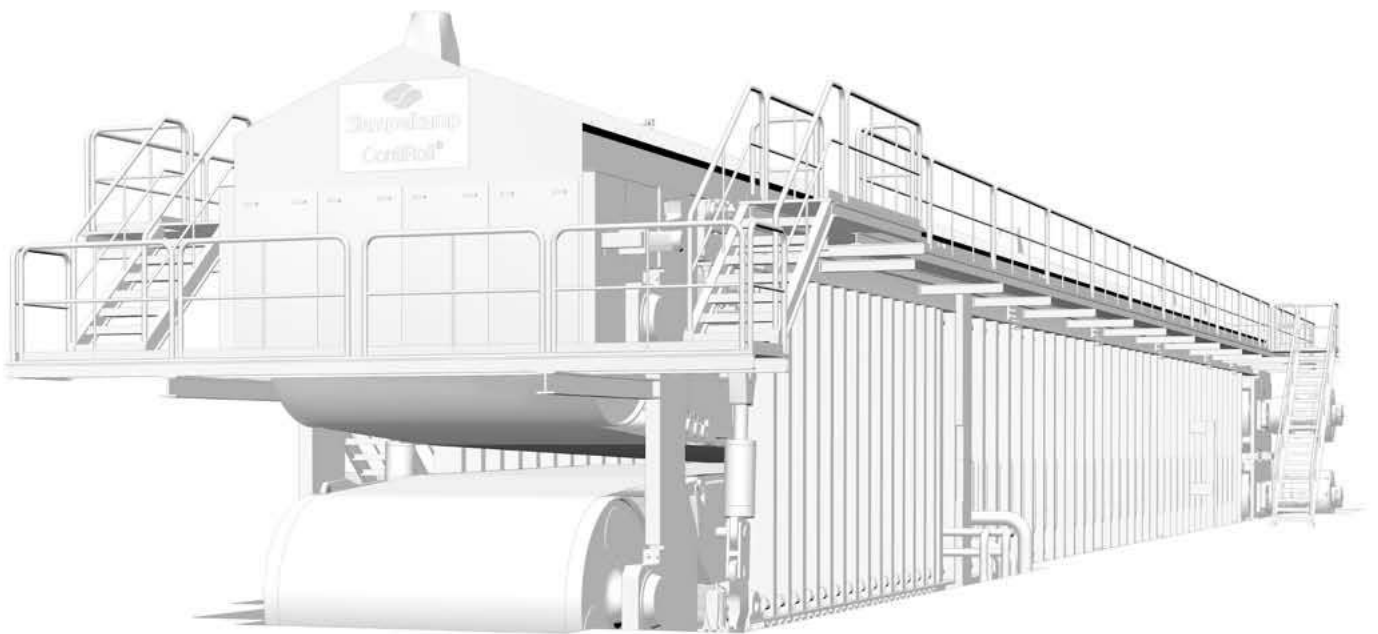




Siempelkamp



ContiRoll®

Dr.-Ing. Hans W. Fechner
—



Dear Customers and Partners,
dear Readers,

We sell a certain product for which an entire team lives and works with all their energy. Siempelkamp's ContiRoll® – our continuous press, which for 30 years has been contributing to wood-based material manufacturers being able to produce and sell excellent products, from Brazil to China, from the United Kingdom to South Africa.

ContiRoll® is our passion.

This press is the result of concentrated teamwork. Everyone of us lives ContiRoll® – whether in the owning family or among the executive management, engineers, designers, sales team, project managers, technicians or assembly personnel. We are all proud to develop the respective best solution for you.

This brochure brings you 30 years of ContiRoll® – as stories, interviews and quotes, some of them from amongst you. Six chapters condense everything that makes our press so special. Unbeatable perfection in development and application, the continuous evolution of the basic idea, the principle of "handcraft manufacturing" as Siempelkamp's credo, reliability of the production technology, technical intelligence and globality – both in terms of customer demand and in terms of the presence of our services for you.

I hope you enjoy reading this ContiRoll® brochure!

Kind regards



Dr.-Ing. Hans W. Fechner

Chairman of the Executive Board, G. Siempelkamp GmbH & Co. KG



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Quality and commitment.

Over 30 years of ContiRoll®

Milestones in the world of wood.



The first ContiRoll® was put in operation at Louisiana Pacific in 1985 and since then our continuous press technology has time and time again met milestones in the world of wood. For example the 900,000 m³ annual production from our Brazilian customer, Duratex, on the world's longest and most powerful ContiRoll®.

This ContiRoll® milestone and all other ones could only be achieved for two reasons: First of all, because all our wood-processing plants work fast and with extreme precision at the same time. Right in the thick of it: ContiRoll®.

It ensures that you get exactly the product that your market is asking for, whether it is for furniture boards, panels for interior walls, laminated flooring, ultra-thin boards, laminated/lacquered boards, light boards etc., etc.

And secondly, because we always start with the most important of all process steps: we listen. And because we are always tuned in to your wishes and ambitions, we are able to always provide you with the best solutions and new milestones.



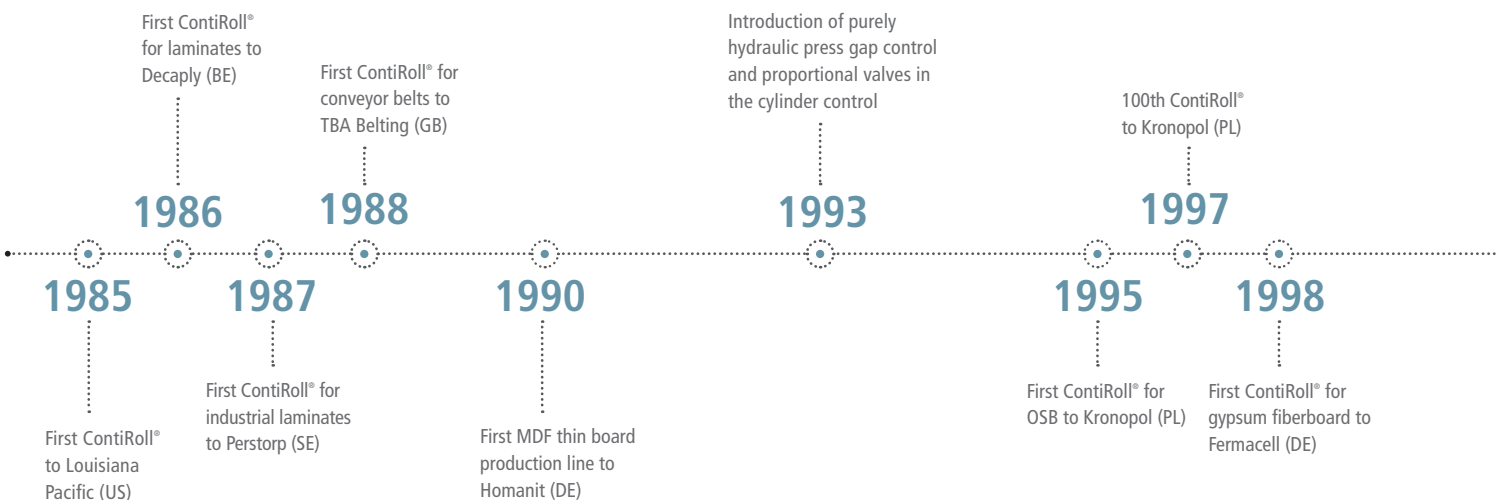
900,000 m³
annual production

High-quality wood-based panels
– technically advanced products:
Whether as fiberboard, particle-
board, OSB-, LVL- or insulating
panel, the advantageous
properties of the natural material
of wood are used here effectively
and economically.





Eight generations of ContiRoll®: the milestones 1985 – 2015





Every ContiRoll® is unique

First ContiRoll® for HDF ultra-thin boards (high speed 2,000 mm/s) to Fantoni (IT)

2006

Introduction of the ContiRoll® 8th generation with quasi-isobaric pressure distribution by means of pressure distribution plates

2011

2008

Longest ContiRoll® 77 m to Duratex S.A. (BR)

2015

First ContiRoll® for high-density basalt rock wool (facade panels) to Rockwool (NL)

“The development of flexible press in-feed sections constitutes the most significant milestone in the history of ContiRoll®. This means that we have succeeded in adapting perfectly to our customers’ individual requirements, and have led the market for over 20 years.”

Lothar Sebastian, Head of Construction



.....
Our latest milestone:
the 8th generation of ContiRoll®
.....

MDF production plant layout

The ContiRoll[®] in their natural environment.

