Progress

The Jowat Magazine 2|2016

Bonding in the process

Editorial

Jürgen Schrödel
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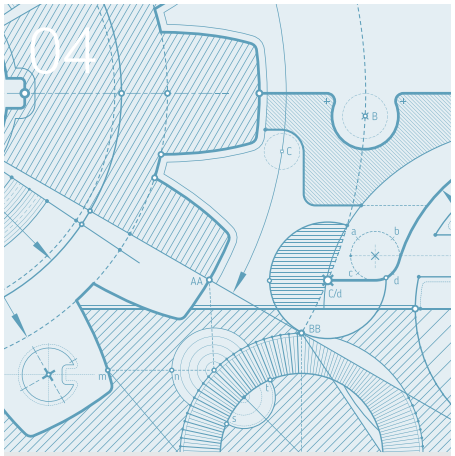
Dear Reader,
Welcome to the latest edition of our customer magazine “Progress”.

Bonding is a demanding process, which extends well beyond the actual bonding procedure. It begins in the planning phase and is still far from completed when the product leaves the manufacturing line. The new bonding standard DIN 2304 follows this holistic approach and provides valuable information for processors on how to properly organise bonding applications in each individual process stage. Find out how the new standard will affect the world of bonding, especially with regard to quality assurance, in an interview with Prof. Dr Groß from the Fraunhofer IFAM (Institute for Manufacturing Technology and Advanced Materials) in the Focus section.

For Jowat, quality assurance also plays a major role in all process stages – before, during and after bonding. Optimal process management already starts with the selection of a suitable adhesive. The manufacture of vinyl flooring is a per-



Organisation of bonding processes
DIN 2304 provides valuable information for processors

Focus

Perfect adhesion in floorings
Selecting the suitable adhesive based on a detailed analysis of the components

Wood | Furniture | Construction Industry

Flexible “all-rounder”
A powerful polyurethane hot melt adhesive for car interiors

Automotive | Textile | Electrical Industry

fect example of the complex requirements during that early and crucial stage of the process. Optimisation is also the focus of our journey into the passenger cells of cars, where an innovative “all-rounder” sets new standards for a simplified and, therefore, significantly more efficient bonding process. After bonding, the challenges continue; especially in the case of deep-freeze packaging. While being exposed to considerable temperature fluctuations, the packaging has to remain fully functional and visually appealing.

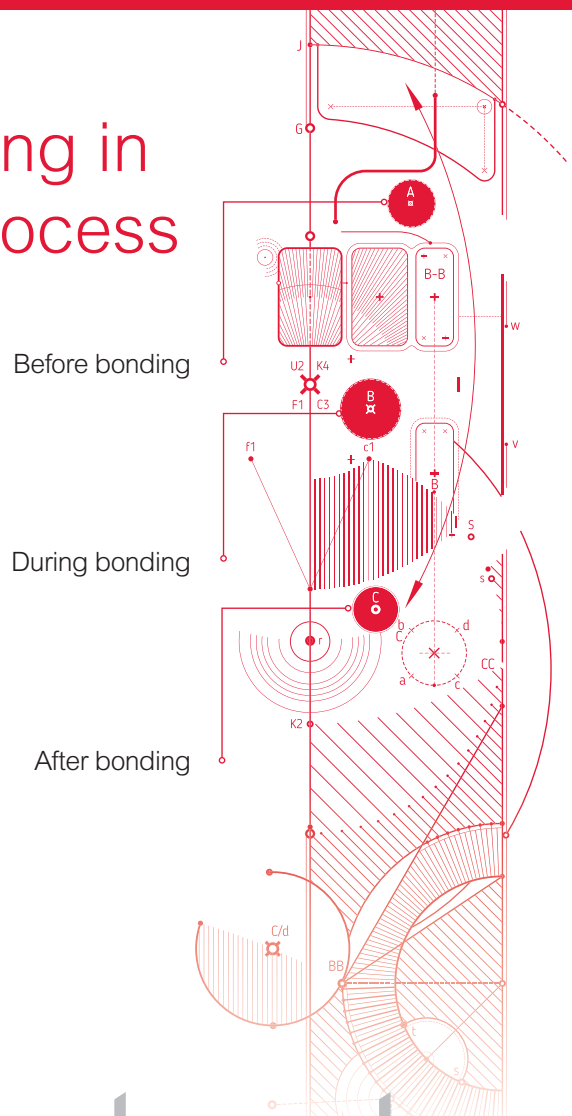
Our objective is to sustainably eliminate all potential application errors by facilitating a continuous improvement of the entire bonding process. This is where the benefits of the globally active Claim Management of the Jowat Application Technology come into play – collaborating with partners and customers.

By the way: “Perfect processes” is also the theme of this year’s Jowat symposium for the furniture industry, with practical workshops and presentations focusing on the complete bonding process.

Enjoy reading the next pages with captivating information.

Jürgen Schrödel
Sales Director Germany, Jowat SE

Bonding in the process



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Quality requirements for adhesive bonding processes

DIN 2304 is the first bonding technology standard for processors. Find out what this means in practical terms in an interview with Professor Dr Andreas Groß.

Editor: Prof. Dr Groß, in a nutshell: What is DIN 2304?

Prof. Dr Groß: DIN 2304 is a German standard determining the “state of the art” for the organisation of a proper realisation of bonding processes during application. The key part in that sentence is “state of the art”, which is a legally binding term in the product safety law! In the event of a bonding failure, legal disputes will focus exactly on this “state of the art”. Which is now going to be DIN 2304. To put it in other words, there will be no way around it!

Editor: Was the new DIN 2304 really necessary?

Prof. Dr Groß: I know…(laughs)… Now we have a standard even for bonding! Lars Höper from Daimler Bremen pointed it out very well: “Certain things in life are self-explanatory, they don’t need to be learned. This includes breathing, hearing and, of course, bonding. Have you ever heard someone say ‘No, I can’t bond this. I have to learn it first’? Of course not!” Training might make sense for welding, but bonding? Yet, compared to welding, bonding is an even more complex process. It is precisely

against this background that DIN 2304 provides information for processors on how a proper realisation of the bonding process has to be organised. In each individual process stage, from the first concept to the final product.

