impressive

ISSUE 2/2022

Putting energy into our customers and the environment

Sustainable site expansions

Troubleshooting on the Pilot Machine

Focus on individual customer solutions

Press Section Audit Part 1

Multiple factors influence productivity

Imprint

Publisher
Heimbach GmbH
52348 Düren, Germany
Phone.: +49 (0) 2421 / 802 0
email: info@heimbach.com
www.heimbach.com

Dear reader,

How do you find your daily production routine? I presume that, for you too, everything revolves around saving, optimising and modernising.

Unfortunately, we have no control at all over shortages of gas, or rising energy prices. We are, however, standing right by your side when it comes to finding solutions for resource-efficient production.

In this issue we provide practical examples of how our customers have been able to save energy, extend clothing life or improve runnability with perfectly matched combinations of clothing.

As you know, our TASK Department is continually addressing complex problems. This time we look at press section audits. Read why it is critical to ensure that suction press roll deckles are correctly adjusted.

Speaking of trouble-shooting: Did you know that, as well as being used to test products and prototypes, our pilot machine is also able to run simulations? We can demonstrate, for example, the effects of doctoring, correct guide palm settings and the narrowing of felts.

Our services are as diverse as current topics are challenging. And yet I am still optimistic about the future. After all, our industry has proved time and again that it is both adaptable and versatile. And this will continue to be the case in the future – of that I am certain.

Best regards

Marco Esper
Chairman of the Management Board (CEO)

Putting energy into our customers and the environment

Gas and electricity are becoming scarcer and more expensive. Bottlenecks are a danger to the health of global industry. And all the time, the consequences of environmental pollution are becoming increasingly apparent. At the latest, now is the time to change course. At Heimbach, we have been on course for a long time. Thanks to the strategic expansion of production in Europe and China, we are always able to offer reliable and competitive deliveries, even in the face of strong headwinds. At the same time, we are consistently implementing our ambitious sustainability goals and contributing everything that we can to a climate-friendly future.

Increase production and reduce energy demand at the same time? That does not have to be a contradiction. Planned with foresight, it can even go hand in hand. A look at our site in China provides an impressive example. We have been continuously expanding production in Suzhou for many years. This is done according to the „local-for-local" strategy. In this way, we benefit from equally high capacities on the continents of Europe and Asia and can reliably deliver even in difficult times. The past two years have categorically proved this.

Teamwork leads to production record

Past efforts are now bearing fruit. Intensive training and internal adjustments have increased overall plant efficiency and led to the breaking of production records. This is in spite of the fact that Corona in Suzhou forced many of our colleagues into lockdown for several months. The completely virtual installation and commissioning of one of the plants with the aid of VR glasses was particularly challenging, but highly successful.

„Increase production and reduce energy demand at the same time? That does not have to be a contradiction. A look at our site in China provides an impressive example. "

Groundbreaking for Pressing 3.0

Building layout Heimbach Suzhou, China

Solar panel installation Heimbach Suzhou, China

Solar panel installation Heimbach Specialities, Belgium

Pressing 3.0

While the focus in China at the beginning of the growth offensive was on the areas of forming and drying, the main attention has recently been directed towards the production of press felts. In May, the go-ahead was given for a third expansion phase under the project name Pressing 3.0: by August 2023, the production area will have been expanded by 4,300 square metres. Sustainability measures taken since the groundbreaking ceremony are every bit as impressive as the increasing footprint of the Suzhou factory.

Above all, the photovoltaic panel system that we have installed will continue to take the plant towards the ultimate goal of independence from the energy grid.

Green energy

It is not only in China that we are setting the course for a climate-friendly future through the use of alternative fuels.

The responsible use of raw materials, water and energy has been embedded in our corporate mission statement for a considerable time now. We are also an active member of the UN Global Compact, and are committed to continuous progress which is monitored and assessed regularly via the Ecovadis platform.

„In future, Heimbach Group will generate 6,500 MWh of its own solar power annually."

„The responsible use of raw materials, water and energy has been embedded in our corporate mission statement for a considerable time now."

Rethinking and acting

We have achieved our ambitious energy goals for this year, among other things, by investing in photovoltaic systems: We produce solar electricity (150 megawatt hours) at our Belgian site. At the China plant we reach even higher levels (850 MWh). These two plants alone are responsible for an annual reduction of our CO2 emissions in the region of 900 t. And we are just getting started.

In an action plan covering the next five years, more than six million euros have been earmarked for the continued adoption of green electricity. The planned measures include a massive expansion of renewable energies, as well as initiatives to use electricity more efficiently. In future, Heimbach Group will generate 6,500 MWh of its own solar power annually, which will result in savings of around 2,600 tonnes of carbon dioxide every year.

Saving gas through innovative heating concepts

In recent months, we have begun to fully understand the implications of a sudden and large-scale scarcity of gas. There is heavy pressure on the boiler and innovative heating concepts will be needed. With the use of these new methods, our plants in Europe and Asia are already making a positive contribution to heat recovery. Over the course of further sustainability projects, we expect to be able to save about 14,000 MWh of gas annually.

And that is by no means the end of the story. Being a responsible partner of the paper industry, a healthy environment is very much in our own interest. So, as we work towards a future in which coming generations have every chance of a good and happy life, we would say both of these go hand in hand.

600.000...

kWh gas savings:

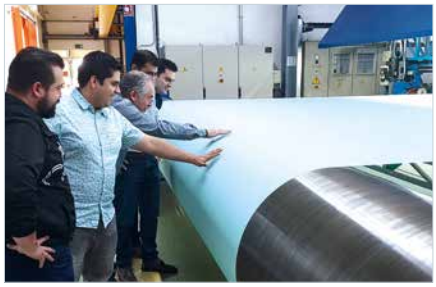
Every kilowatt hour that is not consumed helps.

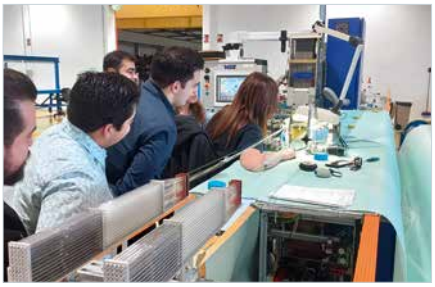
At the beginning of May, we made changes to the energy supply at our site in Düren. A boiler supplying heat to the offices and production halls could then be completely switched off. Compared to the previous year, we were able to save 600,000 kWh of gas, which corresponds to 108 tonnes of CO2. Although there were still cool days in May, the general conclusion is:

Foresight pays off at the double

There is no substitute for personal contact

Following a two-year break, colleagues and partners were this summer finally able to participate in "real" meetings once more. A Heimbach Sales Conference took place in Burgos, Spain, and the International Symposium for Sales Representatives was organised in Croatia. At both events, it quickly became very clear again: whilst online conferences continue to take place on a daily basis, face to face exchanges remain just as, if not more, important.





Close up. Whether on site or in internal communication: so many things work much better when facilitated by direct contact. In particular when it comes to complex products and production processes, face-to-face discussions will more often than not lead to quick understanding and solutions.

Sales Conference in Burgos: 10 nations, one team

There were many smiling faces to be seen in Spain when colleagues from Brazil, Argentina, Peru, Chile, Mexico, Portugal and Spain met again for the first time in two years. Attendees from Great Britain, Poland and Germany were connected digitally. Michael Dick, Vice President Sales, reported on the current situation of the company and took the audience through market and sales targets. Product managers presented their portfolios and market strategies, as well as new technologies and upcoming projects.

One focus of the conference was centred on the exchange of experiences across locations. How can we transfer successful clothing concepts to comparable paper grades? What insights have we gained away from the topic of clothing? And what added value does this have for our customers?

The responsible sales managers presented current case studies and their solutions, recognising of course that even with identical machine configurations, individual goals and requirements can be very different. For this reason, support from Heimbach does not stop once appropriate forming and felt designs have been selected.

Strengthening troubleshooting competence

Rather, we see ourselves increasingly in the role of problem solvers working in partnership across all machine sections. That is why international meetings like these are important.

Michael Dick emphasises: „Only through joint training and continued sharing of successful concepts can we further strengthen our troubleshooting competence."

Bringing newcomers on board

Besides the experienced veterans, three „newcomers" were also present in Burgos: Francisco Sepúlveda from Chile, Diego Ianatoni from Brazil and Rafael Canno from Spain. They were clearly in a position to benefit even more from the direct exchanges and discussions. Although regular online conferences continue, ‚live' teambuilding is so much more personal. No surprise, therefore, that the conclusion of our newcomers was consistently positive: „We feel part of the team - integrated and accepted."

Supplier and customer meeting on Brijuni

More or less at the same time, the 11th international GoLeD Symposium took place on the Croatian island of Brijuni. More than 50 participants accepted the invitation to this event from our commercial agency, including numerous representatives of well-known suppliers and paper manufacturers from Slovenia, Croatia, Serbia and Bosnia-Herzegovina.

Heimbach participated in the symposium, presenting the latest generation of seamed press felts. In addition to practical tips for installation and closing, illustrative material and application examples of seam felts running on marking-sensitive positions were presented.

First-hand experience

„The transfer of know-how is immensely important and first-hand information is invaluable," was the feedback from the participants. Our aim is to maintain our presence on site through a combination of experts from sales, product management and development working directly with you, possessing a view that extends well beyond both the end of our nose and the subject of clothing.

Sales Conference in Burgos, Spain

11th International GoLeD Symposium in Brijuni, Croatia

„Only through joint training and continued sharing of successful concepts can we further strengthen our troubleshooting competence."

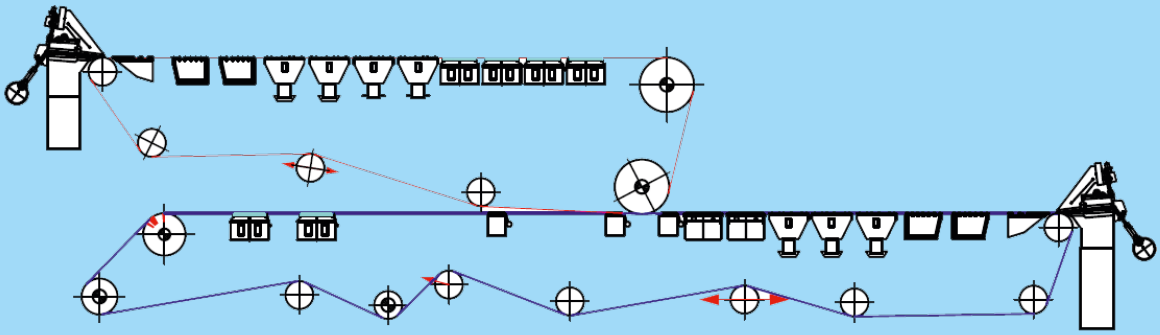
Michael Dick, Vice President Sales

Case Study 1
Working together to find the best solution

Case study documenting the rebuild of a major European packaging machine, in which Heimbach featured significantly. This unusual project featured the rebuild of the entire paper machine, with Heimbach heavily involved from the initial project phase through to completion and commissioning. It provides an example of how the closest of co-operation between customer and supplier can lead to optimal solutions and a customised clothing concept. First of all, some details on the rebuild:

