

Schlüsselbauer Technology GmbH & Co KG, 4673 Gaspoltshofen, Austria

Austrian market leader starts up new production plant for manhole components

The Tiba Betonwerk GmbH is the result of a joint venture between the Austrian concrete plants Maba and Frühwald completed in 2006; a merger that created a full-service provider, specialized in the production of concrete components for civil engineering and environmental engineering. The market position was further enhanced following the acquisition of the well-established Bauer concrete plant in St. Margarethen an der Raab. This plant, which since 2007 has also been trading as Tiba Betonwerk GmbH, is one of the most modern plants in Austria and there are other Tiba production sites in Sollenau and Tillmitsch. To ensure that production remains economical and is kept at a consistently high quality, Tiba of course only uses the most modern machinery and recently a new system was commissioned at the Tillmitsch plant to produce manhole rings, cones and manhole bases. This new Magic 1501 system was supplied and fitted by the Austrian company Schlüsselbauer Technology GmbH & Co KG, which is one of Tiba's most important partners when it comes to production engineering.



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■ Mark Küppers, CPI worldwide, Germany ■

The Maba Fertigteilindustrie GmbH is part of the Kirchdorfer Group; a group successful throughout Europe and whose origins go back to 1925. Under this umbrella high

quality concrete products are produced, including components for residential, industrial and office buildings, sleepers and masts for railway construction, plinths for noise barriers and special bespoke components. Frühwald GesmbH & Co KG can also look back on a long tradition. Founded in 1930, its original business was centred around the production of cement roof tiles and later components and flue technology, waste water and environmental engineering and surface stabilisation systems were added. Nowadays Frühwald ranks in all branches of industry among the leading suppliers of complete systems. Both partners have also been working for years in Eastern Europe – Maba as a major player in the Czech market, Frühwald with four plants in Hungary and branches in Croatia, Romania, Slovenia and Germany. The strong market presence and good contacts into the Eastern European area are generating the basis for further growth in Tiba GmbH.

Tiba on a course of further growth

Tiba's company focus goes well beyond the production of high-quality concrete products: if customers so require, the service may also include complete project management from professional consultation, including the analysis of potential savings through to the drafting of tender documentation.

Nowadays with its workforce of 86, Tiba Betonwerk GmbH produces concrete components for sewer construction, drainage and environmental engineering, with all three areas having roughly the same emphasis. As is typical with these products, over 80 % of contracts come from the public sector. The main sales region is Austria, but Tiba also has considerable market share in neighbouring countries, from Slovenia through to the Czech Republic. However business is not limited to these markets; Tiba has also been awarded



Manhole rings and cones are manufactured at Tiba in a wide range of dimensions with the new Magic 1501



Magic 1501, to the right of the picture the pallet store in front of the oiling station



The Magic 1501 is supplied with concrete from the mixers of Frühwald's existing concrete production

the contract for a large infrastructure project in Kosovo this year, which is being funded in collaboration with the EU.

Tiba is set on a course of further growth for the future. This includes new offices planned abroad and additional modernisation in the production plants. A symbol of this is

the most recent new acquisition of the Magic-Production plant by Schlüsselbauer for the Tillmitsch plant, which is the largest Tiba plant and in which 2/3 of the total turnover is produced.

Magic 1501 - Production plant for manhole components

The Magic 1501 is a production plant for manhole components including rings, cones and bases with heights of up to 1,500 mm, and for parts for road gullies and bent pipes in large quantities. The machine is designed for product sizes up to Ø 820 externally in double production and up to Ø 1,800 mm externally in single production. Rectangular profiles in single production can be produced up to 1,270 x 1,270 mm externally.

The Magic is available in numerous different plant concepts, ranging from stationary production on a free-standing production machine with manual removal of the products through to a fully automatic circulation system. These include production, trans-

port, storage of products, as well as cleaning and oiling of pallets.

Tiba has come up with a plant design with a free-standing production machine, manual removal and automatic devices like two separate stations for cleaning and oiling the pallets. With the space available, it can subsequently be extended to a fully-automatic circulation system with a retrofitted Transexact crane robot system.

The entire manhole part production at Tiba is operated by two employees. One employee runs all the activities around the current production and one colleague is responsible for the dry product side.

The Magic 1501 is supplied with concrete by the mixers of Frühwald's existing concrete production, with the concrete being moved via a conveyor belt from the mixing plant to the production plant. The storage container is quite spacious and is large enough for several cycles and the mixing plant can produce concrete for other Tiba or Frühwald production plants. Alongside



Inserting the steprungs into the Stepmaster



Automatic insertion of the pallets



Filling and compression





The MMagic is designed for product sizes up to Ø 820 externally in double production and up to Ø 1,800 mm externally in single production

an additional conveyor belt, a Skako bucket conveyor ensures the concrete is distributed in the Tiba production area.

