

Wiggert & Co. GmbH, 76227 Karlsruhe, Germany

Innovative products for increased accessibility

Mobility is a basic necessity for man. The improvement of mobility in public areas of all people, including those with limited mobility, is recognised as an important socio-political goal. Not only handicapped people, but also those whose mobility is limited, such as senior citizens, parents with prams and small children, holidaymakers with cases or people carrying heavy shopping bags, benefit from barrier-free bus stops and train stations as well as barrier-free road crossings to get to footpaths and cycle paths. The Profilbeton company from Borken, near Kassel in Hessen, specialises in the production of concrete products that meet precisely these requirements. These include, for example, the extraordinary bus stop kerb, the Kassel Kerb® and also the Kassel Querungsbord® system – border-spanning products that make life a little simpler for people. Profilbeton's products are optimised on a continuous basis and further components for the equipment of barrier-free tram and bus stops and barrier-free crossing points are being developed. Hence, the product range has been supplemented over the course of time by the Kassel Scale Slab and the Kasseler Guide Slab for the Blind, which form an outstanding guidance system for the blind in combination with the Kassel Querungsbord. This spring, Profilbeton put a completely new production facility into operation for the manufacture of the guide slabs for the blind. The production line, which was supplied by BFS and produces using wetcast forms from Wasa, is supplied with concrete by the new mixing plant from Wiggert. Wiggert supplied a complete package for concrete production into which Profilbeton was able to integrate the existing cement silos.

■ Mark Küppers, CPI worldwide, Germany ■

The Profilbeton company is quite a new company and was founded on 1 August 1998 by Mr. Wolfgang Hasch and the August Oppermann Kiesgewinnungs- und Vertriebs-GmbH. The business activity essentially consisted of the production and distribution of a patented special kerbstone for bus and tram stops. The acting partner, Dipl.-Ing. Wolfgang Hasch invented the kerbstone in 1991 together with employees from the Kasseler-Verkehrs-Gesellschaft. Since then the product range has been extended by floor indicators (guide slabs for the blind) as well as elements for barrier-free crossings, which are also patent-protected.

Because of the positive business development, the rented production and storage spaces had already become insufficient after just 3 years. In order to be able to cover the further increasing demand from Germany and – increasingly – from abroad (deliveries were already taking place to the Netherlands, Switzerland, Great Britain, France, Luxembourg, Belgium, Austria and the Czech Republic), a closed-down plant for the production of concrete roofing tiles was acquired. Following extensive rebuilding and installations of new manufacturing equipment, production was relocated to Borken in March 2002. At this location there are sufficient development possibilities on a long-term basis both for the extension of the current

product range and for the adoption of further products into the range.

Products from Profilbeton are now in demand worldwide

Having quickly established themselves across Europe, the special products from Profilbeton are now finding markets on almost all continents. For example, almost 250 metres of special kerbstones from Profilbeton were installed in Auckland in 2012. Due to the large demand in New Zealand, Profilbeton even has a new local distribution partner and local producer in the Busck company.

The first test bus stops were erected in Auckland as early as 2009. The reactions were positive without exception. The first bus stops were still supplied directly by Profilbeton last year.

There is also a further contract customer in South Africa. After the FIFA World Cup in South Africa and the resulting expansion of the local public transport network in Cape Town, Profilbeton was able to gain a further African city as its customer with the help of its consultant HHO: Rustenburg near Johannesburg plans to make the local public transport network barrier-free in the next few years. Almost 20 km of special kerbstones have been installed in Cape Town and there is no let-up in demand. At present discussions are taking place with further city administrations in Africa: Johannesburg, Tshwane and Durban are planning barrier-free local public transport networks in future.



In future the guide slabs for the blind will be produced by Profilbeton in this hall using the wetcast method. The Wiggert mixing plant is additionally enclosed in insulating cladding for use in cold weather.



Access to the mixer platform



The feeding elevator is equipped with a fall protector.

New production line for guide slabs for the blind creates high capacities

Whereas all concrete products have been produced in Borken with ready-mix con-

crete from a nearby concrete plant up to now, Profilbeton's new production hall for guide slabs for the blind has its own mixing plant which was integrated into the production circulation.

