



From Custom Parts to Mass Production: Highly Efficient Manhole Base Production at Foley Products Company

■ Christian Weinberger, Schlüsselbauer Technology, Austria

Spring 2021 marks a defining moment for the precast industry in the US state of Georgia. Foley Products Company, one of the leading precast concrete products manufacturers in the Southeast US, is commissioning a fully-automated system for the production of manhole bases. Previously, manhole base production at the company involved considerable manual labor, and the quality wasn't always consistent. But today, the company has an automated production system that guarantees consistent high-quality products with little comparable labor. Not only has the company's component quality improved, but productivity has also risen to a consistently high level. The operations to be performed are now more manageable, and the daily output can be planned with a higher degree of accuracy. The arrangement and timing of all material flows have been optimized, as have the operations performed automatically

by the system. Historically, channels formed in the manhole base were considered to be custom jobs, along with the majority of manholes without channels, or berms that were used in pipeline construction. Today, however, Foley uses a scheduled production process to manufacture components with or without channels, thanks to their newly installed Perfect system. Through the installation of the production system developed by Schlüsselbauer Technology, decision makers at Foley aim to steadily increase the company's market proportion of high-quality, monolithic manhole bases with channels.

As a successful company, Foley's owners and plant managers have always placed the highest capacity and product quality demands on their precast concrete products production systems. It's this attitude that brought Foley Products Com-

Fully automated system for the production of manhole bases at Foley Products Company in Georgia





User-friendly moulds and scheduled processes—two cornerstones for efficient precast part manufacturing at Foley



Reduction of costs and risks through automated mould management in the hardening area

pany and Schlüsselbauer Technology, an Austrian provider, together many years ago in an initial investment project. This project involved the installation of Schlüsselbauer’s Magic 1500, a dry-cast manhole production system with fully automatic product and pallet handling. Since its installation, the Magic 1500 has manufactured over one million manhole risers, cones, and cover plates, leaving Foley extremely satisfied with their first collaboration with Schlüsselbauer. In the company’s latest project to modernize their manhole base production, Foley was yet again ambitious from the start. It wasn’t just the complex production of manhole bases with berms or channels that was to be overhauled; in blank production, they also wanted to improve processes and completely replace individual work steps with new technologies. Foley had two criteria that had to be fulfilled by a suitable provider for their new production system. First, they wanted a technology partner who had substantial experience with high-volume wet-cast systems which require minimal manpower; and second, the perfect partner had to be able to offer a system for the manufacturing of custom-made channels with a profitable balance of raw materials.

Flexibility and Practicality: Keys to Success

Schlüsselbauer’s Perfect manhole base production system offered the practicality Foley desired; a practicality that is increasingly swaying decision makers in numerous plants across North America and Europe. One of the requirements of Foley’s engineers was that the production system be extremely flexible in terms of capacity and the work steps required. The system should allow for up to 100 manhole bases with nominal widths of 48” and 60”, as well as adaptable channel heights in monolithic manhole bases of between 10” and 36”. Depending on the installation of channel and pipe connection moulded parts, it should also be possible

to install wall and base reinforcements in a scheduled operating sequence. Lastly, the entire work area for setting up the moulds should be coordinated in such a way that the moulds that are constantly being pre-prepared are also automatically made available for filling with self-compacting concrete.

Manageable Activities and Clear Responsibilities

The production of manhole bases with built-in channels is one of the most labor-intensive areas in precast plants. Traditionally, these components are frequently produced in two or three steps. In the first step, blanks are produced.



By setting up moulds based on the division of labor, moulds are constantly made available for filling with SCC.



Automated manhole base demoulding with optimized cycle time

Next, openings are drilled at the relevant points for the subsequent pipe connections. Finally, if absolutely necessary, a channel is manufactured by hand to match the flow of the pipe connections, and it includes making a surface inside the manhole to stand on. This labor intensive process is normally conducted over several production days and it's very costly. In using this process, there is an extremely high probability of producing faulty parts or of making mistakes, due to the repetitive nature of the work and the physical strength it takes to carry it out.