Cyclones / Blender system for preparation, storage transfer system of the glue components

Chip cleaning and refiner system for the production of fibers

Glue tanks

ContiRoll[®] continuous press line

Fiber mat former and continuous prepress

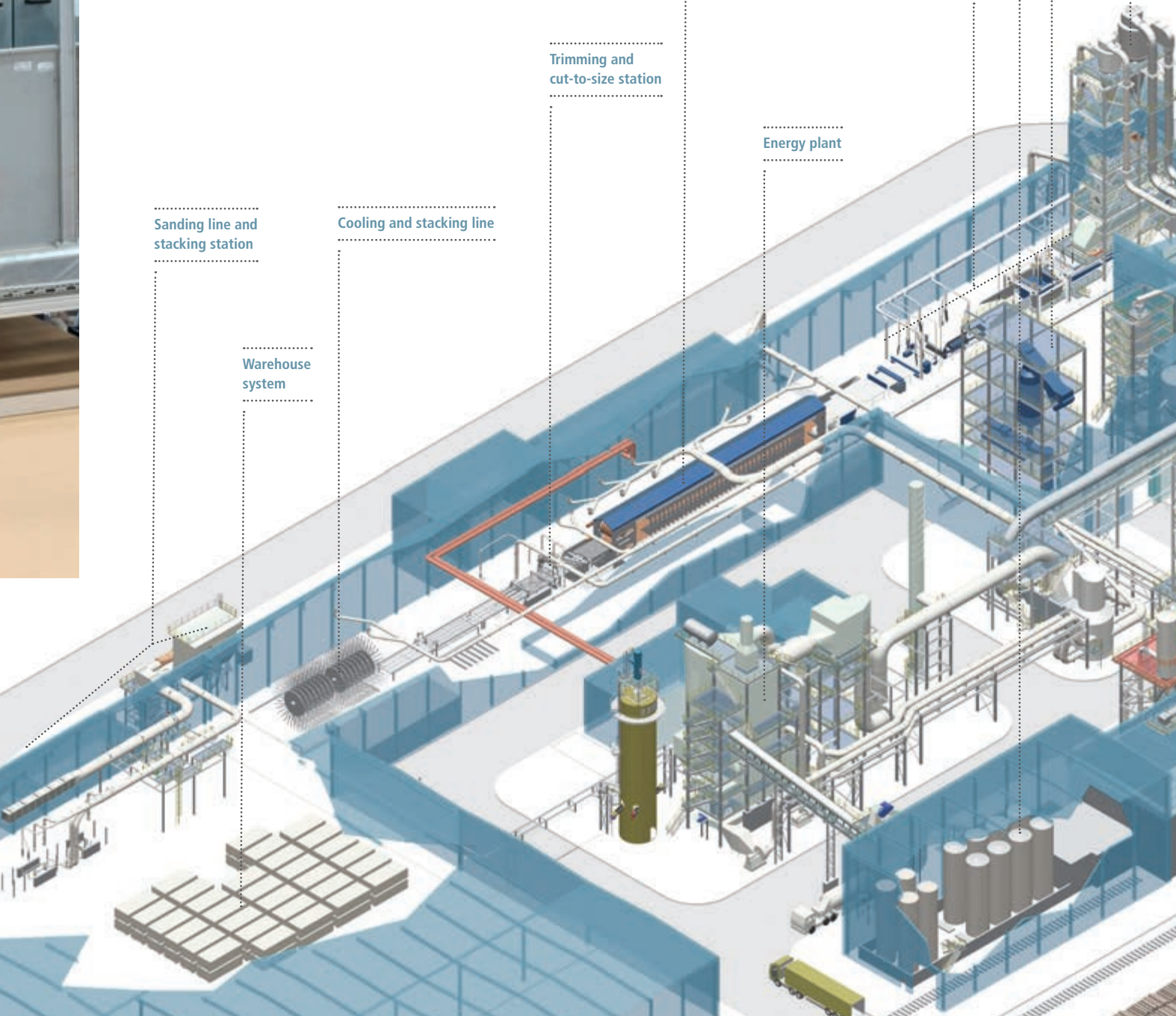
Trimming and cut-to-size station

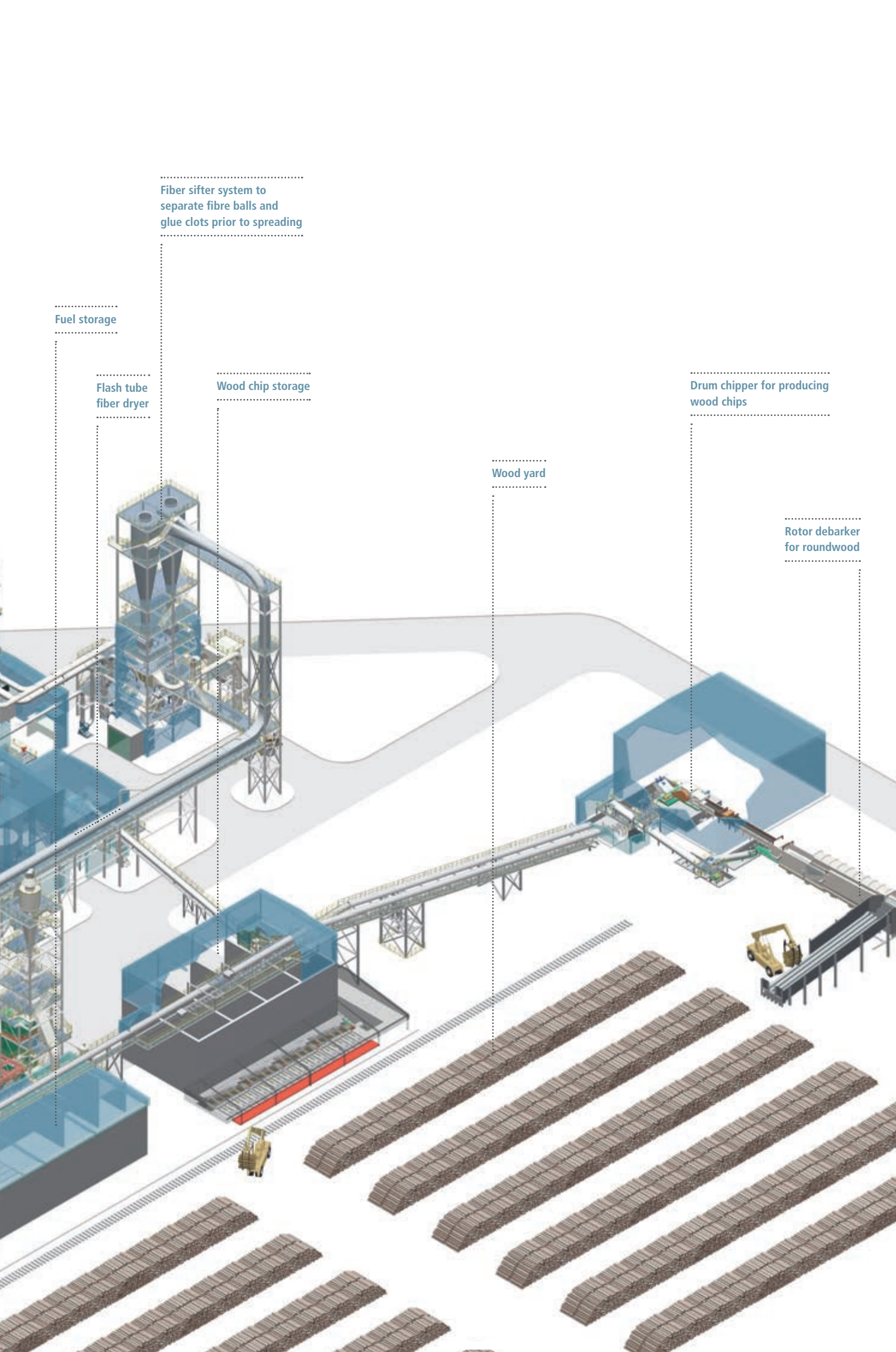
Energy plant

Sanding line and stacking station

Cooling and stacking line

Warehouse system





Fiber sifter system to separate fibre balls and glue clots prior to spreading

Fuel storage

Flash tube fiber dryer

Wood chip storage

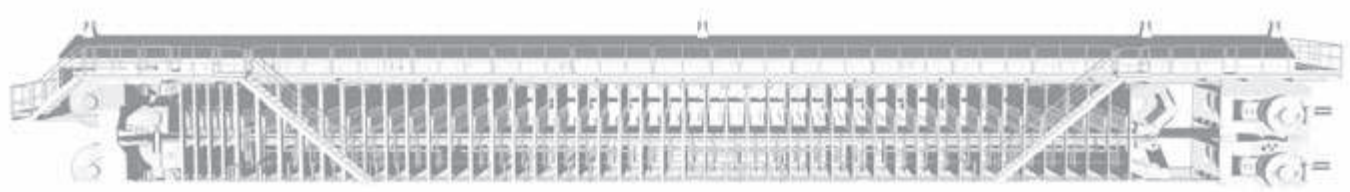
Wood yard

Drum chipper for producing wood chips

Rotor debarker for roundwood



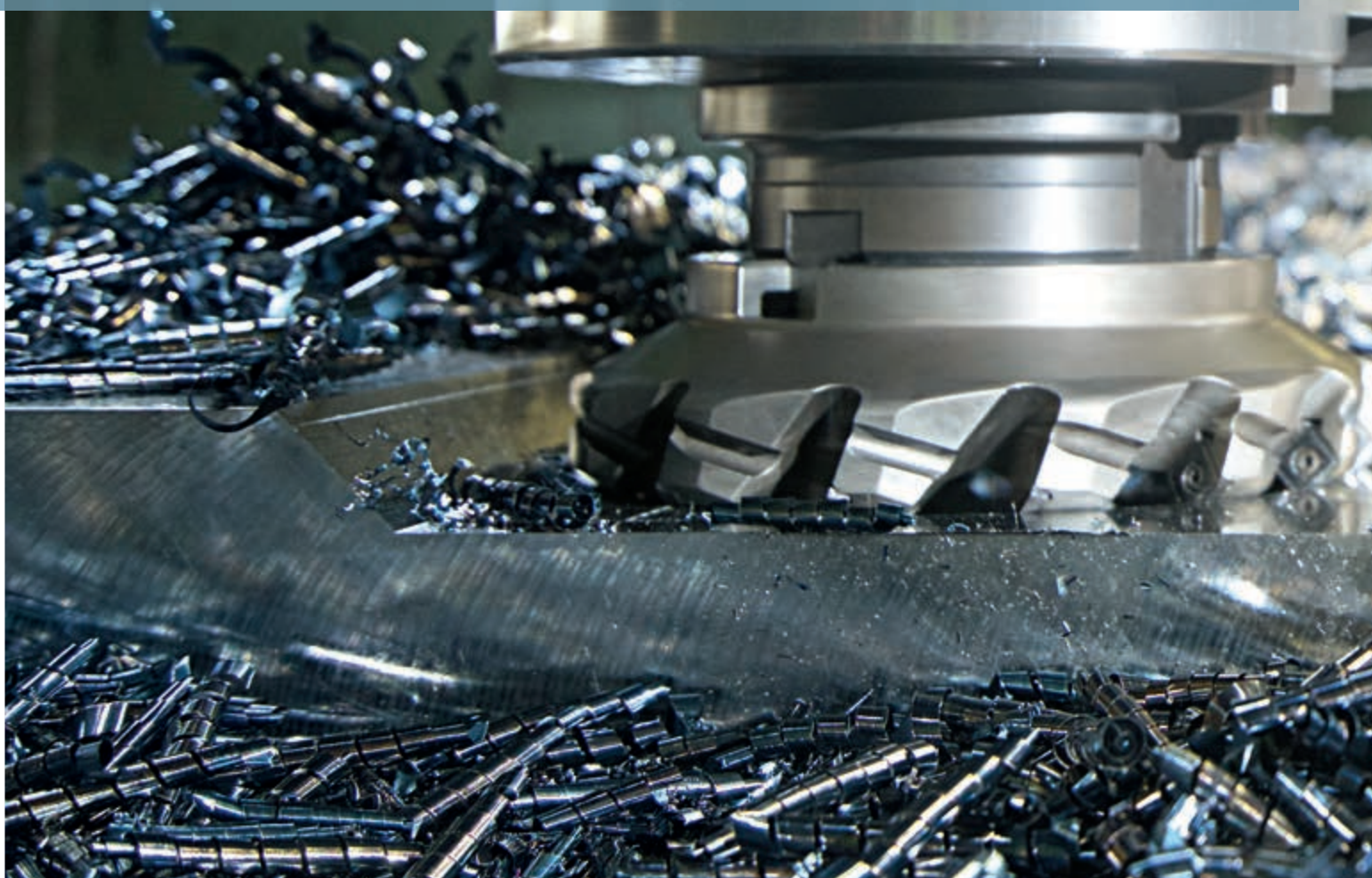
Fold down for
MDF production plant layout



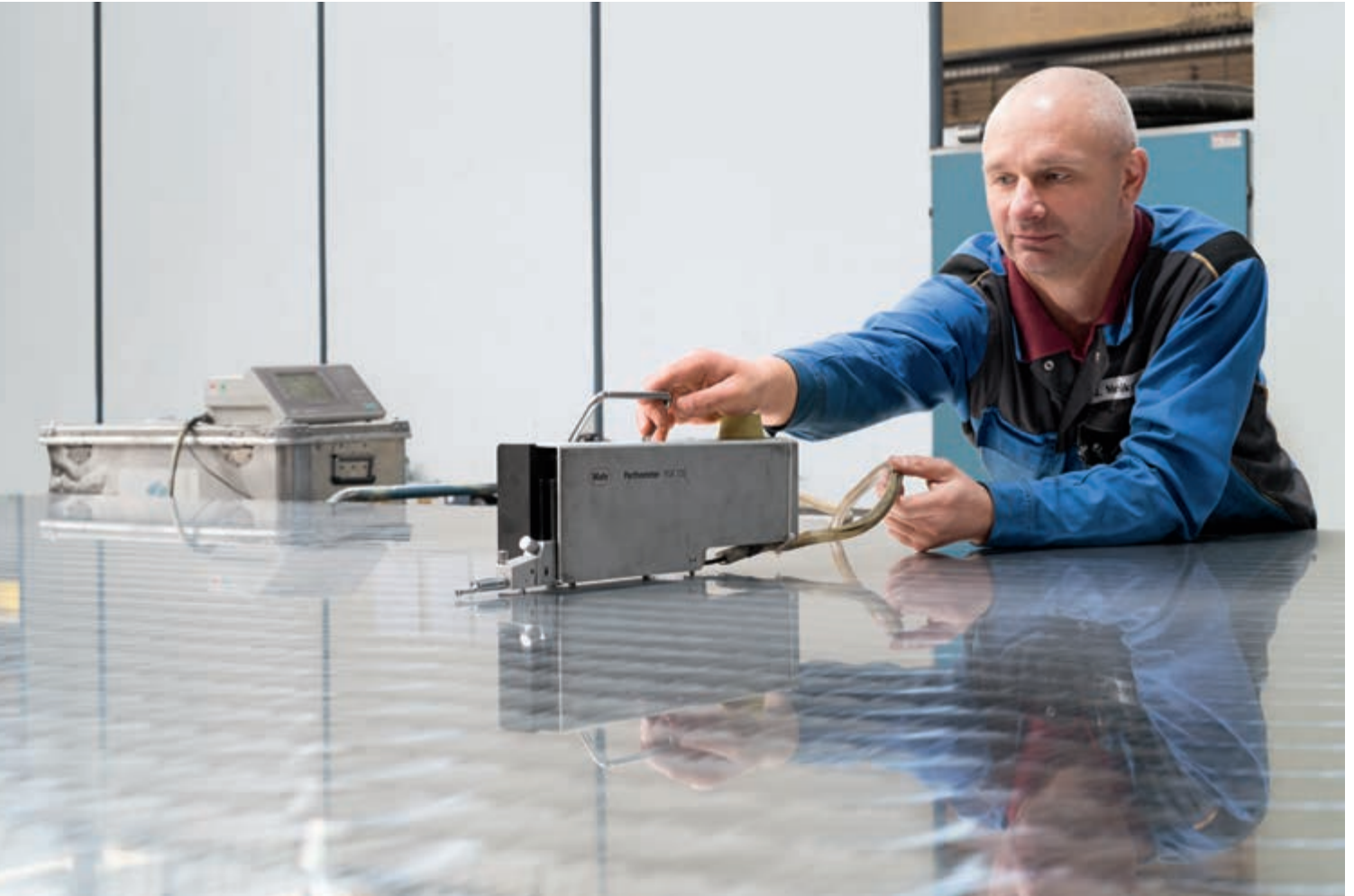
Perfection

“ContiRoll® – perfection in every detail makes all the difference! That includes the pressure distribution concept, utmost versatility in the mechanical and thermal design as well as an up-to-date control technology.”

Dr.-Ing. Hans W. Fechner, Chairman of the Executive Board, G. Siempelkamp GmbH & Co. KG







Surface testing of a hot platen

Engineering made in Germany

Our commitment to perfection.

What makes the Siempelkamp ContiRoll® so valuable? Dr.-Ing. Hans Fechner, Spokesman of the Executive Management at G. Siempelkamp GmbH & Co. KG, gets to the point about the unbeatable performance of the Generation 8.

Dr Fechner, since 2002, i.e. since Generation 6, the success of the ContiRoll® has been one of your central themes at Siempelkamp. What makes the latest Generation 8 so unbeatable?

Dr.-Ing. Hans Fechner: The pressure distribution plate technology. This fundamental Siempelkamp invention, which we have patented worldwide, is what fundamentally differentiates the 8th generation of the ContiRoll® from its predecessors. This effectively creates a virtually isobaric press.

What benefit does this concept deliver for Siempelkamp customers – and how exactly does it work?

