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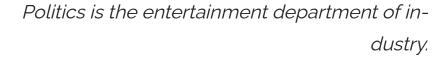






EDirthday!

Editorial



(Frank Zappa (1940 - 1993))

Dear readers!

They rattle down constantly and at a high frequency: the reports from and about the Orange Man. The daily newspapers fall for the scam and chase after every little detail, often at the expense of other topics – and yes: there are other topics! Nevertheless, the chaos and arbitrariness from the White House are causing such immense damage that we will have to deal with it for a long time.

And yet, "Kiss my ass" still has quite a few admirers – and imitators. In Germany and Austria, too, there are business lobbyists and major industrialists who cheer on those who openly proclaim an authoritarian regime without freedoms and without control. They are also no longer ashamed that any halfway attentive observer can easily see through their motives: the satisfaction of insatiable greed, enrichment by any means necessary, and no control over lucrative (but barely legal) business activities and influence exertions. They don't care anymore – the spiral is already too wide. As we're now seeing, one or the other is getting what they deserve: There are no more guarantees, no reliability, no plan. Only arbitrariness and boundless hubris. The market reacts, the economy bleeds, and one wonders why many industrialists and politicians are still willing to crawl on their knees through their own saliva.

But some people are capable of anything. Aren't they?

Stefan Breitenfeld

Have a great read & stay safe!

Your

AUTHOR: SBR

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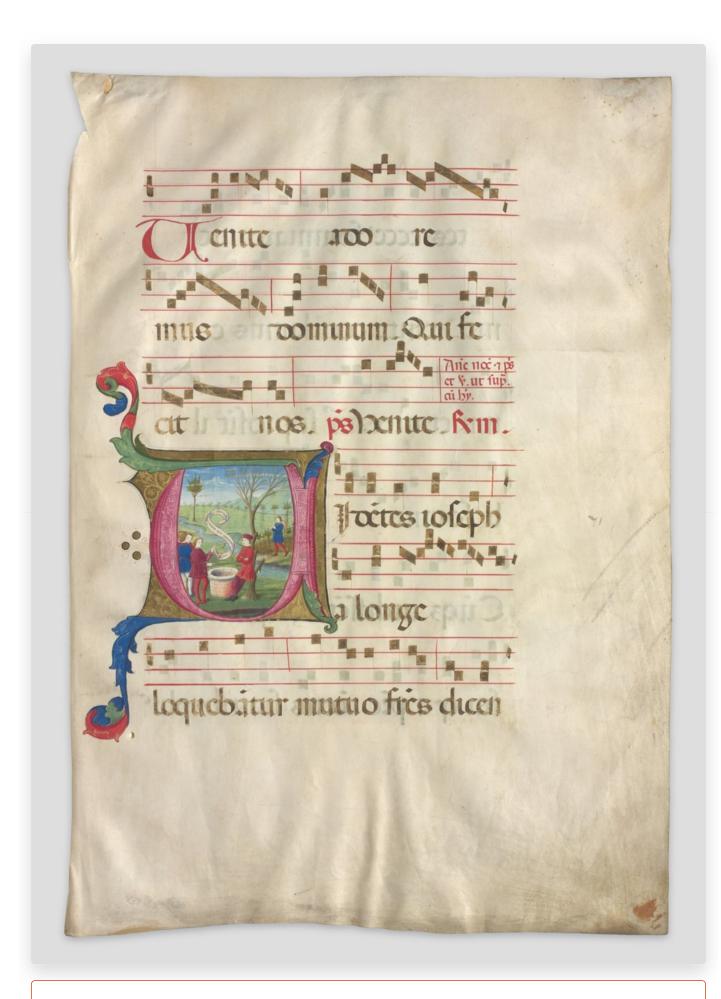
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15. CENTURY

Upper Italian Choir Book



Sheet with picture initial from a choir book, Northern Italy, second third of the 15th century. 535 x 374 mm. Museum of Applied Arts, Frankfurt; LM 71. Part of the exhibition "Enlightenment Graphics. Medieval Manu-

scripts Between Everyday Practice, Luxury, and Faith".

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Big Numbers do not Always Mean Big Rewards



ADHESIVE PERFORMANCE IS DETERMINED BY A COMBINATION OF FACTORS INCLUDING TACK, PEEL STRENGTH, SHEAR STRENGTH, COHESION
AND ADHESION.

When it comes to selecting the right adhesive for your sticking needs, it is easy to get caught up in the numbers. One common misconception is that higher tack equates to better adhesive performance and strength. However, the reality is far more complex. Adhesive performance is determined by a combination of factors including tack, peel strength, shear strength, cohesion and adhesion. Each of these plays a crucial role in the overall effectiveness of an adhesive.

Tack

Starting with tack; this is often the first property that comes to mind when evaluating adhesives. It refers to an adhesive's ability to form a bond of measurable strength immediately after contact with a substrate under low pressure. Tack may provide an initial stickiness but does not guarantee long-term performance.

In terms of solutions classed as 'high tack,' these adhesives may fail under stress or environmental changes. A high tack adhesive is ideal for situations where minimal pressure is required to create a bond, such as when applying a fragile glass mirror to a surface, or when you need a strong initial bond that can later be

peeled from the substrate easily. This would fall into the high tack removable adhesive category.

Peel strength

Next up is peel strength, which measures the force required to separate two bonded materials by peeling one away from the other. The industry standard for this is 180/90 degrees for 20-25mm/min from stainless steel or glass. This property is crucial for applications where the adhesive must resist peeling forces such as in labels, tapes and protective films.

Peel strength is typically measured by applying a constant rate of peel to the bonded materials and recording the force required to separate them, with this measured in Newtons per metre. High peel strength indicates the adhesive can maintain its bond under peeling forces, which is essential for ensuring both the durability and reliability of the adhesive in real-world applications. Pressure-sensitive adhesives, also known as PSAs, are great for peel strength.

Shear strength

Also up for consideration is shear strength, which refers to the adhesive's ability to resist forces that cause the bonded materials to slide past each other. This is particularly important for structural applications where the adhesive must withstand significant loads over time, with 1kg being the standard weight for samples measuring 10cm x 10cm.

In terms of measuring shear strength, this is done by applying a force parallel to the adhesive bond until failure occurs. High shear strength – measured in time or converted Megapascals (Mpa) – helps ensure the adhesive can maintain its integrity under shear forces, making it suitable for applications such as mounting tapes and construction adhesives.

Also keep in mind that grams per square metre, or GSM, will make a big difference to shear strength. More adhesive tends to last longer as it continues to wet over time.

Cohesion

Professionals also need to consider cohesion, or the internal strength of the adhesive, which is determined by the interactions between the adhesive molecules. This is essential for maintaining an adhesive's structural integrity and preventing it from breaking down under stress.

It's also worth keeping in mind that cohesion is influenced by the chemical composition and molecular structure of the adhesive, as well as the curing process. High cohesion ensures the adhesive can withstand internal stresses and maintain performance over time, making it suitable for demanding applications where durability is critical.

Cohesive failure can occur when there is a breakdown in the structure of the adhesive, which in turn may leave behind adhesive on the substrate and on the carrier.

Adhesion

Finally, adhesion is the bond strength between the adhesive and the substrate. This is crucial for ensuring the adhesive can form a strong and durable bond with the materials it is intended to join.

Adhesion can be influenced by factors such as surface energy, surface preparation, and the chemical compatibility between the adhesive and the substrate. High adhesion ensures the adhesive can maintain its bond under various conditions, making it suitable for all manner of applications, ranging from automotive to medical to industrial uses.

You may encounter adhesive failure when there is a complete breakdown, or detachment, from either the

substrate or the carrier.

