JOWAT

THE MAGAZINE 1 | 18

The smithy for experts
How young adults experience their individual support

The secret behind our formulations
An insight into the work of product developers

The wooden milestone
From idea to flagship project: The new House of Technology

Ansgar Wolf, Head of Research and Development in the Flooring division of EGGER Holzwerkstoffe in Wismar, Germany

Dear customers,

As you know, we at Jowat strive for excellence. Our goal is to offer our customers individual and efficient adhesive solutions through the use of premium products – all around the world. By consistently pursuing our triad strategy, Jowat has recently grown by two new subsidiaries: our new sites in Vietnam and Thailand are now members of our big, international family.

But even though our journey on the path to growth has taken us far, there is no place for us like home: the House of Technology is a strong commitment to the Detmold site, where the many threads of our work come together. With the staging of the 17th Jowat Symposium, the new technical centre will celebrate its premiere as an innovation and application centre all about bonding.

Speaking of celebrating: in 2019, Jowat will celebrate its 100th anniversary. As a family business, we are proud of our development thus far, the traditions and values that we uphold and represent. And although our successful company history shapes and defines our daily work, we stay focused on the future. That's why we prospectively promote and support several research projects.

From lightweight construction in the automotive industry to the innovative use of oil palm wood, we support the work of institutions in a variety of ways and, in doing so, always aim at conserving natural resources and reducing harmful emissions. Jowat is ready for the future and embraces it with open arms, whilst you, as our customer, remain at the focus of everything we do.

The Jowat customer magazine is no exception to our high quality standards. That's why we have revised it from top to bottom – in front of you now is the first new edition. We hope that both the selected content and the design appeal to you as much as they do to us.

Enjoy reading it!

»We are continuing to pursue our triad strategy.«

Klaus Kullmann
Managing Director Sales & Marketing

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Publishing information

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Design and realisation
MEDIUM Werbeagentur GmbH
Bielefeld, Germany

Photography
Jowat SE, Andreas Kühlken,
iStock, Fotolia, Unsplash

Print
Bösmann
Medien und Druck GmbH & Co. KG,
Detmold, Germany

Copy deadline
12/10/2018

Sticking together

With its headquarters in St. Johann in Tirol, the EGGER Group is a force to be reckoned with when it comes to manufacturing and processing wood-based materials. Boasting 18 plants across eight countries, the enterprise is also firmly on course for international success. The EGGER range comprises a variety of panelling materials, which rely on Jowat adhesives more than any other product as part of their further refinement process. This has resulted in a close partnership between the two companies, which allows them to not only look back on a shared success story, but also to look forward to an exciting future ahead.

Ansgar Wolf and Rüdiger Ernst are carefully examining a freshly coated HDF panel that has just been taken from the coating plant. After looking at it from all sides and from every angle, they are clearly satisfied with the result: the film coating has been applied flawlessly and the adhesive works perfectly. This is an excellent piece of panel work.

The setting for this scene is a factory in the Hanseatic city of Wismar, one of the EGGER Group's 18 production facilities worldwide. This particular factory on the Baltic coastline has 900 employees and specialises in the production of HDF and MDF boards, OSB boards and laminate flooring. The production and lamination of fibreboard are integral aspects of the day-to-day work here, and Jowat's products and comprehensive range of services can be seen everywhere you look.

Wolf is Head of Product Development for the Flooring division at EGGER in Wismar. His area of activity includes innovations and optimisations in the flooring range. Wolf and his colleagues work closely with Jowat – particularly Rüdiger Ernst from the Global Key Account Management team, which serves as the link between the two companies. Ernst is responsible for dealing with EGGER, which makes him Ansgar Wolf's closest point of contact at Jowat.

Jowats Global Key Account Management

- Responsible for looking after key customers, i.e. Jowat's largest accounts.
- Individual teams are put together for each customer project.
- The teams cover application technology, development and a contact to the relevant Jowat subsidiary.
- Customers receive cross-disciplinary support and can always call on a direct contact person.

Jowat shares its expertise

The panel material coated with Jowatherm-Reaktant®, which Ansgar Wolf and Rüdiger Ernst have just put through its paces, is the result of these many years of cooperation. The exceptional thing about it is that EGGER's entire process chain is set up to handle full-size panels measuring up to 2.07 metres wide. These are the standard dimensions used within the wood-based panel industry, so it makes sense that the coating system is also adapted accordingly. Using polyurethane hot melt adhesives, however, is a little unusual. For EGGER, it was essential to find an adhesive that was 100 percent water-resistant, as the coated panels are used to cover floors in areas that include high-humidity spaces such as bathrooms and saunas. Following extensive research, Jowat was able to meet all the customer requirements with its comprehensive service and products such as the Jowatherm-Reaktant® 609.30.

From EGGER's point of view, Jowat's chemical expertise makes a valuable contribution to its own day-to-day operations. "Jowat not only advises us on adhesive-related matters, but also on other chemical issues," applauded Ansgar Wolf. "Our technologists, purchasers and other employees all benefit from the relevant information they are provided with." As a result, EGGER's associated operating processes are considerably faster and much easier to implement. This begins with measures such as new sources of supply for selected ingredients and application-specific questions on adhesive handling, right through to customised optimisation of the work processes. "It goes without saying that we are only too happy to share what we know with our partners," Rüdiger Ernst pointed out.

Ansgar Wolf (right) from EGGER and Rüdiger Ernst from Jowat are optimistic about their further cooperation as they work towards common goals.

"We're pulling out all the stops!"

Another example of this mutual support is EGGER's multi-layered, modular flooring system, which called for further suppliers in addition to Jowat in its development. The Detmold-based enterprise established contacts with substrate and machine manufacturers, enabling EGGER to lay the foundations for an ideal supply chain from the very beginning. This close cooperation was a matter of course for both parties, with neither ever faltering from their focus on the end result – the finished product. "And this is why we are all happy to pull out all the stops," reiterated Ansgar Wolf. Another of EGGER's special requirements for Jowat was to manufacture both a designer floor and a cork floor on the same system using the same adhesive. It was the materials that presented a challenge in this case, as they required different bonding processes. Ultimately, however, the collaborative research resulted in an ideal, workable solution. "We are also constantly optimising our processes in coating," added Ansgar Wolf. "And, with the most innovative adhesives, that's no problem."

The relationship between EGGER and Jowat is characterised by a high level of trust. Everybody keeps each other informed about ongoing projects and plans for the future. The product developers at EGGER also regularly make use of Jowat's R&D centre to manufacture and test out new prototypes. Jowat supports these tests and can use the insights gained

A production hall at the Wismar plant.
This is where the panels are coated.

in its own work, in carrying out further development of the adhesives currently in use, for example.

It's something that even outsiders pick up on immediately, that EGGER and Jowat are so much more than just business partners. One of the reasons behind this is the close friendship between Ansgar Wolf and Rüdiger Ernst, who know each other well and enjoy a positive working relationship with plenty of jokes and laughter. Wolf is also a regular participant in the Jowat Symposium and other events that Jowat puts on for its clients to provide information, strengthen relationships or even simply say thank you. Wolf and his colleagues like to take advantage of these events to stay up to date with the latest product innovations and developments within the adhesives industry.

EGGER and Jowat – a match that works

One of the EGGER Group's slogans is "EGGER thinks globally and acts locally." The enterprise's ultimate goals, in fact, are to strive for continuous development and international relations without ever losing sight of its roots or any of its locations. "This is a perfect fit for us, as EGGER and Jowat are similar in many ways, and not just outwardly, either," explains Rüdiger Ernst with a smile. Indeed, the white and red colours dominate in the corporate designs of both companies, but it is more about the inner values, common ideals and similar histories: both companies started as small, family-owned companies and have grown significantly over time. This growth, particularly at international level, continues to this day.

While these long-standing partners may be able to look back on a common history, they certainly don't dwell in the past as they forge ahead with plans for the future. In fact, the research and development teams at both EGGER and Jowat are already working together on more joint projects. "EGGER strives for a high level of added value and, in doing so, offers us a great deal of potential," explained Ernst. "This constant pursuit of innovation always presents new challenges for Jowat." This is by no means the last visit to Wismar for Ernst, which is just as well since Wolf is always happy to see his business partner. He can always expect a warm welcome and open ears at EGGER, as the partnership is always at least as good as that panel of chipboard they just examined. "You could say we're stuck together for life!" is how Wolf sums it up.

The EGGER plant in Wismar is also where the panel materials are digitally printed and coated.

Jowat's Advice

Clean job

Thermal exposure can cause industrial adhesives to burn onto system components and behave like grease on a grill within the machine: over time, a burnt-on layer starts to build up. Nobody would want to eat anything off a grill like that, and a thorough clean-up would be required even after applying the adhesive. Jowat reveals just how easy it can be to keep clean.

Many production facilities run constantly at full speed 24 hours a day, seven days a week. Downtime is of course something these facilities are keen to avoid, which means cleaning operations are seen as something of a necessary evil. After all, an outage caused by contamination would be far worse. If system components have to be repaired or replaced, not only does it cost time and money, it also means that the lesson has not been learnt. Prevention is the magic word here, as regular cleaning helps to maintain the quality of both the entire machine and the goods it produces.

The subsequent cleaning should be just as regular and natural as the adhesive application itself. Jowat recommends a combination of flushing processes and cleaning by hand, although the exact procedures depend on the type of machine and adhesive in use. To achieve optimum results in each case, Jowat offers the perfect cleaning products and operating instructions for each of its products. ●

Jowat supplies a selection of separating agents and cleaning products that are specially designed for use with its own adhesives.

Look inside

No one knows a machine better than its manufacturer. A good manufacturer will tell you how to clean hard-to-reach parts.

Clean regularly

Accessible components should be cleaned regularly as part of your daily routine.

Stick with it

Avoid replacing the adhesive as far as possible. If this becomes necessary, however, be sure to clean the machine thoroughly, as any residue could react with the new product.

