JOWAT

THE MAGAZINE 1 | 19

Our experience in bonding
Long-term Jowat employees feature in major anniversary interview

At one with nature
What rapeseed and similar products have to do with adhesive production

You can build on this timber
New Jowat products for load-bearing glued wood structures

South Africa is a picturesque holiday destination for many people. For Jowat it is a country with an important growth market.

»We value sustainable adhesives.«

Dear Customers,

In this edition of our customer magazine, I not only address you as a member of the Board of Directors of Jowat SE, but also as a member of the founding family. The latter is of particular importance to me. As you know, Jowat is celebrating its 100th birthday this year. For us at Jowat, its an anniversary that we are only able to celebrate thanks to everyone's tireless efforts and proven determination for innovation. I wish to thank all of our customers, partners, and employees who have helped to make our company a success over the years.

We wish to mark this happy occasion by gathering some treasured memories: On page 14, you can read the thoughts and feelings our long-term employees associate with Jowat and how they have experienced the growth of our company. And while we're on the topic of company growth … Our triad strategy has enabled us to successfully establish ourselves on the world's most important markets. With work-force of more than 1,200, we are now present in Europe, North and South America, as well as Asia. The Africancontinent is also within our reach, as our title story shows – we have been successfully collaborating with our sales partner National Converting Agencies in South Africa for a number of years.

In addition to past successes, we would like to take a glimpse together with you at the main challenges that await us in the future. Envi-ronmentally-friendly building techniques are as vital as sustainable adhesives. Dr Christian Terfloth, my colleague on the Board of Directors, will explain how we have effectively prepared for such matters.

I hope you enjoy reading this magazine
and I wish you all the very best,

Ralf Nitschke
Managing Director
Production, Finances, Human Resources, IT

Contents

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Feeling hopeful on South Africa's southernmost cape

South Africa is an emerging economic area that plays an important role within the African continent. Jowat also sees great potential on the national market and seeks to find a place for high-quality adhesives in the country's production and packaging processes. Its sales partner National Converting Agencies has already helped Jowat to get many industries on board and establish itself as an adhesive expert.

Agriculture has had a long history in South Africa and it shapes the image of the country. Jowat would like to conquer this market by providing reliable end-of-line solutions.

Thanks to fascinating attractions such as the picturesque Table Mountain and the Kruger National Park with its diverse collection of animals, South Africa has become a hit with tourists from every corner of the world. Since the end of apartheid in 1994, and the new political landscape that emerged thereafter, the country has also seen positive economic developments. These days, South Africa is becoming increasingly important from an economic perspective and is a member of the association for emerging national economies (BRICS) alongside Brazil, Russia, India and China. In addition to the major industrial sectors such as mining for valuable resources and the export of agricultural products, the beverage industry plays a key role in South Africa – South-African wine is world famous.

Jowat recognised the potential of the rapidly growing economy at an early stage and set up operations in South Africa with National Converting Agencies (NCA). Bryan Pepworth who retired at the end of 2017, led NCA's adhesive business as Technical Sales Director for 20 years and thereby made a vital contribution to the company's enormous growth. Nowadays, NCA employs eight technical sales representatives, and has several branches throughout South Africa where it offers bespoke materials, sheets and edge borders. Whether its supplying the furniture or food industry – adhesives are a feature of its extensive assortment. And a key aspect of this range includes Jowat Toptherm® hot melts. NCA complements its collection with a full advisory service service and technical support that guarantee optimised adhesive processes.

The company therefore embodies the same distinctive principles of service as Jowat. The new Technical Sales Director at NCA, Wayne Behr, confirms this: "Customer satisfaction is of the utmost importance to us. Our sales team has strong ties with our customers at every level, particularly with machine operators." If there are any issues, they immediately get in touch with the service provider. NCA also doesn't shy away from providing full support, no matter the hour, as he explains below. "A customer's plant manager once said: 'Whenever I came internally to learn about an adhesive problem, NCA was usually already on the scene by then and had solved the problem.' That is particularly fitting for our company philosophy and makes us proud.'

Ahead of their time

The drinks industry, for example, benefits in particular from adhesive applications. For many years, ethylene vinyl acetate copolymers (EVA) were the product of choice for bonding the outer packaging and transport cartons. Although, the adhesive is highly popular, more and more providers are discovering alternatives to improve bonding processes and to make them even more convenient for processors: polyolefin hot melt adhesives (PO). "PO hot melt adhesives are superior to EVA hot melts in many ways", explains Jowat Product Manager Andreas Weymann. "The biggest advantage of this type of adhesive is its higher thermal stability, meaning that even after long heat-exposure, the melt of these adhesives remains clear, without charring or deposits. That means less clogged nozzles and a significant reduction in maintenance work." As a result, reduced maintenance costs alone could already lead to a considerable reduction in total costs. In addition, Jowat-Toptherm® products provide a better adhesion. They often facilitate the same bond quality with reduced application amounts. Furthermore, the hot melts are ideal for a wealth of surfaces, meaning one product often covers a whole range of applications for a company. In light of huge competition, Jowat anticipates many challenges as it attempts to establish its PO hot melts on the South-African market. But it also has clear advantages to offer, as Andreas Weymann emphasises: "We offer a service that is completely unique to South Africa. Many of the adhesives developed here in South Africa do not offer the same high quality that Jowat demands from its products. And if you want high-quality results, you need a high-quality adhesive." This news has also reached industry: Slowly but surely, the lion's share are shifting to Jowat's PO hot melts.

Jowat adhesives allow drinks packaging to fulfil its promise: the consumer can enjoy their drink without any practical worries.

Jowat Toptherm® products are used in many sectors today. Polyolefin-based adhesives enjoy particular popularity with the beverage industry. Hot melts are often used in packaging processes for beverage cartons, for bonding caps and straws, in addition to sealing cartons. At South Africa's numerous vineyards, where the country's favourite exports are filled and packed, PO adhesives can also help to provide clean, resistant adhesive for stable transport containers or bag-in-box solutions.

Big plans for 2019

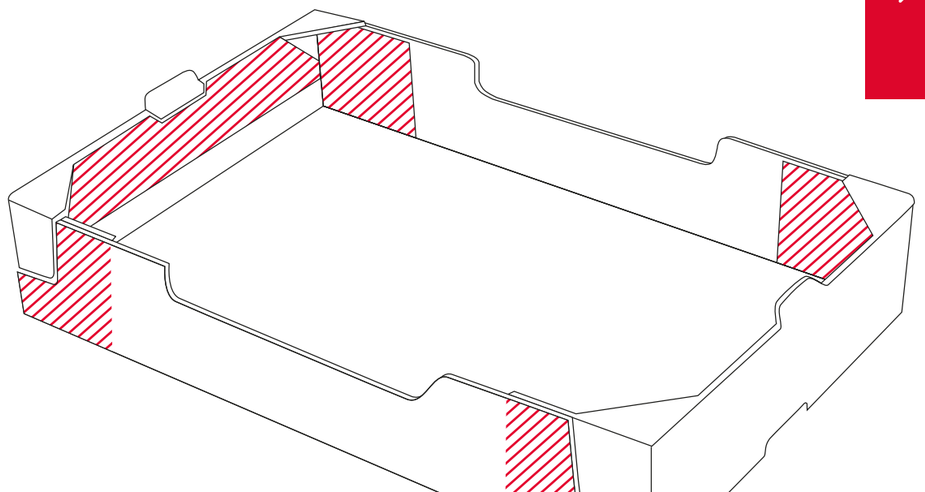
Despite their success to date, neither Jowat nor NCA want to rest on their laurels: the next step is to tap into the agricultural sector. Agricultural exports from South Africa are handled all over the world – a myriad of containers make the journey every day and often have to withstand long periods of transport and storage. The first warehouses that prepare fruit and vegetables for export have already changed to Jowat Toptherm® for bonding transport containers. "The new season starts in spring. During this time, we hope to impress other warehouses with Jowat products", announced Stefan Poorten, International Sales Director at Jowat. It is against this backdrop that Jowat expects renewed growth for 2019. Through the introduction of additional adhesives to the market, Jowat hopes to strengthen its promising position in South Africa across all industries. And with NCA on its side, the adhesive manufacturer has strong support. ●

Jowat's vehicles can often be seen outside the branch of the NCA in Capetown.

