

Masa at bauma 2025: Focus on Product Quality and Traceability

bauma 2025, the world's leading trade fair for construction machinery, building material machines, mining machines, construction vehicles, and construction equipment, was once again an outstanding event for the entire industry. The event in Munich attracted experts and companies from all over the world. Masa proudly represented itself with an impressive stand as one of the leading manufacturers of machines and plants for the building materials industry.

The fair provided the ideal platform to present Masa's latest innovations and technologies to an international audience and to establish valuable contacts. The Masa GreyHub, Masa DigitalHub, and Masa WhiteHub teams did an outstanding job – from planning and preparing the booth to setting it up and representing the company brilliantly throughout the entire bauma week.

Masa WhiteHub, the specialist for the AAC and sand-lime brick industry, focused its exhibits on the topics of product quality and product traceability:

Green Cake Monitoring

Ensuring optimal and consistent quality of the green aerated concrete cakes is crucial for efficient processing in the cutting plant, minimising waste and breakage. The Green Cake Monitoring provides continuous, automated surveillance of the aerated concrete cakes before they reach the cutting plant.

The system measures surface and core temperature, strength, and rising height without interruption during the production process. The recorded data is automatically transferred to the mixing plant control system and stored. Based on this data, the plant operator can draw conclusions, for example regarding the recipe or the rising time. If the defined limit values are exceeded or not met, the plant operator is alerted. Additionally, the measured values are transmitted to the Masa Production Reporting System and stored there to ensure the traceability of each product by enabling access to all Green Cake Monitoring data for every product.



Green Cake Monitoring: continuous measurement of surface and core temperature, strength, and rising height during the production process.



Optimised use of the mould: the bulkhead is securely attached to the lower part and one side of the mould using three switchable permanent magnets.

Technical Data

- Measuring of the cake temperature via resistance temperature detector (RTD), using a temperature sensor PT100.
- Non-contact, precise measuring of the cake rising height via laser sensors.
- Measuring the strength of the cake with a standardised Masa penetrometer, which can also be used for comparative measurements.

Bulkhead System

The variety of product lengths for reinforced AAC products demanded by architects and builders is large and requires flexible and efficient production solutions. An important milestone in this area is the bulkhead system, which enables optimised use of the casting mould. The mould adapts to the respective product requirements in its effective lengths by means of adjustable bulkheads. This is particularly advantageous in markets that require a wide range of product sizes.

The bulkhead is manually positioned in the mould and fixed without electricity to the lower part of the mould and one of the mould side parts using three switchable permanent magnets. With the help of a lever, it is possible to switch between two magnetic states in order to firmly connect or disconnect the bulkhead to the mould side part and the mould bottom part. Additional sealing lips prevent the AAC mix from escaping.

After reaching the required cutting strength, the aerated concrete cake is transported to the cutting plant. The mould turning plant grabs the mould, tilts it by 90°, places it on the mould side plate not connected to the bulkhead, and automatically demoulds the cake. Similar to a mould with fully utilised volume, the mould with integrated bulkheads is also re-assembled into a complete casting mould after the demoulding process and oiled. The bulkheads remain in the casting mould until the product requirements change.

The option of individually adapting the effective length of the casting mould to the products significantly reduces the production of unwanted by-products and green waste. This considerably increases the efficiency of an AAC plant.



The linter cutter is an ideal addition to the cutting plant.



The cutting wires are tensioned pneumatically in the wire unit.

Furthermore, time-consuming sorting processes in the packaging line are no longer necessary, which improves the entire production process. This results in increased productivity and more efficient use of resources.

Technical data

- Available for moulds with an effective width of 1,200 mm and 1,500 mm
- Mounting via three switchable permanent magnets each
- Sealing lip
- Flexible manual positioning

Lintel Cutter

Masa WhiteHub sees a decisive technological advantage in the comprehensive processing of fresh aerated concrete cakes followed by horizontal autoclaving. Work steps such as cutting, tongue and groove profiling or milling the grip pockets are carried out while the cake is still green. This concept is also sustainable and conserves raw material resources, as all waste generated during the cutting process is collected, processed and returned to the manufacturing process.

The linter cutter presented at bauma complements the cutting plant by adding an additional fully integrated work step in a space-saving manner: After the cake processed in the cutting plant is tilted back, oscillating wires cut the linter to the desired processing height. The standard dimensions here are 200 and 250 mm. However, taking into account the built-in

steel reinforcement, individual height dimensions can also be freely selected.

The wire position can be adjusted in 5 mm increments and offers high manufacturing precision. The controllable oscillating movement prevents damage to the lintels when the wire exits.

The linter cutter is integrated into the production process and therefore does not extend the cycle time. Thanks to its compact design, it can be retrofitted to most AAC plants after the tilting table. Compared to dry cutting of the lintels after autoclaving, the energy required for cutting the still green lintels is significantly lower. This leads to a reduction in energy costs. Another advantage is that no dust is generated when cutting the green lintels, which means that the otherwise essential dust extraction system with a suitably designed filter system is not required.

