Siempelkamp

bulletin

THE SIEMPELKAMP MAGAZINE **02_2016**

First symposium for modifications
Constructive dialog in Brazil

Berneck starts up new press line
Consistent investment in modern technology

Teamwork from one source
Synergy between Foundry and Machine Factory

> TEAMWORK MEANS TO RECOGNIZE THE OPPORTUNITIES TO BUILD BRIDGES.

Dr.-Ing. Hans W. Fechner Spokesman of the Management of G. Siempelkamp GmbH & Co. KG

Dear Readers:

"Teamwork" is the motto of this Bulletin edition. Companies define teamwork in many different ways. Maybe you, too, have your own special way to encourage teamwork in your business.

At Siempelkamp's headquarters in Krefeld trainees face a special challenge on their first day of work. They have to build a bridge with just a few materials such as paper and glue. This bridge has to be a load-bearing construction and must pass a stability test. For each team the stability test is the moment of truth: Is our bridge load-bearing or will it collapse under load?

The challenges that our trainees face can easily be extended to our entire business. Within the Siempelkamp Group, teamwork means to build bridges between departments or between the individual companies within the group.

The most important bridges are those we build between you and your teams. Whether it is during the negotiation phase, during the planning or engineering processes, during the commissioning phase, during service, training or symposia, within the framework of each new project our teams build bridges that stand the test of time.

These bridges last. That is why many of you have come our way time and again for many years or even decades. This magazine will report about the bridges between you and us and the many different ways that define teamwork for us.

On behalf of the Siempelkamp team I wish you a pleasant time reading this edition of "Bulletin".

Dr.-Ing. Hans W. Fechner

: People

: Markets

: Machines

6

The first Siempelkamp symposium for modifications took place in Florianopolis, Brazil, in 2016. The topic, "Everything that is making your plant state-of-the-art", hit the bull's eye for the 24 participants. After all, a professional exchange works best in a direct dialogue.

> Read more about this project on page 8

38

Consistent investment in modern technology – this is the foundation of what is meanwhile the fourth order of the Brazilian wood-based materials manufacturer Berneck. Our report shows why it pays off in our industry to swim against the current.

> Read more about this project on page 40

56

Giant castings, produced at Siempelkamp Foundry, are then machined at Siempelkamp's machine factory. Hardly any other synergy in Siempelkamp's overall concept better illustrates concentrated teamwork and coordinated processes!

> Read more about this project on page 58

PEOPLE

At Siempelkamp teamwork starts by connecting trainees, professionals, thinkers and practitioners, in-house departments, sales and service with one another. Only then we can succeed in providing our customers with the best-possible product for their needs – a service that is safeguarded by the 360-degree view of all participants.

Siempelkamp symposium for modifications in Brazil: **Questions, answers, and hope for good partnership!**

→ By Martin Kemmsies and Dr. Stephan Niggeschmidt

A professional exchange of knowledge works best at a personal level. That's why Siempelkamp Logistics & Service GmbH and Siempelkamp do Brasil invited representatives of the industry to a symposium on site in Florianópolis. This symposium was a clear statement for how much Siempelkamp appreciates its numerous customers in Brazil. The topic "Everything that is making your plant state-of-the-art" hit the bull's eye for the 24 participants.

From April 1st to 3rd, the main MDF and MDP manufacturers in the country came together in the capital of the Brazilian federal state of Santa Catarina at the invitation of Siempelkamp. Among them were Arauco, Masisa, Berneck, Fibraplac, Sudati, and Bonet. The event was hosted by Martin Kemmsies, Siempelkamp's managing director for Latin America, Michael Willemen, head of modernizations and retrofits at SLS, and Volker Schölzke, sales engineer for electrical modifications.

"All participants operate Siempelkamp plants. Therefore the focus of the symposium was directed towards optimizations that can improve existing plants," says Martin Kemmsies. In this context all innovations and optimization concepts for MDF and MDP plants were put on the seminar's agenda.

For three days a common theme was discussed during the symposium: How can we further improve our plant? Which options do after-sales service, system upgrades, and new

Welcome to the first symposium for modifications

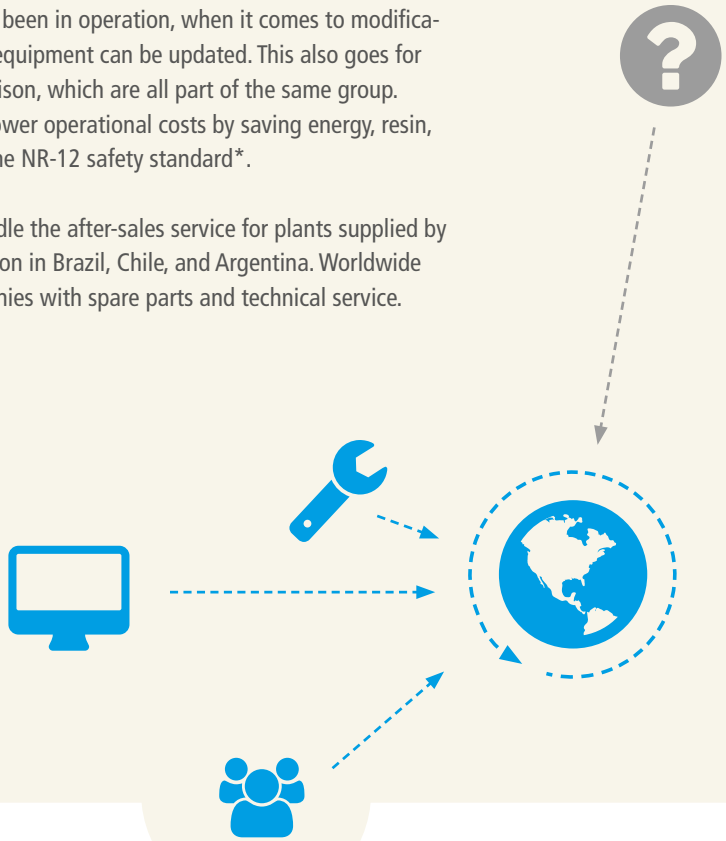
SLS: present on all continents with all around service

Siempelkamp Logistics and Service GmbH (SLS) provides all around service for customers worldwide. SLS not only supplies spare parts but is also responsible for their installation at the customer's site. Furthermore, SLS plans and handles modifications and upgrades to existing presses and plants. SLS service specialists support customers with comprehensive maintenance and repair work as well as with troubleshooting tasks.

No matter for how long the plant has been in operation, when it comes to modifications and upgrades all Siempelkamp equipment can be updated. This also goes for plants made by Küsters, Metso, and Bison, which are all part of the same group. Modifications improve the capacity, lower operational costs by saving energy, resin, and wood and even ensure to meet the NR-12 safety standard*.

In Curitiba, Brazil, ten employees handle the after-sales service for plants supplied by Siempelkamp, Küsters, Metso, and Bison in Brazil, Chile, and Argentina. Worldwide SLS supports more than 1,000 companies with spare parts and technical service.

*NR-12 = "Norma Regulamentadora" – a Brazilian standard that is primarily regulating all aspects regarding accident prevention and the prevention of work-place-related illnesses.



Optimizations for existing plants – the core focus of the symposium.

technologies by Siempelkamp open up? "We pretty much knew what was going to be introduced to us at the seminar but the technical details were important to us, for example, how the new technology functions," says Paulo Costa, project manager at Berneck.

The recently opened Siempelkamp plant for MDP production at Berneck already includes all technical features discussed during the symposium. "We are still in the learning phase and came to the symposium to see what else we can use in both our new and older factories." All four presses at Berneck were supplied by Siempelkamp; Berneck is convinced of Siempelkamp's technology: "Siempelkamp is not only the market leader in sales, but also in technology. I don't know exactly what the percentage is today, but in the past Siempelkamp held a market share of 90% in Latin America," says Paulo Costa. This statement is confirmed by Michael Willemen, head of modifications and retrofits at SLS.

Concentrated learning

3 DAYS

FOR THE EXCHANGE OF EXPERT KNOWLEDGE

… steer plant operators and their service partner together towards a current goal

Edison Meira, maintenance manager at Masisa, took part in the Siempelkamp symposium to find out more about the new technologies that the German partner offers. Of equal importance for him was to find out about optimization options which can be applied to plants of an older generation. Masisa operates plants by Küsters and Siempelkamp and a significant part of all suggested improvements is geared towards older machines.

In reaction to current events another topic was on the seminar's agenda for Edison Meira. A continuously rising need for energy and too little use of renewable resources have caused an aggravated situation in the Brazilian energy sector. As a result energy efficiency has become the decisive factor when it comes to efficient board production.

The symposium also paid off for both participants from Arauco do Brasil. The two people attending the symposium were Rui Marcos Faria de Souza, coordinator for technical planning and Alberty Carneiro de Oliveira, process coordinator, both visiting from the factory in Jaguariaíva in the federal state of Paraná. Arauco operates a ContiRoll® press which started operation in 2013 and a press made by Küsters which has been running since 2001. For Rui Marcos Faria de Souza new important contents opened up: "For example, I did not know that an update for the ContiRoll® press is now available."

The seminar was also valuable with a view to presses made by Küsters and possible updates: "We achieve good results with our Siempelkamp products, from the forming line to the press. These could be improved by using the technology that was introduced to us with the updates," praises Mr. Souza. Alberty Carneiro de Oliveira came with the objective to become more familiar with Siempelkamp machines, especially with the MDF EcoResinator and the pressure distribution plate technology. "Since my work revolves around production processes, these topics were especially relevant for me. I am very satisfied with the information that was provided here," he concludes.

No matter how specific a question was, during the seminar or during a personal conversation everybody was provided with an answer or solution on how to make their corresponding equipment perform even better. The SLS services were complemented with central accompanying products which Siempelkamp offers as a full service provider. For this reason, Gottfried Bluthardt, sales manager at Siempelkamp's subsidiary Büttner, was also represented with a presentation at the symposium. The topic: "Higher outputs during fuel combustion and energy savings" – a home play for Büttner, whose reputation as the world market leader in drying technology and thermal energy is well known in Brazil. Due to the fact that many plant operators operate Büttner products, this topic was also of great interest to the participants of the symposium.

In summary it can be said: "For us the symposium was a great opportunity to come in contact with our customers. To find out that a machine is still operating many years after the first-board event and to hear how significant the machine is to the plant operator, is a compliment for us," says Michael Willemen. Martin Kemmsies adds: "We were very pleased to see old customers and friends again and to talk in detail about their plants in a relaxed atmosphere. As a result of this excellent experience, we have decided to have another meeting of similar nature in Chile at Masisa and Arauco in October."

We say "Muito Obrigado!" for so much interest and for the constructive conversations!

"The focus of the symposium is on optimizations that can be carried out on existing plants."

MARTIN KEMMSIES, SIEMPELKAMP MANAGING DIRECTOR FOR LATIN AMERICA

The participants of the first Siempelkamp symposium for modifications in Brazil

"Team Malaysia" for Siempelkamp:
Learning and sharing between Kuala Lumpur, Singapore, and Krefeld

→ By Rainer Schmitz

To provide optimum support to the Southeast Asian and Chinese markets and to have well-trained personnel available locally for installations and startups, Siempelkamp opened up an office in the Malaysian metropolis Kuala Lumpur in 2007. Under the disciplinary management of Mr. Henning Gloede (Manager Siempelkamp office in Singapore), Malaysian electricians and mechanics are working at the new office, optimally trained according to Siempelkamp standard.

1978

Opening of the Siempelkamp office in Singapore (initially as Germapore Pte. Ltd)

The Siempelkamp office in Singapore was initially opened under the name Germapore Pte. Ltd in 1978 and was renamed to Siempelkamp Pte. Ltd in 1989. It is the interface between Krefeld and the new branch office in Kuala Lumpur to ensure the optimum level of training for the new team. An important principle for optimal quality and support is the reliable transfer of knowledge between Krefeld and the international teams.

The Siempelkamp Service Team

Rainer Schmitz: global learning and sharing in mind

"The applicants that prevailed in the recruiting interviews were invited to Krefeld for one to two weeks. In this way, the Malaysian colleagues were familiarized with the Siempelkamp headquarters in Krefeld and the employees from the areas of automation, mechanical and hydraulic design, and technical field service. In a training course we provided the team from Malaysia with a theoretical base for their future tasks," reports Rainer Schmitz, head of project management and startup of automation systems at Siempelkamp in Krefeld. Employees from the technical fields of hardware design, software development, project management automation technology, and the Siempelkamp subsidiary ATR Industrie-Elektronik GmbH trained the new employees on how to use electrical documentation and the functions of our systems.

During their visit to the Krefeld headquarters, the mechanics also had the opportunity to experience the machine factory and how plant components are manufactured, welded, and pre-installed. "During the introductions to the various design departments, personal contacts were established which simplify the future communication between the technical departments and the installation site. The use of delivery and parts lists and the structure of assembly drawing documents were also part of the training," says Dieter Freiheit, head of operations for the assignment of staff in the department of plant installations and startups. "This part of the training was essentially carried out by our experienced assembly supervisor Mr. Klaus Thuernau in Kuala Lumpur."

Team "Siempelkamp Singapore", from left to right: Irene Chong, Henning Gloede, Hui Lee Wong, Patricia Lopez, Philipp Schmitz

Installation and startup 2016 at Kronospan Veliko Tarnovo, Bulgaria: Site manager Norbert Reiter and Artemio Suratos.
Siempelkamp Kuala Lumpur

Concentrated teamwork for Arian Maryam

During the next, more challenging step, the new employees were assigned to installation sites to gain their first experiences in practice. "After initial startup difficulties, our Malaysian colleagues gradually gained more acceptance and have meanwhile become a fixed component of our startup team," says Rainer Schmitz.

To date, the number of employees grew just as the size of the office. Meanwhile, the office in Kuala Lumpur employs eight mechanics and fourteen electricians which are deployed at Siempelkamp installation sites under the professional management of the Krefeld departments for mechanical and electrical installations and startups.

In contrast to the initial thought of deploying the Malaysian personnel only in the Southeast Asian region, the employees are increasingly working worldwide – from Asia to Belarus,

Site manager Norbert Reiter (2nd from left) with Artemio Suratos, Jismar Bin Desa, and Bruno Kasimin (all from Siempelkamp Kuala Lumpur) during cabling work and the I/O check at Kronospan Veliko Tarnovo, Bulgaria

Europe, Turkey and South America. "Due to simplified visa regulations our Malaysian employees have an easier time entering the Schengen states and our Philippine employees entering South America," explains Rainer Schmitz.

22 EMPLOYEES

… are ready for assignments at Siempelkamp installation sites in Kuala Lumpur

Shoulder to shoulder cooperation with the colleagues from Krefeld

In the beginning, the new team from Malaysia was primarily deployed to monitor and supervise the customers' personnel during the mechanical assembly of plant components and the installation of cable trays and cables in wood-based material production plants. Later, they also started to be assigned to work in metal and rubber processing plants. The demands on the new team were steadily increased. At the assembly sites for wood-based material production plants, the Malaysian employees are making important contributions to the assembly, cabling, and all preparatory work (such as sensor tests and rotational direction tests) ranging from the wood-yard to the packaging and all associated work.

The Malaysian personnel were also introduced to startup works and have already been successfully deployed in that area. In-house training, performed by engineers from the Krefeld software department, prepared the team of electricians over several weeks for their tasks. The focus here was to familiarize the colleagues with the software programs of the individual systems as well as to comprehensively teach

the process technology related interrelations. Thus, for the first time in the wood sector, the startups of the chipper for May Forestry and the double-diagonal saw, included in an order from Kien Giang and Tian Zheng, were carried out by Malaysian employees including the cabling, the sensor check and the startup. During the final phase of the startup, the Malaysian colleagues received support from experienced Siempelkamp personnel.

During in-house training in Krefeld, the Malaysian employees were also prepared for their assignments regarding the metal forming press for Nanshan. They supported the assembly and startup of the press and are present locally to support the customer during production. Contact with experienced colleagues from Krefeld during that time is always guaranteed.

"Our concept: Employees are slowly introduced to easier startups and service assignments, receive important qualifications through in-house training and the support of experienced employees at the assembly sites. This process is both meaningful and to the point. It gives us the opportunity to train and deploy future employees for startups and service assignments," summarizes Werner Schischkowski, head of Siempelkamp automation.

Robert Hutter and Ronald Dilidili

"Project Gomeldrev, Belarus in 2014/2015: At the silo after troubleshooting the levelling sensor 7100. It's super cold up there!!! Luckily, I had Robert Hutter helping me up there!"

RONALD DILIDILI, CONTACT PERSON FOR THE INSTALLATION PERSONNEL AT GOMELDREV

Installation and start-up 2015 at Homanit: Branko Petrovec and Sascha Kreifelts with Mr. Firdaus and Mr. Ikhwan

Another advantage for customers from the Southeast Asian region: For service requests the new employees from the region are quickly on site to support the customers and to analyze potential problems. After an initial evaluation, it can be decided whether additional and more experienced personnel need to be requested. The scheduling of personnel from Kuala Lumpur for a service assignment, whether mechanically or electrically, is always carried out by the office in Singapore. All central services for the Kuala Lumpur office including quotations, purchasing and sales, human resources, and accounting will continue to be covered in Singapore by a team of five under the lead of Mr. Henning Gloede.

Within the Siempelkamp Group the notion of teamwork between different countries has consistently grown and friendly relations between colleagues have formed at construction sites. An ongoing task is to continue working on technical implementations, cultural differences, and on the high common standard regarding Siempelkamp services. "Due to minimal turnover and the willingness of the employees to develop their skills, we are well on track," remarks Rainer Schmitz.

Krefeld and Kuala Lumpur teams working together to find the best solution for the plant operator.