Adjust the temperature

Do not leave the machine running at full power during break times; be sure to reduce the heat.

Keep hoses short

The longer they are, the more difficult they are to clean. They are also more expensive to replace completely in the event of damage.

Bonding at the highest level

The DIN 2304 standard has applied for industrial bonding processes since 2016 and its specifications are intended to ensure error-free results across all industries. Jowat welcomes this development and is actively encouraging its use.

In the early days of welding, confidence in the buildings and vehicles that relied on this process remained limited. Fast forward to today and applications involving adhesive technology – such as in cladding, vehicle or automotive construction – are often met with the same scepticism. DIN 2304 is to change all this by helping to evaluate and safeguard industrial bonding processes. The aim is to achieve flawless adhesive results and thereby to increase confidence in the process.

The general recommendation is to comply with the standard, as it always conforms with the latest state-of-the-art technology. Any bond associated with significant asset values or safety risks should only be carried out by (appropriately) trained employees. Qualifications for personnel are obtained through the Fraunhofer Institute for Manufacturing Technology and Advanced Materials or the TechnologieCentrum Kleben.

The aim of DIN 2304 is to optimise industrial bonding processes in order to achieve maximum adhesive performance.

For any applications involving adhesive processes where standards already exist and apply (such as glulam construction), those standards still remain valid. If a company is already certified according to ISO 9001, then this provides a solid basis for DIN 2304. The latter is aimed at relevant areas where the bonding process is not yet regulated. Examples of such areas include the wood and furniture industries. DIN 2304 stipulates that when manufacturing furnishings or load-bearing objects, the responsibility for classifying those applications lies with the adhesive user.

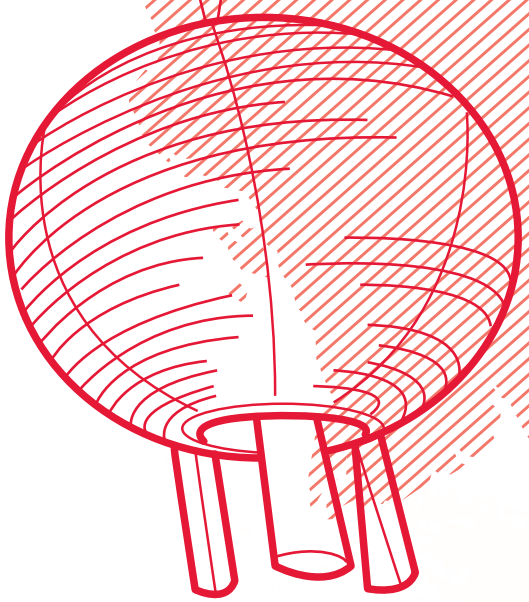
This standard encourages users to play a more active role with regard to the bonding process and its continuous development. From Jowat's perspective, this is a huge step in the right direction. The enterprise has always followed and supported the creation of this standard through representatives from the industry. After all, improvements based on DIN 2304 have long been an integral part of Jowat's individual bonding process analysis. Anyone who would like to implement the standard on a large or small scale in their work – from independent carpenters to major corporations – can count on support from the adhesive experts. ●

Taking the right approach in line with DIN 2304

- Does a bonding failure threaten to put either assets or people's lives at risk? If the answer is yes, then the safety requirement is high.
- The bond should then only be performed by personnel with the right level of training. It is then also recommended to have an adhesive supervisor examine and inspect the work.
- Ultimately, it must be proven that the product can withstand the daily stresses it will be exposed to.
- The bonding process has to be constantly optimised and adapted in line with the latest technical specifications, which is where Jowat can offer invaluable support with its wide range of services.

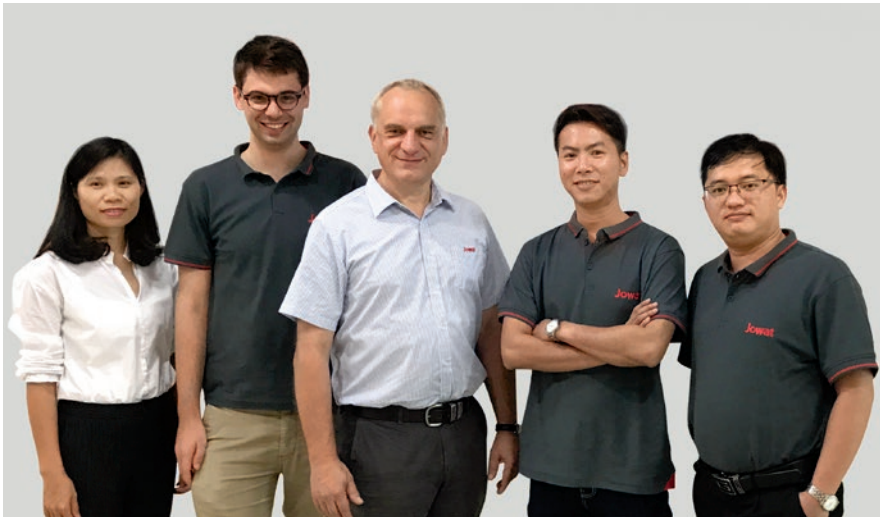
Ina Benz
Head of Application Technology

Ina Benz is the contact person for the correct management of the bonding processes.



Between rickshaws and skyscrapers

Asian metropolises such as Bangkok and Ho Chi Minh City have become attractive business hubs for international companies.



Hitting the ground running in Vietnam last year: Managing Director Sebastian Schäfers (second from left), Dr Ralf Schelbach (middle) and the Vietnamese team.

The economy in South East Asia has grown significantly in recent years. Jowat's Vice President Asia Pacific, Dr Ralf Schelbach, describes it as vibrant – the Asian market offers huge potential. No wonder that Jowat is increasing its subsidiaries in the region.

Outside of Vietnam, Ho Chi Minh City is perhaps better known by its former name of Saigon. The decision to rename it after the former head of state of North Vietnam came after the reunification of the country in 1976. The number of inhabitants has shot up since the 19tth century, with more than seven million people now living in the city – more than in the state capital of Hanoi and almost as many as in Hong Kong.

The Vietnamese economy has taken a similar course, with the local market offering huge potential that Jowat has also tapped into. Autumn 2017 marked the launch of the Jowat Vietnam subsidiary in Ho Chi Minh City, which is headed by Sebastian Schäfers. This location is ideal for Schäfers and his team to be able to meet the needs of their Vietnamese customers.

Jowat has been pressing ahead with its international triad strategy for a number of years in a bid to live up to the requirements of its customers in this region in the best possible way. This is a particularly judicious approach for the Asian market, as it is seen as a disparate continent where market and customer requirements vary massively from one country to the next. So Jowat is taking small, carefully considered steps in opening up local markets.

Asia has been a focal point in Jowat's plans for internationalisation since the 1980s. Prior to that, its expansion had already been successful in Europe and the United States. Its presence within the Asia Pacific region has been built on solid foundations since the opening of the Australian and Malaysian production sites.

Jowat founded its sixth Asian subsidiary in early 2018, headed by General Manager Khachadpai Areeprasertsook in Thailand. This most recent facility in the Jowat network is located in the capital city of Bangkok. Dr Ralf Schelbach sees the Thai market as especially mature, not least due to his highly qualified staff and exceptional competitiveness. Other Jowat subsidiaries in this region can be found in China, Malaysia, Australia and the United Arab Emirates – and the trend is growing in the light of their successful development.

The latest addition to the Jowat network – the Jowat Thailand team with Managing Director Khachadpai Areeprasertsook (third from right).

THE JOWAT WORLD

1,135 employees worldwide

600 Germany

755 Across Europe

215 North and South America

165 Asia/ Pacific

Production volume in tonnes in 2017

87,000 in total

- **7,000** Solvent-based adhesives
- **20,000** Dispersions
- **60,000** Hot melt adhesives

6 production locations

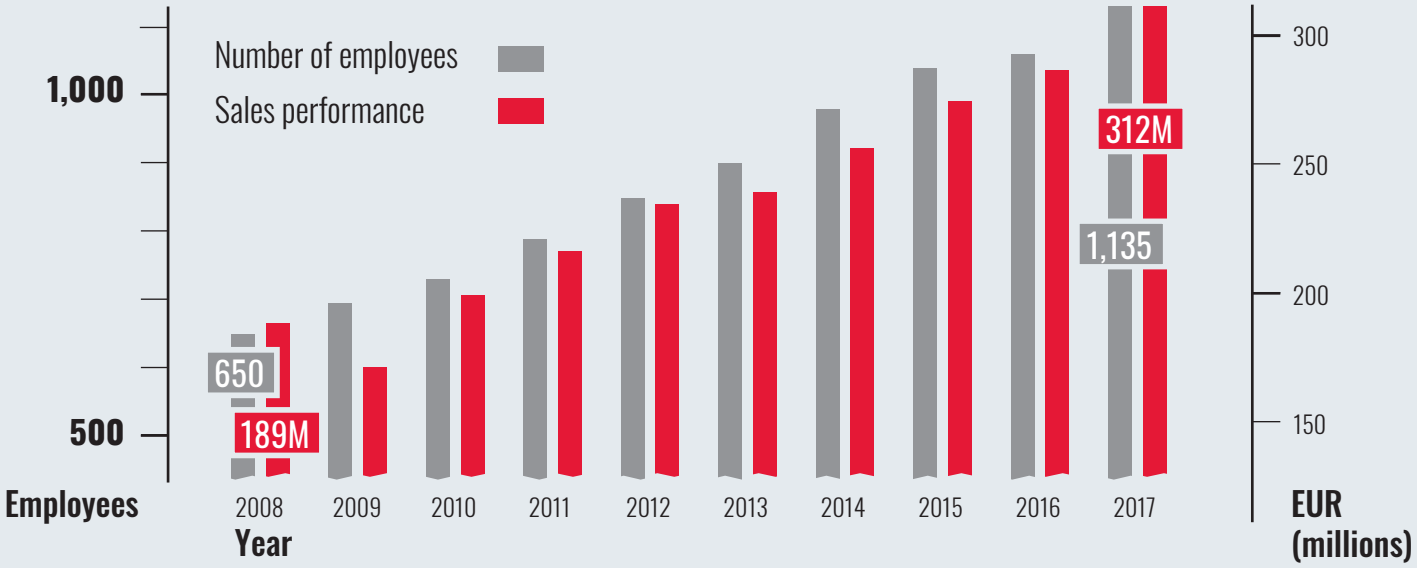
Germany:

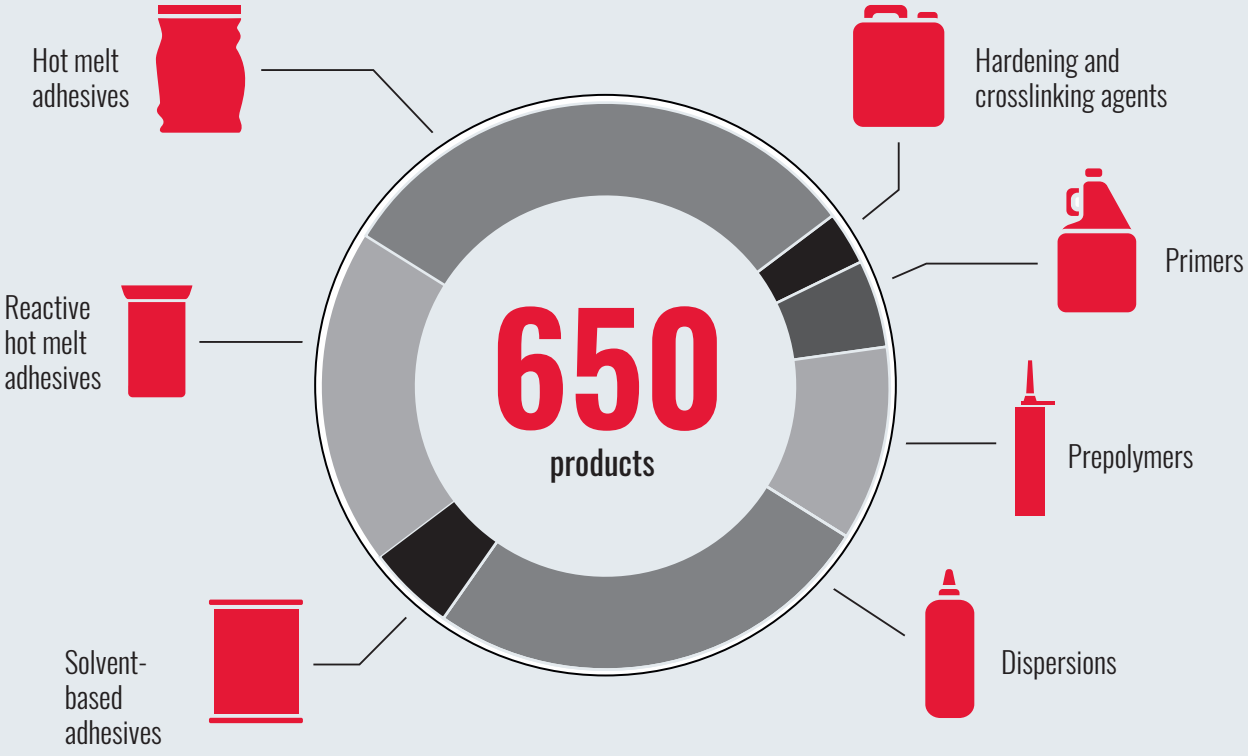
- Detmold
- Elsteraue

Global:

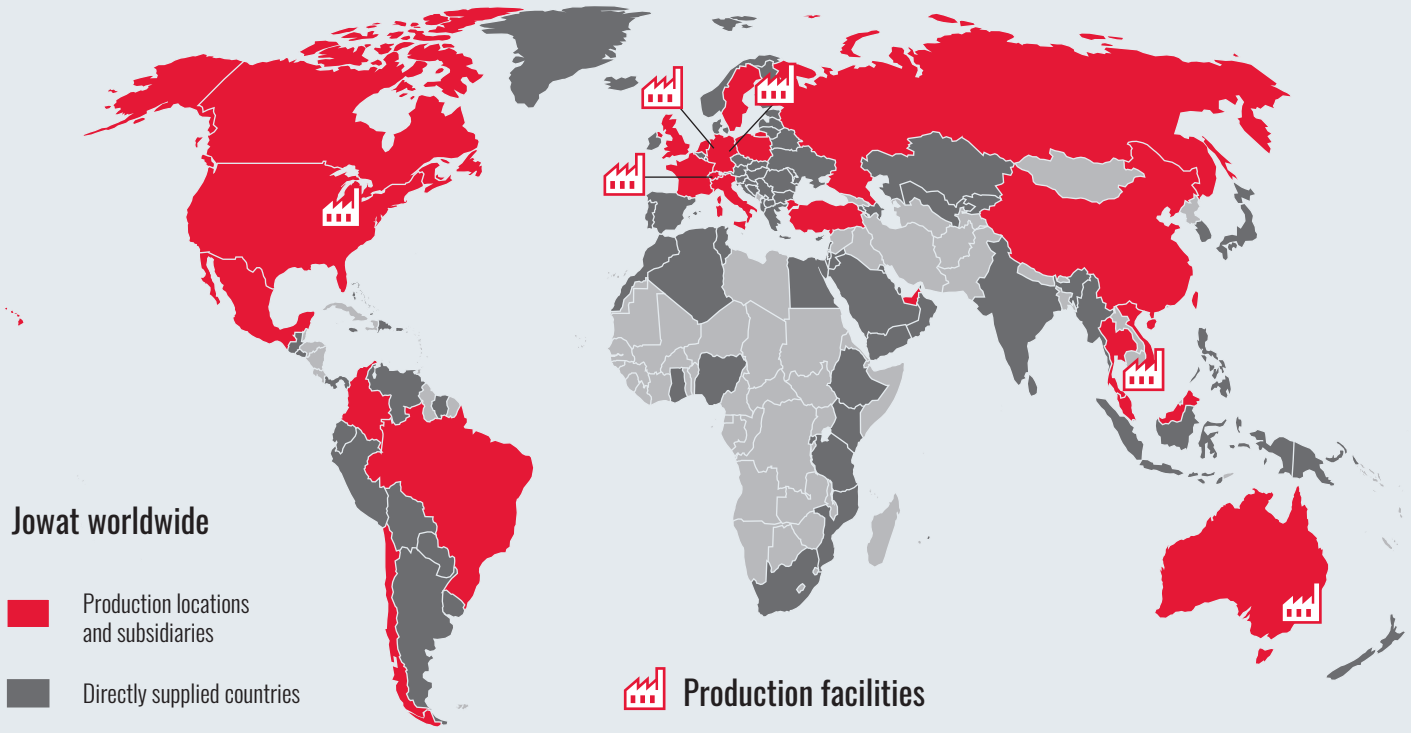
- High Point, USA
- Bandar Enstek, Malaysia
- Buchrain, Switzerland
- Ingleburn, Australia

Economic development





Number of products in the range



Data correct as of August 2018

THE SMITHY FOR EXPERTS

Interested in training as a chemical technician or warehouse logistics specialist? Or perhaps you'd prefer to study – but what exactly? Jowat has a wide range of options for school leavers. And no matter which pathway you choose, our focus is always on people as individuals and how we can promote their strengths. This approach allows everyone to benefit from the training system.

Nicole Teubner developed a fascination for the sciences while she was still at school. So it was an obvious choice for this 19-year-old to train as a chemical laboratory assistant after graduating from school. And although she is only in her first year of training, Nicole is already active in the laboratory, where she mixes adhesives to the correct formulation and tests the specific properties of these mixtures. "I could take a hands-on, independent approach right from the start," explained Nicole with clear enthusiasm.

Soon-to-be Business Management Assistant, Laura Kleine, would like to complete a sandwich course at Jowat after her training.

> **»Jowat provides me with the personal and professional development opportunities I need for my future career.«**
>
> Niklas Gurcke, Trainee
> Business Management Assistant

While Nicole is still at the start of her training, things are starting to get serious for soon-to-be business management assistants Laura Kleine and Niklas Gurcke. They are now in their third year of training and will be sitting their final examination at the end of autumn 2018. If successful, they can then specialise in a particular field, such as HR management or marketing.

By offering in-house training, Jowat is ensuring school leavers are ideally prepared for their day-to-day work with the company. They are taught everything they need to know about the products, machines and programmes they will be working with from day one. At Jowat, young adults can train in eight career pathways and two sandwich courses, all of which encourage a practical approach. Whether they want to be a business management assistant, chemical technician or business IT specialist, the range of courses covers a broad spectrum of interests.

Niklas Gurcke is set to become Jowat's first certified International Trader.

The Jowat world welcomes trainees

There's no such thing as a typical career pathway at Jowat, as there are many different options. Those starting out in their careers can also get an insight into the various other divisions operating at each site, which – in some cases – helps them find their future specialisation. When Andrei Pavel first joined the company, he got to know various different aspects of the business before ultimately deciding to train as a chemical assistant in the production division. It was a choice that even he was surprised by, but he is delighted with his decision. Over the course of his training, he has learnt all about the different production

»I could enjoy hands-on experience right from the start.«

Nicole Teubner, Trainee
Chemical Laboratory Assistant

Nicole Teubner's work in the development lab involves mixing adhesives and testing their properties.

»I even surprised myself when I decided to train as a chemical assistant.«

Andrei Pavel, Trainee
Chemical Assistant

Andrei Pavel is learning how to carry out and optimise production processes at Jowat.

systems and processes, and was even trained in how to operate and maintain the machinery.