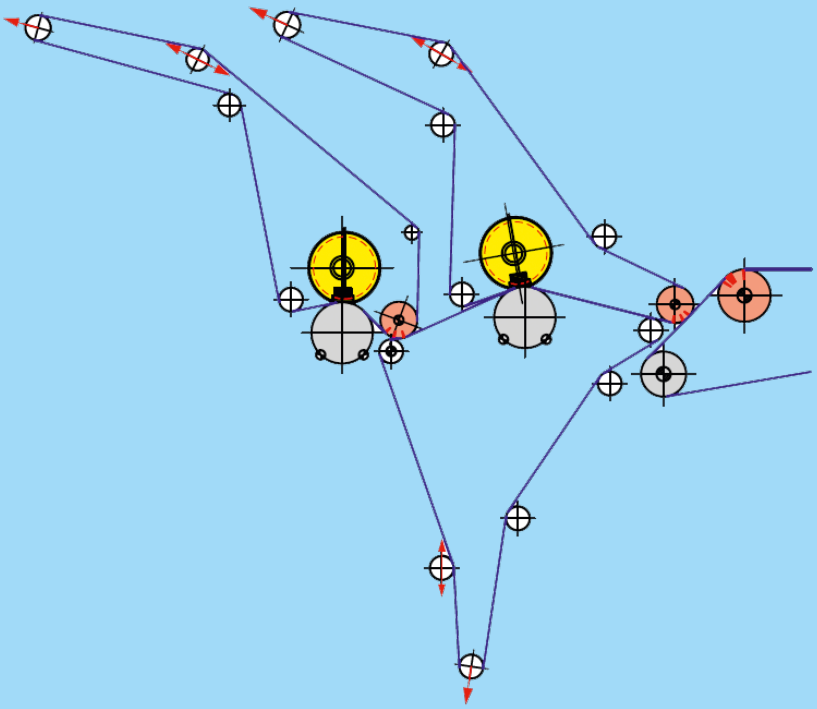
In the forming section new headboxes were installed and several dewatering elements were optimised to provide increased dewatering and, more importantly, improved paper quality.

Forming section after rebuild



The main focus of the press section rebuild was a new shoe press configuration. Moving to two shoe presses enabled dry content out of the press section to be greatly increased.

Press section after rebuild

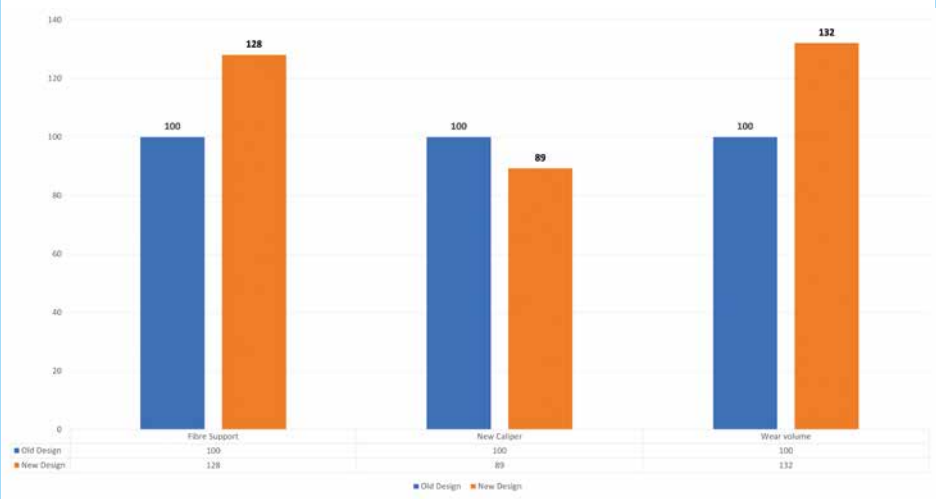


A new slalom group was fitted in the dryer section. In addition, cylinders
and stabilisers were optimised in order to manage the higher steam pressure and speed.

The goal following the rebuild: Higher machine speeds, improved paper quality, higher productivity and superior runnability.

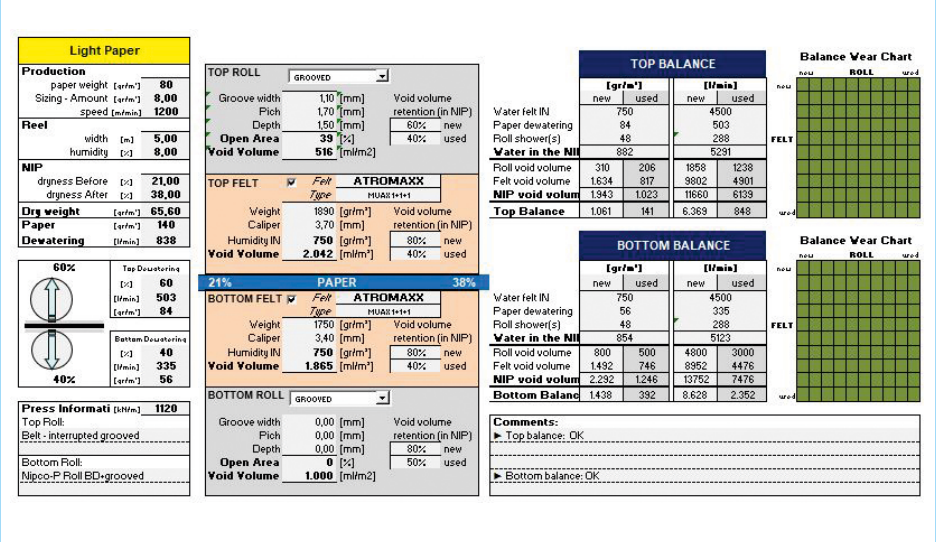
Our understanding of the above targets and the specific requirements of the customer led us to a clear application strategy. In order to set a base and minimise risks during the machine start-up, standard designs were selected for the forming section. Subsequently, and taking into account the challenges, new and more advanced designs were installed based on accurate calculations and agreed targets. This required fabrics with higher fibre support (improved papermaking surface) and drainage, reduced fibre and water carry with longer life potential.

An example showing a comparison of the mathematical calculations
allowing us to select the ideal designs for the application is shown below.



Our unique and patented Primoselect fabric was recommended for future use. As the name implies, a customer is able to
select which features have priority to achieve his individual needs. The table above shows how the new design scores against the original –
in particular where papermaking surface, fibre and water carry and wear volume are concerned.
Various calculations were also carried out for the press section. One of the most important of these was the so-called water balance, whereby the amount of water to be removed in the press section and void volumes of rolls and clothing were calculated. After analysing the results, we were convinced that the felts we had designed were able to handle the required volumes of water without any problems.

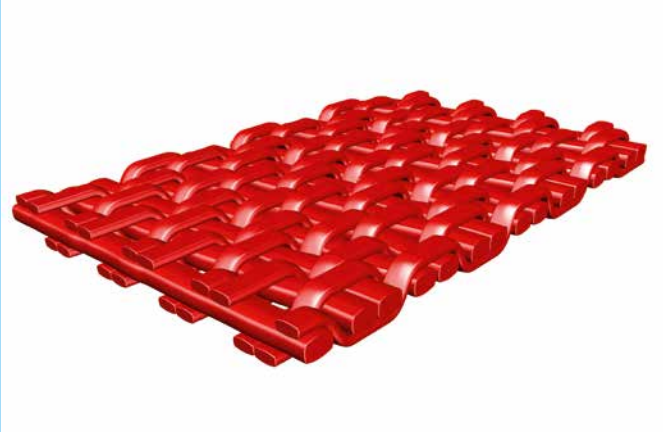
Below is an example of our water balance calculation for the first press position.



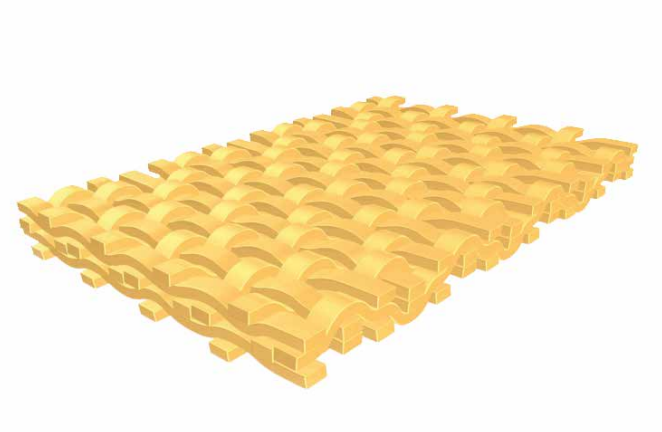
Case Study 1
Working together to find the best solution

Based on our calculations and experience on packaging paper machines, the New-Tech multi-axial Atromaxx felt was proposed for all press positions. Thanks to its multi-axial structure, the felt has a very uniform base element, which guarantees excellent pressure uniformity and therefore higher dewatering as well as improved moisture profiles in the sheet. The structure itself is essentially incompressible as the base elements are lying diagonally above each other. This in turn means that a higher void volume can be maintained, leading to a longer life potential.

The main challenges in the dryer section were increased speed, lower basis weight and higher steam pressure. This demanded dryer fabrics with a high contact area and low air transportation. The dryer fabric has to create good contact between the paper and fabric, as well as between the paper and drying cylinder. This prevents sheet flutter and heat transfer from the drying cylinder to the paper can be optimised.



Secoplan.O



Secoplan.HT+

Higher steam pressure can bring with it a risk of hydrolysis. This means that a specialised material (PPS) must be used. In order to eliminate all risk of hydrolysis in these positions, we chose our Secoplan.HT+ fabric using 100% PPS material. Not only does this design have the best resistance to hydrolysis, but it also benefits from a high contact area which promotes excellent heat transfer from cylinder to paper. At the same time, the fabric has a high level of wear resistance on the roll side.

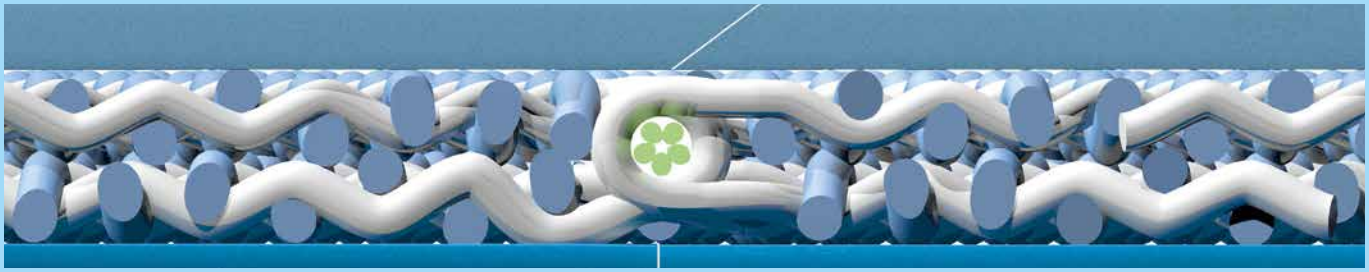
Our Secoplan.O design was proposed for the remaining dryer positions, a proven fabric with high wear resistance on both roll and paper side. In addition, the low fabric caliper ensures high heat transfer and low internal void volume prevents fibe and water carry. The seam is robust, marking free and very easy to close.

Everything, from requirements, targets and technical proposals, was discussed in detail with the customer. For the start-up phase, Heimbach received 80% of forming fabrics and press felts, as well as 60% of dryer fabrics.