Viticulture has become one of South Africa's most important economic sectors since its political turnaround.

Jowat Toptherm® PO hot melts

- Strong performer for bonding cartons, trays, and folding boxes
- Reduced maintenance, downtime, and total costs
- Clean processing and extremely efficient
- Wide range of adhesion as well as high resistance to heat and to low temperatures



Jowat‘s Advice

Alternative adhesives

To maintain quality when changing to a new adhesive, it is important to follow some critical steps during the process. Make the change easily with Jowat’s advice.

It is worth changing to a new adhesive if you are seeking to improve technical, economic, or ecological conditions. Yet you should not introduce new adhesives without sufficient planning. Different types of adhesives used together can interfere with each other, causing unwanted chemical reactions. To prevent any problems, the adhesive change should therefore be carried out very carefully. ●

Spick and span

In general, any hoses and the system itself should be cleaned thoroughly before changing to a new product to remove any old adhesive remnants. (see JOWAT 1/2018).

Caution: changing to a new system!

When changing to a new adhesive system (e.g. from EVA to PO), you must first carry out thorough cleaning due to the composition of the different adhesives. If in doubt, replace any hoses, filters and nozzles.

Correct system?

If changing from a conventional adhesive to a polyurethane hot melt (PUR), you must ensure that all the components are suited for the change, for instance by having a Teflon coating.

The lab is your friend

Reactive products require particular care when changing to a new product, as they may react with the previous product. Lab tests can help you to eliminate issues in advance.

The following rules apply in general:

You should avoid changing adhesives regularly. If a change is necessary, however, Jowat can help you to develop a plan for cleaning and making the change that will allow you to prevent unwanted reactions.

It is necessary to clean machines thoroughly before changing adhesives.

And the winner is …

Jowat has been promoting exception research since 1995 with its adhesives research award.

»We have to promote innovation if we are to be and remain successful.«

Dr Christian Terfloth,
Director of Research & Development

For many years, Jowat has promoted research around adhesives. One such initiative is the Jowat “Adhesives Research Award” for exceptional research at technical universities, which has been awarded since 1995.

An applause of recognition sounds in the House of Technology as Dr Matthias Hopp stands from his seat and receives the well-deserved Jowat “Adhesives Research Award”. In November 2018, the mechanical engineering student was awarded a prize for his PhD research. Most people may not immediately understand what his dissertation focuses on: “Developing technical procedures for bonding WPC for applications in the wood/plastics industry”. [German original Verfahrenstechnische Entwicklung zum Kleben von WPC für Anwendungsgebiete aus dem Holz-/Kunststoffbereich] But most people probably recognise WPC, as it is quite literally under their nose. The composite material made from wood and plastic is a popular flooring for terraces.

Dr Matthias Hopp dedicated himself to the question as to how the material properties of WPC could also be used in the wood and furniture industry. Such research is incredibly important for Jowat. “Adhesives and processes are subject to ongoing developments. We have to promote innovation if we are to be and remain a successful player on the world stage”, explains Dr Christian Terfloth, member on the Board of Directors of Jowat SE. And the search for such innovation often begins at technical universities. To that end, university students from the Ostwestfalen-Lippe region of Germany are awarded a research prize for their exceptional master’s degree research and PhD dissertations. The award sponsors don’t specify a topic, but allow students to research a subject of their own choosing. The research topic must be in some way related to Jowat’s expertise, however.

No easy choice

The coveted prize is awarded every two years. The jury team led by Prof. Dr Bernd Mayer, the head of the Fraunhofer Institute’s IFAM division, inspects all of the applications and comes to a final decision. Dr Christian Terfloth is also a jury member. It’s not always easy to select a winner. After all, they generally deal with exciting experiments that produce new insights. To apply, simply contact the Research and Development department at Jowat SE. The next prize ceremony will take place in autumn 2020. Until then, keep up the good research work for innovative adhesive applications! ●

Dr Matthias Hopp received the 2018 research award for his dissertation.

Signed and sealed quality

Safety and quality are at the heart of the adhesive process and the final product. To that end, Jowat greatly values the latest and most important certifications that testify to the high-quality of processes and products.

Alongside standards that apply to all companies, there are specific criteria that determine if a product can be used for a given application. These include specifications, for example, that determine whether an adhesive may be used in load-bearing applications. Jowat takes any applicable guidelines seriously and therefore places the utmost importance on company certification and the certification of its products in accordance with the latest standards.

PROCESSES FOR HIGH-QUALITY PRODUCTS
DIN EN ISO 9001

This cross-industry standard describes requirements for offering products and services that satisfy everyday customer expectations and official requirements. This includes ongoing improvements to internal procedures, preventative measures to avoid errors, exceptional product and service quality, and delivering on schedule. Jowat's certification is in line with the latest update in 2015.

WASTE NOT, WANT NOT
DIN EN ISO 50001

A global standard for the development of a systematic energy management system. This standard is voluntary and companies are under no obligation to implement it. Yet, Jowat has spent several years concentrating on efficient energy management in line with the standard. This concerns recording a company's energy flows (sources of energy, use and consumption), as well as evaluating the energy efficiency of systems, equipment and processes. This data is used to plan and implement technical measures, and strategic and organisational approaches to improve energy efficiency.

HELPING OUR WORLD SURVIVE INTO THE FUTURE
DIN EN ISO 14001

This standard was designed for companies to continuously improve their performance in regard to the environment. Upon definition of environmental goals and accompanying processes, these objectives are implemented, monitored and evaluated. The processes are corrected and improved where necessary. In that regard, Jowat has drawn up a company environmental policy, targets and an environmental programme, as well as a relevant management system. The standard does not define any absolute requirements in terms of environmental performance, rather it requires businesses to comply with self-imposed obligations.

ALL ABOARD!
European Marine Equipment Directive (MED)

The European Marine Equipment Directive regulates the approval procedure within the EU. It lists the equipment that the EU demands from a notifying body. The symbol of a wheel shows conformity with the directive – equipment featuring this logo may be installed on board throughout the European Union and used without the need for any further approval at national level.

QUALITY CONSTRUCTION
KOMO

KOMO is synonymous with independent quality testing and the suitability for a product to be used in high-quality and sustainable construction work. The certificate is awarded to components that satisfy the technical data for the product and the requirements for the building industry. Jowat's certified adhesive products help to establish load-bearing wooden structures.

TRUSTED PARTNER
AEO – Approved Economic Operator

Certification as an 'Authorised Economic Operator' (AEO) is a component of the applicable EU safety concept to ensure the security of international supply chains. Companies such as Jowat are considered particularly reliable and trustworthy by customs authorities – they are awarded certain customs privileges and simplifications, which makes importing and exporting much faster and significantly easier.

HARMLESS FOR CONSUMERS
ECO PASSPORT by OEKO-TEX®

Selected products from the Jowat portfolio for the textile industry meet the specifications of the OEKO-TEX® seal and are therefore permitted to be used for lamination, treatment or adhesion of certified textiles and textile end products. ●

https://www.jowat.com/en/profile/certificates/

JOWAT FUN FACTS

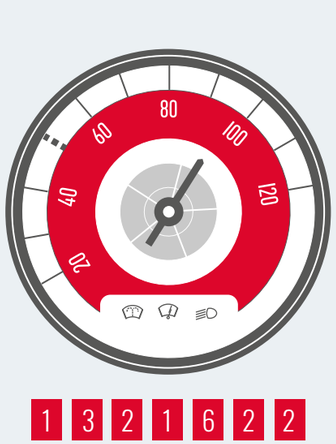
In 100 years, Jowat has carried a total of about

16,500

products in its range.*

29,000

screws
have been used in the newly constructed extension to the **reactive adhesives building**.

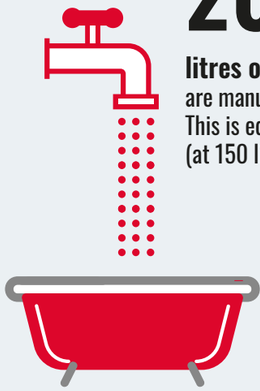


1.3 million

kilometres*
are driven each year by the lorries in the Jowat vehicle fleet.