At the same time, it also provides valuable information for adhesive manufacturers. We can now safely assume that the adhesive quality is high enough to ensure a zero fault production if the adhesive is used properly. Likewise, if bonding failures occur, we can safely assume that more than 90 % of those result from errors committed during application, not from the adhesive quality. Therefore, the problem is not the adhesive.

Editor: What results and benefits are to be expected from the introduction of this standard?

Prof. Dr Groß: DIN 2304 provides the organisational framework for a proper realisation of bonding processes during application. This means, processors who fully implement the DIN 2304 standard do not make any mistakes. It might sound like phrase-mongering, but preventing errors gives a sense of achievement. A sense of achievement gives security. Security gives confidence. And confidence is the basis of the courage to be innovative. This applies to any situation – private and professional. Confidence is the key! In the context of technological developments, confidence was the key for the establishment of riveting in the 19th century. It was the same with welding in the 20th century, and now, in the 21st century, it also applies to bonding. What we need is confidence in the bonding technology.

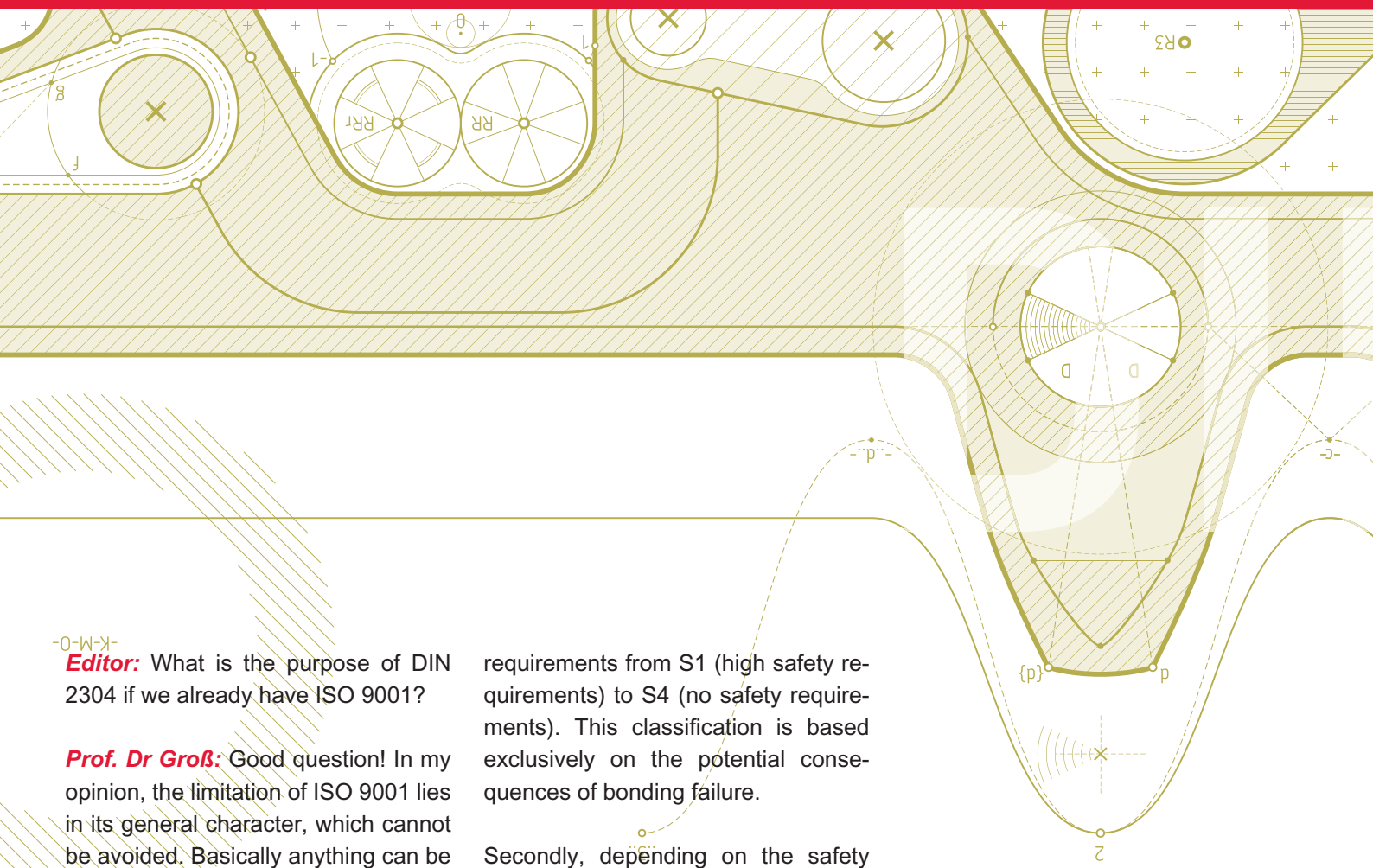
Editor: Can a single standard equally apply to two fundamentally different sectors, such as craft and industrial manufacturing?

Prof. Dr Groß: Not only can it, it has to! Bonding works through adhesion, i.e. the interaction between the adhesive molecules and the substrate surface in the millionths of a millimetre range. Adhesion is not divided into “industrial adhesion” and “craft adhesion”.

There is also no German, French, Italian or Chinese adhesion. Adhesion is always the same – and all activity in the field of bonding is based on it. Either it works or it does not. If it does not work, we do not even need to start thinking about anything else related to the bonding technology – regardless whether it is in craft or industrial manufacturing. If someone cannot understand or accept this – he or she should keep away from adhesives. There are also nice screws available… (laughs).

Editor: Is DIN 2304 the first standard with regard to quality assurance in bonding processes?