Case study 2
Convinced by New-Tech press felts – with or without seam

In Viana, Portugal, DS Smith produces kraft paper on a 7m wide packaging machine and had been using a heavy, conventional felt design for many years. Thanks mainly to our expertise and diverse references on large packaging machines, the customer was ready to go for something new: Atromaxx – not only for one, but all four press positions.

On top of this, the trial felts all had seams: Atromaxx Connect proved itself to the customer all down the line.
All production targets were met and laboratory tests after removal confirmed the very good condition of the felts.



Atromaxx.Connect cross section

We go the extra mile for you

It goes without saying that our products undergo intensive and sustained testing before they reach you. A pilot machine is one of the many resources that we use for this purpose, which opens up a number of possibilities for us. In addition to standard testing and test runs of prototypes , we can also perform simulations on it and use it to develop customised clothing concepts.

The conditions for efficient and cost-effective production have never been as challenging as they are today. Save, and then save again, is the order of the day. This does not apply, however, when it comes to designing and implementing customised solutions for your production with motivation, curiosity and a thirst for action. You recognise Heimbach as a troubleshooter, and you know full well that we do not shy away from the extra mile where, as you know, there is rarely a queue! Our claim is to make good products even better, whilst at the same time fulfilling all the requirements of our customer. The paper machine / simulator at Heimbach in Düren is in constant use as we endeavour to make this happen.

Adaptable and versatile

The experimental plant is a replica of a press position on a paper machine. Thanks to the design, rolls can be arranged in such a way that clothing from 18 to 40 m long can be run at maximum speeds of 2,000 m/min with line pressures up to 200 kN. The line is extremely adaptable. We can just as easily draw in forming fabrics, dryer fabrics and transfer belts in addition to press felts. The analysis spectrum is broad: Our experts investigate start-up and dewatering behaviour, analyse dimensional stability and water permeability and collect data relating to vacuums and vibration behaviour. And this represents only a relatively small part of the routine checks that we carry out.

Demonstrate and simulate

By the way, it is not only our current portfolio that is put through its paces on the pilot machine. We also test prototypes on it, dare to experiment and give practical tips and advice in the form of explanatory videos and guides. So, for example, we are able to demonstrate and record how a hole in a dryer fabric can be repaired or how a felt can be shrunk.

The facility also offers interesting possibilities in terms of dewatering behaviour or felt conditioning, for example to demonstrate the effects of doctor blades or the correct settings of edge trims or fan nozzles.

Good doctoring - no wet stripes

Water content measurement

Correct guide palm setting

Wet stripes due to bad doctoring

Forming fabric inspection

Wrong guide palm setting

Film on!

How do you repair a hole in a dryer fabric? And how can clothing be shrunk?

You can find the answers to these, and other, questions on our You Tube channel.

Visit us sometime!

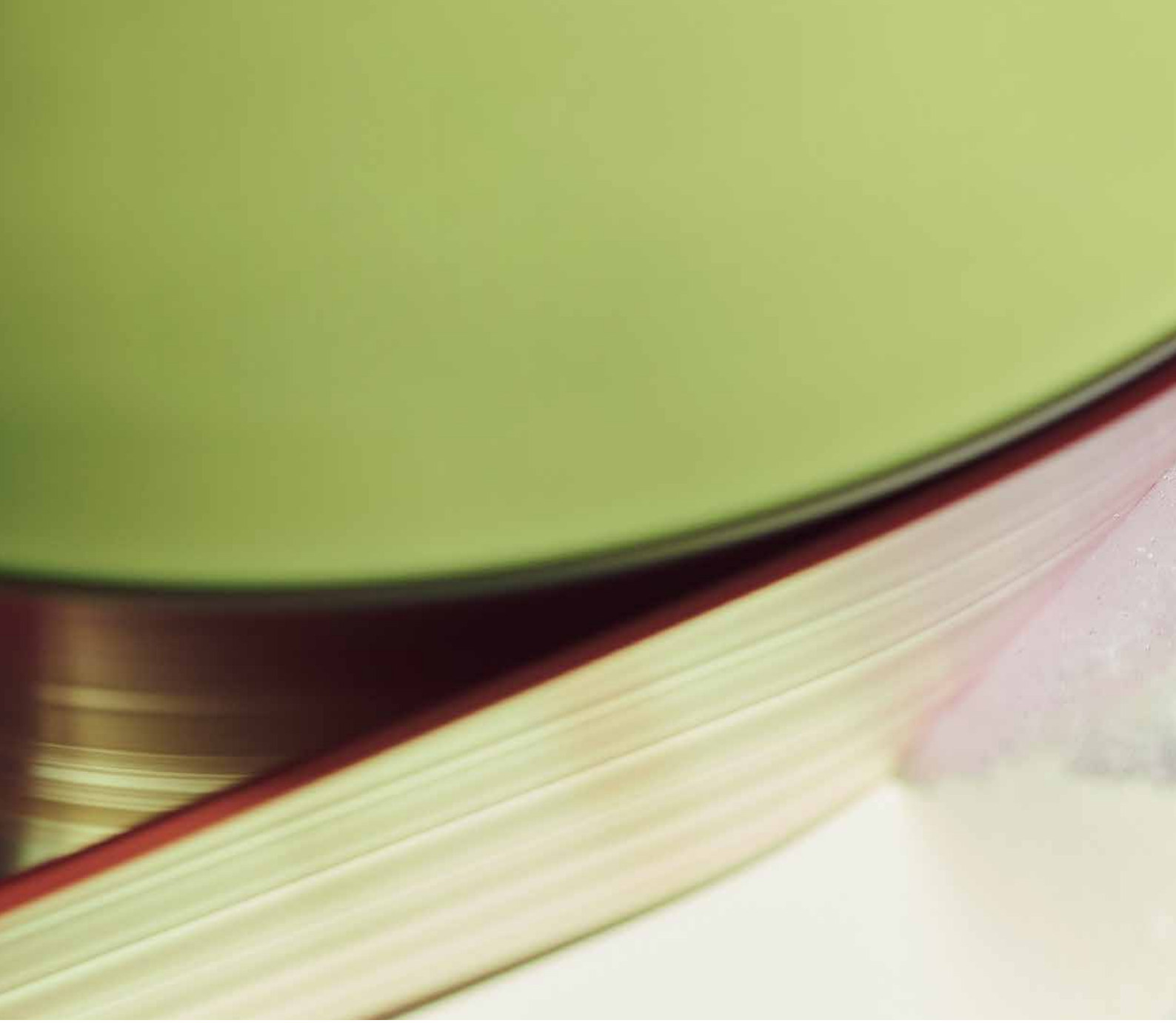
Hole stitching

Felt shrinking

Uhle box edge deckles wrongly positioned

Fan shower nozzles incorrectly adjusted

Fig. right: Fan shower nozzles correctly adjusted



Press Section Audit Part 1

The many different paper machines and their configurations are just as complicated and multi-layered as the parameters that influence productivity. In the last three issues of Impressive we have run a series of articles with a focus on the forming section. Today we will take a general look at the press section.

Mode of operation and characteristics

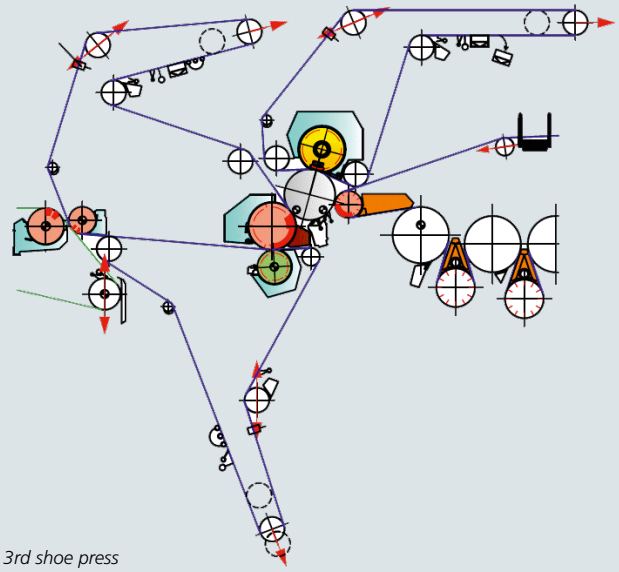
As the paper web passes through the press section, water removal is essentially generated by means of mechanical pressure. In the course of this process the water is stored temporarily within the press felts or in the open area of roll covers. This water is then removed via one of the assembly types described overleaf. There is no single or blanket answer to the question of whether nip or Uhle box dewatering is more suitable.

In the case of high speed machines the laws of physics speak against the use of felt suction boxes as there is simply not enough time available. In machines with lower speeds felt suction boxes can prove to be more efficient. As a rule, the two modes of action complement each other.

It is important to know that the method of dewatering will have an effect on the service life of the felts, energy consumption and paper quality.

Fig. 1: Format setting suction box

Fig. 2: Adjustment mechanism for suction box



Tri-Nip with 3rd shoe press

Assemblies

The machine frame usually has a cantilever system, so that endless felts can be installed relatively easily. The roll arrangement in the press section usually comprises several positions, each consisting of one or more presses and various lead rolls. A single guiding and tension roll is used for each felt position; an additional spreader roll tends to be used when machine working width exceeds six metres. Pick-up and suction press rolls have a format setting (Fig. 1) as well as an adjustment option for the angular position of the suction box (Fig. 2)

Press Nips

A loading mechanism (usually hydraulic or pneumatic) can be used to control the contact pressure of the individual press nips. If crowned rolls are not sufficient to cover the load range, deflection compensated rolls are employed. Soft covers of press rolls, when running with the felt, can cause an increased dwell time in the nip and store the water to be discharged as it passes through.

Doctors and savealls drain the water expressed from the nip out of the press. The water volumes exiting the felts is drained through the vacuum system by suction boxes. Low pressure showers and edge spray nozzles create a lubricating film between the felt and the suction box. High pressure showers help to maintain the permeability of the press felts. The vacuums of the different suction elements can be controlled by an appropriate system. Transmitters are used to monitor dewatering flows online (Ecoflows, for example).

Sheet transfer by pick-up roll

Correctly set end deckles are a prerequisite for correct functioning of the roll. Only then can the web be reliably and successfully transported into the press section via the pick-up felt, while the two edge trims run with the forming fabric through to the pulper. The angle of the suction box must be adjusted so that the pick-up zone is perfectly in contact with the forming fabric during production (Fig. 3). There is usually a doctor with a lubricating shower on the back of the roll, which must be regularly checked and cleaned. Some pick-up rolls have an internal HP oscillating shower to clean the suction holes. Meanwhile, below the pick-up roll, a guide roll manoeuvres the bottom felt to the paper web. The felts are partially saturated with water prior to the nip, so that pressure builds up rapidly upon nip entry.
As a result of this squeezed-out water flows freely into the open area of the rolls. At the exit point of the nip, part of the water on the underside of the felt is now thrown off the roll. (Fig. 4)

Characteristics of the 1st press

Due to the substantial volumes of water present in this position, and dependent of course on the type of paper being produced, felt design, roll cover, doctor and saveall must be precisely positioned and matched. Felt type selection, conditioning and vacuum settings on the felt suction box and suction press roll influence both the dewatering and the running behaviour of the paper web. The suction press roll is usually equipped with a high-performance cover and has a second press nip with a hard centre press roll. The suction box must be at the correct angle in the run direction in order to cover both nips (Fig. 5, page 18).

