

concrete 21 | compact

WASA COMPANY MAGAZINE

RFID TECHNOLOGY FOR PRODUCTION BOARDS | Intelligent boards

WASA WOODPLAST | New plant up and running

HOW WASA MARKETING IS CREATED | Creative communication culture



Competence Leadership.



DEAR READERS,

WASA has never stood still, even during the pandemic. In fact, this challenging situation has helped us develop our innovations further and make them reality. At WASA, we are turning tried-and-tested approaches from the past into a digitized and connected present. That is because we have always focused on improving processes and constantly developing our products.

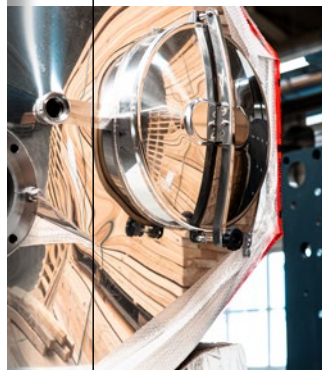
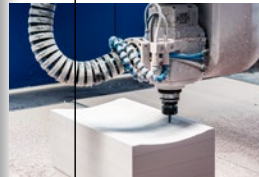
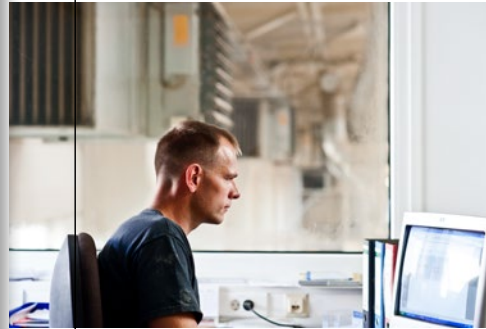
Being able to exchange information and knowledge quickly and smoothly is essential in the modern age. At a time when many of us are working from home, internal communication must be more reliable than ever, as our projects wait for no one and require our undivided attention.

WASA's products are also going digital. All of our production boards can be fitted with the latest RFID technology upon request. This makes it possible to measure the weight of the blocks placed on the boards, for example. As digitalization advances, the possibilities that it unlocks are almost unlimited.

The world is becoming faster, production methods are becoming ever more sophisticated and customer requirements ever more specific. New technical and digital developments work together like cogs in a machine, driving and being driven by each other all the time.

WASA is at the heart of this machine.

Yours, Matthias Bechtold
Chairman and CEO of WASA AG







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Intelligent boards

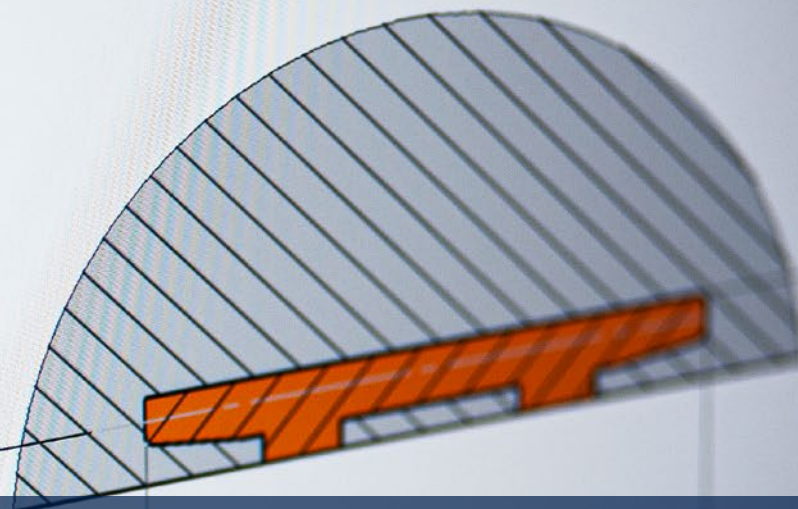
RFID TECHNOLOGY FOR PRODUCTION BOARDS

WASA Compound
GmbH & Co.KG
Meininger Str. 9, D-98617 Neubrunn
Tel. + 49 36947 567-0
Fax + 49 36947 567-21

volume

DETAIL C
MABSTAB 1:2

DETAIL A
MABSTAB 1:2



With Industry 4.0 becoming ever more prevalent, new technology is playing an increasingly important role in the production of concrete block products. A technology that was once the reserve of the automotive and food industries is now being used in the concrete block sector for a variety of purposes. We at WASA are also constantly working on new ways of incorporating RFID technology into production boards.

Terms like the fourth industrial revolution or Industry 4.0 are often used these days without a real understanding the history behind them. But this is necessary if we are to understand the rapid growth of RFID technology in recent years. This report will take a brief look back, analyze the status quo and attempt to predict the future of this technology and its capabilities. Throughout history, there have been several industrial revolutions that made great leaps forward in efficiency and quality. The first industrial revolution began at the end of the 18th century with the first machines, which were driven by steam or water power. This was followed one hundred years later by mass production, characterized by assembly lines and the use of electricity. The next breakthrough came after 1969, as automation and the use of modern electronics once again revolutionized industry. Today, talk of a fourth industrial revolution, or Industry 4.0, is everywhere. This refers to the intelligent connection of machines and processes using information and communication technology.