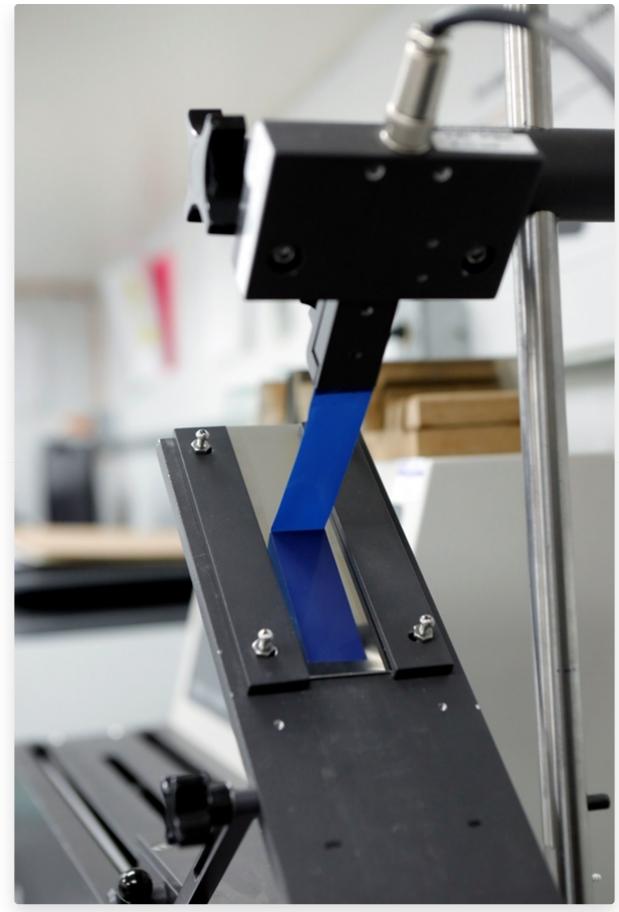
The adhesion triangle

To understand adhesive performance better, it is essential to consider something referred to as the 'adhesion triangle', which illustrates the relationship between tack, adhesion, and cohesion. A balanced adhesive formulation ensures all three work together to provide optimal performance.

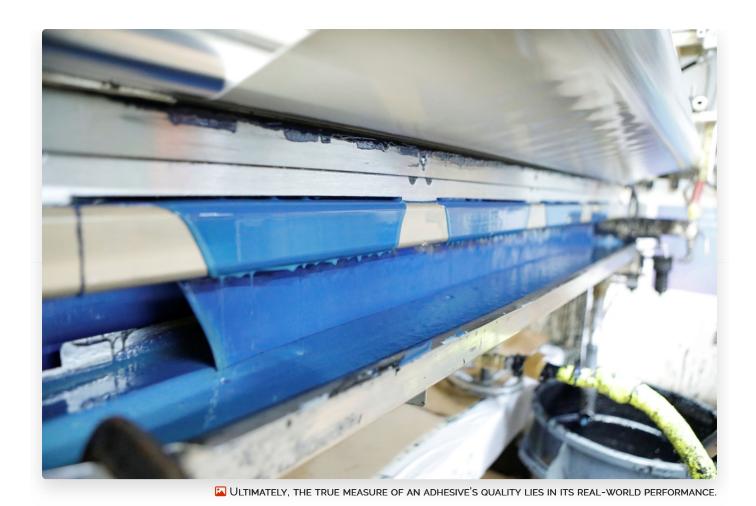
Also remember each application requires different adhesive properties. For example, automotive adhesives need high shear strength, while medical adhesives require gentle adhesion. Testing methods specific to tack, such as the loop tack test, provide valuable insights to the laboratory but should not be the sole measure of adhesive performance.

Environmental factors such as temperature and humidity can significantly impact performance, with high humidity having the potential to reduce adhesion strength. However, plasticizers can be added to help with flexibility and migrate to adhesives, with this being accelerated in high temperatures and exposure to UV light. Also on the same subject, low temperatures can make adhesives brittle, so be wary of this when working with adhesive products.

Ultimately, the true measure of an adhesive's quality lies in its real-world performance. Practical testing and application-specific evaluations provide a more accurate assessment than relying solely on laboratory test results. By testing adhesives in real-world conditions, you can make more informed decisions and select the best adhesive for your specific needs.



PRACTICAL TESTING AND APPLICATION-SPECIFIC EVALUATIONS PROVIDE A MORE ACCURATE ASSESSMENT THAN RELYING SOLELY ON LABORATORY TEST RESULTS.



AUTHORS: KIERAN BLACKNALL, OPERATIONS MANAGER AND CAMERON RUSSELL, LABORATORY TECHNICIAN AT DRYTAC

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FACHPACK Welcomes new Director



A NEW YEAR COMES WITH NEW RESPONSIBILITIES AT FACHPACK.

A new year comes with new responsibilities at FACHPACK, the European trade fair for packaging, technology and processes. As Executive Director Exhibitions, Heike Slotta continues to have overall responsibility for the two trade fairs POWTECH TECHNOPHARM with PARTEC and FACHPACK. Her colleague Phuong Anh Do was appointed to the role of Director FACHPACK in January 2025. Over her many years at NürnbergMesse, Phuong Anh Do gained experience in the trade fair environment and packaging sector and is well-versed in the company's processes. We took the opportunity to interview her about her new position.

Ms. Do, you are a "homegrown" talent at NürnbergMesse. What path has your career taken to date at NürnbergMesse? What experience do you bring from the exhibition management and packaging segments?

Phuong Anh Do: I've always been fascinated by trade fairs as places where ideas take shape and people come together with a shared vision. My path into the events industry began in a very traditional way with a traineeship in event management. In 2018, I then joined Heike Slotta's team in the department that manages FACHPACK alongside POWTECH TECHNOPHARM with the PARTEC scientific congress. Since then, I have

been passionate about the packaging industry and its innovative strength.

For FACHPACK, I initially worked in the traditional operational areas of trade fair organisation, dealing with aspects like hall planning, customer support, and supervising the setup. In the process, I got to know the entire spectrum of the trade fair ecosystem and gained deep insights into the collaboration with a wide range of departments. Later, I was able to consolidate my experience in event design and management as a project manager for the PARTEC Congress, which takes place alongside POWTECH TECHNOPHARM.

I am especially impressed by the packaging industry because it is in a state of constant flux – addressing issues like sustainable materials, smart technologies and innovative designs. This is why I am even more delighted to now take on the role of Director of FACHPACK. My goal is to continue to develop the fair not just as the key gathering for the sector but also as a source of inspiration for innovative ideas and alliances. I am looking forward to working with exhibitors, industry partners, associations and visitors to actively shape the future of packaging!

What do you like about this event and the packaging sector as such?

Phuong Anh Do: "What particularly impresses me about this trade fair is its unique blend of innovation, practical solutions, and genuine encounters. This is where all kinds of people come together – from established companies to creative start-ups – to actively shape the future of packaging. The tangible energy at the fair and the passion of the exhibitors and visitors are what make FACHPACK a genuinely outstanding event. The packaging industry itself fascinates me because it is incredibly dynamic. It unites technological progress with sustainability and design – and is facing exciting challenges that we can only master collectively. It is inspiring to see how much innovative strength there is here and how companies keep developing new product packaging solutions that are smarter, more sustainable, and more efficient. The trade fair brings all this together in one place – and that's precisely what I appreciate so much about it. I am looking forward to seeing the packaging community in September again."

Where do you see FACHPACK in the next few years?

Phuong Anh Do: The packaging industry is facing major changes – from increasing sustainability requirements to smart packaging solutions and digitalisation. Stricter regulations, technological innovations and changing consumer behaviours will continue to characterise the sector. It is not yet possible to predict in detail exactly what this upheaval will look like, but one thing is sure: Face-to-face dialogue and networking are essential to successfully shape this change.

And that's exactly where FACHPACK comes in. In the next few years, it will not just continue to be a key platform for innovation but also a place where experts come together to discuss key issues and develop practical solutions. I see the fair as a hub where tradition meets innovation – with even more space for start-ups, interactive formats and exciting collaborations. My goal is to keep developing and improving the event to meet the needs of the sector and constantly inspire visitors and exhibitors alike. Because one thing is certain: The best ideas emerge from face-to-face dialogue and will continue to do so in the future.

What is especially important to you when it comes to the collaboration between NürnbergMesse, exhibitors and trade visitors, but also with your colleagues?