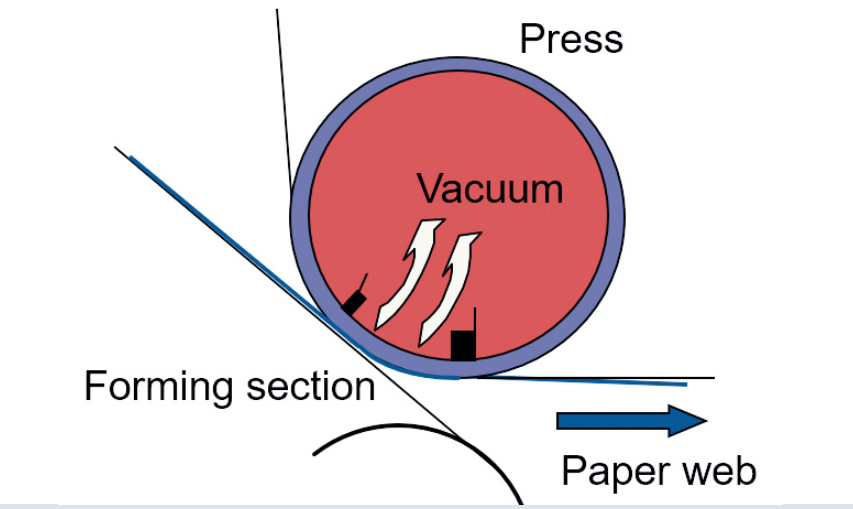


Fig. 3: Adjustment of suction zone to forming wire

Fig. 4a: Good nip dewatering

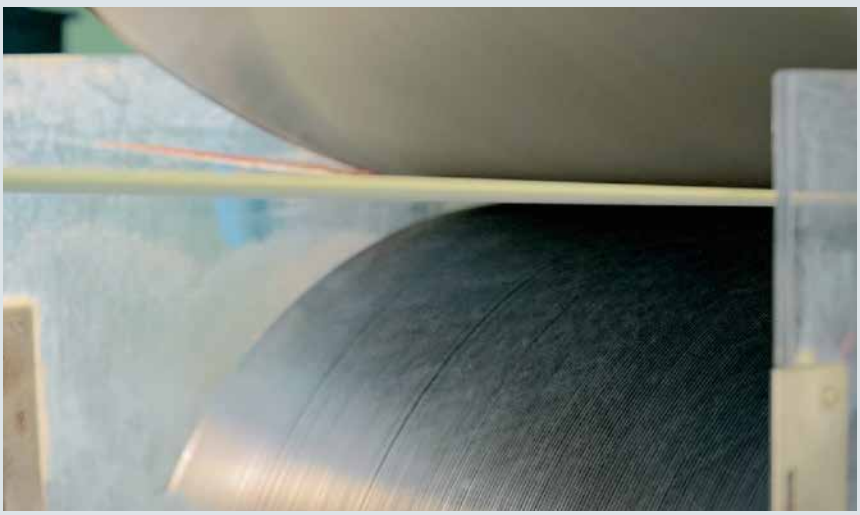


Fig. 4b: Insufficient nip dewatering

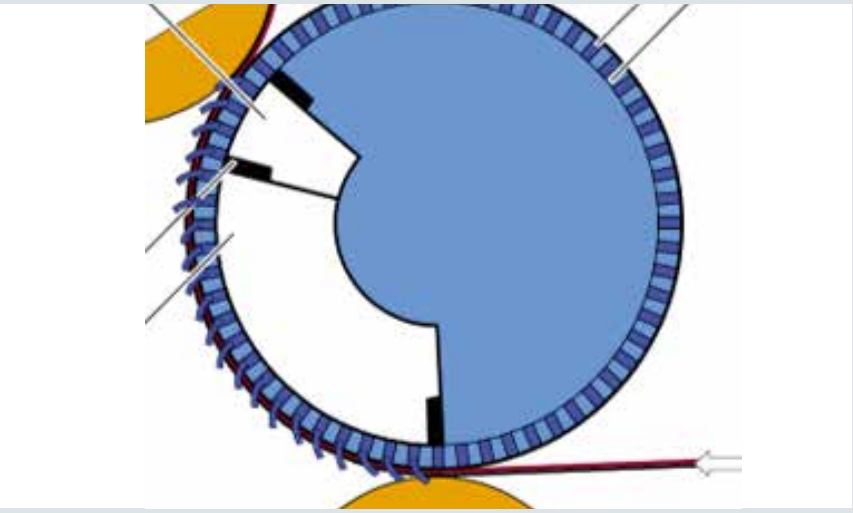


Fig. 5: Suction zone setting suction press roll

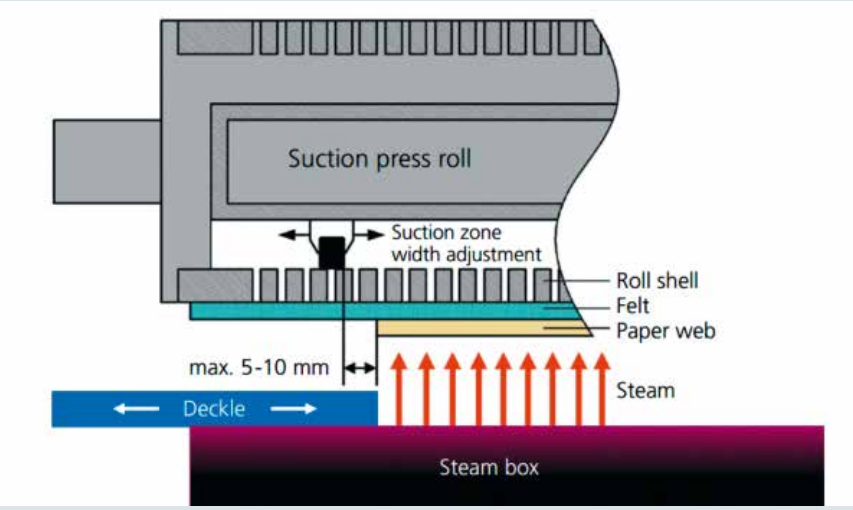


Fig. 6: Correctly positioned deckles on the suction press roll

Practical Tip

Press felts perform best with an optimum saturation level of around 50% water content elative to felt weight. So for example if the felt weight is 1600 gsm the water content before entry into the nip should be around 800 gsm.

A steam blow box is frequently located on the outside of the suction press roll between the first and second nip to increase sheet temperature. By using saturated steamwater, viscosity in the paper web is reduced making dewatering more efficient in the subsequent nips. When a zone-controlled steam box is incorporated, the cross machine profile of the sheet can be regulated.
Correctly adjusted end deckles ensure that no leakage occurs and that steam passes through the felt into the suction box. Otherwise, this could cause damage to both felt and roll cover. Furthermore, precisely aligned deckle positioning prevents the edges of the sheet from being negatively affected (Fig. 6).

Critical point: Sheet release from the centre roll

The centre press roll generally has a ceramic cover with well-defined roughness and hydrophilic properties. The third press tends to be designed as a shoe press with grooves in the belt providing the storage volumes necessary for water to be successfully discharged.
With the aid of a shoe press it is possible to create an enormous impulse, which in turn allows the sheet to have the highest possible dry content on leaving the press section.

Of great importance in the context of sheet transfer into the dryer section is the double doctor system installed on the centre roll.
On the one hand this acts as a dynamic seal that prevents fibres from passing through and thus causing breaks. On the other hand, the interaction of the lubrication and cleaning spray pipes, and first and second blades ensures a constant Ra (roughness) value of the roll surface – usually with Ra values between 0,6 and 1,0.
If these conditions are respected, there is nothing standing in the way of reliable sheet transfer with minimum web tension and subsequently low break frequency.

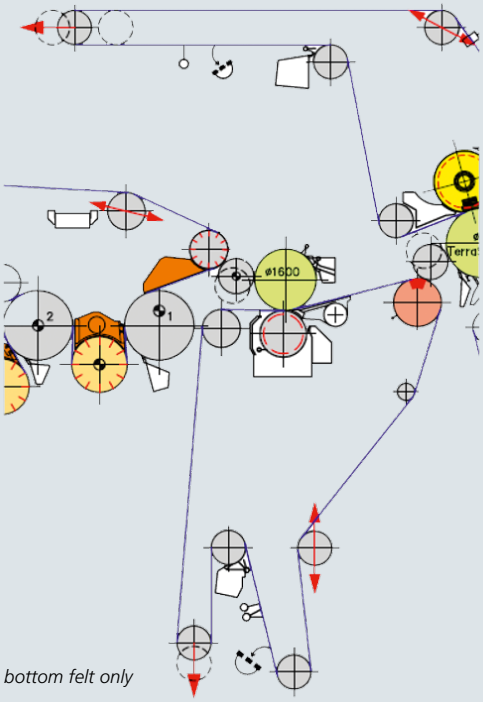
Single 4th press – with bottom felt only
The bottom roll has a hard, grooved cover. This creates high maximum pressures in the nip with the aim of achieving an even greater dry content after the shoe press. This construction, with its hard nip and design, means that vibration can occur. The vibration can be dampened by re-tensioning the felt.

Tandem shoe press with transfer belt
Two successive shoe presses are able to generate a very high press impulse which can create the necessary conditions for high dry content at the exit of the press section with a closed run. As there is no longer any free sheet tension during transfer into the dryer section, higher production speeds can be reached.

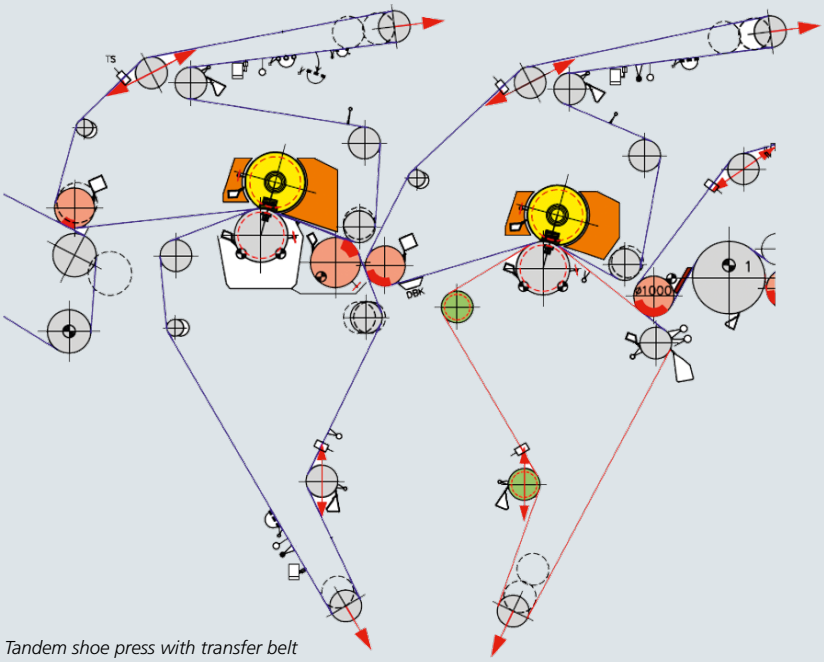
In the run-up to a section audit, we always sit down with you to define tasks and objectives. In this first article we have addressed some of the important issues in the press section. In the next Impressive, you will learn more about specific TASK measurements that we recommend, as well as the key topics of press section hygiene and maintenance of dewatering elements.

