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Scheidt invests in innovative mixing technology for the Arnstadt site

■ Mark Küppers, CPi worldwide, Germany

Wilhelm Scheidt and the foundation of his construction company in Herford in 1889 marked the beginning of a story that is still trend-setting today. At Scheidt, a stable exterior meets the most modern interior: maximum protection for electrical installations by the latest highly complex electrical engineering and electronics under the concrete shell. The company, which today sets standards in the construction of transformer stations, has always adapted to the needs of the times and the markets. This was also the case recently, when the complete mixing technology at the Arnstadt site was extensively modernised. Scheidt again relied on the company Teka, who made the production fit for the future with a high-performance turbine mixer.

The exceptional position of Scheidt lies in the know-how of generations. Specialisation ensured market success - from a concrete plant to a full-service provider for the energy industry.

The Rinteln plant was founded in 1953, the cornerstone of an impressive company development. With the further development of production in 1967, the first finished stations for transformers were able to be manufactured.

In 1990, the company's first branch plant was opened in Hoyerswerda in Saxony and the production of reinforced concrete transformer stations started. Six years later, the site was



View of the Scheidt factory in Arnstadt

expanded with a further factory in Arnstadt in Thuringia, for which a new production hall was built in 2010.

The Arnstadt site is Scheidt's largest plant, where transformer stations up to 80 t including electrical equipment are manufactured. On average, 150 man-hours go into a transformer station until it is ready for dispatch. The transformer stations are mainly sold in Germany, Benelux and Austria.



The Arnstadt site is Scheidt's largest plant.



The circulation system for ceiling and double wall production was supplied by Avermann at the time.

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At TEKA everything revolves around mixing.

TeKa

But also beyond these borders the products of Scheidt are in demand, for example transformer stations have even been delivered to Nigeria.

Quality and perfection ex works

The requirements in the market have changed: especially with regard to the types of stations. In addition to walk-in and compact transformer stations, Scheidt manufactures all types of supply stations - from gas control stations to radio stations and pump stations to special stations. A much greater variety of turnkey supply stations can be produced thanks to an intelligently dimensioned smaller model grid.

Tailor-made switch house

The time of ugly concrete cubes in the surrounding area is finally over: Scheidt shows how things can be much nicer. The prefabricated reinforced concrete buildings in element construction made of reinforced concrete of the C35/45 quality can be realised for almost all sizes in single or multi-storey construction. With individual possibilities to choose the shape and colour.

The individual elements for the switch houses are manufactured in the factory according to customer requirements and assembled on site. Sealing systems from various manufacturers are available for feeding through cables and pipes.

Trend-setting electrical expansion

Wherever the future is being created, local authorities, cities and rural areas today demand networked, intelligent and holistic solutions to meet the challenges of tomorrow: energy infrastructures with a supply advantage. This means new construction, conversion or expansion of the stations to a high

technology level inside the station body. This is where Scheidt comes in with its full programme of smoothly functioning electrical engineering. The high standards also guarantee maximum tested safety when installing electrical switching systems and transformer stations.

Cast-in channels and threaded bushes in the precast concrete elements facilitate installation and mounting of the components. Channels and bushings, the reinforcement of the concrete as well as all metal parts of the station body not belonging to the operating circuit are electroconductively connected to each other: This allows a collective earth connection to be led out of the transformer station.

Mixing technology was getting on in years

The Arnstadt plant has been working with a Teka turbine mixer since the early 1990s. The mixing times for self-compacting concretes were high and the mixer was becoming more susceptible to faults due to its age. The control system and the probes also no longer met today's requirements. It was therefore decided to replace the existing mixer with a high capacity turbine mixer from Teka, which is very well equipped for the production of self-compacting concrete.

The dismantling of the old mixing plant began on 31 October 2019. The base of the mixing tower was left standing, only the upper part with the mixer was completely dismantled. In mid-November Teka delivered the new mixing plant, whose modular design significantly accelerated the assembly process. In December, production was then able to be resumed. Since then, the Teka high-performance turbine mixer THT 1500 with state-of-the-art safety technology has been in use at Scheidt. Sauter was responsible for the new mixer control system, which completely replaced the old control system.



Teka high performance turbine mixer THT 1500 (Type G-2-V)



Patented mixing turbine and counter-rotating mixing star



The modular design significantly accelerated the assembly process.