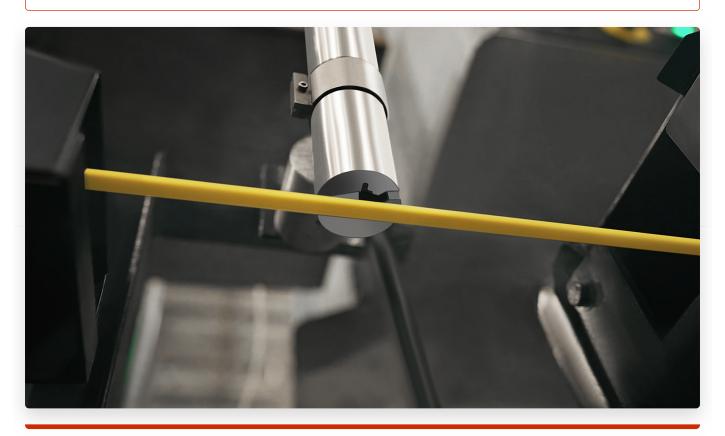
Phuong Anh Do: Approachability! It is my heartfelt wish for representatives of the sector to know that we are always listening to them and that they can always approach us, not just during advisory board meetings or during the event itself. At NürnbergMesse, we are always open to and grateful for information and suggestions. This dialogue genuinely matters to me because ultimately, it is the exhibitors and trade visitors who are the specialists on the market. Without their expertise and opinions, we cannot design FACHPACK to meet the needs of the sector. Within our teams too, we attach immense importance to open and constructive exchanges. This is why I am prioritising approachability and openness.



☑ PHUONG ANH DO, A "HOMEGROWN" TALENT AT NÜRNBERGMESSE.

© EDITOR: SBR

ENCORE WIRE: PRINTING WITH LEIBINGER





THE LEIBINGER JET RAPID WIRE IN USE DURING CABLE EXTRUSION AT ENCORE WIRE – DELIVERING RELIABLE, FAST, AND PRECISE MAR-KING EVEN AT TOP PRODUCTION SPEEDS.

Companies around the world are always looking for better ways of doing things: cutting costs, improving quality, and serving customers better. Encore Wire is a company that strikes the perfect balance. As a manu-

facturer of copper and aluminum residential, commercial and industrial building wire, they describe themselves on their own website as "a company based on old-fashioned values". However, those values have helped them innovate and grow into a highly successful enterprise of over 3.5 million square feet under roof, stretching across 460 acres near McKinney, Texas.

According to Encore Wire, one way of ensuring success is to focus on productivity and quality: "The key to our success and growth has always been our ability to supply customers with the products they need in a timely fashion, shipping on time with exceptional fill rates."

Naturally, this means using the best suppliers for every aspect of production – and the high-speed industrial printers used for mandatory coding on every length of cable that leaves the plant is an essential part of that equation.

Give it a go. You might like it!

A key development in Encore Wire's approach to coding came along almost ten years ago. "Back in 2016 our partners at Rusco Packaging came to us with a Leibinger printer and wanted to know if we wanted to run a trial," explained one of the company's senior management team. "We ran the trial on one of our lines in our commercial building wire plant. I've used different printers in my 39 years in the wire business and Leibinger has been far superior as far as reliability and performance and uptime."

Encore Wire began using Leibinger equipment, and when a new specialist wire printer was announced that claimed to outperform previous models, the company wanted to see what it could do. "Leibinger had developed high-speed rapid wire printers that they wanted us to try. They would print on circuit-sized wire, very small wire, 16-gauge to 8-gauge and run up to high speeds, performing up to 3,280 feet per minute. We ran a trial and the performance was exceptional. Now in that circuit wire plant we have replaced all the other printers with Leibinger's rapid, high-speed printers."

What convinced them to switch to Leibinger?

What exactly was it about the product that impressed Encore Wire so much? The best way to understand is perhaps to look at the six key demands of wire and cable printing plants – and how Encore Wire assessed Leibinger's performance in those areas.

1. Printers need to withstand harsh industrial conditions

Encore Wire points out that conditions for printers in the plant can be tough: "We're in Texas – and in Texas it gets pretty hot." Printers need to be able to withstand all kinds of conditions in other parts of the world too, enduring humidity, heat and cold – so the Jet Rapid Wire is built for industrial environments with IP54-rated protection, ensuring reliability in the most extreme conditions.

2. Operating costs need to be kept down

Companies like Encore Wire want to keep all operating costs to an absolute minimum. Tom Fisher of Rusco Packaging, a close partner and supplier to Encore Wire, explained how he can rely on Leibinger printers to do just that: "The thing about a Leibinger printer is that it does exactly what it says it's going to do. Your maintenance is going to be less. Your overall operating costs are going to be less. It's going to be easier to operate. It's just a better-quality piece of equipment."

For example, the EcoSolv System reduces solvent consumption by capturing and recycling evaporated solvent, making the process more cost-efficient for Encore. Leibinger printers are also built to last and are easier to service – which means Encore Wire needs to pay less in maintenance. With an easy-to-use display, staff can use it with minimal training, keeping them productive. Whichever way you look at it, operating costs are

lower.

3. High speed operation is essential

Like most cable and wire plants, Encore Wire seeks to maximize output. So, they manufacture around the clock, with the extrusion processes used to make the products running at very high speeds. The printers they use therefore have to be able to keep up with them.

The Leibinger Jet Rapid Wire can print up to 1,000 m/minute. That's 3,280 feet of wire every minute. It's a machine that runs faster than a tiger! And it is not only fast but accurate, with a specialized print head that brings the nozzle closer to the cable, ensuring outstanding print quality even at the highest speeds.

4. Wire and cable manufacturers need to stay productive at all times

Because all cables and wires need to be coded, the printers need to keep running. One downside of some printers is that ink can become clogged on the print head, meaning that production has to pause while nozzles are cleaned. Leibinger uses a unique nozzle-sealing technology that prevents unused ink from drying on the print head. No clogging, no cleaning, no interruptions to production. When you're printing thousands of meters of cables every minute, productivity matters.

5. Ink performance and print quality is important

Speed of operation is one thing – but cable manufacturers also insist on quality. Transfer printing, for example, where marks transfer to adjacent surfaces because the ink has not fully dried is unacceptable. Encore Wire noted that Leibinger's ability to formulate and manufacture fast-drying inks that adhere to any kind of substrate was impressive: "Leibinger manufactures their own inks, so they can provide us with inks that have superior adhesion on our PVC, nylon, or XLPE – whatever type of plastic we want to print on, they will provide and develop the ink that will print on to that type of material."

6. Printers need to be easy to integrate into the plant

The performance of Leibinger's Jet Rapid Wire printers was clearly exceptional. But a cable or wire plant can't afford to have problems when switching out one solution for another. The Jet Rapid Wire is particularly easy to integrate into any industrial production line, with a comprehensive set of interfaces that allows effortless Plug & Print integration, including USB, Ethernet, I/O signals (9/8), and serial RS232, ensuring compatibility with various production environments. The fact the Leibinger printers were easily integrated into Encore Wire was no surprise to Tom Fisher: "We didn't have to do anything extraordinary to make the addition of Leibinger printers to Encore's inventory. It just worked because we knew that it would."

Not a difficult decision in the end ...

Encore Wire owes its success to making the right business calls at the right time – consistently pursuing excellence and taking a long-term view instead of constantly changing direction. However, the evidence for using Leibinger was overwhelming. "We have very strong relationships with our vendors and our suppliers, and it really has to be a superior product for us to move on to something different – and Leibinger definitely was."

The company is proud to use Leibinger equipment – and Leibinger is equally proud to play a part in Encore Wire's success story. The relationship continues to strengthen, and Encore Wire suggests that other businesses – whether they are wire and cable producers or any other kind of company – would do well to follow their lead. As a company spokesman said: "I would definitely recommend Leibinger printers for any industry."

www.leibinger-group.com



ENCORE WIRE MARKS A WIDE VARIETY OF CABLES AT ITS FACILITY IN TEXAS. THE LEIBINGER JET RAPID CAN MARK CABLES AT SPEEDS OF UP TO 3,280 FT/MIN.