Do you have any questions regarding this article, or would you like further information regarding our services?

Michael Loenißen
Phone: +49 (0) 2421 802 463
email: michael.loenissen@heimbach.com



Single 4th press – with bottom felt only



Tandem shoe press with transfer belt

„With the aid of a shoe press it is possible to create an enormous impulse, which in turn allows the sheet to have the highest possible dry content on leaving the press section.“

Open doors and pathways

We manufacture and develop forward-looking solutions for the paper industry at eight sites with a total of approximately 1180 employees. To accomplish this, we need qualified personnel and junior staff who will shape the world of tomorrow with us. For decades now, we have been training people with high rates of success and promoting further training measures. Young newcomers to our organization can enjoy and profit from a wide range of possibilities and opportunities. Taking a career from intern to authorized signatory is not merely a vision at Heimbach, but reality. Currently, we have an ambitious student supporting us in research & development, helping to drive our ongoing digital transformation. In this interview, we find out how his interest in the topic of ‚artificial intelligence' developed and what he likes about working for us.

Please introduce yourself briefly.

My name is Sami Azirar and I am a student assistant at Heimbach. I am studying industrial engineering, specializing in mechanical engineering with a focus on production technology.

How did you come to be involved with artificial intelligence?

I have had a keen interest in new technologies for as long as I can remember. At the beginning of my studies, I wanted to write a program that worked in a similar way to the computer game Snake and somehow ended up getting involved with AI.
I strive to find my own solutions, and want to bring in my ideas to help solve problems. Here, algorithms or artificial intelligence offer enormous possibilities. That's more or less how I came to study production engineering.

Your bachelor's thesis, which you wrote with us, deals with AI solutions, such as machine learning for production. What's so exciting about that?

It's curiosity that tends to drive me to explore the unknown and get involved with new things. Working with Heimbach and the ITA (Institute of Textile Technology at RWTH Aachen University), provided the opportunity to deepen my knowledge and apply logical thinking in practice. I learned to understand problems, abstract them, and solve them accordingly. AI plays an essential role here. And very importantly, the results must be visualized and explained in a way that should be easy to understand for people outside the field. That makes it even more exciting.

What skills and insights did you take away from your studies?

I was able to strengthen a number of skills such as time management or project-related work, and then put them to the test in practice. In addition to expanding my professional skills I have been taught how to apply what I have learned to new tasks and how to reach my goal in a roundabout way.

Were you able to apply the course content in practice?

Fortunately, yes. Not only was my mathematical knowledge helpful, but I also benefited from a grounding in basic physics and materials science. To be able to interpret, it is essential that you understand what is happening. I additionally took "Data Science" as a subject, which is very useful in understanding the theory.

What do you appreciate about working with Heimbach?

I am part of an open and friendly team that supports me at all times. My supervisors have a high level of technical expertise and are on hand with advice and support when I start new projects on my own responsibility. I greatly appreciate the independence and trust placed in me. I feel like a fully-fledged team member, participate in meetings with the CEO and communicate face to face. That's motivating!

Where do you see Heimbach in terms of Industry 4.0 / AI?

I'm always surprised at how much is already there, but at the same time I also see great potential. Heimbach has highly developed technology, modern facilities, and employees with plenty of experience and know-how. Acceptance of new technologies is growing steadily, and through cooperation with various research institutes, more and more application possibilities are being identified and implemented in manageable steps.

What are your plans for the future?

First of all, I want to finish my master's degree and then learn as much as I can in the field of artificial intelligence.
I would like to help shape technological progress at Heimbach. On a personal level, I would like to travel a lot and finally learn another language, one without algorithms of course...

We wish you every success for the future and look forward to continuing our cooperation!

We also wish every success to our apprentices who started working with us this summer.

Maximum dewatering plus energy savings

Faced with a backdrop of spiralling energy costs paper manufacturers are more than ever confronted with the difficult task of keeping the cost of production as low as possible. The motto is – less energy, more productivity. The implication of this is that paper machines have to be pushed to their performance limits: High machine efficiency, optimum runnability and maximum possible speed are the focus. A top priority in achieving these goals would normally be to obtain maximum dry content coming out of the press section. This, of course, places high expectations on the performance of press felts. Atromaxx and Atromaxx.Connect from the NewTech product portfolio are well placed to satisfy these expectations.

The concept is based around multi-axial carrier modules providing a structure that is essentially incompressible.
On the one hand, this allows a designated void volume to be maintained throughout the lifetime of the felt, whilst on the other hand the open drainage channels are able to handle large volumes of water.
The result: exceptionally high dry content
Thanks to its modular design, Atromaxx is highly versatile in terms of paper grade application as well as speed range and, combined with a suitable non-woven layer, should be able to perform on every machine and nip configuration.

Turn off Uhle boxes
Nip dewatering can come into play when machine speeds exceed 600 m/min, making it possible to reduce – or even completely switch off – vacuum in felt suction boxes. When this occurs, the door is opened to huge energy savings. A prerequisite for this would be an individually designed and precisely matched press felt design such as Atromaxx, whereby higher dry content, better runnability and faster start-up can be realised. Numerous references (see pages 24-25) – provide compelling confirmation of this.

Unmatched flexibility
The dewatering behaviour of a press felt is significantly influenced by machine speed, pressure pulse and felt saturation level. So, at speeds below 600 m/min nip dewatering is more or less impossible. Even under these conditions, however, Atromaxx can achieve considerable dry content values.
This flexible design can come into its own on machines where, depending on paper grade, speed fluctuations necessitate switching between nip and suction box dewatering.

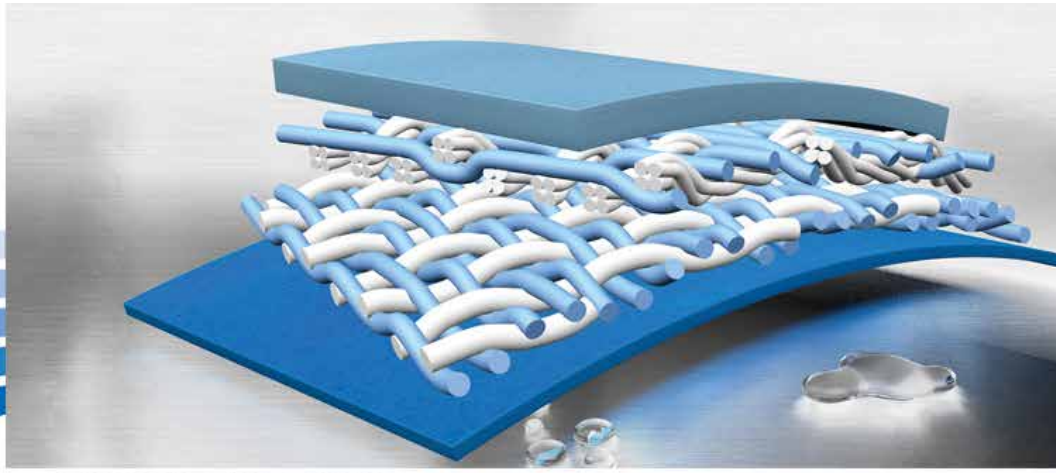
Safe and fast
The outstanding properties of conventional Atromaxx are certainly replicated in the seamed version of the felt. Atromaxx. Connect can be installed quickly and safely while requiring few personnel and brings the additional benefit of drainage values that conventional seamed felts cannot match. High speeds are no problem either, as the seam area and seam itself are designed with this in mind.

The Atromaxx family - Product Features

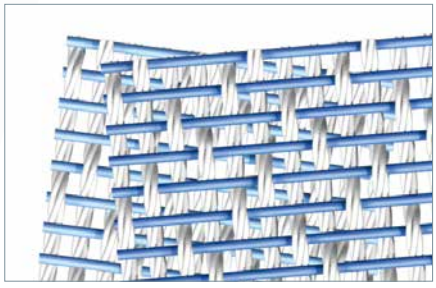
Multiaxial felt

- Modular construction: Combination of totally different base properties possible within one felt
- Outstanding compaction resistance due to multiaxial structure
- Outstanding void volume retention
- Absorption of huge amounts of water
- Excellent dewatering throughout felt lifetime
- High stability
- Operation modes for nip and uhle-box dewatering
- Applicable for all paper grades

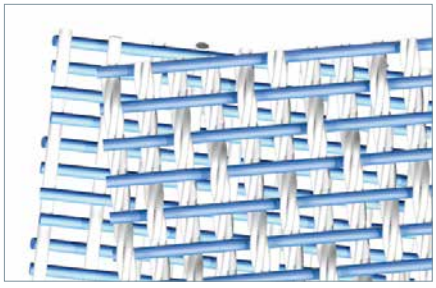
atromaxx.



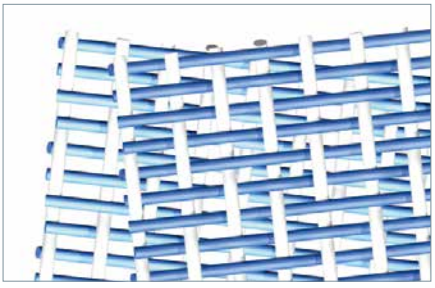
„High machine efficiency, optimum runnability and maximum possible speed are the focus. A top priority is maximum dry content after the press."



Combination twisted/twisted



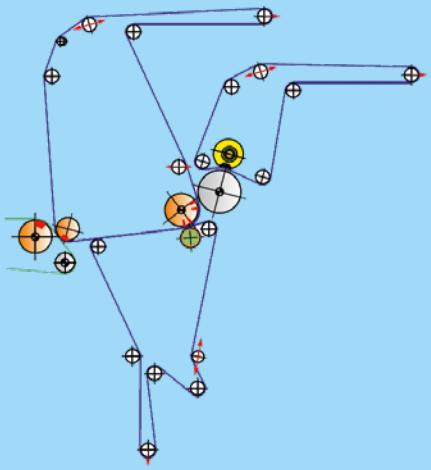
Combination twisted/mono



Combination mono/mono

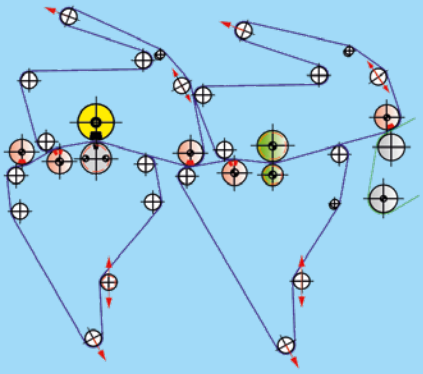
References Atromaxx and Atromaxx.Connect