From sheet metal production to fans:
How Ventapp supports intercompany teamwork

VENTAPP
Ventilatoren – Apparatebau

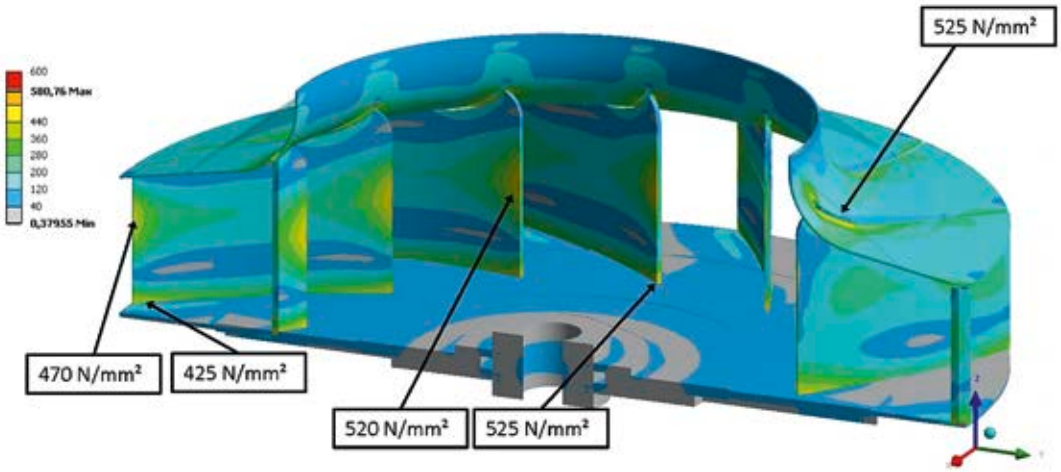
➜ By Fred Holmer

Intercompany teamwork is taken seriously within the Siempelkamp Group. One prime example of how the companies are linked together is Ventapp GmbH: In this case especially the interfaces with the drying system specialist Büttner on the one hand and the planning expert Sicoplan on the other are obvious. When working together with the parent company, the Siempelkamp subsidiary Ventapp also uses many important contact points for the benefit of the products as well as of the customers!

Team Ventapp meets team Büttner (from left to right): Markus Schulz (Project Manager Büttner), Fred Holmer (Managing Director Ventapp), Dirk Homann (Management Büttner), Ulrich Lempertz (Purchasing Büttner), Heinz-Josef Thomas (Managing Director Ventapp)

Within the Siempelkamp Group, Ventapp uses numerous opportunities for intercompany teamwork. This starts with the question of how the special services of Ventapp can enhance the core business of the parent company. "In the past we were involved in the further development and production of certain components for the ContiRoll®, for example roller tracks and belt tracks, heat tunnel covers, suction systems, staircases as well as

Impeller for high circumferential speed > 150 m/sec



Ventapp: figures and facts

- founded in 1972
- currently two companies: Ventapp GmbH and Ventapp Service GmbH
- since January of 2012 the two Ventapp companies belong 100 % to the Siempelkamp Group
- products: apparatus and fan construction
- services: spare parts and preventative maintenance (e.g., vibration and curve measurements, bearing and sound analyses, installation and startups)

walkways. Currently, Ventapp is the standard production location for heat tunnels and oil mist casings," says Fred Holmer, managing director of Ventapp.

One of the key factors for the integration of Ventapp into the group was the extensive knowledge in the area of sheet metal production. While until 2012 Siempelkamp machines in the area of the ContiRoll® were designed with and built from sectional steel, Ventapp had for years been dedicating itself to flexible sheet metal construction – a reason to reconsider the ContiRoll® design.

In joint teams consisting of Siempelkamp and Ventapp experts the topic "sheet metal production" was completely rethought. Based on the high theoretical foundation of the designers and enhanced with the practical experience of the Ventapp employees, the production of certain component groups for the ContiRoll®

Man safe damper combination NW 3150 with sealing gas fan and pneumatic connections

was systematically converted to the use of sheet-metal. The main advantages include a significant reduction in weight, a reduction of the manufacturing depth, and faster installations at construction site worldwide. The following component groups were the focus of this development: heat tunnels, oil mist casings, staircases and walkways, all components for the forming line, reject chutes, forming line tables, belt tensioning stations, and drive stations. Furthermore, the production of all roller and belts tracks for short-cycle presses was affected. Regarding the hydraulics, all function beams were converted to sheet-metal components. By using components made of sheet metal, production costs were significantly reduced.

"The networking within the Siempelkamp group of companies is essential for Ventapp. Next to many other customers of fans on the free market, Siempelkamp presents one of our major customers."

FRED HOLMER, MANAGING DIRECTOR AT VENTAPP

Anything but hot air: fans tailored to the wood-based materials industry

To be part of a new team also means to reposition core businesses. Up until the integration of the company into the Siempelkamp Group, Ventapp concentrated on the production of fans with closed impellers in which the transport of material played only a minor role. Air that is contaminated and laden with particles can only be transported with open impellers. "Here we are talking specifically about the transport of reject material upstream of the ContiRoll® or of wood chips from sawing processes. Like a vacuum cleaner without a bag, a fan is used for the pneumatic transport of material," explains Heinz-Josef Thomas, technical managing director at Ventapp.

What, then, was the particular challenge? Under certain circumstances the material that is transported tends to deposit in the corners of the impellers. That is why Ventapp is trying to build an impeller with fewer corners which nevertheless offers a high level of efficiency. Deposits translate into weight. However, just as with a car tire, the impeller of a fan has to be dynamically balanced; deposits result in an unbalance. This causes the impeller to vibrate and in the worst case scenario to break apart. This could not only damage the plant but also be dangerous for employees. For this reason,

transport fans require comprehensive development work and calculations as well as monitoring devices (vibration detectors). Ventapp carries out the development work; important technical calculations are contributed by another Siempelkamp subsidiary, NIS Ingenieurgesellschaft, whose extensive knowledge has been incorporated into the development work.

Meanwhile these fan types have developed into standard products and are used in the plants of our customers including Russian Laminate, Asperbas, Dongwha, PG Bison, and Yildiz Entegre.

3.20 m

The diameter of the largest man safe damper by Ventapp to date

Major investment in large laser opens up additional synergies

Another synergy used within the group of companies is Ventapp's large laser with automated storage system which the company has been using since the end of 2015. The biggest investment in Ventapp's company history would not have been possible without the company's new status as a Siempelkamp subsidiary. Meanwhile, Ventapp has established itself as the central supplier of laser parts within the Siempelkamp Group.

The team leaders of the Siempelkamp design department travel regularly to Ventapp for joint discussions. The objective is to constantly adapt the designs and extended possibilities to new manufacturing options and to optimize these together.

Fan meets dryer: the link between Ventapp and Büttner

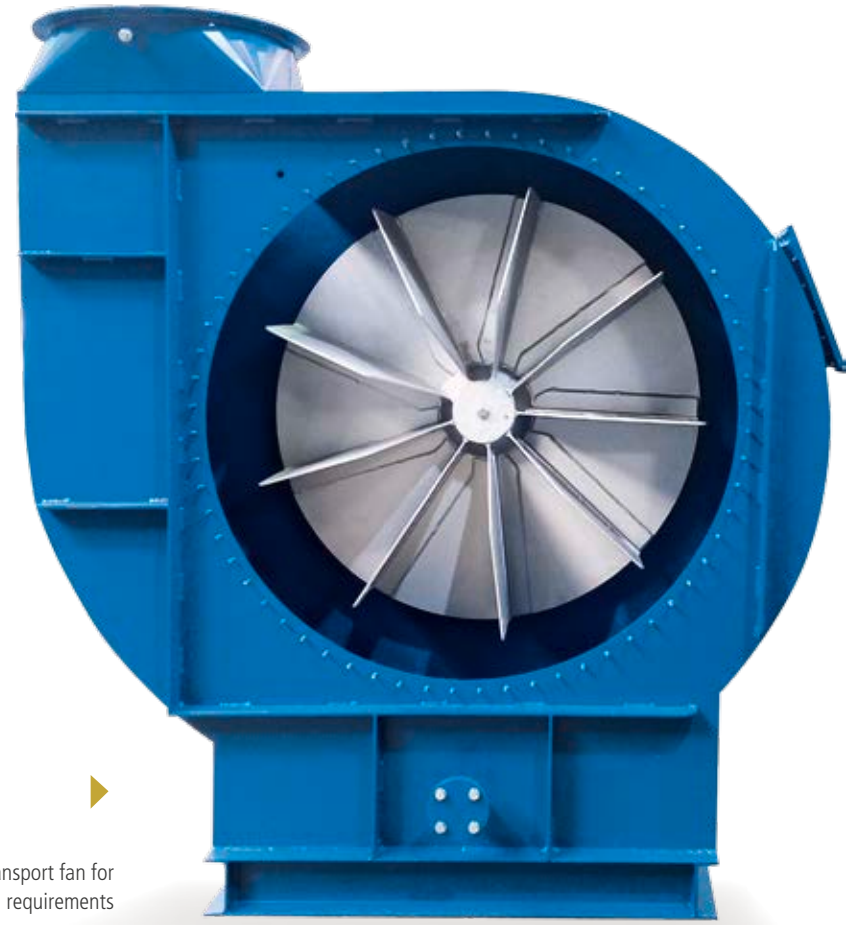
Another important teamwork interface exists between Ventapp and Büttner Energie- und Trocknungstechnik GmbH in Krefeld. Büttner, also an established Siempelkamp subsidiary, has ordered large dryer fans from the intercompany supplier of fans for years. This program is now complemented with hot gas fans used in Büttner energy plants, for example, at Donghwa and PG Bison. "We also manufacture heavy industrial dampers for Büttner including control and man safe dampers. The largest man safe damper produced to date has a diameter of 3.20 m and is intended for the Siempelkamp

Maximum productivity is our standard

customer Yildiz in Rumania," reports Fred Holmer. Ventapp fans and dampers are also established in areas that do not involve Conti-Rolls®. Büttner-only customers from Scotland to Canada also order suitable products.

Fan meets engineering: strong connection!

This, however, is not the end of Ventapp's synergies within the group of companies. Together with the Belgian engineering subsidiary Sicoplan, the Ventapp team advances the standardization of fans. During a first phase, the fans with closed impellers have been analyzed. A second project phase involving fans with open impellers for the pneumatic transport of material will take place shortly. The objective is



Upright transport fan for universal requirements

A tidy work environment is the key to product quality

to limit the diversity of variation to such an extent that it results in a manageable amount of blowers for sales and technology so that afterwards the costs and throughput times can be significantly reduced.

How exactly does a medium-sized company such as Ventapp implement these numerous joint projects with other Siempelkamp companies? To a large extent, the regional proximity easily allows for personal meetings between the teams. One thing unites the partially very different employees: the mutual drive caused by the market. "Customers expect permanent innovations and good prices. The differentiation to Chinese copy-cats cannot succeed via the price but only via quality and innovations. In this area we are perfectly attuned to each other," says Fred Holmer.

"Innovative further developments on the very edge of what is physically possible only function in a strong team which Ventapp could not provide alone."

HEINZ-JOSEF THOMAS, TECHNICAL MANAGING DIRECTOR AT VENTAPP

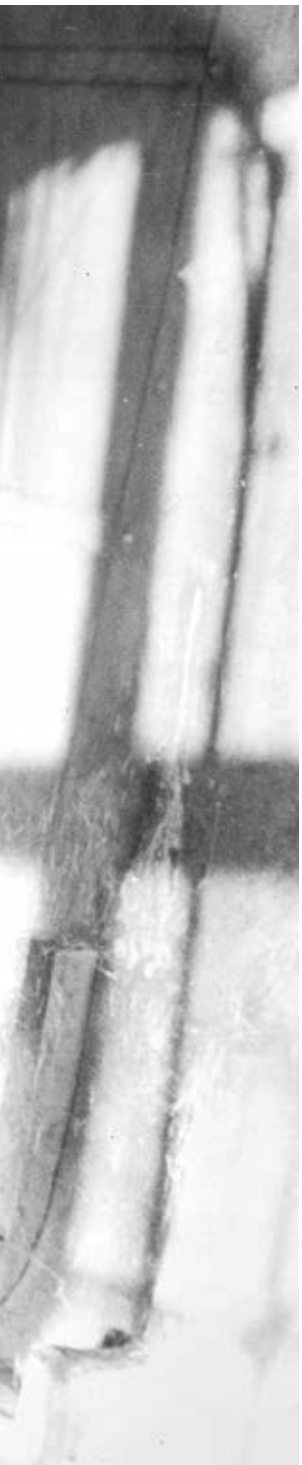
Wolfangel GmbH:
From sled to iJect touch

→ By Dr. Silke Hahn

What began at the end of the 1950s with the development and manufacture of a recreational sled by means of an injection process has today become an important product range in the structure of the Siempelkamp Group. As the only manufacturer of composite equipment in Germany with in-house production for fiber-reinforced component parts, Wolfangel GmbH has been strengthening the Group since 2012.

Not the industry but recreational sport is at the beginning of Wolfangel's company history: In 1958 the company's founder Rolf Wolfangel had his first private experience with glass-fiber and polyester while building a kayak. Soon after, the first 100 hardtops were manufactured and the Swiss police profited from this development: A recreational sled was developed using an injection process (RTM). The sled was given a special design; it featured a sealable transparent hood and was used as a dog sled for mountain rescue services, for example, during avalanche rescue missions.

Today glass-fiber-reinforced plastics have conquered other industries: The aircraft and automobile industry rely on the combination of light weight and strength. However, the components are also used for shower cabins and tubs, rotor blades for wind energy plants, as reinforcements in concrete construction, in commercial vehicle manufacture, container construction, and in the bus and railway sector.



Rolf Wolfangel 1962 – the pioneer

Basic concept of the rescue sled in the 1960s

Wolfangel GmbH: Profile

Founding of the company:	1976
Location:	Ditzingen, Germany
Management:	Heike Wolfangel, Andreas Doll, Robert Raab
Employees:	14
Product range:	gel coat systems, PLC-controlled RTM/injection systems, metering and mixing systems, fiber spraying plants, complex customer-specific solutions for different applications
Customer range:	manufacturers of building components made from fiber-reinforced plastics from all industries (e.g., sanitary industry, boat construction, transport industry, container construction, bus and railway sector, construction vehicle industry, wind power industry, pipe rehabilitation, building and bridge construction)
Customers:	worldwide except in the Americas. Customer range: universities, small and medium-sized companies, colleges, institutes, development departments of automobile manufacturers

Founder Rolf Wolfangel

Premium quality due to the Swabian art of engineering

At the Ditzingen location Wolfangel produces machinery for the manufacture of fiber composite components. This includes injection machines (RTM) and metering systems, fiber spraying plants and gelcoat spraying plants, but also individual machine solutions for diverse application areas. The systems are well known for their high quality and reliability. They are not only easy to operate but also to maintain. "Our products arrive in premium condition at the customer's location regarding their workmanship and use," says Heike Wolfangel who has been working in her parents' company since 1999. In 2006 she became managing director.

Exemplary for the Swabian art of engineering is Wolfangel's concept for closed mold processes. The core product here are injection plants. They can be used in pressure injection as well as vacuum injection processes in closed molds. Upon customer request, our plants can be manually operated or digitally controlled via a computer.

More than ever, Wolfangel customers in the Epoxy as well as polyester field value automation, controlled processes, and controlled and repeatable operations. Our products meet these demands. "We can cater to the individual needs of our customers in terms of the pump design, the size of the material containers, the processing temperatures as well as the programming. We are extremely flexible when it comes to equipment options in the field of

"Great enthusiasm and an exemplary idea of what quality is was exemplified to us by my father and we would like to continue on this path."

HEIKE WOLFANGEL, MANAGING DIRECTOR WOLFANGEL

Inspection prior to delivery

1959

Rolf Wolfangel starts the production of glass-fiber-reinforced plastics using the hand lay-up process, later using a 2-K fiber spraying plant with pressure vessels. The products manufactured are boats, kayaks, water tanks, campers, hardtops, and industrial parts.

1964

Glass-fiber-reinforced plastics production comes to an end, the company becomes a trade agency. The company sells peroxides, polyester resins, glass-fiber as well as accessories and special tools from the in-house development and production.

1976

Founding of Rolf Wolfangel GmbH. Development of injection, mat impregnation, fiber spraying and gel coat systems as well as resin filling stations.

1981

Move into a new office and production building in Ditzingen with in-house technical center. Wolfangel polyester plants are now produced in-house.

1985

Water tank production in Kuwait with new Wolfangel low pressure fiber spraying plant with internal mixing.

Wolfangel in the GFK newspaper in 1985: plant for Kuwait

Composite fun fair

In a conversation at the JEC 2016

sensor technology, vacuum systems, RFID technology, material preparation as well as the amount of components and agree upon all aspects with each customer," explains Heike Wolfangel. In general the company specializes in piston pump systems. The programming, switch cabinet construction as well as the installation of the equipment takes place at Wolfangel and is therefore entirely made in Germany. "With our competencies and the experience of many years, we have created unique selling propositions for us," says Heike Wolfangel.

Quality is no coincidence…

… is the motto which Wolfangel will continue to apply to secure its position as a manufacturer of intelligent machines for the production of fiber-reinforced components in different processes. "These components are produced with Wolfangel equipment worldwide in over 30 countries. Here, our service chain doesn't end with the delivery of the machines. The operating training, service, maintenance, and training for the customer personnel is also part of our range of services," explains Andreas Doll, managing director at Wolfangel.

iJect 2.0 3K

1989

Joining the association for the composite industry (Federation of Reinforced Plastics) with an active involvement in the area of training, seminars, further education, and in diverse work groups. In the beginning of 1996 Wolfangel starts carrying out practice seminars.

1999

Development of first RTM system with PLC und heating cabinet.

2007

Work on development project "CODE" of the European Union in cooperation with the Fraunhofer Institute ICT.

2009

Development of a gel coat spraying plant with internal mixing as well as the machine series "Silver Line".

2010

Introduction of iJect touch systems with PLC and touch screen operation for polyester and Epoxy resins for the RTM process.

2012

First investment by Siempelkamp.