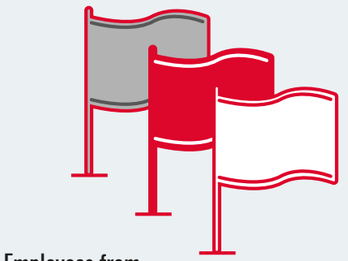
1.5 billion

granules*
are produced every year.



20 million

litres of dispersion*
are manufactured in a year.
This is equal to filling **133,333 bathtubs** (at 150 litres each).



Employees from

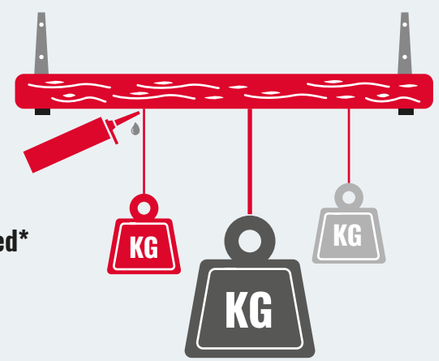
31

nations*
work for Jowat.

5.2 billion

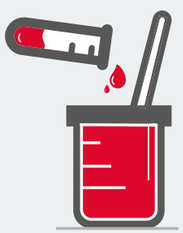
metres of edgebanding*

is bonded with Jowat products each year.
The length is equal to
about 131 trips around Earth.



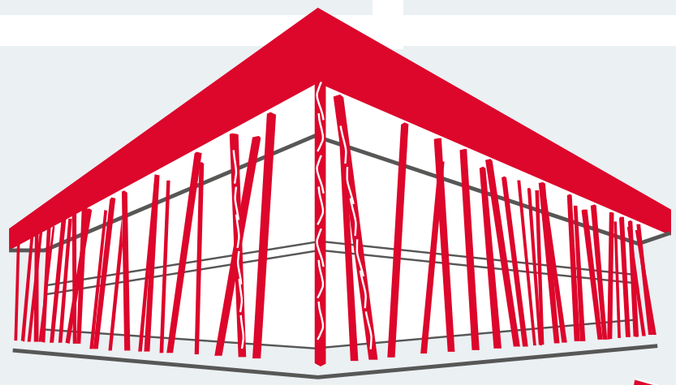
1,722

samples are tested*
each year worldwide.



150

formulation batches
are required, on average, before a final dispersion is achieved.



The House of Technology was constructed from

800 m³

of wood – that equals the load from 40 flatbed lorries.

* Figures from 2018

As of: March 2019

Good cheer: These five employees look back fondly on their careers at Jowat.

Our experience in bonding

Jowat celebrates its 100th anniversary this year. To mark the anniversary, long-time employees look back on their own personal histories with the company.

Jürgen Sonnenberg works in Jowat's Technical Lab. His responsibilities have always consisted of assembling and testing all kinds of bonds.

How did you end up at Jowat?

I'm a trained carpenter and cabinetmaker. After my apprenticeship in a small workshop, I continued to work there for a few years. One day I felt the need for a change and answered a job advertisement in the newspaper. Jowat was looking for someone to support the two-person team in the Technical Lab. I immediately noticed the polite way the employees treated each other: they used the polite form for addressing each other, which I wasn't used to from the craft trades.

> **»I immediately noticed the polite way the employees treated each other.«**
>
> Jürgen Sonnenberg, Technical Lab

What has changed the most?

Our team has moved several times: first we worked in a space of about 50 square metres. After three years, a new, larger Technical Lab was set up in the adjacent hall, where we worked until the end of 2018. Today, we are in the House of Technology on Ernst-Hilker-Strasse – a huge, modern building.

Which memories have stayed with you the most?

I still have fond memories of the celebration marking the company's 80th anniversary. My daughter was just a few weeks old and was therefore the youngest guest by far.

Elke Leistikow works in country processing in International Customer Service. Her job ranges from processing customer orders to final dispatch of goods, including customs clearance. Her brother Bernd Leistikow is a machine and plant operator as well as safety officer in the Polymerisation department. In addition, he is the company contact person for addiction issues and is a member of the works council.

How did you end up at Jowat?

Elke: Our father was a carpenter in Detmold. That's how I knew about Jowat – and from the pencils he brought home from time to time. Apprenticeships were hard to come by at the time, so I applied to a great many of the companies I knew.
Bernd: I had to stop my training as a baker in 1986 due to a flour dust allergy. At that time, my sister was already working for Jowat – through her I found out about some job vacancies in dispatch.

What has changed the most?

Elke: The company has grown very quickly, and as a consequence, we have continued developing our technology.
Bernd: That's true, Jowat has grown really fast. You used to know almost every colleague personally, but at that time we were only just under 100 employees. Today there are more than 600 employees in Detmold alone.

> **»More than 35 years with Jowat – I just stuck with it.«**
>
> Elke Leistikow, Customer Service

How has your time at Jowat been so far?

Elke: I began my training as an industrial clerk in 1981. Then I switched to processing in the export department, where I still work today. After more than 35 years I would say: I just "stuck with it".
Bernd: By 1997 I was responsible for deliveries in the surrounding area. I drove the van – the "Jowat Bulli". After that, I switched to the Polymerisation department. Four years ago I was offered the opportunity to train as a company contact person for addiction.

Which memories have stayed with you the most?

Bernd: Shortly after the fall of the Berlin Wall, I had the opportunity to go on an important tour with medicines and other relief supplies to Rügen as part of an aid campaign for Lithuania. And the Friday meeting with my fellow drivers in the former automotive workshop was the highlight of every week.
Elke: I like to think back on the legendary Jowat choir. We recorded a cassette with various songs with rewritten lyrics and Christmas songs. The tours with the Jowat bowling club were also great!

Jürgen Sonnenberg's new workplace is the House of Technology (see page 30).

Bernd and Elke Leistikow agree: the company has grown quickly.

Jürgen Schrödel is the Managing Director of the recently founded Jowat Pro GmbH. His task is to reorganise and strengthen the Trade & Commerce sales division. The main focus is on the digitalisation of sales processes.

»Jowat still has the charm of a family business.«

Jürgen Schrödel,
Managing Director of Jowat Pro

How did you end up at Jowat?

After finishing school, I absolutely wanted to study wood technology. I therefore started a dual degree as an engineer in wood technology with the support of Jowat.

What has changed the most?

We have become much bigger. However, Jowat still has the charm of a family business. People, with all their strengths and weaknesses, are at the centre of everything we do.

How has your time at Jowat been so far?

For a time, I emigrated to the Middle East for Jowat and also worked for Jowat Middle East FZE, before returning to Germany as Sales Director.

Which memories have stayed with you the most?

My first trip abroad to India, my first presentation in front of customers, the first sales conference and so many other experiences since – there are so many ...

Jürgen Schrödel is the managing director of the new subsidiary, Jowat Pro GmbH.

Dieter Sander is an Application Technology Specialist in the Paper and Packaging division, with a focus on end-of-line packaging and beverage carton applications.

Dieter Sander is amused by our modern dependence on smartphones and navigation devices.

What are your responsibilities?

To test new adhesives in technical applications and to coordinate and implement internal inspections. Also technical advisory and the selection of suitable adhesives, where I supervise customer trials and provide support with complaints.

How did you end up at Jowat?

I was a chemical engineer and application technician in the field of automotive paints, working in Münster. When I returned to my hometown of Detmold, I looked for a new employer in the area.

What has changed the most in the last 25 years?

Jowat was much smaller back then, and many processes were simpler. If you needed an adhesive sample, you could go to the sample department and get one without any major formalities. There were no mobile phones when I first started, so when you were on the road, you were off the grid. Unimaginable today! And the cars didn't have sat navs. You almost have to wonder how we found our way just with maps and street signs.