But digitalization is becoming increasingly widespread in our personal lives too. Things like mobile communication, accessing data and information from anywhere and at all times, or controlling our home when on holiday with a smartphone app have long become standard practice. It's all about being online at any time. While digital tools for private consumers are often just for the sake of convenience or even showing off, they have become a vital tool in industry for increasing production efficiency and quality. The concrete block sector is no exception. Here, data can be collected and analyzed to gain important insights. With the right technology, it is possible to implement dedicated systems to completely track all information, from the request for raw materials to the invoice and delivery note for the finished product. There are many examples of how internal and external sharing of information has become standard, such as ordering and shipping information in online retail. Opinions vary as to how much detail businesses really need here. User needs

range from simply conveying a mixture recipe all the way to seamless tracking of all machinery and environmental parameters. This also calls for the right systems and interface, of course, depending on the amount of information or analysis required. WASA has always been known as a driver of innovation, so we are naturally happy to do our part and support our customers as their expert partner. To ensure this, WASA focuses on both reliably allocating data and researching future expansions and conclusions that cannot yet be interpreted with the current state of RFID technology. Board identification, for example, can be used to directly allocate information like the mixture, machine parameters, product weight, curing times and more to the product or production board. Furthermore, this can be tracked throughout the entire process all the way to packaging.

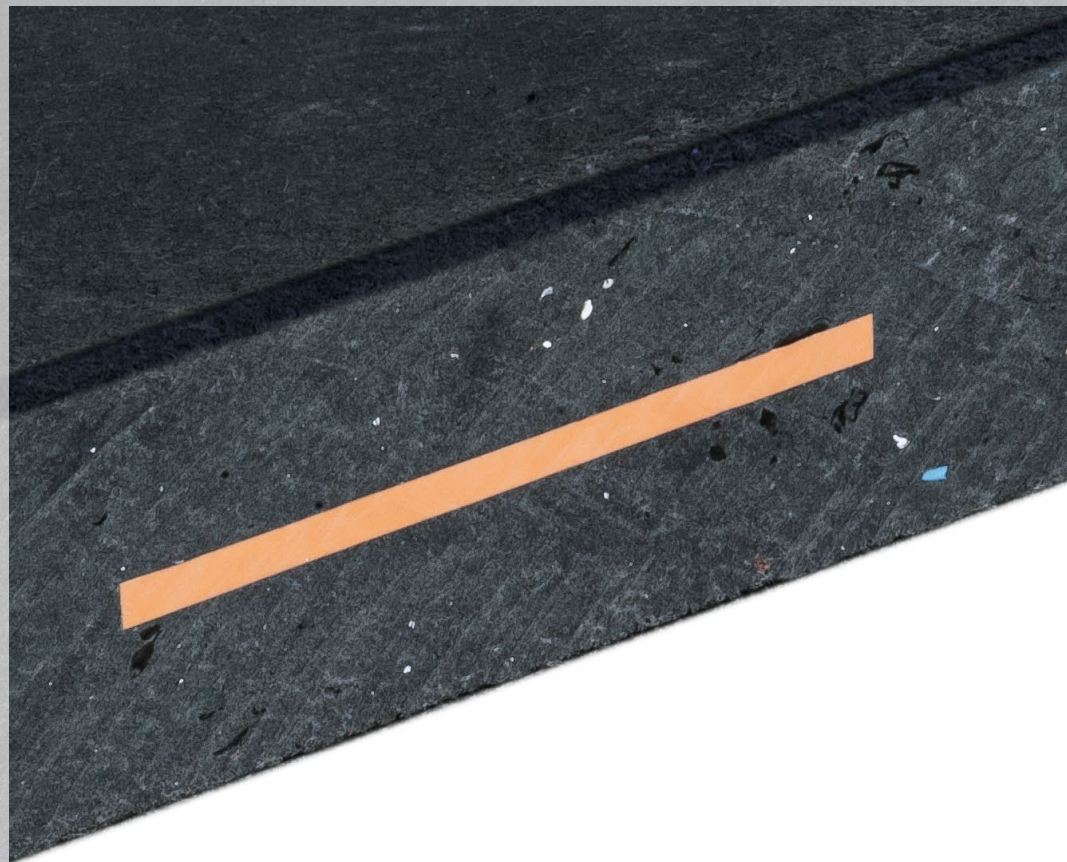
Companies have long been able to collect data in the mixing system and record it over an extended period. Each individual mix-

ture is given a mixture number that is then saved. Transferring information to the concrete block machine is also relatively simple. Things get much more difficult when the information needs to be transported through the entire plant. Although it is technically possible to convey the production board ID using software, any interventions or error corrections must be performed manually. As the complexity of the plant increases, the need for programming grows exponentially; as does the potential for errors.

The solution to the problem is to give every production board its own electronically readable ID. Radio frequency identification (RFID) technology has become an everyday feature of our lives through things like contactless payments and it primarily consists of a chip and a coil. The chip is supplied with voltage from an external pulsing magnetic field, enabling it to be written or read. The advantage of this external voltage supply is that the RFID requires no battery of its own that must then



“It’s all about being online at any time.”



“Alongside the technical requirements for making Industry 4.0 a reality, WASA also analyzes insights to help customers boost their efficiency.”

be replaced. This means that once installed in the boards, the chip remains there for the product's entire life cycle without the need for access to it.

While this may sound simple at first, there are several things to bear in mind. The position of the RFID in the board and the antenna in the plant must be chosen carefully. This makes it necessary to track whether the chip's position changes as the result of turning or buffer systems. Manual movements can also cause the position of the chip to change.