Reference 1



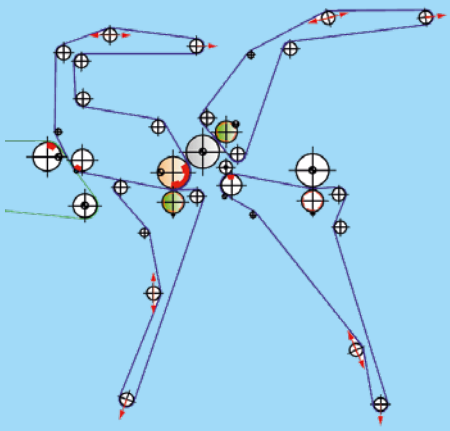
Configuration: Tri-Nip
Speed: 800 m/min
Width: 4,00 m
Paper grade: Special fine paper
Position: Pick-up,
3rd shoe press: Atromaxx
1st press bottom: Atromaxx.Connect
Results: Significant efficiency increase up to 86%. Clear energy savings achieved by switching off felt suction box. Additional advantages: reduced breaks, improved runnability

Reference 2



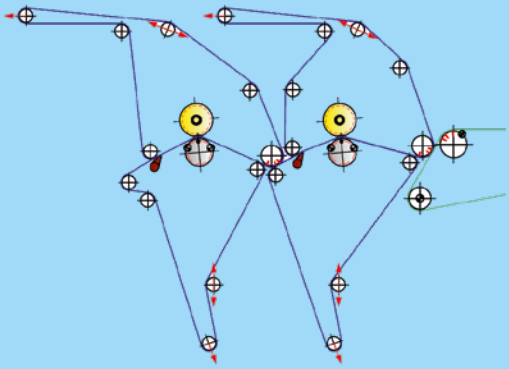
Configuration: Optipress
Speed: 1.200 m/min
Width: 10,50 m
Paper grade: Fluting
Position: 1st press bottom/
2nd press top & bottom: Atromaxx
Results: 56% dryness leaving press section, 16-20% energy saving

Reference 3

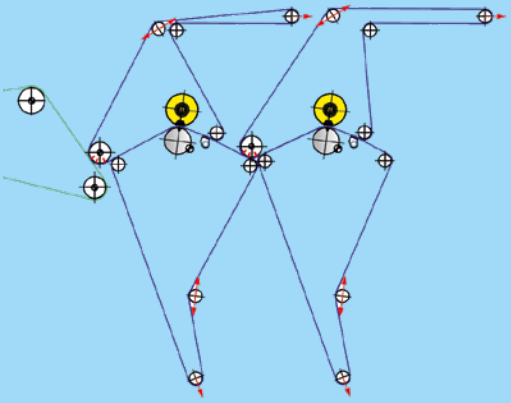


Configuration: Tri-Nip + 4th press
Speed: 950 m/min
Width: 4,50 m
Paper grade: Thermal paper
Position: 4th press: Atromaxx
Results: 50% fewer breaks, more efficient dewatering

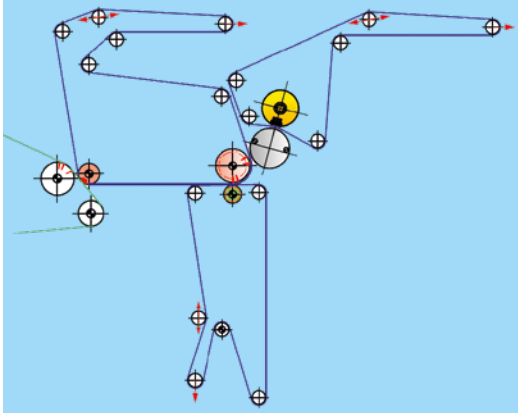
Reference 4



Reference 5

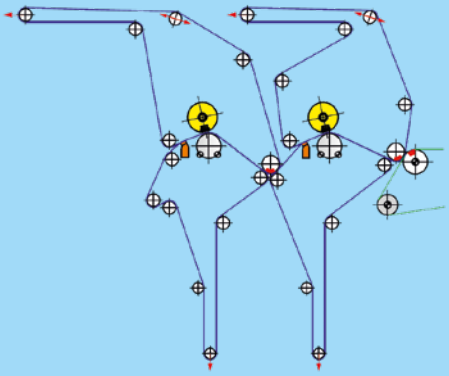


Reference 6



Configuration: Optipress
Speed: 900 m/min
Width: 7,00 m
Paper grade: Folding Box Board
Position: 1st press top/bottom Atromaxx
Results: Improved moisture profiles, production record

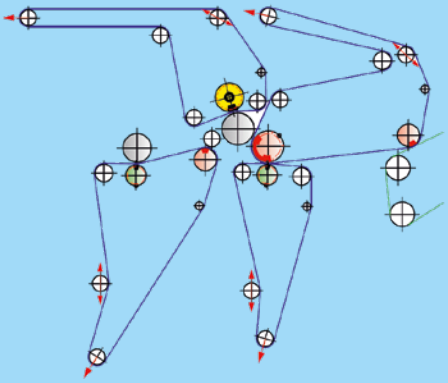
Reference 7



Configuration: Tandem NipcoFlex
Speed: 900 m/min
Width: 7,40 m
Papiersorte: Kraftliner
Position: 2nd press top/bottom: Atromaxx
Results: Very good start-up, longer lifetime compared to competitors

Configuration: Tandem NipcoFlex
Speed: 1.200 m/min
Width: 7,30 m
Paper grade: Fluting
Position: 2nd press: Atromaxx
Results: Faster start-up, improved paper characteristics

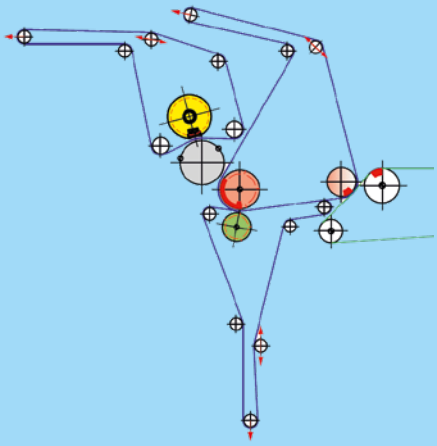
Reference 8



Configuration: Tri-Nip with shoe press + 4th press
Speed: 1900 m/min
Width: 10,50 m
Paper grade: Newsprint
Position: Pick-up: Atromaxx
Results: Fast start-up, good dewatering and runnability throughout felt lifetime

Configuration: Tri-Nip with shoe press
Speed: 1.100 m/min
Width: 5,20 m
Paper grade: Release paper
Position: 1st press: Atromaxx.Connect
Results: Fast seam closing, completely marking-free

Reference 9



Configuration: Tri-Nip with shoe press
Speed: 950 m/min
Width: 5,50 m
Paper grade: Fluting
Position: Pick-up/1st press, 3rd press: Atromaxx.Connect
Results: Perfect performance in all three positions

Thanks for your confidence

This summer, we were honoured to be the guests of our long-standing customer Yueyang Forest & Paper Co. Ltd. based in Hunan Province in China. We have been supplying clothing here since 2010 and over the years have been able to continuously expand our business relationship. Today we supply forming and dryer fabrics, press felts and belts for the three most important graphic machines.

„Pressing" Technical Seminar at Yueyang Forest & Paper Co. Ltd.

Yueyang was quick to realise that it is crucial for lasting success to follow technological progress and adapt market and product strategies accordingly. Heimbach was invited to a technical seminar with the focus on ‚Pressing'. In addition to responsible machine operators, both senior management and purchasing managers were in attendance.

Besides information on market developments, the latest generation of press felts and problem-solving strategies were presented. It was gratifying to see that the customer was prepared to share experiences, optimisation wishes and specific problems with us, giving us the perfect opportunity to improve together.

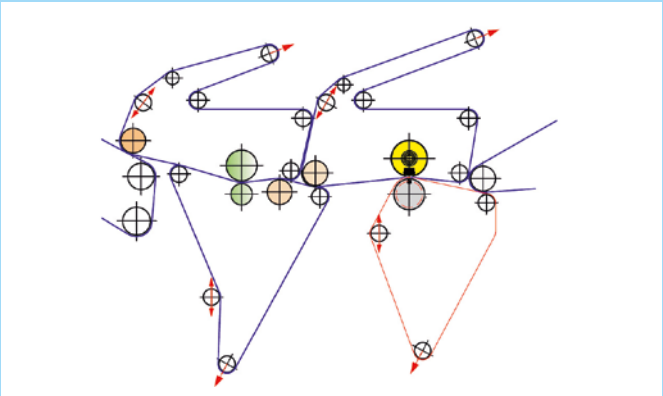
The meeting took place in a relaxed and open atmosphere, providing plenty of room for discussion and exchange of experiences. The feedback from Yueyang was consistently positive: Deputy General Manager Zhao Guohong, welcomed our investment in increased manufacturing capacity at the Suzhou site. Our efforts in continuous product optimisation and reliable quality were appreciated.

Chen Ling, Purchasing Manager, praised our professionalism and technical know-how. She also commented very positively on the fact that the technical and market-relevant information was presented in a factually neutral manner with minimal „Heimbach accent".

At the end of the day, there was the opportunity to enjoy the local cuisine and the obligatory glass (or two) of Baijiu, China's famous white spirit.

We look forward to the future and the next exchange of experiences with our long-standing partner.

Persuasive references

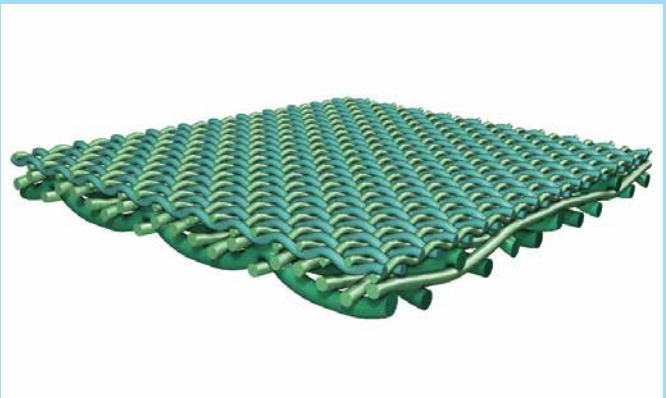


Atrojet scores across the board

Our long-standing Chinese customer Yueyang Paper produces LWC on PM 8 and gives full marks to Atrojet in the 1st press: Record lifetimes and speeds, reduced vibration and stable sheet edges.

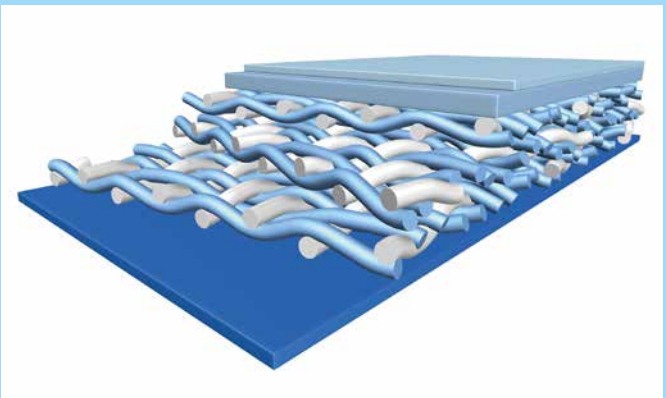
Speed measurements bring clarity

Cartiere di Guarcino in Italy makes decor paper, among other grades, and ran into formation problems on one of its machines. A speed measurement conducted by our TASK group indicated that the jet and pick up press speeds did not correspond to the DCS settings. After elimination of the causes (roll diameter and felt thickness corrected, headbox calibrated) sheet formation showed immediate improvement and the number of breaks was reduced.