»There were no mobile phones when I first started, so when you were on the road, you were off the grid.«

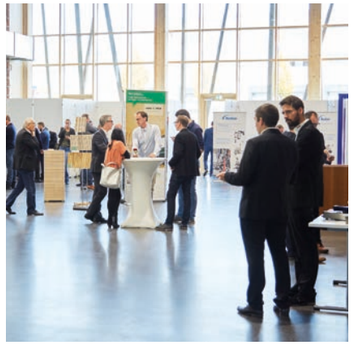
Dieter Sander,
Application Technology Specialist

Which memories have stayed with you the most?

The sales representative for Belgium and I had an appointment to test a labelling adhesive at our customer's plant in Spa. However, when we arrived, the machine was not working. To pass the time while we were waiting for its repair, we drove to a nearby racetrack and watched a few training runs there. ●

News from the world of adhesives

The world of adhesives never stands still: Innovative products and changing laws and guidelines are constantly influencing the market. When it comes to discovering and developing new raw materials, products and applications, Jowat is always on the ball.



THE RIGHT SOLUTION

Water-based adhesives have defined the product portfolio ever since Jowat was founded. The manufacturer demonstrates versatility with a wide variety of dispersion adhesives, which have been and will be developed in the past, present and future.

Jowat's dispersion portfolio contains the right solution for almost any application: from classic workbench and assembly adhesives and conventional surface adhesives to specially formulated systems to fulfil fire safety regulations. In addition, reducing emissions is an important component of these numerous applications. Thanks to the use of high-quality materials and efficient product development, Jowat dispersions are well below the permissible limits and therefore help fulfil health requirements. Both for the processor and in the subsequent location of use by the end customer.

INFORMATION EXCHANGE

Only shortly after its completion, the House of Technology provided a worthy setting for the Jowat Symposium 2018. With an unusually high number of participants, at over 250 people, and an exceptionally high share of external presentations, this meeting of the wood and furniture industry was undoubtedly a highlight.

As the motto, "Open the door to service that connects" suggests, doors were the central focus of the event. The topic was discussed in detail with expert presentations on their production. Information stands and a variety of workshops rounded off the programme. Experienced employee, Armin Erb, took guests on a journey through 40 years of gluing. They were also given an insight into the future of the company, with an overview of ongoing research projects. Finally, in the evening of the second day of the event, the 15th Jowat Adhesive Research Award was presented (see page 13).

MORE SAFETY FOR EVERYONE

Like in many other industries, the use of adhesives that are as harmless as possible is the centre of attention in the automotive industry. After all, cars are no longer used purely for transport – commuters and travelling sales representatives in particular spend a large amount of their time in them.

The aim is to perform lamination with increased safety for users and end customers. The reduced-monomer Jowatherm-Reaktant® 642.90 is safer for vehicle occupants than comparable adhesives, thanks to its outstanding VOC and FOG values. In addition, without respirable particles or chlorine compounds, the product helps safeguard employee health and safety during application. The adhesive can be used in all conventional application processes. It has optimum creep tendencies for application and higher initial strength for high-quality lamination.

15,000 machines from Monti Antonio are used worldwide.

JOWAT RIGHT ON TREND

Hardly any other industry is as varied as the textile industry. But whether the fabrics are used to make clothing, upholstery or industrial textiles: When it comes to refining and laminating fabrics, the machine manufacturer Monti Antonio and adhesive manufacturer Jowat are an unbeatable team on the Italian market.

What sets the Italian textile industry apart is its good sense of style and high quality standards. With world-renowned fashion houses like Versace, Armani and Prada, Italy has rightfully attained an unrivalled status as the home of fashion. For this reason alone, the textile industry is one of the most important branches of the economy. In the north of Italy, near Venice, lies the city of Vicenza, where many reputable production facilities in the industry are located. This is where the company headquarters of Monti Antonia SpA are also located – a company that has developed machines and systems for the further processing of textile for 60 years. It all began in 1959, with the construction of ironing machines and boilers. Only a few years later, presses for heat transfer printing on fabrics were added. From textile advertising materials, like banners and flags, to functional sports clothing and industrial textiles, nowadays Monti Antonio covers a wide range of textile applications. The company started working with Jowat in 2003, in order to achieve optimum results in the processing of products. Since then, polyurethane hot melts (PUR) have been used in the surface lamination of textiles on Monti Antonio machines – and when it comes to the gluing of fabrics, the machine manufacturer works with the subsidiary of Jowat.

»We can rest assured that the adhesives and machines are compatible.«

Simone Bellanova,
Accoppiatura Pratese

Complete package for the textile industry

Together, the systems and hot melt adhesives that are used in textile lamination are tested and offered to customers of Monti Antonio as a convenient complete package. The quality of the products always takes top priority for the Italian company. That's why Monti Antonio not only sets high standards for its own products, but also for those of its partners. "We were able to make an excellent impression with the expertise of our advisors, wide-ranging product palette and reliable technical advisory," remarks Lorenzo Gaspani, Managing Director of Jowat Italia.

It's all about comfort

The fact that this collaboration has been highly successful is also evident in satisfied customers, such as Accoppiatura Pratese. The textile refiner, based in the small town of Montemurlo, specialises in the laminating and bonding of fabrics and supplies numerous industries. For years, the company has been a loyal user of Monti Antonio machines and adhesives from Jowat Italia. Marco Panci is one of the owners of Accoppiatura Pratese and knows exactly what high standards the industry requires of good lamination: "Comfort is important for textiles – regardless of what application they are intended for." That's why fabrics that are given extra durability by the lamination process should not feel hard or otherwise uncomfortable. "The laminated surface must remain washable and breathable. This is particularly the case when the fabric is used for clothing." In Marco Panci's opinion, the PUR hot melts from the Jowat portfolio fulfil all the requirements of an adhesive. Accoppiatura Pratese currently prefers selected formulas from the Jowatherm-Reaktant® and Jowatherm-Reaktant® PUR Tex product series. "What sets Jowat apart, from our point of view, is the large range of adhesives to meet the most varied of requirements," explains the second owner, Simone Bellanova. "And we can rest assured that the adhesives are compatible with Monti Antonio machines." Whether it's delicate fashion fabrics or sophisticated functional textiles – the company trusts in the proven combination of Monti Antonio and Jowat Italia. ●

Visiting the customer: Marco Panci and Simone Bellanova with Lorenzo Gaspani (left to right)

The fashion industry has a feel for quality – a standard that Jowat products meet.

Sports clothing has to remain breathable and washable after laminating.

At one with nature

Environmental issues are no less relevant in adhesive production than other industries: Here too, we need to find alternatives to fossil fuels. That's why Jowat has long been dedicated to research into organic sources of raw materials.

For example, rapeseed is used in the production of organic fuels.

Dr Eugen Weisheim

Dr Eugen Weisheim works in Research & Development as the assistant of Dr Christian Terfloth.

The starch in maize is not only a good binding agent, but can also be used as a raw material in adhesives.

Conserving the environment and its limited resources has become an issue across all industries that affects all our daily lives. Industry and end users are equally concerned with the search for products with a positive eco-balance. Growing customer interest in sustainable raw materials is accelerating the efforts of production companies to abandon fossil fuels like petroleum. Lawmakers are also helping to protect consumers and the environment with stricter regulations. The adhesive industry is not unaffected by these changes – Jowat has long been focusing on research into alternative raw materials that are suitable for adhesive production.

An overdue step

Of course, the above-mentioned arguments are not the only reasons to use natural raw materials: Fossils and minerals are becoming increasingly scarce, while industrial demand for adhesives is growing year on year. For this reason, researching organic sources of raw materials has become an issue of great importance for Jowat, as well as the focus of future-oriented strategies in its company policies.

Jowat is involved in multiple projects to research suitable raw materials from organic sources: In autumn 2018, Jowat presented a polyurethane dispersion adhesive, developed in collaboration with two competitors as part of the "ThermoBiK" funding project. What's special about it: The recipe consists mainly of sustainable raw materials. Cellulose, starch, castor oil and glycerin, among other materials, serve as a basis for the necessary chemicals, and are primarily sourced from plants that grow in Europe. The resulting adhesive is similar to petrochemical products in many aspects, and can therefore be used in wood processing, furniture and vehicle production.