Dr.-Ing. Hans Fechner: “Exactly” is the right word, because with the Generation 8 we achieve verifiable precision to levels never before seen in raw panels. On the one hand, this is achieved through the use of the pressure distribution plates, and on the other hand it is the additional cylinder track we have integrated into the Generation 8. Our pressure distribution plate technology prevents the pressure on the hot platens from being relieved between the frames – which is standard with all frame presses. This solution is technically far superior to all other approaches, e.g. the sliding bevel method, but is more complex and costs more material. Our customers appreciate, however, that the concept pays off amongst other things through the considerable glue savings – and plant operators know how high the corresponding costs can be.

And the advantage of the additional cylinder track?

Dr.-Ing. Hans Fechner: The calibration range of the machine allows us to compensate completely for density fluctuations by individually actuating the cylinders.

You already mentioned the frame press – a subject that persists throughout the entire company history of Siempelkamp ...

Dr.-Ing. Hans Fechner: For 130 years, the name “Siempelkamp” has been standing for enormous competence in the construction of hydraulic presses. The frame press has always played a special role in the history of our company and the evolution of our technical concepts. Accordingly, it is scarcely a surprise that we use single-piece frames for the ContiRoll®. This single-piece, enclosed press frame is superior to the frames joined together from separate parts, because it is free of play. Within this frame, there is a clear flow of forces. The combination of the single-piece press frame with the foundation and stiffening trusses gives the machine a unique, stable framework. When heating up the machine, i.e. under load, this framework is free to thermally expand along the production axis. From the first frame to the last, the frames have a consistent spacing dimension of 830 mm – a unique feature on the market.

What effects does this concept have on precision and speed?

Dr.-Ing. Hans Fechner: We achieve the precision by means of the absolutely stable guiding of the steel belt, which requires only minimal corrections from the belt control system. This in turn has positive effects on the speed – for us, two metres per second is not an advertising claim but a fact. Each ContiRoll® is fundamentally capable of achieving this production speed. Our objective is always to get the maximum process design, i.e. to achieve the lowest theoretically possible heating time factors.

