

Masa GmbH, 56626 Andernach, Germany

Slab press with 10,000 kN pressing force for Bernhard Mengelkamp GmbH & Co. KG

In a company history of more than 50 years, the family-owned business of Bernhard Mengelkamp GmbH & Co. KG from Olfen Vinnum in the Münsterland region of Germany has demonstrated unbroken growth. Already managed by the third generation of the family, the company has now significantly expanded and consolidated its range of garden building materials in the area of concrete slab flooring. The stringent quality requirements for this product range were achieved in partnership with the company Masa. With the help of experience and modern manufacturing technology, persuasive products for both indoor and outdoor use are being produced and sold throughout Germany under the name TERRAMENG. In another branch, the natural stone sector, various products such as worktops, window sills, steps, wall coverings and floors are made from marble, granite and quartzite. The company can also use its own production lines to tailor products to its customers' particular requirements and wishes.

"We want to continue to set benchmarks in the future and to develop exceptional product lines with our garden and terrace concrete slabs, and we have therefore invested

in the most modern production technology and created forward-looking possibilities and opportunities" says André Mengelkamp.



Figure 1: Uni 2000 slab press

The choice fell on the company Masa GmbH, which has a facility in Porta Westfalica. The company has decades of experience in the field of concrete slab presses and is one of the world's leading manufacturers of machines and systems for the building materials industry. Masa was able to help the Mengelkamp business to choose the technology and the design of the components required to meet its needs.

In numerous discussions, the various client requirements in relation to the product range were defined with various slab formats. An important criterion was the production of large slabs up to a maximum size of 1000 x 800 mm and a maximum thickness of 100 mm. Formats of this size make exceptional demands on hermetic slab presses. This is particularly the case with regard to compaction pressure and the transmission of the compaction pressure into the product through a particularly sta-

ble design. Other special dimensions may also be possible on the "Uni" range of slab presses from Masa, but require technical investigation. In addition, special consideration must be given to the removal of the large slabs from the mould frames in order to avoid damage.

Slab press, type UNI 2000/1000/7

A Uni 2000 slab press with seven workstations and a maximum pressing force of 10,000 kN is used at the main press station (Figure 1). Other significant features of the Uni 2000 hermetic slab press are described below.

Thanks to its solid portal construction, the press can absorb the high compaction pressures and transfer them to the product. This results in very high productivity and availability.

A dosing unit fills exactly the same amount of facing concrete into the mould every time. In this way, an evenly thick facing layer is applied (Figure 2). At the same time as the facing concrete is being filled, a



Figure 2: Hose-type dosing unit for filling the facing concrete

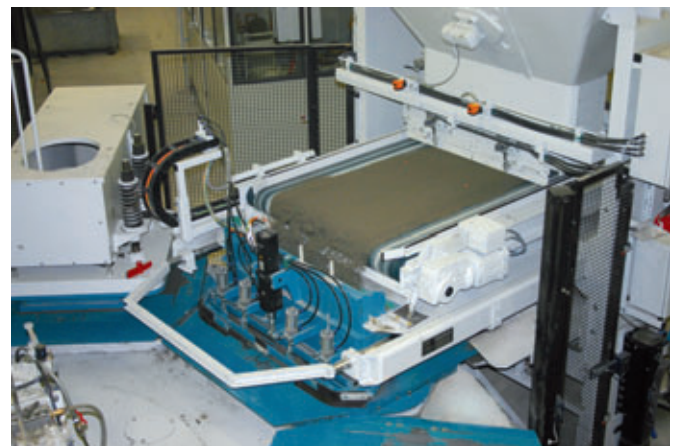


Figure 3: Filling the core concrete with belt-filling

masa

Milestone to your success.

We can combine...

AAC + Steel = Reinforced Elements

Masa - Your partner for the successful production of building materials.



Masa GmbH
Werk Porta Westfalica
Osterkamp 2, 32457 Porta Westfalica, Germany
Email: info@masa-group.com
www.masa-group.com

ROTHO CURING FACILITIES: THE RIGHT SOLUTION FOR EVERY SYSTEM

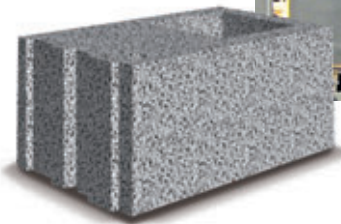
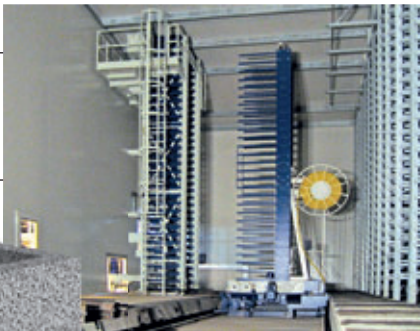


