SR Schindler, Regensburg, Germany

Fully Automated Finishing Line at Alwady Alakhdar Company for Cement Products in Saudi Arabia

Together with SR Schindler, Alwady Alakhdar Company for Cement Products has realized a fully automated finishing line that combines calibrating, grinding, shotblasting, curling and coating machines with automated conveying and handling technology into one continuous finishing line. The plant was ordered at the Saudi Build trade fair in Riyadh in November 2024 and has since been delivered, installed and successfully commissioned. The newly constructed production hall was designed for operation of the line. Grinding water channels and water supply systems are integrated into the hall floor, enabling the grinding machine to operate in both wet and dry modes.

A Wide Product Range on a Continuous Line

The line, arranged in a linear layout, is designed for a wide product range. It can process pav-ing stone layers from 800 × 800 mm up to 1,200 × 1,200 mm and product thicknesses from 20 to 180 mm, as well as slab layers, kerbstones and wetcast products – fully automatically, provided the products are equipped with spacers and the layer weight does not exceed 644 kg.

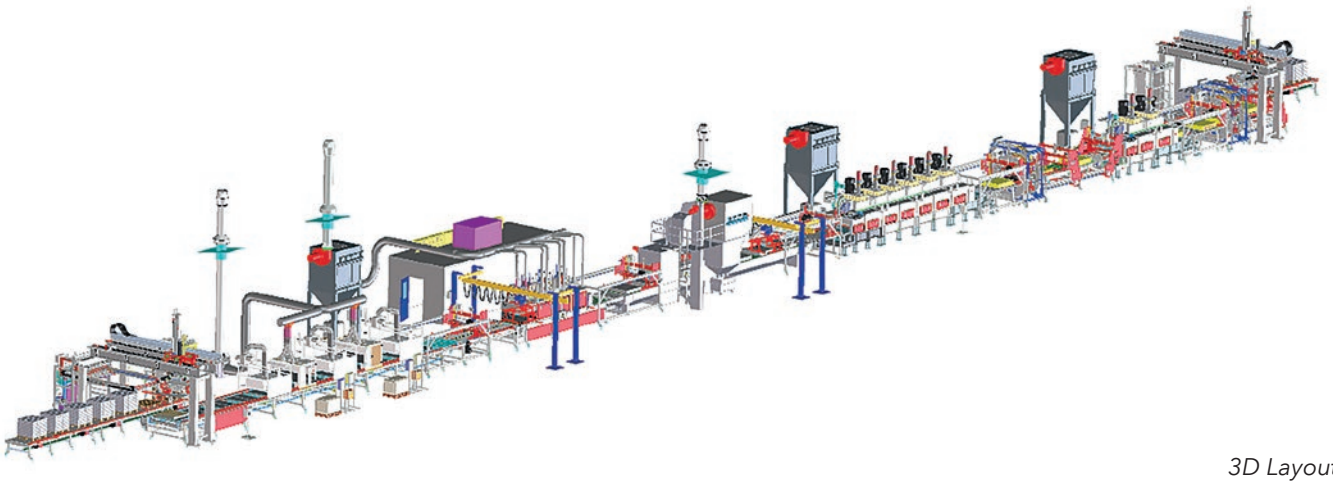
Products without spacers, or kerbstones of certain dimensions, are loaded into and removed from the line by the operator using on-site lifting equipment. All products are delivered on pal-lets in the formats 1,220 × 1,200 mm, 1,000 × 1,000 mm or 1,200 × 1,000 mm by forklift truck. The empty pallet magazines at both the infeed and outfeed ends of the line are designed to accommodate all three pallet formats. Product infeed and outfeed are each handled via a layer stacker. The infeed-side layer stack-er removes the products layer by layer and transfers them onto the hydraulic lifting table of a layer pusher. Emptied pallets are automatically discharged into an empty pallet magazine and stacked there.

Precision on Both Sides: Calibrating and Grinding

The process begins with the stone layers being fed into a hydraulic drum turner that rotates them by 180°. After turning, the backing concrete side of the products faces upward and can be milled in the calibrating machine, reliably eliminating production-related tolerances such as tapering or variations in product thickness.

Calibration can be carried out in either dry or wet mode using two grinding heads with diamond milling segments rotating around the vertical axis, electrically driven with frequency control and motorized height adjustment.