No matter what they go on to do, Jowat supports the individual strengths of its trainees through various further training courses and seminars. This is how Niklas Gurcke, for example, went on to attend a three-week intensive training course in London in July 2018 to obtain his "International Trader" certificate on its completion. Given the increase in globalisation, many more trainees are likely to follow in his footsteps.

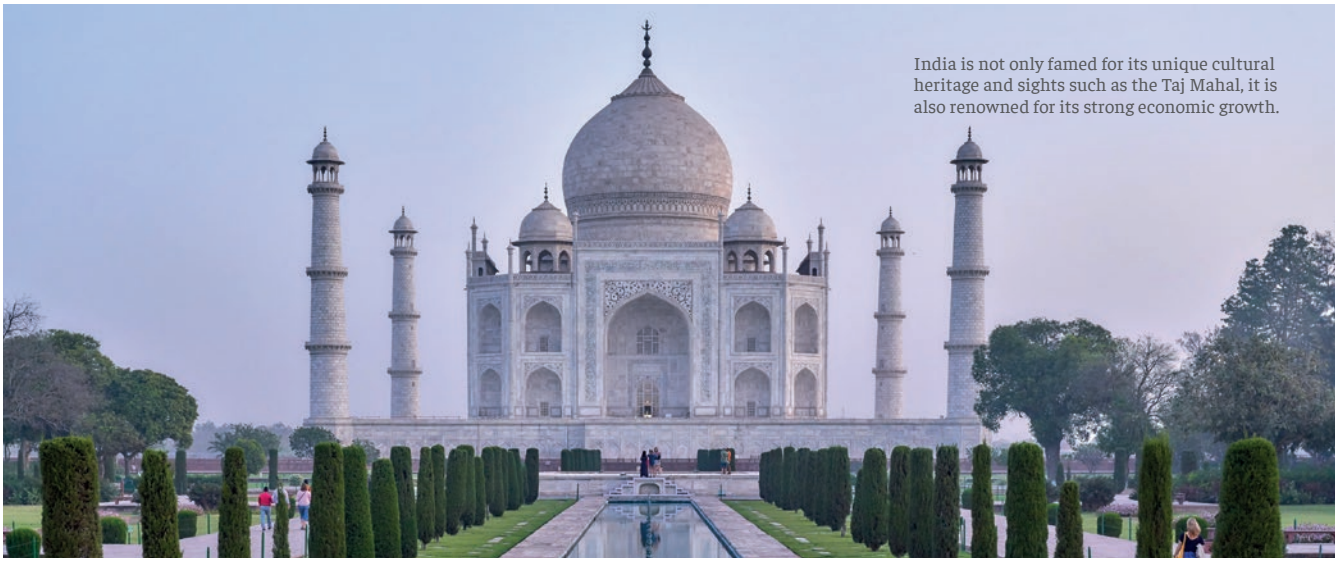
The practical nature of the training programme and the focus on corporate content really do pay off, as it provides newcomers with an opportunity to pick up exceptional specialist expertise and Jowat-specific experience over the course of their training. And, consequently, their domestic and international promotion prospects are far better as a result. Even some of the company's senior managers originally started out as trainees with Jowat, including Sebastian Schäfers who is now Managing Director of the new subsidiary in Vietnam (see pp. 10/11).

A convincing idea

Statistics show that training is really worthwhile for everyone involved, as the retention rate is very high. And there is still only a minimal amount of fluctuation further down the line, as the vast majority of former trainees are still employed with the company today. Jowat's appeal as an employer to those just starting their careers is clear from the relatively low average age of its employees.

The idea of service not only shapes day-to-day working life at Jowat, but also the training programmes. Trainees are gradually introduced to a specialist area or to customer service, which customers can benefit from in a number of ways, including a long-term, fixed contact person at Jowat, who has benefited from both thorough and relevant training. This provides a sense of security and creates trust, which is the ideal foundation for any good cooperation.

Every year, ten to fifteen young people start their professional or academic careers at Jowat, which shows how well the concept is received. The production site in Malaysia is also proof that this model is compatible on an international scale, where similar models are established locally in cooperation with the German Embassy to maintain an identical level of quality across the board.



India is not only famed for its unique cultural heritage and sights such as the Taj Mahal, it is also renowned for its strong economic growth.

A German–Indian cooperation

As one of India's leading adhesive manufacturers, Pidilite is now responsible for distributing the Jowat range across the subcontinent. The two companies share similar values and objectives, which is the perfect foundation for Jowat as it seeks to gain a foothold on the rapidly growing Indian market.

Anyone looking for adhesive in India is sure to come across the name Fevicol time and again. This traditional brand is ubiquitous in its home country – so much so, in fact, that the name has become a widely used synonym for adhesive in general thanks to its popularity within the adhesive market. Pidilite is India's largest manufacturer of adhesives and sealants and its target markets include the wood, furniture, packaging, automotive, textile and handicraft industries. In fact, Pidilite products can be found in virtually every household in India.

The Group's range has recently further expanded, with the exclusive rights to market Jowat products in India as well as in the neighbouring countries of Nepal, Sri Lanka and Bangladesh. This cooperation is part of Jowat's triad strategy, which has seen consistent growth across its sites in Europe, America and Asia over the years. But instead of competing with each other within the Indian market, Jowat and Pidilite have joined forces as equal partners. By working together, the two companies see excellent opportunities for growth within their target segments, not least because their respective strengths can be combined to maximum effect. Jowat can count on a company that is well established and respected in its home country, to market its already successful brands, while Pidilite can take advantage of Jowat's selection of adhesives as a logical extension of its own range in terms of technological progress.

»By sharing many of the same ideas, we are in an excellent position to serve future customer needs in all growth markets.«

Klaus Kullmann,
Managing Director Sales & Marketing

As Jowat Managing Director, Klaus Kullmann, puts it, "by sharing many of the same objectives and strategic alignment concepts, we are in an excellent position to serve future customer needs for quality products in all growth markets where custom-made adhesives are required." Bharat Puri, Managing Director of Pidilite Industries Limited, also sees huge advantages in the new partnership: "This cooperation is perfectly in line with our aspiration to continuously improve our market position, which is already strong, especially in the field of adhesives."

In addition to their sales partnership, both companies are also involved in a technical cooperation in the area of hot melt adhesives. The increasingly popular product range of thermoplastic hot melts is in high demand in a variety of different applications, such as in modular furniture production, and is set to be expanded further. Jowat is looking forward to this and other joint projects and has a positive outlook on its market prospects in India. So all that's left to say is अच्छे सहयोग पर! "Here's to a successful cooperation!"

PalmwoodNet

Remnants with potential

Palm oil is one of the most sought-after natural products of our time. Oil production aside, however, the industry has only seen little value in palm trees, which results in them being destroyed once they stop producing fruit. Under the leadership of Jowat, the PalmwoodNet expert network is now looking to change this approach and create greater awareness for palm trees as a potential and sustainable source of wood.

From hazelnut spread to shower gel and even washing powder, the oil extracted from the fruit of palm trees can be found in so many of the products we use on a daily basis. Countries such as Malaysia have long since discovered palm oil exports as a crucial economic sector and cultivate this coveted raw material over large areas.

But you can't make an omelette without breaking eggs, and the eggs in this case are entire plantations that are cut down and replanted when they lose their yields after a useful life of around 25 years. This results in around 80 to 100 million trees being cut down every year, as hardly any value has been realised from them to date. One of the reasons for this is the varying wood hardness and density within the trunk as well as a high silicate content, which makes it almost impossible to process with conventional tools. What's more, the high water and sugar content of the wood in the prevailing tropical climate promotes fungal infestations, which in turn necessitates a flexible transport chain with regional processing. The answers to these obstacles so far have included leaving the trunks to rot, chopping them down, or even burning them. Each of these methods releases vast quantities of greenhouse gases into the atmosphere and also pollutes the environment.

Down with disposal

The Palmwood R+D company has been exploring the potential uses of palm wood for quite some time and has come up with a support project to address the issue. This is how PalmwoodNet came into being in 2016 out of a partnership with Jowat, Leitz, Minda and Möhringer. As part of this initiative, the German companies work under the leadership of Jowat to act as network spokespeople on visits to various establishments. These include plantations, universities, government agencies, research institutions, certification bodies, machinery manufacturers and companies within the wood industry across several European countries and in Asia – particularly Malaysia and Thailand. It is working on developing efficient processes, adhesives, tools and machines that are designed to handle the structural properties of this material. For Jowat, the focus here is on the optimum bonding of the wood – for example, for veneer top layers and multilayer boards.

The project targets wood processing companies that could discover the benefits of this abundant raw material through the use appropriate machines and tools and implement this technology. After all, palm wood has a number of advantages. It is light, but also solid. Laboratory tests have also certified the wood as having excellent fire protection properties. These findings shed a different light on a material that has previously been met with scepticism – and it should soon become an attractive material and meet the growing demand for wood in Asia. As the wood that has been used to date in this region will one day be unable to satisfy the demand of the construction and furniture industry there. In the medium term, however, plans are in place to market this material and the products made from it on a global scale.

Federal Ministry
for Economic Cooperation
and Development

develoPPP.de

This develoPPP.de project was co-financed by the German Investment and Development Association using public funds from the Federal Ministry for economic cooperation and development.

Representatives of the cooperation partners from Germany and Malaysia. Dr Hartmut Henneken (front, second from right) is actively involved in the initiative on behalf of Jowat.

Interested parties were able to admire the initial results at the LIGNA trade fair in 2017: in addition to panels with veneer top layers made from other wood types, the presentation also included plywood and multilayer panels of various constructions in the full range of density classes afforded by palm tree trunks. The PalmwoodNet partners now cover the entire value chain with all of the steps required to process palm wood. "We have developed the technology within our network and now have all of the process steps under control. The systems are complete and ready to use," explains Dr Hartmut Henneken proudly as Head of Research Services at Jowat. This means that interested companies and investors can now be offered fully-developed comprehensive solutions. PalmwoodNet is keen to demonstrate just how suitable this wood is for furniture and door production, as well as for the wider construction industry.