While the production of the various special kerbstones is located centrally in one production hall, the new production of the wet-cast slabs was outsourced to another production hall. Hence Carsten Hasch was able to draw up the actual plant concept and supervise the implementation of the project with the support of his father Wolfgang, who is still active in the company as senior managing director. Two cement silos still existed from the old concrete roofing tile production and these were relocated by Mr. Hasch next to the new hall. Wiggert then built a mixing plant between the cement silos and the hall that supplies the slab production inside the hall with concrete by a bucket track.

MobilMat Mo 750/3 – PCS by Wiggert

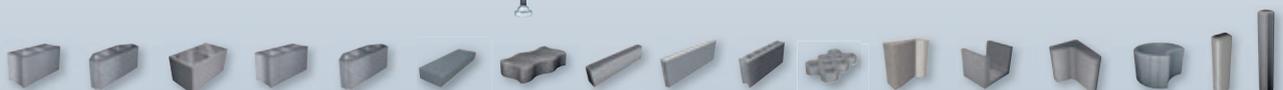
Wiggert & Co. GmbH from Karlsruhe supplied and installed a mixing plant of the type MobilMat at Profilbeton in Borken. In this system the components necessary for the concrete production are manufactured in compact, easily transportable units, pre-assembled in the factory, electrically installed and their function checked.

ZENITH

940 SC
Fully automatic multilayer machine



CHAMPIONS ■■■
MADE IN GERMANY



ZENITH Maschinenfabrik GmbH · Zenith-Strasse 1 · D-57290 Neunkirchen/Germany · Phone: +49 (2735) 779-234 · Fax: +49 (2735) 779-211 · info@zenith.de · www.zenith.de



The Wiggert inline silo type 3-35-WB 600 has three chambers with a total capacity of 35 m³.



Filling the inline silos

Wiggert offers planetary countercurrent mixers in ten different sizes. A broad spectrum is covered with dry filling volumes ranging from 375 litres (HPGM 375) to 4,500 litres (HPGM 4500). The rotor with side scrapers is driven from above via a robust reduction gearbox. The mixing stars are driven via the ball slewing ring built into the rotor. 1, 2 or 3 mixing stars are used, depending on the size of the mixer. Large cleaning flaps allow simple cleaning and maintenance of the mixer. Safety limit switches prevent the mixer from being switched on with the flaps opened.

HPGM 750 planetary countercurrent mixer for fast and homogeneous mixing

The core element of the newly installed mixing plant is a Wiggert planetary countercurrent mixer of type HPGM 750 with a hardened concrete output of 0,5 m³ per mixing cycle. 22 KW of drive power and the countercurrent principle provide for an intensive exchange of material with short exchange paths, thus bringing about the fast mixing and homogenisation of the mixture at a very high level. Using this drive principle the entire interior space of the mixing trough is used for the mixing process.

A mixer lining with compound armour plating guarantees a long service life, while the attached mixer filter ensures virtually dust-free production. Water spray nozzles with non-return valves ensure the fast and symmetrical addition of the mixing water and the simultaneous pre-cleaning of the mixing arms. In order to minimise cleaning times when changing the recipe and at the end of the shift, the mixer was additionally equipped with an automatic high pressure mixer cleaning system. The mixer can be cleaned completely in 7.5 minutes.



China Time-honored Brand
World Class Service




Iron Oxide Pigments

Complex Pigments

Granula Pigments

Liquid Color

MAIN CONTACTS:

SHANGHAI
YIPIN PIGMENTS CO.,LTD.
4839 Jiasongbei Rd.
Shanghai, China
Tel: +86 21 6257 0666
Fax: +86 216257 0666*8818

YIPIN PIGMENTS,Inc(USA)
843 6th St Suite 105,
Rancho Cucamonga,
CA 91730,
Tel: +1 909 243 7394
Fax: +1 909 243 7397

YIPIN GMBH (GERMANY)
Happelallee 2, 22089
Hamburg, Germany
Tel: +49 40 36 90 010
Fax: +49 40 36 38 42
Email: info@yipin.de
info@remy-hamburg.
www.yipin.com

Building on more than 80 years' of experience in the manufacture and supply of iron oxides, chrome, anticorrosion, pearlescent and complex pigments also with other related products, Yipin Pigments is a company with customers worldwide . It supplies products through companies in the USA, Germany,China, Australia, Russia, France and Turkey with R&D Centre,service and logistic.





One of the three electro-pneumatically actuated segment dosing closures



The feeding elevator is pulled up to the mixer level via a profile steel track.



The moisture level in the sand is measured directly during dosing



The existing cement silos were fitted with new screw conveyors by Wiggert.



