

JOURNAL

Economic plants for autoclaved aerated concrete blocks and panels, fibre cement sheets

Edition 2026

DRIVING EFFICIENCY WITH DIGITAL INTELLIGENCE

Evaluate. Control. Optimise.



Once a production plant has been successfully commissioned, the real operational challenge begins. Processes and recipes must be continuously optimised, new products developed and product quality carefully monitored. At the same time, plant operators must ensure stable production while coordinating maintenance, staffing and production planning.

To support customers in mastering these complex tasks, Wehrhahn has developed advanced digital tools that transform plant data into valuable operational insights. Modern control systems today enable the continuous capture and analysis of large volumes of production data in real time. Instead of evaluating only selected signals, operators can now access a comprehensive and transparent picture of the entire plant.

The **Wehrhahn Master Control System (MCS)** provides exactly this level of transparency. By linking process data, machine parameters and production results, the system creates a real-time process image of the factory. This allows plant managers to evaluate performance, control operations and continuously optimise production efficiency.
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Everything comes out just here!
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Decarbonisation of AAC
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Worth knowing...



WHERE SCIENCE MEETS PRACTICE

Everything comes out just here!

The Wehrhahn laboratory plays a crucial role in ensuring a successful market entry. Customers are supported in identifying locally available raw materials, which are then thoroughly analysed in our Technology Center.

After selecting the optimal materials, production trials for AAC and fibre cement are carried out under conditions comparable to industrial manufacturing. The Technology Center enables the production of AAC blocks and fibre cement sheets, using a 500-litre autoclave with the same control system (WACO) applied in full-scale plants. This

allows all key process phases – vacuum, pressure build-up, holding, and controlled release – to be accurately replicated.

The produced AAC and fibre cement products are tested according to relevant standards, including physical property assessments and X-ray diffraction (XRD) analysis to evaluate the formation of tobermorite, a critical factor in AAC quality.

Once all quality parameters are met, the laboratory specialists give approval, ensuring reliable production performance. These experts also support plant commissioning on site until all guaranteed parameters are achieved.

Laboratory services are essential to the execution of every Wehrhahn project.



In the autoclave AAC blocks or fibre cement sheets are steam cured.



Customers are supported by Wehrhahn in securing reliable, locally available raw materials. Comprehensive analyses in the Wehrhahn Technology Center ensure process stability and material safety.

NEW DEVELOPMENT & TECHNOLOGY DEPARTMENT

“Innovation is at the heart of everything we do”

The laboratory forms a central pillar of the Development & Technology Department, which serves as the driving force behind continuous innovation and ongoing product enhancement. Many of these innovations are directly inspired by customer requirements and are translated into advanced machinery and modern production systems.

At its core, the new department is dedicated to developing future-ready machines and technologies for autoclaved aerated concrete products, tailored to meet the diverse demands of global markets. Equally important is the commitment to consistency in development: innovations and Continuous Improvement Processes (CIP) are systematically integrated into every project from the very outset.

Working hand in hand, the Wehrhahn laboratory and the Development & Technology Department create a powerful foundation for the ongoing evolution of Wehrhahn systems and technologies – an approach trusted by customers around the world.



“Customised solutions and strong customer partnerships are key in today’s global markets.

By combining innovation with continuous improvement, we ensure reliable technologies that meet both current and future demands.”

– Sebastian Sanders, Product Manager AAC

NEWS FROM THE WEHRHAHN AAC WORLD

AAC projects around the globe

SOCERAM launches new AAC production in Romania

Târgu Cărbunești, Romania – SO-CERAM has successfully produced the first AAC cake at its new plant following weeks of installation and preparation. The milestone marks the launch of the company's second

Wehrhahn-built facility, equipped with advanced SMART technology to ensure high efficiency and low production costs. Special thanks go to the SOCERAM and Wehrhahn teams for their excellent cooperation and strong commitment.



Great atmosphere on the building site: the first AAC cake is always a hit!



Italy: Another first cake accomplished!