The layout of the plant or conveyor system may mean that the antenna can only be placed at a certain position (usually to the side or below the board), thus restricting the installation position of the chip. Depending on the location of the RFID and the conveyor system used, complications can also arise when two boards are too close to each other for the two RFIDs to be differentiated, for example.

RFID technology comes in several different layouts and sometimes requires the antenna to be in a fixed position. In order to ensure good transmission, as much of the coil sur-

face as possible must lie parallel to the antenna. A coin-shaped RFID can only be installed in a board horizontally, for example. This means that the antenna must be fitted beneath the conveyor system. Frequency ranges vary greatly, with little in the way of international standards. Read/write cycles are limited and time consuming. That is why it can be useful to store data in a database instead of writing it onto the chip. This accelerates the process by reducing the role of the RFID to simple identification.

Given all these various factors, it is clear that there is much more to incorporating RFID in production boards than just installing a chip. As an expert partner offering excellent service to its customers, WASA works with various RFID types and several providers of scanning technology.

We work with the customer to determine which RFID type and hardware are most suitable, as well as discussing the potential installation and scanning positions. When purchasing new boards, WASA can install the RFID technology during production. Existing customers receive expert support should they wish to retrofit the technology in their existing boards. RFID can be installed on all board types that WASA provides, from softwood and polyurethane-coated wooden pallets to glass fiber-reinforced solid plastic boards.

Alongside the technical requirements for ma-

IFM SYNTRON

The **Tire Tag*** has a storage capacity of 64 bytes.

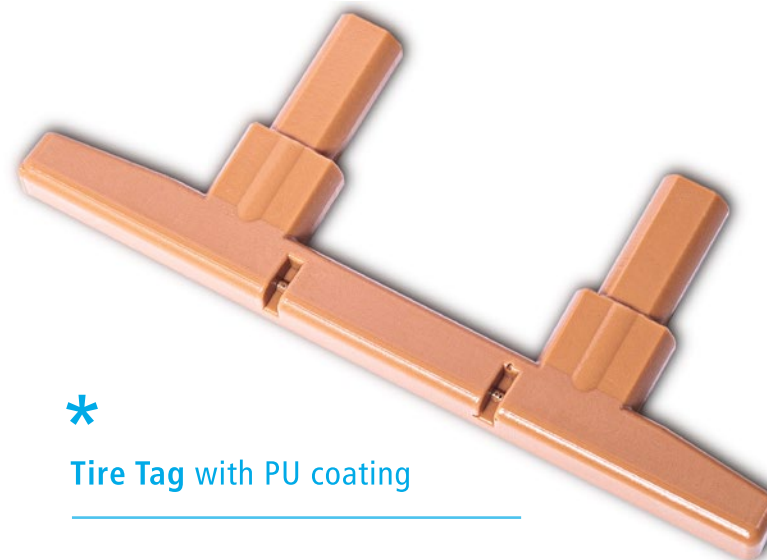


SIEMENS

The **Siemens** chip has a storage capacity of 128 bytes.

king Industry 4.0 a reality, WASA also analyzes insights to help customers boost their efficiency. The data collected can provide information about how boards are used. For materials like softwood in particular, the boards need to be used regularly in order to keep moisture levels constant and prevent the damage that could arise through drying out.

The unique ID of the product and therefore the board forms the basis for a wide range of applications and customer requirements. This opens up several new options, including boosting efficiency in production, quality assurance, processing the production data in an ERP system and product tracking, to name a few. Users can also respond to more demanding service needs by providing customers with information in digital form. More and more customers are using this open communication with WASA to shape their digital future.



*

Tire Tag with PU coating



KORTMANN BETON

Quality at its best

01



The town of Schuettorf in the County of Bentheim, Lower Saxony, is home to a manufacturing plant for concrete and finished products that may not be the biggest, but is certainly one of the best. The Kortmann plant aims to offer the best quality in the industry.

Founded by Carl Kortmann in 1950, the company began life as a forwarding and trading business. Kortmann initially supplied concrete products to the local area, before starting its own production a few years later. Since 1970, the company has been managed by the second generation of the family under Karl

Kortmann. Sons Henning and Matthias joined the business seven years ago to form the third generation of the company, which stands out thanks to the extraordinary quality of its products. Kortmann produces six days a week in a three-shift operation.

Among its leading products are its “Miscela” and “Passione” ceramic panels. These innovative products offer a unique combination of a ceramic surface with a strong concrete base. During the production process, the concrete is cast together with the ceramic surface. The spacers on the panels ensure an even joint spacing of three millimeters, allowing quick and easy laying on most substrates.

The company is located next to the interchange of the A30 and A31 highways, between the states of Lower Saxony and North Rhine-Westphalia. It also has its own fleet of vehicles that enables quick and flexible delivery to customers from the North Sea to the Ruhr and from Amsterdam to Berlin.

When selecting the production boards, Kortmann survey the various options on the market before choosing the WASA UNIPLAST® ULTRA. Over 7,000 of these glass fiber-reinforced, solid plastic boards have been in use since 2017. This smooth and level production board offers outstanding vibration transmission and is essential for producing Kortmann’s premium concrete products. As family businesses like Kortmann always look at the big picture when taking major decisions, it was two more outstanding properties of the WASA UNIPLAST ULTRA® that convinced the company to make the purchase. Both the long service life of up to 15 years and the ability to reground the boards to extend this even further make WASA UNIPLAST ULTRA® an extremely attractive option.