HPGM 750 planetary counter-current mixer with one mixing star and two mixing paddles



The very first concrete mixture from the new Wiggert mixer was poured into large moulds for better checking and analysis of the mixing quality in the outdoor area.



Naturally the slump of the first concrete mixture was also measured by Profilbeton according to standard



Manual test filling of a wetcast mould from Wasa

Storage and dosage of the aggregates

The aggregates are stored at Profilbeton in a 3-chamber linear batcher with a total volume of 35 m³.

The dosage of the aggregate quantities specified in the recipe takes place in succession via dosing valves on the belt weigher arranged under the silo compartments. The aperture of the dosing closures can be controlled by adjustable stops. Shakers on the discharge cone provide for proper discharge even of poorly flowing aggregates.

Weighing by means of weighing cells ensures high accuracy and trouble-free operation. The automatic coarse/fine batching of the aggregates together with the integrated free-fall correction guarantees the high repeatability of the dosing procedures.

After the dosage of all aggregates is complete, the belt weigher transfers the material to the bucket of the feeding elevator, which transports it to the planetary mixer. A fall protector in the form of a second hauling rope secures the feeding elevator against uncontrolled falling in the event of a rope breakage.

Several steps have been taken to ensure the precise adherence to all recipe data for the respective mixture. On the one hand, moisture measuring probes have been attached to the valves of the sand compartments of the linear batcher for correcting the weight of the sand. The moisture contained in the sand is measured nearby the discharge cone in order to be able to precisely dose the quantity of sand specified in the recipe by automatically adjusting the opening time of the valves. On the other hand, a highly wear-resistant microwave measuring probe is integrated into the mixer base for the determination and setting of the precise moisture value. Following the addition of the aggregates, the cement and further additives into the mixer, dry mixing initially takes place. After a defined dry mixing time, the measuring probe determines the existing moisture in the mixture and the quantity of water that is lacking compared to the recipe value is added via a flow meter. This procedure guarantees precise adherence to the water/cement ratios for the individual concrete recipes.

Following the expiry of the subsequent wet mixing time, the ready concrete is transferred into the bucket track or alternatively via a swivelling chute into a crane bucket.

Dosage of admixtures and liquid dyes

The recipe-related addition of admixtures and liquid dyes to the mixer takes place via a four-chamber liquid weigher from Würschum. The admixtures and dye are emptied out of the weighing containers in free fall. The controller for the dosage of the admixtures and dyes is integrated in the main control cabinet of the mixing plant.

Cement storage and dosage

Profilbeton stores white cement and limestone meal for the production of the guide slabs for the blind in two cement silos. The mixing plant is supplied with white cement and limestone meal via screw conveyors; however, the two binders are weighed separately in a double-chamber weigher. In accordance with the state of the art, the storage silos are equipped with air loosening units, purge air filters, overflow protection and radar level measuring equipment.

PCS fully automatic controller for 1000 concrete recipes

Based on the Microsoft Windows operating system and a Siemens PLC, the PCS controller offers the operator simple and tidy control over all plant functions, including mixer status, moisture correction, plant status, recipe and warehouse management. The PCS controller offers the precision necessary in order to meet the steadily increasing demands on the mixture, e.g. for self-compacting concrete (SCC) and coloured products.

Apart from the monitor and keyboard, the control panel contains all necessary components, such as the power stage, the main



The new Slabflex production line at Profilbeton



CreaVib compaction station

switch, all motor protection switches, fuses and overload protection, the ammeter for monitoring the mixer current, the digital displays for the weighers and the Siemens S7 PLC.

Slabflex – concrete slab production using the casting process

The guide slabs for the blind are manufactured using the Slabflex manufacturing system from BFS Betonfertigteilsysteme GmbH. BFS offers various plant concepts with solutions adapted to suit the specific customer. Plants to suit the respective requirements can be assembled from the BFS modular system. The production pallets with mounted polyurethane forms for wetcast production were supplied by Wasa. Six slabs can be manufactured with each production pallet.



With the systems supplied by Wasa, Profilbeton can automatically manufacture a total of five different studded or grooved slabs using the wetcast method.

WETCAST

WASA WETCAST

Exact. Creative. Flexible. WASA WETCAST enables any surface structure and shape to be exactly reproduced in an impressive quality true to your specifications – and on a serial scale.

WASA provides:

- Robust, polyurethane cast-resin moulds of the highest quality
- Fabrication according to customer specifications
- Stack carrier systems with single or multi-nest wetcast moulds



WASA

Competence Leadership.