Prof. Dr Groß: Not at all. I think most adhesive processing enterprises are already certified according to ISO 9001. Which is a good thing. The central idea of ISO 9001 is as simple and logical as it is brilliant. If it is not possible to absolutely exclude any errors in the manufacturing process without damaging the product, if it cannot be confirmed with absolute certainty that the manufacturing process was successful, then the error has to be prevented. All potential error causes have to be eliminated in the first place. THAT is the central idea of ISO 9001. Not printing a lot of pages, putting a signature and a seal in the right place and filing them in a cabinet only for the sake of hanging the certificate on a wall.



Editor: What is the purpose of DIN 2304 if we already have ISO 9001?

Prof. Dr Groß: Good question! In my opinion, the limitation of ISO 9001 lies in its general character, which cannot be avoided. Basically anything can be certified according to ISO 9001, from A to Z, from adhesives to zippers. Consequently, only the quality management system is certified, not the content of the quality management.

One might exaggerate and say that the QMS documents only need to exist, with the current date, signed and sorted in the proper order in a cabinet. Therefore, ISO 9001 with its brilliant concept needs further specification for the individual technologies. And this is exactly what DIN 2304 does. It builds on an existing QMS, for instance according to ISO 9001 and adapts it to adhesive bonding applications. This is how it supports the processor.

Editor: Could you give us a few examples of quality assurance in the individual stages of the bonding process chain?

Prof. Dr Groß: DIN 2304 contains three core elements. Firstly, DIN 2304 states that the processor is responsible for classifying each (!) bonding application according to the safety requirements from S1 (high safety requirements) to S4 (no safety requirements). This classification is based exclusively on the potential consequences of bonding failure.

Secondly, depending on the safety category, so-called "personnel in charge of bonding" has to be involved in all decisions related to bonding. While "personnel in charge of welding" is well-known in welding, it is certainly new in bonding applications.

And thirdly, it has to be verified that during the lifecycle of a bonded joint the stress to which the loaded joint is exposed is always lower than the stress limit. This applies to other joining technologies as well. Quality assurance is important before bonding, during bonding and after bonding.

Editor: What are the practical benefits for adhesive processors if they decide to follow or to become certified according to the new standard?

Prof. Dr Groß: As already mentioned, processors receive valuable information on how to organise bonding processes in their enterprise according to the "state of the art". Implementing the system will be laborious at the beginning. In the mid-term, however, it will lead to less bonding failures and reduce costs. Within the enterprise, the implementation of DIN 2304 will improve the image of bonding. Confidence in this technology will increase. As mentioned previously, that will lay the groundwork for innovation.

In addition, processors will feel they are taken seriously. Another benefit is the legally binding nature of the term "state of the art" in the product safety law. In the event of a bonding failure, an enterprise that has implemented DIN 2304 and is certified accordingly will be in a much better position than an uncertified company, which has to prove first that the bonding process was carried out properly even without a DIN 2304 certification.

Editor: Is there a similar standard which has proven successful?

Prof. Dr Groß: Yes, absolutely! In fact, DIN 2304 is really nothing new. A similar standard for railway vehicle manufacturing, DIN 6701, has already been in place for more than a decade.

The standard was requested by the German Federal Railway Authority ("Eisenbahn-Bundesamt") and declared state of the art for bonding applications in railway vehicles in 2006.

After 10 years, the following can be said: The bonding technology has a completely new status in the manufacture of railway vehicles; the personnel responsible for bonding – similar to the personnel in welding – has become more professional; the number of new, significant bonding applications is increasing continuously; the image of bonding has improved considerably; and the German "DIN" norm is now used internationally. Confidence has been built. It is not without reason that DIN 6701 is currently being converted into a European Norm (EN).

Editor: Numerous standards for bonding processes and applications already specify that users have to be trained accordingly, or that checks need to be implemented in the process. Compared to the existing standards, DIN 2304 is rather overreaching, applying to all applications. To what extent does the processor need to comply with DIN 2304 if he or she already fulfil other, special standards?

Prof. Dr Groß: This has to be determined on a case-to-case basis. DIN 2304 specifies the state of the art for the organisation of a proper realisation of bonding processes. To be clear: It does not regulate any technological specificities, how, or according to which standard, strengths have to be tested.

DIN 2304 clearly states that it does not replace any existing regulations in specific sectors that have been tried and proven. They are still valid. For instance, DIN 6701 is still going to apply to bonding applications in the manufacture of railway vehicles, and it will not be replaced by DIN 2304.

The key criteria here is whether these existing regulations which have been tried and proven correspond to the state of the art. The product safety law only refers to the state of the art, not to any specific standard. ■

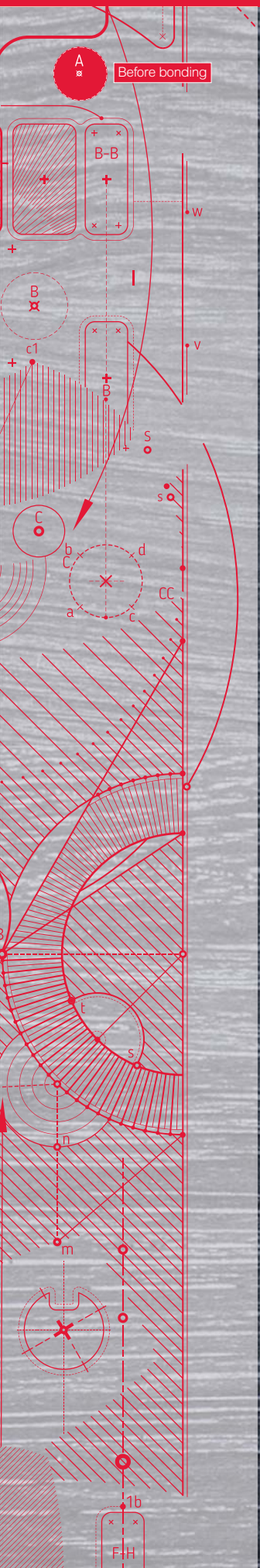
Interview partner

Prof. Dr Andreas Groß

For over 30 years Prof. Dr Andreas Groß has worked at the Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM and is the head of the technology transfer and professional training division.

In addition, he is also a lecturer for professional training, and responsible for the strategic orientation of the department, the representation of the Fraunhofer IFAM and the department at home and abroad, as well as the acquisition of participants and projects for all training levels and divisions.