Gel coat spraying with robots

INTERVIEW

„MORE THAN JUST EQUIPMENT“

Interview with Heike Wolfangel and Andreas Doll

The “Wolfangel” name represents more than five decades of experience in the field of composites. How did the company, team, and the products develop and distinguish themselves during this time? We talked to Heike Wolfangel and Andreas Doll, Management Wolfangel.

Bulletin: Ms. Wolfangel, your father’s resume shows he was an outstanding business personality. What was his greatest competence which has spurred on your company for the last five decades?
Heike Wolfangel: Everything he did, he did with enthusiasm, creativity, and with an “all or nothing” attitude. His greatest competence was maybe his imagination. His knowledge and experience, his drive for perfection and, at the same time, his simplicity, bite, lifeblood, and his perseverance knew where to go.

Heike Wolfangel,
Managing Director Wolfangel

Bulletin: How did you grow into the company?
Heike Wolfangel: My parents founded the company over 40 years ago. Growing up my sister and I inevitably learned everything about “composites” through our family. Early on we traveled with our parents on business trips. Later, we helped out at trade fairs and worked for the company whenever interesting and comprehensive projects and tasks were due. In my early thirties I returned to the company as an employee. That is when I became aware how much I had already learned right from the cradle.

Bulletin: What is Wolfangel’s greatest strength today?
Andreas Doll: It is hard to say what our company’s greatest strength is. It is the many small things that characterize Wolfangel. At this point I should probably mention the team spirit of our personnel. We help one another. A flat hierarchy provides for quick and efficient communication. This goes for the internal communication but also especially for the communication with the customers. For our customers the level of quality that Wolfangel has offered for decades still counts. This is backed by the machines that our customers have operated for many decades.

Bulletin: What does the cooperation with Siempelkamp look like?
Andreas Doll: We work well together with Siempelkamp on all levels. That was made easy for us when Robert Raab, who was part of the Siempelkamp management for many years, started working for us as a managing director. In the last few years, Wolfangel and Siempelkamp have exhibited together at several composite fairs including JEC in Paris or Composites Europe in Stuttgart. We have also implemented projects together, for example, in Saudi Arabia.

Bulletin: How important is research and development for Wolfangel?

Andreas Doll: Compared to large companies or enterprises with their own research and development departments, the approach at Wolfangel is rather pragmatic. Nevertheless, innovation is very important for us, whereby the largest share of innovations is probably driven by customer demands. In this area we see the need to advance developments in order to simplify processes for our customers and thus, generate new products and product groups. In this way, we have developed the product family iJect touch since 2010 which is used as metering, RTM or infusion system and for which we continue to provide new functions and accessories.

> FOR OUR CUSTOMERS THE LEVEL OF QUALITY THAT WOLFANGEL HAS OFFERED FOR DECADES STILL COUNTS. THIS IS BACKED BY THE MACHINES THAT OUR CUSTOMERS HAVE OPERATED FOR MANY DECADES.
>
> Andreas Doll

Bulletin: Ms. Wolfangel, in line with your commitment to support the association "AVK Industrieverstärkte Kunststoffe" (Federation of Reinforced Plastics), you have been offering seminars for the last few years. What exactly do you cover in these seminars and who participates?

Heike Wolfangel: The focus of these seminars is on the theory and practice of producing components made of glass-fiber or carbon-fiber reinforced plastics whereby the RTM (Resin Transfer Molding) process plays an important role. We concentrate on all processes and their challenges, we know the smallest details that count and can demonstrate in practice in our technical center how it works. Our customers are smaller companies with only a few employees, companies with larger departments for the production, universities, institutes, and colleges in Germany and abroad. We look back at 50 years of experience and enjoy sharing our knowledge.

Bulletin: In 2011 you have initiated the Composite Kirmes (Kirmes: fun fair) which took place for the third time in 2016. How do you explain this successful concept and the appeal to your customers?

Heike Wolfangel: Partnering with a material trading company we are acquainted with, we show, at Composite Kirmes, what new and interesting things we have to offer. Everything is absolutely practice-oriented and combined with a number of live demonstrations. Automation and controlled component manufacture were big topics this year. The cool drinks, grilled food, tents and traditional beer tables gave the event a "fun fair" character and offered time for individual questions and networking.

Bulletin: What objectives have you set for your company for the next few years?

Andreas Doll: At this point, we should mention the further integration of Wolfangel into the Siempelkamp Group. To use the synergy effects within the Group can help us continue on our path worldwide. We are in a highly competitive market that is controlled by few suppliers. We have to strengthen our profile and offer customers solutions. Topics involving emissions and work safety determine all European markets. Customers today have different demands and are changing. We will go down this path with our customers worldwide and grow with them. For Wolfangel this also means to continue to expand our engineering and sales areas in the next few years.

Heike Wolfangel: Stable growth, innovative development of the made-in-Germany brand name Wolfangel. To challenge and reward our employees also has to be mentioned here. All in all, we are talking about a future that we are looking forward to!

Andreas Doll,
Managing Director Wolfangel

Teamwork between Teheran and Krefeld: **Irani trainees visit ATR**

➔ By Stefani Stampe

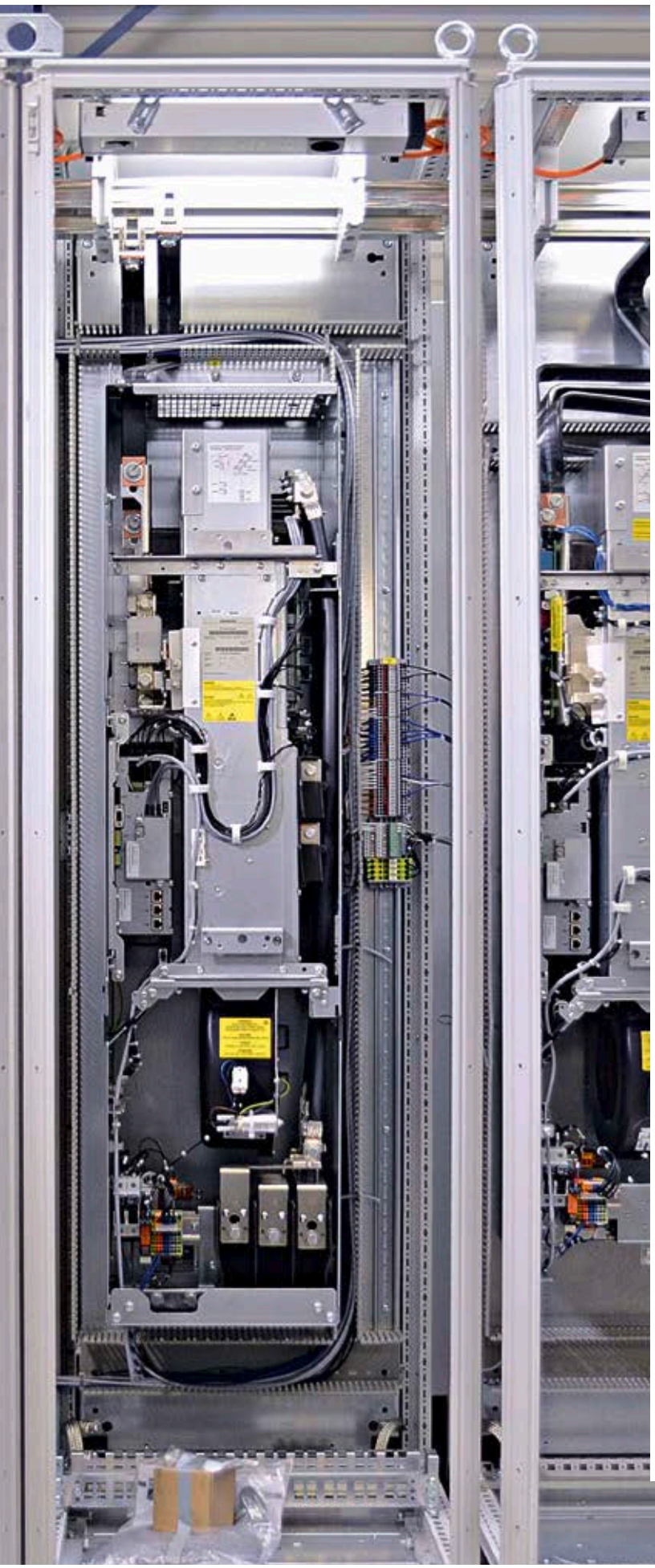
Two plants for the Iranian ARIAN Group are currently being put into operation; two additional plants were recently commissioned. This ongoing business relationship also binds the teams of both business partners together: Three technicians from ARIAN traveled to Krefeld in June to familiarize in detail with switch cabinet construction at ATR.

To date ARIAN Takhteh and ARIAN Maryam, both companies of the Iranian ARIAN Saeed Industrial Group, have ordered an MDF plant each from the Krefeld partner. Founded in 2003 the Group, headquartered in Teheran, is established in the softwood veneer and plywood manufacturing industry.

Per the customer's request, part of the agreement was that a team of technicians becomes familiar with ATR switch cabinet construction so they could later oversee the care of electrical switchgear equipment at different ARIAN locations as supervisors. Alireza Mavvaj, Kamal Rahimi, and Mahdi Khademi traveled to Krefeld in June for several weeks to acquire important technical training regarding switch cabinet technology together with other German trainees.

All three completed University studies with degrees in electrical engineering in Iran. They complemented their studies with practical experience in switchgear construction during their stay in Krefeld. Instructed by Jürgen Grüters, electronics technician for switch cabinet wiring at ATR, the three Irani trainees explored central details in the area of switch cabinet technology. One conclusion: "Working together as a team for several weeks has created the basis for functioning communication, both technically and interpersonally, between all parties involved in Krefeld and in Iran. For the ATR team this visit was an exciting experience," says Timo Amels, Managing Director at ATR.

On site in Krefeld: Alireza Mavvaj, Kamal Rahimi, Mahdi Khademi (front to back)



THREE QUESTIONS FOR

Timo Amels and Jürgen Grüters

Mr. Amels, how important is the subject "switch cabinet technology" in the overall profile of a plant for wood-based products?

Timo Amels: It is of crucial importance. To exploit all technical possibilities of such highly complex plants, switch cabinet technology, technically coordinated right down to the detail, is required. This is why the switchgear is referred to as the central nervous system of each plant.

Mr. Grüters, what is the cooperation like with the customer's team as in this case?

Jürgen Grüters: Extremely good. The cooperation on a personal and professional level could not have been any better and it gave me pleasure to see with how much commitment our colleagues from Iran participated here day after day.

A question for both of you: As a supplier, what can be learned from such direct contact with the customer?

Timo Amels: To better understand the expectations and demands of the customer and to adjust our standards accordingly. It is not without reason that our company motto is: Challenges drive us forward. After all, the collaboration with our customers does not suddenly end with the delivery of the plant; instead, it is our aim to build long-term alliances.

Jürgen Grüters: That is right and a common understanding for switch cabinet technology is a key factor for this success.

SLS in Bad Kreuznach:
Ground-breaking for new service building

→ By Carmen Lorch

Location expansion for Siempelkamp Logistics & Service GmbH in Bad Kreuznach, Germany: On July 1, 2016 construction for the new logistics building started with the official ground-breaking and with many guests in attendance. In this way, the Siempelkamp subsidiary continues to follow its guiding principle "Our drive: Perfection" once again.

With the new service and logistics center providing significantly larger warehouse capacities, Siempelkamp Logistics & Service GmbH has continually extended its demand to be the perfect service partner. Thanks to the 7,000 m² of warehouse space added in the first construction phase, Siempelkamp customers worldwide have the option to receive the correct spare parts quicker than ever.

Joint ground-breaking: (from left to right): Dr. rer. nat. h. c. Dieter Siempelkamp, Dr.-Ing. Hans W. Fechner, Elisabeth Bienbeck-Ketelhohn (Siempelkamp Krefeld), Markus Dös (project manager for the construction of the new building), Carmen Lorch (branch manager), Thomas Dahmen, Stefan Wissing (both Managing Directors of SLS)

The official ground-breaking took place on July 1 and was attended by many guests. The SLS advisors Ms. Elisabeth Bienbeck-Ketelhohn and Dr.-Ing. Hans W. Fechner traveled to the event from Krefeld. The chairman of G. Siempelkamp GmbH & Co. KG, Dr. rer. nat. h.c. Dieter Siempelkamp, also attended. SLS managing directors Mr. Stefan Wissing and Mr. Thomas Dahmen as well as branch manager Ms. Carmen Lorch were pleased about the positive local feedback for this event. As representatives from the city and the district of Bad Kreuznach, madam mayor Dr. Heike Kaster-Meurer and county commissioner Mr. Franz-Josef Diel were present at the ground-breaking.

During the festivities, Stefan Wissing, SLS managing director and spokesman for the management of Siempelkamp Maschinen- und Anlagenbau GmbH, emphasized the great importance of the new building for SLS and for the future of the company as a service and logistics partner. "With the new building, we will meet our customers' expectations for

July 1, 2016
ground-breaking

October 28, 2016
"topping-out ceremony"

7.000 m²
of warehouse space in the first construction phase

10.200 m²
of warehouse space in the second construction phase

144.500 m³
of gross floor area

spring 2017
completion

SLS Management during the discussion of a plan in the preliminary stage

"This new logistics building is of great importance for our customers who will benefit from even higher performance in the future."

STEFAN WISSING, MANAGING DIRECTOR OF SLS

24/7 availability reduces the stocking of spare parts for customers and cuts costs.

having the quickest possible service. In the future, spare parts will be available 24 hours a day 7 days a week. This will provide plant operators the possibility to significantly reduce their own stockholding of spare parts and thus reduce costs," says Stefan Wissing.

Dr. rer. nat. h. c. Dieter Siempelkamp addressed the history of the Siempelkamp company in his speech. He also referred to the special advantages of the Bad Kreuznach location due to its close proximity to the Frankfurt airport and the excellent highway connection.

24 hours a day, 7 days a week = minimal reaction times

With the location expansion, SLS focuses, at an early stage, on even quicker reaction times which customers demand from their spare parts specialist. 24/7 is the clear demand on SLS service. With the new storage capacities at the Bad Kreuznach location, the service subsidiary of the Siempelkamp Group once again increases its quality standard. The principle is simple: The quicker SLS can deliver, the more the customers can reduce their own stockholding of spare parts.

Dr. rer. nat. h. c. Dieter Siempelkamp, Chairman of the Advisory Board of G. Siempelkamp GmbH & Co. KG, during the ceremony

SLS location expansion: prospects

Meanwhile, the "topping-out ceremony" for the new building took place in October. As of spring 2017 the new service and logistics center will be "ready for takeoff" and provide Siempelkamp customers with immediate spare parts service.

Installation of the support beams

"Topping-out" ceremony on October 28

INTERVIEW

IN SUPPORT OF 24/7: INTERVIEW WITH STEFAN WISSING AND THOMAS DAHMEN

By Dr. Silke Hahn

SLS services at a glance:

- Planning and implementation of modifications and modernizations
- Supply of high quality spare parts at competitive prices
- Retrofitting of existing plants, procurement, and sale
- Upkeep and service of existing plants
- Service work and support on site or online
- Concepts for supply chain management

Fields of application: machines and components of the wood-based materials industry (Siempelkamp, Bison, Küsters, Siempelkamp Handling Systems, etc.), metal forming, rubber presses, laminate (HPL), fiber cement and gypsum fiber board presses

Bulletin: Mr. Wissing, during your last interview with Bulletin in 2015 you said that for the benefit of our international customers we have to perform. To do that, SLS has to continuously further develop and has to become more modern. What significance does the new logistics building play here?

Stefan Wissing: A very important one because with it SLS can offer a 24 hours a day 7 days a week supply readiness for all spare parts.

Bulletin: What type of spare parts can be added after completing the location expansion and in what areas can the stock-keeping be expanded?

Stefan Wissing: Basically we are increasing storage capacity for the entire product spectrum. In the medium term it is our objective to quintuple the current stock-keeping. According to the motto "We are your spare parts storage!", we will implement highly individual solutions for our customers.

Bulletin: Since 2010 the former Siempelkamp service department has been operating as a separate company. What is your assessment of the last six years?

Thomas Dahmen: During this time we had great business success and we achieved high acceptance among our customers. Thanks to uniform systems, SLS customers and our teams profit from worldwide transparency when it comes to the availability of spare parts. We enjoyed great success when selling optimization packages and individual solutions within the scope of modification projects to existing Siempelkamp customers. Furthermore, we have firmly anchored clear service structures and contact partners and implemented significantly reduced reaction times and extremely quick delivery times. The result: Modern logistics involving very close contact with our customers.

Bulletin: What type of customer feedbacks do you receive regarding SLS services?

Stefan Wissing: The feedback is exclusively positive. Our strategy focuses exactly on our customers' requests: expansion of the stock-keeping and allowing for individual concepts. It is due to our clear organizational structures that the communication with all participants has been significantly improved. We achieved large success regarding the modernization of older plants. We also receive praise for the expertise of our service technicians working at our customers' sites and for their commitment.

Bulletin: Time, money, quality: Which service aspect is the most important?

Thomas Dahmen: Time is an important factor when it comes to service. That's why we focus on modern logistics. To supply quality parts at a competitive price to plant operators is another important objective. Of course, the quality that we receive from our subcontractors is very important. Nonetheless, we supply parts in a market-compliant way to extremely price-sensitive regions.

Bulletin: The guiding principle of this Bulletin edition is "teamwork". To what extent does the human factor contribute to the fact that SLS is known as a reliable partner worldwide?

Thomas Dahmen: SLS is a success for the Siempelkamp Group because we place high importance on the human factor. From permanent training of the experienced service team, to the need-based hiring of new employees, to their training on the job, we pay special attention to our human resources work. We succeeded in creating a service company that understands how to meet the high quality requirements of our customers at our worldwide locations. At our international offices we represent the service concept of our parent company and that of our different subsidiaries increasingly better. For this, we have to thank our highly motivated teams.

Bulletin: Barcode system yesterday, increased storage capacities today – what will SLS score with tomorrow?

