

# JOURNAL

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

**EDITION 2018**

## TOPICS



### Supersmooth thickness cutting

Unique new flat thickness cutting machine for SMART plants

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New generation of fibre cement sheet production plants launched

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### Is your production 'Smart'?

Three intelligent modules of the Wehrhahn electric control system

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## Is it the best AAC production plant in the world?

Early in 2018 the “all-new” superSMART plant for H+H UK successfully started operation. The supplied plant sets the new global benchmark for high quality AAC production plants.

Jointly with the H+H UK team the design of each piece of equipment was challenged in detail and optimised to meet the high expectations of one of the most experienced AAC producers in the world.

The existing Wehrhahn plant in Borough Green had been in operation for more than 25 years. H+H UK decided to invest in a brand-new plant in order to increase the plant reliability and capacity of its Celcon Block products and to add features to demonstrate H+H UK's commitment to provide outstanding AAC products to its customers.

The old plant stopped operation on 21<sup>st</sup> December 2017, the existing equipment was dismantled and the factory prepared for the installation of the new equipment by 31<sup>st</sup> December 2017. Installation of the new plant started on 1<sup>st</sup> January 2018.



On 13<sup>th</sup> March 2018 the first cake was produced. It took less than three months to install and commission the AAC plant.

Reflecting on the project **Ed Surman, Production Director, H+H UK** said:

“This has been the most significant investment for both H+H UK and the UK AAC market for more than 10 years. The cooperation between Wehrhahn and H+H throughout the process of planning, design, installation and commissioning has been outstanding; it is through this partnership that we were able to complete this project within the very challenging 3 months timeframe I set at the outset. The Wehrhahn and H+H teams should both be immensely proud of their achievement and I would like to use this opportunity to thank everyone involved for their enthusiasm, dedication, commitment, determination and hard work.”

### What are the special features of this “all-new” plant?

The existing factory footprint was used very efficiently. In comparison to other plants the required space was reduced by 30%. Previously some of the machines required deep foundation pits. Unbelievable, but by redesigning equipment we managed to eliminate almost 90% of all previously required pits. This is now the standard for all new Wehrhahn supplied AAC plants.

For many years hydraulics were necessary for a reliable and safe machine operation. New developments in the electric drive systems enabled us to reduce hydraulic components by 60%. High performance electromechanical drives replaced the former hydraulics.

The cutting line is considered as the heart of an AAC production plant. Despite the fact that the Wehrhahn cutting technology has always been the benchmark in the industry, our team did not stand still, but again deeply questioned each single cutting machine.

The result is more than impressive. The uniform distribution of cutting wires in a very long cutting machine reduces stress applied on the cake during cutting, in particular for very thin blocks and panels where many wires have to pass through the cake. The length of the thickness cutter has almost been doubled. The wires and knives are automatically cleaned to enhance the cutting surface and to prevent material sticking to the wire.

Efforts have also been put on the side trimmer (cutting length and profiling). The machine is now equipped with a new “quick-change” cutting system and automatic knife cleaning devices.

Another important issue is the separation of blocks prior to autoclaving. The new plant uses the proven Wehrhahn green cake separating technology. However, in order to add additional flexibility to the process, a brand-new curing station between cutting and separating has been developed. The curing station allows the cake to harden prior to separating which reduces the risk of unsightly marks on the AAC products and provides more flexibility for the hardness of the cake during cutting.

### Coming back to the question: “Is it the best AAC production plant in the world?”

**We are sure. And H+H UK, the proud owner of this exceptional new plant agrees entirely.**





## Unique new flat thickness cutting machine for SMART plants!

Flat cake cutting technology has been used in some markets, preferably for cutting reinforced AAC panels. The technology almost disappeared on the global AAC market due to its disadvantages in AAC block cutting and product profiling.

Recently a trend has been observed for thin vertically applied reinforced panels with smooth surfaces.

Suddenly the Durox technology came back into the picture because of the possibility to cut super smooth surfaces with a double wire cutting technology in horizontal position.