Beyond that, Andreas Groß holds different positions in various committees and workgroups.



Perfect adhesion in floorings

How a detailed analysis of the bonding components ensures the selection of the most suitable adhesive

The optimal process parameters play a major role when choosing a suitable adhesive and are crucial for the quality of the end product. Therefore, they already have to be defined in the planning phase.

The manufacture of vinyl floorings is a good example of a bonding process with many different components that have to be taken into account. In addition to the numerous process parameters and the requirements for the end product, the different substrates and covering materials used as well as their specific characteristics and ingredients also need to be considered when choosing a suitable adhesive.

1st parameter: The bonding partners

For years, vinyl floorings have been an established product for private homes and commercial buildings. Due to numerous benefits, such as an attractive price to performance ratio, easy cleaning, and a huge variety of designs, they are in high demand. Vinyl floorings are made of a PVC floor covering which is bonded onto a substrate (e.g. MDF, plastic, cork, or a laminate). PVC floor coverings generally contain high amounts of plasticisers (usually

a mixture of different products) which are added during manufacturing to improve the processing characteristics and to increase the flexibility of the PVC. Without plasticisers, the material would be brittle and quickly break during its daily use. The challenge is to permanently bond the plasticised floor covering to the substrate. Polymer plasticisers are less critical in bonding applications because they are generally immobile and remain in the PVC. Monomer plasticisers, such as benzoates and phthalates, on the other hand, have a higher mobility and migrate into the adhesive, which makes them more difficult to bond.

Plasticisers migrating into the adhesive can seriously damage the glueline and even the bond. This can lead to adhesion failure in the interface between the PVC floor covering and the adhesive, or between the adhesive and the substrate. The latter happens when the plasticiser from the vinyl diffuses through the glueline and reaches the interface between the adhesive and the substrate. Therefore, the requirement for the adhesive is clear: It has to absorb the plasticiser without suffering any damage. This is ensured by selecting suitable raw materials and an appropriate formulation of the adhesive.

2nd parameter: The area of application

After the components in the individual bonding partners have been analysed, the next step is to determine in what environments the finished flooring will be used. Whether environments with high humidity (e.g. bathrooms), outdoor areas (e.g. patios or balconies), or different climate zones – each parameter has a special set of requirements for the flooring and, therefore, for the adhesive. Depending on the area of application, the adhesive has to provide, for instance, special hydrolysis or heat resistance to ensure a durable end product.

3rd parameter: The manufacturing process

The engineering technology used in manufacturing and the application method also have a great impact on which adhesive is suitable and on the

To define the individual requirements for the adhesive, it is also essential to know in what environment the finished flooring will be used.

quality of the end product. Low-cost systems, for instance, do not always provide the expected result. And the decision whether to use a roller or a nozzle application system also inevitably has consequences for the adhesive selection.

The adhesive parameters, such as open time, initial strength, or viscosity, have to be adapted to the conditions of the manufacturing process. Vinyl floorings are bonded with either dispersion or hot melt adhesives, depending on the chosen or available engineering technology, application and the requirements for the end product. The decision, which of the two adhesive systems will be used is made based on a very detailed set of criteria.

Choosing the adhesive

The adhesives that have been found to be generally suitable based on the collected information are tested in trials with the original material and its ingredients, after which the results are compared to each other. Such trials include, for instance, adhesion tests and an analysis of the interactions between the plasticisers and the adhesives. Several samples of the flooring are assembled and subjected to an accelerated aging test to simulate the potential lifespan of the product.

The adhesives with the best results are then singled out for the following development stages. If an adhesive has shown sufficient adhesion to the bonding partners and resistance to the contained plasticisers in lab tests under ideal conditions, the results have to be confirmed under actual manufacturing and application conditions to ensure that the adhesive really is suitable. Therefore, adhesive processors have to carry out their own tests to verify the performance of the adhesive. After the suitability of the adhesive has been proven under actual manufacturing conditions, the manufacturer can put the end product on the market.

As a supplier of adhesives, Jowat provides support and consultancy not only during the adhesive selection process and potential trials, but also helps processors identify the root cause in the event of deviating or unsatisfactory test results. The close cooperation with processors can also lead to new adhesive developments. However, finding the most suitable adhesive depends on many factors: A consistently high quality and durability of the end product cannot be ensured if the parameters are unclear; for instance if the substrates are undefined and the requirements are imprecise. In this case, the processor should be informed about the specific risks of the existing system and the possible changes to the joining parameters. Quite frequently, the best solution is found in close cooperation.

Bonding is a complex process and depends on many parameters. Only enterprises which choose the suitable adhesive in advance and plan the process properly can ensure a consistent superior quality of their products. Manufacturers can rely on an extensive support and consultancy service from Jowat in all processing stages – from preliminary planning to serial production.

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One for e

A flexible all-rounder for car interiors and the history of its development

product verything

Requirements for laminating adhesives for car interiors are very diverse and often almost contradictory. Talking to the editor of the Progress magazine, Dr Michael Hagenstein and Andreas Ditze describe how the Product Development and Application Technology departments of Jowat cooperated to develop a new polyurethane hot melt – a powerful "ALL-ROUNDER".

Editor: Bonding is a key process in the automotive industry, especially for car interiors. Could you please give us an insight in this process?

Ditze: First of all, there is not only ONE laminating process for car interiors. Generally, we distinguish between two different laminating methods: vacuum deep-drawing and press laminating. Vacuum-tight materials, such as foamed PVC foils, TPO foils, etc. are applied through vacuum deep-drawing. Porous materials, on the other hand, like for instance textiles, are laminated by pressing. These two methods are characterised by a significant difference in the joining temperature and, therefore, in the duration of the procedure. In addition, the adhesive is also applied with different systems.

