

Reinforced AAC panels, lintels and blocks – stable production with state-of-the-art technology in Turkey

29th October 2018 was an important day in the history of an AAC plant of one of the largest AAC manufacturers of Turkey – the first AAC cake was produced. The plant is equipped with the state-of-the-art technology of the German equipment manufacturer WKB Systems GmbH that ensures efficient production of a wide range of AAC products.

Based on the successful cooperation with WKB Systems while realising previous AAC projects one of the largest AAC manufacturers of Turkey choose again the German plant manufacturer as the equipment supplier for his Greenfield project – an AAC plant for the production of a wide range of AAC products: blocks, panels and lintels, including reinforced elements with a daily capacity of approx. 324 moulds in three shifts.

Perfect solution from one source

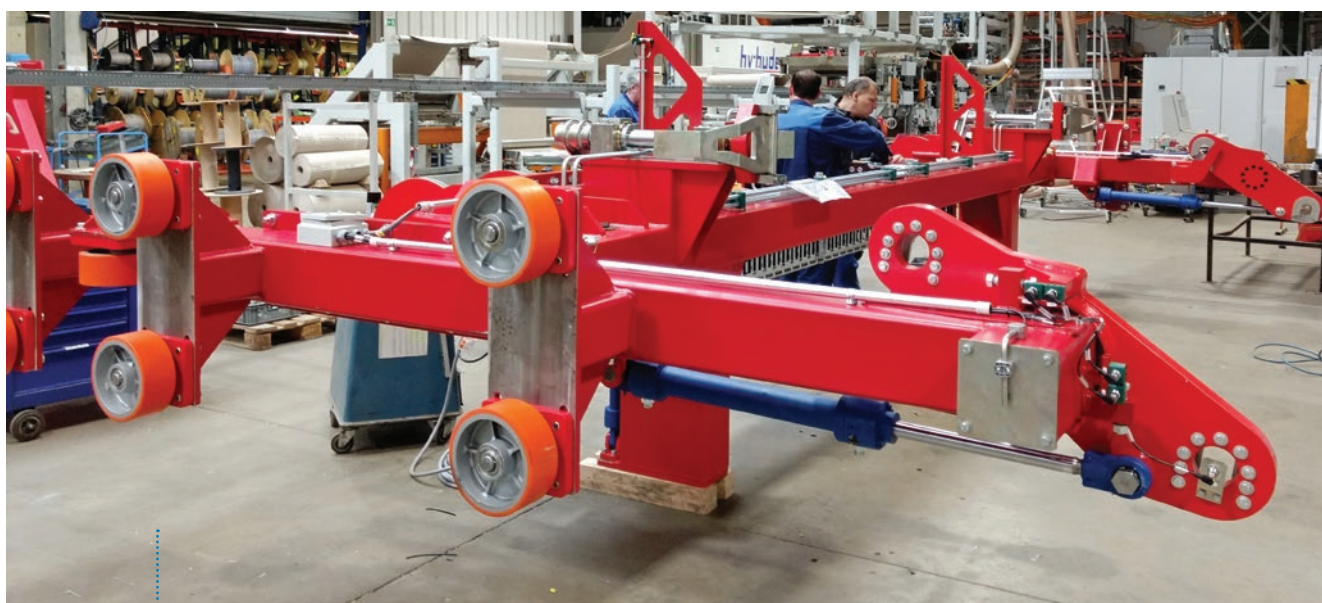
The project started with the precise analysis of the customer needs. The team of WKB engineers worked out a tailor-made solution that comprised complete engineering of the plant, equipment production, dry test run at the premises of WKB in Germany, assembling and commissioning at the customer's site, per-

sonnel training as well as the whole project management also after the production start. As a result, the AAC manufacturer received a plant that is equipped with the state-of-the-art technology to ensure the efficient and reliable production of a large variety of AAC products.

Innovative technology for energy efficiency

One of the customer's requirements to the realisation of the project was the production of AAC elements under strict production efficiency regulations. The WKB experts considered all the experience available on the market to develop a unique aluminium dosing system for rough and fine paste with a dosing accuracy of 10 gram!

The aluminium dispersion is prepared in charges in the dispersion tank by an automated dosing of a



Equipment production at the premises of WKB Systems in Germany



The sectional gripper is being assembled in WKB workshop

certain amount of water. The mixture is then poured via gravity into the main mixer which is located under the aluminium dosing plant.

Simple ways to improve plant efficiency

In order to ensure the perfect plant logistics WKB Systems delivered a wide range of transporting, forwarding and lifting equipment for the handling of moulds, hardening carriages and grates as well the complete transport units for the reinforcement area. Exactly ten cranes, a number of manipulators, portal units, transfer platforms and tilting tables are used in the plant.

One of the effective solutions of WKB Systems is a pin manipulator that is used to insert/pull the staple pins during the loading/unloading of the hardening carriages in a fully automated way. This simple device significantly optimises the plant logistics and ensures a smooth production process without any manual interruptions.

