

Quadra, 74130 Contamine-sur-Arve, France

Modernization at Heinrich & Bock facilities: comprehensive and sustainable

For more than 50 years, Heinrich & Bock, an Alsatian family business named after its founders Marcel Heinrich and Robert Bock has been developing and manufacturing innovative, high-quality concrete products for the public and private sectors. Production is carried out at the company's Steinbourg, Krautergersheim and Wittenheim sites and is marketed in France and various other European countries. Thanks to its know-how and a sustained innovation and investment policy, Heinrich & Bock has been able to ensure its growth in terms of market share and diversification of its products to become a major player with a European dimension.

Originally specializing in the prefabrication of masonry and concrete floor elements, Heinrich & Bock nowadays offers a complete range of products: pavers, slabs, stairs, external walls, fences, kerbstones, gutters, hourdis and blocks in a wide range of shapes, colours, coatings and structures.

Heinrich & Bock products combine sophisticated materials and innovative technologies to create unique spaces that are aesthetic, functional and durable. A symbol of refinement, elegance, know-how and innovation, the Heinrich & Bock brand has become a benchmark in outdoor design. President Patrick Heinrich and his children Sébastien and Nadia, who are, respectively, in charge of general management and marketing, share the same passion for their profession and the same concern for customer service.

Quadra - a sustainable and committed partner

Collaboration between Heinrich & Bock and Quadra began as part of the modernization project for the Wittenheim and Steinbourg facilities. Looking for a reliable and technologically advanced partner, Heinrich & Bock's management was quickly attracted by the innovative dimension and versatility of the equipment offered by Quadra.



Quadra vibrating press at Wittenheim site

Investment decisions were made and carried out successfully, with priority given to the Wittenheim site. A major renovation project was thus undertaken in Wittenheim, requiring the intervention of various external service providers:

- Bikotronic for an automation update of the concrete plant and the dynamic control of aggregate moisture content and concrete water content,
- Teka for the installation and addition of a new mixer to the new block making machine,
- Skako for the supply of components for the management of the aggregate tower and the supplies to the mixers,
- Quadra for the supply of a block making machine equipped with face mix unit and with fresh product conveyors up to the elevator,
- Beyria for the replacement of wooden production boards,
- Oxerad for the supply of a set of compressors to supply the two Wittenheim production units.

The automation and mechanical retrofit of the dry product conveyors and palletizing line have been carried out by the Heinrich & Bock technical team. A plant performance control system governing productivity rate, scrap rate, cause of stoppages, and traceability of the block making machine parameters during production was specially developed in order to guarantee the performance and quality of products.

The first challenge was therefore of an organizational nature in that these different teams had to work safely in a coordinated and efficient manner to meet the deadlines set in the specifications. In order to take advantage of the winter break, the work was planned to be carried out at the end of the year. Commissioning the completely modernized and renovated production unit were to take place in January.

With this in mind, the possibility offered by Quadra of keeping the existing press bed and installing the new press in the already existing location meant that additional, time-consuming and costly civil engineering work could be avoided.

For Quadra's engineers and production staff, there was no time to lose: meticulous preparation of the worksite beforehand, good coordination of the teams involved in the project and the delivery of equipment that had been fully assembled and tested in the workshops were going to be decisive in being able to meet the deadlines for the installation of the equipment at the customer's premises.

In terms of technical features, the specifications stipulated that the upgraded facility should enable the range of products manufactured to be expanded while improving productivity and quality.

The new block making machine had to be able to use the new wooden boards with dimensions of 1,400 x 1,200 mm

