

Kraft Curing Systems, 49699 Lindern, Germany

Bruk Bet relies on proven concrete curing quality on its anniversary

Bruk Bet is one of the largest Polish manufacturers of decorative concrete blocks and paving stones. The family-run company with several production locations in southeast Poland celebrated the 30th anniversary of its founding in 2014. Bruk Bet has a high aesthetic standard and offers its customers an unusually extensive range of designs, shapes and colours. In order to do justice to this ideal and to meet the increasing needs and requirements of a demanding market, Bruk Bet continues to rely on individually adapted curing solutions, technology and expert knowledge from Kraft Curing Systems.

The renowned Polish paving stone manufacturer Bruk Bet knew precisely what it was doing when it decided in autumn 2013 to install a curing system from Kraft in a further production plant. Concrete curing solutions from Kraft Curing Solutions have been used

successfully in the Cracow, Tarnow and Krzemienica works for several years in order to check the quality of Bruk Bet's wide range of concrete products, to guarantee the continuity of production even in winter and to ensure uniform results.

The result – it works

Zbigniew Lechowicz, director at Bruk Bet with responsibility for investments in new technologies for production, tells of his experiences with Kraft plants and co-oper-



Direct size comparison of the vapour generator and the curing rack (40x8x5m). The operation of such a large plant with the smallest vapour generator from the Kraft product range (footprint only 95 x 77 cm) is possible only through precise adaptation to the customer's production parameters. The result is very high product quality with very low energy costs.



Kraft Vapor Mini™ vapour generator with Kraft Autocure™ controller in the new Bruk Bet footpath slab production plant in Tarnow.



Piping gangway on the rear side of the slab rack with vapour pipe, a valve for each curing chamber and the air distribution pipe.

ation with Kraft: "The products that we manufacture on the hermetic press in our modern Schindler plant are mostly large, thin slabs that are subjected to various surface treatments. In order to enable this it is necessary to obtain sufficient hardness of the concrete as quickly as possible. We found that we could only achieve this in an isolated curing environment with closed chambers and the use of modern technology for heating and air circulation – with the vapour technology supplied by Kraft. Our co-operation with Kraft goes back a long way. Their Quadrix and Vapor systems have been used successfully in our plants for many years now. That's why we relied on the experience and proven solutions from Kraft for the implementation of our latest investment in Tarnow – in other words we relied once again on the Vapor system developed by Kraft."

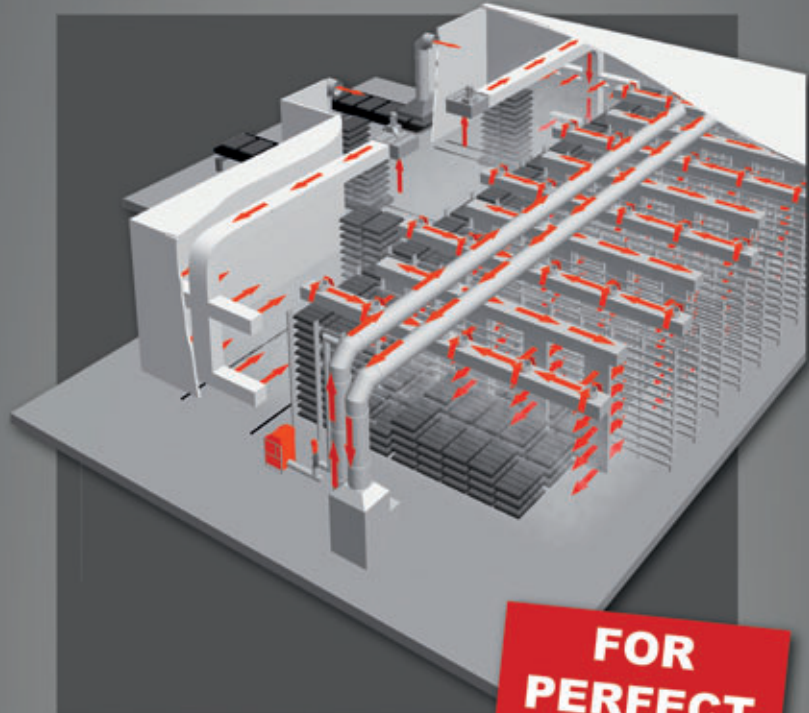
Bruk Bet is positioned at the high end of the domestic market as a manufacturer of high-quality products for floors and walls. In order to meet market requirements for even better products with a higher quality and on the basis of positive experience with the solutions from Kraft, the manufacturer relied on the quality-increasing effect of controlled concrete curing with a Kraft system in a further production plant. A Vapor™ Mini vapour generator was installed in the Tarnow plant together with automatic operation of the curing chambers for the new slab production facility.

Know-how is the magic word

What is most impressive here is the relative size of the system installed by Kraft. It's hard to imagine that such a small device as the Vapor Mini can reliably supply a slab rack of the size of the plant in Tarnow (approx. 40 x 8 x 5 m). According to Kraft this is only possible if the system is optimally calculated to match the production parameters and the customer's needs.

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Inlet opening for the hot air under the slab rack.