High degree of automation makes work easier

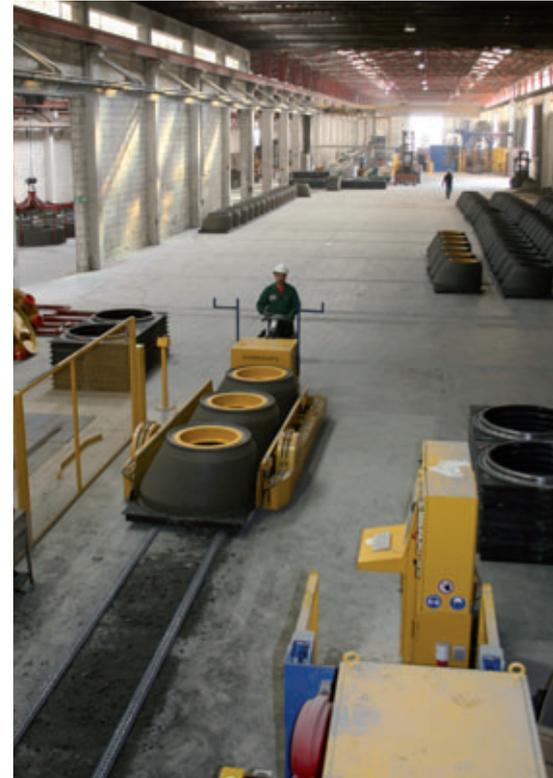
Production of a manhole element starts with a pallet being transferred to the production machine via the manipulator on the automatic pallet feeding. Prior to the transfer the

pallets inserted have also gone through the automatic pallet oiling station. In this unit, the bottom pallets delivered are automatically oiled and stored. A sponge that self-adjusts to the particular pallet dimension applies the formwork oil in doses. The entire unit is encapsulated and the oiling time can be adjusted on the operating panel.

If integrated steprungs are required, the machine operator inserts per cycle steprungs or irons into the Stepmaster, which then ensures automatic insertion into the manhole element. The steprungs / irons for the next product are connected by the machine operator to a special store during the filling or vibration cycle. This then drives programme-controlled into waiting position to transfer the steprungs to the core after demoulding. The cycle times are thus enhanced and waiting times are avoided. The operator on the Magic is not just responsible for visually monitoring the production but also for the removal of the fresh concrete products and small adjustments like laying setrings on the top of the manhole parts. Filling the production plant with concrete, the compression process and the output of the finished product then occur fully automatically.

Loading and automatic pallet cleaning

The electric transport cart is used to drive the fresh products from the production plant to their destination in the internal storage area. Here the simultaneous transport of several products is possible. By using the buffer zones of the Magic 1501, the machine operator can produce several cycles and then bring the accumulated manhole components together into the setting area.



View from the Magic onto the palletising station in the background

A second employee drives the hardened products from the previous day's production in another cart to the automatic depalletising station and also supplies the Magic 1501 with clean pallets. This employee also handles the automatic palletising process and the fully-automatic pallet cleaning station, called Cleanmaster, which is located right beside the palletising area.

During palletising, the hardened concrete manhole components are driven individually into the station. Then a gripper holds the



The hardened products from the previous day's production are moved to the loading station on the electric transport cart



The crane uses a gripper to shift the manhole element

component securely on the walls and raises it slightly. In the following step, the pallet is released from the manhole part and the gripper raises the element to the conveyor belt into the external area. On this conveyor belt there are wooden pallets, continual supply is provided via the pallet store, located in the external area. This means there is always an empty pallet available onto which a manhole element is deposited by the gripper. The loaded pallet is then moved outwards via the conveyor belt. Here forklifts are used to move the concrete

components on to their temporary destinations in the external storage area. The steel pallet in turn is shifted right into the fully-automatic pallet cleaner once it is released. Cleaning is done dry using brush technology and the cleaning systems adjust automatically to the different pallet dimensions, thereby minimising the wear and tear of the brushes. The employee supplying the palletising station with the hardened manhole components is also responsible for the transport of the cleaned pallets to the Magic 1501. This involves him taking around 20 cleaned and stacked pallets from the cleaning station and drives them in his cart to the Magic 1501.

Conclusion

The management is extremely satisfied with the acquisition of the Magic 1501 after the first few days of operation. Actually, in terms of its requirements, Tiba sees in the Schlüsselbauer Company the ideal partner - even for future acquisitions. This is why the company managers Christian Nagler and Wolfgang Bauer rate the Schlüsselbauer Company not only as a reliable partner in terms of maintenance and service, but they emphasise that the value for money and durability of Schlüsselbauer production plants are definitely convincing.



Fresh product with integrated step-rungs

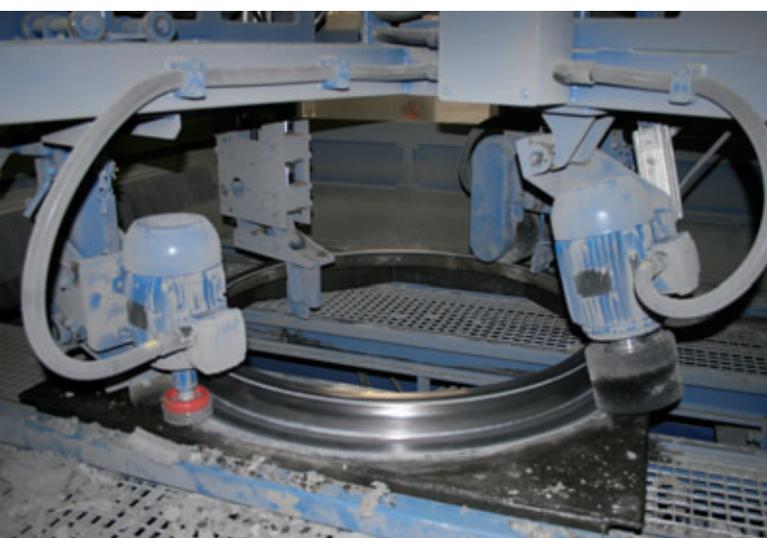
FURTHER INFORMATION

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Cleanmaster – fully-automatic pallet cleaning



Forklifts are used to bring the concrete components to their temporary destinations in the external storage area