Stefan Wissing: Let us surprise you. We have many ideas for the perfect service of tomorrow. An example: The intelligent factory of the future has to be able to automatically notify the service about maintenance intervals, service requirements, as well as the need for replacement and wear parts. Our teams are working on reaching this objective. We also want to achieve an even closer cooperation with our customers in order to help us meet personnel demands internationally. Also, we aim to further increase the presence of our service specialists close to our customers with the goal to advise, help and support even better. And, last but not least, we are thinking about spare parts orders that our customers can place via mouse click through a direct connection to our systems... As you can see, we still have many ideas for the future!

Mr. Wissing and Mr. Dahmen,
thank you very much for this interview!

Stefan Wissing,
SLS Management

Thomas Dahmen,
SLS Management

MARKETS

Teamwork has far-reaching impacts for us: At construction sites, in our testing facility, and in our branch offices we seize every opportunity to communicate with the teams of our customers. "Learning and sharing" is the principle we use to work together with all participating parties.

Berneck:
Success through consistent investment in modern technology

➜ By Roland Peltzer

In 2014 a contract for a fourth production plant for Berneck S. A. Painéis e Serrados was signed; in February 2016 the first board was produced, followed by an extremely short ramp-up phase. This repeat customer has relied on the experiences of Siempelkamp in the area of technology for wood-based material production plants for more than 16 years. The Brazilian manufacturer of wood-based products is one of the largest producers in the South American market. Berneck's product range covers MDP, MDF and HDF board materials, surface finishing, sawmill products, pine wood and plantation teak.

One year after the order was placed, according to schedule, a forming and press line including a latest Generation 8 ContiRoll® press, designed with a production width of 9' and a length of 38.7 m, was delivered to Curitibanos in Brazil in early spring 2015. Other containers from Krefeld also arrived containing the following plant components: the complete finishing line for a 10-head sanding machine, the cooling and stacking line, intermediate storage, and the fully automatic storage system. Shortly after, the installation of the equipment began. This is already Berneck's fourth production line including a forming and press line with ContiRoll®

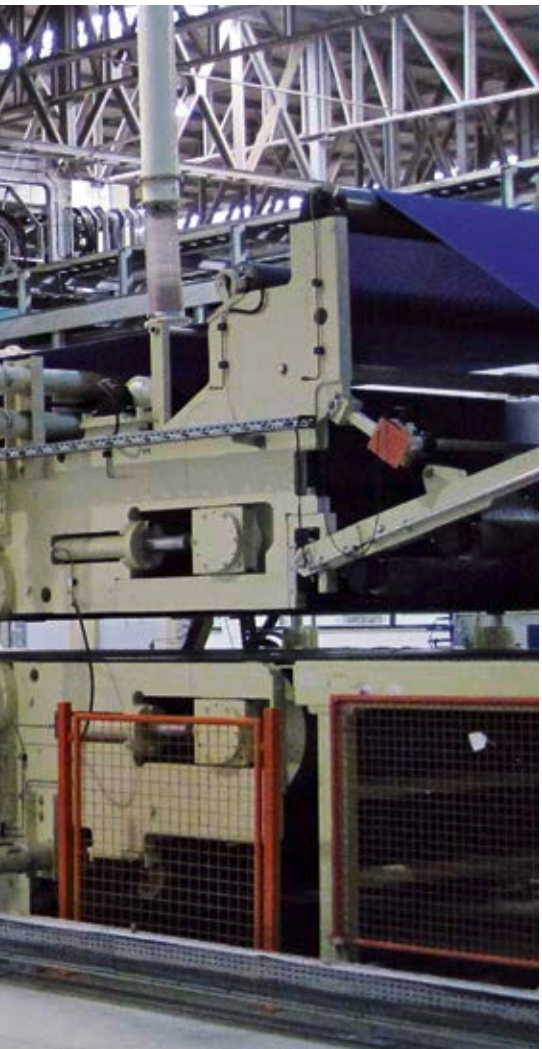
The new ContiRoll®, enclosed in a housing, with vapor exhaust

press and the company's second plant at the Curitibanos location. With the existing ContiRoll® line the customer has been manufacturing MDF. The new line will add particleboard to the product range.

To swim against the current requires way more effort than to let yourself drift with the current. However, some production targets can only be achieved by going upstream, especially in unstable economic situations. The current markets in South America are in a state of transition and are developing. To not let yourself be driven by the difficult market situation, but to stand your ground in these challenging times, demands entrepreneurial foresight. Gilson Berneck has this type of foresight. He invests in new production plants even when others act very cautiously. He has been expanding his company's product range because he foresees that these products will have a strong demand once the economy recovers.

Gilson Berneck has most likely inherited this foresight and entrepreneurial courage from his father. Bernard von Müller Berneck founded Berneck S. A. Painéis e Serrados in January 1952 as a sawmill in Bituruna in the federal state of Paraná in Southern Brazil. After only a few business years, production was expanded by adding a veneer peeling line in 1956 and a plywood factory in 1959. The planned expansion of the product range made it necessary to move all production capacities to Curitiba, capital of the federal state of Paraná a year later. There, Berneck began with the production of complete doors.

Since its beginning, Berneck has been committed to leading-edge technology and the consistent expansion of its product range in an effort to



Berneck S. A. Painéis e Serrados

- Founded: 1952 as a sawmill in Bituruna (Federal State of Paraná, Brazil)
- 1,600 employees
- 63,000 ha of company-owned plantations for growing pine and teak
- 4,000,000 newly planted trees each year
- 170,000 m² of production and administration area
- Trade relationships to more than 60 countries

The company's guiding principles and values

1. Recognize customer needs
2. Pursuing excellence in production
3. Social responsibility in action and attitude
4. Promoting and developing the team spirit of all employees
5. Ensure the added value of the Berneck brand in all market developments
6. Respectful interaction with all employees by promoting creativity and professional development
7. Lead by example.

Forming line with pre-press and vapor exhaust

1,200 m³

DAILY PRODUCTION CAPACITY

during the ramp-up phase – twice this amount is possible

maintain and even expand the company's market position. In 1976 Gilson Berneck took over the business obligations from his father and invested in expanding production capacities, also with the goal to expand the product range. In 1983 the company entered into the production of particleboard and bought a production plant from the former Cia. Industrial Novopan.

An important component of this production plant was a Siempelkamp multi-daylight press with belt line, a solidly designed machine which Berneck upgraded on its own and operated for many decades. The encounter with this robust production plant from Krefeld was the reason that the entrepreneur Berneck sustainably upheld his trust in this machine.

To manufacture high-quality products one needs high-quality technology, a connection that cannot be split up in Berneck's opinion. The Brazilian wood-based materials producer has always been committed to high-quality production and therefore, has invested in technology. The new ContiRoll® press was also ordered with entrepreneurial far-sightedness. Following a short installation, the first board was produced on February 18, 2016. After an extremely short ramp-up time, a daily capacity of 1,200 m³ of board material could be produced. However, the production line is actually designed for twice as much output so that the increasing demand for particleboard from the primarily American market can be met in the future. To achieve this, only the particle preparation area has to be modified.

Sustainable plantation management

Brazil: Who does not immediately think about tropical climate and dense rain forests? However, the country offers so much more. Because of its vast size, Brazil also offers temperate climates in the South. On its own plantations Berneck grows pine trees (Pinus Elliottii) for its wood-based materials production. All processed wood originates from the company's sustainable plantations which cover an area of 63,000 ha. Every year Berneck plants more than 4 million trees, both pine trees and teak trees (Tectona grandis), at the company's plantations close to Brasnorte in Central Brazil.

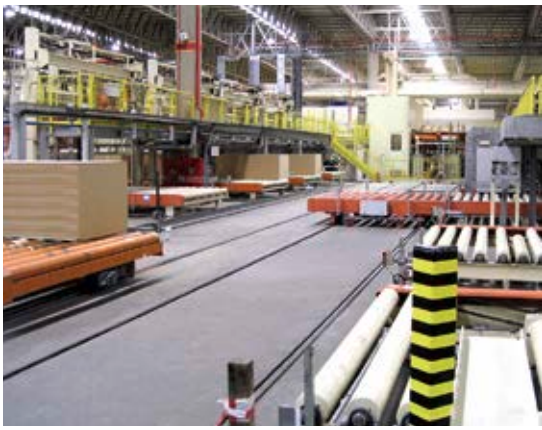
The sustainable use of wood taking nature and environment into consideration is part of

Cooling and stacking line

Press line

Berneck's production site in Curitibanos

Mechanical forming machine



Finished board stacking

Berneck's general business understanding. 100 % of the harvested wood is used in the production of wood-based products. The waste material from three sawmills that cut teak and pine wood is the resource for the production of wood-based boards. Berneck places great importance in excellent product quality: The particleboard produced with the new ContiRoll® has an excellent and strong cutting pattern. This is partly due to the fact that only high-quality pine wood is processed without adding any of the cheaper eucalyptus wood which is common practice for many suppliers. On the other hand, this is due to the mechanical mat forming of the new plant. Via forming rollers high-quality wood particles are well prepared and mechanically aligned which reflects in the strong quality of the produced particleboard and its excellent surface. Once again, the new investment in modern Siempelkamp technology has been a clever move of the far-sighted entrepreneur Gilson Berneck. In view of the current economic recession in Brazil, this investment was a swim against the current, however, a fast swim with powerful strokes. The next upturn will come soon and Berneck is well prepared.

63,000 ha

– area of Berneck's pine and teak plantations

Groundbreaking in Vietnam:
First continuous MDF plant for FSC Vietnam Corporation

→ By Marc Müller

The groundbreaking took place in the Vietnamese Binh Phuoc province on August 18. With it FSC Vietnam Corporation celebrated the first milestone on the road to its first continuous MDF plant. This event includes several firsts: a new Siempelkamp customer, the customer's entry into a new market, a new prestigious brand for the wood-based materials market.

Vietnam – an important market for Siempelkamp

Shaking hands on the partnership in Vietnam: Marc Müller (Sales Siempelkamp) with Mr. Trinh Huu Dai of FSC. In the background, center right, Henning Gloede (Manager of Siempelkamp's sales office in Singapore)

FSC Vietnam Corporation placed the order for an MDF production plant back in July. The company is a 100% subsidiary of the Kim Tin Group, of which the core business is the production of welding electrodes. The investment in the field of the wood-based materials industry opens up new perspectives (see box).

The new MDF plant will be built in the Binh Phuoc province in the southeastern region of the country, bordering Cambodia to the north and northwest. The region is considered the center of the Vietnamese MDF production. The press line will be equipped with a 8' x 47m Generation 8 ContiRoll® press. The new line will have the same length as another MDF line, which has been the highest-performing plant in Asia to date and was sold by Siempelkamp to a company in Vietnam in 2010. Back then the joint venture between the Vietnam Rubber Group and the Korean company Dongwha

Kim Tin Group: Profile

- one of Vietnam's leading enterprises in providing welding materials and devices
- headquarters: Ho Chi Minh City
- total plant capacity: more than 100,000 tons of welding rod and wire every year, 70% of the domestic market share
- investment in new, large-scale MDF production plant in Vietnam under the name FSC
- trademark "Timbee MDF": new and prestigious trademark in the local and international wood-based material markets
- plant's production capacity: 400,000 m^3 annually
- standards of production: E1, E2, Carb P1, and Carb P2

A new prestigious brand for the Vietnamese wood-based materials industry – a particular challenge

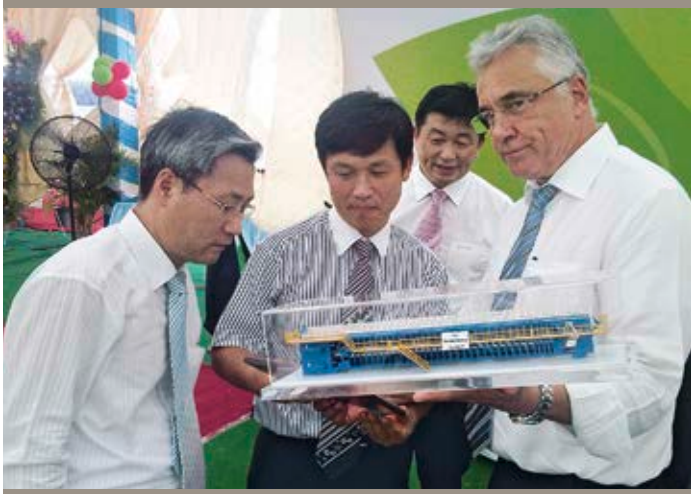
decided for an MDF plant from Krefeld (see box).

Next to the forming and press line, the scope of supply for this order includes the cooling and stacking line with an automatic storage system, a dryer and an energy plant by Siempelkamp's subsidiary Büttner, as well as the planning of the complete plant carried out by Siempelkamp's Belgium subsidiary Sicoplan. The new plant is designed to produce boards with a thickness range of 2.5 – 40mm. It is capable of an estimated 400,000m³ of MDF boards annually.

The new order is proof that Siempelkamp's success story in Vietnam continues: "With the new order from FSC we can defend our

FLASHBACK 2010: MDF SERVICE PACKAGE FOR DONGWHA

In June 2010 the Vietnamese Joint Stock Company VRG DongWha, headquartered in Minh Hung, signed a contract for an MDF/HDF plant made by Siempelkamp. This plant includes a 8' x 47 m ContiRoll® press which has been the longest MDF press line in Asia thus far. The joint venture brought two Asian companies together, the rubber manufacturer Vietnamese Rubber Group (VRG) and the Korean DongWha company, Asia's largest wood-based materials manufacturer for MDF/HDF.



Handover of a ContiRoll® model during the groundbreaking ceremony at VRG DongWha

market leadership in Vietnam and supply what is meanwhile the fourth plant in this upcoming market. The trust in our planning competence as well as the performance of our products for the wood-based materials industry is a compliment for us," says Jürgen Philipps, managing director at Siempelkamp Maschinen- und Anlagenbau. The four presses, including the one in the latest order, which Siempelkamp has sold to the Vietnamese market, will produce a daily board capacity of 3,500 m³ – this volume cannot be matched by any other supplier.

For both business partners, the groundbreaking in August was a special occasion to celebrate the beginnings of the new plant. Numerous guests including representatives of the provincial government, banks, the Vietnamese TV, and the trade press accepted the invitation of FSC Vietnam Corporation. "Our research and development center has focused on the project over the last two years. In the course of our work we received the comprehensive support of the government of the Binh Phuoc province as well as from our equipment suppliers," explains Nguyen Tien Hai, chairman of FSC Vietnam Corporation.

The delivery of the new plant is scheduled for fall of 2017, the first-board event and acceptance test for spring of 2018. The mission of FSC Vietnam Corporation, "Sustainable development for forest systems", will be optimally supported with the new plant including a ContiRoll© press that scores high in regards to material and resin savings!

INTERVIEW

"TARGET: 1ST BOARD SPRING 2018!"

Interview with Nguyen Tien Hai, President of FSC Vietnam Corporation

Bulletin: Mr. Nguyen Tien Hai, with the new MDF plant you will have an annual board volume of approximately 400,000 m³ and you will be operating one of the largest MDF plants in Asia. What markets do you plan on serving?
Nguyen Tien Hai: Our main market is the Asian market.

Bulletin: How is the market for the wood-based materials industry in Vietnam doing in general?
Nguyen Tien Hai: There is a good balance of supply and demand on the market. For us to be competitive we have to focus on cost savings and produce high quality products.

Bulletin: Siempelkamp is proud to be able to support you with the new plant. What was the key factor for you to go with Siempelkamp as the supplier of this plant?
Nguyen Tien Hai: Siempelkamp manufactures the largest continuous press systems and they have experience from producing over 300 production lines worldwide.

Bulletin: The motto for this edition of our customer magazine is "Teamwork". What does teamwork mean to you in regards to your own team?
Nguyen Tien Hai: To us, teamwork is for FSC's teams to work together to reach a common company target.

Bulletin: ... and how do you define teamwork when it concerns the cooperation with a plant manufacturer such as Siempelkamp?
Nguyen Tien Hai: FSC's team will cooperate with our plant manufacturer in order to reach the same target: the 1st board in spring 2018!

Laboratory press for SABIC: **Precision work for a chemical giant**

→ By Fabian Falk

When it comes to really large forming presses, Siempelkamp is at the top of the list of all special plant manufacturers. Several years ago Siempelkamp's tradition as press specialist was expanded to the area of modern composite materials. Especially the developments in recent years, primarily in the field of highly precise hydraulics and their controls, which both are completely developed and manufactured in-house, have made it possible for Siempelkamp to also produce highly specialized hydraulic presses that can be used for the manufacture of composite components. During the manufacture of these components, high pressing forces are secondary. The high precision of the processes when manufacturing composite components made of fibers and resins takes center stage. The processes leading to composite materials are still studied by composite manufacturers with the objective to further optimize them for large-series production.

SABIC

One of these manufacturers is SABIC (Saudi Basic Industries Corporation), a conglomerate, which specializes, next to metals such as steel and aluminum, in all products relevant to the petrochemical industry. Despite its relatively young corporate history, SABIC was founded in the Saudi Arabian city of Riyadh in 1976, the company belongs to the "Global Big Five". BASF is regarded as the leading chemical company, followed by Dow Chemical and the Chinese Sinopec Group which was recently reorganized in 2000. With an annual turnover of 50 billion $US, SABIC takes the fourth place, ahead of the US giant ExxonMobil. SABIC currently employs approximately 40,000 people worldwide and owns technology centers and sites in the USA, Europe, India, China, Japan, and South Korea. Because the transfer of knowledge is part of the company's business model, the company researches customer solutions and innovative process technologies in 19 technology centers (SABIC T&I).

Hydraulics of the press

Paris, March 2014 – At the world's leading trade fair for fiber composite materials, the JEC Composites, the first contact between SABIC and Siempelkamp took place. At the fair SABIC was hoping to find a company to supply a laboratory press for its research institute on polymer development, the SABIC Plastic Application Development Center. At this highly modern technical center, which is located at the campus of the King Saud University and covers an area of 43,000 m², the Saudi Arabian polymer specialist researches and develops new materials and their manufacture. An important field of activity for the technical center is the understanding and solving of customer problems regarding the processing of modern and complex fiber composite materials.