When asked about this phenomenon, Kraft Curing CEO Michael Kraft says: "Over the course of the years we have constructed and commissioned more than 1,000 curing systems all over the world and each one is unique. Every customer has specific requirements and we and our engineers develop solutions tailored precisely to these requirements. That's why we say: 'We don't sell curing systems.' Somebody else could probably build the individual components that make up our projects. Our strength, conversely, is customer-specific solutions – made-to-measure suits for concrete curing as it were. Such individual solutions are

only possible through a precise analysis of the customer's needs and preconditions, through an accurate understanding of the chemical process of the curing of concrete and through many years of experience. In the case of the Bruk Bet plant in Tarnow, for instance, we designed and dimensioned our curing system to precisely match the products, manufacturing characteristics and mixtures used by Bruk Bet."

Most constant climate possible

The vapour system from Kraft Curing serves to accelerate the curing of concrete prod-

ucts in chambers at temperatures of 30° to 40°C and a humidity of over 90%. All parameters such as temperature (+/- 2 °C), relative humidity and carbon dioxide content are kept constant by the system throughout the entire curing chamber – at the front, rear, top and bottom. Heat losses are compensated by the external heat supplied by the vapour generator.

Flexible and energy-saving

The curing rack installed in Tarnow consists of ten chambers, which can be operated independently of one another. Regardless of whether individual or several chambers are filled, this guarantees the most flexible and at the same time the most constant production possible. Once a chamber is completely filled it is closed. After a preset pre-heating phase of about one hour, in which the concrete reaches its basic strength with the supply of vapour, the concrete temperature is slowly increased during the two-hour warm-up phase. Once the concrete has achieved its maximum temperature, it is kept at this temperature over the dwell time of about six to eight hours.

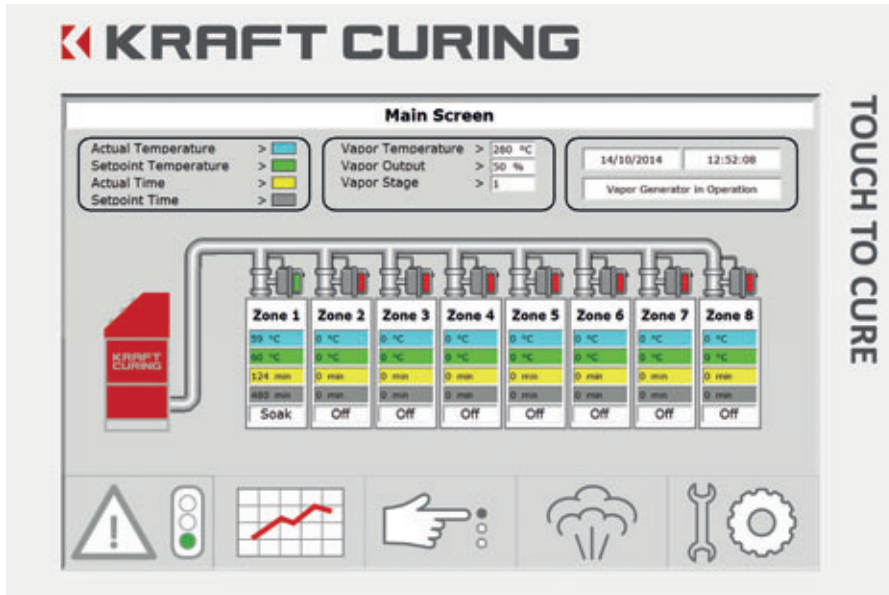
After expiry of the dwell time, a recirculation system removes any remaining vapour from the chambers in order to ensure a dry production department. The extracted chamber air can be used directly for the

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TOUCH TO CURE

Full control: the machine operator can view and change all system parameters in a simple manner on the touchscreen of the Autocure controller.

preheating of the next chamber. In this way the Vapor system combines maximum flexibility with a significant saving of energy.

Requirement profile

Bruk Bet's list of customers includes companies and architects as well as private individuals. The product range includes paving stones, slabs, decorative stone tiles, palisades, kerbstones and further aesthetic concrete products for road, garden and patio. On account of this alignment the company places the highest demands on the quality of its products: Bruk Bet stones should be homogeneously beautiful in colour, design and appearance, but at the same time resistant to mechanical damage, adverse weather conditions and non-specialised care or maintenance - and their good looks should last a long time. The company relies on curing solutions from Kraft Curing Systems in order to permanently and reliably meet this high requirement.

The technology of controlled concrete curing is already well recognised and highly valued in Poland. More than 30 Kraft systems are currently in operation in Poland alone. For that reason Kraft didn't have much explaining to do at Bruk Bet. The customer wanted top products and above all homogeneous quality in every season of

the year as well as fresh, vivid colours, and knew that the systems from Kraft Curing would be able to ensure this. For a new plant from SR-Schindler for slab production in the Tarnow works, Bruk Bet requested the possibility to produce more quickly and at the same time to achieve higher early strength of the products with firmer corners and edges. The solution developed for this by Kraft was a Vapor-Mini generator from Kraft's Vapor product line, combined with aeration and ventilation and automatically controlled roller shutters for the rack system.

FURTHER INFORMATION



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