Saving energy and CO2 with Primoselect.HD+

The installed drive power on a testliner paper machine was a limiting factor. Standard SSB fabrics had always operated at the load limit, whereas Primoselect.HD only required 90-94% of the installed drive power whilst also operating with reduced vacuum settings. Even though the machine has now been equipped with increased drive power, Primoselect.HD continues to save energy and CO2 with every installation!



Atromaxx gets top marks

Atromaxx achieved improved moisture profiles and a new record: 720 hours without a break on a liquid packaging machine.

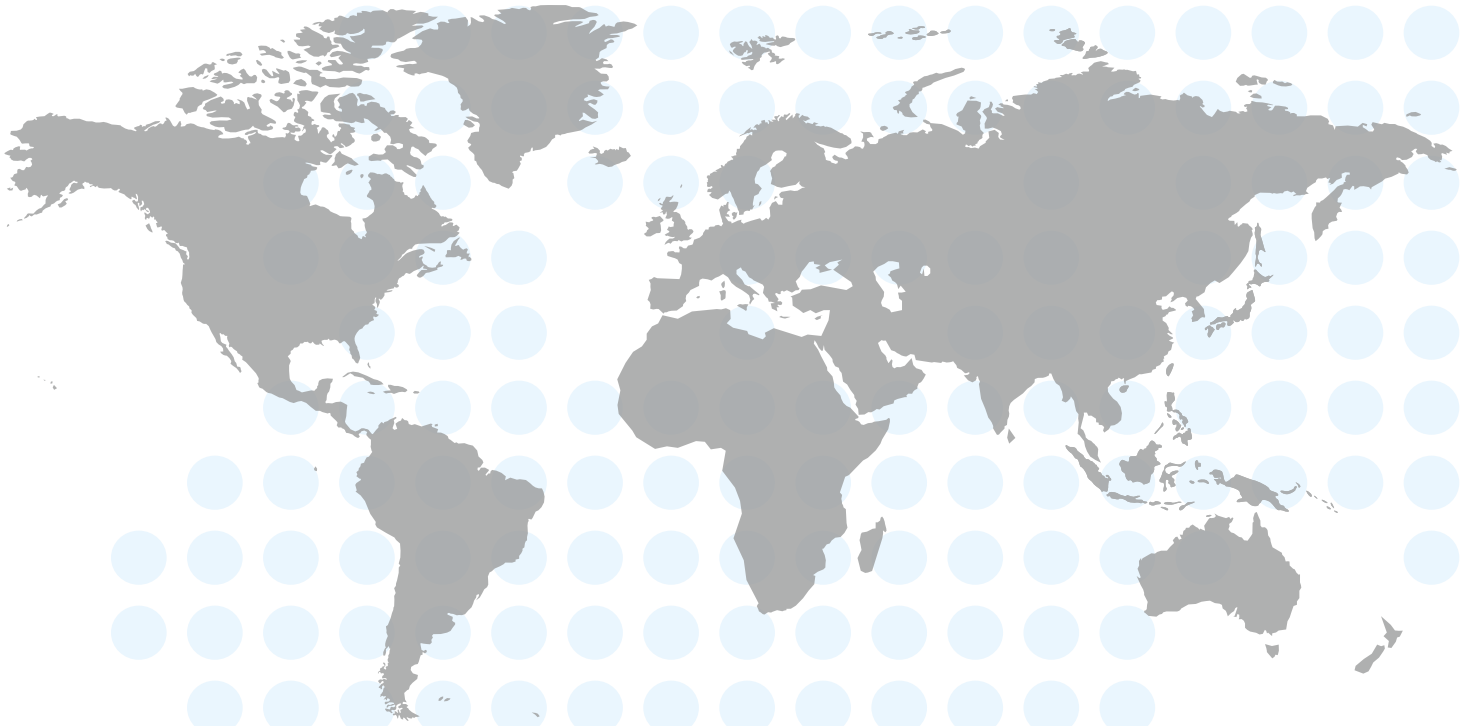
Value added to the power of five

Tailor made solutions, individual consulting and close-up support have always been our standards. For some time now we have been working towards a more de-centralised and customer-friendly sales organisation. This is intended to help assure that you get individually conceived solutions for your production. If desired, this can extend far beyond our clothing.

Nobody knows better than you.
No two paper machines are alike and different rules apply to each production cycle and paper grade. Partial knowledge and understanding and standard recipes are out of place in such an environment. What really counts is the provision of intensive technical exchange, experience and know-how.

This is what our highly qualified and experienced employees are able to bring to the table. They take a holistic approach to the production process, understanding the equipment and processes as they interact with the product mix. In short, you are not working with salespeople, but with consultants and troubleshooters.

Our multi-national sales team is led by experts having the benefit of long years of experience. Almost certainly, many of you will have already sat round a table with them. In the working environment it is sometimes difficult to find the time to get to know each other a little better, so today we will take the opportunity to introduce our colleagues to you in the form of a short profile.



„No two paper machines are alike and different rules apply to each production cycle and paper grade."

„What really counts is the provision of intensive technical exchange, experience and know-how."

Paul Tunnah
Sales Manager
North and West Europe,
Turkey and Africa

What is your professional background?
I studied Business Studies and Chemistry.

How long have you been with Heimbach?
I came on board in 2008.

What constitutes a good day at work for you?
The sales teams for which I am responsible are based in different countries and I love the teamwork. There is nothing better for me than working together on a project and seeing positive results on its conclusion. And even if they are not as positive as we would like, we all learn from it and make sure the next project goes better.

What typifies Heimbach for you?
Spontaneously, I would say: Innovation, professionalism and quality.

What excites you about the paper industry?
The continuous adaptation and development of paper machines as they adjust to changing times and market conditions. This is the only way to manufacture paper grades that are still of the correct quality, but also cost-efficient and sustainable.

How do you see the future of the paper industry?
That is an interesting question, though I would most likely need a crystal ball to provide an answer. In my markets I have noticed a huge decline in demand for graphic papers. This will be replaced and added to by the rise in board/packaging production, which is also reflected in an increase in the number of rebuilds.

How do you spend your free time?
I come from Manchester so, unsurprisingly, football is my passion. I support the „red" side of the city. We are not doing too well at the moment, but we will bounce back!
I also work at a soup kitchen twice a week, where I help distribute food and much-needed warm clothing to those in need.

Dominik Stoliński
Sales Manager East
Europe and Israel

What is your professional background?
I studied chemical and wood technology at the Agricultural Academy in Poznan where I graduated with a Master's Degree. Following that I spent 6 years as a shift supervisor in a Decor paper mill.

How long have you been with Heimbach?
I have been a member of the team since 2009.

What constitutes a good day at work for you?
I don't really have any recipe for a good day. I do try to work out early in the morning – or take my dog out for a walk. As soon as I have had my coffee I am ready for the day. I love my job because every day brings with it something new.

What typifies Heimbach for you?
Typical for me are the two sides of Heimbach. One is the traditional company by the banks of the Rur with more than 200 years of experience and presence in the paper industry. This, of course, is something to be very proud of. Our numerous locations with very diverse cultures and business practices are a major basis for our success in the market. The other side is a modern company with enormous potential, full of ideas and with highly qualified employees. They work hard every day to continue providing the paper industry with high-quality products and services. Both sides add up to a company where I feel very much at home and fulfilled.

What excites you about the paper industry?
I am excited by the way the tissue industry is developing, and how modern technologies are now being applied in this segment. I believe that the tissue market will show strong growth in the coming period.

How do you see the future of the paper industry?
I actually think that it is very difficult to predict what the future will bring. For sure we can estimate some trends. If, however, unexpected changes or unforeseen events occur, for example issues such as energy, raw material prices, Covid 19, war etc., all expectations and goals may have to be reconsidered. Paper is still a fundamental part of our lives, and each of us uses it day by day. Unfortunately our industry is not exempt from the shortages of skilled workers. This could mean that sooner or later we will have to deal with fully automated production lines.

How do you spend your free time?
I spend a great deal of my time sitting, be it in my car, in meetings or in front of the computer. That is one of the reasons why I enjoy outdoor activities such as mountain biking, running and inline skating when I am not working. I am very fortunate in so far as my family also shares these passions. We go on bike rides together or are out with our dog as often as we can. We also enjoy taking to the ski slopes together.

Felix San Vicente
Sales Manager
Spain, Portugal and
Latin America

What is your professional background?
I am a qualified Paper Engineer.

How long have you been with Heimbach?
Since 1986.

What constitutes a good day at work for you?
When mind, psyche and body come together again after waking up, I'm ready to go. From the first ray of sunshine, I always try to think positively and begin the day in a good mood.

What typifies Heimbach for you?
I have spent my entire working life with Heimbach, just as many of my colleagues have been employed here since completing their training, in many cases for decades. In this day and age it is hard to find this happening anywhere else.

What excites you about the paper industry?
My enthusiasm was actually already present in the cradle! For one thing I was born in an old Spanish papermaking town – Aranguren. Secondly, part of my family has roots in the industry. The outcome is that paper production has been a part of me since I can remember.

How do you see the future of the paper industry?
The paper industry will become a driver of the bio-economy. As we go forwards, much more will be produced from its raw materials – such as wood fibres and recycled paper – than is the case today. Cellulose fibres from new natural sources can be used to produce biocomposites, printed electronics and nanotechnology, among other things.

Packaging is now playing an increasingly important role in purchasing decisions and nowadays contains increasingly important communication and protection functions.

With the objective of making our lives easier and more convenient the paper industry is developing renewable, recyclable and biodegradable products with unique and innovative properties

How do you spend your free time?
I spend a lot of time with my family and friends and love to visit my old home town of Bilbao and the surrounding area. I am a big fan of gastronomy and enjoy cooking myself. I also try to stay involved in sports – whether on foot or bike.

Jochen Arnolds
Sales Manager Germany,
Austria, Netherlands

What is your professional background?
I completed a commercial apprenticeship and subsequently studied Business Administration while working.

How long have you been with Heimbach?
Almost 30 years – since 1993.

What constitutes a good day at work for you?
For me, the day is successful if we have created and achieved worthwhile results for ourselves and our customers. Even better if we were able to have fun during the process.

What typifies Heimbach for you?
Tradition and innovation in one place! My colleagues always approach their work with commitment and passion. This is the same whether it involves paper machine clothing in particular, or paper production in general.

What excites you about the paper industry?
The diverse challenges of day to day business combined with the continuous realignment of the industry.

How do you see the future of the paper industry?
I am assuming that the general conditions will continue to present a challenge to us all. Energy, raw materials, shortage of skilled workers are just a few of the many examples of this. Nevertheless, I am confident that the industry as a whole will be able to cope with this and continue on its path towards sustainability and zero emissions.

How do you spend your free time?
I am very keen on sports and enjoy mountain biking, inline skating or going hiking or climbing. I also have a keen interest in agriculture and agricultural technology. I actually have my own tractor, and we cultivate our own fruit and vegetables. The care and harvesting is highly time consuming, but totally worth the effort.

Phil Wübbeling
Sales Manager Southeast Europe, Italy, Switzerland and the Balkans

What is your professional background?
I trained as a paper technician at the papermaking school in Gernsbach. I then trained as a state-certified technician for paper packaging and paper technology at the technical school in Munich.

How long have you been with Heimbach?
I have been a Heimbacher since 2017.

What constitutes a good day at work for you?
My perfect working day begins with a hearty breakfast and a positive mental attitude.