After weeks of installation work, processing the first AAC cake marks both a reward and a milestone – a moment of real significance. Enthusiasm ran high across the site as the first cake was produced, greeted with excitement by the entire team. The new state-of-the-art Wehrhahn cutting line at EKORU is now officially up and running. Congratulations to everyone involved! The proud team is celebrating the plant's first AAC cake!



EKORU owner Claudio Bacchi is very satisfied with the result.



Uzbekistan: Arton Vodiy Invest expands AAC production in Andijan

The Uzbek manufacturer Arton Vodiy Invest, based in Andijan, is expanding its production capacity. Following the successful operation of its first plant, the company is investing in a second production line. The new SMART AAC plant supplied by Wehrhahn is currently under construction, with installation work progressing rapidly. Commissioning is expected in the coming months.

This investment strengthens Arton Vodiy Invest's position as a growing AAC producer in the region and marks another milestone in the company's development.



Turkish plant upgrade successfully completed

STT Turk Gazbeton has taken over the former ATEK AAC production plant in Çorlu and is now advancing modernisation efforts. The existing Wehrhahn superSMART has been in operation for many years. To bring the facility up to current standards and increase automa-

tion, Wehrhahn was entitled to upgrade key equipment, including mould locking and unlocking systems, as well as mould cleaning and oiling machines.

Thank you to all involved for their valuable cooperation!

STAY UP TO DATE
on new projects
at Wehrhahn





TURNING DATA INTO PERFORMANCE: AI IN MANUFACTURING

A new era in plant data management

MCS

MACHINE PARAMETERS (CROSS CUTTER)

- Format
- Line speed
- Cycle time
- Hydraulic temperature
- Bearing temperature
- Vibrations

PRE-CURING PROCESS

- Curing time
- Cake height
- Cake hardness
- Recipe
- Mould ID

DOSING AND MIXING

- Raw materials
- Product temperatures

PACKAGING AREA

- Line status
- Pallet count

Data collection and linking across all sections.

Traditional plant data acquisition systems relied on limited data transfer via PLC interfaces and data loggers, making them complex, inflexible, and costly to adapt. Expanding these systems often strained network infrastructure and required significant engineering effort.