FLYING THE FLAG FOR VALUES AND PERFORMANCE: ENCORE WIRE COMBINES TRADITIONAL ENTREPRENEURIAL SPIRIT WITH CUTTING-EDGE, EFFICIENT MANUFACTURING.



ENCORE WIRE'S 460-ACRE SITE NEAR MCKINNEY, TEXAS.



☑ IT'S A MACHINE THAT RUNS FASTER THAN A TIGER!

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PRODUCT LAUNCH





THE NEW COLOR-INTENSIVE, FAST-SETTING INK SERIES IS ECO-FRIENDLY, COBALT AND MINERAL OIL-FREE, AND FORMULATED FOR COMMERCIAL PRINTING.

Hubergroup is proud to announce the launch of its Dynamica Ink Series. This new colour intensive, fast-setting ink series is eco-friendly, cobalt and mineral oil-free, and tailored to meet the evolving demands of modern commercial printing. The Dynamica process series is compatible with the latest high-speed printing machines and perfectly suited for a wide range of jobs across various substrates, meeting the highest ink performance demands. It stands out with a low dot gain, high dampening tolerance, impressive versatility and excellent stackability. It enables fast work-and-turn, quick post-print finishing and offers high fountain solution tolerance and stability, ensuring consistent performance and exceptional print quality even under varying press conditions.

The Dynamica Ink series works on both straight and perfecting presses. It embodies a perfect blend of advanced technology, sustainability, and unparalleled performance, setting a new benchmark in the industry.

Inspired by customers, engineered for excellence

"The Dynamica Ink Series is a testament to the power of listening and engaging with our customers. By combining their invaluable insights with our expertise, we've created a product that empowers printers to achieve remarkable print outcomes while upholding sustainability and efficiency," says Richard Gill, Product Manager

Sheetfed, hubergroup.

Born from a spirit of collaboration and meaningful dialogue with hubergroup's customers, the Dynamica Ink Series delivers remarkable results while addressing the practical challenges faced by commercial printers in a competitive and fast-paced environment.

With high pigmentation as its basis, Dynamica offers unmatched color density and vibrancy, ensuring visually striking print outcomes. Its exceptional gloss adds a premium finish, making it the ideal choice for coated substrates. Engineered for speed and precision, its rapid-setting properties significantly enhance productivity, catering to high-volume operations without compromising on quality. The duct-fresh formulation ensures consistent performance, minimizing press downtime and maximizing output efficiency. The Dynamica Ink series is fully compliant with ISO 2846-1 and perfectly aligned with the requirements of ISO 12647-2. Tailored for high ink coverage and density applications, this series delivers exceptional results and consistent quality for printers.

Sustainable innovations: Good for the world, good for business

Beyond performance, the Dynamica Ink Series emphasizes hubergroup's commitment to sustainability. A Cradle-to-Cradle material health certified series, it is completely free from mineral oil and cobalt drier and ideally suited for IPA-free printing. All this aligns with environmentally responsible practices, supporting printers in their journey toward greener operations.

"The launch of the Dynamica Ink Series is not just the unveiling of a new product, it is the culmination of a shared vision between hubergroup and its customers, a commitment to innovation, and an unwavering dedication to excellence in print."



DYNAMICA OFFERS UNMATCHED COLOR DENSITY AND VIBRANCY, ENSURING VISUALLY STRIKING PRINT OUTCOMES.



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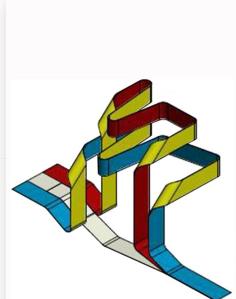
THE DYNAMICA INK SERIES IS FULLY COMPLIANT WITH ISO 2846-1 AND PERFECTLY ALIGNED WITH THE REQUIREMENTS OF ISO 12647-2.

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■ MULTI-WEB LABELS

Maximum Communication in the Smallest Space







SCHEMATIC WEB PATH: THE SEPARATED NARROWER WEBS ARE ROUTED ON TOP OF EACH OTHER TO FORM THE MULTILAYER LABEL USING

TWO WER SHIFT DEVICES.

Multilayer labels are true communication gems. Their multi-layered structure provides plenty of space for comprehensive information without overloading the label design. But what high-precision machine technology is behind the production of these space-saving wonders? The Gallus Labelmaster demonstrates the perfect interplay of efficiency, precision and flexibility in multi-web label production.

Multilayer labels are characterized by an immense amount of space in a very small area. Also known as peel-off labels, they enable highly efficient communication for retailers, which they increasingly need to meet constantly growing information requirements.

Problem solvers in the market segments

Multilayer labels are firmly established in all market segments. In the pharmaceutical sector, they can be found on folding cartons, vials, cans and blister wallets, where they are used to clearly communicate dosage instructions, warnings and information on ingredients. In the food sector, they enable precise labeling of copious ingredients and additives, origin information and allergens. For multilingual versions in particular, multilayer labels provide the necessary space to concisely convey information in all language variants.

On household product packaging, they convey important warning and handling instructions. In the security sector, they are used as void labels, where any attempt to remove the label irreversibly separates the film and adhesive, revealing a void message or pattern as clear evidence of tampering. In logistics and ecommerce, they facilitate product tracking and returns management, and hardly a day goes by without new applications being added.

Production process with sophisticated web guidance

The easiest way to explain the differences in the production process of multi-layer labels is to look at them from the substrate side. A common production method is based on a single substrate web. First, the reverse side of the substrate is printed, followed by the front, before the web is slit into narrower webs. These are then configured on top of each other to create a multilayer label. In this example, the result is a three-layer label with five printed sides. However, the maximum label width is limited to approximately one-third of the original web width.

The manufacturing process differs when using a machine with multiple unwinders, where production is carried out with several substrate webs. This method allows for the use of different printing materials and enables high-volume production.

Modular printing presses can be equipped with up to three unwinders and often feature 12 or more inline printing units. Additionally, a rail system above the printing units can accommodate applications such as cold or hot foil stamping, providing further options for unwinding and rewinding.

In multi-web applications, precise web transport is crucial. Only with utmost precision can different substrates such as polypropylene, polyethylene and paper webs be accurately combined to form a single label. This is achieved through a highly precise machine control system, which adjusts the unwinding and web tension of the materials according to their respective E-modulus — a crucial factor, as the stretch properties of these materials vary greatly.

With register control in the longitudinal and traverse alignment, one web is defined as the master, while the other webs are synchronized to it. This ensures that all webs are perfectly aligned, enabling precise and stable further processing.

System to Compose

If existing Gallus Labelmaster press systems are to be expanded for multi-web label production, the "System to Compose" offers the necessary options with its modular design. Each machine system can be upgraded with flexographic and screen-printing units, for example, to enable reverse printing as the first production step, as well as for haptic effects or the application of braille lettering.

Adding a digital printing unit allows for variable data printing in one to four colors, with an optional color gamut expansion including orange and violet. Additionally, die-cutting units can be retrofitted, which are often required between printing units in multi-web applications.

From Roll to Multilayer Label

The production of multilayer labels differs from that of traditional pressure-sensitive labels (PSL) right from the unwinding of the roll material. The printing sequence often begins with reverse printing. For this, the web is unwound with the liner facing up, the substrate and liner are separated, and the open adhesive back is printed in the first flexographic printing unit, as shown in the sample label "Body Sport". Subsequently, both layers are recombined, pressed together, and the web is turned over for printing on the front. The four-color design is then printed in four flexographic printing units (CMYK).

The next finishing step is a cold foil transfer and, most importantly, the neutralization of the adhesive on the backside. Various processes are available for this, such as release varnish or glue killer. In this case, a release varnish is applied to the front so that the individual sides of the multi-layer label can be opened without any problems.

In the next step, haptic effects are applied in a screen-printing unit before the webs are cut and precisely superimposed to form the multi-layer label.

Process variability is crucial in day-to-day business

This example label illustrates the high demands that the production of multi-layer labels places on the machine configuration. Fast and flexible changeover of the machine system is a crucial factor for efficient production. Since multi-layer label designs require very different processing sequences, flexo and screen-printing units, as well as die-cutting units must be able to be placed at different positions in the machine, depending on the job. Where one job might require a screen-printing unit in the machine sequence, the next one might require a die-cutting unit in that position. Efficiency in production is therefore achieved by ensuring that modules can be exchanged easily, quickly and flexibly.