Pre-galvanised or hot dip galvanised – always the best surface protection



The ROTHO CLIP-IN™ System

Curing racks for big chamber concept



Air circulation system with moisture control

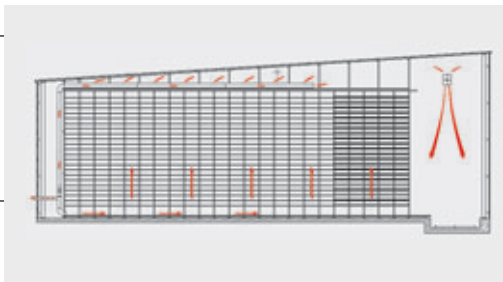


Figure 4: Ejector with vacuum plate



Figure 5: Transfer car

colour injection system can be activated in special cases in order to create subtly tinted surfaces.

The turntable of the slab press is equipped with a ring gear that is directly driven by a servo gear motor. Very short table rotation times and thus minimum cycle times can be achieved through the use of this (proven) drive concept.

Via a conveyor belt, the core concrete is precisely dosed into a fill pocket. With this advanced system, the entire unit is moved with the help of the mould (Figure 3). The mould starts to fill even as it is still drawing up, so the concrete distributes itself more evenly in the mould, and pre-compaction in the fill pockets or uneven filling on one side of the mould cannot occur. The result is evenly compacted products with very precise thicknesses.

The conveyor belt for filling the fill pocket has another special feature. The fill level of the core concrete in the fill pocket can be controlled via a laser. Thus, only a defined quantity of concrete is filled into the mould.

To achieve the optimised ejection of large slabs, the ejection station is also equipped with a vacuum plate so that the heavy products can be guided in a better manner during the demoulding process



Figure 6: Slab-transfer unit

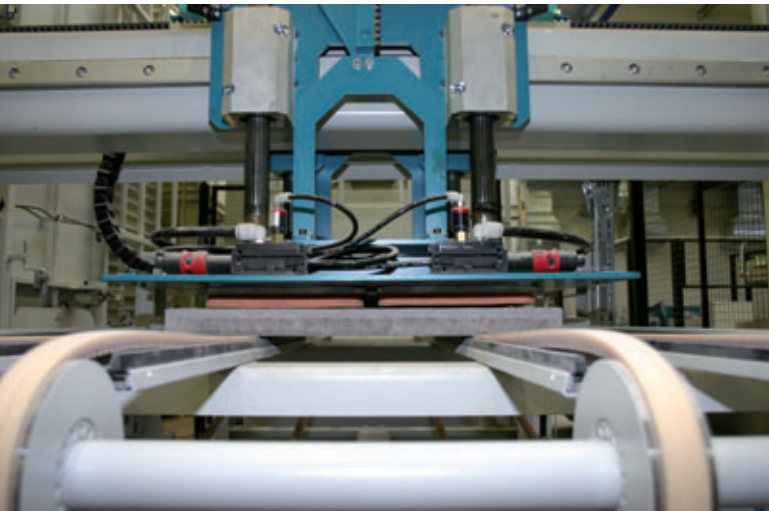


Figure 7: Detail view of slab-transfer unit with vacuum head

(Figure 4). After ejection, from the finger car the products are placed directly onto steel pallets with the facing layer upwards. To make this setdown as gentle as possible, the empty steel pallets are pivoted in the direction of the slab car and the slabs are transferred directly onto the pallets.

Pallet circulation

After the slabs are placed on the steel pallets, the pallets are transported to a stacking machine. In this unit, 25 pallets can be stacked above one another. Before the pallets receive new products, they pass through a cleaning line and are moistened with release agent.

Finished pallet stacks are transported via a chain conveyor to a transfer car with a superstructure and an undercarriage. The superstructure has a hoist and can place two pallet stacks above one another in the curing rack (Figure 5). The rack aisles can be individually closed by roller doors. To speed up the curing, a concrete hardening system is used.

After curing, the stacks with the products are transported to a destacking machine where the products are separated, and then a transfer unit (slab-removal unit) places them one at a time and with a regular rhythm onto a V-belt conveyor. The transfer unit is equipped with a controllable vacuum head and can transfer different sizes of products without requiring modification. This is noticeable in the optimised line-conversion times (Figure 6, Figure 7).

In the event that, due to the process, the wet and dry sides must be driven at different cycle rates, empty pallets can be channelled into or out of the process by means of the transfer car and another stacking/ destacking machine. Thanks to this decoupling, the wet and

INNOVATIVE SOLUTIONS

for 51 years!



