillinger site. A DRI cooling solution will enable the transport of CDRI to the site Saarstahl AG in Völklingen, Germany. Saarstahl is also a subsidiary of SHS – Stahl-Holding-Saar.

“The decision by Dillinger and ROGESA for MIDREX Flex technology allows them to transition to hydrogen-based ironmaking at the pace that matches the availability of sufficient gas supply while reducing their current CO₂ emissions significantly,” K.C. Woody, Midrex President and CEO, said. “DRI-based steelmaking provides a pathway to a sustainable future, both economically and environmentally, and our technology solutions offer the flexibility and performance to turn promise into success.”

The Dillinger Group, is positioned at the forefront, and consists of a series of leading companies in the market for heavy plates, including Dillinger and Dillinger France. Steel produced by Dillinger Group companies can be found in demanding applications such as the headquarters of French daily newspaper “Le Monde” and London’s tallest building, the “Twentytwo” as well as in the safe tracks of European high-speed trains and in the majority of cars manufactured in Europe. With its ambitious Pure Steel + program, Dillinger Group primarily aim to achieve carbon neutrality by 2045.

Dillinger, ROGESA and Saarstahl obtained funding from various sources for its green transition, including the German state and the state of Saarland. The fundings are approved by the European Union.



Midrex is the world leader in direct reduction ironmaking technology and aftermarket solutions for the steel industry. As a developer of the MIDREX® Process, Midrex has designed, built, and serviced direct reduced iron (DRI) plants for 50-plus years. MIDREX Plants produce approximately 80% of the world's low CO₂ DRI. The MIDREX Process is highly flexible in reductant sources, iron oxide feed, and product discharge options. Plants can be configured to operate on natural gas, natural gas with hydrogen addition (MIDREX Flex®), and 100% hydrogen (MIDREX H₂™). Iron oxide pellets and lump ores, regardless of their Fe content, can be transformed into either cold DRI (CDRI), hot DRI (HDRI), or hot briquetted iron (HBI). Plants can be designed for cold and hot discharge at the operator's discretion, and proven options are available for transporting and charging HDRI into an EAF.

Primetals Technologies, Limited, headquartered in London, United Kingdom, is a pioneer and world leader in the fields of engineering, plant building, and the provision of lifecycle services for the metals industry. The company offers a complete technology, product, and services portfolio that includes integrated electrics and automation, digitalization, and environmental solutions. This covers every step of the iron and steel production chain—from the raw materials to the finished product—and includes the latest rolling solutions for the nonferrous metals sector. Primetals Technologies is a joint venture of Mitsubishi Heavy Industries and partners, with around 7,000 employees worldwide. To learn more about Primetals Technologies, visit the company website primetals.com.

Dillinger is part of the Stahl-Holding-Saar (SHS) Group and Europe's leading producer of heavy plate steel. Dillinger traces its steel production heritage back more than 330 years and is truly a global organization, with operations in Europe, the Americas, and Asia. For more information, visit en.dillinger.de.

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