Hess Group GmbH, Burbach-Wahlbach, Germany

New benchmarks in Plovdiv: Persenk Invest opens a block and paver production

The Bulgarian construction sector is undergoing significant modernization. Municipalities are investing in long lasting infrastructure, private developers increasingly expect premium surfaces and exact dimensional accuracy, while many existing production facilities still operate with outdated technology. As a result, demand for high quality block and paver products exceeds the domestic supply. Persenk Invest, a company with long standing roots in the raw materials and infrastructure sector and its own asphalt production, experienced this discrepancy directly. Unreliable product quality, delivery shortages, and dependency on external producers prompted a strategic realignment: the establishment of an in house, technology leading block and paver production facility.

The company's leadership approached this investment with foresight. Managing Director Ivan Georgiev describes the project as a manifestation of a consistent drive for innovation and the ambition to provide the Bulgarian market with high quality, future ready block and paver products. With an investment of around eight million euros, a plant was built in 2023 that quickly became regarded as the most modern and powerful block and paver facility in Bulgaria–an important milestone in a country where few new production installations had been realized for many years.

From Site Selection to Commissioning

Initially, the facility was planned as a greenfield project directly at the company owned quarry. The natural slope would have integrated optimally into the aggregate logistics. However, during concept development, it became clear that the existing asphalt plant site in Plovdiv–located a few kilometers away–offered significantly better infrastructural conditions. The area already featured developed utilities, excellent traffic access, and long term expansion options. Shifting the project to this site was a decision made for efficiency and future viability.

During earthworks at the new location, an unexpected challenge emerged: a significantly higher groundwater level than anticipated. The Hess team responded flexibly by raising the aggregate hoppers' positions and realigning the batching plant. The customer additionally constructed a feeding ramp, enabling fast adaptation of the layout without time loss. This demonstrated how close cooperation between engineering and project leadership ensured the overall project success.

The project's journey began well before technical execution. At bauma 2019, Persenk Invest initiated contact with the Hess Group and outlined the idea of establishing its own block

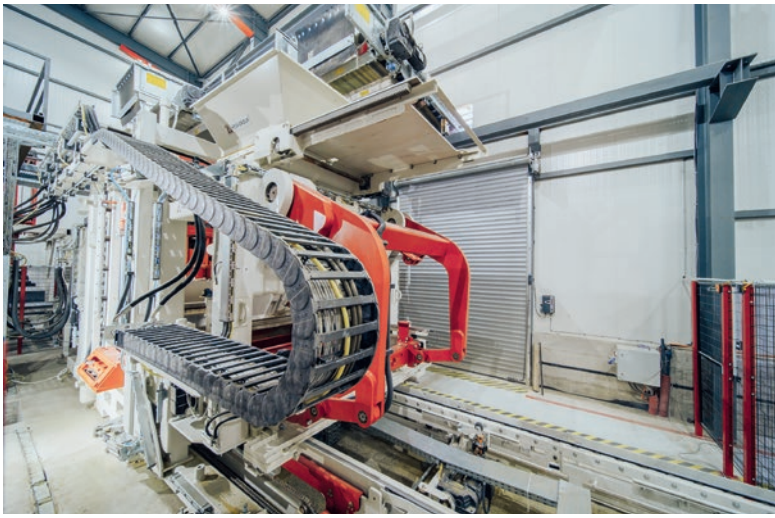
SM 3375 core concrete mixer

Overview of the wet and dry sides

and paver production. One year later, the Hess team traveled to Bulgaria to inspect the site and develop initial layout concepts. The pandemic caused delays, but in July 2021, the block machine was ordered, followed by the batching and mixing plant in August. Construction of the new hall began in summer 2022, commissioning took place in spring 2023, and since May 1, the facility has been producing at a high level–supplying the growing demand throughout the country.

Technology Center: Mixing Plant and High Performance Production

At the core of the new facility is a highly automated combination of batching and mixing plant and the RH 1500-4 MVA block machine. The batching and mixing plant forms the beginning of the value chain. It includes two hoppers for base mix and face mix, seven aggregate bins,



The RH 1500–4 MVA forms the technological heart of block and paver production

a Big Bag discharge station for fine special materials, and two bucket elevators supplying the mixers with material.