Intuitive Control

Other features crucial for efficient multi-layer label production include easy operation and control of the machine via the HMI (Human Machine Interface). Especially with longer machines, the system supports the operator by providing real-time information on the status of the printing units, register accuracy, and the processes on the rail above the printing units at all times. This includes parameters such as tension or the status of web tension units and web edge guides – regardless of the operator's location at the machine.

Machine Concept with Minimal Waste and a Stable Production Process

Especially in the production of multi-layer labels with long web paths, waste plays a key role in effective and sustainable production. With the Gallus Labelmaster, this aspect is optimized with a short web path of just 1.4 m between the printing units and a compact arrangement of all key processes on the primary level. This eliminates additional web paths of 4 to 6 meters that would arise when changing to other machine levels. This reduces waste, saves time and cuts costs, especially with frequent job changes.

At the same time, short web paths lead to a high level of stability in the production process, which optimizes the use of materials in multi-layer labelling, as well as ensuring simple operation and high efficiency.



MULTI-LAYER LABEL CONSISTING OF TWO LAYERS, WHERE THE TOP LAYER IS PRINTED IN FOUR COLORS AND THE BOTTOM LAYER IN ONE COLOR.



VOID LABEL, INDICATES THE OPENING OF PACKAGING.

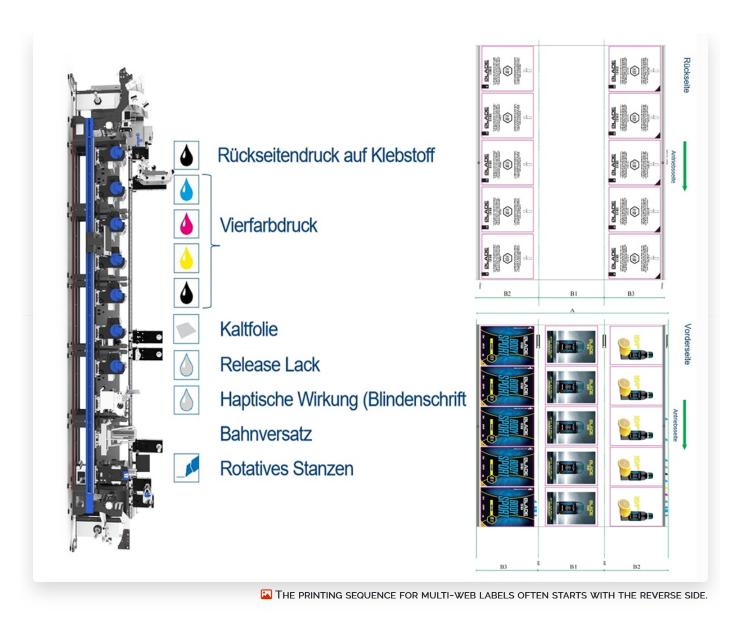


☑ GALLUS LABELMASTER MULTI-WEB MACHINE SYSTEM WITH TWO UNWINDERS.



THE "SYSTEM TO COMPOSE" ENABLES THE LABELMASTER SERIES TO BE RETROFITTED FOR MULTI-WEB LABELS.





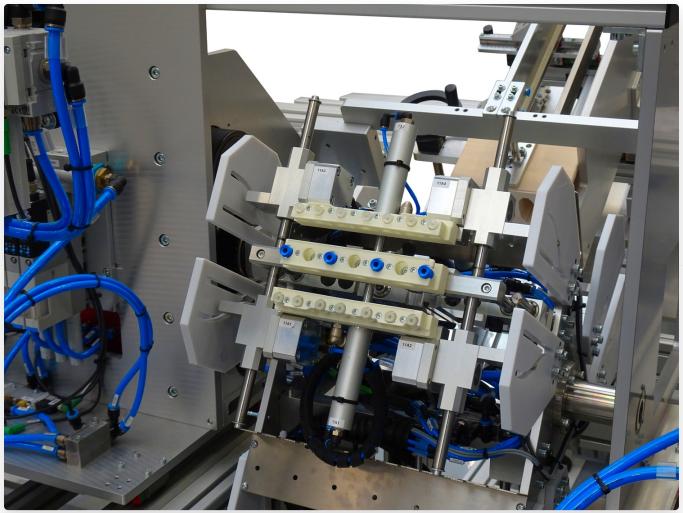
AUTHOR: DIETER FINNA (DFI)

© EDITOR: SBR

© IMAGES: GALLUS FERD. RÜESCH AG [1, 4-7]; PACK.CONSULT [2]; ADVAST SUISSE AG [3]

FOLDING CARDBOARD INLAYS

Compact Gripping and Folding Unit Developed Specifically for a new Cardboard Tray Former



TO ENSURE THAT THE COMPLEX GRIPPING AND FOLDING UNIT IS AS COMPACT AS POSSIBLE, THE DOUBLE-ACTING CYLINDER DOES NOT TRAVEL THE FULL 120 MM LENGTHWISE, BUT IS DIVIDED INTO TWO STROKES OF 60 MM EACH.

They are hygienic, durable, lightweight and reliably protect medicines and instruments from contamination: plastic containers are indispensable in the medical and pharmaceutical industries. However, the material itself is not biodegradable, is often only recyclable with a loss of quality, and even more frequently ends up in residual waste. To implement sustainability goals in medical sectors as well, it is necessary to reduce the use of plastic as much as possible – for example, in packaging inlays. The problem with this is that folding cardboard trays has so far been significantly more complicated and expensive than producing their plastic counterparts. With the new cardboard tray former from Kraus Maschinenbau, however, inlays in various formats can now be produced efficiently. To design the system flexibly and in a space-saving manner, it is equipped with two special gripping and folding units, which the pneumatics specialist Konstandin developed specifically for this purpose. To ensure that this complex assembly is as compact as possible, the double-acting cylinder does not extend the full 120 mm lengthwise, but is divided into two strokes of 60 mm each. A sensor-

monitored rotary union from the same manufacturer reliably supplies the system with compressed air and electricity.

"Many industries have now realised that implementing sustainability goals is not just a 'must', but actually pays off for individual companies," says Patrick Hermann, Head of Design and Development at Kraus Maschinenbau. "In the medical and pharmaceutical industries, however, this process is progressing slowly – even though there is so much potential, especially in terms of waste reduction." With numerous medical products such as sterile packaging, blood bags or flexible components like tubing, plastic is often unavoidable. In the case of less critical applications, however, the situation is different: many components such as outer packaging or inlays can easily be made from paper or cardboard, which place significantly less strain on the environment during production and disposal.

But why has this so rarely been the case in practice so far? Hermann has an answer ready: "Cardboard packaging has so far been more expensive to produce because folding and shaping require more complex work steps, and most companies first have to invest in new systems for this." However, in recent years, Kraus Maschinenbau has observed an increasing demand for exactly this. Many manufacturers are interested in producing conventional trays for medical products such as medicines, ampoules and syringes from cardboard at low cost. Therefore, the machine manufacturer began developing initial concepts for the new cardboard tray former in 2020.

Patented assembly for separating, folding and combining

The cardboard tray former consists of four segments: at the beginning, there is a feeder for the still-flat cardboard blanks that form the supporting frame of the trays. These pass through a gluing station before cutouts for the recesses are inserted, folded and placed into the supporting frame in another feeder. The finished trays are then stacked for removal or, as needed, transferred to downstream systems for filling with products. The entire process is fully automated. "The complex unit for separating, folding and combining the individual cardboard components is a completely new design that we have already applied for a patent for," adds Hermann.

However, to ensure that the entire line, measuring approximately 6,400 x 2,800 mm, was not too large, the new development required particularly sophisticated pneumatics. For this, Kraus Maschinenbau turned to its long-standing business partner Konstandin. "The challenge was not to cobble together a complex assembly from several components, but to design it from scratch as a single unit to meet the strict requirements," explains Mathias Kraft, Technical Manager at Konstandin. "Among other things, it had to be as light and compact as possible, have a low centre of gravity and allow for movement in several directions as well as stops."