»We have all the process steps under control.«

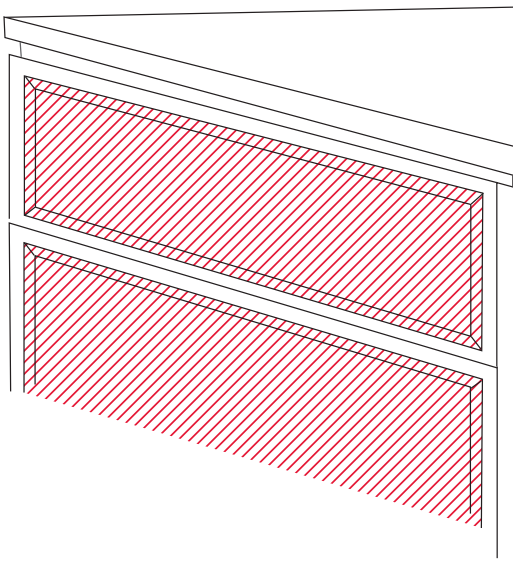
Dr Hartmut Henneken,
Head of Research Services

Huge plans for Asia

PalmwoodNet is currently in contact with several companies in South East Asia who are developing an interest in the material use of oil palm trunks. According to Prof. Dr Arno Frühwald (Palmwood R+D), industrially produced palm wood products are to be introduced to the Asian market by 2020 at the latest. He estimates that more than a quarter of the accruing palm trunks will be used as a construction material within ten years.

The expected yields from the deforestation of the disused plantations are marginal compared to the yield of the oil crop over a lifetime, which means no new plantation facilities will be planned specifically for wood production. Consistent use of the palm wood will even relieve strain on the tropical forests in the long term as far as existing regional wood sources are concerned. Together with the Roundtable on Sustainable Palm Oil and other local organisations, PalmwoodNet is planning a certification for oil palm wood sourced from responsibly cultivated plantations. After all, sustainability is the most important factor for everyone involved in jointly creating a material for the future.

Typical for country-style furniture are the delicately designed 3D fronts.



A true classic that keeps its hold

In decades past, it was ubiquitous. Now it's much rarer: country-style furniture. Its three-dimensional design is iconic of this style of kitchens and cabinet building – something that can also be seen in other styles today. Jowat is strongly committed to optimising the lamination process for these delicate surfaces – using high-quality products and complete information.

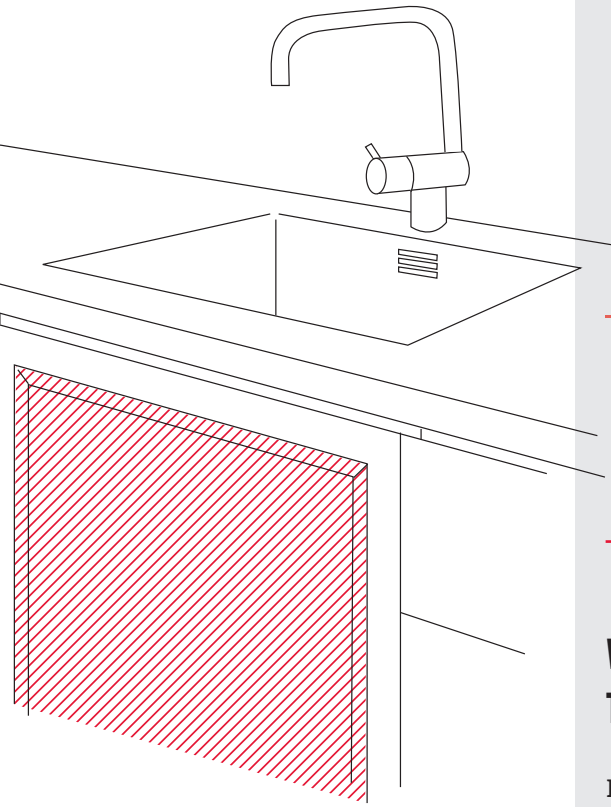
3D fronts are available in a number of different furniture styles.

Whether it's the wall unit from grandmother's living room or the kitchen in your parents' house, three-dimensional fronts were all the standard in furniture manufacture until just a few years ago. Today, this country-house style is becoming rarer, but 3D fronts are no less fascinating – it's just that they now follow new trends.

Many designs and colours are available without any difference in price and quality since most of these items of furniture are built using medium-density fibreboard (MDF). They are clad in PVC or other thermoplastic laminate layers so their design matches the customer's specifications. The quality and lamination on three-dimensional surfaces can be improved significantly by choosing the right adhesive and laminates.

But there are a huge number of stumbling blocks that must be avoided in the manufacturing process. This includes proper storing and preparation of the substrate, correct application of all the manufacturing factors such as adhesive application quantity, sufficient drying, optimum press parameters and, not least, quality control to ensure that the finished products match their performance requirements. Jowat and its partners are constantly working to simplify the 3D cladding process.

20 years ago, Jowat revolutionised 3D furniture lamination by developing one-component polyurethane dispersions. The dispersion is already mixed with the crosslinking agent and ready to use. Compared with alternative products made of two components, this allows processors to save a great deal of time and means they no longer need to take pot life into account. Even dosing and stirring mistakes when mixing are now a thing of the past. One-component adhesives are now used for most laminating purposes. The lateral edges and three-dimensionally milled areas are sprayed with the dispersions twice. The surface is coated with the first layer to even out the board's fine pores and fibres on the cut edges and milled areas because the dispersions tend to penetrate in those places. After a short drying period, another coating is added to this layer. The adhesive amount is increased in joints and ornamental three-



dimensional surfaces for an even result. Flexible vacuum and membrane presses ensure a reliable lamination of the film on the MDF boards. The adhesive is optimally reactivated during the coating process.

Jowat continues to further develop its Jowapur® dispersion adhesives, which have become a key component in furniture manufacture. A few years ago, the product range was expanded to include the latest one-component polyurethane dispersion: Jowapur® 150.93 can be applied as a particularly fine mist and can be used at lower temperatures than with comparable products, making it especially interesting for treating high-gloss panels. Numerous users have made the switch to this new formulation since its market launch.

But even the best products need to be handled responsibly. During processing for example, the ambient temperature and humidity are key factors in whether the lamination will work as promised. Because of this, the German Adhesives Association (Industrieverband Klebstoffe e.V.) has teamed up with manufacturers such as Jowat and Wemhöner (see interview) to develop the "3D Front Production Quality Guide", which provides information on how to properly handle foils, adhesives and panels. In addition, Jowat also provides individual advice on all aspects of the lamination process to its customers. ●

»3D fronts are undergoing a renaissance.«

CEO Heiner Wemhöner values the high quality of three-dimensional fronts.

WORKING TOGETHER – THE FUN WAY

Laminating 3D fronts is an essential area for Wemhöner Surface Technologies. CEO Heiner Wemhöner and Head of Marketing Detlef Hanel talked about current trends in furniture and expanding the business to Asia.

What does your company's range of services look like?

Heiner Wemhöner: We provide machinery for finishing the surfaces of wood-based materials. The core of our business is in the wood-based materials industry, in which particleboards and MDF are finished with melamine films, then using 3D technology to laminate furniture fronts and automotive parts.

Is 3D coating becoming less common?

HW: There are always new trends. People currently prefer modern fronts that look like storage doors made of particle board with edgebands. In a high-volume business, price also plays a role. But that, too, will change. The classic 3D front hasn't gone anywhere.

Detlef Hanel: The quality of 3D furniture components is everything. Just like Jowat, we are part of the 3D Initiative Committee, where the industry and associations can get information about the right way to go about 3D coating.

How important is this collaboration with Jowat to you?

HW: It is a close business relationship. We are in constant contact with our partners so we can continue to develop. This applies to new requests for machinery, the adhesive industry as well as the lamination material. We meet at trade fairs or when we're working with customers, but we are also engaged in a continuous dialogue.

DH: We particularly value our proximity. Jowat recently immediately sprung into action with a last-minute delivery of adhesives – the quantity we needed was there just the next day. They really saved the day for the test series on our membrane press for a customer. It's really fun when we can work together to find a solution so quickly.

What role does China play for Wemhöner?

HW: China is the largest furniture market in the world and will remain so for a long time to come! Prosperity is increasing among the people there, and they can now afford more quality products. If you want to work in the Chinese market, you need to be there yourself. We founded a subsidiary there in 2005. Our 3D business there is a key part of the furniture industry, and that will continue for a while yet. ●

The secret behind our formulations

All adhesives are not alike! No one knows that better than the experts working in Jowat's labs. That is why there is such a broad range of products to cover as many applications as possible. Jowat provides an exclusive look at a typical day in its in-house development lab – where potential new products are born.

At Jowat, Dr Christian Schmidt (left) and Dr Felix Starck turn customers' needs and ideas into action.

All Jowat products are born in the production sites' development labs.

Gluing is a joining method with a long tradition: 200,000 years ago, tools and weapons were glued together with birch pitch. Today even the smallest of children enjoy using craft glue and similar products on their art projects. But not many people actually know exactly how that works and what gives the adhesive its sticky properties. Those who are familiar with how gluing works, however, also understand why there is no universal solution for all applications. Every single combination of surface material, environmental conditions and intended use requires tailor-made products.

All told, more than 30 people work on these individual solutions – that often go on to become standard applications – in the Research and Development department and the adjoining labs in Detmold. New products are developed here based on customer requests, new scientific findings and innovative raw materials. Dr Christian Schmidt has been working for Jowat since 2011. He is responsible for dispersions in the paper and packaging division. Dr Felix Starck's focus is hot melt adhesives for the wood and furniture industry, in particular for edgebanding and profile wrapping applications.