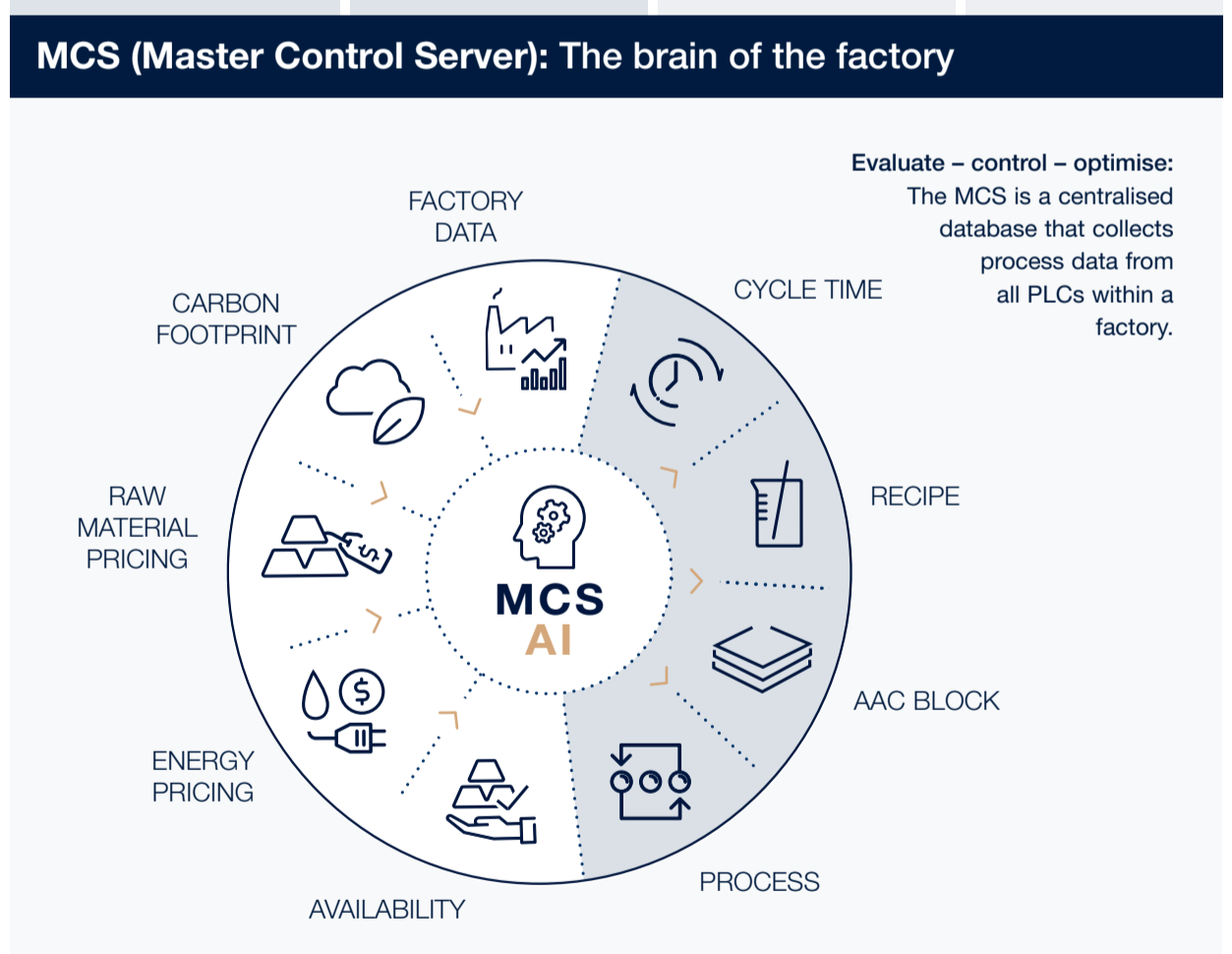
Today, advances in network technology and high-speed control systems allow continuous, real-time collection of all machine and process data. This shift forms the basis of the Wehrhahn Master Control System (MCS), a fully integrated platform that converts raw production data into actionable insights.

The MCS provides a web-based interface with customisable dashboards tailored to different user roles – from real-time production monitoring to strategic KPI analysis. It enables seamless navigation from plant-wide overviews down to individual sensors, offering full transparency across operations. A key feature is complete process traceability: all production data, including raw materials, machine parameters, and quality results, are linked to specific production units. This allows rapid identification of quality issues and accelerates process optimisation.

By continuously monitoring machine conditions such as energy consumption, temperature, and vibration, the system supports predictive maintenance, reducing downtime and unnecessary servicing.

Real time process image for a transparent factory

The integration of artificial intelligence further enhances performance by identifying root causes of downtime, opti-



mising processes, and reducing energy and material usage. Additionally, the MCS improves resource efficiency through detailed energy analysis and intelligent process adjustments, contributing to lower costs and reduced emissions.

Overall, the Wehrhahn MCS acts as a central intelligence system for industrial plants – enabling real-time monitoring, data-driven decision-making, and continuous optimisation across production, maintenance, and energy management. **In short: Evaluate. Control. Optimise.**



SUSTAINABILITY & CLEAN PRODUCTION

Decarbonisation of AAC

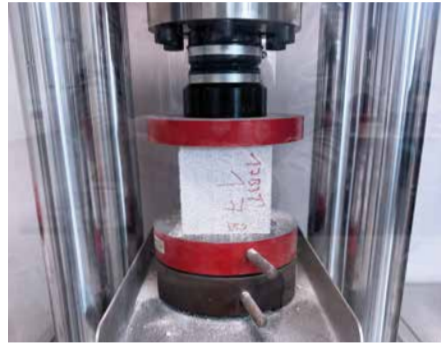
Wehrhahn R&D: Building green

Cement and quicklime account for up to 80 % of the CO₂ footprint of autoclaved aerated concrete. Cement is responsible for around 6 % of CO₂ emissions worldwide.