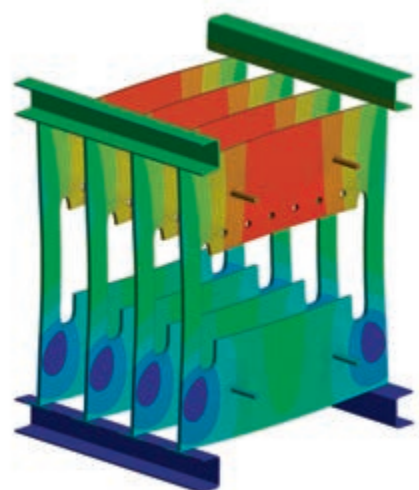
Are there other decisive factors here?

Dr.-Ing. Hans Fechner: The range of experience our customers have is naturally also very important. Some of our highly experienced clients achieve sensationally low heating time factors on our machines. This results from the interplay of three factors: (1) the mechanical stability of the machine, (2) the virtually isobaric behaviour of the press, and (3) the experience of the plant operator.

The name Siempelkamp stands for a high degree of in-house manufacturing – will that remain so in the future?

Dr.-Ing. Hans Fechner: All pistons and cylinders are manufactured in Krefeld, and are subject to 100% quality control. We made this decision on principle ten years ago – after a number of unsatisfactory experiences with buying in pistons and cylinders – and stand by the principle of “quality made in Germany”. Thanks to our state-of-the-art sealing systems, we successfully manufacture approx. 3,500 cylinders and pistons per year, which are virtually zero-maintenance. The cylinders have been manufactured at our headquarters in Krefeld since this fundamental decision, and will continue to be manufactured there.

FEM model showing the stress distribution in a frame section



A further detail in the ContiRoll® sales pitch is the infeed header ...

Dr.-Ing. Hans Fechner: The upper and lower infeed headers are manufactured from nodular graphite cast iron – the great skill of the Siempelkamp Foundry. We thus implement an extremely stable, rigid connection and precise guiding and curvature of the upper infeed hot platen. This can be curved in such a way that our customers are able to manufacture flexible products from 1.1 mm to 40 mm on our systems. The precise guiding and curvature makes a significant contribution to the precision of our machine. The infeed header and the density-guided mode of operation are likewise Siempelkamp patents. Density fluctuations in the mat of spread chips or fibres can thus likewise be automatically compensated for with high efficiency.

How does Siempelkamp's process control technology Prod-IQ® support this requirement?

Dr.-Ing. Hans Fechner: Our Prod-IQ® control system for the production data management of raw panel production is being expanded to the sanding lines supplied by Siempelkamp. The Prod-IQ.basics module covers the process, production data and downtime logging, and thus facilitates systematic downtime analysis for each plant component. This contributes in particular to increasing availability. The performance data of the plant are automatically documented online and in the form of standardised reports for production orders, shifts, days and months. Siempelkamp thus ensure the rapid ramp-up and high performance of the plants it supplies – transparent and reliable!

The basic package is supplemented by Prod-IQ.business, the licence for customer-specific adaptations of the reports, and Prod-IQ.maintenance, for the organisation and support of the servicing and maintenance of the plants.

Prod-IQ® Next will represent a real milestone. Prod-IQ® Next represents the "self-optimising plant", and is the next stage of development of the online quality control Prod-IQ.quality (SPOC) into a higher-level control loop. With Prod-IQ® Next, the production process will independently and automatically adapt itself, so that the panel quality is ensured and costs are optimised – without the need for intervention on the part of the operator. Siempelkamp customers will be able to produce close to the optimum with Prod-IQ® Next – with minimum consumption of material and energy, and simultaneously at high production speed!

In keeping with the motto "Made in Germany", the engineering and final manufacturing take place under the supervision of the highly qualified engineers at Siempelkamp's headquarters...

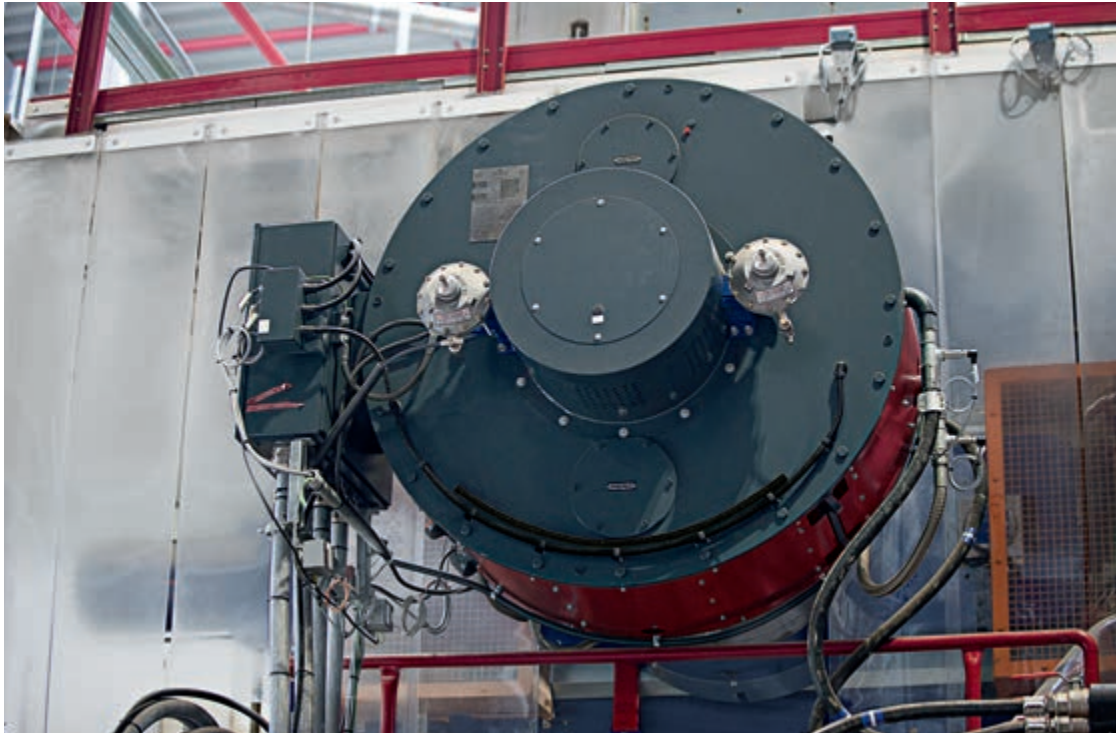
Dr.-Ing. Hans Fechner: The entire engineering process for cooling and stacking systems, sanding lines, storage system and splitting technology has been performed in Krefeld since 2013. Since then we have very successfully delivered 20 cooling and stacking systems, 12 raw board storages and an equal number of sanding lines, and 3 packaging lines. Our interdisciplinary mechatronic engineering team contributes to our ability to deliver top services, including downstream of the ContiRoll®.

What do you think is most important from amongst all these technical milestones?

Dr.-Ing. Hans Fechner: Most important is that our customers value us as a partner in setting the benchmarks in their markets – in the conviction that we deliver the best solution. A recent example: in September 2015, Yildiz Entegre ordered two plants with ContiRoll® for new locations in Europe. Here we invest an additional 150 t of steel in a 55m system in order to design the press such that it operates virtually isobaric. I also consider it a compliment to our work when our customers refer to Siempelkamp when advertising their own products. This applies not only to the ContiRoll®, but to all of the machines and plants in which our customers around the world place their trust. Another example: our customer of many years, Egger, operates 17 Siempelkamp presses at its facilities.



.....
Deep-hole drilling of
channels of a hot platen
.....



Permanent-magnet synchronous Motor Ecodrive
to power the ContiRoll® discharge drums

Perfection means

We leave nothing to chance!

Precise and perfect: A Siempelkamp wood-based panel plant with a ContiRoll® Generation 8 stands for unrivalled precision that pays off many times over for the plant operator. The fact that this bar is consistently being raised is the success of precision at all levels.

30 years of ContiRoll®: Precision generates demand!

“Happy Birthday, ContiRoll®” was the motto at LIGNA 2015 in Hanover, celebrating the 30-year success story of this Siempelkamp press. Straight after its market launch, it established itself as the leading system for the continuous manufacturing of wood-based materials. As early as in September 1986, Siempelkamp recorded 17 orders for the ContiRoll®. The ContiRoll® has by now been sold over 300 times to customers around the world.

Efficient wood-based panels production

We apply pressure –
exactly where you need it.
—



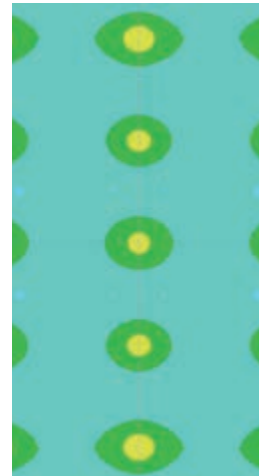
The manufacturing of wood-based boards with low resin addition, low sanding allowance, and smoother surfaces requires an extremely homogeneous pressure distribution across the entire production width. That is why we developed a press that operates on a virtually isobaric basis. Due to the optimal pressure distribution of our ContiRoll® Generation 8, savings in production costs regarding resin, energy, and material become self-evident.

Due to new pressure distribution plates below the lower hotplaten, the reaction forces upwards and downwards are displaced against one another. The frame distance and elasticity of the hotplatens are adjusted so any compression ripples in the direction of production are eliminated. The result is even pressure distribution in the press that allows for optimized density profiles and for the adhesive bonds to cure homogeneously.