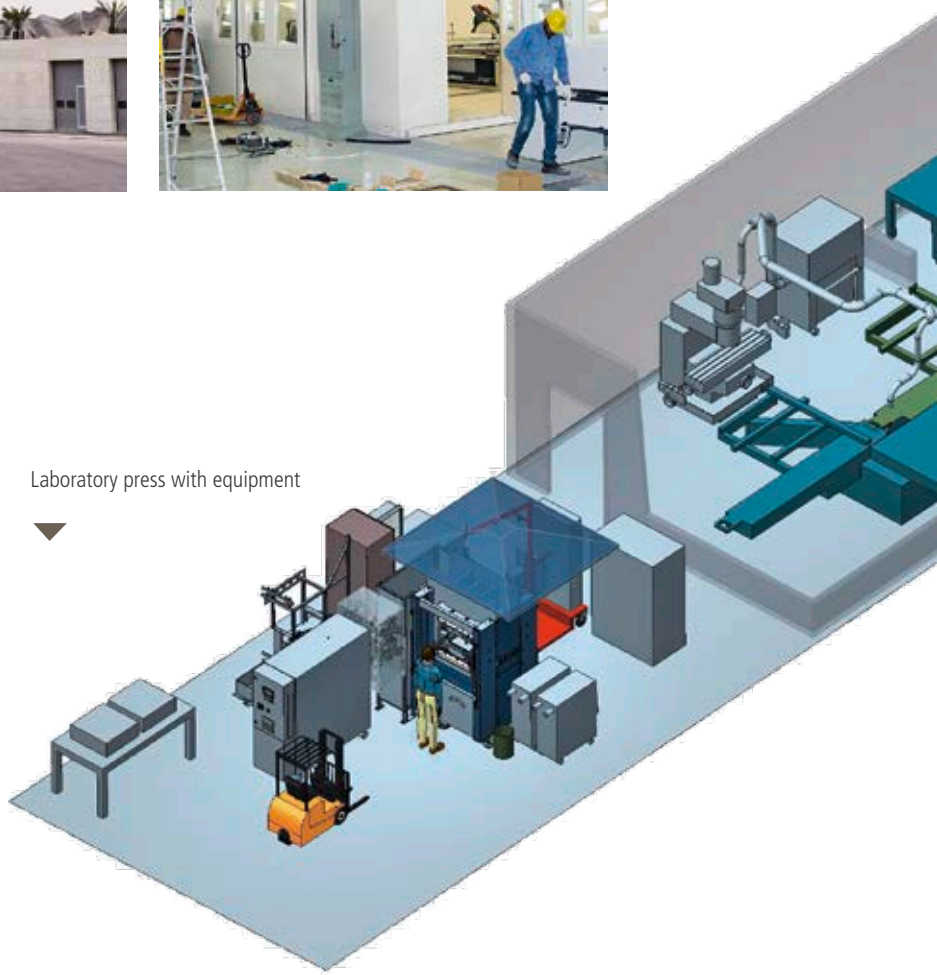
The friendly discussion at the fair convinced SABIC of Siempelkamp's competence as the systems supplier for its investment project. Several reference plants and the available process expertise in the area of press systems for composite production, as well as Siempelkamp's own technical center at the Krefeld location, motivated the Saudi Arabian businessmen to visit the German company. The visitors from the Middle East were especially impressed

Laboratory press for SABIC

SABIC Plastic Application
Development Center in Riyadh

Cut-to-size and
machining center

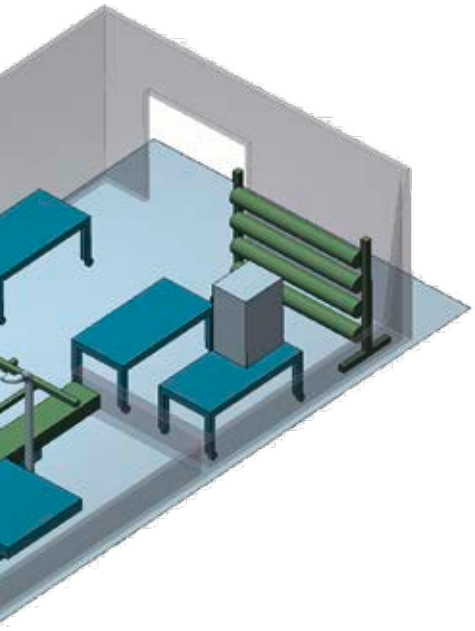
Laboratory press with equipment

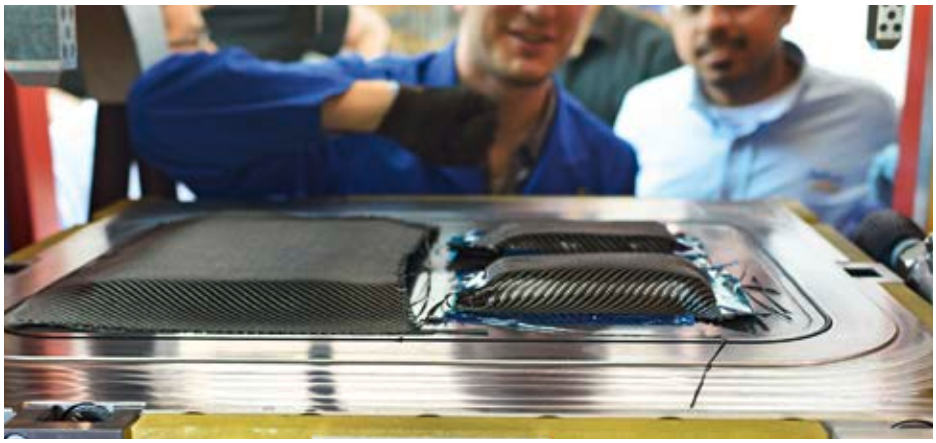


by the extensive product range of the press builder but also the in-house developed control technology as well as the unique highly precise hydraulic system. With the available laboratory presses at the Krefeld technical center as well as the 2,500-metric-ton laboratory press developed for the Open Hybrid LabFactory research center in Wolfsburg, Germany, which Siempelkamp visited with the guests from SABIC, Siempelkamp was able to demonstrate its competence in the area of diverse presses.

A supply contract for complete laboratory equipment including a 150-metric-ton laboratory press for the development of new high-performance plastics and for testing new resin systems was signed in August 2014. A special feature of the press was supposed to be the large stroke of 700 mm (daylight) which allows high variability for very large pressing dies. This requirement was implemented with a one-cylinder up-stroke press which means the press cylinder is located below the press table. The press table has a base area of 700 x 700 mm. Compared to the entire Siempelkamp product portfolio for presses, this press, with a total height of 3,500 mm, is considered a dwarf. However, despite its small size, the properties of this press are impressive. The dwarf press applies a hydraulic pressure of 1,500 kN. By means of differential cylinders the lower die can be precisely positioned and pressure can be applied in a pinpointed and finely-dosed manner. The press control allows a press movement under full force of 1 – 3 mm/second. During normal operation, for example, when the press is closing, the press speed can be controlled precisely between 1 mm/second up to 40 mm/second.

Product samples





Lower press table with molds and preforms

The small press is very versatile: For the development of high-performance plastics, two heating plates are used which can be heated very precisely to up to 350° C and ensure, by means of controlled cooling, the necessary process parameters for the desired product properties. The entire press system is designed as a complete machining center. The new laboratory press can manufacture and test sheet materials or manufacture, with the help of molding tools, three-dimensional components. With these product samples SABIC researches the mechanical properties of newly developed duroplastic and thermoplastic base materials in the company-owned institute in Riyadh.

Through interdisciplinary and partnership-based cooperation with Advanced Composite Engineering GmbH, Luratec AG, and Siempelkamp's subsidiary Wolfangel GmbH, Siempelkamp was able to supply the complete production plant in the end. ACE supplied the necessary tools for sheets and coupons. ACE also contributed the injection machines with an injection pressure of up to 22 bar, consisting of Wolfangel components. Two different injection systems allow the processing of one or two-component materials. The systems can be heated up to 140° C and can be actively cooled. This process technology enables SABIC to also research serial production processes. Luratec supplied the test equipment and the system solutions for the adjacent cut-to-size system and machining center. Here, sheet materials can be trimmed to size by a diamond saw and test pieces can be milled, also with a diamond tool, to a certain shape and material thickness according to standardized international test instructions.

After briefing and two weeks of on-site training in press operation by the Krefeld specialists, SABIC Plastic Application Development Center can now carry out more in-depth research of modern fiber composite materials with the new processing center. We are convinced to hear and read a lot more about SABIC, the chemical giant with the highly professional research center and its versatile and accurate laboratory press from Siempelkamp.

"Formidável, ForMóbile":
Guest at the hotspot of the Brazilian wood-based materials industry

➜ By Bernd Hauers

From July 26 to 28, 2016 Siempelkamp was an exhibitor at ForMóbile in São Paulo. The fair was an excellent opportunity to revive customer relationships, some of which date back 65 years and, more than ever, to benefit from new impulses.

ForMóbile is regarded as the meeting place for primarily the Latin American wood and furniture industry. On an area of 80,000 m², 750 exhibitors and close to 60,000 visitors were represented here to deepen existing contacts and to become familiar with industry innovations. For the wood-based materials industry the fair is an important economic barometer especially considering the continuing economic recession in Brazil.

Siempelkamp presented its comprehensive concept in São Paulo, all components for the sustainable production of wood-based products from a single source. A new product highlight at the booth was EcoScan, the system for measuring the area weight distribution for optimal mat density in the pre-press. Following

Siempelkamp booth at ForMóbile trade show in São Paulo

Curitiba – the capital of the State of Paraná and home of the Siempelkamp sales offices for South America

Xylexpo in Italy, at ForMóbile this concept was exhibited for the second time at a fair with the help of animated pictures and film. "Our booth was well visited from the first to the last day of the show; concrete investment projects were discussed. We had very good talks with important representatives of our long-standing South American customers," reported Bernd Hauers, Siempelkamp Sales Latin America.

The focus of ForMóbile: Current topics

All the important South American manufacturers of wood-based material boards as well as Siempelkamp's market competitors were represented at ForMóbile. Arauco, a South American manufacturer of pulp, panels and lumber presented new surface designs which were the primary topic at many other booths. This was also reason for lively exchanges between Arauco employees from Pien and Jaguariaiva and the German Siempelkamp partner from the Curitiba office.

The new Siempelkamp customer Asperbas put itself in the limelight with a very attractive booth concept. Among other things, the company displayed a large model of the MDF plant at the Agua Clara location, a plant that was supplied by Siempelkamp. Our customer presented this model with particular reference to the Siempelkamp scope of supply and technology. In two TV performances during the fair, William Alves from Asperbas pointed out that Siempelkamp was the single-source provider of the plant.

Duratex, another long-standing Siempelkamp customer was also an exhibitor at ForMóbile. The wood-based panel manufacturer introduced some particularly interesting features including new surfaces, retardant particleboard, and moisture-resistant panels.

Brazil Highlights

1951

During a trip to Brazil, Eugen Siempelkamp, father of Dr. rer. nat. h. c. Dieter Siempelkamp, initiated the first business contacts with the Setubal family, founders of Duratex. The company orders a wet fiberboard press plant.

1973

Minasplac in Uberaba (later Satipel-Minas S.A.) builds a particleboard plant which operates according to the Fahrni-Novopan system. The heart of the plant is a Siempelkamp multi-opening press.

1983

Berneck built its first particleboard plant in Araucaria, Paraná, with a Siempelkamp tray-belt system. Later the customer added a large multi-opening belt system. Both press lines were replaced with a ContiRoll® press line in 2001 which achieves an annual capacity of more than 600,000 m³ of MDP. Nowadays Berneck operates two Siempelkamp MDF and MDP plants each at two locations.

1998

Brazil's first MDF plant started operation at Duratex in Agudos. Siempelkamp supplied a complete plant including the engineering, complete wood-yard, fiber preparation system, forming and press line with ContiRoll® press, finishing line, and energy plant.

1999

Under the management of Dr. rer. nat. h. c. Dieter Siempelkamp, Siempelkamp opened up a representative office in Brazil. This office laid the foundation for today's sales and service offices Siempelkamp do Brasil Ltda. and Siempelkamp Comèrcio e Indústria Ltda. in Curitiba.

We also took the opportunity to engage with our customers Fibraplac, Guararapes, and Masisa. Pertech, São Paulo, a company of Lamitech in Columbia and one of the largest Siempelkamp customers in Latin America introduced many new designs for HD laminates. This type of product range establishes the connection to Siempelkamp: Pertech operates three large Siempelkamp press lines for HD laminates in Cartagena, Columbia. In Primadera the customer operates a Siempelkamp particleboard plant with ContiRoll® technology and in São Paulo four additional plants for HD laminates.

Bernd Hauers: "The booths of our customers were well visited every day of the fair. The economic recession in Brazil resulted in price adjustments but that didn't keep orders from being placed. We were able to welcome many customers and interested parties from Brazil and other Latin American countries at our booth. In this way, we laid the foundation to approach the key challenges of the future with our customers in mind."

2000

Satipel-Minas S.A. (known as Duratex today) ordered a complete particleboard plant from Siempelkamp. At this location which, at the time, had been the home of a multi-opening press, a new plant was built. Later on, this site also became the home of an MDF plant. ContiRoll® presses are used here as well.

2009

The 200th ContiRoll® press started operation at Duratex in Agudos, 330 km from São Paulo. The 9' x 77 m jubilee press is still the world's longest continuous press. The largest South American wood-based panel manufacturer produces 800,000 m³ of MDF annually at the plant. Nowadays Duratex operates 8 MDF and MDP plants by Siempelkamp at five Brazilian locations.

2013

Guararapes, Cacador, one of the largest plywood manufacturers in Latin America ordered from Siempelkamp a complete MDF plant with a yearly capacity of 360,000 m³. This plant started operation in the beginning of 2016.

2014

Our new customer Asperbras ordered for its location Água Clara a high-end MDF line. For all components Siempelkamp is the single-source supplier including the engineering, the steel support structures, the complete fiber preparation system, the forming and press line, and the finishing line. The scope of supply also includes an energy plant, a short-cycle press line and an evaporation facility for the water treatment.

2015

2015 approx. 5 million m³ of MDF and 3.3 million m³ of particleboard (MDP) were produced in Brazil. Nearly 80% of these products were manufactured with Siempelkamp ContiRoll® plants.

Siempelkamp representative office in Brazil

MACHINES

The whole is always more than the sum of its parts. Teamwork means to unite the strengths within our group where they are obvious in order to achieve a unique position. An excellent example are the synergies between our machine factory and our foundry.

Component parts made by Siempelkamp:
"Cast-iron teamwork"

→ By Manfred Biermann, Frank Gerst, Dirk Howe, Dr. Joachim Martin, Ralf Meier, Stefan Ziemes

In Siempelkamp's integrated concept, teamwork is an established factor: Large castings are created in the foundry and machined in the machining shop – e.g. grinding bowls, large-scale components for the wind power industry, turbine housings, and press components. Two projects illustrate how smoothly this teamwork operates.

Team at Siempelkamp Giesserei (Siempelkamp Foundry Technology)

From windmills to wind power plants

Wind energy uses the kinetic energy of wind – i.e. moving masses of air in the atmosphere – as a renewable energy source. Introduced in the ancient world, in earlier ages windmills and sailing ships were used. Electricity generation using wind power plants is today far and away the most important form of wind energy use.

At the end of 2015, according to "Global Wind Statistics 2015", worldwide there were wind power plants installed with a total rated output of 432.4 GW, of which 175 GW is in Asia, 147 GW in Europe, and 101 GW in America. These are capable of covering approx. 3.7% of global electricity requirements – according to the "Renewables 2016 Global Status Report".

THE FOUNDRY TEAM:

Executive Board:
Dirk Howe, Stephan Kaiser

Works management
Jens Wenzel

Planning
Klaus Dieter Wohlfeil

Sales
Frank Gerst

Project management, logistics
Ralph Louven

Melting shop
Karin Buhlmann

Molding shop
Rainer Hendricks

Fettling shop
Dieter van den Brand

Quality department, laboratory
Arndt Merten

The procedure "first casting, then machining" represents a Siempelkamp core competency that is utilized by customers from numerous industries. The component parts thus include e.g. structural parts for large onshore and offshore wind power plants, turbine housings, large cast components for the construction of metal forming presses, parts for machine tools, mill heads and grinding tables for the extraction of raw materials, cask bodies for the nuclear industry, engine blocks for marine diesel engines, and components for plastic injection molding machines.

The production of castings and the subsequent precise machining opens up numerous advantages for Siempelkamp customers: smooth processes without interface losses, quality from a single supplier, and lower transportation costs for the often very large component parts. Smooth transitions that never falter include e.g. the machine housings and subdecks for Adwen GmbH, leading specialist in offshore wind power plants.

"Adwen Wikinger" project: safe waters!

The Adwen joint venture, of which the wind turbine builders AREVA and Gamesa each hold 50 percent, is a leading specialist in offshore wind power plants. The offshore wind turbines made by the company are among the most powerful on the market, and their electrical output is five or eight megawatts. The range of services offered extends from the development, production and installation of the wind turbines on the high seas, through to servicing at the company's location in Emden, Germany.

Approx. 35 km northeast of the island Rügen, and over an area of approx. 35 km², 70 wind turbines of type AD5-135 are being set up – suitable and certified for offshore operation.

Working at Siempelkamp Maschinenfabrik (Siempelkamp Machinery Manufacturing)

The name of this turbine is derived from the rated output (5 MW) and the blade diameter (135m). The total output of the wind farm is 350 MW – which covers over 20 percent of the entire annual consumption of the German state of Mecklenburg-Western Pomerania! The 1.4 billion euro project is set to be connected to the power grid in 2017.