Other ongoing projects aim to develop adhesives based on vegetable oils. "In addition, fermented biowaste, cellulose, starch and natural resin can also be used as a source of ingredients in adhesive," explains Dr Eugen Weisheim, Assistant Director of Research & Development at Jowat. To prevent the adhesive industry from competing with the food industry, it primarily uses waste rather than ingredients that can be used in food production. One example of this is bone glue, the basic ingredient of which is produced by boiling slaughterhouse waste. This adhesive was known to Ancient Greece – and is still used in bookbinding today, thanks to its special properties.

Natural raw materials for adhesives

- Cellulose: The main component of plant cell walls also serves as an important raw material in paper production.
- Starch: Sourced from maize, potatoes or wheat, it is used throughout the food industry and is also used as a binding agent.
- Sugar beets: Sugar is used in fermented form as bioethanol for fuel, among other purposes.
- Oils: Castor, soy or rapeseed oil are a basic ingredient for many petroleum alternatives.
- Resin: The sticky mass that comes from trees has been used as an alternative to adhesives since the Neolithic period.

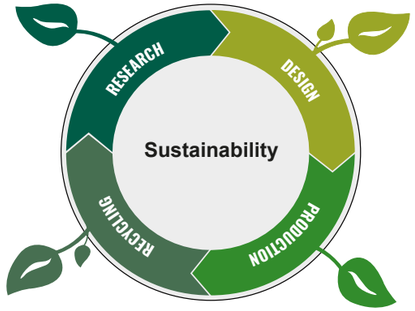
The seeds of this miracle plant are used to make castor oil.

Long-term potential

When it comes to developing new adhesives from organic raw materials, however, Jowat takes a much more sophisticated approach than Ancient Greece. When an adhesive made of organically based raw materials is designed, it has to met three criteria in order to be approved for manufacturing. "It goes without saying that the production of adhesive from the raw material must be technically feasible. But it also has to be worthwhile from an ecological and economic perspective," says Dr Eugen Weisheim. The finished adhesive is barely distinguishable from products based on synthetic materials. "There is no difference in the production and disposal of the adhesives. The difference lies purely in the origins of the processed raw materials." Jowat's extensive portfolio already features various organically based adhesives. Although the ingredients are not bound to fluctuating oil prices, they are more expensive than petrochemical substances, due to the laborious production process (thus far). This factor influences the price of the adhesive and the end product it is used in. This aspect continues to make it difficult for organically based adhesives to become established on the market on a large scale. But Dr Eugen Weisheim is certain: "The raw materials costs will become more competitive in the long term. Then, more and more users will choose our organic adhesives. In the mean time, we can continue expanding our product range, thanks to our intensive research." ●

»More and more users will choose our organic adhesives in the future.«

Dr Eugen Weisheim



GLUING RESPONSIBLY

Dr Christian Terfloth, Director of Research & Development at Jowat

When it comes to innovation, Jowat plays a pioneering role in the adhesives industry. It's no wonder then that the current issue of sustainability is taken very seriously by the company.

How does Jowat define sustainability?

Dr Christian Terfloth: That depends on the focus of your question. For Jowat, sustainability means long-term, successful growth on the market. The company has successfully achieved that since it was founded 100 years ago. For adhesive joining technology, sustainability means enabling sustainable products and processes through the use of adhesives, that cannot be realised with other joining techniques, or only with considerably higher use of resources. I would also like to cite the definition of the former chairman of our Supervisory Board, and longstanding president of the Fraunhofer Society, Professor Hans-Jörg Bullinger: "The world must be technically designed to protect the health of people and the environment in the future."

How are Jowat and its subsidiaries helping to protect the environment?

In addition to legal regulations and official requirements in regard to production, labelling and distribution of adhesives, Jowat is working on developing resource-friendly processes in the production of its products. What's more, the prevention, reduction and recycling of waste takes precedence over sending waste to landfill or incineration. Jowat also strives to use renewable energy sources in the production of its products. Environmental protection doesn't end at our factory gates, of course. Efficient logistics and advising our customers on adhesive processing and waste reduction also helps to achieve this aim.

»Our enviromental goals go hand in hand with our quality and energy goals«

Dr Christian Terfloth

What role does the recycling of organic raw materials play?

Organic raw materials have been used in adhesive recipes ever since birch tar was first used as an adhesive in Stone-Age tools more than 180,000 years ago (!). Today, organic raw materials have to compete with very high-performance synthetic products. A good sense of judgement is also needed for the potential competition between organic raw materials and foods. We are very actively supporting the development of new organic raw materials in a variety of research projects, and are also seeing increasing interest from our industry customers.

What are Jowat's environmental goals for the future?

Our environmental goals go hand in hand with our quality and energy goals, i.e. the continuous reduction of critical figures, such as the amount of waste, energy consumption per ton of adhesive and the fuel consumption of our vehicle fleet per 100 kilometres. Our modern, low-emission adhesives will also help our customers to achieve their environmental goals. ●

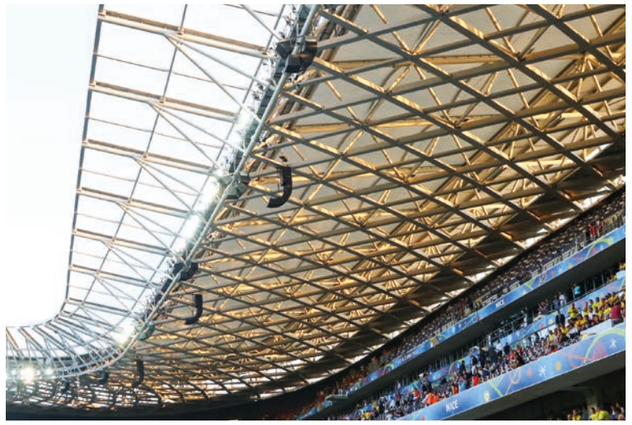
You can build on this timber

Load-bearing glued wood construction is playing an ever greater role in building construction. Technology is constantly developing to meet increasing quality standards. Jowat not only welcomes this development with open arms, but actively supports it with new, certified adhesives.

Impressive: The Metropol Parasol in Seville is a popular tourist attraction.

»Building with wood only has advantages.«

Ralph Kirst



The Allianz Arena in Nice is also built with a wooden roof.

Ralph Kirst
Business Development
Load-bearing glued wood construction

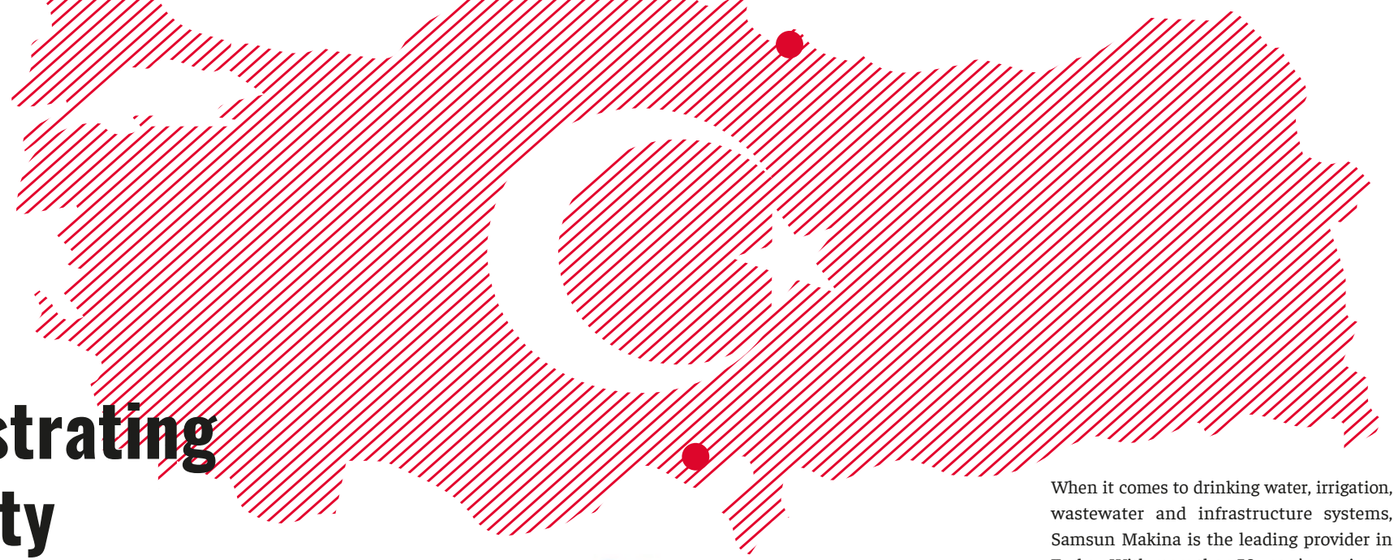
After the industrial revolution, wood construction was relegated to the background, as massive constructions with steel and concrete took its place as the standard. However, for several years now, an increasing number of buildings are being built in load-bearing glued wood constructions and are able to hold their own against conventional new-builds in terms of quality. Ralph Kirst works for Jowat in the Business Development division for load-bearing glued wood construction, and is impressed by this change of attitude. "Building with wood only has advantages," he reinforces. "Through gluing, the time and cost associated with wood construction are reduced. Entire rooms can be industrially prefabricated and joined up on the construction site." From Jowat's perspective, glued wood construction will become increasingly significant in future – and optimised adhesives will accelerate this development. Jowapur® prepolymers based on polyurethane are an alternative to condensation resin, which are commonly used to glue load-bearing wood construction parts. Thanks to their high solid content, however, considerably smaller amounts of adhesive can be applied. Prepolymers produce visually natural adhesive joints and harden rapidly – the ratio of waiting time and pressing time has been optimised to the best possible extent.