The SM 3375 base concrete mixer, with an output of 2.5 m³ compacted concrete per batch, ensures short mixing times and consistent material characteristics. Its separate drives for tool plate and mixing stars, safe start under load capability, and two large cleaning doors provide excellent operating and service accessibility. The customer's face mix mixer was fully integrated into the Hess automation system, ensuring seamless overall control.

The color dosing system with six compartments enables precise colormix effects, which are increasingly in demand in the Bulgarian market. The concrete belts feeding the block and paver machine can be adjusted flexibly in position and speed, ensuring a consistent and repeatable material flow– particularly important for premium face mix surfaces. The entire batching and mixing plant is monitored via a modern visualization system with one single, curved monitor, giving operators intuitive access to all process parameters.

The RH 1500–4 MVA forms the technological heart of block and paver production. Its reinforced machine frame distributes the forces of the four-shaft vibration system evenly across the entire mold format, ensuring stable and precise compaction even for demanding surface structures.

The hydraulic control pump adapts dynamically to real power requirements, reducing energy consumption and providing smoother machine movements. Depending on mix design and machine settings, cycle times of 11.5 seconds are achievable – equivalent to up to 2,110 m² of face-mix paver or 20.520 CMUs per 8-hour shift. The robust MAC 8 control system ensures stability and precision across all process stages. The downstream handling system is designed for efficiency

On the wet side, products pass through the washing unit.

In defined cycles, the boards move beneath the block and paver splitter, which precisely pushes products together and aligns them for downstream processes.

and repeatability. Freshly produced products are placed onto durable Wasa full plastic boards, which provide stability due to their high wear resistance. A four-section belt conveyor transports the boards to the 22 elevator. On the wet side, products pass through the washing unit, which removes excess material and shapes the characteristic surface texture. During machine emptying at the end of a shift, the skip chute empties remaining concrete directly into a designated container.

The transition from elevator to finger car and the precise placement into the curing chambers is assured. The controlled climate in the chambers ensures consistently high product quality.

After curing, the lowerator transfers the full plastic boards with cured products to the dry side conveyor. In defined cycles, the boards move beneath, which precisely pushes products together and aligns them for downstream processes. The layers then move to the intermediate layer insertion unit, where nets or foam sheets are placed to protect surfaces during stacking.

Next, the layers move under the cuber. There they are picked up, aligned, and placed on the outfeed. The cuber forms the layers into a stable block and paver package, which is then horizontally and vertically strapped for transport. In parallel, automatically places empty transport pallets on the deck belt. Finished packages are discharged and moved by forklift to the yard.

On the dry side, the empty production boards move automatically beneath the cuber and through the cleaning station, where remaining material is removed. They return via the cross conveyor to the machine. A board buffer with chain conveyors allows a two-sided gripper to add or remove boards as needed. The boards then move to the board silo and via the board infeed back to the machine–closing the loop.

Parallel to the material flow, the extended data system records all production and machine parameters in real time. This board tracking, combined with direct data transmission to the internal system, provides full transparency across all steps and enables detailed process analysis–an essential foundation for a consistent, data driven quality strategy.

Customer Value, Future Readiness, and Next Development Steps

For Persenk Invest, the benefits of the new facility are clear on multiple levels. The plant delivers high reproducibility, consistent quality, and a production performance unmatched in Bulgaria. The cooperation with Hess Group is characterized by short reaction times, reliable after sales support, and the

The layers move under the cuber where they are picked up, aligned, and placed on the outfeed frame conveyor.

modular, future oriented expandability of the system. High spare part availability and proximity to the Hess service network additionally strengthen long term operational stability. The company's next steps are already defined. Persenk Invest plans to expand the facility with an optical quality control system. Together with Hess, the company has already visited a reference installation in Germany, and the required board tracking functionality is already implemented. Integrating this quality solution will further digitalize production and elevate quality monitoring to a new level.

The plant in Plovdiv sends a strong technological signal. The combination of a modern batching and mixing plant, a high performance RH 1500–4 MVA, continuous automation, and data-based process control creates a production platform that will shape the Bulgarian block and paver industry for years to come. Flexible project execution, ongoing technical advancement, and Persenk Invest's clear innovation strategy underscore the company's focus: quality, growth, and technological leadership–today and in the future. ■

The empty production boards move automatically beneath the cuber and pass the cleaning station.

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