The finished products are removed from the Slabflex buffer belt using the vacuum lifter from Timmer



Mixing process and levels are displayed on the monitor.



The employee can supervise the entire production from the operating console.



Kerbstones for local public transport networks in the most diverse versions – a speciality of Profilbeton from Borken/Hessen

The production of the slabs runs fully automatically at Profilbeton; only the removal of pallet packages with fresh products from the stacking magazine and the input of pallet packages with hardened products into the buffer and input station in front of the demoulding station are done using a fork-lift-truck. The production pallets are equipped as stack-carrying systems with base rails and are thus simple to stack.

After a pallet stack with products has been placed in the buffer and input station, the pallets are isolated and cycled through the Slabflex production line. In the demoulding station the hardened concrete slabs are taken out of the mould, turned and placed on a buffer conveyor belt. The slabs are picked up individually from this belt using a vacuum lifter from Timmer and set down on a wooden pallet by an employee.

The production pallets are cleaned automatically in the next station before being prepared in the following step for the next usage by the application of release agent in the spraying station. Afterwards the stack carrying systems with the polyurethane moulds drive into the concreting station. The concrete dosing system provides automatically for the desired quantity of concrete in the mould.

In the following step the fresh products drive into the CreaVib compaction station. The pallets are clamped on the vibrating table and the table begins to move. The even acceleration distribution over the entire table surface ensures complete concrete compaction.

The production pallets are subsequently collected into pallet stacks by means of lifting equipment in the stacking system at the end of the production line and subsequently taken over by a fork-lift truck. The stacks are then placed in the area of the hall provided for the curing of the fresh products.

Stack carrying systems with polyurethane moulds for the production of guide slabs for the blind using the wetcast method

Wasa GmbH & Co. KG from Neubrunn in southern Thuringia has been producing casting resin moulds made of polyurethane and silicone for some seven years now. For Wasa, which is known as a manufacturer of wooden, plastic and wood/plastic composite boards, this was a consistent further development in 2006 of an already extensive range of products for customers in the concrete block industry.

Wasa has invested in the optimal conditions for the processing of liquid polyurethanes for the production of PU moulds. Using a state-of-the-art plant, liquid polyurethanes are processed with a permanently identical mixing ratio.

172 forms for five different products in the starting phase

Wasa supplied 172 stack carrying systems and 172 polyurethane forms for the production of guide slabs for the blind using the wet-cast method. The stack carrier system manufactured by Wasa offers the customer an all-in-one solution of wetcast mould and carrier system that forms a self-contained unit.

Six concrete slabs can be manufactured with each polyurethane mould. With the systems supplied, Profilbeton can automatically manufacture a total of five different studded or grooved slabs using the wetcast method.

The initial maximum daily output will thus be around 1,032 guide slabs for the blind. Since neither the Wiggert mixing plant nor the BFS production line is used to full capacity by this, manufacturing can easily be expanded by the use of further moulds in future. ■

FURTHER INFORMATION



Profilbeton GmbH
 Waberner Straße 40
 34582 Borken/ Hessen, Germany
 T +49 5682 73860
 F +49 5682 738642
info@profilbeton.de
www.profilbeton.de



Wiggert & Co. GmbH
 Wachhausstr. 3b
 76227 Karlsruhe, Germany
 T +49 721 943460
 F +49 721 402208
info@wiggert.com
www.wiggert.com



Wasa GmbH & Co. KG
 Meiningen Str. 9
 98617 Neubrunn, Germany
 T +49 36947 567-0
 F +49 36947 567-21
factory@wasa-technologies.com
www.wasa-technologies.com



BFS Betonfertigteilssysteme 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



WORLDWIDE

COMPETENT

**BUCKET CONVEYOR SYSTEMS
 CONCRETE DISTRIBUTION SYSTEMS**



Mono rail system rotary bucket



Bucket with double flap gate



Two rail system rotary bucket



Bucket with double flap gate



Semi portal frame distributor



Inclined host



Semi portal distributor



Distributor



Administration and production in Germany

KÜBAT
 Förderanlagen GmbH
 Max-Planck-Str. 14
 D-88361 Altshausen, GERMANY

Phone: +49 (0) 75 84/92 09-0
 Fax: +49 (0) 75 84/92 09-20
 E-Mail: info@kuebat.de
 Internet: www.kuebat.de