Consequently, searching for alternative binding materials is compulsory. Wehrhahn actively supports its clients in reducing the carbon footprint of their AAC production through its own research department.

Under the leadership of Konstantin Dietz, who completed his Master thesis in our state-of-the-art laboratory, we investigated how alternative binders behave in AAC production.

The challenge: these binders have so far been optimised just for conventional concrete – not yet for AAC.



The decarbonisation of AAC is an essential topic.



AAC - fit for the future

drive change

AAC – fit for the future

„50 % less CO₂ – same performance.“

Is it possible to reduce CO₂ emissions in AAC production without compromising on quality and strength?

Yes, it is!

This is proven by the results of Konstantin Dietz's Master's Thesis. By using more environmentally friendly binders, it can be achieved to:

- halving CO₂ emissions
- maintaining the same mechanical strength, thermal conductivity and drying shrinkage of the blocks, and in some cases even surpassing them.

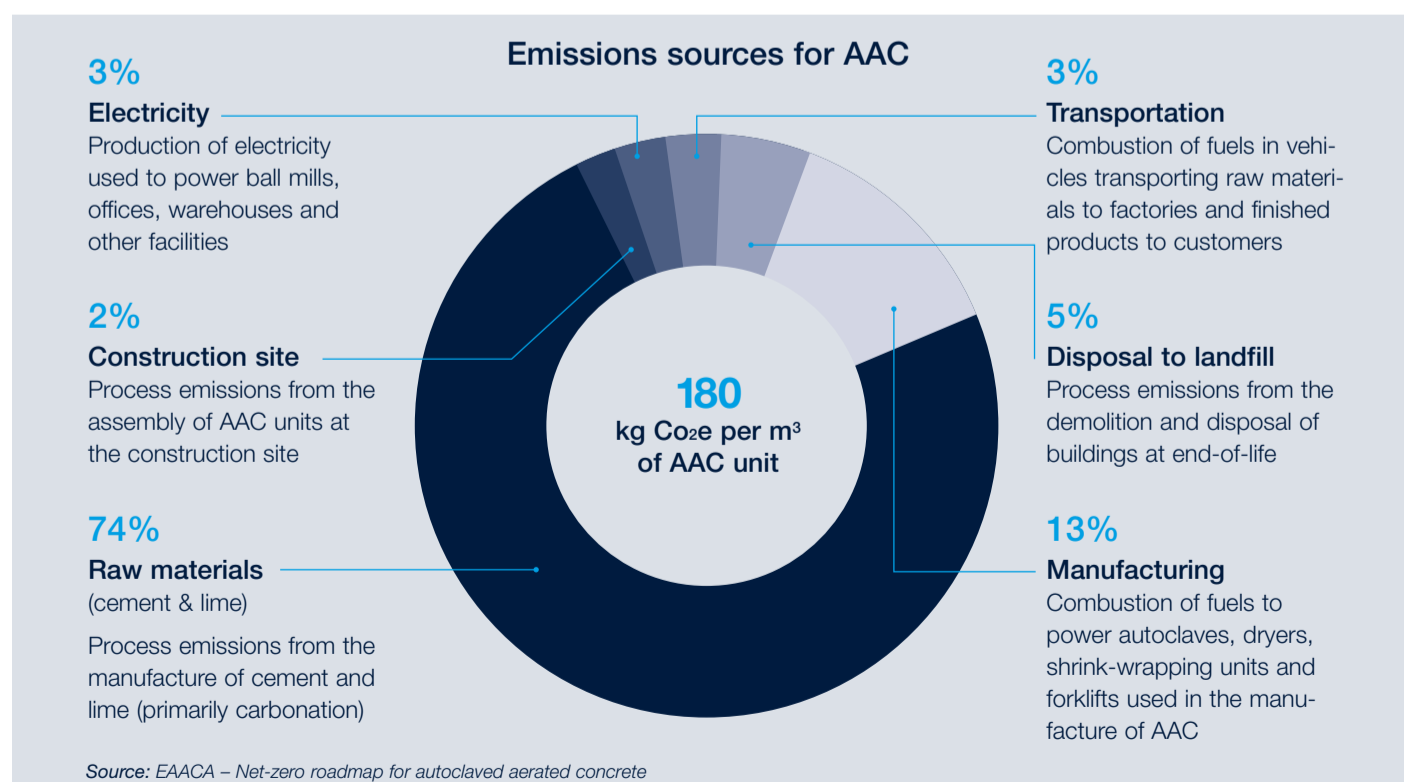


M.Sc. Konstantin Dietz
Manager Process Development

Conclusion: Sustainable and economical production of AAC is possible – with the support of a partner who brings in-depth process expertise and takes a holistic view of the production process.

AAC – Life cycle analysis

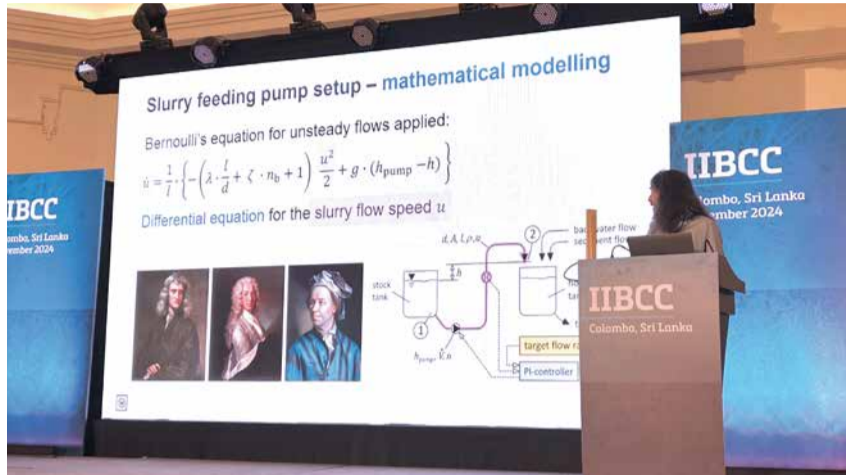
- The majority of emissions – around 74% – come from the manufacture of cement and lime. Around 13% of emissions come from the manufacture itself.