Compact pneumatics with extra damping

The first hurdle Konstandin had to overcome with the gripping and folding unit was to make the cylinder housing as small as possible. With the required stroke length of 120 mm, the entire structure would have been far too large, necessitating a redesign of the system and inevitably requiring more space and increased material costs. "However, we divided the stroke into two 60 mm movements so that it moves one step upwards and one step downwards lengthwise," reports Kraft. "This allowed the housing to be built half as large." A cam disc was also used to realise not only the double-acting longitudinal stroke but also a transverse stroke, which is responsible for clamping and folding the cardboard. To prevent the components for the transverse stroke from moving on their own due to rotation, the cylinder operates with particularly low back pressure.

The rapid cycle times required by Kraus Maschinenbau also presented the developers with challenges. A cycle should not exceed approximately one second. For the pick-up movement, this consists of extending, suction, retracting and rotating by 120 degrees; the placement movement involves clamping, extending,

retracting and rotating. However, due to the high speeds when reaching the end positions, impacts occur that inevitably place heavy stress on the components. To increase the durability of the components nonetheless, the strong forces are absorbed by special damping discs. Additionally, the screw connections were specifically secured against unintentional loosening.

A step towards greater sustainability

In addition to the gripping and folding unit, Konstandin supplied special rotary unions for the new system, which provide the system with compressed air for movement, vacuum for the suction device and electricity for the piston end-position switches. Due to their modular design, the rotary unions are equipped with a leakage channel, which allows seal wear to be monitored using sensors. "This makes it possible to plan maintenance in the long term," explains Kraft. "At the same time, there are no unpleasant surprises with the media supply that could impair operations."

The development process for the complex assembly took only two months. Thanks to the smooth collaboration with Konstandin, Kraus Maschinenbau was finally able to present the new cardboard tray former for the first time at Pharmintech in Milan in spring 2022. "The feedback was consistently positive," recalls Hermann. "There is undoubtedly strong demand for sustainable packaging that is in no way inferior to conventional plastic moulded parts in terms of performance. With the cardboard tray former, we are now offering companies the right tool for this."

Further information at https://www.krausmb.de/and https://konstandin.com/.

Kraus Maschinenbau GmbH

Since 2008, Kraus Maschinenbau GmbH has been developing and manufacturing high-precision feeding systems and complete solutions for various applications and industries. The components and systems are used worldwide in print and logistics, warehouse and automotive automation, as well as in the pharmaceutical, hygiene and food industries. The company places great importance on sustainability: wildflower meadows for insects buzz with life around the company building, while a photovoltaic system on the roof collects valuable solar energy, enabling the business to operate largely autonomously. When developing and designing customer projects, the company uses state-of-the-art, energy-efficient components and packaging materials that are as fully recyclable as possible.

Konstandin GmbH

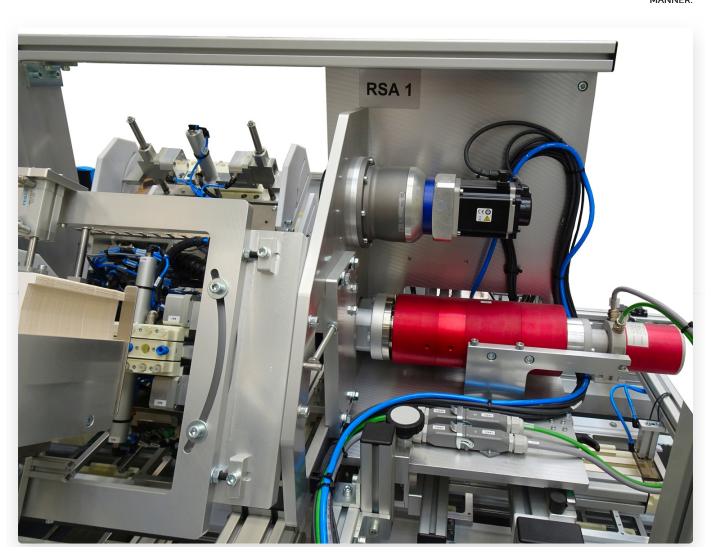
Konstandin GmbH was founded in 1975. The family business is now managed in the second and third generations by managing directors Jörg and Jonas Konstandin. The Baden-based company develops, produces and distributes technical components and systems, as well as customer-specific special solutions in the fields of pneumatics, hydraulics and vacuum technology. The extensive product portfolio ranges from cylinders to rotary unions, compact controllers and control cabinets. Konstandin's head-quarters are located in Karlsbad-Ittersbach, covering an area of 3,300 m². The company, which also operates as a training organisation, employs a total of 40 permanent specialists.



THE DEVELOPMENT PROCESS OF THE COMPLEX ASSEMBLY TOOK ONLY TWO MONTHS.



A SENSOR-MONITORED ROTARY UNION FROM KONSTANDIN SUPPLIES THE SYSTEM WITH COMPRESSED AIR AND POWER IN A FAIL-SAFE MANNER.

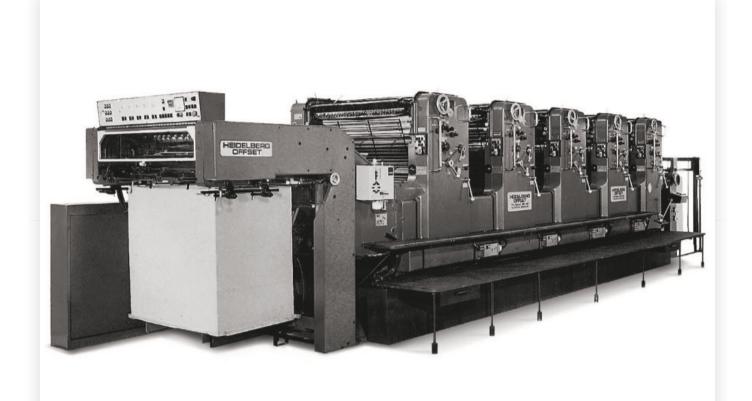


IN ORDER TO BE ABLE TO DESIGN THE CARTON TRAY FORMER FLEXIBLY AND IN A SPACE-SAVING MANNER, THE SYSTEM HAS TWO SPECIAL GRIPPING AND FOLDING UNITS THAT THE PNEUMATIC SPECIALIST KONSTANDIN HAS DEVELOPED SPECIFICALLY FOR THIS PURPOSE.

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© IMAGES: KRAUS MASCHINENBAU [1,4]; KONSTANDIN [2,3]

From a Bell Foundry to a Global Player



🔼 1975 SAW THE MARKET LAUNCH OF THE SPEEDMASTER SERIES, WHICH BUILT ON THE SUCCESS OF THE TIEGEL.

On March 11, 1850 – exactly 175 years ago – the Hemmer, Hamm & Co. bell foundry and machine shop opened in Frankenthal. Besides bells, it also made printing presses, which laid the foundations for the company now called Heidelberger Druckmaschinen AG (HEIDELBERG). Precision, quality, and innovation were the success factors that transformed HEIDELBERG from a workshop based in the Palatinate region of Germany to a global player in the printing industry. "A company that can sustain its success over such a long period, become a world leader in its industry, and continue to shape the entire sector right up to the present day has strong credentials that are testament to its innovative capabilities. The defining feature of HEIDELBERG is the company's understanding of markets, customers, and exceptional product quality," says Jürgen Otto, CEO of HEIDELBERG. "We also intend to maintain and build on this leading position in the future," he adds.

HEIDELBERG heads into the future with a strategy for growth

To achieve this, HEIDELBERG is tapping into growth potential in its traditional core business – from packaging and digital printing to software and lifecycle products. Recently, for example, the company has signifi-

cantly expanded its portfolio in the growth market of industrial digital printing, including service and consumables. Global incoming orders confirm that sales of digital printing solutions will already start increasing substantially from the coming financial year. According to market assessments, the global digital printing market that is accessible to HEIDELBERG will grow from its current level of around 5 billion euros to 7.5 billion euros in 2029.