Based on the load information from the customer, WASA’s technicians calculated that a 50 mm thick board would meet the requirements for bending. The thickness was increased by another two millimeters to allow the boards to be reground.

Given that Kortmann aims to be the quality leader in the concrete products market, it was no surprise that the company sets high standards for its suppliers too. KBH, a building materials company from Lachen, southern Bavaria, was charged with transporting the WASA UNIPLAST ULTRA® from the lowering frame to the stacker. The plan was to use the production boards to supply a Kuka robot with “good” (i.e. defect-free) concrete blocks for sorting.

The robot would also be given boards with defective blocks. For Kortmann, it was important that the production boards with both the defective and good products were moved in and out of the cuber as smoothly as possible. KBH was to install a cuber and a turning device alongside this.



02

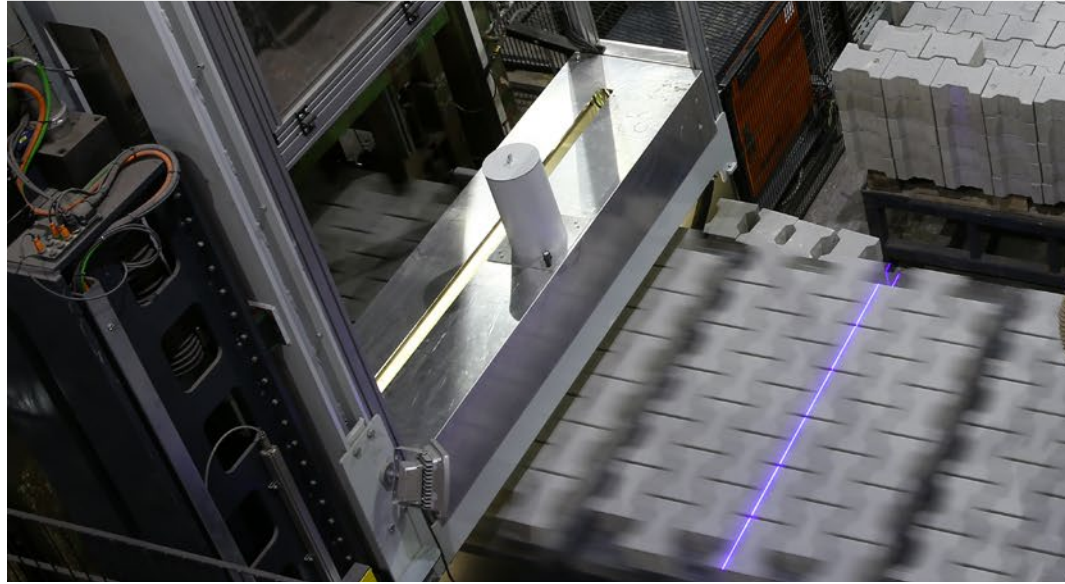


03



04





01 | 02 | 03 | 04 | 05 | 06 | Images of the modern production facility at the concrete plant

All tasks were carried out to the customer's complete satisfaction. The conveyor on the dry side was designed as a chain conveyor with a special rubber covering that gently transports any type of production board. A raising and lowering station was integrated on the dry side of the conveyor, so that the production boards could be raised and lowered without interfering with the transport and cuber.

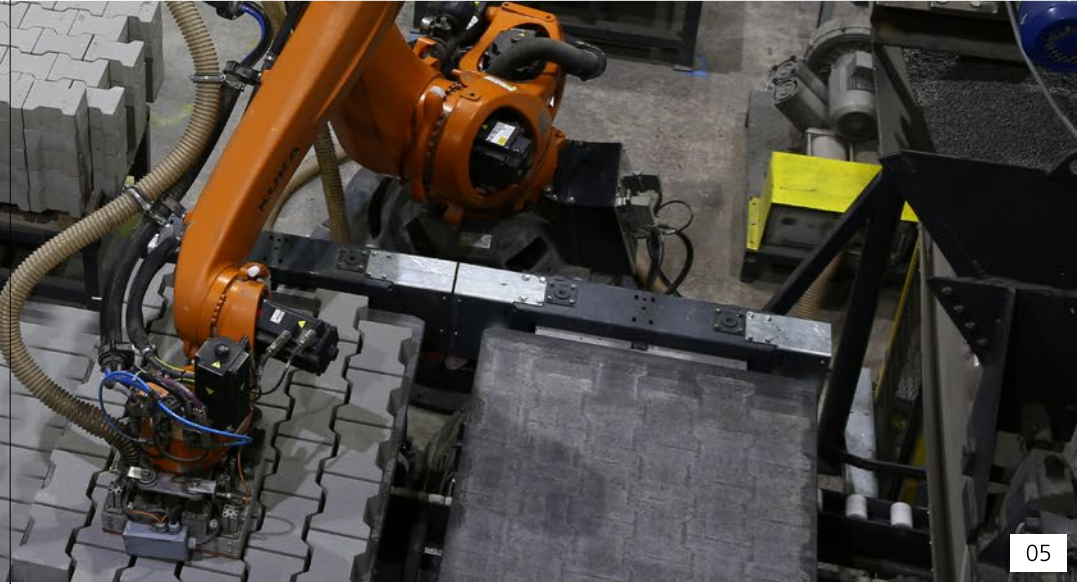
Kortmann wanted a very short cycle time for the transport system. Due to the limited amount of space and the resulting short distances, acceleration and deceleration ramps are only of limited use. The state-of-the-art cuber is fully electrical. In addition, the strict quality management is augmented with an automatic block height measurement system provided by R&W Industrieautomation and the use of a Qaver.

