

BFS Betonfertigteilesysteme GmbH, 89143 Blaubeuren, Germany

Everything from a single casting – companies all over the world use monolithic concrete manhole bases

Whether in Europe or North America: the Capitan systems from BFS Betonfertigteilesysteme GmbH of Blaubeuren in southern Germany are already being used successfully in many countries to manufacture custom made products, of a very special kind. What is possible? That is shown by examples from Canada and Belgium, where the Langley Concrete Group and Tubobel NV are respectively based.

The Langley Concrete Group from British Columbia, Canada has been offering solutions for precast concrete elements for over 60 years. The philosophy of the family-run enterprise has always been based on growth through investment in the machine pool - a principle that is successful: efficient technology lowers production costs and increases the production capacity. The company has been producing with the Capitan since 2012 and managing director Marc Omelianiec is satisfied: "The products are very well received by our customers. We're glad we chose the Capitan system."

With the Capitan, BFS has developed and brought onto the market a machine with which monolithic manhole bases with an extremely smooth surface, flexible channel diameters and angles of inclination, and variable heights of the inlets and outlets can be manufactured from a single casting. The high flexibility of the plant is based on a 3D design software that calculates all product parameters. Following the calculation of the model, the data are sent to the heart of the Capitan: the multi-axis milling centre. Channel negatives, recess cores and negative mould inserts are milled from EPS blocks here in a very short time. The milled shape is coated with the patent-pending BFS release agent, which has the advantage amongst other things that the product

can be reused several times over. "That was another reason why we chose the Capitan", says Omelianiec. At Langley Concrete, BFS fulfils not only the customer's special requirements, but also the standards and directives applicable in North America. "We have adapted the BFS configurator in order to be able to make the system available to customers in North America, too", says Daniel Bühler, managing director of BFS.

The customer's every requirement can be met

With the Capitan system, Langley is able not only to manufacture standard products, but also to react to individual customer requirements and to realise them at low cost. A few examples from Langley Concrete show just how flexible and versatile the Capitan plant is:

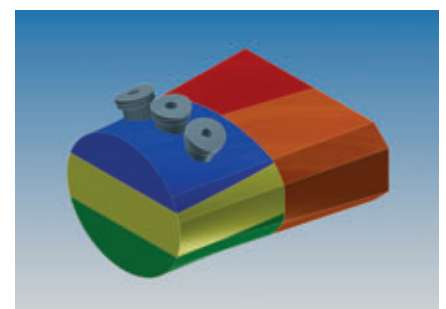
The main pipe with a diameter of 525 mm was split into two pipes, each with a diameter of 375 mm, since the outlet would otherwise have struck an obstacle with this overall height. "Thanks to the Capitan we were able with the two smaller pipes to solve this problem in a simple manner and to save the customer a great deal of time and money", explains Sid Wijngaarden, production manager at Langley.

Langley had the idea of changing from a conventional round format to a rectangle in order to enable the flow from a pipe with a nominal diameter of DN 1500, which was hindered on one side by an electrical station. In addition, the product was lined with a corrosion-resistant material.

On the basis of the model that Langley created with the Capitan configurator from BFS and the calculated data, the company was able to manufacture the negative mould for this custom product.



That's also possible with the Capitan: rectangular instead of round formats.



Model for the custom product.

The rectangular profile is one of two monitoring units installed on opposite banks of a river. Under the river runs a connecting pipe that was delivered for a junction. The customer insisted on a precast solution, which normally would have been very expensive and laborious, since a steel or specially made timber mould would have had to be manufactured for this. With the Capitan plant Langley was able to use EPS blocks, thus significantly reducing the expenditure.



The Capitan system from BFS for standard and custom products



Problem solved – two small pipes instead of one large one.



Rectangular profile



One of the special solutions that Tubobel has manufactured with the Capitan.



Tubobel often has to connect special pipes with large connecting pieces.