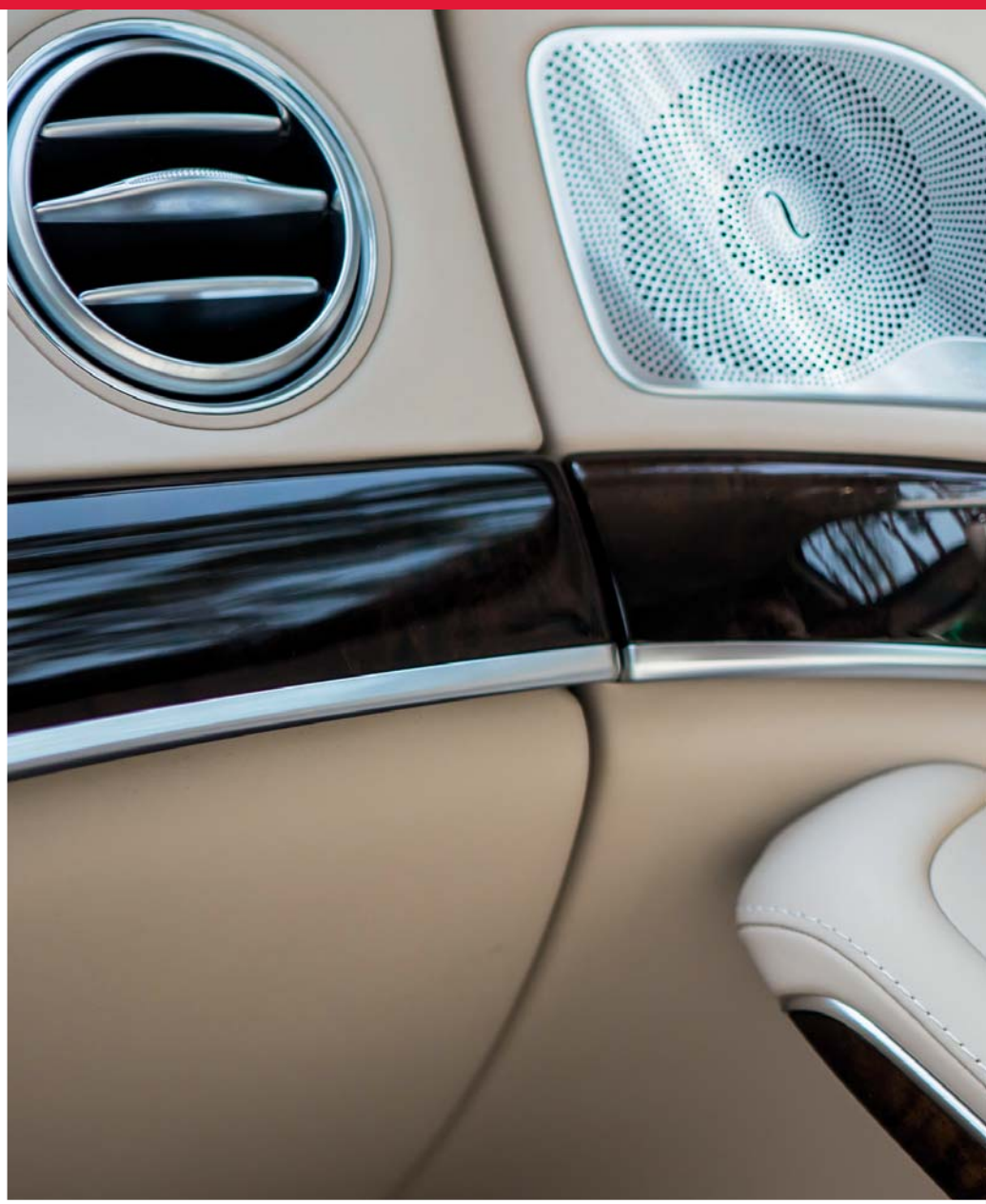
Editor: This sounds as if the requirements for the adhesive are also at least as multifaceted.

Hagenstein: Yes. When hot melts are processed, the application method alone already places different requirements on the adhesive. We distinguish between three different application methods: by roller, by nozzle, and by spraying. Especially spraying is a very demanding application method with a very limited viscosity range. Therefore, adhesives with a high viscosity, which provide an acceptable initial strength, would have to be applied at very high temperatures. High processing temperatures, however, would damage the adhesive in the long term, which would lead to unreliable processes. Even the smallest changes in the procedure, for instance the distance between the nozzle and the substrate, and any change or variation in the properties of the product have an impact on the application pattern.

Ditze: Manufacturers in the automotive industry expect an adhesive which facilitates the production of high quantities with a consistent quality and a reject rate as low as possible. Therefore, even the smallest variations must be avoided. In addition, manufacturing in the automotive industry is characterised by short process cycles. This requires short hold times, which are ensured through a fast build-up of high cohesion during the laminating process. On the other hand, a low-viscosity adhesive would be beneficial for a reliable spraying process, but is in contradiction to the necessary build-up of cohesion.

Editor: Could you please elaborate?

Hagenstein: The products we had in our portfolio at that time were adapted to specific applications. For instance: In vacuum deep-drawing, the maximum hold time is 20 seconds. Within that period, the adhesive has to build up sufficient cohesion to resist the high restoring forces of the decor foils. So far, the necessary cohesion could only be ensured with high-viscosity adhesives. The processing temperature for spraying applications was about 160 °C, which is too high for a reliable process. Depending on the duration of exposure, processing temperatures above 140 °C may lead to considerable stability problems in PUR hot melts (e.g. discolouring, thickening, etc.). From our point of view, a safe process for serial production can only be ensured at a temperature up to approx. 140 °C.



The new adhesive is designed for a very wide range of application technologies and laminating processes of car interiors.

Ditze: The development of a new PUR hot melt which was launched on the market at the start of the year was triggered by the desire to provide a product that is suitable for a wide range of applications and also meets the different requirements. The new adhesive has proven to be a genuine “ALL-ROUNDER” for numerous three-dimensional laminating applications in the automotive industry, which previously could not be served with a PUR hot melt.

Editor: Why wasn't this product developed earlier?