Technical Data

- Lintel height: adjustable for standard heights (200 or 250 mm), also available on customer request and taking into account reinforcement
- Wire device: wire units on both sides of the cutting frame with wire position adjustable in 5 mm increments; 1 wire unit equipped with pneumatic tensioners
- Standard provision: 1 wire (for 2 x 250 mm high lintels) or 2 wires (for 3 x 200 mm high lintels); other provisions possible on request
- Eccentric drive: for oscillating movement of tilting wire units; eccentric with various adjustment options for adapting the stroke of the cutting wires

- Wire oscillating speed: controllable from operator panel
- Geared motor: variable speed through frequency inverter control

Density measurement via Pipe Loop Scale

The quality of AAC products depends directly on precise measuring and dosing technology. Only if the quantity specifications and mixing ratios of the individual recipes are always precisely adhered to in the mixing process, a product of consistent quality can be manufactured time and time again. Thus, one of the raw materials of AAC comes into focus: the processed sand. Both the sand slurry produced in the

wet ball mill from raw sand and water and the return slurry, which consists of the cake residues collected in the cutting plant and processed with water, must have a consistent density.

Masa uses pipe loop scales with a standard nominal diameter of DN 100 to automatically calculate the slurry density. Via load cells, they determine the mass of the sand or return sludge and transfer the actual values to the Masa mixing plant control system for density calculation. Two compensators each ensure the weight-neutral decoupling of the rigid piping system from the pipe loop scale.

After comparison with the target values, the Masa mixing plant control system automatically regulates



Pipe Loop Scale for automatic calculation of slurry density.



Compensator, outlet for sampling and weighing device.

the addition of water and sand throughout the entire process. This eliminates the need for time-consuming manual determination of the sand and return sludge density.

To ensure that each mixture is continuously monitored, density measurement is carried out in real time after each process step at the following positions in the AAC plant:

1. Wet ball mill
2. Sand slurry tank
3. Return slurry tank
4. Cutting basin before the transition to the return slurry tank

Each pipe loop scale is equipped with a manually operated outlet. This enables uncomplicated and clean sampling to regularly verify the displayed values by means of an independent laboratory test.

Technical Data

- Standard nominal diameter DN 100
- Manual sampling device
- Weight measurement via load cell (200 kg)
- Two compensators for decoupling from the piping system

Masa Production Reporting System (AAC)

The Masa Production Reporting System is an advanced digital solution designed to support the coordination of workflows, tasks and resources of the company. Productivity, efficiency, and cooperation within the production plant can thus be optimised. It includes two presentation levels (frontend) specifically tailored to the target groups 'plant operators' and 'decision-makers'. They allow access to all product-relevant data and conditions from mixing to packaging. An SQL database (backend) structures and stores the data. The interconnection of two hard disks and the inversion of the data (RAID 1) guarantee for a complete redundancy. Thus, the Masa system ensures a high degree of fail-safety.

Customer Benefits

- **Enhanced productivity:** Real-time data allows for precise coordination of resources, reducing cycle and reaction times.
- **Improved quality management:** The system traces quality deviations throughout the entire production process, enabling detailed analysis and correction.

- **Increased automation:** Various plant components automatically adapt themselves for product changes, reducing paper-based processes and human error.
- **Reduced administrative efforts:** Centrally available data minimises manual recording and transmission, making information immediately accessible to decision-makers.
- **Efficient performance analyses:** Prepared data enables the detection of strengths and weaknesses, helping to organize processes more efficiently.
- **Comprehensive documentation:** The system documents the entire production process, linking finished products with their production data to identify possible mistakes.

Main Functionalities

Production Data Acquisition (PDA): Gathers and evaluates key operational metrics such as waiting times, processing times, capacity utilisation, and availability.

Locking of the processing station: Locks a processing station depending on the product to be manufactured, ensuring all parameters are correctly adjusted before production or treatment begins. Key functions include an automation of product change and examination of set-up parameters.

Traceability: Enables complete tracking of product history, aiding in quality control and issue identification.

User-Specific Presentation Levels:

- **For Plant Operators:** Customisable visualisation with the familiar Masa user interface, with a Dashboard of the most important data and Sub-levels such as order edit, order management, cast details and detailed production tracking.
- **For Decision Makers:** Interactive visualisations and business analysis functions using Microsoft Power BI, including a Main Page with important key figures and various detailed Sub-pages such as output in relation to the mixing, cutting, and packaging processes or the raw material consumption per recipe within a defined period.



For further information, please read the Masa Bluepaper Production Reporting System.



Presentation of the Masa Production Reporting System at the Masa booth.

Successful bauma: Masa looks optimistically to the future

The bauma was far more than just a trade fair for the Masa team. It served as an international meeting point and an outstanding platform to present and make tangible innovations and advancements for the concrete block, AAC, and sand-lime brick industries.

The strong interest in the exhibits, the focus on topics such as product quality and traceability, as well as the overwhelming response to the yellow-blue trade fair appearance, made the bauma a great success. The discussions with German, European, and international customers and partners were equally inspiring, enriching, and stimulating for existing and new business relationships.

After the bauma, Masa GreyHub, Masa DigitalHub, and Masa WhiteHub look confidently at the developments and opportunities in the industry. ●



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