What typifies Heimbach for you?
What is omnipresent at Heimbach is the family culture. I get on really well with all my colleagues. No matter who you run into – or when – you are always greeted with a smile.

What excites you about the paper industry?
I find the tremendous variety of paper machines and technologies, young and old, very interesting.

How do you see the future of the paper industry?
Overall, I see the future in a positive way, as the current focus on sustainability means that paper is becoming an increasingly important material in many applications. At the same time, the topic of digitalisation is becoming increasingly important in our own lives as well as in the paper industry.

How do you spend your free time?
I do a lot of sports, with the main focus being on football and running. In the summertime I have great fun surfing, though with only moderate success! I also watch a lot of sport on TV – soccer in particular. Travelling in my 23 year old Volkswagen is also one of my favourite leisure activities.

„There is nothing better for me than working together on a project and seeing positive results on its conclusion." *Paul Tunnah*

„I love my job because every day brings with it something new." *Dominik Stolinski*

„I am excited by the diverse challenges of day to day business combined with the continuous realignment of the industry." *Jochen Arnolds*

„The paper industry will become a driver of the bio-economy." *Felix San Vincente*

„The topic of digitalisation is becoming increasingly important in our own lives as well as in the paper industry." *Phil Wübbeling*

Still a good career choice!

DO SOMETHING WITH A FUTURE! These admonishing parental words have accompanied young people for generations. Over several decades, the paper industry was without doubt a safe choice, presenting a secure career with a wide range of training and further education opportunities. But is that still the case today? Matthias Walter clearly thinks YES. He is the head of the state papermaking school in Gernsbach and shared information with us regarding the current numbers of young people attending, as well as giving his opinions on the influence of digitization and other interesting topics.

Mr. Walter, thank you for taking the time to answer our questions. What is the general situation regarding availability of junior staff? Should the industry be worried?

Many industries have been complaining for years about declining applicant numbers. The gap between the number of available apprenticeships and the number of applicants is certainly widening. The paper industry has not been spared from this trend. Whilst we are, of course, concerned about the quantity of applicants we are even more concerned over the quality of applicants.

How satisfied are you with regards to the current application figures?

A distinction has to be made here between vocational and management schools. We are seeing a significant drop in the number of applicants for paper technologists and machine/plant operators. Things are, however, looking better for prospective foremen/managers. Here, the number of applicants is constant.

Has the learning culture changed? Does Corona virus play a role?

Students bring a variety of skills, but also weaknesses, to their schooling. If you focus the term learning culture on alternative learning methods, you could already say that today's generation of students requires more encouragement. Simply taking a same-step approach has become much more difficult. The development of language and numeracy skills in particular requires learning paths to be tailored to individual trainees, which also requires more time. Unfortunately, this time is not available. One positive effect of Corona is the increased adoption of digital media. This in turn provides us with more opportunities to respond to students on a more individual basis. That said, we also have to bear in mind that there is a multimedia oversaturation anyway, which is not exactly having a productive effect on learning. There is certainly a need for targeted stimuli to attract trainees' attention to learning subjects or to keep them engaged in a subject for a longer period of time. However, the distance learning procedures that became necessary in Corona times has also led to people enjoying coming back into school again and appreciating the direct exchange between trainees from different companies.

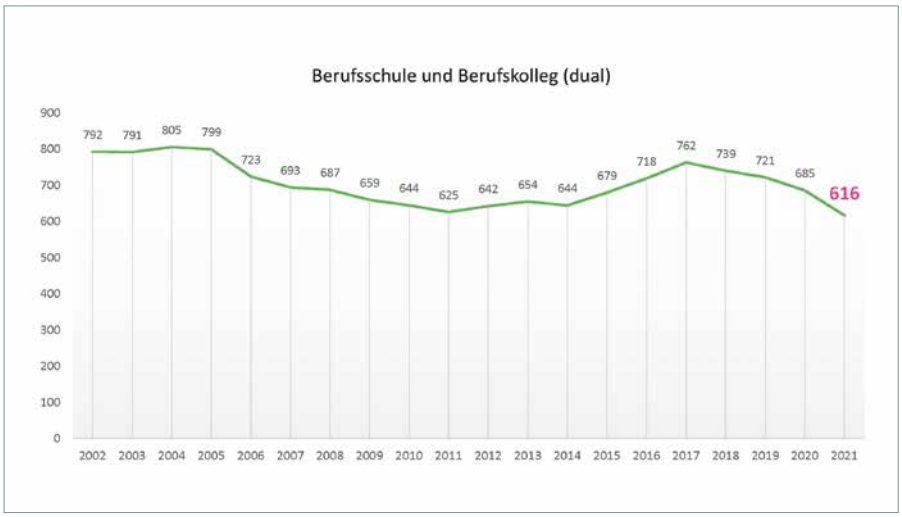
Keyword digital learning: Has the paper industry arrived in the digital age?

We can confidently say that the papermaking school has always followed the digital path. As new technologies or software become established in the working world, the school is able to keep pace. Digital end devices are used by teachers in appropriate places. It should also be noted that the use of traditional blackboard writing is also retaining its importance. It is not as „fleeting" as a PowerPoint slide that is quickly clicked-on before continuing.

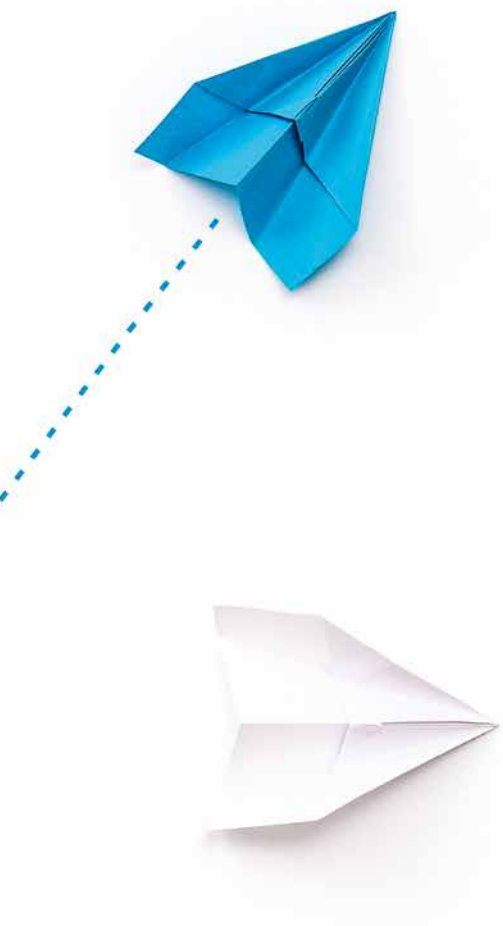
As a partner of the paper industry, Heimbach supports the next generation. What is your experience of this at Gernsbach?

It must be said that there has always been a close connection with Heimbach ever since our school opened. For example, up until the outbreak of Corona, we were frequent visitors to the site with numerous master students. Where else, if not on a factory tour guided by professionals, can you learn so much about the specific requirements for modern paper machine clothing. Information that has been specially compiled for us was, and continues to be, a valuable basis for teaching. In addition, both teachers and students benefit from access to Heimbach's technical articles and illustrative material.

Total number of pupils



Vocational school and college (dual)



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Matthias Walter, Head Teacher

What would you like to see from the paper industry in general?

First of all, I would like to say that we as an educational institution have been very well supported by the paper industry for decades. This is good for us, but is also necessary for the industry itself, as the high-quality standard and innovative ability reached today can only be further expanded by the qualification and introduction of new young people and the further training of employees.

We have to think together - teachers and trainers - about how we can give the next generation, who have not yet been able to develop their knowledge in the same way in general education schools, an increase in knowledge. One main aspect would certainly be to give students more learning time. How this can be implemented within the framework of legal requirements will have to be discussed.

What do you think is needed in order to stimulate the interest of young people in the paper industry?

First and foremost, shift work is perceived as problematic. Furthermore, the workplace itself is seen as „dirty" and „noisy". In certain work areas, it is also associated with high temperatures. The trainees also often lack an overview, as paper machines are usually large integrated systems and they only recognize the interrelationships in the third year of training.

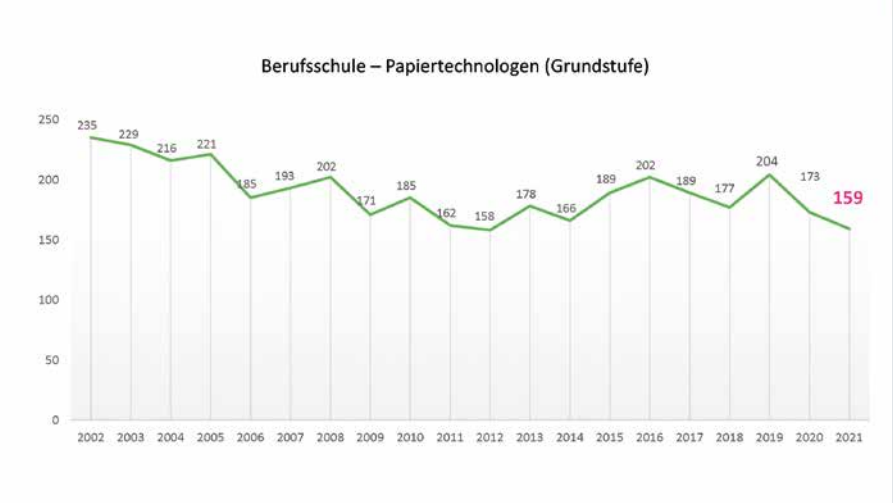
Another important aspect is that the profession of paper technologist remains little known to the general public. For this reason, a much more intensive and varied approach to young people is necessary.

What do you hear from the field? What gives the foremen of the future the most trouble?

Our graduates have to be able to satisfy more and more requirements (quality management, certifications, customer requirements etc.) while maintaining cost-effective production. This is in spite of the fact that most costs, in particular for energy of course, continue to rise. Foremen/ Managers are expected to be familiar with, and understand, more and more areas of the company in order to produce efficiently. This puts additional pressure on them. Whether due to the corona virus or other illnesses, there are fewer trained personnel available in the workplace. This in turn makes it more difficult to organize and maintain an often demanding operating schedule.

How has the curriculum changed over the years or been adapted to the requirements of modern paper production?

Curricula and educational planning have to be adapted at certain intervals. As it stands today, the Paper Technology department is looking at the current curriculum. The important question here is: What content should definitely be continued because it promotes the „classic understanding" of paper production or processing, and how can we also provide an insight into the increasingly digitalized industrial processes? In this context, the level distinction between the vocational and master school also plays a significant role for us.



Vocational school - Paper Technologists (Basic level)

Vocational school - machine and plant operators

The papermaking school has been around for more than 30 years. What is your concept for success?

In my experience, the paper industry is one big family. Many people pull together to ensure its success. This is also true in the case of our teaching staff. In my three years as principal, I've been lucky to work with motivated teachers who actively embrace new approaches to teaching and learning and are always open to new ideas.

The Gernsbach Papermaking School - Paper Technology School Center -
is a vocational school in the paper center of Gernsbach.

As a state school, qualified employees for the pulp and paper industry are trained here.

The educational programs are divided between the vocational school (paper technologist, packaging technologist, machine and plant operator), the vocational college (dual) and the master school (paper production and processing).

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