Hagenstein: For the development of such a product, we needed precisely defined requirements from the customer regarding the characteristics of

the adhesive and suitable tests for verification. The related customer and market information had to be collected, analysed and then formulated as product requirement specifications. In some cases, suitable test methods had to be developed first. It became clear that the adhesive should be processable with all application methods, including spraying. Therefore, we faced contradictory requirements: cohesion built-up, initial strength and creep resistance versus a low processing viscosity for reliable processes. In addition, the steadily increasing demands of the VDA 278 standard with regard to emissions had to be considered in the developmental phase of the adhesive.

Ditze: An additional motivation for the development was the clear tendency in the industry to replace the previously established water-based adhesives with PUR hot melts. In contrast to dispersions, PUR hot melts do not require an additional drying process, which leads to more available space and energy savings.

When it comes to high-volume manufacturing in the automotive industry, dispersion adhesives are increasingly replaced with PUR hot melts due to the solids content of 100 % and higher efficiency.

Editor: What are the actual benefits of the new adhesive for the bonding process?

Ditze: The special feature of the adhesive is its suitability for a very wide range of application technologies and laminating processes in the automotive industry for interior trim. For the first time we have a PUR hot melt that meets the processing cycles of vacuum deep-drawing as well as of press laminating. The hot melt adhesive is characterised by a very fast build-up of cohesion with virtually no creep tendency, which has facilitated reduced hold times. In addition, the new product impresses with a smooth and even application pattern, and a very stable spraying process. Therefore, we now have an adhesive with unique characteristics for 3D laminating applications of car interiors that meets all the mentioned requirements.

Editor: All in all, it sounds like a very complex development.

Hagenstein: Definitely. To develop a product which is suitable for the different joining and application methods has been quite a challenge. As mentioned before, the requirements are almost contradictory. However, this contradiction was mastered by the R&D Department with a special raw material combination. We have developed a solution which takes the compromise between these contradictory requirements to a new level.

Editor: A real success story. Thank you for the interview!

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A
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Deep-frozen and attractive – even a long time after bonding

Deep-freeze packaging on its way to the consumer

From filling and transport to the point of sale – deep-freeze packaging goes a long distance. When it has reached the consumer, it should not only still be frozen, but also visually appealing. To ensure a durable packaging, the bond has to meet special requirements, such as permanent flexibility at low temperatures and moisture resistance.

The journey to the consumer is a tough challenge for the packaging of deep-frozen goods. To ensure that the packaging survives shipping and reaches the consumer undamaged, the bond has to meet special requirements: excellent adhesion, high resistance to moisture and mechanical stress, durability, and, last but not least, flexibility at low temperatures. From shock freezing at -40 °C during filling, to transport between -28 °C and -30 °C, to storing at approx. -20 °C – deep-freeze packaging is exposed to a wide range of temperatures and the adhesive has to ensure a safe bond under all conditions. Additionally, the joint also has to be resistant to the mechanical stress from transport. But the packaging has not ended its mission once it reaches the consumer. People often do not consume all the food at once and dispose of the packaging. In many cases, the food – for instance, seasonings – is taken out of the freezer several times and put back again. Therefore, the bond has to be resistant to the moisture from defrosting, as well as to survive the refreezing of the wet and already open folding box.

To facilitate a packaging which will last long after the bonding process, the framework conditions of the filling process have to be considered when a

When frozen goods reach the consumer, the packaging should still be fully functional and visually appealing.

suitable adhesive is chosen. However, those conditions vary widely, for instance the freezing procedure or potential downline processing of the goods. Some food is packaged around 0 °C to reach freezing temperature fast. In other cases, the food is frozen before being portioned and filled into the packaging. Other food, such as pizza or ice cream cones, is still slightly warm during the packaging process. The glass transition temperature of the adhesive is the crucial key to ensure a bondline which is flexible at low temperatures. If the temperature falls below the glass transition limit, the adhesive will become brittle and non-flexible. In addition, the ambient temperature on the packaging lines also has to be taken into account to ensure an optimum setting behaviour of the adhesive.

High line speeds in the packaging process and a permanently growing variety of materials also have an impact on the adhesive. To ensure reliable and reproducible bonding results of superior quality, all those parameters have to be taken into account.

The conclusion: Deep-freeze packaging needs tailor-made adhesives. Hot melts based on EVA (Ethylene-Vinyl-Acetate) from the Jowatherm® series and hot melts based on PO (polyolefin) from the Jowat-Toptherm® series ensure reliable primary and secondary packaging processes. The field of application of these adhesives reaches from the assembly and sealing of cardboard folding boxes, to holding cardboard packaging sleeves in place, and to closing the exterior packaging. These hot melts are characterised by a fast build-up of cohesion, high flexibility at low temperatures, and superior bonding strength. In addition, the adhesives facilitate a bond which is highly resistant to temperature fluctuations and mechanical stress – in processing as well as from transport and usage. The hot melts are odourless and, of course, certified for food packaging according to the FDA regulation 175.105 and the EU regulation 10/2011.

Innovative adhesive solutions which have been developed specially for deep-freeze packaging master all the above-mentioned different requirements, ensure reliable processes, and facilitate durable and visually appealing deep-freeze packaging – all the way to the final destination at the consumer. Jowat supports manufacturers and processors throughout the complete value chain in the packaging industry with modern adhesives and an extensive advisory expertise. The objective: a continuous improvement of packaging processes. ■

Glass transition temperature

The glass transition temperature is the temperature below which polymers change from a fluid or rubber-elastic, flexible state to a hard-elastic, brittle or glass-like state.

An adhesive which has reached the glass transition temperature has a drastically reduced molecular mobility, and becomes non-flexible and brittle. This behaviour can promote adhesion failure and cohesion failure. The risk significantly increases if the bondline is exposed to mechanical stress.