Green Cake Separating Machine to increase production output

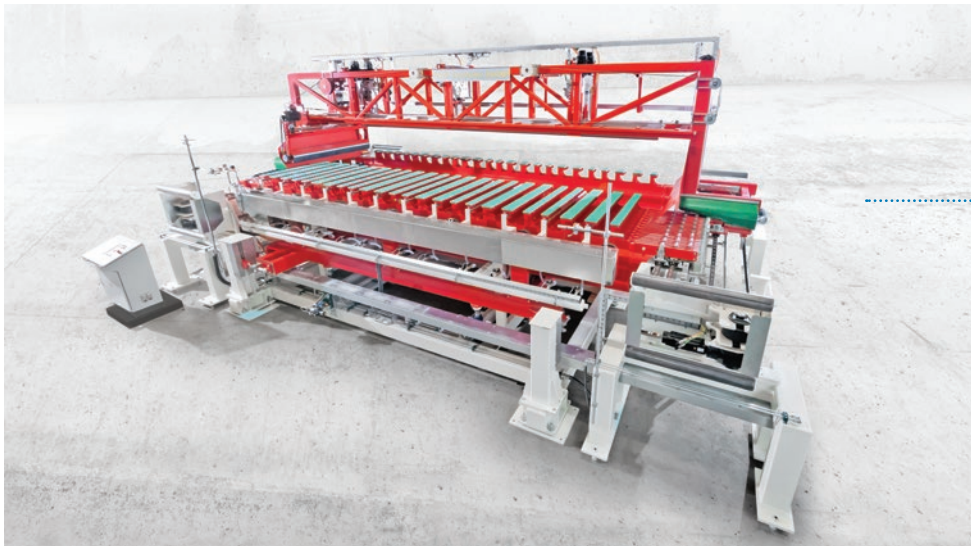
In order to avoid sticking of AAC blocks during the autoclaving process WKB engineers advised the AAC manufacturer to use the Green Cake Separating Ma-



Assembling of WKB equipment at the customer's site



Grates with pins are ready to be stacked with AAC cakes



Green Cake Separating Machine (GSM)

chine (GSM). Thanks to its application the production wastes are considerably reduced and the production output is significantly increased.

The Green Cake Separating Machine is steplessly adjustable from the smallest brick thickness (50 mm) to the largest brick thickness (400 mm). Mixing formats is also possible.

The grates with a green AAC cake are fed in the GSM via driven rollers. These rollers are lifted and lowered with a hydraulic lifting device. As far as a grate

with an AAC cake is on the GSM, the grate is lowered and the AAC cake remains on the separation trusses of the GSM. The separation trusses are arranged beforehand depending on the block format needed. Now, single trusses are sequentially moved by a few millimetres, so that gaps arise between rows of AAC blocks. After the separation process the grate is cleaned of fallen debris using an air blaster and lifted again. The crane removes the grate with the separated AAC cake and forwards it to the next production area.



The separation trusses of the GSM

After the discharge of the grate with the separated AAC cake, the separation trusses are cleaned with a steerable, rotating brush. There is a transport belt mounted under the GSM in order to remove falling down wastes and forward them into the return slurry treatment tank.

The right outfit for the reinforcement area

For the production of reinforced elements (panels, lintels) WKB Systems delivered all the equipment needed to make an automated production process possible. Portal units for an automatic insertion and removal of reinforcement frames with cages, dip tanks for anticorrosive coating and paraffin belong to the scope of WKB supply.

According to the innovative WKB technology the production of AAC blocks and panels in one casting mould is possible.

One of the crucial units in this area is a dry cutting plant for reinforced panels and lintels. This innovative machine was developed by the WKB expert team to process different AAC elements. The plant consists of two separate lines, each equipped with saw blades for longitudinal and vertical cuts. Thanks to its unique technical design the cutting accuracy of ± 1 mm is ensured. Furthermore, any displacement of the reinforced elements (relative movements between the belt and a reinforced element) is eliminated.

The adjustment of saw blades as well as the positioning of AAC elements on the vertical cutter occur in a fully automated way.

More flexibility for more efficiency

The WKB specialists worked out a special concept for the packing area of this plant – separate packing lines for common AAC blocks and AAC panels/lintels, incl. a sorting area. Both packing lines are based on the shuttle system. The shuttle transport system moves the whole AAC cake to separate the blocks into half-pack groups so the needed gaps for a palettizing robot arises.

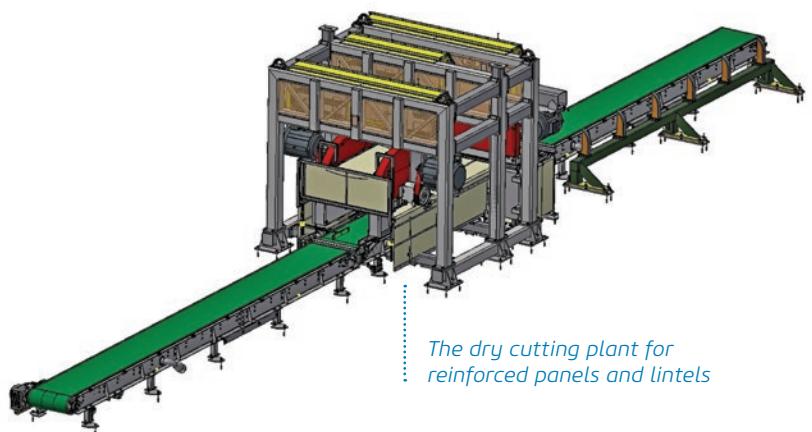
The AAC products are forwarded to the needed packing area with cranes equipped with sectional grippers.

Goals achieved

During the whole project duration, the WKB specialists provided guidance to the AAC manufacturer in order to ensure stable production process under the usage of innovative technology of WKB Systems for the production of not only AAC blocks but reinforced AAC panels and lintels.



The reinforcement area of the plant



The dry cutting plant for reinforced panels and lintels



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