Tubobel also uses the Capitan system

Tubobel NV, which is based in Tessenderlo, Belgium and specialises in the manufacture of precast concrete elements for underground construction as well as the production of manhole bottoms, is also delighted with the Capitan plant. Since demand for monolithic manhole bottoms is constantly growing in Belgium and in order to be able to react even faster and more flexibly to customer enquiries, the company decided in late 2012 to purchase the Capitan manufacturing system from BFS Betonfertigteilsysteme. Managing director Luc Lemmers, who has already invested a great deal in Tubobel to bring his company forward, is convinced it was the right step because, as he says, "since it's commissioning in spring 2013 the new plant has been operating almost constantly at full capacity."

In order to keep the water in the pipes, a wall of a certain height has to be installed in the manholes. Monolithic walls are easy to produce with the Capitan manholes. Tubobel manufactures an EPS hard foam block (with or without flow profile) with a suitable height and cuts a wall out of an EPS hard foam block. Both of these parts are placed on the inner core. If the flow of water is to be delayed, Tubobel places a small piece of EPS between the two pieces to make a hole in the wall.

Wastewater and rain water are being separated from each other more and more. Wastewater often flows through plastic or ceramic pipes. Sometimes the flow profile also has to be made of a ceramic. In order to fasten the ceramic profile directly in the manhole, Tubobel places the ceramic profile over the EPS profile and concretes it like a normal manhole ring.

Special requirements – special solutions

Like Langley, Tubobel appreciates the advantages of the innovative manufacturing system for the production of monolithic manhole bottoms. Beyond that the Belgian company had special requirements that it was able to meet with the Capitan from BFS, as the following example shows.

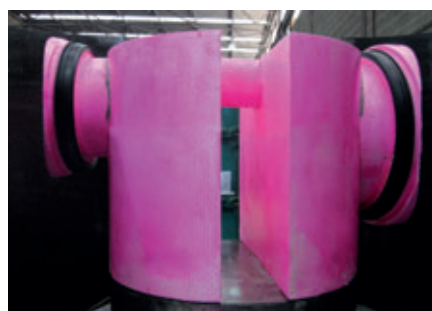
In some manholes it is necessary to install a valve or a pressure pipe. A flat wall is required in order to fix them. With the Capitan it is simple to manufacture this by placing an EPS hard foam block over the steel inner casting mould and cutting out the required thickness of the EPS hard foam block.

An attempt is being made in Flanders to buffer the water by means of a new sewer in order to avoid flooding in case of heavy rainfall. In addition, porous concrete pipes are being used so that the water seeps into the soil and doesn't flow into the waterway.

Tubobel often has to connect special pipes with large connecting pieces that are too big for the wall thickness. In this case, too, the Capitan system offers a suitable solution to allow these connections to be fastened with no extra work.



Ceramic flow profile



The production of monolithic manhole walls is no problem with the Capitan manufacturing system.

FURTHER INFORMATION



BFS Betonfertigteilsysteme GmbH
 Dr.-Georg-Spohn-Str. 31, 89143 Blaubeuren, Germany
 T +49 7344 96030, F +49 7344 4710
info.bfs@casagrandegroup.com, www.bfs-casagrande.de



Langley Concrete Group
 20152 Logan Ave, Langley, BC V3A 4L6, Canada
 T +1 604-533-1656
www.langleyconcretegroup.com



TUBOBEL N.V.
 Albertkade 4, 3980 Tessenderlo
 T +32 13 67 07 10, F +32 13 67 07 11
info@tubobel.be, www.tubobel.be



Special flow profiles (with or without slope) are simple to configure with the Capitan software.

With an extra tool, Tubobel is also able to fasten pipes via the flow profiles and to create a clear production description for its customers and employees.

Successful step

Although they were both aware that they had invested in a special machine, Langley and Tubobel only discovered the wealth of possibilities that it offers when they began to produce with it. With this manufacturing system they are now able to implement virtually every specification, however special, be it extremely thick walls, large connection



The fastening of pipes via the flow profiles is no problem.

diameters or large overall heights. "I have been in the concrete industry for over 30 years and I can honestly say that this unbelievable system has revolutionised the production of manhole bottoms. Capitan - the game changer", says a delighted Marc Omelianiec.

Visit us at bauma 2016!

bauma 2016
 11-17. April | Munich

Stand
 B1.150