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Claim Management at Jowat – Continuous process improvement

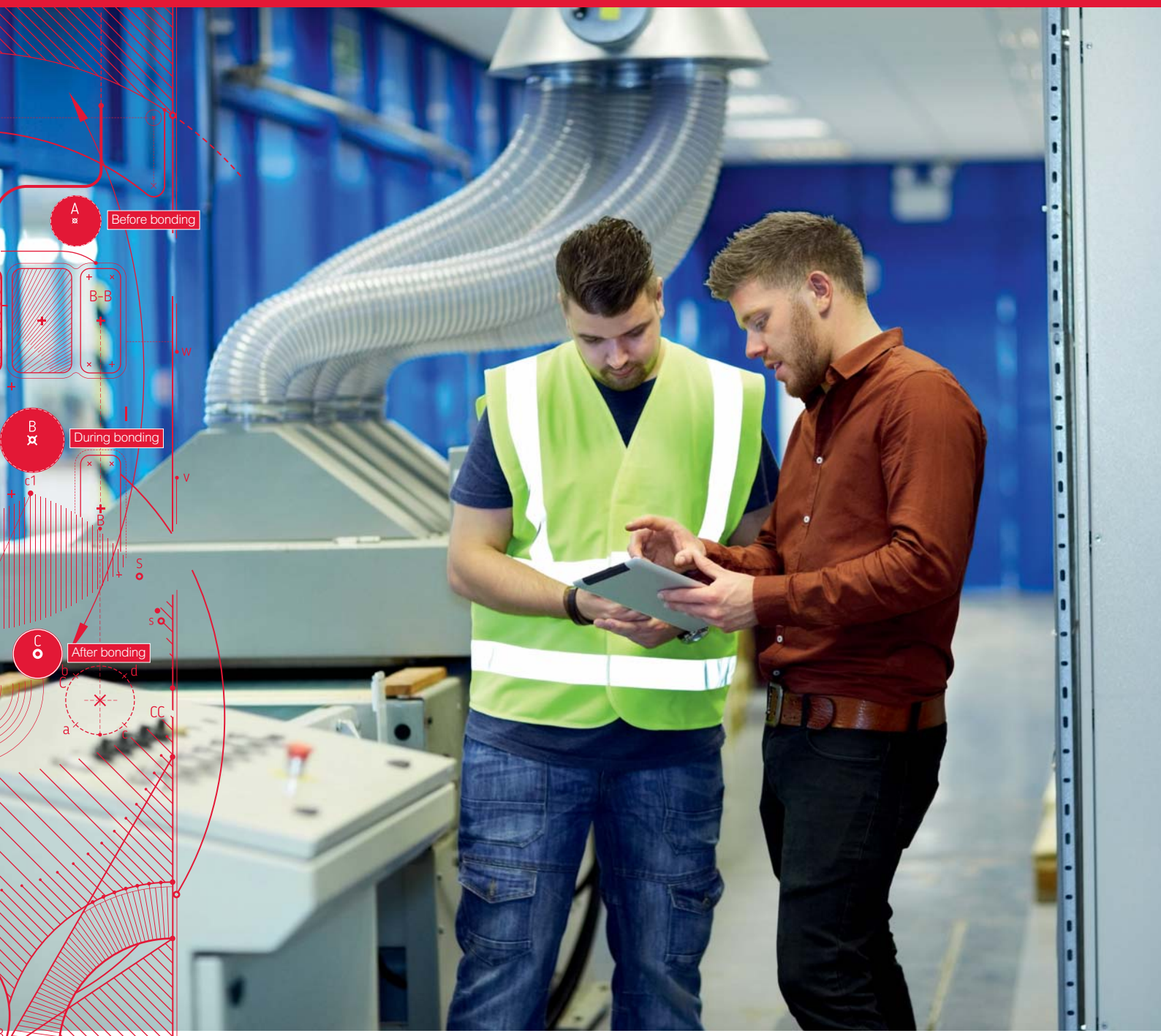
Ina Benz talking to the editor of the Progress magazine

Editor: Mrs Benz, you have been responsible for Claim Management since 2006, and in 2012, you have become director of Application Technology at Jowat. What is the most exciting part of your work and what are the expectations?

Benz: My team and I frequently face new tasks and challenges which require a great deal of creativity – when we analyse a defective part or when we search for the failure in a process. These are frequently highly interesting tasks in our daily work. By taking a novel approach to carry out a test, we sometimes encounter an unexpected error. After the customer has contacted us because the adhesive "did not bond", the first thing is to analyse "what exactly does it mean?" For instance, do we need to contact the chemist to improve the formulation? Is the failure caused by the manufacturing process? Our paramount objective is to provide a benefit for the customer when we manage claims. This way we will also gain from it. Therefore, the expectation is to facilitate a continuous process improvement by identifying errors and providing sustainable solutions.

Editor: Speaking of process improvement: Does managing claims at an adhesive manufacturer include more than just improving the adhesives?

Benz: Absolutely. A fully functional adhesive in line with the market requirements is only one of the many links in a process chain. Other factors on the supplier side – in this case Jowat – also play an essential role. For instance, supply capacity, quality management, or customer service. This is also the rationale behind ISO 9001 and other quality management systems – a continuous adjustment to



the needs of the customer by improving our own processes. In addition, we want our customers to benefit from our technological know-how. This service is basically provided together with our products.

Editor: Could Claim Management, therefore, be seen as an interface between the customer and the individual departments of Jowat?

Benz: Yes. We form a kind of a network, or, if you want, a process accelerator. The core objective of claim management is to put together a team responsible for identifying the problem, and to provide a fast solution to the customer. The complete process includes several individual stages: from a failure description and immediate measures to be implemented by the customer, to our own analysis to identify the root cause of the failure, finding a solution, and finally monitoring the effectiveness of the measures undertaken. At Jowat, Claim Management is incorporated in the Application Technology Department. However, we also work closely together with the other departments, for instance Quality Management, and can forward suggestions for improvement to them as well. In addition, our customers

also benefit from a wide range of on-site services, which are not related to claims.

Editor: What kind of services?

Benz: For instance, we offer a training program on how to evaluate a bond, and support our customers when they use a new adhesive on their machines. At our symposia, we regularly organise different workshops in which we proactively discuss failures in the bonding process and their causes, to provide a learning experience. Beyond that, we support our customers in bonding-related issues during the manufacturing process. The basic idea here is that we are prepared to face any problem, regardless whether the cause of the failure are our adhesives or other circumstances.