From idea to adhesive

How do new Jowat products come about? Developers have a feel for trends and upcoming changes in the market. "You know what's currently being glued and what laws are in place," is how Dr Christian Schmidt sums it up. New statutory provisions concerning ingredients or specific customer needs can serve as a motivation. Projects first start out with a development request, decided upon by the Board of Directors, Application Technology, Product Management and other relevant departments. Employees in Research & Development are also free to research into their own projects. Some current research issues of particular relevance include renewable raw materials and recyclable bonding solutions.

Without technical support, 300 to 400 attempts would be needed to find the ideal mixture.

Understand

Our developers get an idea of the planned deployment of the adhesive and machinery being used.

Bond

The first time a bonding solution is used, Jowat experts are there by our customers' side with advice and assistance.

Perform

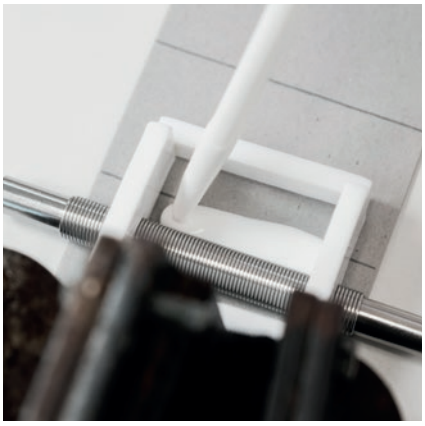
Jowat also goes above and beyond that, and advises customers on any questions they may have regarding adhesives.

Project work is focused on practical applications right from the start: developers meet with customers to produce a clear picture of how the product will later be used. "If you've seen the application, you know the subtleties of what's involved," said Dr Felix Starck. This allows developers to better take the local conditions into account.

Using the impressions they gain from site visits and from customers' specifications, the lab then gets to work. There is no such thing as a typical process. In many cases, existing products are developed further to meet new requirements. However, completely new developments with new raw materials, sometimes developed exclusively in cooperation with raw materials suppliers, are also part of the lab's day-to-day work. In all cases, the many years of experience of the colleagues in the development department is indispensable. The complex interaction between various raw materials means trial and error also plays a major role, with development employees increasing their wealth of knowledge with each attempt. Testing primarily involves seeing how raw materials components interact with one another and which macroscopic effects these interactions produce. For formulations with an average of ten ingredients, even the different dosages of any single component can significantly change the properties of the mixture. To reduce the number of practical lab tests, software has recently been put to work in the lab. Following the principle of statistical test planning (known as the design of experiments), various input sizes for each ingredient are set and other measurable criteria, such as viscosity and heat resistance, are specified. The software uses these approximations to determine the range of dosages for testing that will ultimately reach the best possible result – saving employees a great deal of time.

In spite of the many advantages this software provides, it is no substitute for human employees. Because it is based on a single algorithm, it does not test the logic of the formulations. In practice, this means that it will also suggest combinations that simply cannot be implemented. Lab employees with the right specialist skills are capable of quickly identifying these "one-way streets" and excluding them from the outset. Computers and humans complement each other this way. To reach their goal more quickly, the dispersion team uses a lab robot called the "Disperlotte". The robot carries out new formulation attempts virtually automatically. The formulations produced must then undergo further testing by lab employees. Several hundred lab attempts are sometimes needed to find adhesive formulations that meet the set requirements.

Creative product developers are then needed to separate the wheat from the chaff. The process conditions under which the customer will be working must then be recreated in



A planned industrial application creatively adjusted by hand in the lab.

a small lab. A complex field of application needs to be expressed simply – which generates an exciting experiment!

If the product then meets Jowat's quality standards, it is approved. Application specialists and developers jointly provide customers with support when they first use the new product on their systems. But the product developers' job is still not done, even after the product has successfully been launched: as they are responsible for the product throughout the entire life cycle of the adhesive. This includes working with the process engineers to optimise production and ensuring supply availability by qualifying alternative raw materials. They then continue to monitor, test and optimise with a focus on customer satisfaction.

Customer focus is a key part of the day-to-day work, even after a successful product launch. In case of any problems, product developers work with application specialists at the customer's plant to get an impression of the situation. Their expertise, based on formulation know-how and experience with applications, facilitates solutions to be worked out for the customers.

Success, even without a breakthrough

If a project does not result in a new product, the knowledge gained is still valuable. It will be used in projects later on down the line. It may be that the ideas involved can be developed later on when the state of knowledge has changed or other ingredients have come on the market. It may also be the case that a project reveals findings that may be interesting for another division or application. That is why the product developers in the different divisions keep in constant contact with one another – everyone benefits from shared expertise. Ideas and findings are also exchanged externally: other labs are located in Switzerland, the US and Malaysia. They work in similar structures, but sometimes use local raw materials. Products are modified to suit local market requirements or they are completely redeveloped for specific technologies.

More on Jowat's extensive services is available at:

www.jowat.services

Service on Tour

When Jowat products leave the company's headquarters in Detmold, they travel using the company's own fleet in almost half of all cases – a tendency that is increasing. After all, the quality, reliability and flexibility this transport provides is well received.

Jörn Peters at Jowat often receives a call in the afternoon from a customer wanting to add additional items to their order due for delivery tomorrow. No problem for this dispatcher and his team. The truck's route and load are quickly adjusted, and the extra goods requested arrive at their destination as requested the next day, along with the customer's usual order. This spontaneity is made possible by the company's own fleet of vehicles, which Jowat runs as part of its distribution logistics division. Jörn Peters, who has worked as a dispatcher at the Detmold site for more than 20 years, is proud of the eleven long-distance trucks and trailers, tailored to the company's needs, that are currently in its fleet. "Equipping our fleet means we can guarantee the delivery of materials as contractually agreed, for example by using temperature-controlled trailers for items that are sensitive to low temperatures."

Sustainably effective transport

And the fleet doesn't fall short when it comes to environmental concerns, either. All vehicles always conform to the latest model and environmental standards. They are replaced every four years at the latest. Every shipment is first reviewed to see whether we can transport it ourselves. "After all, we're flexible and our lead times are short," said Peters. This allows Jowat to accommodate its customers, for example by increasing the quantity at the last minute or agreeing different delivery dates if the capacity and route involved permit it.

Another major plus is the 15 drivers and two dispatchers who work for the company. "We feel connected to the enterprise and its products," Peters pointed out. This is evident in the careful way goods are handled, for example. The rate of damage is negligible.

Jowat driver Frank Wellig is proud of the modern vehicles and the positive feedback received from customers.

News from the world of adhesives

Whether it's the market or environmental guidelines that are changing, the world of adhesives is by no means ever attached to the status quo. Quite the opposite, in fact. Jowat is always forging new paths in product development, and regularly presenting its findings at trade fairs worldwide.

JOWAT GOES IWF

Jowat showcased itself at this year's IWF trade fair in Atlanta with a new look and patented new granulated polyurethane hot melt adhesives. This enabled the enterprise to score major points with customers and exhibitors in Atlanta.

Under the "Jowat unites" principle, the adhesive specialist presented its products at the International Woodworking Fair in the United States. As the name of the trade fair suggests, wood-based materials were at the heart of the event. The majority of exhibitors stemmed from the wood and furniture industries. Jowat already had something very special for this group of customers up its sleeve: its polyurethane granulate, which is now available on the US market. In fact, Jowat's patented new product has filled a gap in the market. The granulate meets customers' needs and is particularly user-friendly.

SECURE COATING

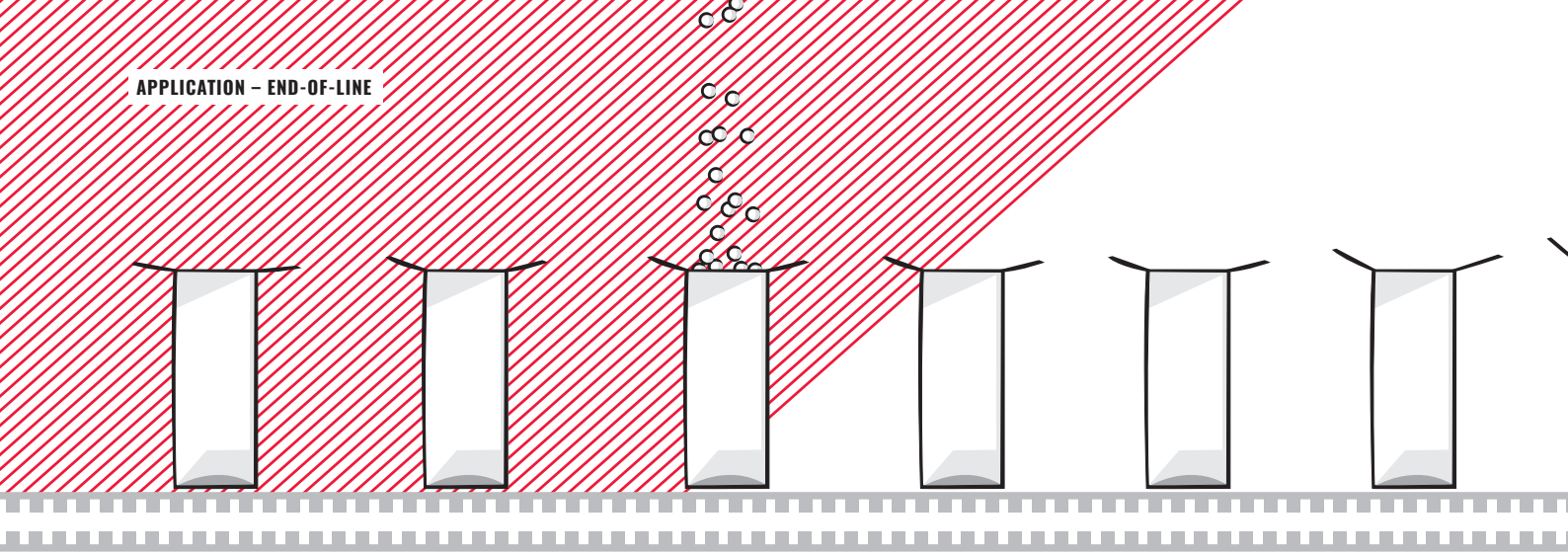
Growing competitive pressure and an increased focus on environmental regulations for food packaging are posing new challenges to the finishing industry – including printed sheet coating. Jowat is responding with a new product portfolio to meet these requirements.