Teka high-performance turbine mixer

The supplied Teka high performance turbine mixer THT 1500 (type G-2-V) has a frequency controlled 45 kW drive motor and has a maximum concrete output of 1.0 m³ per batch. The THT 1500 is equipped with innovative mixing technology and has a patented mixing turbine and one or more counter-ro-

tating mixing stars. The mixing star and the likewise rotating clearing and scraper blades continuously feed material to the mixing turbine. This leads to a very intensive and fast mixing of the material in a very short time, to a very high degree of homogenisation, as well as an almost straight measuring curve during moisture measurement. No grain is destroyed. The grading curve remains unchanged.



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The concrete is distributed in the production area by means of buckets and overhead crane in the main hall. The buckets are transported to the adjacent hall by a Muli-Trans electric platform truck

The turbine mixer achieves very good mixing results even with absolute minimum quantities. According to the manufacturer the desired mixing results can still be achieved in practice with quantities as low as 10 % of the maximum capacity of the respective mixer.

The Teka THT high-performance turbine mixers were presented for the first time at bauma 2013 and have established themselves in many concrete plants for the production of high-quality products. The THT turbine mixer is mainly used for face mix, coloured, fibre and polymer concretes as well as self-compacting concrete and ultra-high performance concrete.

The development concept behind the patented mixing turbine was to build a special mixer that further increases the

quality of the mixed product in the case of difficult mixing tasks, shortens the process times with regard to the mixing and emptying times and permits an immense variability of batch sizes for the same mixer size.

This resulted in the turbine mixer, which can be assembled very precisely due to the well thought-out modular principle. The size of the trough, the drive power and the number of mixing stars themselves are correspondingly variable.

Teka automatic scraper

As part of the modernisation, the Arnstadt site was also equipped with a powerful Teka THS 15 automatic scraper.



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The most important part of the new Teka scrapers is the control system, which has been completely redesigned and rebuilt.

A few years ago Teka introduced a new generation of scrapers to the market, which have since proven their worth in many concrete plants in Germany. The Teka scrapers are available in different sizes, so that the most economical size can be selected depending on the required hourly output of the plant.

Teka scrapers are generally used in mixing plants with mixers from 0.33 m³ to 2.0 m³ concrete output. This corresponds to a scraping capacity of 50 - 160 m³ of loose aggregates per hour. Boom lengths can vary from 14 to 22 m, depending on the box lengths.

The scraping unit is mounted on the centre of the dosing star. A robustly dimensioned ball bearing slewing ring with external teeth connects the mobile unit with the fixed mounting frame. The device is moved by a gear motor with magnetic brake and integrated frequency converter.

The most important part of the new Teka scrapers is the control system, which has been completely redesigned and rebuilt. The core of the new control system is the dynamic frequency-controlled drive of all motors. This allows much less wear and tear and a more gentle operation, which also saves considerable electricity costs. The control cabinet with the fully automatic control and the power section are completely pre-installed in the scraper, which considerably reduces the cabling effort during assembly.

Only a junction box is installed in the control room, which is equipped with a plug connection and all safety-relevant switches. The actual operation is carried out via a handheld operating pad, which is a touchscreen monitor, menu-guided and easy to operate. There are connections for the operating pad directly on the scraper and in the operating area of the system. Usually, this is connected in the control cabin to be able to set and monitor all control functions. For maintenance, repair and/or adjustment work on the scraper, the operating pad is connected directly to it.



A 3D formwork from Ratec for the production of transformer station elements is also one of the latest investments at the Arnstadt site.

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On average, 150 man-hours go into a transformer station until it is ready for dispatch.

For safety reasons, Teka scrapers are equipped with a large platform to ensure easy access to the control cabinet. The scrapers are equipped with a switching and safety device at the entrances through a traffic light system.



The transformer stations are mainly sold in Germany, Benelux and Austria.

FURTHER INFORMATION



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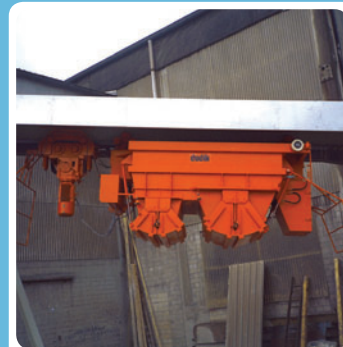
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