- The main source of these production emissions are fossil fuels such as coal and natural gas that are used to power the boilers that provide steam to the autoclaves.
- Emissions from electricity generated to power ball mills, offices, warehouses and other facilities amount to approximately 3%.
- Based on a life-cycle analysis (LCA), the majority of CO₂ emissions come not from the manufacture of AAC itself, but from the manufacture of two key raw materials – cement and lime.
- These emissions lie upstream with the cement and lime producers and are an unavoidable result of the chemical reaction that occurs when carbon is removed from limestone to produce clinker, the main ingredient in cement.





NEWS FROM THE WEHRHAHN FIBRE CEMENT WORLD

Fibre cement events & projects around the globe



Wehrhahn at IIBCC in Colombo, Sri Lanka

The IIBCC in Colombo, Sri Lanka, proved to be an outstanding venue, featuring a high-calibre programme and an impressive lineup of speakers covering a wide spectrum of industry-relevant topics. The event once again demonstrated its importance as a global platform for innovation, knowledge exchange, and networking within the fibre cement and inorganic bonded composites industry.

Representing Wehrhahn, fibre cement specialist Rainer Becker delivered a technical presentation entitled "Sheet Thickness Control System Optimisation through Mathematical Modelling and Self-Learning Pump Maps." His contribution highlighted the critical role of intelligent control systems in modern Wehrhahn production plants.