Jowat's solution for the current market trends and legal requirements for food packaging includes three new products. Not only do these dispersion adhesives meet the EU directives on food, they also optimise production processes for users. Using the newly-developed products means customers no longer need to switch adhesives during the production process, which reduces the effort required for cleaning and saves time and money. Even if customers do end up needing to switch, the process remains secure in terms of contact with food – a real first.

WELL PACKED FOR TRAVEL

When furniture has to travel, robust packaging is needed so these often expensive pieces are not damaged. Jowat-Toptherm® 850.00 ensures that packaged furniture reaches its destination intact.

Furniture often has to cross entire oceans before it can take its place in people's homes. Long journeys and travel in containers bring major challenges to cardboard packaging. Whether faced with huge temperature fluctuations or bumping up against other items, the packaging adhesive simply must hold. This is where Jowat-Toptherm® 850.00 comes in, providing these boxes with the protective factor they need: this innovative PO hot melt has impressive heat resistance and a high cohesion. This allows each product to withstand even the longest journey undamaged.



From start to End-of-Line

Hardly any other industry is as varied as the food and consumer goods industry. The standard range of many brands is constantly growing, with products coming and going or getting new packaging. The adhesive has to be as flexible as the manufacturer is. Good thing Jowat makes hot melt adhesives!

The advantages of Jowat-Toptherm®

- ✓ Cleaner processing and less stringing
- ✓ High yield
- ✓ Excellent adhesion, even on critical surfaces
- ✓ Product available based on renewable raw materials
- ✓ Tested for use, including at very low (frozen food) and very high (hot filling) temperatures
- ✓ Can be processed at low temperatures

The average supermarket has around 10,000 items in its aisles. Even the standard range has a huge selection of products, not to mention seasonal items and new innovations. All of this places individual demands on packaging – and, in turn, the adhesives that bond it. With its Jowat-Toptherm® and Jowatherm® hot melts and exceptional service, Jowat is there to help processors from start to finish – from first-class technical advisory and support to expert assistance in meeting statutory requirements.

Their fast setting speed and initial strength make our adhesives well suited to work with extremely high cycle rates. The adhesive is cut off cleanly at the nozzle, preventing soiled products and equipment, and reducing downtimes due to cleaning to a minimum. These hot melts also have a high yield – as you only need a small amount for perfect adhesion. Selected Jowat products can meet all of a company's needs for standard adhesives. But the hot melt range is particularly suitable for challenging packaging.

Medications

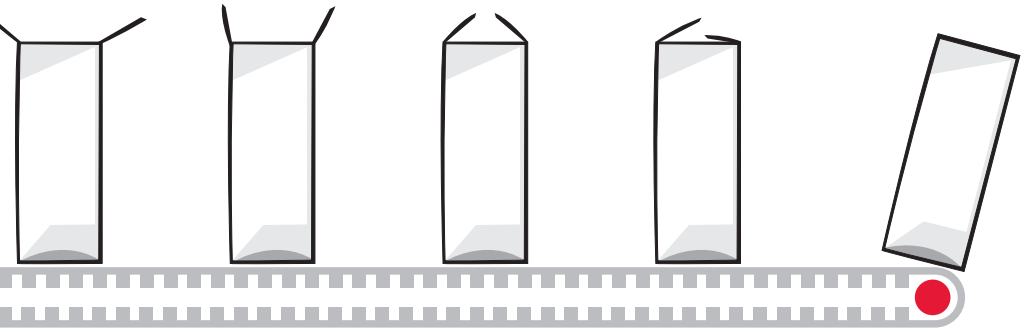
Starting in 2019, tamper-evident closures will be required for prescription medication. Increased heat resistance of the adhesive can improve this tamper-proof protection. So Jowat's specially-tailored adhesive solutions offer extremely high heat resistance, thereby contributing to successfully implementing the new regulations.

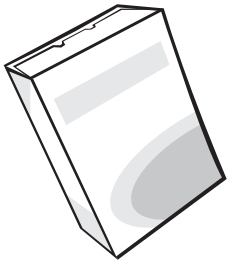
Baby food

No other food is subject to such stringent standards as food for infants and small children. Jowat has decades of experience working with international brand manufacturers and can provide the expertise needed to meet even the strictest of requirements.

Tea

Folding boxes used for packaging tea pose particular challenges for adhesives. Essential oils (such as bergamot) can damage the adhesive over longer periods of time. To meet this need, Jowat further developed its hot melts to withstand this by giving it additional resistance.





Frozen foods

Goods are placed on ice almost immediately after they are packaged: if the temperature dips below -40° Celsius, the adhesive faces a gruelling test. Jowat provides products specifically tailored to this kind of use. They have a certain degree of flexibility under cold temperatures and reliably keep the packaging sealed.

Chocolate

Hardly any other food changes consistency, smell, look and taste as quickly as chocolate does. To prevent any adverse effects on this delicious treat, the choice of adhesive used is crucial. The use of particularly clean, high-quality raw materials and extensive organoleptic testing ensures these adhesives do not impact on the purity of the chocolate's taste. They are also processed at lower temperatures than other comparable hot melts – this is more gentle on the chocolate, and means energy is saved in the adhesion process and the adhesive is safer for processors.

Beverage cartons

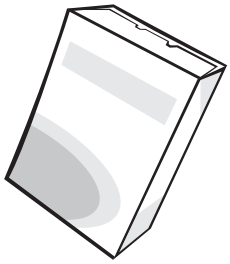
For pure enjoyment: whether the contents of the carton come out through a screw cap or a straw is a question of personal taste and consumer behaviour. In both cases, however, the adhesive has to prove reliable when faced with high strain during transport and storage, but also has to be easily removable when needed. Specially developed adhesive products such as Jowat's CAP series are specially tailored to these requirements.

Labels

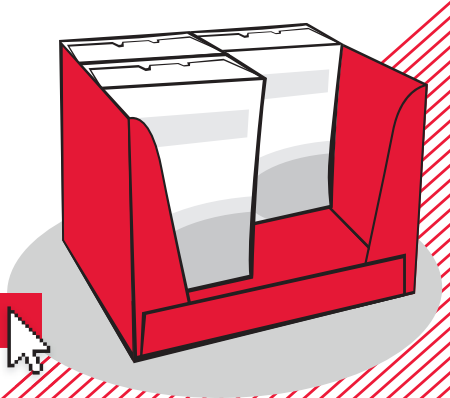
They provide information, convey brand messaging and also serve a decorative purpose. Perfect labelling contributes to the immaculate appearance of bottles, tins and other containers. The adhesive must ensure that everything sits perfectly throughout the product's service life – even if the bottle and label size may change, for example on carbonated drinks. Thin paper poses yet another challenge as none of the adhesive components should penetrate the material and damage the brand appearance.

Recycled packaging

Despite its contribution to conserving resources, packaging made from recycled paper still faces criticism due to the migration of mineral oil residues from the printing ink. A barrier coating prevents migration into food, but this has to be bonded differently compared to untreated recycled cardboard. Jowat hot melts perfectly adhere to even the most challenging barrier layer.



An individual process analysis carried out by Jowat is well worth it in any case. We work with customers to develop an adhesive solution tailored specifically to the product and its packaging – as a "service that unites". A personal Jowat contact person is happy to help with any further issues. ●



www.packaging.jowat.com

The wooden milestone

After intensive planning, the House of Technology is finally opening its doors. Not only does it constitute the future workplace of some Jowat employees, it also provides a worthy framework for the very first special event to be held here – the 2018 Jowat Symposium and the Jowat Adhesive Research Award ceremony.

THE HOUSE OF TECHNOLOGY

The best view is from Jowat's Detmold headquarters. Also built on Ernst-Hilker-Strasse, the new House of Technology has an imposing presence. When the evening sun hits the glass façade, the building becomes a work of art in its own right. The longer you look at it, the more the architectural finesse of this glued laminated timber building becomes apparent: its generous glazing, delicate diagonal and seemingly random struts. The House of Technology is, in fact, a work of art that everyone involved in the project can truly take pride in – especially long-time Jowat employee and authorised signatory Armin Erb, who worked on the project as its Project Manager.

This attractively designed innovation and application centre that focuses on all things adhesive has an exciting background story. As anyone who takes a closer look at the House of Technology and its structure will quickly realise that this is no ordinary building project. The choice to use a glued laminated timber design raises completely different questions from traditional building projects. Could a building where wood serves as the bearing material meet all the applicable requirements? Adhesion – on a large scale for this kind of woodwork – is part of Jowat's core expertise, and the House of Technology was designed to pay homage to this important industrial sector. This justifies the selection of materials

Both architecturally and visually, the new House of Technology is truly special.

The arrangement of the wooden columns is reminiscent of the adhesive filaments between two surfaces.

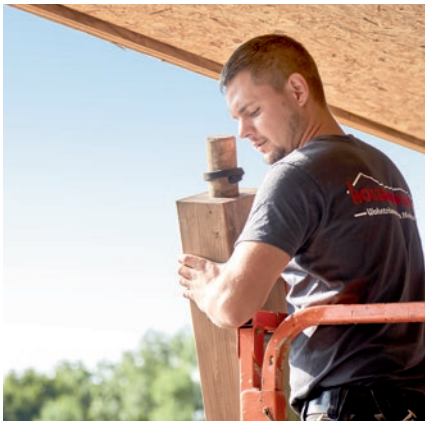
and the construction method that was carried out here. Natural materials were used in nearly every part of the construction, to give the office spaces a specially atmospheric environment. Columns in the corners and window frames made of wood are more than merely functional additions – they also serve as key decorative elements.