After calibration, the products are turned another 180° by a second drum turner so that the facing side is positioned upward for the grinding process. The subsequent six-head grinding machine features two stations with milling diamonds, one station with smoothing segments and three stations with grinding segments. All tools are mounted on universal plates.



3D Layout

SR-Calibrating machine Star 8122 K

SR-Grinding machine Star 8126

The smoothing and grinding segments, equipped with dovetail guides, can be replaced quickly.

Thanks to the universal plates and frequency-controlled drives at all stations, both the cali-brating and grinding machines can be used universally. Additional tools for wet operation were supplied for both machines. The extended machine conveyor also provides space for two further grinding stations and serves as a drying section during wet operation, supplemented by six high-performance blowers mounted above the conveyor. During grinding, the aggre-gates are exposed, creating an attractive surface appearance and texture. At the outfeed of the grinding machine, an integrated high-pressure cleaning system removes adhering residues.

SR-Curling CA-1200-6

Complete Finishing Line

Shotblasting, Curling and Coating

In the next step, the products are fed into the shotblasting machine. Steel or stainless-steel shot with a diameter of 0.6 to 0.8 mm is projected onto the product surfaces by special turbines (18.5 kW per turbine). The blasting media falls through the perforated conveyor belt, is collected, cleaned and recirculated into the process. For processing kerbstones, the machine is equipped with two additional turbines rated at 7.5 kW each, used to treat chamfered edges, side surfaces and top surfaces without overblasting the products.

The curling machine, equipped with three processing tunnels and two brush rollers in each tunnel, subsequently polishes the exposed aggregates in the surface. The alternating coun-ter-rotating brushes, mounted at slight angles, prevent streak marks and, thanks to their flexi-ble bristles, can also process recessed surface areas. This creates a uniform surface finish with a slight shimmer.

For products requiring coating, curling is an essential upstream process step. An integrated high-pressure cleaning system with rotating air nozzles reliably removes residual dust from the surface. The coating section above the downstream plate conveyor includes an infrared preheating tunnel, a spraying unit for primer application, a heating tunnel for primer drying, a spraying unit for the coating agent and a final heating tunnel.

All heating tunnels are electrically height-adjustable and equipped with six heating cassettes, each fitted with seven infrared lamps. The spraying systems are suitable for water-soluble and acrylic-based agents and feature an automatic cleaning system for the spray nozzles. At the outfeed of the line, a granulate dispenser applies granulate to each finished layer, protect-ing the surfaces from damage during packaging.

Topwerk Open House 2026: "Shape the Future"

Topwerk Group cordially invites you to its in-house exhibition, "Topwerk Open House 2026," taking place on September 24-25, 2026, at its headquarters in Burbach-Wahlbach. Under the guiding theme "Shape the Future," Topwerk will showcase how high-performance machinery, intelligent production systems, and smart digital tools are transforming concrete production worldwide.

Live demonstrations are planned from the business units Hess Group, SR Schindler, and Prinzing Pfeiffer - ranging from block and paver machines to surface refinement, to precast, concrete manhole, and pipe production. In addition, visitors will gain hands-on insights into new workflows and production concepts.

A major focus will be on service: visitors will learn about Topwerk's service philosophy and gain insight into digital platforms that provide a 360° view of their equipment.

The in-house exhibition offers a great opportunity to learn about the latest innovations, discuss projects, and explore tailored solutions directly with the teams from Topwerk, Hess Group, SR Schindler, and Prinzing Pfeiffer.

Control, Safety and Structured Ramp-Up

The entire SR Schindler finishing plant is controlled via a Siemens S7-1500 PLC system. Two additional Siemens operator panels mounted on pedestals are available for plant operation, while the calibrating and grinding machines each feature their own swivelling touch panel.

Via a VPN router, the system can be accessed online, enabling direct support in the event of malfunctions. Communication with the customer's machines is ensured through a defined sig-nal exchange. Electrical safety, including fail-safe control systems, light barriers, safety light curtains and emergency stop buttons, was fully designed and implemented by SR Schindler, while the mechanical safety systems were provided on site in accordance with SR Schindler specifications.

The smooth commissioning process was the result of close coordination among all project partners from the very beginning. The customer's hall design, with integrated grinding water channels and sufficient space for the entire line already incorporated, provided the ideal foundation.

With the new installation, Alwady Alakhdar has established the basis for finishing a broad range of products with high product quality, flexibility and reproducible results. ■

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FURTHER INFORMATION

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