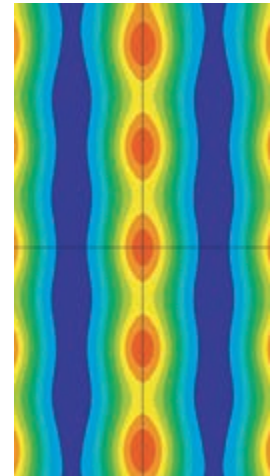
Homogeneous thickness over the entire production width

Our ContiRoll® is perfected by an additional row of cylinders in the calibration zone. Thus, the pressure distribution becomes even more uniform in the crosswise direction over the entire production width. Differential cylinders produce the right amount of localized pressure with the help of our process control technology and thus allow for homogeneous thickness tolerance of the boards. Product changeovers are possible at any time; the adjustment of the pressure profile during ongoing production provides constant product quality without time-intensive re-setting of the machine.

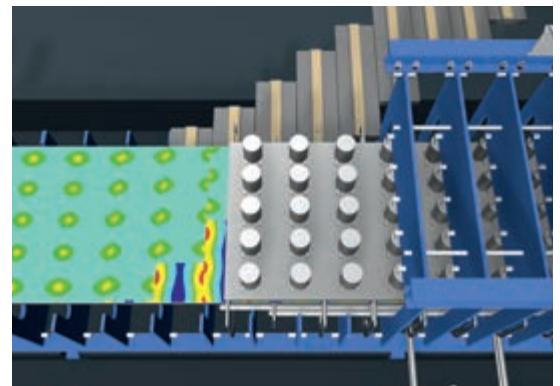
Naturally, older production plants profit from the integration of new pressure distribution plates also. The in-house production of all components including the hydraulics allows shortest modification times. After updating the process control technology, a modernized ContiRoll® featuring up-to-date, resource-saving production according to Siempelkamp standard is available and provides significant savings in energy and material.



Pressure visualization with pressure distribution



Pressure visualization of conventional press



Homogeneous pressure through pressure distribution plates

Subsequent installation of pressure distribution plates in an existing press



Installation of pressure distribution plates



Evolution

“Our patented pressure distribution system is the key to highest product qualities, precise pressure distribution, wood and glue savings.”

Dipl.-Ing. Lothar Sebastian
Dr.-Ing. Volker Middelmann
Dipl.-Ing. Klaus Schürmann
Development, Construction, Calculation



Evolution of the continuous press

“Good ideas are simple ideas!”



At the age of just four years old, Dr. Dieter Siempelkamp already accompanied his father to his father's workplace. He joined the company in 1958, became managing partner in 1970, and retired from the executive management in 2003. He has since been Chairman of the Advisory Board at G. Siempelkamp GmbH & Co. KG. Through all its generations, he has managed the vision, development and sales of the ContiRoll® – a chronology of the right moments and the right decisions.

Dr. Siempelkamp, what decides whether an invention succeeds or fails?

Dr. Dieter Siempelkamp: On the one hand, it is naturally decisive whether the concept is fully developed and well thought-out. But a good invention still needs more to be, as they say, "airworthy". A lot of inventions have been made too early, because the market and the technical environment were not yet ready for them.

Does this also apply to the ContiRoll®?

Dr. Dieter Siempelkamp: Before we began marketing this invention in the 1980s, there had been precursor designs stretching back to the 1950s. The first continuous press was developed by the English company Bartrev.

These presses were monstrosities with rotating hot platens. Around seven of these presses were sold, and as far as I recall went to Scandinavia and Eastern Europe – but the process was extremely unreliable. The rotating hot platens were mounted on large stationary rollers; this type of bearing was prone to failure. Malicious voices claimed you would have to buy a whole ball bearing factory to operate this press. The chipboard quality was not particularly high, and the electrical heating system was a big problem.

The concept was not pursued for quite a number of years...

Dr. Dieter Siempelkamp: ... until the company Bison made new attempts, likewise using rotating hot platens, which were heated with



Our philosophy:
**creating benefits
for our customers**

gas flames. This press was located at the factory of Bison in Springe, and produced chipboard panels, amongst other things to demonstrate them to customers. But no further presses of this design were built. At that time, the mood on the market was against these continuous systems. At the end of the 1970s, the company Küsters in Krefeld made a further attempt to develop a continuous press, using the roller chain principle for pressure transmission. But this, too, involved significant problems, which resulted in the first press – sold to Kunz in Gschwend – having to be returned. Küsters subsequently succeeded, however, in achieving more stable running with other presses, which were sold but were still not yet satisfactory.

How and when did your company start building continuous presses?

Dr. Dieter Siempelkamp: When we recognised that the market was now ready for this technological quantum leap, we intensively engaged with the subject. This was at the start of the 1980s. We recognised that roller rods were the only correct technical solution, having already performed initial experiments with roller rods at the start of the 1960s.

Why were roller rods the right solution?

Dr. Dieter Siempelkamp: Between the steel belts and hot platens of the ContiRoll® is a moving carpet of calibrated roller rods. These rods roll down without the need for a drive system, thus optimally transferring the press force and heat energy to the product. The ContiRoll® is a giant needle roller bearing – the most practical method of transferring pressure and heat in the forward motion. Appealingly simple, but good ideas are simple ideas. The more complex the technical equipment, the more difficult it is to master.

And then the market was paying attention again ...

Dr. Dieter Siempelkamp: Indeed, because our American customer Louisiana Pacific urged us to market a continuous press. Harry Merlo, the president of the company, which was then based in Oregon, intended to manufacture OSB panels using the continuous press method. "I want to be the first customer," he said.

Louisiana Pacific became the first customer, and in 1984 already the first ContiRoll® was tested in the company's trial area.

Dr. Dieter Siempelkamp: Back then, as in the years that followed, we were working to the maxim: we have to generate value for the customer. We achieved this in close dialogue with Harry Merlo and his team in the first years – and later all around the world. Our continuous presses run with long duty cycles and are resource-efficient. Furthermore, the continuous press method has demonstrated that it is associated with lower trimming losses and minimal stock removal.

What progress do you consider to be the most significant, when you review ContiRoll® across the decades?

Dr. Dieter Siempelkamp: The first important milestone was the development of the new infeed section with the curved hot platen. Our customer Kaindl was the first to receive this concept for their facility in Sandebeck. An infeed section that exactly adjusts to the panel thickness again was a simple but extremely lucrative idea. Now it was possible to operate at higher speeds without disrupting the surface of the mat. This facilitated considerable capacity increases. Boring the hot platens lengthwise instead of laterally, to achieve a higher throughput of the heating medium, was also progress.

Another important milestone was the development of the first MDF thin panel system equipped with a ContiRoll®. What was the challenge there?

Dr. Dieter Siempelkamp: It lay in the fact that manufacturing fibreboards using the wet process was now supposed to take place using the dry process, like with the MDF method, in order to eliminate such side effects as the need for cleaning and recycling wastewater. Our customer Homanit in Herzberg was the first to buy such a Siempelkamp plant, fully developed for thin panel technology, back in the 1990s.

Today, in the days of Generation 8, the hallmarks of the ContiRoll® are high speeds, minimal tolerances and extremely low stock removal...

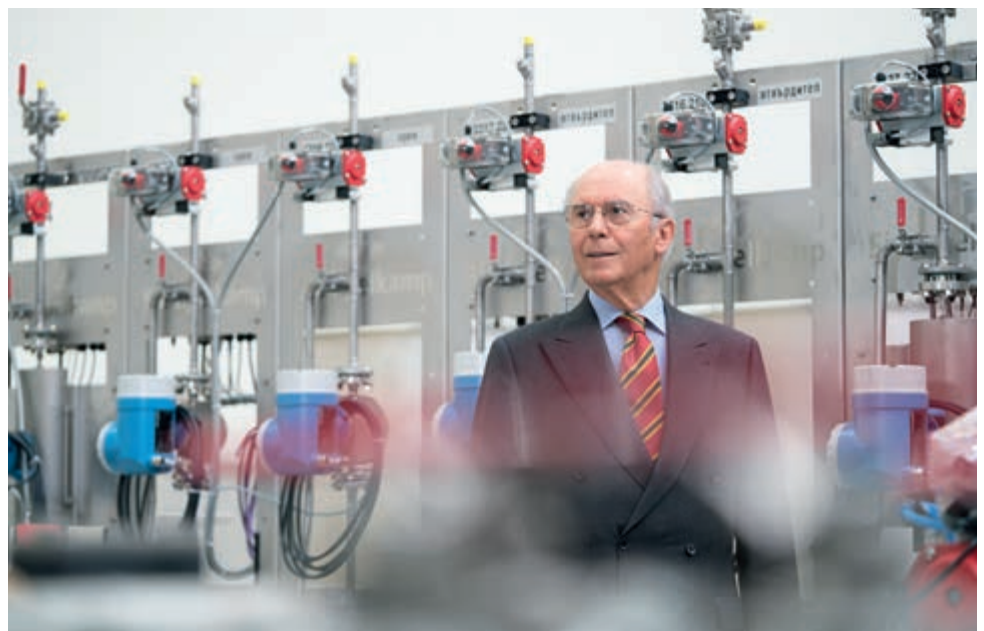
Dr. Dieter Siempelkamp: Our customers expect a short commissioning phase, quick three-shift operation, and long duty cycles – and this is what we deliver. What is the annual output of the plant? This is a more important question for us than the question of daily production. Which is why the operational stability of our plants is such a great advantage.

How important is the latest ContiRoll® generation to the overall concept of panel production?