The EEG levy

The EEG levy was introduced by the German government as early as the year 2000, and is intended to promote the expansion of renewable energies. The Renewable Energies Act (EEG) obliges power grid operators to purchase the electricity generated from renewable energies, e.g. wind, hydroelectric and solar, from the operators of the plants at a guaranteed price.

If the power grid operator is only able to sell the electricity on the electricity market at a lower price, the difference is refunded from the EEG pot. This in turn is fed by the EEG levy, which every consumer pays.

THE MACHINING SHOP TEAM

Executive Board:
Stefan Ziemes,
Dr. Joachim Martin,
Ralf Meier

Works management
Manfred Biermann

Planning
Ullrich Fieweger,
Günter Heltweg

Project management
Christoph Stryczek,
Markus Stammen

Production
Roland Renkel

Quality assurance
Eduard Gall, Sergej Zilinski,
Udo Schmalz,
Maik Jacobowsky

OVER

14,300 m²

– THE SWEPT ROTOR AREA

The maximum rotor blade speed is 13.5 rotations per minute.

By then, Adwen will already be integrated into the Siemens Group, because Areva is getting out of the offshore wind business entirely, and Siemens will be taking over 59% of the Gamesa shares by the end of the first quarter of 2017.

In the GT1 project, Siempelkamp Giesserei (Siempelkamp Foundry Technology) already manufactured the machine housing and subdeck castings for the M5000 predecessor system. After the modification of the pattern equipment, both castings are now also being manufactured for the Wikinger project – a total of 57 machine housings and 30 subdecks between the end of 2015 and the start of 2017.

The order for Siempelkamp Giesserei (Siempelkamp Foundry Technology) includes the casting, the machining, and the coating. The unfinished casting for each machine housing will weigh in at an impressive 63,400 kg, while the smaller subdeck weighs 19,700 kg.

For the weekly production of one machine housing, the foundry team sets up special pits with the dimensions 5.5 m x 5.5 m x 6 m. Once the casting process is done, the component can be lifted out of the pit after 16 days – and after another 30 days it is tested, and leaves the Siempelkamp Giesserei (Siempelkamp Foundry Technology) for the machining shop.

Wooden pattern of a grinding bowl

Pattern making for a grinding bowl

The machining shop takes over!

At the start of 2016, the first machine housing for the Wikinger project was machined in the machining shop at the company's Krefeld location, after which series production began. After a short learning phase and process optimization, throughput times of 35 days are now achieved in the machining shop.

Pattern making for Adwen machine housing at the foundry

Machine housing in the fettling shop

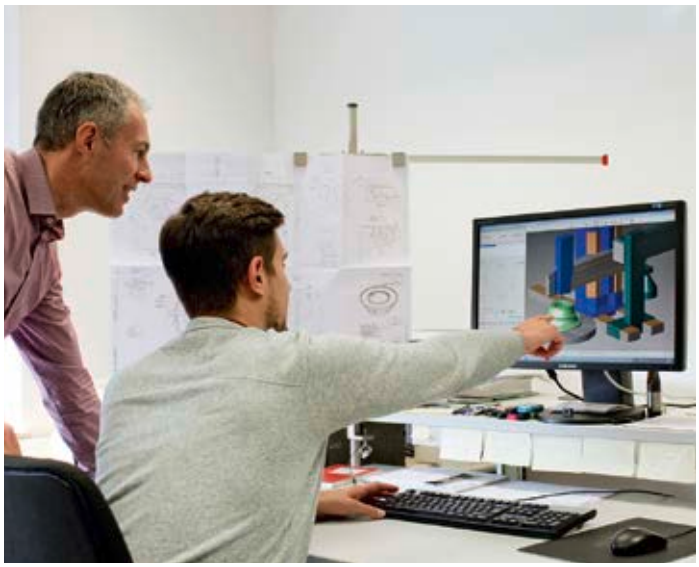
Rotor hub in the machining shop

Before a casting leaves the foundry, the machining shop team has already initiated important steps to allow such a project to be taken over smoothly. This work is part of the planning process, which precedes the actual machining: The work sequence for the machining of the component is defined, tool procurement and configuration are initiated, and test equipment and quality assurance plans are prepared. A 3D model of the component is created on the basis of the drawings. This is an important basis for the creation of the NC programs. Without such programs, a complex machining process of this kind would not be feasible.

A team of seven programmers is responsible for the NC programming. “A central quality feature is that all planners and programmers can demonstrate their experience with the equipment on which a casting is being

27
lathes

25
milling machines



NC programming department: Setup situation for grinding bowls, comparing drawing and NC program

16,000 mm

… is the maximum diameter of production parts that can be handled in the machining shop for machining with the carousel lathe

during all phases of the procedure," reports Stefan Ziemes, Director of Siempelkamp Maschinenfabrik (Siempelkamp Machinery Manufacturing). Internal process and quality assurance reviews finish the job, ensuring a regular cycle of continuous optimization for all the individual stages.

Once the course has been set in this way, the actual machining process can start. The component – in this case the Adwen machine housing – is unloaded, and positioned precisely on a marked surface. The laser measurement of the external contour then takes place, using state-of-the-art laser technology via laser trackers. The focus here is on defining the optimal central axis, before the component part is clamped to the machine for milling. It is likewise important to apply initial markings to the component part for various machining steps, i.e. to mark out the existing machining dimensions.

This is where a key unique selling point of Siempelkamp comes into play: State-of-the-art machining equipment is on standby to turn and mill the machine housing. However, even the most innovative equipment is no substitute for specialist personnel: the first task is to clamp the component to the machining table of the machinery – based on the initial markings – with a precision of a few hundredths of a millimeter. This is achieved by a team of

machined, and have built up additional expertise through a wide range of professional development training. Regular coordination sessions on planning, programming and project management ensure consistent communication

TOP EQUIPMENT

86 machine tools

- **1** deep hole drilling system
- **3** CNC boring mills
- **10** machining centers
- **5** saws
- **15** drilling machines

… plus **103** crane systems (bridge and jib cranes)

experienced crane operators and equally experienced cutting machine operators working hand in hand. In order to also ensure optimal subsequent cutting, the highly qualified employees not only need to monitor the production process, but also to read the cutting parameters and correct the machining process if required – because even the best simulation is "only" a model.

The Siempelkamp machine pool allows the metal-cutting machining of component parts of up to 450 metric tons. This includes the milling of workpieces between 500 x 500 x 500 mm and 20,000 x 7,000 x 6,000 mm.

The mechanical machining is again followed by manual work. Well trained specialist personnel handle the finishing of the components: It is necessary to remove flashes and rework transitions from the cast surfaces to the machined surfaces, so that the component corresponds to the required specifications.

Before delivery, the machine housings are subject to a final inspection: The Quality Assurance team inspects and documents all the manufactured dimensions. Wall thicknesses that cannot be determined using conventional measuring equipment are determined here using ultrasonic testing.

There then follows the coating process for the fully machined parts, i.e. two different paint systems are applied. Siempelkamp Giesserei (Siempelkamp Foundry Technology) then organizes the transportation toward Bremerhaven, where all the components of the nacelle are assembled.

"Grinding bowls for Loesche" project
Another project in which Siempelkamp is demonstrating its networked competence is the order for the "LM 72" – a grinding bowl ordered by the family-run company Loesche. This family company has been active in the cement grinding industry since 1906, and is one of the international market leaders for vertical roller mills.

FOR ME, TEAMWORK MEANS:

"… the perfect management of the entire process, from the patternmaking to the conclusion of machining, including painting and delivery, right across the boundaries between the companies."

STEFAN ZIEMES

"… multiplying the potential of each individual, instead of just adding them, to achieve maximum customer satisfaction."

MANFRED BIERMANN

"… utilizing the strengths of all the personnel involved in a manufacturing process, so that together we can fulfill the requirements of our customers."

FRANK GERST

"In this new team, we don't just work with each other, but also for each other. We all have the same understanding as our clearly defined objective: Understanding our customers, with their continuously increasing needs and requirements, in an extremely hard-contested market environment, and providing them with excellent added value."

DIRK HOWE

The name of the grinding bowl is derived from the company name (Loesche-Mahlschüssel) and the external diameter of the grinding surface (7200mm). With an external diameter of 7600 mm and a height of almost 3700 mm, the LM 72 is currently the largest vertical mill – a great opportunity for Siempelkamp, as the machining shop and foundry specialize in particularly large component parts.

At the start of 2016, Siempelkamp Giesserei (Siempelkamp Foundry Technology) received two orders at once for this type of grinding bowl. The unfinished casting is identical, and only the machining for the two type variants "LM 72.5" and "LM 72.4+4" is different.

This colossus took 20 days before the temperature in the mold had fallen below 300°C. 14 days after removal, the grinding bowls are fully cleaned and ultrasonically tested. "The handling represents a special challenge. Because of the low crane height, the bowls cannot be rotated in the fettling shop. Our employees therefore laid the grinding bowls on their side, so that they could continuously shift them into the right position," explains Jens Wenzel, Works Manager at Siempelkamp Giesserei (Siempelkamp Foundry Technology).

Two external and three internal cast-on lifting lugs facilitate the work, first during the machining, and then during transportation. For this purpose, shackles are used that weigh over 300 kg, including their retaining bolts.

Loesche grinding bowl LM 72
in the fettling shop

188,000 kg

… is the raw casting weight of the LM 72.

Several dozen grinding bowls will be cast in the Siempelkamp Giesserei (Siempelkamp Foundry Technology) in 2016 alone. The team produces raw casting weights between 50,000 kg and 210,000 kg for each grinding bowl. And there is another record coming up: "At 8,100 mm, one of these grinding bowls will have the largest diameter found in a vertical mill anywhere in the world," says Dirk Howe, Director of Siempelkamp Giesserei (Siempelkamp Foundry Technology).

Machining competence, needs-oriented focus

As in the case of the "Wikinger" project for Adwen, here too the project was taken over seamlessly by the machining shop. For large components like the Loesche grinding bowls, a CNC carousel lathe of type Schiess VME 10 (see box) and a double portal with a faceplate of type Schiess VMG6 is used: these machines can cope with vast component part weights. "All in all, our logistics and mechanical

Lösche grinding bowl
on Vertimaster

engineering technology are capable of machining large castings with individual weights of up to 450 metric tons," says Ralf Meier, Director of Siempelkamp Maschinenfabrik (Siempelkamp Machinery Manufacturing).

The decisive factor for the structure of the machining process in the machining shop is generally: is this a series-produced part, or individual job manufacturing? "We are machining 16 of the Wikinger machine housings this year, so we can call that a series-produced part. The Loesche grinding bowls, on the other hand, are virtually a series-produced part with different variants, occasionally differing in the size of the component part and sometimes the drilling pattern," explains Manfred Biermann, Works Manager in the machining shop. But highly complex individual job manufacturing tasks are also included in the range of services, meaning every customer's requirements are handled precisely.

Thanks to "casting and machining from a single source", the transport logistics for the fully machined product also represent one less challenge. In the case of the grinding bowls, the size and weight make transportation by truck virtually impossible. Thanks to the teamwork at the location in Krefeld, the Siempelkamp Group offers the optimal solution. There is no problem obtaining permits for subsequent transportation to the port on the river Rhine approx. 15 km away at Krefeld Uerdingen.

Whether in the case of the Adwen components, the Loesche grinding bowls, or any of the many other projects, the foundry and the machining shop work together: the combination of precisely coordinated teams and personnel, material and

"Considered individually, we previously always added together our expertise and successes. With our new technology cluster of "complex thick-walled casting with machining" at the shared location in Krefeld, we are multiplying our potential: "Together Everyone Achieves More".

DIRK HOWE, DIRECTOR OF SIEMPELKAMP GIESSEREI (SIEMPELKAMP FOUNDRY TECHNOLOGY)

Gigantic dimensions – Loading of the grinding bowl

+/– 0.01 mm

… is the dimensional tolerance of the machining process. A comparison to illustrate what this precision means: a human hair is approx. 0.05 to 0.07 mm thick!

machinery that perfectly complement one another forms the recipe for success. "Everything from one source, short distances, teamwork that extends across company lines – these are the advantages that our customers in numerous segments are accessing," says Stefan Ziemes.

Loading of Adwen turbine housing

Vertimaster

Schiess VME 10: The carousel lathe giant

Workspace

Turning diameter:
16,000 mm

Clearance:
6,000 mm

Faceplate diameter:
10,000 mm

Traversing ranges

X axis: 13,750 mm

Y axis: 7,000 mm

Z axis: 7,500 mm

maximum component part weight:
400 t

Spindle power:
100 kW

Faceplate drive power:
240 kW

Crane capacity:
2 x 240 t

Büttner drum dryer for Swiss Krono Menznau:
The mountain is the benchmark

→ By Wolfgang Engel

Construction sites for wood-based material manufacturers throughout the world require new or different framework conditions again and again. The best example illustrating that is an order for a new drum dryer which Swiss Krono Menznau placed with the Siempelkamp subsidiary Büttner in 2016. Here, a mountain set the course!

The manufacturing plant of the Swiss Krono AG in Menznau, founded in 1966, is located in the mountainous back country of Lucerne. Here, the company manufactures wood-based materials with the well-known Swiss quality standard and sells these in over 90 countries worldwide. The equipment at the location includes a particle board plant with a drum dryer that had to be replaced in 2016.

Siempelkamp's energy and dryer specialist was awarded the contract for this project: During the first project stage in August, the old drum dryer was replaced with a new bigger Büttner model. The current replacement model was designed to increase performance. While the old drum had a diameter of 5.20 m

Initial situation with the old dryer in the center of the plant

Assembly of the new Büttner drum at the plant directly next to the installation location

The new drum is ready for installation

Drum dryers made by Büttner: directly heated

The directly heated drum dryer can be heated with various heating media and is especially suited for the drying of wood chips, OSB strands, and other biomass products. The drum dryer is directly heated via various energy plants and burners.

Products designated for drying come in through an air-tight rotary valve and into the rotating single-pass dryer drum. The dryer drum is equipped with specific internals, depending on the type of product. This results in an increase in surface area and with it, an increase in efficiency.

The product is transported slowly through the dryer drum, by the internals of the dryer drum and the flow of the hot gases. Hot gases from the dryer flow around the product in a continuous current, heat it up and remove the moisture. After a product has passed through the dryer drum, cyclones separate it from cooled down and moist gases.

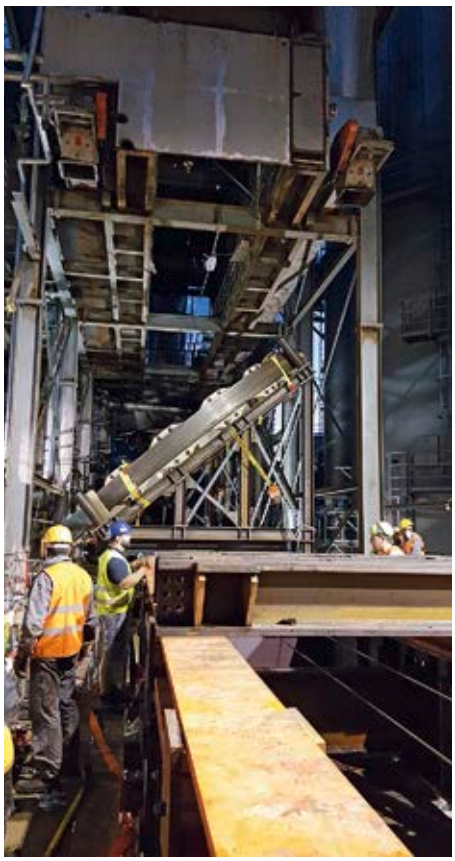
At the end of the process, the dried product is discharged from the drying process through an air-tight rotary valve. To make use of the residual heat, dryer gases are partly recycled back into the mixing chamber. The other part is released as exhaust or sent through filter systems and cleaned.

and a length of 28 m, the dimensions for the new Büttner drum include a diameter of 6 m and a length of 29 m. The scope of supply also included the new discharge housing, a fan, and dry particle transport systems.

The measure of all things …

… for this project was the mountain that borders the plant. "Due to its location next to a mountain, there was no open access to the plant. For the dismantling of the old plant components prior to the installation of the new equipment, some components had to be removed first, for example, screens and sifters," reports Wolfgang Engel, at Büttner working in the area of service for modification projects. Furthermore, due to limited space conditions, the old drum could not be lifted out with a crane. A sliding device had to be installed to carry out the dryer replacement. The constrictive time frame for the modification also set clear boundaries for the project.

The old drum is moved out, the new drum is ready to be installed



The rear drum ring must first get through the narrow steel construction

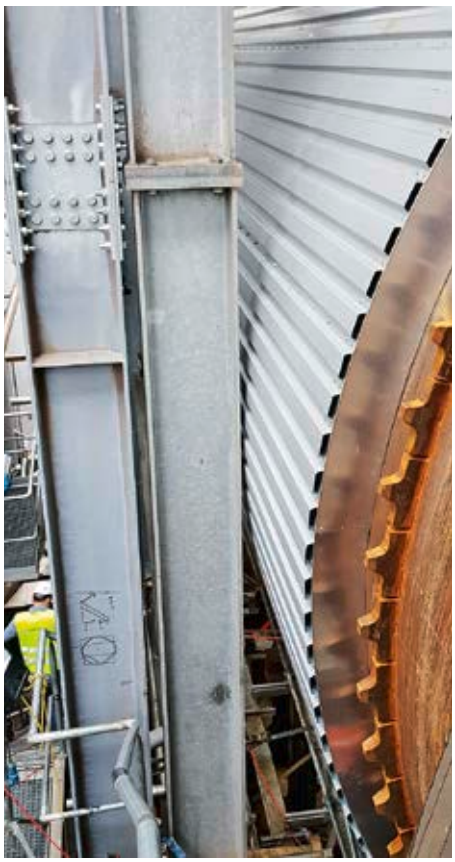
It follows the drum on the mounting carriage

To reduce production downtime to a minimum, three weeks were scheduled for the drum replacement. A team of 42 technicians, instructed by two construction managers from Büttner, worked around the clock to carry out the custom work involving the new drum dryer. "It paid off that we had a well-coordinated team working for us and that specifically trained construction managers took care of the coordination on site," says Wolfgang Engel.