Kortmann also values environmental protec-

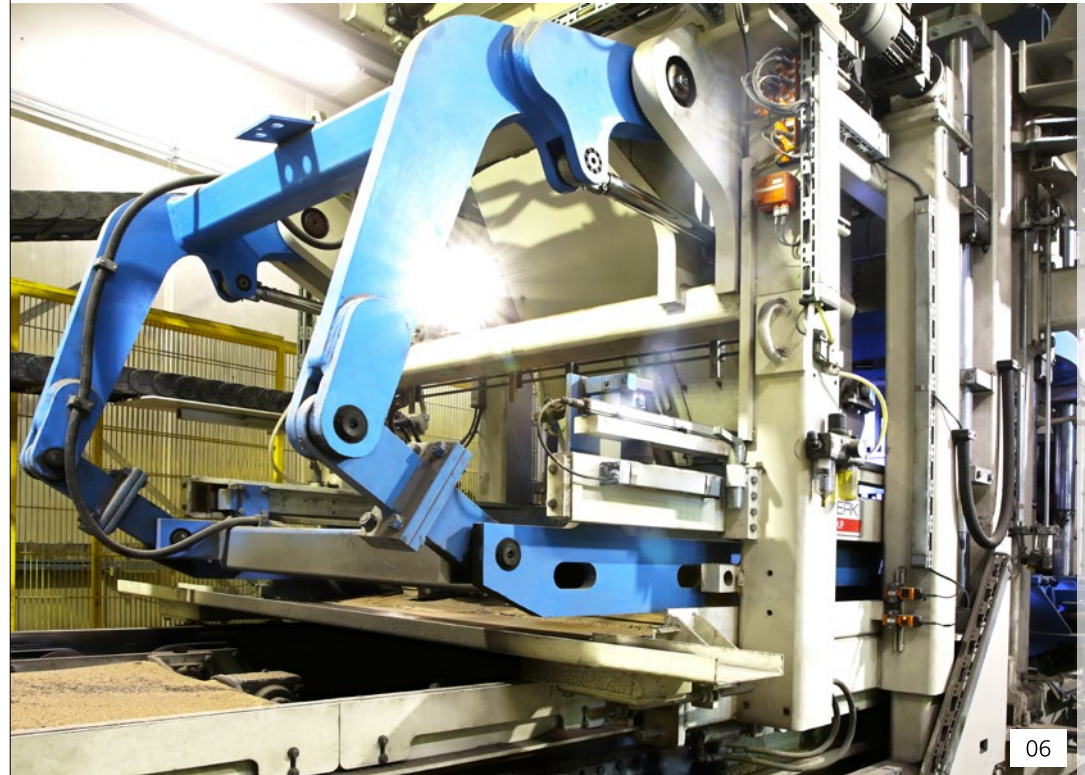
tion and sustainable use of resources. Blocks that do not meet the extreme quality requirements and are rejected from the production process are recycled. The plant has its own cogeneration unit that uses this waste to produce a large proportion of the required electricity and heat.

Kortmann aims to produce a million square meters of paving stones per year. Alongside the concrete block plant, the company produces precast elements that make up around half of the overall business.

Kortmann is well placed to achieve its goal of becoming one of the best in the industry. Its production equipment and machinery will play a key role in doing so. As the company welcomes the third generation of management in the form of Henning and Matthias Kortmann, together with their young and dedicated team, we are proud to have worked with such an ambitious family company. ■



05



06



WASA WOODPLAST

New plant up and running

As a result of high demand and stricter customer requirements for production boards in concrete block production, WASA decided in 2019 to invest in a new, almost fully automated plant to produce a wooden board coated with polyurethane.

The plant was designed and developed by leading engineering companies, along with WASA's own design department and a special machine construction specialist. Alongside automation and the associated reduction in staffing costs, the new plant was also seen as a way to increase production capacities to meet constantly rising demand.



What makes the technology here so special is the production process. The softwood core is first placed in a twin-casing aluminum mold, before being moved into the pressing chamber. The locking force required to coat the wooden core is generated by a specially developed bellows. This system can generate locking forces of over 100 metric tons and prevents the molds in which the softwood cores are positioned from bulging outward. This reduces the tolerance of the board thickness to a minimum. The polyurethane metering system works with a relatively slow curing PU system, in order to give the coating enough time to penetrate deep into the wood structure and create a strong bond with the wood surface. This represents a major advantage compared to faster curing PU systems of the kind used by competitors.

The press is designed to simultaneously fill four cavities with polyurethane. The molds are conveyed by systems located to the left and right of the press. A rail-guided filling carriage runs along the rail to load the respective chambers with the steel molds. The buffer section can hold up to 15 steel molds. A pair of Fanuc robots are responsible for placing the cores inside the molds and removing the coated pallets.

The system is not exactly lightweight. The press alone weighs 120 metric tons, while the individual steel molds weigh in at 1.2 metric tons each. The total system weight is around 200 metric tons. Added to this are the PU tanks positioned above the press as a day silo, which offer a total capacity of 10,000 liters.

Thanks to this new production technology, WASA is prepared for whatever challenges the market presents. ■



01 | The WASA-WOODPLAST system undergoing completion

02 | Rail-guided reworking carriage for the molds

03 | Welding for the finishing touch on the press

04 | Rail-guided removal station for the steel molds



SIMONE HENKE

Sunshine for everyone!