Dr. Dieter Siempelkamp: It is the key component, better and more fully developed than ever, with the additional cylinders and pressure distribution plates, which are what make the exceptional thickness tolerances of the panels even possible. The quality of the panel already starts at the lumberyard, however. Throughout the years, Siempelkamp has always been able to make a name for itself with customers because the plant operators can be sure that we will take a close look and integrate all production stages into our development work. This starts with the organisation of the lumberyard, and continues through all system components: glue-saving systems, new spreading techniques with improved tolerances, power-saving drive systems, more efficient drying systems, more advanced automation systems with Prod-IQ®. Here, too, simple ideas have been made a reality – but these are decisive for the entire production process, and ultimately represent high value for the customer.

Look carefully:

integrate the customer needs in the development of new products





.....
The first ContiRoll® in the testing
ground for Louisiana Pacific
.....



From pine to eucalyptus

We dedicate our creativity to the wood- processing industry.

Groundbreaking inventions are often based on simple ideas. And they have a continuous soundboard: market requirements and customer value. Once started, the ContiRoll® concept has always been keeping its finger on the pulse of the global wood-based materials industry.

Impressed worldwide!

Louisiana Pacific, buyer of the first ContiRoll®, was so convinced by the performance of the new press that Siempelkamp received orders for five plants at once. France, Italy and Belgium followed; Germany also received its first ContiRoll® in 1988: Glunz AG in Meppen ordered an MDF plant.

One decisive advantage of the ContiRoll® principle is its flexibility. Whether in Europe, Asia, South America or South Africa: the spectrum of raw materials used for the production of chipboard, MDF, HDF and OSB ranges from pine to eucalyptus. Every wood-processing company can use ContiRoll® to operate its production processes reliably, rapidly, and profitably.

Many of the first systems are still operating successfully today – an indicator of the long service life and quality of this Siempelkamp product. ContiRoll® presses are now also used in manufacturing conveyor belts and high-pressure laminates.

Manufacture

“The forming and press line is the process-defining unit within a complete system. As the heart of the plant it secures capacity and quality of the product. Our drive is to build the best forming and press lines, and to offer the customers a decisive competitive market advantage.”

Stefan Ziemes, Managing Director Siempelkamp Maschinenfabrik GmbH





The ContiRoll® manufacture

We use not only state-of-the-art CNC technology, we pay attention to every speck of dust.



Precision-milling a hot platen
Assembly work on hydraulic components



What role does manual work play in a highly sophisticated technological concept? A decisive one. The manual assembly of various modules adds to the modern techniques and offers many advantages to our customers.

As a rule all ContiRoll® basic components are machined using the latest CNC techniques. This boosts cost optimisation thanks to low machining times and promotes the dimensional accuracy of our components.

The "manufacture" concept or manual assembly is used for various modules. The advantages include:

- "Containerisation" of the modules – combined modules are assembled in such a way that they fit exactly in a standardised overseas shipping container. This optimises packaging and freight.
- Price advantage thanks to on-site final assembly, provided by local assembly teams. The quality is ensured by Siempelkamp's supervisors.
- Electrics and hydraulics are fitted as modules: "plug & play" – fast commissioning and start-up on site.
- Individual modules can be checked for operability immediately after assembly – in Krefeld or on the construction site.

Hydraulic components: hand-picked!

One of our units is particularly focused on the manufacturing of hydraulic components for the ContiRoll®. As a systems provider, we build all parts individually and to suit perfectly your purpose. Clean and conscientious handwork with good sense of proportion keeps things like chips or dust from causing mechanical damage or operating blockages in the hydraulic circuit. Leaks in the press cylinders or breakdowns due to scoring in the smooth surface are thus eliminated.

Our specialists work on assembly with a solid eye for apparent trivialities in a clean room atmosphere. Manual work also means that our know-how in matters of hydraulic circuits is carefully set out in schematic flowcharts and followed; function tests after assembly complete our thorough basic manual work.

Our test bench in Krefeld focuses on the individual optimisation of our hydraulic components. Only accurate development of the cylinders will enable precise pressure control of the cylinder groups and counteract periodical pressure fluctuations ("valve floats"). This step of the process ensures an optimised mat density in the calibration zone. This conscientious examination in Krefeld makes for a smooth process on the building site.



Lower flexible infeed onto Strothmann RoundTrack technology heavy-load trolley

“After now more than 27 years ContiRoll® experience it is for me again and again a great pleasure to see how our customers respond to the absolutely smooth commissioning of the Conti!”

Werner Masnitza, Sales Director

Our team guarantees quality to the very end

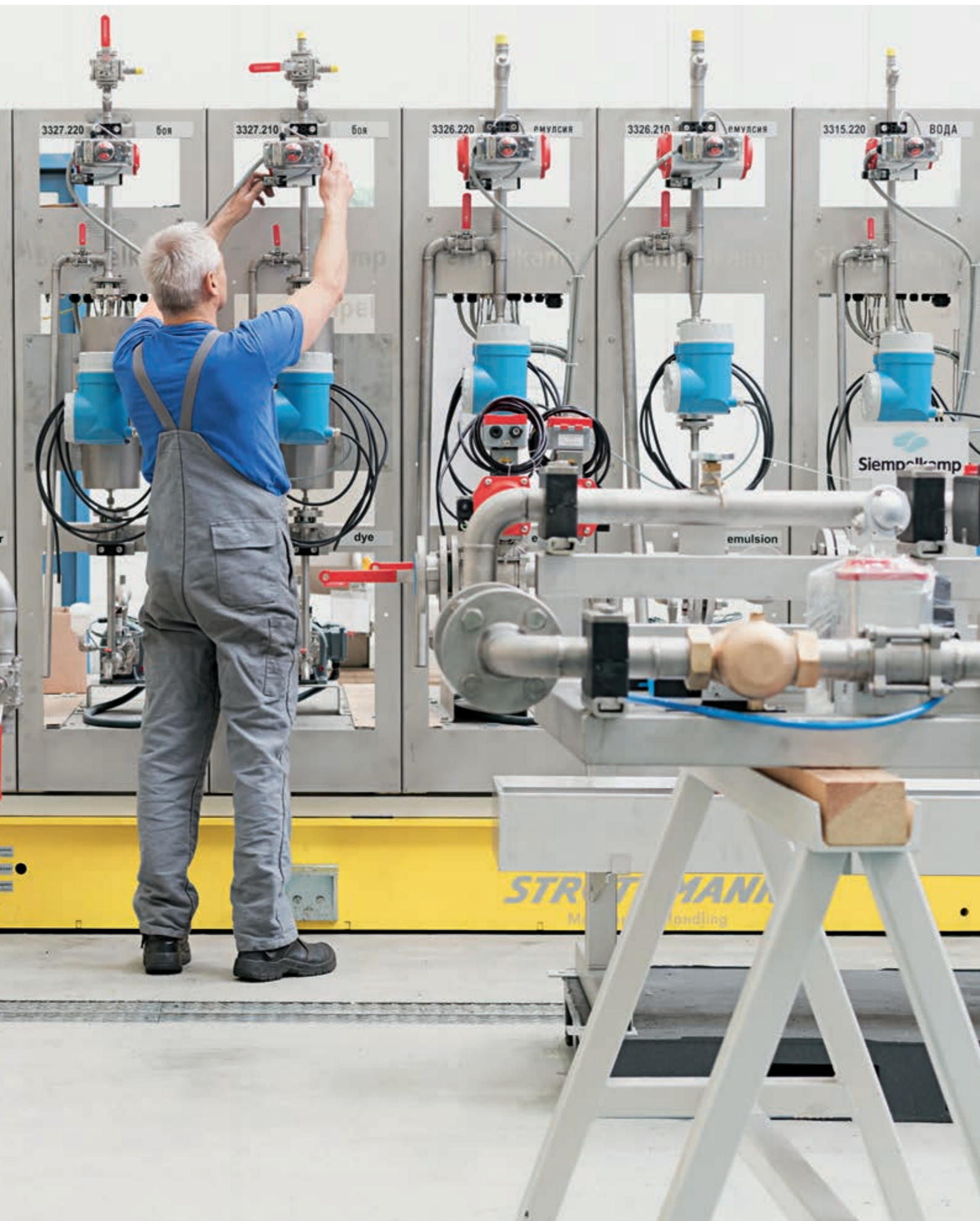
Manufacture also means operating a well-maintained and cared-for machinery park. Our teams check the machinery’s accuracy on a regular basis and with the greatest care. Milling, drilling and grinding tools are aligned at 100% and calibrated to ensure that the surfaces of our hot platens are produced exactly like the customers want them to be: smooth and flawless, because that is the guarantee of a quality product.

All steps of the process are well defined based on our experience, the know-how in tool use and various processing parameters (e.g. feed rate during milling), and all those involved are well trained. Only high-quality raw materials are used and in strict compliance with the required level of hardness.

Manual work and accurate inspection and checks are also indispensable for the production of rollers and pressure cylinders, because these components can be difficult to work in terms of surface quality. Our knowledge of best machining processes constitutes here a major asset and our in-house manufacturing unit guarantees plant operators the best product dependability and durability.

Last but not least our on-site specialists help strengthen the manufacture concept at the time of assembly on site. They hold each product one last time and check its function. That way the plant operators can be certain that their new piece of equipment is truly working.