Through the installation of Schlüsselbauer's Perfect System, Foley has overcome the drawbacks and risks that conventional production poses. With Perfect, employees in the company's manhole base production are extensively supported by technology, and this support begins with the collection



When required, demoulded products are automatically and carefully rotated by 180 degrees.

of relevant product data. A one-time input or transfer of the data into the production system is sufficient for the mechanical adjustment of the channel mould parts, the management of casting moulds from set-up to demoulding, and for the provision of product-specific documentation by means of a secure label on the outer wall of the manhole base. Though this technology, employees have clear guidelines of the necessary steps to be carried out, whether it be preparing a custom channel, special pipe connections, or the sequence of the products to be demoulded, and it also makes it easy for plant managers to easily get an overview of all the processes.

Reliable Planning of Output

Scheduling the required work steps one manhole base at a time is not just advantageous, due to the clear responsibili-



Manhole bases are transferred from the production hall with individual labels attached.



Outstanding component quality thanks to the use of self-compacting concrete



Precise production of manhole bases with channels and pipe connections



Efficient production of monolithic concrete manhole bases

ties, the manager responsible for meeting the planned production quantities can also control the production productivity for a longer period of time as a result. Manhole bases with a channel or berm, and blanks, are now manufactured at Foley in one procedure. Thanks to the Perfect planning software, neither complex channel formations nor different pipe connections in blanks pose a problem to plan their completion, since downstream work steps such as drilling connections or manual channel installation are no longer required.

Products included in the production preview are reliably ready for delivery at the planned time and they are consistently made with high quality. Fluctuations in demand can of course also be used in the future to produce stock goods. However, demand-synchronized production in the Perfect manhole base system tends to reduce the quantity of precast parts produced in stock. This results in reduced capital costs with increased reliability of parts availability compared with the build-up of stock that historically occurred.



Magic manhole production system with fully automatic product and pallet handling



Mr. Jack Foley

“The success of Foley Products Company has always been to think outside of the box, or to do things a bit differently or better than our competitors,” said Mr. Foley. “For quite some time we have discussed how we can efficiently produce blank and/or customized wet cast manhole bases on an industrialized scale - in one-pour and without additional costs or production steps. After much consideration, we decided Schlüsselbauer Technology’s highly automated Perfect Base System is the answer to our question, which is great because we already have a solid partnership with the company and we trust their proven technology.”

Automation is Key to Efficiency

Foley Products Company has been one of the most dynamically growing companies in the US for decades. Since 1981, Frank Foley, along with his employees and now, his sons, has transformed his sole proprietorship into a group of companies that is still privately owned and has multiple locations across the states of Alabama, Georgia, Tennessee and Florida servicing the entire southeastern United States. While in the area of dry-cast concrete production, the focus was on quickly optimizing production quantities to lay the foundation for future growth, wet-cast production faced further requirements. Repeatedly interrupted processes and a large number of manual activities led to high wage costs per part and hindered growth for this product segment. In order to

be able to increase efficiency in wet-cast production, the processes needed to be standardized and automated. It was at this “meeting of the minds” that the partnership continued between Foley and Schlüsselbauer Technology. As with the automation of manhole production, Foley Products Company broke new ground as leaders of innovation by commissioning what is currently the most efficient production system for the wet-cast product segment in North America..



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Foley Products Company
 1030 1st Avenue, Columbus, GA 31901, USA
 T+1 706 563 7882
www.foleyproducts.com



Schlüsselbauer Technology GmbH & Co KG
 Hörbach 4, 4673 Gaspoltshofen, Austria
 T +43 7735 71440
sbm@sbm.at, www.sbm.at



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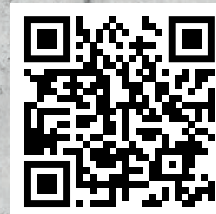
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