Still the disadvantages of the Durox technology remain:

- higher content of binding materials required
- profiling is very difficult and not accurate
- maintenance is continuously needed for the cutting grids with lamellas as they enter the autoclaves

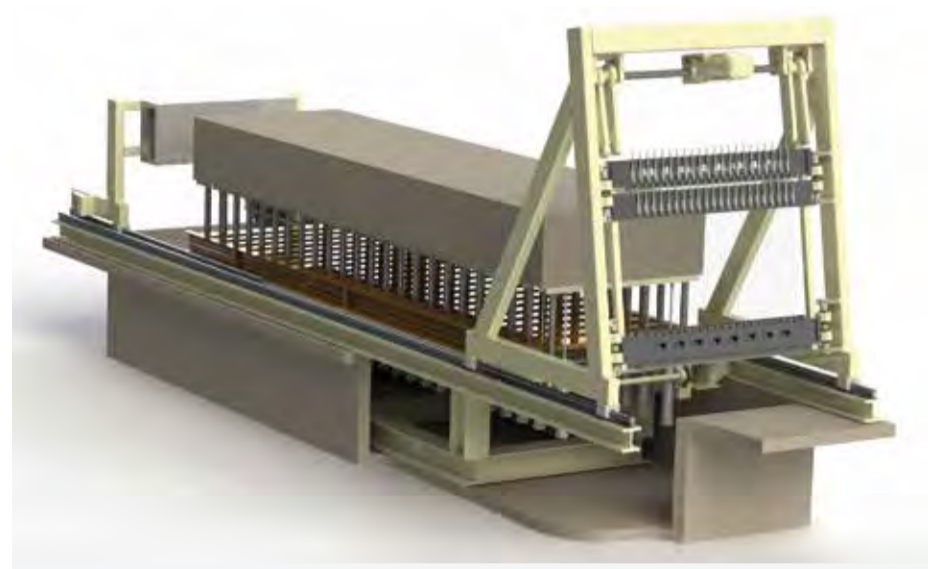
### Is it possible to combine advantages of tilt cutting systems and the Durox technology?

Our team of engineers finally designed a complete new machine which can be added to any SMART plant.

### How does it work?

The Wehrhahn superSMART cutting line remains unchanged and is still used for cutting of blocks and thicker panels which usually require tongue and groove.

The newly designed thickness cutter is installed near the second tilting machine. Instead of tilting the cake onto the autoclave grid the cake will be picked up by the cake inserter and is put into the super smooth thickness cutter. The cake rests on a high precision cutting grid on top of the machine. The cutting grid can be changed depending on the required panel thickness. Cutting is done by two adversely oscillating cutting frames similar to those used



The new cutting machine combines the advantages of upright cutting and flat cake cutting in one unique plant design.

in the cross cutter. The cutting frames are installed vertically and travel on special linear horizontal guiding through the cake. For every cut two wires, which are installed

behind each other, are used. The first wire cuts the thickness and the second one smoothens the surface. The result: a precise and super smooth panel surface.

## China – The biggest market for AAC in the world



Jing Neng Power – superSMART – just about to come.

The capacity of all AAC plants exceeds 200million m<sup>3</sup>/year.

The AAC market in China can be divided in two different segments: The largest is still the low grade quality focussed segment, primarily focussing on ash based block production. This market appears to remain stable, but without further growth prospects.

Wehrhahn purposely focussed on the smaller, but promising market segment for

high quality, innovative AAC products, predominantly sand based. During the past 15 years Wehrhahn has successfully been approaching the Chinese market. Our stringent strategy paid back: Wehrhahn is considered to be the number one foreign supplier of AAC production plants in China. The high quality focussed market segment has been growing significantly and AAC panel production is getting more and more popular. The production capacity of all Wehrhahn AAC plants exceeds 4 million m<sup>3</sup>/year.

### NEW and latest projects:

**Baopeng from Jiangsu** purchased a superSMART block and panel production plant. The plant has already demonstrated its capability and produces high-quality AAC blocks and panels.

**Jing Neng Power**, a daughter company of Beijing Energy, a large utility supplier, purchased a 600,000 m<sup>3</sup> superSMART. Start of production is expected later in 2018.

## Three reasons for universal use of AAC panels

### Automatic reinforcement manufacturing process

The reinforcement for lintels and load-bearing panels requires clean and rust-free steel as it has to be coated prior to putting it into the mould. The reinforcement manufacture (and assembly) should therefore preferably be carried out in the AAC production plant.

