

Gerhard Warning Verschleißtechnik und Industrieprodukte GmbH, 33619 Bielefeld, Germany

Patented ageing and sorting technique for concrete paving slabs stands out due through high efficiency

The family-run SundsAlfa company, located about 10 km north of Herning in Jutland, Denmark, has a long tradition of manufacturing concrete products. Old town pavers, slatted floors, concrete pavers, paving slabs, hollow blocks with insulating inserts, pipes and other products have been produced at three factories for many years. The company is very successful in Denmark with aged, genuine tumbled products. For this reason a new plant has recently been put into operation at SundsAlfa for the manufacture and packaging of genuine aged paving slabs and tumbled pavers. The plant is question was manufactured by the Vorning company and distributed through Gerhard Warning Verschleißtechnik und Industrieprodukte GmbH.

In Denmark, where aged, genuine tumbled paving enjoys a market share of 60 to 70 %, the SundsAlfa company constantly receives requests to supply its paving slabs, which are produced on two block moulding machines, with a genuine aged finish too.

and sorting technique of the Vorning plant. The aged paving slabs are sold far outside of Denmark in the Scandinavian market and are an extraordinary success story for the SundsAlfa company.

Manufacture and packaging of genuine aged paving slabs

The finished dyed or grey paving slabs are stored intermediately on pallets in the open



Alongside the very popular, genuine tumbled old town pavers, the genuine aged paving slabs are a great market success for SundsAlfa.

The ageing of large-format, thin concrete products is extremely difficult, however, and the breakage rate in production is extremely high. As a result of this ageing becomes unprofitable, because if the scrap rate is too high, prices have to be demanded that the market will not pay.

However, the concrete technicians from the SundsAlfa company have developed a recipe with which both grey and dyed paving slabs, which are manufactured on the company's own block making machines, can be produced effectively and in large quantities with the patented ageing



The tipping station carefully removes the finished paving slabs from the pallets and transfers the paving slabs to the conveyor belt that feeds the ageing drum.



Thanks to the special technique, the ageing process takes place in the ageing drum without large-scale breakage.

air after hardening, before being sent to the special ageing, sorting and repackaging plant. The palletized paving slabs are loaded by a fork lifter onto a heavy-duty roller conveyor, the feeding buffer belt. The roller conveyor then transports the complete pallets to the tipping station.

The tipping station takes over the paving slabs together with the pallets and, during the subsequent tipping procedure, transfers the paving slabs extremely carefully to a conveyor belt that is highly resistant to wear and acids.

The tipped-up, empty pallets are subsequently transported automatically out of the tipping station by a transverse conveyor belt. The tipped-up paving slabs are transported to a special ageing drum, which enables the paving slabs to be aged by means of a special technique without causing large-scale breakage.

At the end of the ageing drum and at the transition belt to the patented pre-organiser, the aged paving slabs glide over rails and chutes and, hence, lose the chipped edges, which results in the genuine finish. A conveyor belt below the separation grating leading to the pre-organiser transports the spalled residues from the genuine aged paving slabs into a container. Disposal is hence unproblematic.

The special controller, which is programmed for the sorting of paving slabs, enables the slabs that have already been pre-sorted by the pre-organiser to be moved in a row on the organiser – following sorting the aged paving slabs are positioned behind one another on the conveyor belt. Visual quality assurance at the end of the patented organiser can hence be carried out easily. At the end of the organiser the quality checker, who is at the same time the only operator, can remove the few unsatisfactory paving slabs from the system with little effort and without interrupting the production process.

Following the patented organiser and the quality check, the slabs pass onto two long buffer belts, which have in particular the task of continuously feeding the servo-driven packet assembler. Thanks to the buffer zone, short interruptions in the production process, for example due to quality checking, do not lead to any compulsory pauses in packaging.



On the left in the picture is the collecting container for the spalled residues; on the right the pallet magazine.



The plant is equipped to the latest safety standards.

The buffer belts transfer the paving slabs, according to the customer's required type of packaging, to the servo-controlled side pusher of the packet assembler. After the buffer belt has filled the packet assembler, a side pusher transfers all of the paving slabs to the layer pusher, which gently takes them and transfers the finished layer to the drawsheet inside the packet assembler. The servo equipment with belt drive works extremely quietly.

Whilst the side pusher and the layer pusher are cycling, an empty Europallet is automatically transported via a pallet magazine onto the ninety-degree rotatable scissor lift, which then lifts the empty pallet and stops immediately under the drawsheet. In the meantime the layer pusher has formed a complete layer of paving slabs and the drawsheet moves back, transferring the paving slabs gently onto the pallet situated below the drawsheet. This procedure is repeated so often until the occupation of the pallet, as required and programmed by the customer, is achieved.



After this the loaded pallet moves out of the packaging area and reaches the position at which the paving slabs can be covered with a sheet (sheet feeder) or also wrapped by a wrapping machine, so that the pallets leave the plant ready for dispatch.

The entire new plant for the genuine ageing of SundsAlfa's paving slabs and blocks naturally has a high safety standard in keeping with the times. All of the plant's components can be checked by the manufacturer online.

This way any errors can be rectified immediately or changes made to the plant. Waiting times for a service technician are thus not necessarily required.



The drawsheet transfers the paving slabs gently to the pallets situated under the drawsheet. This procedure is repeated so often until the occupation of the pallet, as required and programmed by the customer, is achieved.



The pallet, loaded according to plan, leaves the packaging area and can now be wrapped, for example.

The mature technology enables the plant to be operated by only one person and nonetheless to achieve a very high output. This applies both to paving slabs and to normal pavers.



Both grey and dyed paving slabs can be produced effectively and in large quantities with the patented ageing and sorting technique.

Alongside the very popular, genuine tumbled old town pavers, the genuine aged paving slabs are a great market success for SundsAlfa. The company has thus been able to further expand its good market position with the investment in the new plant.

FURTHER INFORMATION



Gerhard Warning
Verschleißtechnik und Industrieprodukte GmbH
Rehhagenhof 32
33619 Bielefeld, Germany
T +49 521 141313
F +49 521 141311
g.warning@t-online.de
www.gerhard-warning.de

SundsAlfa Betonvarefabrik A/S
Navervej 27
7451 Sunds, Denmark
T +45 96 29 27 00
F +45 96 29 27 07
salg@sundsalfa.dk
www.sundsalfa.dk