

Prinzing Pfeiffer GmbH, 65552 Limburg an der Lahn, Germany

New Wet-Cast Mold Equipment for Lafarge in Canada

In Lafarge's most recent micro tunneling projects, there was a specific requirement for new wet-cast mold equipment for the production of a wide range of jacking pipes. Prinzing Pfeiffer effectively met this need, providing the necessary equipment and expertise to complete these projects successfully.

Prinzing Pfeiffer is a leading global supplier of high-performance machines, production and mold equipment for pipes, manholes and precast concrete elements. Lafarge is one of Canada's largest providers of sustainable and innovative building solutions, offering a wide range of products and services, including aggregates, cement, ready mix and precast concrete, asphalt and paving, and road and civil construction. As a member of the Holcim Group, Lafarge Pipe designs and manufactures a wide range of precast underground infrastructure components, including concrete pipe, box sections, manhole components, catch basin components, and Stormceptor (oil/grit separators). High-quality precast concrete pipes are manufactured using state-of-the-art facilities, processes, and equipment integrated under controlled conditions. Several manufacturing methods are used, each capable of producing precast concrete pipe conforming to various requirements.

Prinzing Pfeiffer's Role in Lafarge's Success

Lafarge's decision to choose Prinzing Pfeiffer is based on mold quality, ease of use, schedule, and cost. After effective meetings between Lafarge and Prinzing Pfeiffer, an efficient collaboration had begun. The Prinzing Pfeiffer Engineering team designed the molds to meet the stringent project requirements as well as Lafarge's production needs. Prinzing Pfeiffer's responsiveness made the schedule achievable and its service, combined with the ability to build a high-quality mold, made for the beginnings of a great partnership.

Prinzing Pfeiffer has delivered mold equipment to Lafarge since December 2017. The initial order included a complete set of mold equipment for several sizes of jacking pipes, ranging from DN 1200 to DN 3000, along with special equipment for Dehner stations, which produce lead-and-trail pipes. This equipment enabled the production of up to three jacking pipes of each size per working day.

A unique feature of the equipment was using existing flange vibrators driven by the appropriate variable frequency drives. Additionally, the distinctive design of the spigot rings accommodated different types of gaskets, including "confined"



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CONCRETE PIPES AND MANHOLES

O-ring seals and double chamber seals. The hydraulic retractable mold cores simplified the demolding process for the cured jacking pipes. This technology not only improved production efficiency but also ensured the high quality and precision of the jacking pipes. All molds were manufactured by MSM Maschinenbau, a 100% subsidiary of Prinzing Pfeiffer, a company with decades of experience in the manufacture of molds to produce pipes and precast concrete elements.

Expanding Capabilities

The collaboration began in 2016 when Ryan Finley, Sales Manager, now Design and Marketing Engineer at Lafarge, first contacted Prinzing Pfeiffer. Due to the high quality of the jacking pipes and the increasing demand in Canada, Lafarge placed follow-up orders as early as August 2018.

Between 2018 and 2022, the range of molds was continuously expanded to meet the diverse requirements of the Canadian market. This enabled Lafarge to cover a wide range of infrastructure requirements.

In 2023, Lafarge transitioned to using self-compacting concrete (SCC) in their production process. This shift eliminated the need for outer molds to be equipped with vibrator consoles, so flange vibrators were no longer necessary for concrete compaction. All outer molds delivered from 2023 were manufactured to accommodate SCC, further enhancing the efficiency of the production process.

Sean Tymkow, Business Unit Manager at Lafarge, was excited about meeting the project's timelines from initiation to completion: "From project inception to delivery, we needed to go through that process in less than one year. Prinzing Pfeiffer delivered the high-quality forms on time, which we will be able to utilize for many projects and years to come."

Ryan Finley is delighted with the quality of the molds delivered: "We have been very satisfied with the quality of the molds, which produce concrete pipes to very demanding tolerances. Since we are a long-time dry cast jacking pipe supplier and as the demand for wet cast pipe increases, the service from Prinzing Pfeiffer has allowed us to evolve along with that market."



*Demolding process begins -
Removal of the mold core*



*Demolding of the mold jacket -
Cured Jacking pipe on base pallet*



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Jacking pipes with inliner and O-Ring gasket utilizing a confined groove

The new mold equipment enhanced the efficiency of Lafarge’s production process. Its ease of use allowed the Lafarge team to complete multiple cycles within standard shift times, which was crucial for meeting the project schedule. The ability to cycle the equipment frequently also increased cost-effectiveness, as it meant fewer molds were required while still maintaining the desired production rate.

Future Outlook

By providing the new Wet-Cast mold equipment, Prinzing Pfeiffer supports Lafarge’s continued growth as Canada’s largest provider of sustainable and innovative building solutions. This mold equipment will result in the successful execution of Lafarge’s micro tunneling projects. The new equipment will allow Lafarge to set new standards in the construction material industry and promote further expansion of sustainable building practices throughout Canada.

Sean Tymkow is very satisfied working with the Prinzing Pfeiffer team and looks positively to the future: “We have had a very positive experience with the Prinzing Pfeiffer team. They have worked collaboratively with our team through several challenging scenarios and ensured that our needs are met. The opportunity for technology to play in construction seems limitless.” ■



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