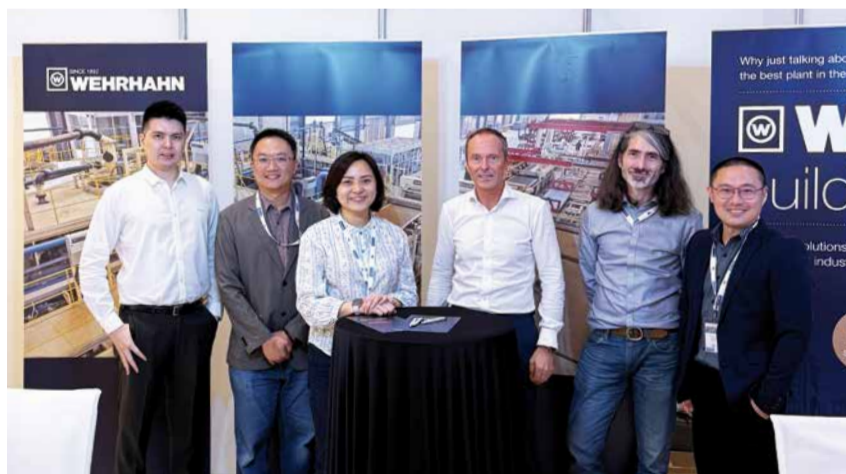
In fibre cement sheet production, the automatic sheet thickness control system plays a decisive role in determining both plant performance and overall process feasibility. One of the core challenges lies in the interconnected structure of

multiple control loops, including tank filling levels, slurry throughput, felt speed, and slurry density. These parameters are dynamically linked, and their interactions – combined with inherent time delays – can lead to increased sheet thickness tolerances under certain operating conditions.

Such deviations are particularly evident during plant start-up phases or in the presence of process disturbances. For example, fluctuations in flocculation efficiency or progressive pipe clogging can negatively affect system stability. Wehrhahn's approach, based on mathematical modelling and adaptive, self-learning pump maps, offers significant potential for optimisation. By improving system responsiveness and reducing variability, substantial gains in product quality and operational efficiency can be achieved.

Interested in the full paper?

Please contact Wehrhahn for more information.



Wehrhahn & IIBCC – a longstanding commitment

As one of the regular participants at the IIBCC, Wehrhahn is contributing to the conference every two years and actively supporting industry dialogue and innovation.

Next event: November 24–27, 2026, Curitiba, Brazil



unique · versatile · approved

Fibre cement production plants



Yanbu: El Khayyat Fibre Cement Board

The El Khayyat fibre cement sheet plant sets new standards in rapid project execution, having been successfully commissioned in record time. Shortly after producing its first sheet, the plant already reached its full 100% design capacity, demonstrating strong performance from the outset. As one of the most advanced fibre cement facilities in the region, it is equipped with the latest intelligent automation technologies. These systems ensure high efficiency, consistently excellent product quality,

and competitive production costs. The project reflects the strong partnership between El Khayyat and Wehrhahn. Through close cooperation, a flagship plant has been delivered that sets new industry benchmarks. With state-of-the-art digital features, the plant also benefits from Wehrhahn's remote service capabilities, enabling continuous monitoring, fast process optimisation, and expert on-site support – ensuring maximum reliability and operational excellence.

Valuable insights: Worth knowing!

What defines ...

... the Wehrhahn AAC thickness cutter as a true masterpiece?

Wehrhahn cutting machines are intelligently designed and continuously enhanced to ensure maximum cutting accuracy. A current example is **the Wehrhahn thickness cutter**.

The cutting wires are uniformly distributed along the length so that only one wire enters or exits the cake at a time. This wire configuration minimises the stress applied on the cake during cutting, which is particularly advantageous to produce thin AAC wall panels.



The uniform distribution of the wires minimises stress and ensures maximum cutting accuracy with automatic wire adjustment.

Why does ...

... fibre cement sheet thickness control stand out as unique?

Fibre cement sheet makers know:
Even minor process disturbances due to, for example, flow fluctuations or tolerances in mix composition lead to undesired deviations from the target sheet thickness.

For this reason, Wehrhahn's automatic sheet thickness control is not only designed as a thickness measurement plus closed loop control of slurry consistency and felt speed.