Editor: In the Wood-Furniture-Construction section of this magazine, Dr Matthias Staudt explained how to choose a suitable adhesive before the actual bonding process can start and all the parameters that have to be taken into account. That approach could also help prevent potential failures in the process.

Benz: Definitely. In fact, we start even earlier, when the adhesive is still in development. Once the formulation has left the laboratory, we test the adhesive to see whether it fulfils the demands of the customer, or, more precisely, if it fulfils the requirements of the end product for the intended use. In discussions with the client, our technical sales personnel establishes a framework to define all the requirements which need to be met. With this framework we then go to the customer to define the other demands for the adhesive, the processing parameters, the engineering technology, the application method, etc. as well as all subsequent test series. All those criteria determine the suitability of the adhesive and the quality of the end product. With this approach, many failure causes can already be eliminated at an early stage. Therefore, this approach is the key for a successful development of new products as well as for choosing a suitable adhesive.

Editor: In the event of a claim, specifically how does Jowat assist customers?

Benz: Most claims are caused by the application of the adhesive – this was also the main reason for the development of the DIN 2304 standard. Therefore, claims are processed centrally by the Application Technology Department. A team is formed, consisting of application technologists, product managers, and, potentially, also developers. The first objective is to request a sample from the customer for an analysis and to understand the issue. This is essential to determine if, for instance, there have been any changes in the characteristics of the adhesive. However, the sample analysis is only to determine the next steps. Whether, for instance, the tests are continued at the customer. Our application technologists will analyse the processing parameters and samples, provide assistance during tests, and cooperate closely with the customer until the claim has been settled. This also includes providing advisory services for the customer when an adhesive with different characteristics is needed. Due to an extensive know-how and broad experience in the field, our application technologists are able to precisely point out the problem and solve the issue.

Editor: Does your department serve as a central contact point for claims from all around the Jowat world?

Benz: Each manufacturing site in the Jowat Group has a local Claim Management Department to process claims. However, products from Detmold are shipped worldwide, and, as a consequence, we receive claims from all locations in the Jowat world. Therefore, our department plays a major global role. Annual Global Quality Meetings on topics such as adhesive application ensure a regular knowledge exchange and provide the basis for a learning experience. This also gives us the opportunity to react fast and process claims from globally active customers in a global expert network. ■

Interview partner

Ina Benz

Director
Application Technology

Bonding as part of the whole picture

Manuel Füstmann, Technical Sales Service Manager

After working 13 years for Jowat, of which eight years in the Divisions and Product Management Department for Paper & Packaging, Manuel Füstmann has found a new destination in March 2016 as Technical Sales Service Manager Asia Pacific at Jowat Beijing Adhesives, where he already spent a year in 2007/2008. The most exciting aspect of his new responsibility is learning about new fields of application. In his daily work, the graduate engineer (Dipl.-Ing.) in wood technology has to see bonding as a process chain. “The bonding process at the customer is only one of many process,” says Manuel Füstmann. “For a successful bonding process it is of utmost importance to take a holistic approach and to also analyse the processes before and after bonding.”

Innovation as a strategy

Andreas Weymann, Product Manager

Andreas Weymann took an early interest in the world of bonding and pursued an according path. A carpenter by profession, he was awarded a scholarship by Jowat during his studies to become an engineer of wood technology. After writing his bachelor’s thesis with the Product Marketing at Jowat and graduating best of his year, Andreas Weymann successfully completed the trainee programme at Jowat in the departments Application Technology, Product Management, and Sales. Today, he holds the position of Product Manager for the packaging industry and is responsible for collecting information on current market trends and requirements in the different fields of application. The insights gained from these studies are used to develop new products and marketing strategies. From his point of view, this innovation process is one of the key processes in Product Management.

Process optimisation in IT and machine control systems

Tobias Wiebking, Plant Management Team

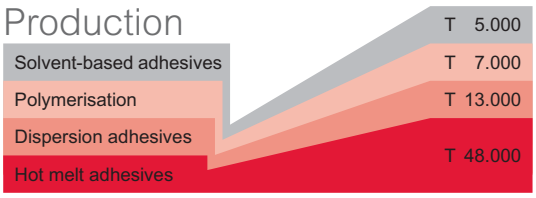
Tobias Wiebking started working for Jowat in 2013 as an IT apprentice. Since July 2016, he has now been part of the Plant Management Team and responsible for IT and machine control systems. His responsibilities include the development of internal database applications and programming machine control systems. His primary interest lies in innovative IT systems. The IT specialist carries out Deep-Learning projects aimed at identifying machine malfunctions at an early stage. “My responsibilities are multifaceted. I am involved in the optimisation of processes, and, on the other hand, I also support colleagues when they have a problem,” says Tobias Wiebking.

Jowat in figures

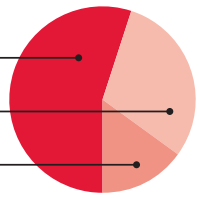
Sales
€ 275 m

Employees
1,046

Production



Sales by industry



Jowat News

Jowat Polska now active for 20 years

The year 2016 has been a special one for Jowat Polska. The Jowat subsidiary with headquarters in Poznan celebrated two decades of activity. On 21 May 2016, the new milestone in company history was celebrated at Sulislaw Palace, near Wrocław. The guests were invited to visit the former Jowat building in Wrocław, where founder Johannes Watzlawczik laid the foundation of the enterprise.

In addition to an exciting review of the history, achievements and success of Jowat Polska, the visitors set out on a virtual journey to explore the countries that are supplied with Jowat products by the Polish subsidiary. ■

Jowat Outside

ZOW
Bad Salzuflen, Germany

February 07th to 09th, 2017

Empack
Zurich, Switzerland

April 26th to 27th, 2017

Techtextil
Frankfurt am Main, Germany

May 09th to 12th, 2017

Ligna
Hanover, Germany

May 22th to 26th, 2017

interzum
Cologne, Germany

May 16th to 19th, 2017

Additional dates for trade fairs are available on our website at www.jowat.com

The product is the footprint of the preceding processes.

Kai Yang,
economist, expert in the area of quality engineering

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