Starting from simple mat welding machines up to fully automated solutions from the coil up to the finished cage. Functional assembly places and automatic coating

plants for the reinforcement complement the Wehrhahn scope of supplies.

**Non-structural thin panels for no-crane installation** with only light reinforcement for transportation can be handled by one or two men.

### Vertical walls

Mostly 100mm (4 in) floor high as external and internal walls commonly used in cost-sensitive countries with moderate climates.

**Structural load-bearing “crane” panels** are quite popular as **lintels** in different lengths to

1. easy installation
2. speedy construction
3. economical advantages

cover openings like doors, windows and are a must in extremely cold climates.

**Wall panels** of any thickness as vertical walls for home buildings, schools, hotels/motels, hospitals (mostly light reinforcement).

**Horizontal panels** for industrial and commercial buildings where good in-house climate and fire protection are a must.



Vertical panels are highly suitable for fast building of standardized homes.

## As quality matters: Experts at work

Specifically focused on AAC, fibre cement and quicklime – provided for research, development and customer-specific requirements: The results of the Wehrhahn laboratory achieve reliability for our customers and investors.

**Interview with the lab team:**  
Dr. Bernd Schulte and Uwe Schley

**Which are typical daily challenges in the Wehrhahn laboratory?**

“We receive raw materials from our customers and we produce real AAC cakes and fibre cement sheets which are autoclaved in our 500 l Wehrhahn laboratory autoclave. The lab-autoclave is controlled by the WACO-Wehrhahn Autoclave Control system like the large autoclaves in our production plants. In this way we make analyses under real conditions which are very similar to the production conditions of our customers. We can quickly find out if their raw materials are suitable. We produce blocks or panels and measure pre-curing times, strength, shrinkage, bulk density and much more. The analyses of the raw materials play an important role. This is the reason why Wehrhahn just invested in a particle analyser operating on the basis of static laser light scattering (laser diffraction). Now we can measure

the particle size distribution of powders and granules (like sand, cement, quicklime etc.) over a range of 0.01 to 5,000 µm in a combination of dry and wet measurements. This will give us much more detailed and accurate information, especially for fine powders compared to the air jet sieve machine used before.”

**What are the benefits of a distinguished laboratory for our customers and partners?**

“We are testing raw materials from our customers on suitability for AAC, fibre cement or lime. It is our focus to design the exact individual recipe for each production plant. But our work is not done, yet. After commissioning of a plant, the recipe fine tuning, often not focussed, has a great potential to reduce production costs. We always try to ensure the best product quality, as quality matters. And we develop innovative products and production procedures. Last, but not least, we are frequented for operators’ training, by remote, online and personally.”

**So you are always in close contact with the customers?**

“A wide range of work can be done in the Wehrhahn laboratory in Delmenhorst. However, for commissioning, improving recipes or training we are travelling worldwide to our customers. We advise the operators on site to improve production quantity and quality to increase the profitability. Whenever required, we closely assist and advise.”



Experts at work: Dr. Bernd Schulte and Uwe Schley.



## Support – Review and outlook

Wehrhahn Support – Exceeding all expectations

MOST POPULAR



PLANT SUPPORT

In year 3 after the introduction of the Wehrhahn Support we look back to an outstanding track record. Customers all over the world appreciate the Wehrhahn Support solutions. They arrived at a new level of production understanding and quality – prepared for the daily production and market challenges.

The highly motivated and experienced Wehrhahn support team is following the goal to assist customers to operate their plants in a most efficient way and to facilitate smooth plant conditions. They train the plant personnel on the job by providing intelligent solutions and advise how to make best use of Wehrhahn plants. Plant inspection evaluates the technical status of the machines and plant engineering – valuable for each customized Wehrhahn plant upgrade concept. Energy management achieves sustainable reduction of energy consumption and boosts in addition the understanding of each process step. The training and education package is essential for the staff

at new and already established production sites. The additional very powerful tool “emergency support” provides immediate assistance “24/7” whenever our customers face unforeseen difficulties.

**Wehrhahn Support competencies at a glance:**

- increase production capacity and efficiency
- improve product quality
- manage investment cost
- deepen existing production knowhow
- introduction and implementation of innovations



Clients appreciate our clear and understandable support language with the agreed goals in focus.