Moreover, it features additional modules such as

- feed forward control of the felt speed, compensating changes in slurry flow which are measured early in the process. The data is evaluated in a build-in process simulation and modulates the felt speed in the exact right timing.
- feed forward pump rotor speed control, resolving the characteristic time-lag behaviour of centrifugal pumps. Evaluating tank filling levels, pump speeds are automatically adjusted according to the build-in pump map model. Simultaneous feed forward control of backwater and fresh slurry pumps make it possible to maintain constant slurry consistency.

Simply explained: Wehrhahn's sheet thickness control knows what to do even before the sheet is formed.



Perfectly aligned sheets create a flawless, uniform surface – this is the high quality that is truly desired.

How has ...

... green cake separation set standards for almost 20 years?

Shortly after introducing the SMART production line, a groundbreaking idea emerged: separating the horizontal layers of the green cake before autoclaving. In 2007, this vision became reality with the successful start-up of the first green cake separating machine in the AAC industry.

In conventional tilt-cutting systems, the green cake remained upright after cutting and throughout the autoclaving process. Separating only took place after autoclaving. This approach often led to sticking issues, caused by the cake's own weight and the slow migration of water from top to bottom. The severity depended on factors such as product density, water-solid ratio, and mix design.

With the development of SMART technology, we recognised a new opportunity:

- separating the horizontal layers prior to autoclaving
- precisely defining the gap between layers

This allowed improved steam penetration and significantly optimised curing conditions inside the autoclave. As a result, post-autoclaving separation became unnecessary.

A true milestone – and a lasting contribution to the advancement of AAC production.



Precise AAC panel separation requires the right machine – delivering precise, smooth and marketable results.

5 reasons why ...

... the sieve cylinder process dominates flow on technology

The success of the sieve cylinder process is based on a clear and robust engineering logic. Five key factors explain its strong performance in industrial fibre cement production:

- 1. Parallel instead of sequential dewatering**
Dewatering is distributed across multiple stages, with each thin layer formed and drained individually. This avoids bottlenecks and improves process flow compared to systems that rely on later-stage dewatering.
 - 2. Thin layers, short drainage paths**
Multiple thin layers reduce the distance water must travel, enabling fast and efficient filtration. Thicker single-layer systems create higher resistance and slower drainage.
 - 3. Higher line speed drives output**
Efficient dewatering allows significantly higher line speeds, which directly increases overall production capacity.
 - 4. High efficiency despite lower solids content**
Even with a more dilute suspension, the higher operating speed results in excellent productivity in both area output and tonnage.
 - 5. A proven industrial standard**
Widely adopted by industry leaders, the sieve cylinder process has been refined over decades and is recognised for its reliability, performance, and product quality.
- In short:** The sieve cylinder process achieves superior throughput through intelligent dewatering design and consistently higher operating speeds.



SERVICES & INSIGHTS

Your direct line to Wehrhahn



THE WEHRHAHN SERVICE
for successful plant operators!

IS YOUR PLANT STILL WORKING EFFICIENTLY?

Wehrhahn plant inspections boost efficiency and performance

As a key element of proactive maintenance Wehrhahn offers comprehensive plant inspection. Often customers use scheduled downtime, such as e.g. the winter break, to assess and optimise their production facilities.

Wehrhahn specialists evaluate the entire production process, analyse product quality, provide service recommendations, and carry out repairs and improvements. These measures typically lead to fewer plant stoppages, lower production costs and reject rates, improved energy efficiency, and higher product quality.

For plant upgrades, inspections, and expert support, contact: mail@wehrhahn.de



SAVE THE DATE
and meet us!

INTERNATIONAL TRADE FAIRS, CONGRESSES AND CONFERENCES

Meetings face-to-face

Whether at ICCX, IIBCC, bauma, or other leading international industry events, you'll find us where innovation happens.

Visit our website or follow us on LinkedIn to stay up to date on where to meet us next.

Follow us on LinkedIn!

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Production plants for AAC panels and blocks

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