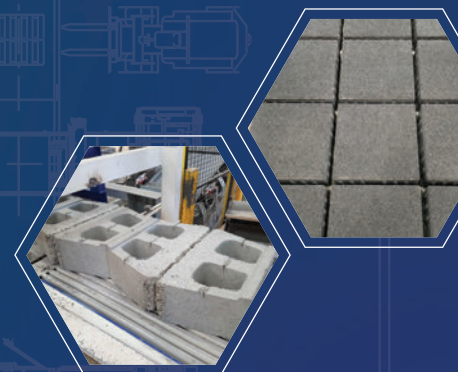
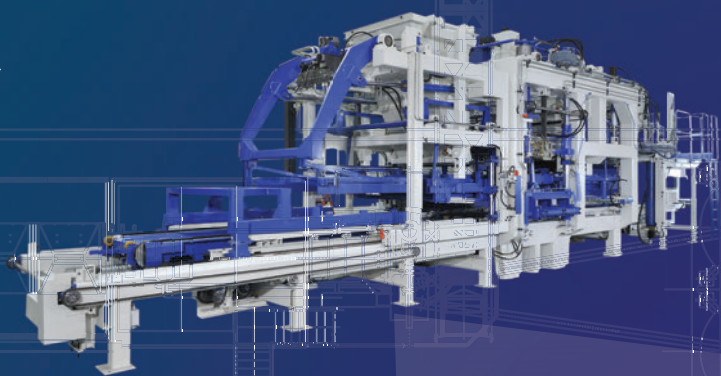


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Exit pallet line

and a thickness of 50 mm and also to reuse all the moulds for pavers, kerbstones and accessories from the block making machines currently in operation at the Krautergersheim and Wittenheim sites without any adaptation.

In addition, all concrete products such as hollow blocks, hourdis, slabs, paving stones, kerbstones and landscaping products had to be manufactured. The Q12 HP block making machine, whose technology, features and performance meet the requirements in every respect, was the model proposed and chosen to meet these objectives:

- The high-performance vibration system significantly reduces manufacturing cycle times.
- The lateral positioning of the motorization on the block making machine ensures good accessibility and protection of the components. The motors are completely isolated from vibration, which helps to ensure reliability and long life.
- The modular vibratory features developed by Quadra have been patented. This feature is highly valued for its ability to evenly fill the concrete in the mould during the pre-vibration phase.
- This "force and frequency modulated" vibration system makes it possible to differentiate the vibratory characteristics between the front and back of the mould and to easily homogenize the density and weight of the products between the front and rear ends of the production board.
- Being fully automatic, this machine offers great versatility and allows for technically reliable multi-product manufacturing with consistent quality and high production rates.
- For the production of two-layer pavers and kerbstones, the face mix unit is positioned at the front of the press. It can be switched on and off quickly and conveniently. Forward and reverse movements are remotely controlled as is the interlock function against the block making machine frame. The equipment moves on tracks positioned

way up and protected from concrete projection. When not in use, a large space in front of the press is freed for access, maintenance and mould change purposes.

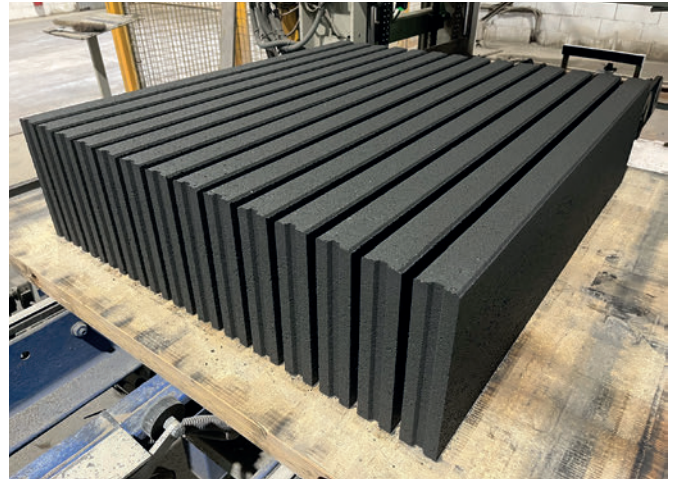
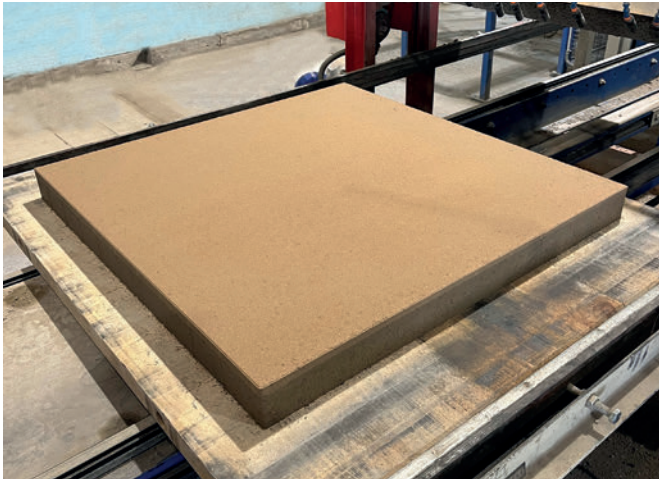
- The press control panel is located in the control cabin, from where the entire production line can be managed. Adjustment and visualization of the manufacturing parameters are carried out on a touchscreen terminal. A clear, complete and intuitive instrumentation allows for the control of the various elements of the block making machine.
- Causes for cycle stops are exactly described and automatic cycle restarts are facilitated.
- Vibratory forces of the block making machine are constantly monitored via accelerometers and all of the key production board manufacturing parameters are recorded. The convergence of vibratory responses of the block making machine with key manufacturing parameters makes it possible to optimize the manufacturing recipes and product qualities and to avoid mechanical machine "overdrives".