**A few votes:**

“The Wehrhahn process transparent and tailor-made solutions have affected the plant organization and plant results. The Wehrhahn Support project pays off, because it could be refinanced 100 % by the project results. We look forward to a continued trusting cooperation at eye level.”

“Sometimes you have to look at things from a different perspective, to question old strategies and procedures and, if necessary, to break new ground. The Wehrhahn Support project has shown a great deal of tact in dealing with our special situation and specific plant features. The Wehrhahn support team adapted fast in our project, we sang very quickly on a common soundtrack. Thus we were able to develop a new understanding for the production process.”

“We have implemented a continuous improvement process, with which we are constantly developing our process and products. Wehrhahn supported us with application and production-related approaches. Particularly important to us was the precise communication in understandable language.”

“Our employees took a lot from the Wehrhahn Support projects for their daily work, so we did not only benefit from reduced production costs, but also improved our methodological skills.”

We thank our customers for the trust. And we are proud to announce that the Wehrhahn Support is constantly expanding thus to meet the growing demand and needs of our customers!

**The successful Wehrhahn Support story will continue – do you want to be part of it?**

Please contact: [support@wehrhahn.de](mailto:support@wehrhahn.de)





## Stärken from Malaysia expands AAC production



The Malaysian AAC producer Stärken belongs to the Chin Hin Group, which is the largest building materials distributor in Malaysia.

The Stärken AAC factory in Serendah, Selangor, produces high end AAC quality products and has already reached the maximum production plant capacity of 1,250 m<sup>3</sup>/day.

Wei Luen Ng (GM of Stärken) stated – “**AAC made on Wehrhahn machinery and equipment has reached a high acceptance within the Malaysian construction market and has become a positive profit driver for the whole Chin Hin Group**”.

Now Stärken has expanded the AAC business. The second Wehrhahn superSMART has started operation in Johor near Singapore. Parallel, the capacity of the first plant is intended to be increased to approx. 1,900 m<sup>3</sup>/day. Beside high quality block production, AAC panels could be a further component in the Stärken product portfolio. Especially the market in Singapore is already familiar when it comes to the application of vertical AAC panels.

## Largest industry park for construction in northern Caucasus / Russia



Lime production and mortar production just about to start operation.



With the brands Ytong and Hebel, Xella is one of the world's largest manufacturers of autoclaved aerated concrete (AAC).

The Xella Group is in a stable market position – the continuous growth of the German construction industry also presents challenges for production. Driven by the market, Xella wants to increase its production volume, so the production process has been reconsidered.



Tailor made unloading and packing solution for Xella.

### Autoclaved aerated concrete (AAC) blocks and panels, fibre cement sheets, quicklime, dry mix mortar

Installation works are in full action. All plants together are expected to become the biggest Industrial Park in Northern Caucasus.

Virtually all common home building construction materials will be produced.

### Lime production

Nearby top quality lime stone will be burnt to quicklime pebbles, and then finely ground to quicklime powder, middle/hard burnt as required by AAC production; but also for many, many other uses. Production start is expected still in 2018.

### Lime hydrate will be slaked from quicklime.

Lime hydrate is an important raw material for the dry mix mortar production.

### Dry mix mortar

Production is expected to start at the end of 2018 with a wide range of dry mix mortar product.

### Aerated concrete blocks and panels

The state of the art Wehrhahn plant, type PLUS, has already been shipped and installation works have started.

The plant is scheduled to produce blocks, but also panels and lintels for prefab homes. AAC panels are ideally suitable as wall building material for large series of homes for the middle and low income population.

The Wehrhahn fibre cement sheet plant is provided to produce air cured and autoclave cured sheets. The plant comprises a stack press for improved strength as well as a state of the art paint coating line for decorative surface.

Corrugated fibre cement sheets will be produced as air cured sheets. The main application is roofing.

The market for façade sheets is rapidly increasing in Russia. Fibre cement sheets compare very favourable due to many attractive features, especially due to less weight in comparison to heavy ceramo-granite and marble.

### The identified options were checked with the following objective:

- Highest potential
- Highest priority
- Avoid bottlenecks
- Best possible solution
- Return on investment

As a result of the factory inspection, Wehrhahn was selected as a cooperation partner to provide Xella with a tailor-made solution in order to achieve the desired increase in capacity and implementation as far as possible in parallel with ongoing production.

The new customer-specific unloading solution optimizes the work in the unloading area in time and guarantees a smooth and quality-oriented unloading process.