As for lifecycle business, HEIDELBERG boasts the industry's most comprehensive service network, with a presence in approximately 170 countries.

Packaging printing enjoying strong growth worldwide

The end-customer market for packaging has grown by more than 60 percent over the past ten years. HEIDELBERG, too, is benefiting from this development. The packaging segment accounts for more than 50 percent of the company's sales, a figure that is set to increase further still. One market driver is the global trend toward replacing plastics, films, and foils with recyclable fiber-based packaging.

Hybrid print production boosts competitiveness

Autonomous printing processes that make printing businesses more efficient and save on resources used to be regarded as a futuristic vision, but that changed some time ago. HEIDELBERG introduced its Push to Stop concept for a printing process with minimal operator intervention back in 2016. The AI-assisted Prinect Touch Free workflow showcased at drupa 2024 assigns print jobs to the most efficient production method and output system on an automated basis. Besides offset and digital systems from HEIDELBERG and third-party suppliers, it also covers postpress operations, all the way through to the finished final product. Controlling hybrid print production in this way makes print shops much more competitive.

Growth in industrial business and with green technologies

"In addition to this, we will be further expanding our portfolio for industrial business and the growing green technologies market. This includes key sectors such as high-precision mechanical engineering, the automotive industry, charging infrastructure, software, and new hydrogen technologies," reveals Otto. Taking into account all strategic initiatives in the period to financial year 2028/2029, and in conjunction with enhanced performance and efficiency at both staff and organizational levels, HEIDELBERG sees overall growth potential amounting to over 300 million euros. "The achievements of HEIDELBERG over the past 175 years are impressive. We have every reason to be confident that our current market position, the expertise of our staff, and our global customer relationships will deliver further growth in the coming years," emphasizes Otto.

2025 is all about the company's anniversary

HEIDELBERG will be organizing numerous events to celebrate its anniversary year with customers, partners, politicians, and representatives of civil society. The highlight will be a week of celebrations in June, including an international ceremony at the company's largest production site, in Wiesloch-Walldorf. The HEIDELBERG customer demonstration center has been redesigned as the "Home of Print" for this purpose.

The company is organizing family days for staff at various sites. HEIDELBERG is also publishing an anniversary magazine providing insights into the company's past, present, and future. "The loyalty of HEIDELBERG customers, partners, and staff is a mainstay of the company's success. The numerous anniversary activities throughout the year are our way of saying thank you to everyone. At the same time, we want to encourage a shared commitment to shaping the future," says Dr. David Schmedding, Chief Technology & Sales Officer at HEIDELBERG.

Milestones in the history of HEIDELBERG

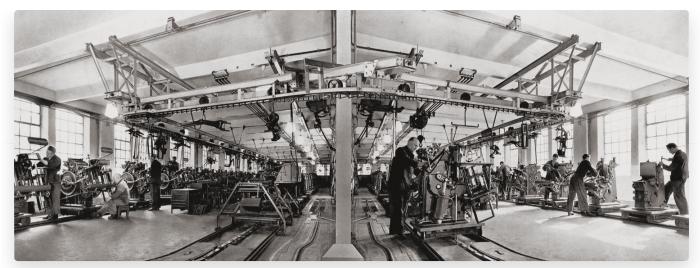
• 1850: The Hemmer, Hamm & Co. bell foundry and machine shop opens in Frankenthal on March 11, laying the foundations for the company now called Heidelberger Druckmaschinen AG.

- 1921: The first Heidelberger Tiegel is built. From 1926 onward, this automatic letterpress platen press was produced on an assembly line. By 1985, the company had manufactured over 160,000 of these presses.
- 1926: Hubert H.A. Sternberg is appointed to the board of Schnellpressen-fabrik Heidelberg AG, as the company is known at the time. He remained a board member until 1972 and really made his mark on HEIDELBERG. Sternberg modernized production and marketing operations and ensured the company's growth. In 1949, he organized the first German export exhibition in the USA after the Second World War. In 1951, he then helped initiate drupa, the sector's leading global trade show to this day.
- 1930: The demonstration vehicles set off. One of Sternberg's marketing ideas was to demonstrate HEIDELBERG presses to potential customers at their premises. This involved assembling them on trucks or installing them in buses and sending them to target markets around the world, accompanied by engineers. Advertising campaigns and installment-based payment plans also contributed to the success of the company's marketing.
- 1951: drupa proves a big hit with the public. The International Printing and Paper Exhibition, now known as drupa, attracted 300,000 visitors in its first year. HEIDELBERG presented an enhanced version of its successful Tiegel model. To protect against copycats, all the company's presses had a manufacturer's plate bearing the "Original Heidelberg" trademark.
- 1957: HEIDELBERG creates space to grow. Further expansion within the city of Heidelberg was impossible, but thanks to Sternberg's strong commitment, the company was able to open what is still its largest production site, in Wiesloch, after a construction period of just one year.
- 1962: HEIDELBERG moves into the up-and-coming offset market with its small offset rotation press (in German: Kleine Offset Rotation, or KOR for short). In 1965, this was followed by the Rotaspeed, a larger sheetfed offset press. Then, in 1972, a large platen offset press (in German: Grosse Tiegel Offset, or GTO for short) was launched and proved a successful model for years to come.
- 1975: A name that says it all! The Speedmaster sheetfed offset press for multicolor printing revolutionized the market with its productivity. Operating at 11,000 sheets per hour, it became a bestseller and is, to this day, a cornerstone of the HEIDELBERG portfolio in the company's traditional core business.
- 1999: HEIDELBERG acquires a 30 percent shareholding in the Swiss press manufacturer Gallus, a market leader in label printing, before taking over the company completely in 2014.
- 2000: HEIDELBERG transforms itself into a solution provider, expanding its prepress and postpress portfolios through targeted acquisitions. Prinect software ushered in the era of digitalization by networking the various machines in the workflow.
- 2004: HEIDELBERG takes a further key step toward digitalization, connecting a press to the Internet for the first time.
- 2005: The Chinese production site in the Qingpu district of Shanghai opens. Now a cornerstone of the company's production network, it is becoming increasingly important.
- 2016: At drupa, HEIDELBERG introduces the Push to Stop concept, which only requires operator intervention if a problem occurs the next logical step toward autonomous printing.
- 2018: Wallbox production starts in Wiesloch-Walldorf. The company subsequently founded a subsidiary called Amperfied that successfully tapped into a new area of business the electromobility market.
- 2020: The company moves into robotics, with industrial robots driving the automation of the printing process, including postpress operations. This automation will also extend to other areas in the future.
- 2024: The new Jetfire 50 digital press developed in cooperation with Canon is unveiled at drupa 2024, offering industrial productivity in the growth area of digital printing.
- 2025: The company celebrates 175 years of HEIDELBERG and opens its redesigned customer demonstration center, now called the **Home of Print**, in Wiesloch-Walldorf. A clear **growth strategy** will take the company into the future.

You can read more about 175 years of HEIDELBERG and history on the dedicated anniversary website www.heidelberg.com/175, on the current Wikipedia page of the company, in the yearbook "150 years of Heidelberger Druckmaschinen AG" and "A Press Is Born".



 ${\color{red} lack}$ 1921 SAW THE LAUNCH OF THE LEGENDARY HEIDELBERGER TIEGEL THAT WAS TO MAKE THE COMPANY A WORLD LEADER ...



... AND ALSO LED TO HEIDELBERG INTRODUCING ASSEMBLY LINE PRODUCTION IN 1926.



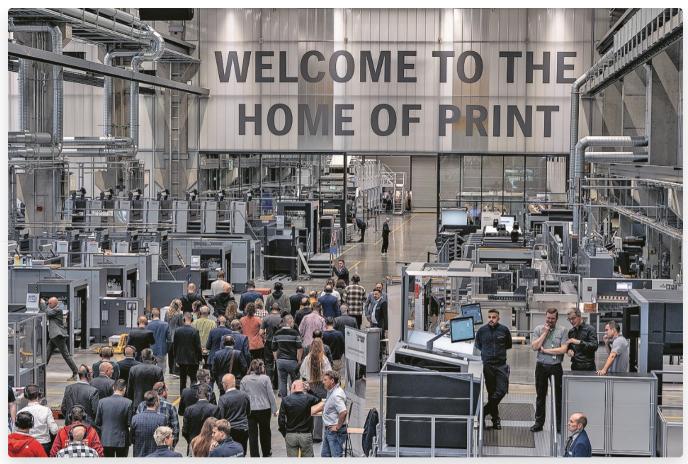
A KEY FIGURE OVER THE NEXT 45 YEARS WAS HUBERT H.A. STERNBERG, WHO WAS A BOARD MEMBER FROM HIS INITIAL APPOINTMENT IN 1926 UNTIL 1972 AND REALLY MADE HIS MARK ON HEIDELBERG.