Modernization of the Steinbourg site

In conjunction with the Wittenheim site, modernization work was launched at the Steinbourg site as well. Here, the entire press line was to be replaced.

While requirements for the construction site were identical to those at Wittenheim in terms of technical and human resources, the objective at Steinbourg was to limit plant down-times to a maximum of four weeks. Specifications were particularly delicate to implement, given the requirements to be met and the constraints linked to the existing infrastructure.

The block making machine installed had to be able to use wooden boards dimensioned 1,200 x 650 mm with a thickness of 40 mm and had to be compatible without adaptation with an already existing large mould set for a product height of 40 to 400 mm. In view of these requirements, a Q5 block



Product specimens manufactured by Heinrich & Bock

making machine with two-layer equipment was proposed and chosen for the project. This production unit is particularly intended for the manufacture of high-quality products with high added value.

It is important to note that the entire range of Quadra vibrating presses is equipped with similar machine feature design systems. This technological consistency is particularly appreciated, as many components are present in the same place in each block machine model.

This standardization makes it possible, on the one hand, to pool and minimize stocks of parts and, on the other hand, to guarantee their availability.

Customer service in augmented reality

Heinrich & Bock benefits from the manufacturer’s enhanced customer service provided by experienced and specialized Quadra technicians in the operation of this equipment.

Quadra always provides important technical means to follow and accompany its customers:

- The remote connection via remote maintenance allows access to all machine parameters and thus provides effective and fast assistance to operators’ requests.
- A video maintenance service is also available to accompany operators live on their equipment during an adjustment or troubleshooting operation. This “augmented reality” device greatly facilitates exchanges between operators and technicians and helps to increase efficiency.

Quadra has recently upgraded its service department and now provides its customers with a user-friendly, interactive and intuitive online collaborative platform that allows them to quickly and easily submit requests for information, incident reports and other remarks and messages. Customers can also access their spare parts catalogue, download technical documentation for their equipment just the same as operating instructions and animated tutorials.

Thanks to the symbiotic expertise and commitment of the Heinrich & Bock and Quadra teams, the initially scheduled time for intervention operations was met. Also in terms of production, the two new block making machines installed satisfy the technical and commercial requirements defined.

With these investments, Heinrich & Bock has significantly improved its present business status and will be able to better anticipate the future. As for Quadra, the manufacturer has confirmed its position as a preferred partner for the design and manufacture of tailor-made plants that are capable of being integrated into a modern reconfigured environment as well as into an existing production line, all of this with constantly controlled integration costs at any time. ■

FURTHER INFORMATION



Société Heinrich & Bock
 Zone industrielle Sud - CS 20208
 67790 Steinbourg, France
 T +33 38801 8707
www.heinrich-bock.com



Quadra
 40, route de Findrol
 74130 Contamines-sur-Arve, France
 T +33 450339221
info@quadra-concrete.com, www.quadra-concrete.com