Learning from similar upgrade projects makes us a qualified and valuable partner to review your production process as well – let us know how we can tackle your challenges!



## Fibre cement: Advanced sheet thickness control system

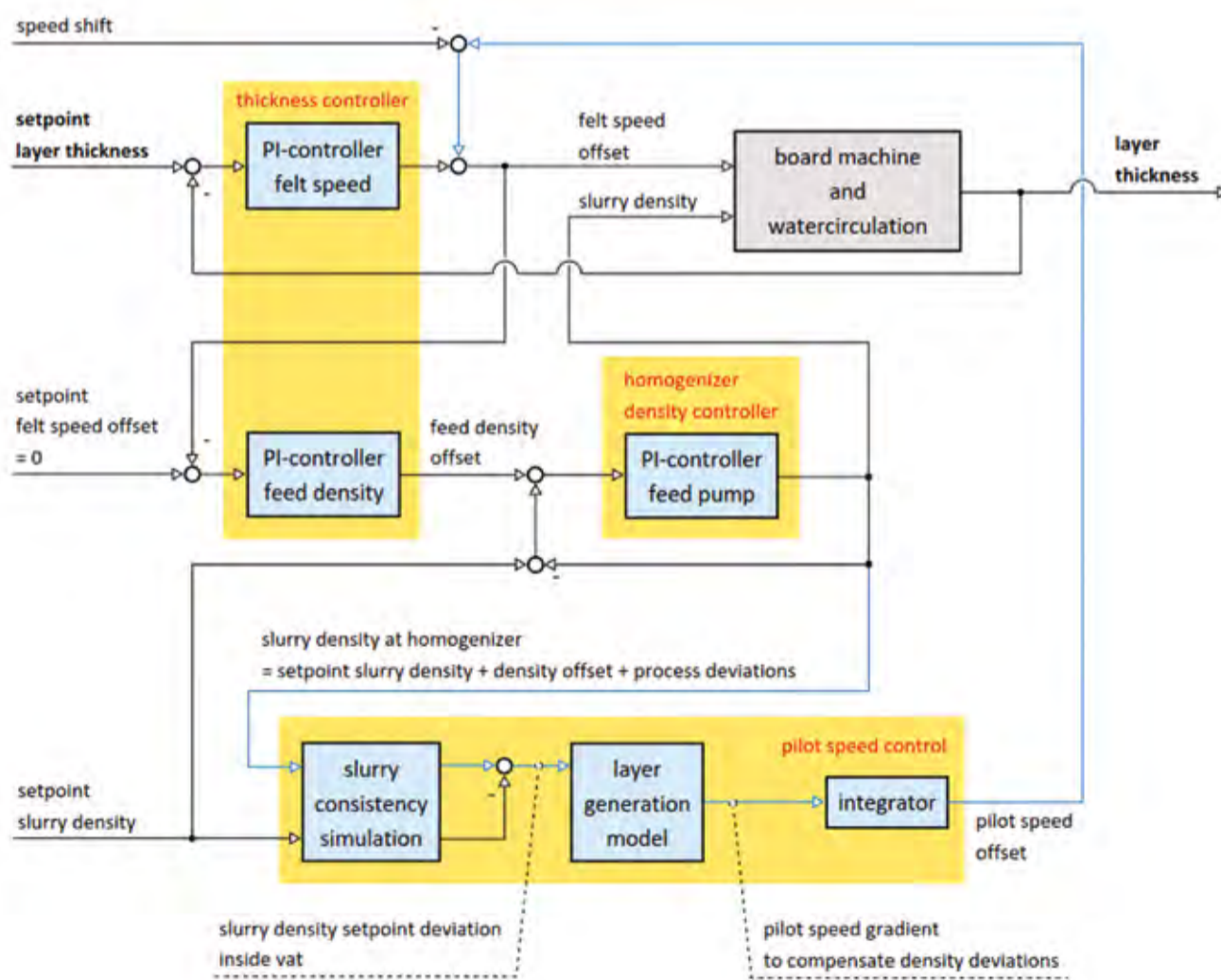
### ...by mathematical modelling and simulation

State-of-the-art sheet thickness control systems usually include two PI-controllers to regulate the felt speed and to adjust the homogenizer slurry feeding. Determination of suitable controller parameters however can be difficult and time consuming as minimum two gain-parameters and two integrative-time-constants need to be adjusted, to achieve fast controller reaction without significant overshooting.

