

BFS Betonfertigteilsysteme GmbH, 89143 Blaubeuren, Germany

CS-Beton expands product range

Nothing stays still at CS-Beton. For that reason the Czech company has invested in new plants. Since 2017 it has been working with the Capitan 1580 concrete manhole making machine and the fully automated Karibik Multi 1211 manhole ring machine from the South German manufacturer BFS Betonfertigteilsysteme.

In 1992 CS-Beton s.r.o. started off in a small way with the manufacture of pavers and other products for road construction. Today the company, which is based in Litoměřice in the Czech Republic, is successfully established on the market and is one of the country's leading concrete block manufacturers. The company has continuously expanded its product range, for example with slot channels for use in the wastewater sector. Since 2017 CS-Beton has also been producing manhole bases, manhole rings and manhole cones.

In 2016 the company chose the Capitan 1580 and the fully automated Karibik Multi 1211 manhole ring machine from BFS Betonfertigteilsysteme. "After briefly comparing manufacturers, we chose the machines from BFS because they offered us the best added value", explains Petra Copova. She and her brother run the company as the second generation of the family to do so.

Capitan 1580 - versatile and user-friendly

In the Capitan, BFS has developed and brought onto the market a system with which monolithic manhole bases with a very smooth surface, flexible channel diameters and angles of inclination, and variable heights of the inlets and outlets can be manufactured from a single casting. "With this plant our customers are able to manufacture not only standard products, but also individual products at low cost", stresses Volker Nusser, sales manager at BFS and contact for CS-



Manhole bases manufactured by CS-Beton with the Capitan system



The CS-Beton plant in Litoměřice



The Capitan system makes individual channel geometries possible

Beton. The formwork system produces with low wear and significantly reduces the cycle times in the production process.

The flexibility of the plant is based on easy-to-use 3D design software that calculates all of the product's parameters in just a few steps. Specific manhole data such as standard or end section, diameter, number of inlets, pipe connection types, angle of the pipe connection in the wall, channel slope or height are entered here. "Even tapered channels are no problem", explains Nusser. Wall thickness and manhole height can be calculated automatically. Wall thickness reduction, various ledge slopes or stepped berm surfaces can also be implemented as options. This input is used to calculate a 3D model that CS-Beton can pass on to its customer as a visual model before production begins and a manhole data sheet for approval.

After calculation of the model, the data goes to the Capitan milling centre. Here, channel negatives for nominal manhole widths up to DN 1500, associated blockout cores and nega-

tive-shaped parts are milled from EPS blocks within a short time. "The Capitan is very user-friendly. Since the milling program is created automatically, no specialist staff is required to operate the CNC milling centre", Nusser stresses. CS-Beton has also invested in a recycling system from BFS, with which the milling residues are extracted, pressed and collected for recycling.

Easy, tool-free assembly

During the milling procedure the employee has time to assemble the channel. Very little work is necessary to join the channel negatives and the blockout cores together by means of a special screw connection. At the same time, anchor bolts are sunk into the underside of the channel negative. The moulding inserts can be pulled out of the hardened concrete by the anchors without effort later on.

Decisive for this is the patent-pending Casacap release agent from BFS, which is applied to the channels. The polystyrene



The centrepiece of the Capitan system: the milling machine



Mould equipment with individual channel



turned for demoulding. The blockout cores are removed and the main channel is lifted from the concrete product. No rework is needed. The surfaces of the concrete manhole bases are very smooth and ensure very good flow characteristics.

Flexible all-rounder: Karibic Multi 1211

CS-Beton uses the fully automatic manhole ring machine to manufacture manhole rings and cones with diameters of up to 1200 mm and lengths of up to 1100 mm. All products are manufactured in accordance with DIN 4034 and DIN 4052, optionally with manhole steps or entirely without climbing aids, as well as with special climbing recesses, which are part of the catalogue of requirements in the Czech Republic.

CS-Beton selected the Karibic "because the plant is extremely flexible and has short change-over times", explains Marek Matejka, CEO of CS-Beton. To achieve this, BFS has equipped the machine with a hydraulic mould jacket clamping system.



The moulds are filled by a dosing system that is operated via the bridge crane

channel cures within a few minutes under light irradiation. With the aid of the magnetic fastening anchor the channel is then placed on the mould core of the BFS wet-casting mould, the product height is individually adjusted and the mould is closed. The concrete mixture is then poured in.

On the following day, the manhole base can be lifted from the mould core with the Capitan turnover spreader beam and



Wastewater elements produced with the Karibic in the outdoor storage area

CS-Beton also saves time with the electromotive positioning, because in the production of cones the press is no longer positioned mechanically from the centre as would usually be the case, but instead the movements take place electrically with an accuracy of one tenth of a millimetre. "Apart from the saving of time, it's very convenient for the operator, too", Nusser adds. Relief is also provided by the BFS central lubrication, which automatically lubricates the central vibrator



Karibic with base pallet handling

at defined intervals. The maintenance intervals are thus adhered to irrespective of the machine operator, which has a positive effect on the longevity of the central vibrator. Production takes place completely underground, resulting in only low noise emission values.

As is now usual, BFS has positioned the hydraulic system outside the pit. The advantage of this is that possible overheating of the hydraulic oil on hot summer days is avoided. In addition,

the system is equipped with an oil temperature controller, which regulates the oil temperature if necessary and banishes the threat of machine downtimes.

The complete Karibic Multi 1211 system has been equipped with a base pallet magazine for round and rectangular pallets as well as a fully automatic pallet placement fixture. The pallet transport trolley pushes the cleaned base pallets into the base pallet oiling station, in which they are automatically sprayed

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The electronic run-off truck from BFS for the removal of the products

with form oil. They are pushed from there into the machine. The finished products are pushed out of the machine on the other side in the same cycle and transported from there to the curing station by the electro-hydraulic run-off truck. The width adjustment for all nominal widths is done hydraulically.

CS-Beton has left space in the production hall for the PUMA base pallet cleaning machine. The cleaning robot with multi-axis control from BFS could in future clean the base pallets gently and quickly with a CNC-controlled steel brush. "The brush pressure is controlled automatically and remains constant even when the brush is worn", says Nusser. The simple teach-in programming enables the machinist to program in new base pallet types or new diameters himself.



Manhole cone with climbing recess - typical for the Czech market



CEO Marek Matejka

Connection via Internet

If there are ever any problems, BFS's experienced service team can assist via the remote maintenance unit, because in the case of problems the service technicians can directly access the machines at CS-Beton, diagnose errors and rectify them immediately where possible. "The advantage is that we can help promptly and uncomplicatedly in this way and significantly minimise downtimes", says Nusser, speaking from experience. ■

FURTHER INFORMATION



CS-BETON s.r.o.
 Velké Žernoseky 184
 412 01 Litoměřice, Czech Republic
 T +420 473 030400
 F +420 416 747179
csbeton@csbeton.cz
www.csbeton.cz



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