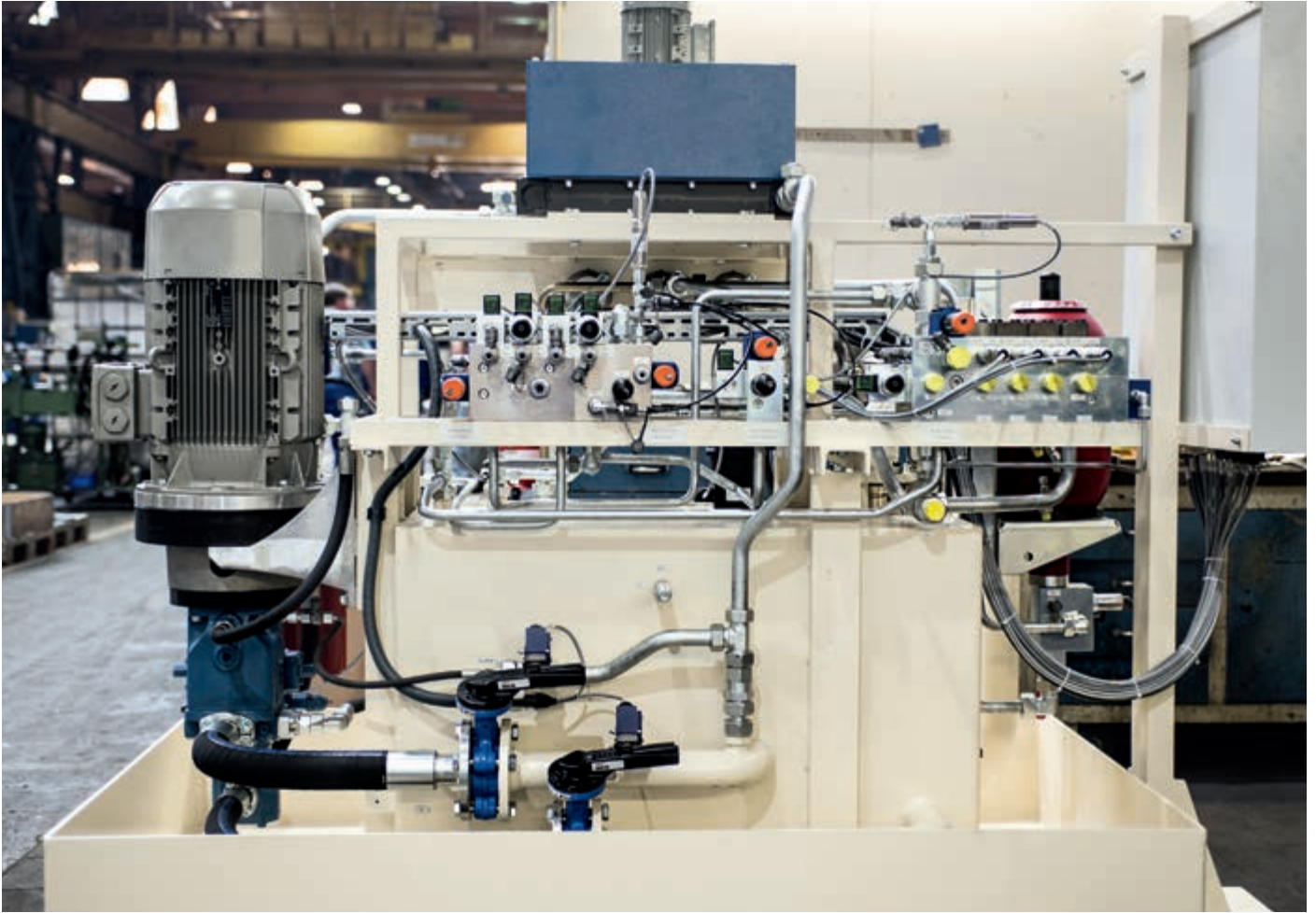
Competence

“Our for this purpose specially developed hydraulics interacts precisely with solid mechanics, controlled by our advanced automation technology.”

Gregor Endberg, Head of Hydraulic Design







Hydraulic competence

The hydrostatic principle was discovered by Blaise Pascal. Its perfect application by Siempelkamp.

Hydraulics made in Krefeld

A sophisticated hydraulic drive concept forms the core part of the ContiRoll®. All the hydraulic components required are designed and manufactured at our Krefeld-based factory. They include amongst others the press cylinder control, the belt tracking system and the control of the flexible infeed section.

The hydraulic assemblies such as hydraulic supply system, control blocks and function beams are manufactured, pre-assembled and fitted with pipes and cables in Krefeld. This enables the assemblies to be installed on site without requiring adaptation.

Moreover, the hydraulic and electric functions of the assemblies are tested at our factory. Not only does this prevent errors and failures right from the start, but it also ensures a significantly faster start-up of the press on site, saving time and money.



Titel page of a brochure from the 1920s



Hydraulic test stand



Hydraulic function carrier with 6 m length

Reliability

“It runs 360 days a year, 24 hours a day, for decades. ContiRoll® is a high-performance press that is available to plant operators for continuous operations, and which remains accurate in the most difficult conditions. This resilience is the result of excellent manufacture.”

Stefan Wissing, Spokesman of the Management, Siempelkamp Maschinen- und Anlagenbau GmbH





There is no skill in getting a wheel to turn once.

There is a skill, however, in getting a wheel to turn for more than 20 years.

Whoever buys a Siempelkamp ContiRoll® can rely on availability and uptime. Whether in China, Brazil or Belarus, our continuous press operates everywhere in the world under the most specific conditions to help plant operators and their markets remain reliable, usually over several generations.

Climate, location, wood species, production range and output: ContiRoll® operates within different parameters. Our engineering sets the path to success from the start in terms of reliability. Cutting-edge 3D technology and measurement ensure that the plant layout can be planned exactly to the point and fits in the infrastructure on-site like a key in a lock.

During manufacturing, our testing technology addresses all components on your press. Hot platens, hydraulics, electrics, as well as the components supplied by external partners such as steel belts undergo detailed testing by Siempelkamp. That way we make sure that both our performance and that of our external subcontractors meet all requirements.

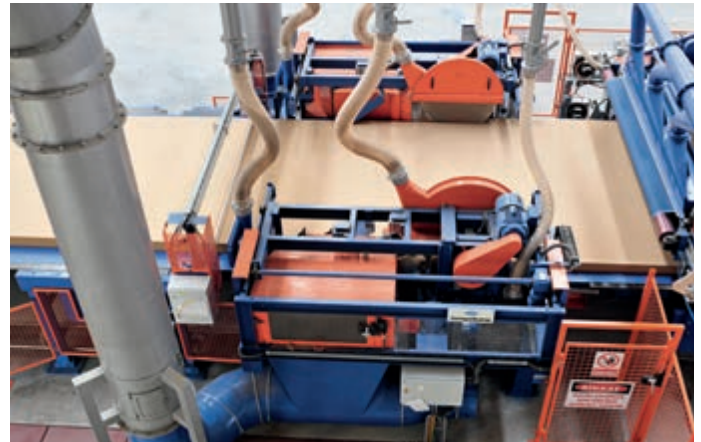


.....
Finishing line with
cooling turner
.....

“Consistent and reproducible!”

This is what is asked from our continuous press in terms of performance. After start-up, ContiRoll® is set to long-term operation and produces 24 hours a day without stopping. Reliability starts as early as during the greatly anticipated ramp-up curve. It is the moment when ContiRoll® delivers what it promises, when it renders the contractually warranted functions in the first week or even exceeds them.

The fact that the long-term operation remains reliably on course is also due to the excellent cooperation between our team and the client’s personnel. Theoretical and practical training and courses ensure that each person involved knows exactly what makes the plant tick. This transfer of knowledge from team to team works better than a hand-book alone could ever do.



.....
Edge trimming of the fiber mat
Frontal discharge of the mat former bunker
.....



“Stop – Conversion – Start – Go!”

We support our customers throughout the whole life of a plant and provide targeted service when modernisation of the electrical engineering or mechanics is needed to improve the plant or when spare parts are required. This service enjoys an excellent reputation for components in terms of modernisation & conversion, spare parts service, consulting & engineering, teleservice and trainings. The concept as a whole helps ensure increases in output, high uptimes and long-term competitiveness.

Our service teams are reliable, efficient and fast when they are needed at “Installed Base”. Over 100 employees of Siempelkamp Logistics & Service GmbH over three locations are dedicated to provide the highest levels of quality and smooth processes. Our international service subsidiaries help consolidate our close-knit service network.

Depending on their individual goal for modernisation or retrofitting, our customers’ benefits are: increased output, extended uptime, material savings, improved safety functions and reduced wear and tear.

Our teams

Multiplying our strengths.



Hydraulic and Automation Team



Engineering Team



Through the development of ContiRoll® up to Generation 8 all customer requirements are met. Whether super-thin, very light, hardboard or paintable surface, we have an answer.

Technical concept, D&E, manufacturing, dispatch, assembly and start-up of a ContiRoll® - unthinkable without the strong and closed Siempelkamp community.

Our team gives proof of planning safety and adherence to schedules at all stages of a project. Several ContiRoll® presses are implemented successfully at the same time at different locations – for example in spring 2016 when seven ContiRoll® lines started first-board production within a period of just three weeks.

Our specialists are on the site at the right time to contribute their skills to a ContiRoll® project. Our teams always cooperate closely with the customers' teams at all project stages. For this is the only way to success.

Sales Team



Project Management Team



Intelligent Production

“Intelligence means processing information efficiently, above all within the scope of ContiRoll® production. Knowing today what will happen tomorrow is part of that concept.”

Werner Schischkowski, Head of Automation Technology







Intelligent production

Our ContiRoll[®] not only has SPC and SicoScan, but also IQ – Prod-IQ[®].