An information and meeting place

Even when announcing the project in autumn 2014, it became apparent that construction of the House of Technology would be a mammoth undertaking. It would serve as the future workplace for dozens of Jowat colleagues from the Technical Support and Analytics Service departments and would also be a meeting place for customers and business partners to discuss all things adhesive – a kind of showroom for the Jowat company. But the building is not short on research and production either. Several laboratories, exhibition spaces and training rooms are to be housed in the House of Technology. Those interested in the theory and practice behind working with adhesives, applicators and machinery can find out more about various applications there, including edgebanding, wrapping, and flat or 3D laminating. All of these processes are relevant to the manufacture of furniture parts and automotive interiors, for example.

The House of Technology – facts and figures

- 1 year of construction time was needed
- 16,000 m² site
- 2,500 m² building area; the structure measures 90 by 34 m
- 800 m³ of wood was used, equivalent to the load of about 40 flat bed trailers
- 750 t of CO_2 are stored in the wood
- 45 employees will work in the House of Technology
- 200 parking spaces are available for visitors and staff



The decorative wooden struts were installed in the summer of 2018.

Armin Erb (left) from Jowat and construction manager Thomas Auer work together on the project.

The Institute for Urban Woodwork ("Institut für urbanen Holzbau") was tasked with the planning, and the Ed. Züblin AG wood engineering construction firm was hired to turn the drafts into reality, supervised by construction manager Thomas Auer. In addition, Jowat sought specialist support for the building's interior design from the Detmold-based OWL University of Applied Sciences School of Architecture and Interior Design. Four Masters students studying interior design submitted several designs for the interior together with their professor, Ulrich Nether, and Research Associate Ricarda Jacobi – and one of those designs was finally selected for the interior of the building.

Jowat wanted the building to reflect its focus on customers, and this was a cornerstone of the students' brief. Consequently any visitors who enter are led into the space along the reception counter, bringing them right to the heart of things as soon as they arrive. A sculptural wooden staircase leads from the reception area to the upper floor. A circular gallery provides an exceptional view of each of the individual areas on the ground floor. Another component of the design is the "KlebBar", a play on the German words for "adhesive" and "bar": a café and bistro with an outdoor terrace area where guests and employees can enjoy breaks and meetings, also serving as a catering area for events.

A research and meeting point

In September 2017, after years of preparation, the long-awaited laying of the foundation stone was held. Board of Directors members Klaus Kullmann, Ralf Nitschke and Dr Christian Terfloth placed a time capsule on the site – officially launching the construction phase with this symbolic act. The shell structure then grew by half a metre on average every day. When finished, the House of Technology will be 2/3 two-tiered, occupying an area of 2,500 square metres. Numerous exhibits will be housed in 250 square metres at the front of the building to show visitors what kind of work Jowat does on a daily basis and familiarise them with the world of adhesives. Two machine halls, measuring 200 and 500 square metres, will be used in future for testing, training and demonstrations. Among other things, this will house equipment for coating bottles, edgebanding and profile wrapping, thermoforming automotive interiors, coating textile materials as well as packaging

The House of Technology is located directly across from the company's headquarters in Detmold.

Completion in time for the company's birthday in 2019.

and bookbinding – covering Jowat's entire range of services. According to the Züblin company, the 15-metre wide timber/concrete composite slabs are the only ones of their kind in Germany.

The lecture hall will be the perfect venue when exclusive events like the Jowat Symposium and the Jowat Adhesive Research Award ceremony are held. The hall has space for an audience of 200. Comfortable seating in Jowat's classic red gives the hall an agreeable character.

The future is made of wood

The House of Technology will punctually open its doors for the Jowat Symposium in October 2018. Attendees to the event will be among the first to be welcomed into the new meeting centre. The symposium and the Jowat Adhesive Research Award ceremony in November are just two of many special events planned to be held in the new building. The move and all construction work are scheduled to be finished by the company's 100th anniversary at the latest – when the building will officially be opened with a festive ceremony.

During the symposium, Armin Erb, who has been working for Jowat for almost 40 years, will share his experience with the invited guests. He will offer them insights into the historic changes in adhesive technology. With its glued laminated timber construction, the House of Technology itself will no doubt feature in his presentation.

Armin Erb
Project Manager, Authorised Signatory

Armin Erb has been working for Jowat for nearly 40 years and even serves as an authorised signatory. Heading the project is a particularly exciting project for him as he prepares to retire from a fulfilling career.

Development of the use of wood in automotive construction is on the rise, but still in its infancy.

Lighter is more

Lightweight construction is increasingly deployed in many technology sectors. In the automotive industry in particular, weight reduction reduces fuel consumption and minimises pollutant emissions. As a lightweight material, wood is increasingly gaining focus, and Jowat is involved in several projects for researching the suitability of wood for use in vehicles.

When you think of materials used in automotive construction, you don't generally think of wood. Yes, it is often used as a decorative element in vehicle interiors, but not for structural components. The key question here is, "Can a component made of wood deliver the same performance as a conventionally manufactured element?"

As a lightweight construction material, wood's low density and attractive weight-to-stability ratio make it well suited to this purpose. The anisotropy of wood can be counteracted using multi-layer construction methods. If greater stability is needed, thin, reinforcing sheets or wovens can be incorporated as well. Adhesives represent the most rational binding method for both component manufacture as well as joining parts to other vehicle components. Yet the comparatively low density of wood is not its only advantage: it is a natural, renewable material with good availability, and the processing technology needed is already well-established in the timber and furniture industry. Compared to steel and typical lightweight construction alternatives, manufacturing and processing wood is significantly more efficient in terms of cost and energy. Wood also stores CO_2, which gives these components a net positive CO_2 balance. So there are many good reasons to focus more on wood.

There are also challenges involved, of course, such as the shelf-life of wood and the currently limited space available for the material in the vehicle. Scientists and researchers are now developing new models that can simulate wood's crash behaviour. The idea of replacing more and more components with wood in future will soon become reality.

Who's hot, who's not?

You never get a second chance to make a first impression. Just about everyone knows that. If the look isn't right, the chances of being torn open are poor – at least where products and their packaging are concerned. The right adhesives ensure an attractive appearance, making them the perfect partner for successfully marketing products.

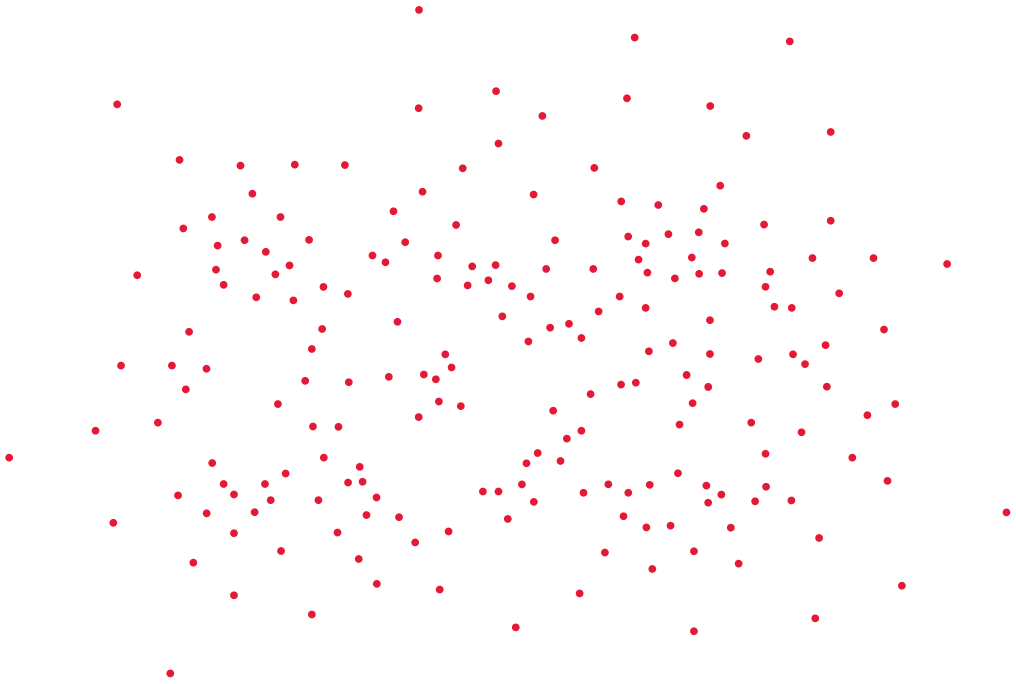
They've got all dressed up and are making the consumers in the supermarket truly spoilt for choice. Whether it's cereal, frozen pizza or tempting chocolate – products with the most striking appearance attract the most customers. Which ones will consumers end up taking home? The flirting begins, but no one is interested in "what's on the inside" if the packaging doesn't show what the product is really all about. "Fresh, crunchy veggies," whispered on a wrinkly, sunken packet? An unflattering show. It's almost as if the body language of the packaging reveals that the promises the product makes could only be lip service. Who is happy to be fooled by that? At the end of the day, the product gets the brush-off and stays on the shelf.

So before their products' first flirtatious moment, manufacturers should bear the following in mind: a product will only ever be bought and opened if its packaging really attracts its customers. To do this it's best for companies to choose the right adhesives.They are the be all and end all to ensure that folding boxes always keep a good figure. And, because every figure is different, packaging needs different adhesives for a "taut skin" and perfect posture.

Some like it hot – in low-cut shelf-ready displays for example. For the perfect push-up effect, Jowat-Toptherm® PO hot melts are exactly the right choice. Other paper dressings pose different challenges to adhesives. The Jowat-Toptherm® product series offers the perfect solution for any occasion so everything can stay where it belongs.

Whichever packaging is in need of a lift, experts such as Jowat product developer Dr Carola Haider use their love of detail to ensure the final packaging stays in place and confidently and convincingly displays its product. Then the flirting with the product and the packaging can begin. ●

Jowat product development has done all the work. It has become prettier than the others. And one thing is clear: no special offers are required to rescue this packaging. As who could resist such a thing of beauty?



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Jowat Adhesives

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