Our photos demonstrate: The modification was successfully carried out in precision work and within the requested time frame. A key factor for this success is our business relationship with Swiss Krono Menznau which has grown over many years. Already in the mid-1990s Büttner delivered a dryer for an MDF plant which the customer ordered from Siempelkamp. Clear, flat hierarchies, simple and targeted correspondence and an open dialog between the customer and the supplier are decisive characteristics which made this ambitious project a success!

Finished plant

After inserting the drum, the rear drum ring is installed



Custom-fit installation

Finally, the new discharge housing is installed

The press giant of Nanshan:
Strength meets gentleness

→ By Christian Hassler

When 50,000 metric tons of pressing power gently pushes at 0.05 mm per second into the workpiece, only one machine can fit this description: the press giant of Nanshan. Bulletin 02/2015 reported about the startup and the forging processes of its little sister with a pressing force of 12,500 metric tons. Now the 50,000-metric-ton giant is ready to begin production at Nanshan Aluminum, headquartered in Longkou in the Shandong province. The press has passed 100 different functional tests, before beginning full production operation. This was done to ensured that the giant of Nanshan will manufacture high-quality parts for the aerospace industry complying with all international aviation standards. All tests were passed with flying colors!

2,200 metric tons

– the weight of the moving bolster of the Nanshan press

When 500 MN are working – aluminum pancakes with site manager Gordon Zühlke

With a height of almost 30 m, the giant press takes visitors' breath away once they see the press for the first time. However, what visitors are looking at is only part of the giant machine. More than twelve meters of the press is installed below floor level. When visitors are told that this giant, with its total weight of 8,000 metric tons, operates with the same precision as a machine tool at a metalworking shop, they have their doubts. These are, however, unfounded because this machine is unique.

A lot of work had to be done before the operational properties of the 4 x 7 m press table could be proven during operation. Upon completion of the mechanical and hydraulic installation, the first accuracy tests of the press had to be performed. All positions within the overall configuration were measured, it was necessary to keep tolerance deviations of less than 1/10 mm. Thus, it will ensured that during future mechanical operation everything will move freely and the press cylinders will be able to lift and lower the moving bolster weighing 2,200 metric tons. The assembly team performed a very good job And all position measurements of the components were within the specified tolerances.

Once the electrical installations was completed, the automation technology and the control system supplied by Siempelkamp subsidiary ATR Industrie-Elektronik GmbH, function and no-load testing could begin. For the first time, the Nanshan press was brought to life from the control desk. On the request of the press operator, 60 hydraulic pumps were started to circulate 150,000 liters of mineral oil with a pressure of 450 bar in the hydraulic system. All main press movements were tested, such as,

Closed-die forging press for Nanshan: A precise performance requires accurate test processes

the lifting and lowering of the moving bolster via the eight main press cylinders with diameters of 1.4 m each and their corresponding pull-back cylinders. All auxiliary press movements were verified and passed their tests. One such test was that the press table was operated for eight consecutive hours to test the reliability of all components during long-term use. Additionally, the press passed its no-load test!

The hot startup

All basic functions had now been thoroughly tested and verified, the position measurements were correct, mechanical and digital tests of the input/output had been performed. The hot startup was next major milestone in the commissioning. That meant the giant from Nanshan had to prove its required precision forging a part. The first forging of metal cylinder blocks made of aluminum (Al 7050) with defined heights and diameters required the full commitment of the startup team. Numerous requirements had to be met; forming speeds under full load ranging from 50 to an incredible 0.05 mm per second were recorded in the requirement specifications of the machine. As a comparison: a piece of paper has a thickness of approximately 0.1 mm. Thanks to the efforts of Siempelkamp's in-house developed hydraulics, the team was confident that the machine would satisfy these strict requirements.

But why are such incomprehensible forming speeds, hardly visible with one's eyes, necessary? With this press Nanshan Aluminum intends to manufacture structural parts and

Top left and right: compression tests with aluminum ingots, bottom left and right: eccentricity tests

Sliding table

50,000 metric tons

of pressing force is applied with pinpoint precision by the Nanshan closed-die forging press

high-temperature resistant components such as turbine disks which are made of titanium alloys. In this respect, it is important to let the material flow into the mold during the forging process. Ultimately, the inner crystal lattice structure dictates the final quality of such components. Ductility of the finished work-pieces is desired. That means that during forging no defects in the inner microcrystalline structure, for example cracks resulting from forging too quickly, can occur. This ductility can only be achieved in titanium materials when the material has sufficient time to flow into the die due to extremely low forging speeds. Through this, the finished workpiece achieves the necessary operational safety for its future application. In the event of a crash, it does not immediately break but a plastic deformation takes place, ensuring that some functionality remains.

However, extremely low forging speeds aren't all that the closed-die forging press has to provide. It has to be able to apply the enormous pressing force of 50,000 metric tons with pinpoint precision – accurately without giving in to the counter-pressure of the blank or even building up more pressure. The required pressure holding time lasts just as long as the blank needs to stop its inner material flow after the defined press-in force and after closing of the die. The inner material flow in the crystal lattice of the hot workpiece does not stop with the maximum applied force during press closing but lasts significantly longer. Until the material flow ceases the press has to precisely maintain it's maximum pressing force. Thanks to Siempelkamp's in-house developed intelligent process control technology Prod-IQ, such operation is no problem even with a 500 MN closed-die forging press. Here, the perfect coordination with the tailor-made in-house developed hydraulic unit pays off. 5,000 to 8,000 data points per second are collected from the pump systems, the hydraulics, the position sensors, and the

Morning impression

Turbine disk

First forging tests

temperature sensors during forming processes and afterwards managed and archived by Dahmos, a process data management system developed by Siempelkamp.

Inspired by the excellent measurement data supplied by 38 load tests over a period of two weeks, the customer decided to push the limits of the machine to what was possible. An eccentricity test was carried out, which at the request of the customer, referred to values outside the agreed standard. An ingot was placed extremely off-center on the press table and by this the moving bolster was unevenly loaded. The suspense among all participants grew; the demands were extremely high and pushed the machine to its limits. But why was this request for such an extreme test outside the machine's requirements made?

One reason for this test was the production of, asymmetrically-shaped landing gear components. This process requires to forge the blank with a correspondingly shaped die. Unlike the manufacture of turbine discs which are forged directly in the center of the press table and which ideally allows control of the eight press cylinder by pairs, the press cylinders are

Landing gear components

External ejector installed beneath the floor

unevenly loaded when it comes to the manufacture of an asymmetrically-shaped part.

Sometimes the press force is generated from a pair of cylinders which is not completely positioned under the die. In such a situation a pull-back cylinder has to generate counter-pressure to the press cylinder that is not loaded so that only the cylinder that is positioned directly above the die applies pressure to the die. The load is therefore evenly distributed across the workpiece. The press giant made in Krefeld passed this test with flying colors. Its parallel deviations measured less than the required 0.25 mm per 1 m.

This performance regarding a metal forming press with a pressing force of 50,000 metric tons, which applies its pressure with pinpoint accuracy at speeds of 0.05 mm per second, can currently only be achieved by the 500 MN closed-die forging press made by Siempelkamp. This press provides the perfect combination of solid mechanics, sophisticated hydraulics, and intelligent process control technology developed by committed and experienced specialists and entirely made from a single source.

This machine has now started production at Nanshan Aluminum in Longkou. For two months the customer has already forged reference components, such as, structural parts for landing gear components for large passenger jets which comply with the strict manufacturer specifications of all international aviation industries. With the new production plant, Nanshan is able to process turbine disks with a diameter of 900 mm at one temperature during multi-stage forging. This is a decisive competitive advantage provided by the high degree of automation of the entire plant and quick tool changeovers.

Ruler over 500 MN

L'Union des Forgerons:
New open-die forging press and ring-rolling mill as a double pack

→ By Rüdiger Bartz

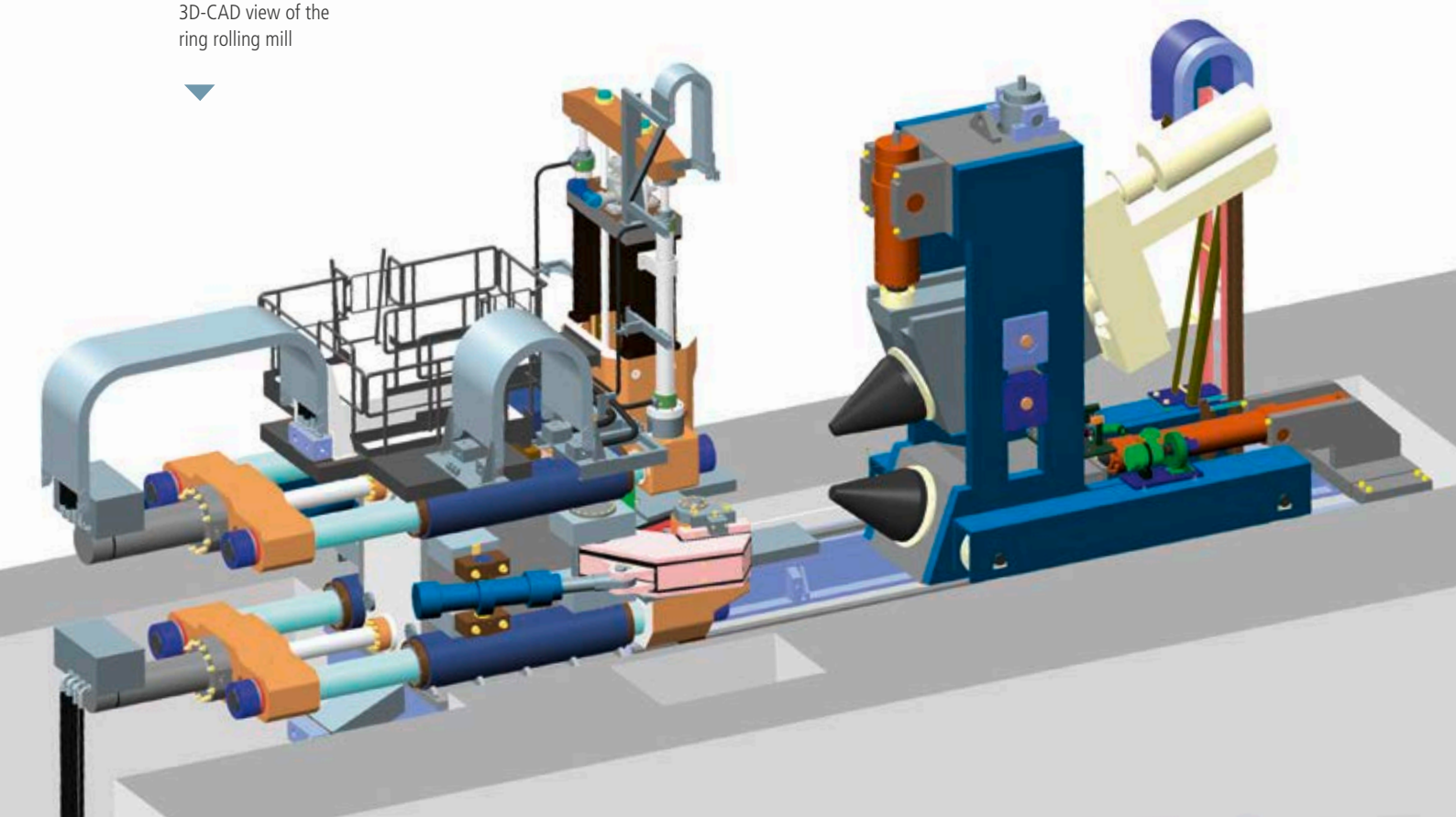
In 2015, the French company L'Union des Forgerons ordered an open-die forging press and a ring-rolling mill from Siempelkamp; the start of the installation for the press is scheduled for the fall of 2016. Both plants are components of a new line for ring rolling. This will allow the company in Méréville to expand its product spectrum, including through the addition of parts made of nickel-based alloys, titanium, and low-ductility metals for the aerospace industry, and will significantly increase its production capacity.

The new line consists of an open-die forging press and a ring-rolling mill, plus the furnaces and handling systems. The forging press has a press force of 30/33 MN, and represents a combination of an open-die press and a ring blanking press, thus providing high flexibility. In addition to manufacturing ring blanks, L'Union des Forgerons will use the press to manufacture conventional open-die forgings with weights of up to 10 metric tons. Due in part to the highly accurate lifting and centering device, the press achieves high precision during punching operation.

The unique "Universal Cassette Design"

The ring-rolling mill processes the ring blanks from the forging press and has radial and axial forces each of 4,000 kN, with a maximum ring diameter of 2,500 mm. It rolls rings with a height of up to 700 mm and weights of up to 5 metric tons. Siempelkamp is supplying the entire plant, including the hydraulics, electrical system and rolling dies.

3D-CAD view of the ring rolling mill



L'Union des Forgerons: "Result of the courage and perseverance of its founders"

1912:	Alphonse Bellamy and Eugène Loubignac, both of whom were farriers, filed the articles of association for a workers' production co-operative called 'L'Union des Maréchaux' (Blacksmiths Association) with the clerk's office at the town hall of the 14th Arrondissement of Paris.
1920:	The 1920s witnessed the decline of horse-related business, at the same time as the ramping up of industrial forge activity. The company was now called "L'Union des Maréchaux et Forgerons" and was established at Ivry. Business was based on 150 kg, 250 kg and, subsequently, 500 kg forge hammers.
late 1960s:	a new factory was established at Méréville
1985:	Forge work devoted to aluminum, titanium, nickel and cupro-aluminum alloys
1992:	Commissioning of a 1,000-ton press
1996:	Subsidiary founded for machining – Merevilloise de Mécanique
1999:	Expansion of forge building and commissioning of a circular rolling mill
2005/2007:	Expansion of the machining shop. Merevilloise de Mécanique grows
2013:	Takeover of the company FPG, the largest French manufacturer of lathe centers
starting 2015:	28 million euro investment in the Méréville location

The "Universal Cassette Design" makes it possible to use different main roll configurations in the same machine. The cassette principle provides the customer with a high degree of flexibility in the production process and allows high output rates even with small batches, because the cassettes can be changed within 30 to 50 minutes.

Through the use of design principles that have proven effective in other Siempelkamp systems, the plant achieves high precision during rolling, and simultaneously has a long operating life. Extensive FEM calculations guarantee the durability of the mechanical structural components. Another contributing factor here is that the housings for the tapered rolls, which experience high mechanical stresses, are designed as cast components. Similarly, all bearings are designed for a long operating life.

The software solution SiCoRoll 2.0, which Siempelkamp developed specially for ring-rolling, and which was recently updated with new features, allows the precise control of the rolling process. Furthermore, the rolling strategies saved in the system support the user during process planning: An advance simulation takes the limit values of the machine into account and determines all the relevant rolling

5 metric tons

is the unit weight of the rings that the ring-rolling mill will manufacture

Cross beam in the machine shop

New open-die forging press, new ring rolling mill: extended product range for the aviation industry, increased production capacity.

parameters. The program utilizes a database, in which the tool and material data are stored. It also contains the standard rolling curves and strategies as the basis for the planning process. The rolling parameters calculated are transmitted to the machine control system, which ensures that the ring rolling process is optimized and keeps the rolling parameters synchronized with the process.

During the rolling process, two lasers continuously measure the dimensions of the rings. There is also an online temperature monitoring system installed, which is an integral component of the new SiCoRoll 2.0. The kernel of the software also defines the dimensions of the blanks for the forging press.

"Bigger, better, higher quality"

Michel Discour, Président Directeur Général of L'Union des Forgerons, sees great potential for his operation thanks to the investment in the new plant: "In future we will be able to manufacture more products from low-ductility materials that require greater press and rolling forces. This covers higher-quality materials, larger dimensions, and higher working weights. And we can achieve higher outputs.

Press frame for a forging press in the machine shop

We specialize in the flexible manufacturing of complex products; the new machines will help in this regard, because they will allow us to achieve shorter delivery times."

Samiron Mondal, the Director of Siempelkamp Machinery and Plants GmbH responsible for sales in the Metal Forming division, is delighted that a company with decades of experience in manufacturing high-quality forged parts and rolled rings gave Siempelkamp this order: "The customer obviously has confidence in our ability to supply a tailor-made system that optimally fulfills their requirements and still fits within their budget. One factor here is that we use as many standard components as possible for the parts exposed to high loads, such as the gear units. For the client, this means a significant cost saving, because maintenance and the procurement of spare parts are very simple."

Samiron Mondal,
Managing Director
Siempelkamp Maschinen- und Anlagenbau GmbH

Sequential product changeover:
Speed dating for the forming and press line

→ By Werner Schischkowski and Rainer Krumbach-Voss

"Monoculture", the production of one and the same product, has long been a thing of the past for most wood-based material production plants. True to the motto "After the product changeover is before the product changeover", product changeovers after only three hours of production have become the norm for many forming and press lines. What can the plant manufacturer do to spare the operator the dark sides of a product change? The solution is "sequential product changeover".

Since 2015 this feature can be ordered as part of a new Siempelkamp plant. Up to this point the sequential product changeover was only available as a retrofit. It is used when a plant operator runs many different order batches and the goal is to minimize scrap, one of the biggest disadvantages of conventional product changeovers. "Unlike conventional product changeovers, our concept allows to change the production automatically to the order-specific parameters without having to open the mat reject nose. Material waste is reduced to a minimum," explains Werner Schischkowski, Manager Automation at Siempelkamp.

7 out of 10
PRODUCT CHANGEOVERS

… are carried out without an interruption of the material strand

During the changeover process of the forming and press line, the Siempelkamp innovation not only minimizes reject material and reject boards but also minimizes time as well as product and quality variations. The production of the exact number of boards per order and the minimized time for the changeover process between two orders are further benefits for the plant operator who is faced with increasingly more specific orders placed by customers. Streamlined changeovers of the type of wood, resin, and board thickness can be managed with the new concept effectively and without a loss of quality.