The demands on the quality of particleboard MDF, HDF, OSB or veneer boards are quite challenging, the tolerances to be met are very tight. This is true for the board thickness, board weight, density distribution, surface quality as well as the mechanical properties. In all circumstances, the product quality must remain consistent – even with temporarily changing process parameters. They vary with changing fibre or particle qualities or with fully automated product changes.

Therefore comprehensive knowledge of all influencing parameters as well as their interaction are an indispensable precondition for ensuring a consistent product quality. Based on our 30-year experience in ContiRoll® development, production and system support, we have developed unparalleled production know-how. The knowledge gained from countless laboratory tests and sample analyses do also weigh in, just like the use of revolutionary innovations, even and most of all the trusting discussions with our diverse and experienced customers. Based on that knowledge, we have developed a board quality model that constitutes the basis for our intelligent and adaptive process control system, Prod-IQ®.

The concept: more than 2,000 sensors are continuously monitored and provide information on the actual prevailing production status. All data are assessed with precision. A quality forecast and control is done online basing on the board quality model. For templates that can be individually configured, the production's results can be clearly shown in terms of quantity and quality, and can thus provide the basis for any process optimisation. The data can be transmitted to any terminal device, e.g. iPad, iPhone or large screen.

From board quality model Prod-IQ® to self-controlling production device Prod-IQ® Next: Intelligent production one step further.

With Prod-IQ® Next, we have brought our successful process control even further: not only do we want optimized properties for wood-based boards but we also want self-optimising production systems.

Which product should be produced with which properties and in what quantities? These are the only requirements our customers will have to specify in the future. Everything else, the product change, the online quality prediction and controls, and even the production order change will run off automatically.

Cut your costs: energy-efficient production

Energy-efficient production always goes hand in hand with the use of modern management systems. Our systems are already fitted with modern energy measurement devices. Energy data are monitored centrally and paired with production data with the aim to manage and reduce energy costs without any loss in quality during production. A dedicated reporting manager provides at all times an overview of the current consumption data.

Big data to increase system availability

In order to further increase system availability, we have fitted our plants with a condition monitoring system. More than 20,000 measurement data and plant parameters are transferred to the monitoring software and are analysed using intelligent technology monitoring systems that look for irregularities. Based on the findings, process-led corrective measures can be taken or indications provided for predictive maintenance, which is essential when it comes to machine parts' wear and tear. Maintenance intervals can be organised in connection with our maintenance tool: getting on with troubleshooting before the machine even fails.

Thanks to this concept, plant operators are always one step ahead. This goes for us as well: together with our customers, we work to expand these features in order to improve system availability ever further.



.....
We use the most advanced HMI
(Human Machine Interface)
.....

Globalism

“Here in Qingdao, we have built a great team. All employees strive to reach a common goal, namely the best quality and optimised product costs.”

Dr. Jung-Ren Ni, General Manager Siempelkamp/China





Custom-made for every market

The best ContiRoll® is installed in China. And also in the USA.

“Think global, act local” – that is the guiding principle followed by Siempelkamp to set the worldwide success of ContiRoll® on a solid basis. Long-range, concentrated specialisation for even the smallest market requirements is our recipe for success.



Marietta, U.S.A.



*Siempelkamp headquarters,
Bittwer Krefeld, Germany*

We live globalism first of all through our eleven representatives, from the USA to Australia, including five international production and/or project planning sites. Our service is also fast and targeted on site once spare parts are delivered, resulting in even higher uptimes!

Whether in Brazil or Belarus, Turkey or China, international plant operators ask for Siempelkamp products because we offer a technological edge at a reasonable price. Our teams connect with these customers optimally thus making each individual ContiRoll® the best possible tailored to the demands of our customers, their product portfolio and location as well as their target markets.

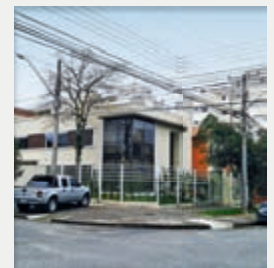
The prospects? ContiRoll® also means continuously rolling on to master future challenges. In Southeast Asia, in particular China, but also in Latin America, there is an increased need for small to middle-sized production capacity. Even Vietnam has emerged as a blooming market, whose timber industry (wood-based products) relies on our set of skills. Myanmar and Laos are also deemed future markets.

This means many markets and various applications. Our highest level of demand derives from that global requirements: never provide standard, but custom work.

The Dragon Press: Siempelkamp quality in and for China

With the Dragon Press, a ContiRoll® in a 4' format, we meet the need of plant operators on the Chinese market. This smallest representative of the ContiRoll® family combines our press building expertise with the advantages of local manufacturing in China.

The concept: the Dragon Press offers the same level of performance as the large continuous presses made by Siempelkamp – high-quality production, best accuracy –, but is adapted to meet the local requirements. The 4' version constitutes the optimal solution for the smaller works that characterise the Chinese market. Siempelkamp expertise, made for China in China!



Curitiba, Brazil

**SIEMPELKAMP HEADQUARTERS,
BÜTTNER, KREFELD, GERMANY**

**SIEMPELKAMP WOOD-BASED PRODUCT PLANTS
– EXPERTISE FROM A SINGLE SOURCE:**

The construction of complete wood-based product plants is Siempelkamp's core competency worldwide. Alongside the in-house research and development centre, we operate an innovation centre at the headquarters in Krefeld, Germany, giving us a technological advantage in the market. Our reputation in the field of continuous wood-based product presses and complete systems from the wood yard to the finished panel has secured our place as the market leader.

**FROM DUAL-FUEL BURNERS TO DRUM DRYERS
– BÜTTNER DELIVERS TOP QUALITY:**

Drying systems, energy systems and burner systems: Büttner Energie- und Trocknungstechnik GmbH has established itself internationally as a leading supplier for this range of products.

SICOPLAN, MENEN-LAUWE, BELGIUM

DESIGN, PLANNING & CONSTRUCTION:

Our Belgian subsidiary provides design and engineering at a benchmark level. Together we represent 60 years of experience in process planning, design and technological commissioning of wood-based product plants.

CMC, COLZATE, ITALY

THE FRONT-END SPECIALIST:

Since 2012, this company in Colzate, Italy has been a subsidiary wholly owned by Siempelkamp. The front-end specialist manufactures conveyors, gluing injection machines, screening machines, chip forming machines and finishing line saws.

BLATNICE, CZECH REPUBLIC

SEAMLESS SERVICE CHAIN WITHIN EUROPE:

Since 2008 our team in Blatnice has been providing forming line components, services for chip production, mat forming machines and finishing lines. Our production volume in this market is continually expanding with more and more high-quality components including electrical and pneumatic components.



Blatnice, Czech Republic



*Sicoplan, Meneu-Lauwe,
Belgium*



Wuxi, China

WUXI, CHINA

FIRST ASIAN CENTRE OF EXPERTISE:

Our first Chinese production site, established in 2004, is a centre of expertise for transport rollers and rolls for finishing lines, and mat forming machines. In addition, selected forming and press line machines for the Asian market are produced here.

QINGDAO, CHINA

FLAGSHIP PROJECT IN CHINA:

In April 2015, production started on our second Chinese site in Qingdao Ecopark, an international flagship project. We were the first German company to build a site here, with an area of 7,000 m², expandable to 13,500 m². The production range includes components for the ContiRoll®.



CMC, Colzate, Italy



Qingdao, China



Production/engineering locations



Representative offices



Since 1893 based in Krefeld

Our knowledge for your success.

Siempelkamp Maschinen- und Anlagenbau / Managing Directors



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a dedicated team.

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Clients' comments

Quality and commitment.

—



Germany: “The large number of continuous presses installed worldwide and the experience with particularly long presses convinced us of using Siempelkamp. Our press is at least 60 m long: you don’t build that every day. For the purchase, the quality of the technical solutions and the commitment of the staff when working on these technical solutions took precedence over the price.”

Ralf Pollmeier

Pollmeier Furnierwerkstoffe GmbH & Co. KG uses the first continuous press to produce beech-laminated veneer lumber/LVL

Russia: “We are highly satisfied with ContiRoll®! The assembly went according to plan and the operators were trained within a short period of time. At the moment we work about 25% above the promised performance.”

Sergei Ostanin

OA O Uvadrev-Holding,
Director of particleboard production

Austria: “ContiRoll® is like a synonym at Egger for the highest level of machinery in our branch and for an in all aspects efficient and constantly optimising production technology. With ContiRoll® we associate our sustainable business success, based on a decade-long reliable and trustworthy partnership with Siempelkamp.”

Walter Schiegl

EGGER Group Management
Production/Technology

Italy: “We are convinced that with the new ContiRoll® production line we will achieve a better position in the board market. In regard to the new technology, Frati is now avant-garde. We want to use this cutting-edge technology to operate efficiently.”

Luigi Frati

Frati Luigi S.P.A.

Australia: “Laminex operates two Siempelkamp ContiRoll® MDF presses at their Gympie plant. ‘G1’, a 20,800mm Generation 3, produced its first board in August 1988 and ‘G2’, a 23,500mm Generation 6, produced its first board in February 1997. Today, both presses run high levels of uptime and well above design speeds over a range of thicknesses (2.5 mm to 32 mm) and densities. All MDF products are of high quality (E zero formaldehyde emission) and are manufactured from renewable plantation pine.

In conjunction with Siempelkamp, both presses have been modernised to improve process control, product quality, rejects, reliability and efficiency.”

Brian Bennett

Plant Manager Laminex/Gympie

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