Wehrhahn uses mathematical modelling of the involved process components and software controllers. Based on mass balances, this method can describe the entire process of slurry feeding, mixing, vat feeding and layer generation up to the forming roller. PI-controller models can link the layer thickness signal with the slurry feeding characteristics and the felt speed. The resulting set of equations image the complete control path and the thickness control system.



Fast responding sheet thickness control system.



The diagram shows the linkage between the sheet thickness controller, the homogenizer density controller and the new pilot speed control add-on with its in- and output connection marked in blue colour.

Time-discrete computer simulation allows the calculation and graphical display of the system performance on different controller parameter settings. Optimized parameters can be determined offline before operating the real sheet production. This shortens commissioning time and saves tons of raw materials due to plant operation on low thickness tolerances over years of production.

In addition, the mathematical equations can be implemented into the machine PLC control to calculate a real-time felt speed compensation for deviations in slurry feeding. Wehrhahn implemented this felt speed correction as a feed-forward pilot speed control to further increase the sheet thickness performance.

#### This add-on to the conventional sheet thickness control allows:

- faster changes in felt speed and machine capacity on a minimum of sheet thickness deviation during the adjustment phase
- minimization of changes in sheet thickness in case of homogenizer slurry feeding deviations due to e.g. changes in pump performance or flocculants feeding
- faster return to the setpoint felt speed after necessary controller actions





## Newly designed Wehrhahn fibre cement plants



“All new” 5-vat high performance sheeting machine.

### Fibre cement sheets are in high demand in many parts of the world.

Together with a carefully planned production process, fibre cement sheets make it possible to develop strong and long lasting construction. Today fibre cement is considered as a material physically suited for construction products such as cladding and roofing. It is primarily due to its function, performance and commercial value. Wehrhahn has currently a number of new fibre cement projects in house.

### From around the world

#### Sri Lanka:

Wehrhahn supplied a state-of-the-art plant for the production of autoclaved flat sheets to El Toro. The plant has come with a large number of newly designed features. The plant started production in 2017 and is the first plant for autoclaved fibre cement sheets in the region. El Toro ordered another plant for corrugated roofing sheets, even before the new Wehrhahn plant for flat autoclaved sheets started operation. The plant features several innovations in the sheeting machine and cutting plant sections. Plant installation is scheduled within 2019.

This project is another milestone for El Toro as it will be the first plant for non-asbestos corrugated roofing sheets in the region. With these two new plants El Toro is recognised as the market and technology leader in Sri Lanka. Wehrhahn and El Toro are planning to cooperate closely in more new projects to come.

#### China:

ESSE from Beijing received two high capacity Wehrhahn flat sheet production lines for air cured boards. The plant will be installed and commissioned shortly. Intention is to use a newly developed cement which offers many advantages in comparison to standard Portland cement.

#### Russia:

Kazbek from Chechnya ordered a plant for the combined production of flat and corrugated sheets. The flat sheets will be autoclaved whilst corrugated sheets are produced using air-curing technology. Wehrhahn supplies a finishing plant together with sheet production to enhance the sheet quality which will generate higher sales prices for Kazbek.

### Forecast – New plant features

Our aim is to maintain the leading global position in plants and technologies for state-of-the-art fibre cement sheet production plants.

#### Some of the latest developed and already supplied features:

#### Sheeting machine (the heart of the plant):

- Optimized vat geometry for better slurry flow around the sieves and consequently better pick-up. Completely new is the “internal over flow recirculation” (Patent is pending) which improves filtration on the sieves and is exclusively available with Wehrhahn plants.
- The layer-breaker is now operated by servo-drive and a special electronic timer synchronised with the forming roller. The new system reacts faster and is very reliable independent of the felt speed.
- All new, long lasting and easy to replace vat agitator sealing

#### Mixing

- High accuracy batching: The new batchers come with an automatic calibration system to facilitate constant high accuracy during batching.

#### Electric Control

- Automatic sheet thickness Control: A newly developed algorithm evaluates the density signal from the homogenizer in the automatic sheet thickness control system. Your benefit: Faster reaction of the system and easier process control.