The "transitional wedge" principle

During the sequential product changeover, all changeover processes regarding the board thickness and quality take place within a defined material segment, the transitional wedge (see diagram). In the initial segment, the changeover of the aggregates is prepared. If necessary, control processes are adjusted and the allowable tolerances increased. In the actual transitional wedge, the aggregates are adjusting themselves to the new production. In the final segment, the changeover process is completed and the new parameters are leveling out.

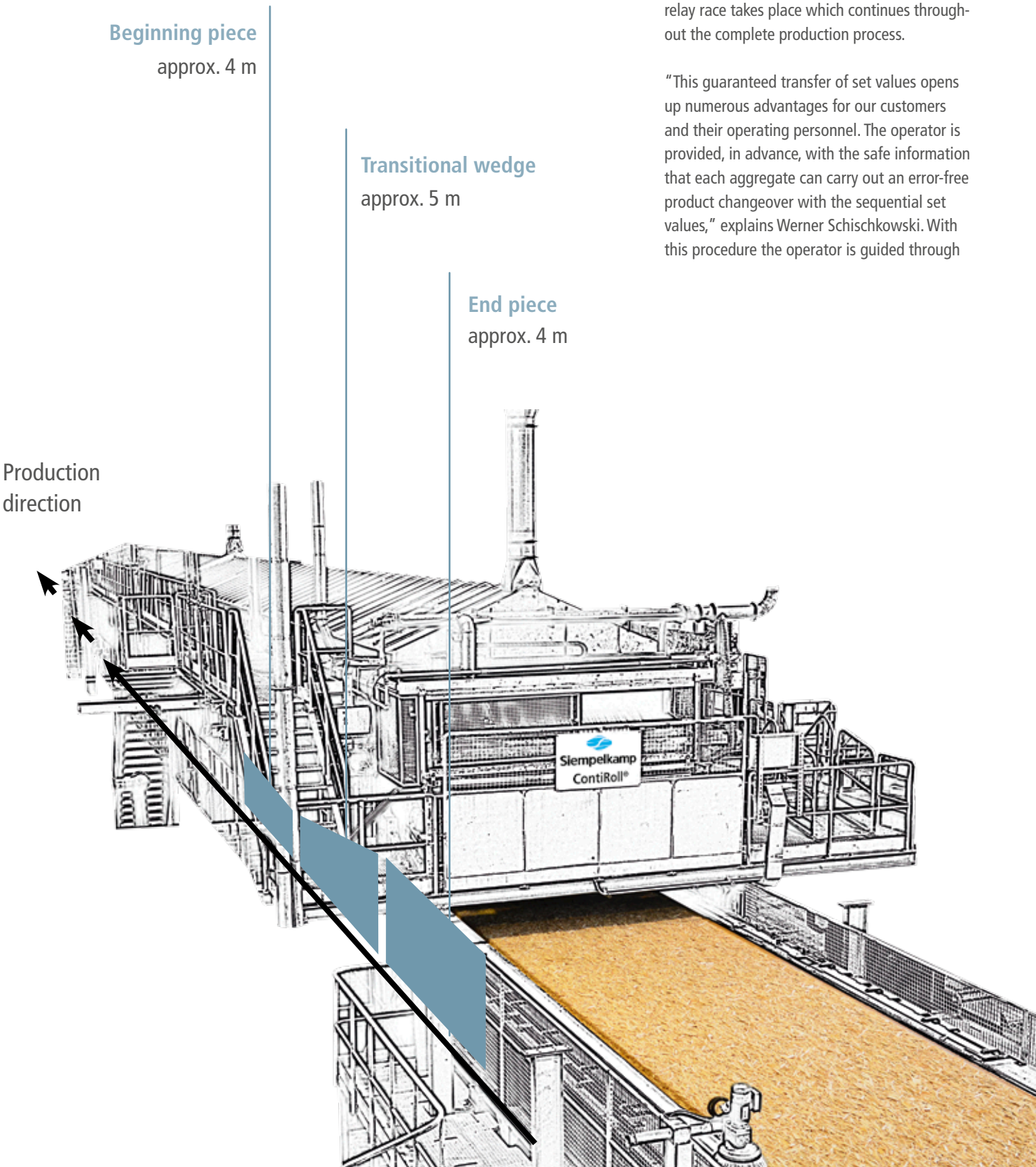
The optimal process takes place in such a way that the product changeover is carried out without an interruption of the material strand and with closed reject nose. Technologically,

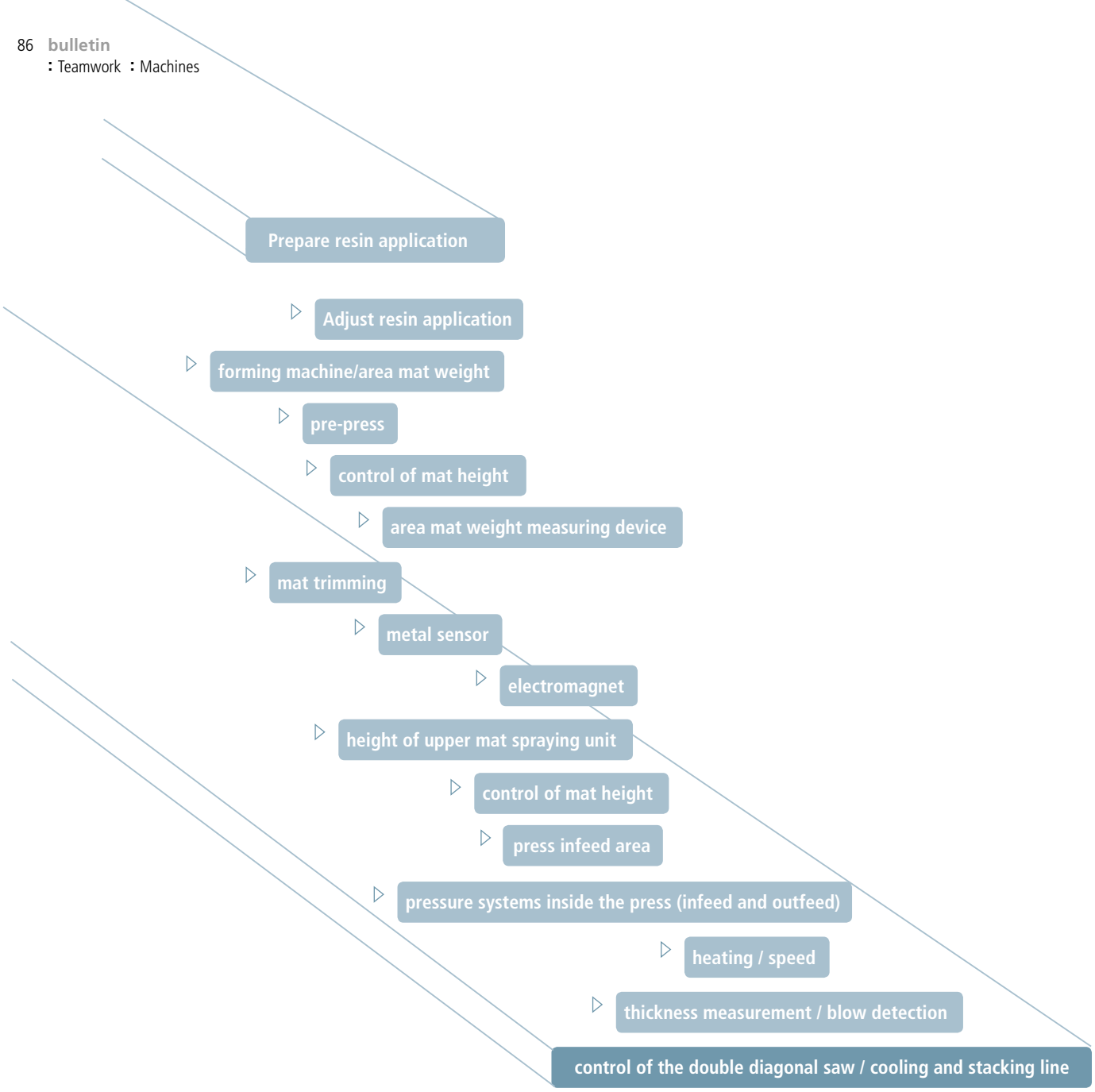
it is nevertheless sometimes necessary to interrupt the material strand in a guided manner. Only the transitional wedge goes into the reject nose; causing a gap in the material mat to run through the press. In practice, however, seven out of ten product changeovers are carried out without an interruption of the material strand.

The secured transmission of set values: Like a relay race

A product changeover with closed reject nose requires optimized set values and recipes for the process which generate, in our central order input and recipe management system for sequential product changeovers, the necessary start-trigger-signal for the forming machine discharge. From here, all the way to the cooling and stacking line, a permanently controlled relay race takes place which continues throughout the complete production process.

"This guaranteed transfer of set values opens up numerous advantages for our customers and their operating personnel. The operator is provided, in advance, with the safe information that each aggregate can carry out an error-free product changeover with the sequential set values," explains Werner Schischkowski. With this procedure the operator is guided through





The secured relay race:
Machine parameters influenced by the sequential product changeover

the functions. For example, depending on the situation, functions are regarded as "useable" or "non-useable". The centralized data server coordinates all aggregates with third party interfaces which have to be integrated into the secured changeover process. The server also coordinates and controls all functional processes and reports to the user interface.

Resin application with sequential product changeover: tailor-made

What current customers have already learned to appreciate: With the sequential product changeover, the type of resin for the new order batch is precisely assigned according to the type of board to be produced. This represents a significant advantage especially for wood-based material manufacturers that use many different types of resins depending on the order batch and specific board type. Siempelkamp developed a special software which guarantees that each order batch is assigned the correct resin type. The required amount of

resin is automatically calculated beforehand and then mixed according to the specific board type in the preparation tank. Especially for frequent product changes, the resin consumption and the surplus due to remaining quantities and the precise use of the resin according to the type of board can be significantly reduced. With Prod-IQ resin type and consumption are logged according to the type of board produced. Thus, the applied resin type and charge can be traced back all the way to the tank storage for each board.

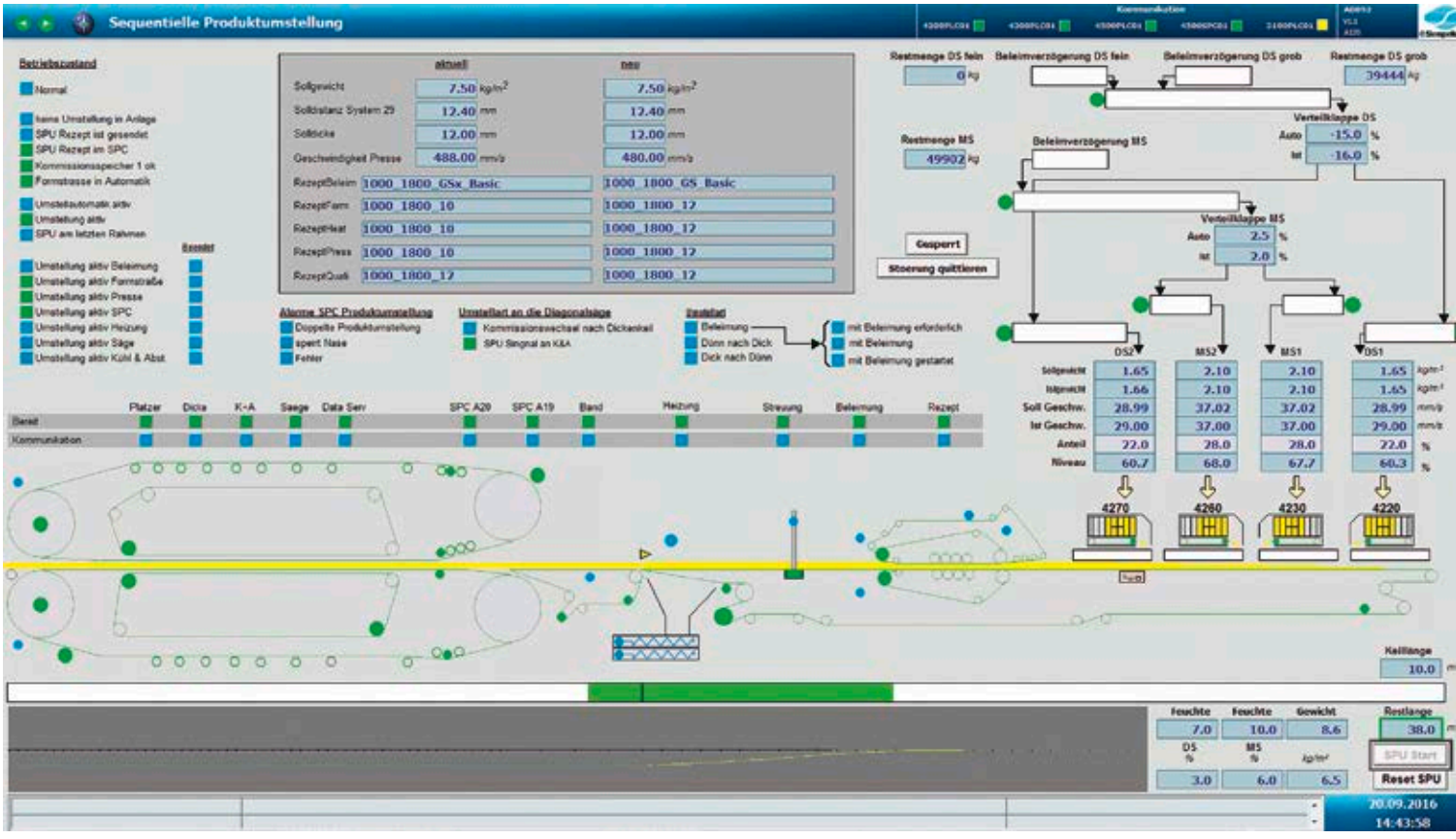
180 m³

– THE MONTHLY INCREASE IN OUTPUT

… achieved with the sequential product changeover

New concept, tested in direct customer contact

Regardless if the product changeover involves a length or width change, thickness or area weight change, the sequential product changeover allows the production of different board types without affecting product quality or resource efficiency. The direct contact to the customers and the consequent teamwork between Siempelkamp and plant operators resulted in an optimal solution which has already proven itself in practice. On average, five product changeovers per day are carried out, seven out of ten are performed without an interruption of the material strand. "Furthermore, our customers record less scrap involving anywhere from one to five boards due to the continuous production or record that they produce approximately 260 more boards per month," according to data gathered by Rainer Krumbach-Voss, Development Engineer Automation Technology at Siempelkamp, Project Manager Sequential Product Changeover. Plant availability also profits from the Siempelkamp innovation: At a monthly production volume of approximately 20,000 m³, the board output can be increased by one percent.



Visualization: The continuous green bar (at the bottom of the picture) represents the transitional wedge and illustrates the change in the weight

Imprint

Publisher: G. Siempelkamp GmbH & Co. KG, Marketing/Communication Department, Siempelkampstr. 75, 47803 Krefeld (Germany)
Executive Editor: (Officer responsible for compliance with German press law) Christian Hassler, Text: Dr. Silke Hahn and Christian Hassler
Typesetting and Layout: vE&K Werbeagentur GmbH & Co. KG, Printing: KARTEN Druck & Medien GmbH & Co. KG

Siempelkamp

G. Siempelkamp GmbH & Co. KG

Machinery and Plants

Siempelkamp Maschinen- und Anlagenbau GmbH
Krefeld, Germany

Büttner Energie- und Trocknungstechnik GmbH
Krefeld, Germany

Sicoplan N.V.
Belgium

CMC S.r.l.
Italy

Siempelkamp Maschinenfabrik GmbH
Krefeld, Germany

ATR Industrie-Elektronik GmbH
Krefeld, Germany

Pallmann Maschinenfabrik GmbH & Co. KG
Zweibrücken, Germany

Wolfangel GmbH
Ditzingen, Germany

Hombak Maschinen- und Anlagenbau GmbH
Bad Kreuznach, Germany

Siempelkamp (Qingdao) Machinery & Equipment Co. Ltd., China

Siempelkamp L.P.
USA

Siempelkamp Pte Ltd.
Singapore

Siempelkamp (Wuxi) Machinery Manufacturing Co. Ltd., China

Siempelkamp CZ s. r. o.
Czech Republic

Siempelkamp India Pvt. Ltd.
India

Siempelkamp Logistics & Service GmbH
Bad Kreuznach, Germany

Ventilatoren – Apparatebau
Kempen, Germany

W. Strothmann GmbH
Schloß Holte-Stukenbrock, Germany

Sales companies/ Representatives

Australia
Siempelkamp Pty Ltd.

Brazil
Siempelkamp do Brasil Ltda.

China
Siempelkamp (Wuxi) Machinery Manufacturing Ltd., Beijing

France
Siempelkamp France Sarl

Russia
Siempelkamp Moscow

Belarus
Siempelkamp BEL

Spain
Siempelkamp Barcelona

Turkey
Siempelkamp Istanbul

Foundry

Siempelkamp Giesserei GmbH
Krefeld, Germany

Siempelkamp Giesserei Service GmbH
Krefeld, Germany

Engineering and Service

Siempelkamp Ingenieur und Service GmbH
Krefeld, Germany

Siempelkamp Behältertechnik GmbH
Mülheim a. d. Ruhr, Germany

Siempelkamp Prüf- und Gutachter-Gesellschaft mbH
Dresden, Germany

Siempelkamp NIS Ingenieurgesellschaft mbH
Alzenau, Dresden, Essen and Rheinsberg, Germany

Siempelkamp Krantechnik GmbH
Moormerland, Germany

Siempelkamp Tensioning Systems GmbH
Lünen, Germany

Siempelkamp MSDG S.A.S.
France

11.2016/3.000 GB

G. Siempelkamp GmbH & Co. KG | Siempelkampstraße 75 47803 Krefeld, Germany | Phone: +49 215192-30 Fax: +49 215192-5604
www.siempelkamp.com