Jowat's contribution: Jowapur®

In order to cover even more cycle times, the prepolymer portfolio was recently expanded with the Jowapur® 681.xx product family. In addition to previously available formulations, the new adhesives have a waiting time of between 10 and 60 minutes. Industrial users can specifically optimise their processes by choosing the appropriate formulation. The now wide-ranging product range covers a wide variety of production processes in load-bearing glued wood construction.

Certified for high safety

The whole product family is certified in accordance with European standard 15425, which defines the requirements for polyurethane adhesives for use in load-bearing timber structures. Specifically designed to meet the requirements of building construction, the new Jowapur® range is approved by building supervisory authorities. With requirements like these, the chances are high that an increasing number of developers will choose wood construction. This choice of material brings more than just economic and ecological benefits, as shown by the aesthetically striking design of Jowat's House of Technology in Detmold (see article on page 30). Further examples of spectacular wood construction projects include the French Centre Pompidou-Metz or Metropol Parasol in Seville, Spain.



Demonstrating flexibility

Water is more than a necessity – it's the basis of all life. To create an exhaustive drinking water supply, more and more regions around the world are being developed with drinking water and wastewater networks. An important component are the pipes, made by Turkish company Samsun Makina using a Jowat adhesive.

The ductile pipes are subject to strict quality requirements, which also have to be met by the adhesive used.

When it comes to drinking water, irrigation, wastewater and infrastructure systems, Samsun Makina is the leading provider in Turkey. With more than 50 years' experience, the company is firmly established in the industry and occupies its leading position not only in Turkey, but also internationally – its comprehensive product range is exported to more than 30 countries.

Pipes under high pressure

Samsun Makina was the first Turkish company to produce ductile cast pipes. These are more durable and safer than conventional pipes, because they are able to withstand pressure through flexibility. The pipes do not rupture or burst under pressure, but rather bend and so continue to supply running water. Their use helps secure the water supply in inaccessible areas and earthquake-prone regions. All the components of the pipe must be able to withstand extreme stress. The interior is lined with zinc, before being laminated with adhesive and coated with polyethylene. If the pipe is deformed, none of these layers must be damaged – that's why the lamination is performed with a hot melt adhesive that must have certain properties. As well as strong and long-lasting adhesion, it also has to provide a soft adhesive joint.

"Jowat's service convinced us."

During its process optimisation, Samsun Makina happened upon a product from the Jowatherm® series, which was already being used by other manufacturers in the industry. "Our interest was piqued immediately," explains Nurdan Yücel, Quality Manager at Samsun Makina. "And Jowat has a very good reputation as an adhesive manufacturer."

Ata Burak Yucel is a Territory Sales Manager at the Turkish subsidiary, Jowat Atasoy. He immediately recognised the customer's potential and provided a sample of the adhesive for test runs. The first trials were successful, leading to the customer's decision to work with the Jowat product. "It was not only the adhesive that made up our minds," explains Nurdan Yücel. "The application expertise of the team and the know-how of the technical advisors impress us too." Ductile cast pipes have to meet several industrial standards at once. They therefore have to undergo additional performance tests. Although the adhesive impressed the customer, the end product did not achieve a perfect result. For Jowat, this comes as no surprise: "The process analysis had not yet been performed. Challenges often arise in the first stage, which then need to be solved," explains Serpil Arıöz, Technical Support Service Manager at Jowat Atasoy. Many variables need to be taken into account to produce suitable adhesives. As well as the machinery and raw materials used, the subsequent use and contact with other materials also need to be taken into consideration. It's therefore almost impossible to get it right first time. "Even if two companies produce a comparable product, that doesn't necessarily mean that the same adhesive will be suitable for them," remarks Serpil Arıöz.

Achieving goals together

Jowat performed a process analysis, taking into account the materials used and the subsequent purpose of use, to determine the ideal product: Jowatherm® 245.00 has a high viscosity and creates a flexible adhesive joint, even after drying. When placed under strain, the adhesive strength gets even stronger. Jowat Atasoy conducted the performance test with the selected formulation and achieved the ideal result of 100 percent! All that hard work was rewarded: Samsun Makina opted to work with Jowat Atasoy long-term, thanks to its flexibility rivalling the ductile pipes. And not only is the customer satisfied, but Jowat too has benefited from the deal: Thanks to the successful completion of the project, Jowatherm® 245.00 is the best-selling PSA hot melt in Turkey thus far.

Nurdan Yücel, Serpil Arıöz, Ülken Erdoğ (Marketing Manager Jowat Atasoy), Mustafa Kemal Can (Plant Manager Samsun Makina), Ata Burak Yucel, Salih Karadiş (Production Manager Samsun Makina; left to right)

STICKING PUR

People are becoming increasingly aware of just how important it is to get a good night's sleep. As a result, requirements for mattresses are becoming just as diverse as the people who sleep on them. With the Jowatherm-Reaktant® 639.20 polyurethane hot melt adhesive (PUR), Jowat is taking the quality and productivity of mattress production to a whole new level.

The mattress market already offers an enormous range of designs and materials; however, the demands surrounding the quality, flexibility, and efficiency of the assembly process are constantly on the rise. The adhesives used in the manufacturing processes for foam mattresses have a significant role to play. While most manufacturing processes still rely on dispersions, Jowat has long since been using a solution that not only improves efficiency, but also streamlines production processes in the form of the polyurethane hot melt adhesive (PUR) in the Jowatherm-Reaktant® series.

Convincing benefits

Standard use of aqueous dispersions requires a time-consuming interim storage period of up to 24 hours during the mattress assembly process, not to mention the corresponding storage spaces and logistics costs. This is due to the low initial strength of the adhesives and the risk of mould formation as a result of the water introduced while applying the adhesive. Jowatherm-Reaktant® keeps this time-consuming intermediate step to a minimum. According to Falk Potthast, Product Manager at Jowat, "as soon as the pressing process is complete, the mattress covers can be filled with the mattress core, packed in foil and rolled up after just a few minutes." The use of PUR not only minimises storage periods and thereby increases cycle rates, it also only requires a significantly lower amount to achieve exceptional adhesive results in comparison to a dispersion, which in turn saves on costs. At the same time, the use of Jowatherm-Reaktant® ensures there are no compromises in terms of comfort; quite the opposite, in fact, since the soft adhesive bonds and minimal tacky adhesive surface residue left behind by PUR prevent any unpleasant noise when lying on mattresses, making for a quiet and healthy sleep.

