Kraft Curing Systems GmbH, 49699 Lindern, Germany

Multi-function Heating System for Precast Concrete Elements enables Year-round Production

The Polish company Telwolt-Beton Sp. z o.o. began production in 1991. Since its founding, the company has mainly produced manhole components and other products for the installation of telecommunication networks. Through its many years of cooperation with customers from all over the country, the company has firmly established itself as a supplier of precast products for energy and telecommunication technology. In 2009, the company changed ownership. Following that change, the first modernization measures were taken with the aim of increasing the quality and productivity of the plant.

In parallel, the product range was expanded. Today the company offers a wide variety of products for road, building and industrial construction as well as environmental protection, including cable shafts, distribution junctions, road slabs, jumbo slabs, grating slabs, culverts, wastewater shafts, drainage outlets, drainage channels, drive-over channels and effluent channels. After eight years of regular investment, the Telwolt production plant is today one of the most modern precast production plants in the region.

A modern equipment pool, which guarantees the productivity demanded and a constantly high product quality, as well as an effective management system have brought the company more orders, including orders from customers who implement large-scale road construction and telecommunication projects. The requirements of these customers were two-fold:

- implementation of projects all year-round,
- adhering to strict schedules and
- deliveries of precast elements at times when their production wasn't always possible due to weather conditions.

In order to minimize the risk of overrunning delivery deadlines and in order to complete orders the whole year round, Telwolt decided in 2015 to purchase a vapor generator from Kraft Curing Systems GmbH. The KC-35VS model with an output of 1050 kW/h forms the heart of the new concrete curing system and additionally allows for the thawing and heating of aggregates and batch water for the mixing plant. With a guaranteed combustion efficiency of 98%, the natural-gas-fired vapor generator achieves a calculated saving of 40 to 60% in comparison with traditional steam boilers.

Vapor distribution pipe with holes or a hose connection for the distribution of heat.

The vapor generator is not only a money saver but also a space saver – pictured here alongside the steam boiler that it replaced.

VAPOR GENERATORS BY KRAFT CURING SYSTEMS

REDUCE PRODUCTION COSTS

AND INCREASE YOUR PRODUCTION RATE

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YOUR BENEFIT

VAPOR CURING ACCELERATES
THE **CONCRETE HARDENING** PROCESS

INCREASE CONCRETE QUALITY

60 % **LOWER** OPERATING COST
THAN STEAM BOILERS

KRAFT CURING

CONCRETE CURING SOLUTIONS. **MADE IN GERMANY**



Vapor cured precast concrete elements under a curing tarp.

In conjunction with temperature sensors and stainless steel vapor control valves, the AutoCure® control system guarantees the fully automatic operation of the system.

The KC-35VS vapour generator is a genuine all-rounder, because the device

- cures the concrete
- heats the sand and gravel bins and
- heats the batch water.

An insulated vapor distribution system transports the vapor to the respective production areas. Telwolt produces in three manufacturing halls and in adjacent outdoor areas. The appropriate quantity of vapor is fed at a constant temperature and humidity via the piping system to these areas and to each of the four aggregate bins, with a capacity of 15 m³ each. The batch water is also heated – all with one vapor generator. The output of the generator and the AutoCure controller enable simultaneous curing areas with parameters that are set individually for each area – based on concrete product type. Since the output of the vapor generator is variable, it can also supply just a fraction of the maximum rated output – depending on the concrete quantity, the outside temperature and the quality of the cover film.

Dipl.-Ing. Wiesław Kościński, Production Manager, is very satisfied with the investment in the vapor system: "The system is used a lot in winter so that production can continue, which wasn't possible before. Although the weather conditions were severe (as low as -20 °C), we were able after commissioning to continue with production and deliver to our customers on time. The curing of the concrete products under such difficult conditions doesn't take any longer than 12 hours. We have two overhead cranes and the products were loaded onto lorries in the hall directly after curing. The system thaws out the aggregates – mainly sand – and warms up the batch water. This means that we don't have to stop production even under severe wintery conditions and we don't need to worry about deadlines and the associated contractual penalties. The system is safe and easy to operate. Our employees were easily able to set all the operating parameters for the respective production areas after just one training session. The placement of the wireless temperature sensors requires a little intuition, but after just a few production cycles we knew what arrangement would guarantee the required system performance. Up to now the system has only been in operation in winter, but if there should be a greater need for our products and the weather is bad, we are optimally equipped to increase our productivity with the aid of the system and to meet the requirements of the market." ■

Heating of sand and gravel.

FURTHER INFORMATION

KRAFT CURING

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