Feasible production of high quality fibre cement sheets in Sri Lanka.



# Three intelligent modules of the Wehrhahn electric control system

## 1 Data Analysis – The new service from Wehrhahn

A modern production plant provides a large number of measured values, plant data, production data and machine data, which shows the condition and efficiency of the production plant or helps to make the best decision for optimization. This requires a systematic analysis and processing of the data. Many plant managers feel overloaded by the comprehensive amount of data and wide data diversity and therefore they do not have the chance to profitably use the data provided.

Wehrhahn offers to customers a detailed analysis of all production data. Based on the experience gained from a large number of built production plants, Wehrhahn can carry out a systematic data analysis (benchmarking) and point out improvement potentials. As an equipment supplier with its own design and automation department, Wehrhahn is in a position to define measures from the potential and to implement them.

### The specific target of the data analysis is:

- To find and evaluate improvement potentials

### The overall target of the data analysis is:

- Sustainable, reliable and efficient production with high product quality
- Increase/hold of overall equipment effectiveness – OEE
- Lowest possible production costs

After the data analysis, Wehrhahn is able to program automatic monitoring of specific data analyses into the plant control system that provides data evaluations in real time.

Experience has shown, that even in a well-organized AAC plant, a savings potential of more than 50,000 per year is possible after a data analysis.



Decentralized control integrated in each single machine.

## 2 Industry 4.0

### Industry 4.0 for a production line means:

- The direct connection between real production and virtual simulation (“virtual twin”)
- Real-time data exchange through the entire production process
- Self managing production process by decentralized intelligence into smart machines.

The electric control systems in Wehrhahn production plants are decentralized and the electric cabinets are integrated in every single machine, prewired and extensively tested before delivery. Intelligent simulation software allows testing the PLC programs of complete sections prior to delivery to the customer. Later the simulation tool helps to train new operators and optimize the production process once the plant is running.

In state of the art production plants, many product data, machine data, parameters and measuring data come together. The meaningful connection of these data results in experience and ideas for innovations. In many plant control systems, however, the data ends up in different departments, locations or registers, so that the actual coherence is not recognized and therefore unused. With the new uniform Wehrhahn database, in which all data are automatically collected and put in flexible correlation to each other in real time, new insights are created, insights that can be used to make precise decisions and enable an optimal production process.

### Examples:

#### Self managing machine control:

A predictive machine control that automatically adjusts to product specifications and production conditions based on product data from the PCI-System, energy data from WH-EnMS, and maintenance requirements from SIA.

#### Predictive maintenance:

Considering the energy consumption value in kWh/m<sup>3</sup> of a single machine and taking into account what type of product (raw density and cake format) is being produced and the settings of the machine parameters (e.g., speeds), then an increased energy consumption value indicates the need for maintenance.

Humans try to explain conditions and prove or refute them through structured tests, measurements, and data analysis. Instead today's

computer technologies are able to store large quantities of data everlasting, access it at any time and connect them very quickly. With mathematical algorithms completely unbiased contexts can be found which were supposed to be impossible. Some people may be worried about the possibility of using data in their private environment, but **in a production plant, this technology enables a real-time data exchange between smart machines and a self-managing production process. That is worth to be honoured as Industry 4.0.**

## 3 Load Peak Monitoring (a new tool of WH-EnMS)

### WH-EnMS

The cost for electricity includes kWh-price, fees for metering, fees for delivery service and fees for power peaks.

The fee for power peaks often constitutes 50 % of total energy costs. The maximum average power peak is measured every 15 minutes. For some contracts, the customer has to register the anticipated maximum

power peak for one year in advance with his electricity supplier. If the actually measured value exceeds the forecasted value only once, then the higher rate must be paid for the full year. In some contracts even a penalty fee is due. On the other hand, if the actual demand for power peak is less than the predicted value, the customer will not receive any refund. It is, therefore, absolutely necessary to keep the power peak as low as possible and to supervise it continuously. It makes sense to be able to make a prediction about the expected power peak within the 15 minutes period in order to be able to automatically initiate measures for reduction.