Every company has an identity, an attitude and a positioning. Alongside marketing strategies and advertising budgets, the personalities involved can play a major role in how a business is perceived. They are the people who represent the business, from the C-suite and managers' offices to the production floor.

At WASA, our people shape the business every day. Simone Henke has been working at WASA since 2007 and is an excellent example of this.

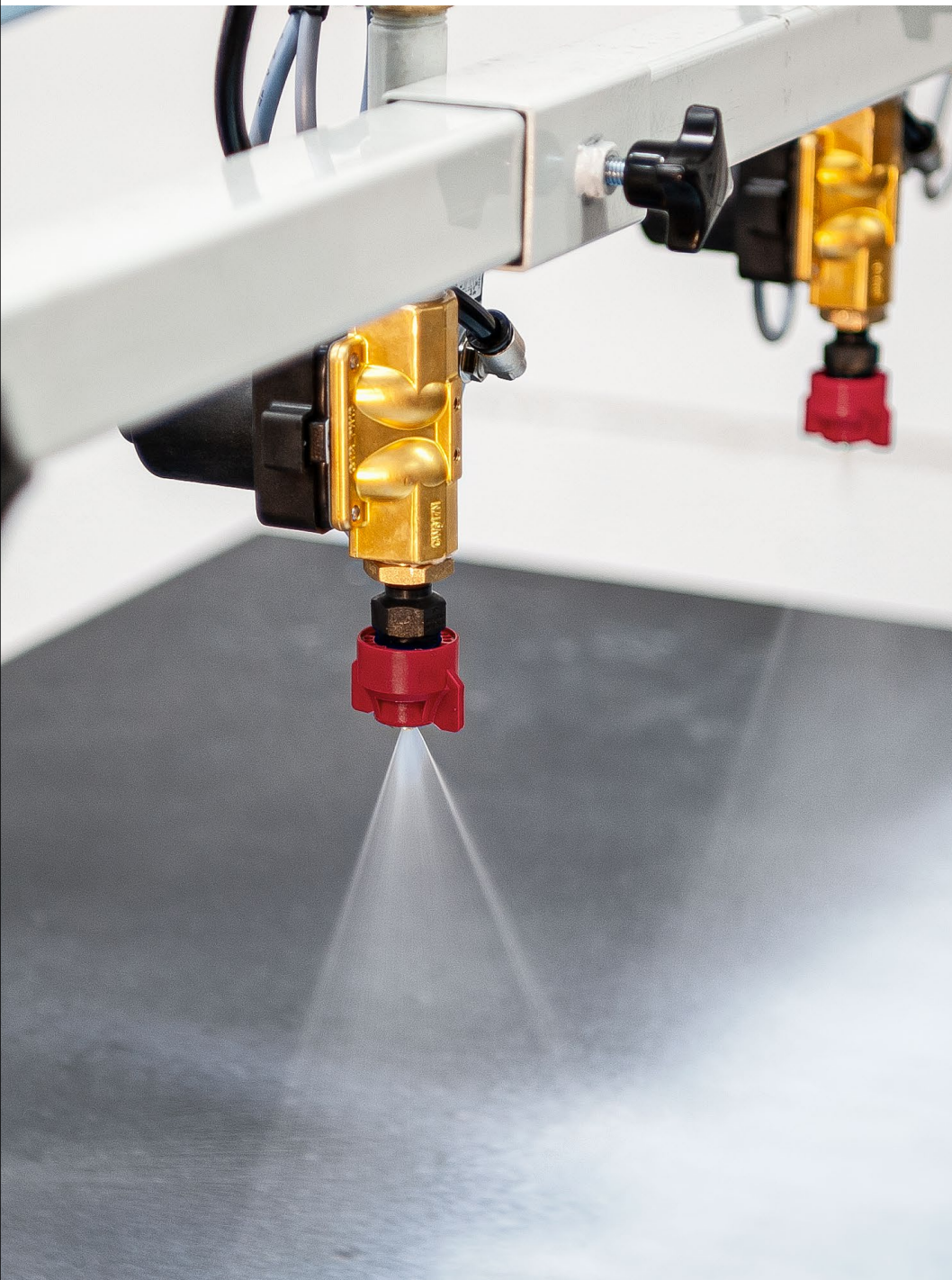
She can often be found riding her bike, racing around the corner in her company car or caring for the flowerbeds dotted around the company premises, which would not look half as beautiful without her hard work. She embodies many of the things that make working at WASA so enjoyable. Above all, those around her value her warmth and enormous dedication. She is truly someone who will go the extra mile.

Simone describes herself as a happy person, and draws this happiness from the relationships with the people she likes to have around her. A particular source of joy and energy is the time she spends with her grandchild. We are so lucky to have someone like Simone Henke, who makes our working lives better every day. ■



WASA PROTECT

Protection and care





02

In 2019, the WASA Group expanded its product range to include the WASA ACCESSORIES and has been adding to these ever since. Based on their properties, these accessories are used to maintain boards or simplify various work processes in concrete plants, for example.

The range offers products like the WASA SMART REPAIR kits for easy repairs to panel surfaces and WASA PROTECT for maintaining production boards.

Production boards are subjected to incredible stresses in concrete plants up to 24 hours a day, with a service life that can last decades. Our biodegradable release agent, consisting of a water and oil emulsion, prevents concrete adhesions and can extend the service life of the boards even further. The product also has the positive side effect of reducing the amount of dust in the plant, as it binds the particles that arise during production. As well as ensuring cleanliness and

smooth operation in the plant, this is also important for occupational health and safety, as it reduces exposure to dust that can enter the lungs.