Dosing equipment for:	Powders
Concrete admixtures	Granules
Concrete colours	Compact pigments
Liquids	Microsilica

We are the Dosing Experts!



WÜRSCHUM

Würschum GmbH
P. O. Box 4144
D-73744 Ostfildern

Tel.: +49 711 448130
info@wuerschum.com
www.wuerschum.com



Figure 8: View of production hall with blasting plant

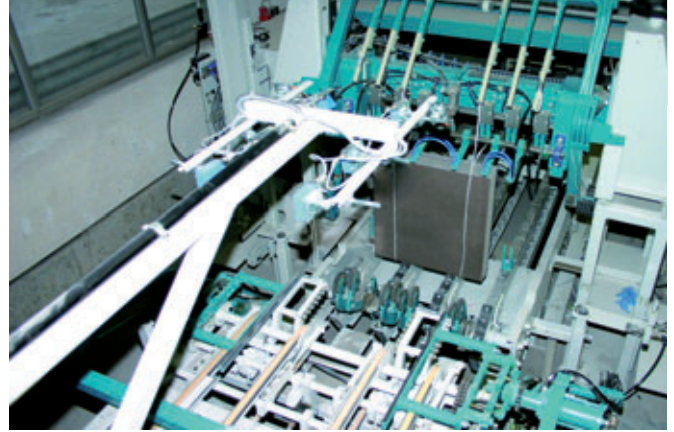


Figure 9: Cord-pulling unit



Figure 10: Packet transport to removal by fork lift truck



Figure 11: André and Werner Mengelkamp

NF

PRODUCTION PALLETS FOR THE CONCRETE INDUSTRY

ANTEKAD SDN BHD

(Co. No. 182462-H), P.O.Box 589
89208 Tuaran Sabah, East Malaysia
Tel: +60 88-788141, 788142
Fax: +60 88-788144, 788193
E-mail: antnf888@tm.net.my
Website: www.antekad.com



Chaux de Contern, Luxemburg



Semmelrock, Hungary



We produce to German quality standards under German direction · We have the best references!

Directimport from Asia Standard and special versions according to your specifications

Type of wood Yellow Balau / Selected Tropical Hardwood

Our Agents will visit you upon request.

**AGENTS WANTED for: West and East Asia,
Belgium, Netherlands and Canada**

dry sides can be operated independently of each other. This improves the flexibility and efficiency of the system.

Blasting machine

The hardened slabs are transported through a blasting plant on the V-belt conveyor. The blasting plant is designed so that slabs can be produced with a maximum working width of 1,000 mm and a throughput speed of 2 - 10 m/min (Figure 8).

On the next transport section, the products are transported either through an additional finishing line or directly to the packing line. Second-grade products can also be placed on a stock-removal line here. The operator only marks the products that are to be removed. A slab-removal unit with controllable vacuum head then automatically lays them on a transport device, a pack assembler with swivel arm positions them vertically, and they can then be removed from the process by a fork-lift truck.

Packaging line

Slabs that are lying horizontally are then positioned vertically by a pack assembler with a swivel arm. During this operation the slabs can be optionally rotated. In addition, separator cords can be pulled between the visible faces of the vertically positioned slabs with the help of a cord-pulling unit (Figure 9). The cords are used as spacers and prevent damage to the visible faces of the slabs. The packs of slabs are then wrapped in foil, strapped and placed on Euro-pallets, from where they are transported one at a time on a chain conveyor to be removed by fork lift truck (Figure 10).

Conclusions

With the investment it has made, the Mengelkamp company is consolidating its position in a highly demanding market, and in future it will be able to supply and continually develop additional product lines (Figure 11). Masa GmbH, with its facility in Porta Westfalica, and using its technological know-how in both equipment and processes, was able to implement a suitable

concept that could meet the very high standards of the Mengelkamp company.

FURTHER INFORMATION



B. Mengelkamp GmbH & Co. KG
Borker Straße 36
59399 Offen-Vinnum, Germany
T +49 2595 387300
F +49 2595 3873050
info@mengelkamp.de
www.mengelkamp.de



Milestone to your success.
Masa GmbH
Masa-Str. 2
56626 Andernach, Germany
T +49 2632 92920
F +49 2632 929211
info@masa-group.com
www.masa-group.com



VERONA
JUNE 21st 22nd 2012

XVI ERMCO CONGRESS

Sustainability and competitiveness in Concrete Market.
Key Players meet to face the challenge.

Diamond Sponsor



Platinum Sponsor



Gold Sponsor



Official Carrier



with the patronage of



Promoters and Organizers



Congress Management Office