Proven technology made even better

Jowatherm-Reaktant® 639.20 is part of a new generation of PUR hot melt adhesives that have been successfully used to manufacture foam mattresses for many years. The hot melt is suitable for all conventional materials used in the production of foam mattresses, and – unlike the commonly used polychloroprene dispersions – does not feature any chlorine compounds. As a result, it not only lives up to the high requirements of OEKO-TEX® and the Blue Angel, it also makes a significant contribution in terms of process reliability. Switching to PUR is a relatively straightforward process. As it can be applied using a roller or a spraying process, just like a dispersion, this means only the application unit has to be replaced in most cases. Offering extensive specialist expertise and application proficiency, Jowat is always on hand to offer support every step of the way – even after switching to PUR hot melts.

Jowatherm-Reaktant® 639.20

- Wide range of adhesion levels for conventional and/or popular material combinations
- Minimal monomers without chlorine compounds
- High level of initial strength for automated processes and ease of handling
- Water free, which dispenses with lengthy drying phases and facilitates direct packaging and inline roll packing
- Minimal quantities required

A wise decision

The dispersion adhesives currently used in mattress production processes are based on polychloroprene rubber, ethylene-vinyl acetate (EVA), or polyurethane (PUR). In order to facilitate faster processes, however, they have to be dried out in a phase that requires a great deal of energy. This is where the reactive PUR hot melts are clearly the better choice, as they do not involve any water at all. Jowatherm-Reaktant® 639.20 are therefore ideal when it comes to maximising process efficiency and saving on the costs of adhesives. After all, as the motto goes, better gluing means better sleeping.

Falk Potthast
Product Manager

Falk Potthast is a Product Manager for primers, adhesion promoters and adhesives for textiles and foam padding.

»Mattresses bonded with PUR can be filled, packaged, and rolled right away.«

Falk Potthast

Mattresses are usually made up of several layers of foam that have been glued together.

HEART AND SOUL OF THE ADHESIVES SPECIALISTS

The Jowat team moved into the company's new House of Technology back in the autumn of 2018. Almost 50 employees now work in the offices, laboratories, and machinery rooms housed within the new building. Jowat is sure that there will be exciting times ahead.

The very structure of the building means it already looks impressive from the outside, but the true dimensions of the space are only revealed after stepping inside. The working environments within the House of Technology are large, spacious and flooded with light. In addition to the lecture hall, the vast machinery halls also offer plenty of space for the staff who moved into their new empire back in October 2018. The ground floor is home to the practical workstations for the Application Technology department along with the test laboratories. This is where industrial bonds are adjusted in small frames before being scrupulously put to the test. Key applications include those commonly found within the woodworking and furniture industries, such as edgebanding, wrapping, flat lamination and solid wood bonding. These internal tests serve to make Jowat products even better. ●

Ismail Coku uses hot air to reactivate adhesive that has already been applied.

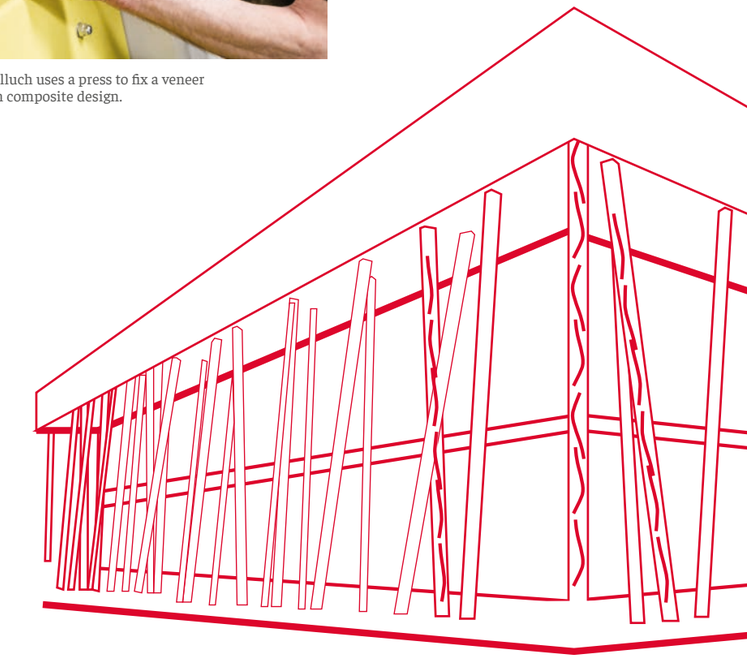
Application specialist Dr Sebastian Mailänder keeps a watchful eye on the tests.

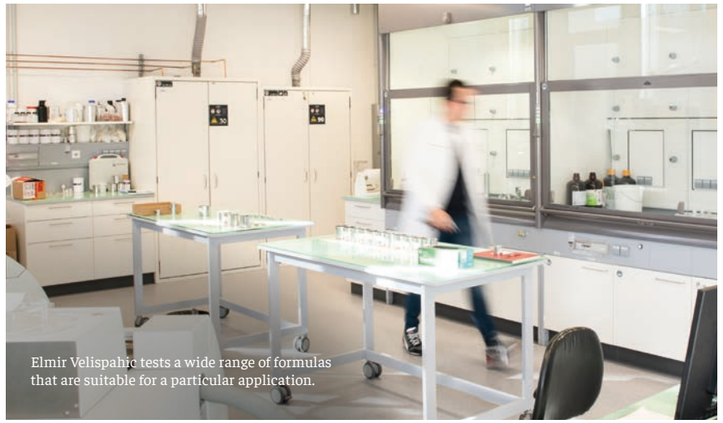
Manfred Palluch uses a press to fix a veneer to a wooden composite design.

The House of Technology is where glued edges are put through various stress tests.

»The House of Technology is where every aspect of our day-to-day work comes together.«

Klaus Kullmann,
Managing Director, Sales & Marketing





Elmir Velispahic tests a wide range of formulas that are suitable for a particular application.

Benedict Nider makes adjustments to an edgebander.

Research is essential for bonding

By participating in a whole host of adhesive-based research projects Jowat is cementing its status as the sector's leading innovator. In addition to products made from renewable raw materials, adhesives that make their own contribution to saving energy and limiting resources are also very popular.

Special composite materials are set to make underfloor heating systems more effective and therefore also more energy efficient.

Constant development of products and expertise is absolutely essential when it comes to making sure a company such as Jowat can remain successful and keep pace with progress well into the future. Some ideas can only be brought to life with the help of public funding, which is the case if achieving objectives is set to be risky or else requires intensive cooperation with external partners.

This is why Jowat is currently involved in more than ten different collaborative projects. The research contracts are usually co-financed by a grant from the European Union or the German federal ministries and awarded by means of public calls. "A few years ago, for example, 'Adhesives and Binders' were made a specific funding priority by the German Federal Ministry of Food and Agriculture, and we were able to focus on specific research topics," explains Dr Daniela Klein, who is Jowat's point of contact in the field of Research Services. The topics can be driven by basic research as well as by an issue presented by the wider industry. In addition to industry representatives such as Jowat, universities and scientific institutions such as the Fraunhofer Institutes are often also included in research.

»Our research activities mean we are constantly gaining new insights.«

Dr Daniela Klein

"We are well aware that we will not necessarily be left with an instantly marketable product once a research project has come to an end," explains Dr Klein. "But what we do know is that we will come away with plenty of new knowledge, even if it takes a few more research phases before we reach a tangible result."

Saving resources

One look at the research topics put forward in recent years shows a clear trend towards the development of sustainable products and processes by means of boosting efficiency. The EHoLA and For(s)tschritt projects, for example, are clearly pressing ahead with the ecological lightweight construction of automobiles, which includes replacing metal components with wood-based alternatives. The aim here is to reduce fuel consumption and emissions by minimising the weight of the vehicle (see JOWAT 1/2018).

Even within its own four walls, Jowat is researching ways to save energy. The EleiK (electrically conductive bonding) project, for example, focuses on the production-ready development of a heatable composite material based on wood, which is being developed in partnership with FH Schmalkalden University of Applied Sciences, MeisterWerke Schulte GmbH and ZILA GmbH. This has seen Jowat come up with an electrically conductive adhesive that generates heat when an electrical voltage is applied. "This type of product could be used as a flooring element in living rooms and would represent an alternative to conventional underfloor heating solutions," explains Dr Daniela Klein. And if the results prove convincing enough, developing heatable items of furniture might not be beyond the realms of possibility in the future.