WASA PROTECT is suitable for protecting all production boards. The release agent is delivered in an IBC and applied using the WASA ATOMIZER spray bar. State-of-the-art technology guarantees even spray application without overspray. The WASA ATOMIZER is compact and easy to install. Alongside the aforementioned benefits, using a release agent also reduces the amount of wear on the sweeping brushes when cleaning the production boards after raising the blocks. This is because WASA PROTECT is proven to reduce concrete deposits on the production boards. ■

PROTECTION AND CARE FOR PRODUCTION BOARDS

- ✓ Prevents concrete adhesions
- ✓ Extends service life
- ✓ Biodegradable concentrate
- ✓ Reduces dust in the factory
- ✓ Suitable for all board types

02 | WASA ATOMIZER in action | 03 | The WASA ATOMIZER is easy to use



03

Form meets function

WASA PUR

Liquid polyurethane for creative concrete factories

In 2006, WASA began producing polyurethane wetcast molds for premium concrete products. Today, wetcast molds are made using modern metering and mixing systems for small and large series. The first question here was which of the polyurethane synthetic resins available on the market was best suited for the punishing work in the concrete plant.



02



03



04

WASA's experts quickly discovered that the standard polyurethane was not up to scratch in terms of quality or durability. Customers were also increasingly looking for elegant, aesthetically pleasing and generously sized concrete blocks.

The answer came in the form of Rampf Polymer Solutions, a leading specialist in premium cast resins. Working together with and exclusively for WASA, the company developed special polyurethane systems tailored precisely to the needs of the concrete industry. WASA has been using the special material since 2013, with thousands of delivered wet-cast molds successfully in use around the world.

Today, numerous creative concrete processors are tackling the challenge of producing wetcast molds with simple means for a small series or for a block design. As a special offer for proprietary Wetcast mold manufacture,

concrete factories can rely on a proven system with the new WASA PUR.

WASA PUR is a low-viscosity, two-component casting resin. Due to the low viscosity of both components and an extended pot life of at least 30 minutes, the casting mass is simple to process using an open, manual casting technique. WASA PUR is made in Germany and can be delivered quickly directly to the customer. The casting resin has a long shelf life and must be used within 12 months of the production date.

When it comes to consulting, WASA is able to rely on its many years of experience in mold making, and also discusses more economical alternatives with the customer. Customers can arrange to have their pre-prepared models delivered with casting frame to WASA. The resin is cast using computer-aided, mechanical processing technology.



05



Lithonplus specializes in developing, producing and marketing premium concrete products. It is one of the leading suppliers in Germany.

Among other areas, its product range focuses on the planning of open spaces and traffic surfaces. Thanks to its outstanding properties, WASA PUR contributes to the incredible success of Lithonplus' premium product. ■

01 | Casting a wetcast mold

02 | **03** | **04** | The casting process

05 | Wetcast mold

06 | **07** | Installation situation for bus lane curb

WASA PUR OFFERS FOLLOWING ADVANTAGES:

- ✓ Easy-to-mix components, creating a homogeneous resin
- ✓ Cast mass vents and evens out quickly
- ✓ A proven and tailored separator mixture for model molding and concrete block production
- ✓ Detailed depiction of designs
- ✓ No discoloration on the end product
- ✓ Free of plasticizers and mercury
- ✓ Meets all specifications of the European Chemicals Regulation REACH



NEUER KANZLERPLATZ | BONN

Reaching for the sky

Neuer Kanzlerplatz, the new face of the city of Bonn, is growing.

Building 2 is almost finished and will soon be ready to hand over to the lessee. Construction work on buildings 1 and 3 has also progressed well. The elevator rails, portals and cabins have been installed, meaning that the building shells are accessible.



The construction of Neuer Kanzlerplatz is commencing as planned with the help of WASA CONSTRUCT.

To clad the outer facades, the developers selected (GFRC) concrete elements delivered and fitted by Lindner. WASA Compound GmbH & Co. KG was commissioned to create the necessary PU molds at the start of August 2020, with the first molds delivered later that month.

Lindner is charged with fitting a total of 2,786 facade elements. To produce such huge quantities in such a short space of time, WASA delivered 30 molds in 12 different models. The casing consists of a sturdy base frame and an inserted casting mold made from polyurethane. The largest of these measures 11 meters in length and weighs over 240 kilos. Some of the molds have been used to produce several hundred facade elements throughout the course of the construction

work. Every element fitted, from the very first to the very last, must have the same surface quality and identical geometry. This places huge demands on the WASA's PU system WASA PUR. The last and tallest building, the skyscraper, is due to be completed in mid-2022. Buildings 2 and 3 will be opened in the first quarter of 2022.

Neuer Kanzlerplatz will consist of three buildings surrounding a large open square. Upon completion of the tallest building in 2022, Neuer Kanzlerplatz will transform the skyline of Bonn. Measuring 101.5 meters in height and with 28 stories, the city's third-tallest building will form a characteristic landmark. The new development will only be surpassed by the Post Tower and the Lange Eugen, located in the former government quarter close to Neuer Kanzlerplatz. ■





HOW WASA MARKETING IS CREATED.

Creative communication culture

When the world market leader for production boards creates a new advert, it requires more than just a great deal of creativity. The company calls upon input from every area of the business to formulate a confident and sometimes playful message.