The “Load Peak Monitoring System” of the Wehrhahn energy management system WH-EnMS takes care of it. **The system continuously measures the power requirement, calculates the presumed peak power of the next 15 minutes and shuts down previously defined unnecessary consumers, like air condition, heater or air compressors if they are not needed.** WH-EnMS does not only consider consumers in the production plant, but also in administration buildings, workshops, outdoor areas, air conditioning or heating systems. Often only a short-term shutdown of a few minutes is necessary to guarantee the determined maximum power peak.



The new feature of Wehrhahn energy management system is called “Load Peak Monitoring System”.





## Fibre cement sheet facades



Fibre cement facades: beautiful and long lasting.

Few building materials offer a combination of architectural scope and strong technical specification as convincing as fibre cement cladding and roofing.

Fibre cement combines strength with ease of handling and stylish versatile colour options. Fibre cement gains its impressive strength in a special manufacturing process where thin layers of fibre cement are laminated and compressed under high pressure followed by air curing or autoclaving. A major advantage of fibre cement is its ability to resist all kinds of weather conditions. Frost and thaw heat, hail or rain do not pose a threat to fibre cement. Inside buildings fibre cement is applied as backer board in wet areas or for dry walls in heavy duty applications where fire resistance and strength are the dominant requirements.

Globally seen we experience a trend towards apartment houses in downtown areas which prepares the ground for an increasing demand for cladding materials. Here fibre cement sheets may show their unsurpassed quality in comparison to other cladding materials. Architects love fibre cement sheets, elegantly finished with a wide range of colours or even unpainted but coloured through with added pigments.

## The importance of lime

### Lime is Life.

**Lime is almost everywhere. We find lime in many different conditions in our environment and definitely in many construction materials, e. g in AAC and dry mix products.**

Hard burnt lime for the production of AAC, soft and medium burnt lime for metallurgical industry, hydrated lime for the production of dry mortars, crushed stone and limestone flour (GCC) for agriculture, chemical industry, road construction. There are even far more applications.

**Wehrhahn offers turnkey lime processing plants – starting at the limestone quarry, through limestone crushing, limestone burning, lumps of lime crushing or milling to powder, further to slaking into lime hydrate or even into nano-fine PCC (Precipitated Calcium Carbonate) powder.**

High quality AAC production requires reliable and consistent supply of hard burnt quicklime. The ideal lime for AAC has a slaking time of 4 - 12 min. up to 60 °C. Lime which complies with the required specification is often not available near a production facility. As a consequence more and more AAC producers add a lime kiln near to their AAC production plant to have a reliable source of suitable quicklime.

The ideal lime for metallurgy industry requires a completely different specification than for AAC production. It has to be "soft burnt" and comes with a size around 40 mm and shortest slaking times.

Due to the special shaft kiln design, even small size lime stones of > 25 mm can economically be burnt. This improves the viability of the lime stone quarry considerably, but even undersize or lower quality lime stone can be crushed or finely ground for many applications.

Wehrhahn has orders to build and supply several turn key lime production plants for clients in Russia. The capacities range from 100 to 600 t/day of finely ground quicklime and hydrated lime with extension to produce PCC.

Shaft kilns supplied by Wehrhahn come with precisely controlled burning process by adjustable burning lances as well as by the exact quantity of air and fuel. The technology is optimal for the production of uniformly burnt high quality lime.



## ICAAC – International Conference on Autoclaved Aerated Concrete

The conference will bring together numerous international experts to discuss issues, share ideas and gain insights into the trends, innovations and challenges of autoclaved aerated concrete.

Wehrhahn is "Gold Sponsor" and will hold a presentation "Automation goes 4.0 – The 'Smart' AAC factory".

[www.6icaac.com](http://www.6icaac.com)

4 - 6 SEPTEMBER 2018

University of Potsdam, Germany

The presentation will provide information concerning the many intelligent features in Wehrhahn AAC production plants.



## IIBCC – International Conference on fibre cement

In continuation of the IIBCC conferences held in different parts of the world, this years' conference will take place in beautiful Cape Town, South Africa. There are again specialists from all-over the world expected to join the conference. It is almost tradition that Wehrhahn acts as a sponsor of the well reputable conference.

Wehrhahn will present latest developments in the fibre cement industry during the "suppliers' day".

[www.iibcc.biz](http://www.iibcc.biz)

23 - 26 OCTOBER 2018

Cape Town, South Africa

We look forward to meeting customers, specialists of the fibre cement industry and potential new clients at the venue.



## JOURNAL



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