If the DextriPlast research project goes well, the process of treating wounds in horses will be much easier going forward.

Countless different formulas are required to develop an idea into a real product.

Exciting diversity

Every so often, Jowat will also step out of its comfort zone to break new ground – just as it did in the DextriPlast project. Together with the Friedrich Schiller University Jena, the fzmb Research Centre for Medical Technology and Biotechnology, and Emerell GmbH, Jowat is working on an emergency bandage solution for horses based on renewable materials. This sees modified starch serving as a raw material for the adhesive as well as for the cover layer films for the wound closure. In addition to sustainability, the adhesion to sheared animal fur should be improved without compromising on the ability to easily remove the wound dressing. This type of innovation is set to not only simplify the work of veterinary surgeons, but also inspire plenty of horse owners.

"We don't normally have anything to do with the veterinary medicine sector," stresses Dr Daniela Klein, "but we are always open to gaining new insights through our research." After all, the knowledge we gain can also be transferred to other applications.

Dr Daniela Klein
Research services

Dr Daniela Klein is responsible for overseeing Jowat research projects with external partners.

The EleiK and DextriPlast projects are co-financed by public funds from the German Federal Ministry of Food and Agriculture.

Federal Ministry of Food and Agriculture

The For(s)tschritt project is co-financed by public funds from the Germany Federal Ministry of Economics and Technology.

Federal Ministry for Economic Affairs and Energy

EHoLA is funded by the European Fund for Regional Development (EFRE).

EUROPEAN UNION
Investing in our Future
European Regional Development Fund

EFRE.NRW
Investitionen in Wachstum und Beschäftigung

We are delighted to offer our expertise on all things adhesive to the Australian continent as part of this incredible company. Here's to the next 100 years!

Shane Devereaux,
Jowat Australia

As it reaches its 100th anniversary, Jowat really has proven its worth when it comes to helping its customers to overcome their adhesive-based challenges. We are proud to be a part of this heritage and would like to wish everyone all the best.

Dr Ralf Schelbach,
Asia Pacific Jowat Group

Congratulations on reaching this fantastic milestone; I'm proud to be part of one of the world's leading adhesive manufacturers. It's always a pleasure to be involved in a partnership that promotes open communication and congenial relationships.

Toni Rüegg,
Jowat Swiss AG

I am incredibly fortunate to be able to work for a company whose values and beliefs I happen to share. Here at Jowat France, we are proud to have reached our 100th birthday!

Christophe Magnin,
Jowat France

Congratulations on achieving this well-earned milestone! Jowat really has earned its reputation as a company that comes up with solutions and sticks to its promises.

Nick Orton,
Jowat UK

The occasion of Jowat's milestone anniversary is the perfect opportunity to look at the future we actively want to shape. After all, we have years of innovations and ideas ahead of us – not to mention a dedicated team.

Dr Zdzisław Bernaczyk,
Jowat Polska

100 YEARS OF JOWAT – STICKING TOGETHER FOR SUCCESS!

Having worked for the company for over 20 years, I can say with some confidence that this is a family business that promotes truly exemplary values. I am delighted to see that these values are also being upheld in our international locations, and I am very much looking forward to the future!

Willi Wiens,
Jowat Manufacturing Malaysia

For me, it's simply an honour to work for a company that is so highly regarded within the industry. This anniversary just goes to show that the values we live and breathe really do pay off – and they're sure to live on for the next 100 years.

Lorenzo Gaspani,
Jowat Italia

I am simply delighted to be able to participate in Jowat's 100th anniversary celebrations. On behalf of the Thai team, I would like to wish everyone all the best, a bright future, and many more anniversaries to come.

Khachadpai Areeprasertsook,
Jowat Thailand

Clocking up 100 years of successful development is an exceptional achievement that very few companies can enjoy. It is just fantastic to be a part of it all and be involved in writing the next chapter!

Sebastian Schäfers,
Jowat Vietnam

Let's Stick Together!

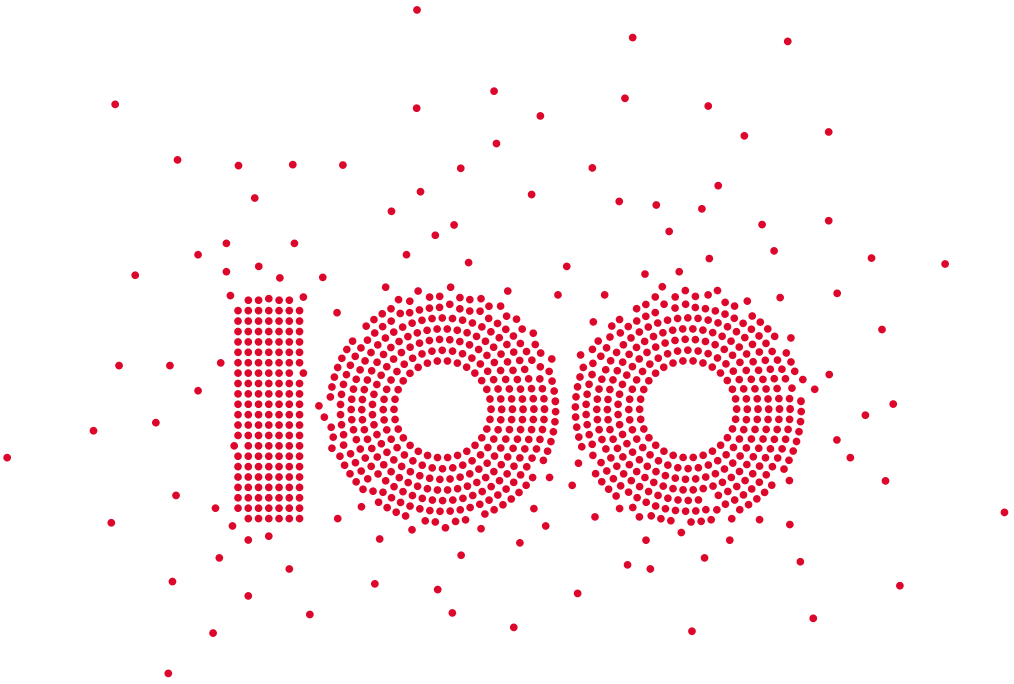
Time really does fly, doesn't it? It's hard to believe that Jowat will be celebrating its 100th birthday this year. And looking back on the company history that this Detmold-based enterprise has enjoyed, it is by no means a stretch of the imagination to say it has been something of a fairy tale. So with this in mind, and in honour of the company's milestone anniversary, it seems only fitting to share the fable itself, which you could say is based on a 'glue' story!

"Once upon a time there was a little Jowat. As soon as it saw the light of this world, it clung to everything it could with a force beyond compare, as if it never wanted to let go again. Even if all it used was the tip of its finger. The extraordinary staying power of Jowat took everyone in the land by surprise, and it soon became clear from its unique talents that Jowat would be the one to make sure there would always be a strong connection between materials of all kinds. But way back then, no one could have known what that would mean beyond the borders of its birthplace in Wrocław. After all, ever since it came into being, Jowat had been destined to pursue its personal gluing task to bring things together forever.

And so the years went by, with Jowat growing and developing magnificently, exploring the world of bonding in ever more depth as it went. At the age of 26, it already had an enormous amount of bonding experience to call upon, which is what prompted it to make its skills official and share its knowledge with the world. It chose to settle down in the German city of Detmold and continue to explore the world of bonding from its new abode. Jowat accumulated so much knowledge and developed such amazing skills that it became a bonding expert across national borders. And soon enough, it had even come so far from its very first hours of bonding that Jowat decided to reward others for sticking to their gluing capabilities in the form of coveted research awards.

But this is not the only respect in which Jowat made such strong connections; it also went on to have 23 children in the world of bonding, establish strong bonds in 80 different countries, and find over 1,200 companions stick with it on its adventures.

Today is the day we celebrate its 100th birthday, as we look forward to finding out what else it will help to stick together forever in the future. And the moral of the story? Stick together in life and you're sure to go far."



Jowat is celebrating!

Jowat Adhesives

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