This was, after all, a complex and creative process, resulting in the new WASA front-page advert that appears every year on the cover of the internationally renowned CPI magazine.

Creative minds were invited one morning to the "loft", a photo studio fitted with the latest technical gadgetry, in order to capture the image for the advert in WASA's 60th anniversary year.

WASA's front-page advert for CPI has been a highlight in the entire construction and concrete industry for many years. Instantly recognizable as a WASA creation, the advert reveals layer upon layer of playful, self-deprecating messages every time you see it, going beyond the usual norms, patterns and conventions of communication. You could call it communication culture at its best, with nothing left to chance and capable of provoking a huge range of reactions, all culminating in one big topic: WASA. The adverts are so good at doing this that they get tongues wagging throughout the industry. WASA is perfectly happy to provoke this discussion, of course, as any attention for the company and its products is welcome.

The advert was conceived and designed by an agency in the central German city of Darmstadt. The image was captured by the Frankfurt-based photographer Nico Wallfarth, who has been instrumental in designing and implementing all of WASA's marketing and visual imagery with the studio NIC HAY PHOTOGRAPHY & DESIGN.

The topic of this year's advert is the beginnings of WASA's six decades and counting of success. The image shows a young boy playing in a sandpit, forming sand bricks on a

wooden board with a little mold. The headline translates as "Even big successes start out small". WASA's incredible journey is reflected in the 1960s styling of the image, the decade when the company was founded. The boy on the image was edited into a decades-old original photo.

The WASA advert therefore creates both a visual and contextual thread between the ambitious, striving years following the company's foundation and the confidence of today's global market leader. ■



02 Photoshoot in the studio

Even big successes start out small

Intuition became a vision, and a vision became the goal: WASA has been setting new standards in the concrete industry for six decades – always with the ambition of making good products even better. As the world market leader, we are motivated to stay a step ahead of the competition without losing sight of our tradition. We focus all our energy on the challenges of the future, and will continue to do so for the next 60 years.

WASA®

Competence Leadership.

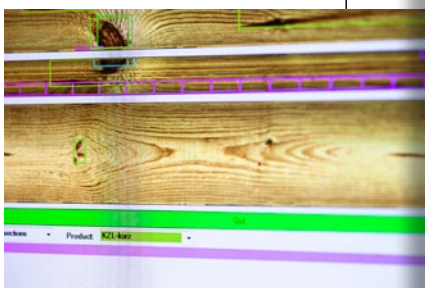
WASA BOARDS

WASA CONSTRUCT

WASA ACCESSORIES

WASA SERVICE

WASA-TECHNOLOGIES.COM



TOPIC: THE FUTURE | Three generations in conversation

MARK MUNICH | WASA expertise for high-tech facades

CLIMATE & ENVIRONMENT | Ecology meets efficiency

IMPRINT

PUBLISHER

WASA AG
Europaplatz 4
64293 Darmstadt

REPRESENTED BY

Matthias Bechtold (CEO)
Peter Webel
Tobias Hess

CONTACT

Telephone: +49 6151 7808-500
Telefax: +49 6151 7808-549
info@wasa-technologies.com
www.wasa-technologies.com

EDITORIAL STAFF

Matthias Bechtold, WASA
Tobias Hess, WASA
Dr. Arno Schimpf, WASA
Jannik Webel, WASA
Susanne Anding, WASA
Nico Wallfarth, NIC HAY

DESIGN & PHOTOGRAPHY

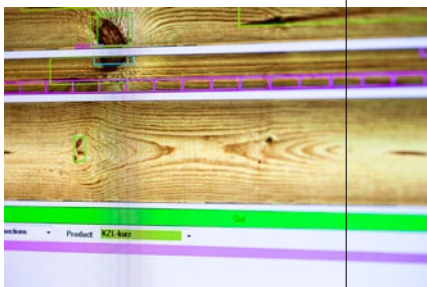
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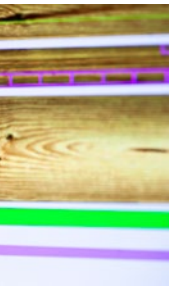
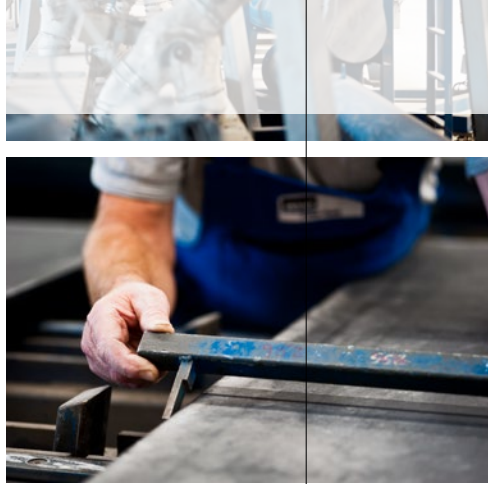
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ALWAYS 100% READY – EVEN WHEN EVERYTHING IS UPSIDE DOWN.

The world is in disarray, still.

There have been many changes. Circumstances we take for granted have revealed their enormous significance through the limitations imposed by the COVID-19 pandemic.

One essential fact remains true at WASA however: Our actions have always been guided by the virtues of decisiveness, diligence and prudence. For more than 60 years. Every day. For our customers. For you.

To one hundred per cent.



WASA BOARDS

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