LA HUBERT H.A. STERNBERG PROVED TO BE A MARKETING GENIUS, INTRODUCING DEMONSTRATION VEHICLES TO TAKE HEIDELBERG PRES-SES TO CUSTOMERS FOR PRESENTATIONS FROM 1930 ONWARD.



HEIDELBERG MOVED INTO ROBOTICS IN 2020 AND IS GRADUALLY EXPANDING ITS PORTFOLIO AS IT HEADS TOWARD AUTONOMOUS PRODUCTION.



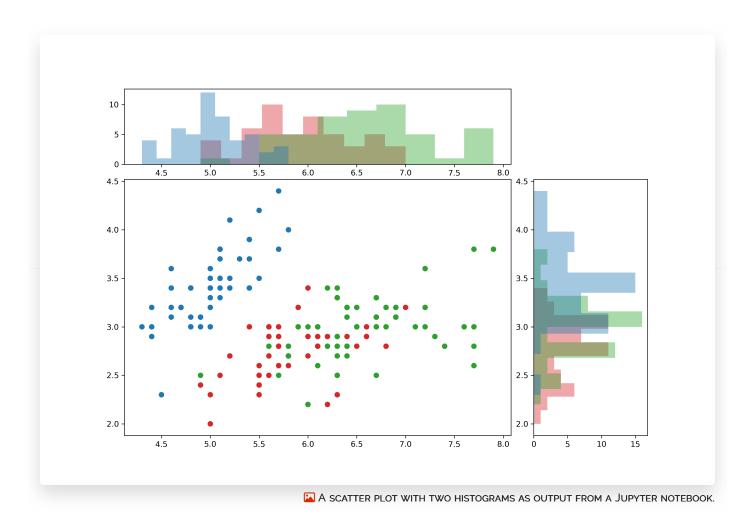
WELCOME TO HEIDELBERG IN THE HERE AND NOW – IN 2025, ITS ANNIVERSARY YEAR, THE COMPANY IS OPENING ITS REDESIGNED CUSTOMER DEMONSTRATION CENTER AS THE "HOME OF PRINT".

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© IMAGES: HEIDELBERG

■ WHAT DOES IT MEAN ...

Jupyter Notebook



[EDUCATION GAP]

Jupyter Notebooks aren't the kind of thing you buy at your local computer store and pay for with cash. Rather, we're in the realm of big data. Jupyter Notebooks is a software application primarily used for analyzing and visualizing large amounts of data – preferably live and in real time. But the files with the somewhat cumbersome file abbreviation *ipynb* can also be easily saved and shared.

Qu'est-ce que c'est?

From the official description: "A notebook is a shareable document that combines computer code, plain language descriptions, data, rich visualizations like 3D models, charts, graphs and figures, and interactive controls. A notebook, along with an editor (like JupyterLab), provides a fast interactive environment for prototyping and explaining code, exploring and visualizing data, and sharing ideas with others."

Jupyter Notebooks essentially consist of any combination of code cells and markup cells. While the latter are intended for textual descriptions and explanations, code cells are used for script-like programming. The code can be executed and modified – isolated for each cell – and immediately delivers results, such as visual representations of the data. In addition to classic bar charts and pie charts, more sophisticated visualizations such as box plots, scatter plots, matrices, and even 3D plots are available. What all graphics have in common is that they can be configured in a wide variety of ways, making Jupyter Notebooks ideal for presentations, workshops, or video conferences.

Work environment

The easiest way to create and run a Jupyter Notebook is to use the web interface JupyterLab in your browser. Seriously interested parties will prefer a local installation and consult the extensive documentation. Ultimately, you'll unlock its full potential with maximum control: As part of an integrated development environment (IDE) such as JetBrains DataSpell or PyCharm, which include native Jupyter support, the system is equipped for all professional use cases.

Jupyter Notebooks can be used with various programming languages. The first step is to load a language core, a so-called kernel. While there are language cores for many common languages, such as Java, PHP, or

Dart, these are considered rather exotic when it comes to data analysis and processing. In 99 percent of cases, you will use Python, the standard language for these types of applications – possibly supplemented by R, a scripting language particularly suited to statistical applications. The great advantage of Python – in addition to the uncomplicated setup of a suitable working environment – is the availability of a large number of libraries that were created precisely for these problems and have been tried and tested over many years. The classic libraries are called *pandas*, *numpy*, *seaborn*, and, of course, *matplotlib*. They are all available free of charge, either separately or – more conveniently – as part of a ready-made Python distribution such as Anaconda.

Of course, every programming language initially has a more or less steep learning curve. Python is no exception. However, you will rarely need to delve into the depths of its programming constructs (i.e. *fluent Python*); data preparation and graphical representation can often be achieved with just a few lines of code. At the end of this article, you will find further literature references that should get you fairly well-versed.

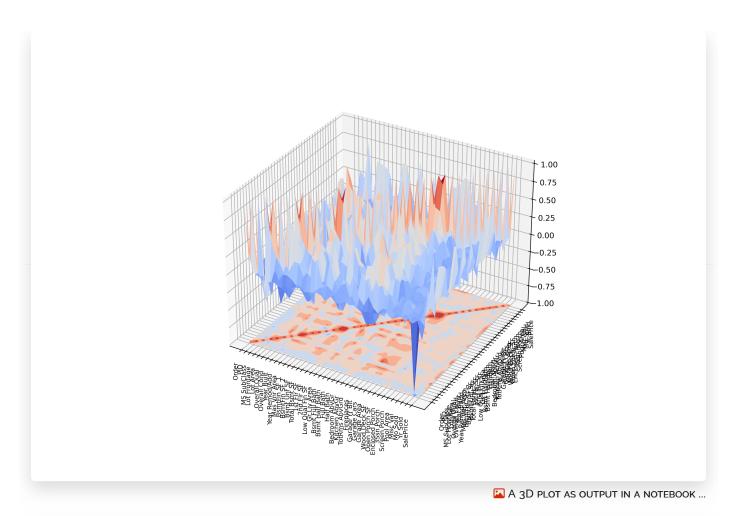
It doesn't matter what type of data you're dealing with. Sales or other financial data, market analyses, or log or maintenance data from a production plant - anything is possible. Depending on the quality of the data, some prior processing may be necessary, but the Python libraries - especially *pandas* and *seaborn* - offer all the necessary tools for this. This includes handling file formats that are "logical" choices for data processing: CSV and XLSX files can be loaded with a single line of code, and direct access to an SQL database (even remotely) is also possible. Ultimately, in an IDE, the entire scope of Python is available beyond the libraries mentioned.

Further reading

Landup, D.: Data Visualization in Python with Matplotlib and Pandas (StackAbuse)

Vanderplas, J.: Python Data Science Handbook (O'Reilly)

McKinney, W.: Python for Data Analysis (O'Reilly)



C Jupyter Notebook.ipynb × + / | ※ 圓 圓 | ↑ ↓ | ▷ ☆ □ □ G ▷ ♂ 回 | Code ∨ | ✓ Go To Managed: http://localhost:8888 ∨ Trust Notebook 🛌 🛝 import matplotlib.pyplot as plt import pandas as pd import numpy as np df = pd.read_csv('dataset.csv') fig = plt.figure(figsize = (12, 8)) X = Y = range(0, len(correlations.columns)) X, Y = np.meshgrid(X, Y)Z = correlations.values ax3d = fig.add_subplot(111, projection = '3d') ax3d.plot_surface(X, Y, Z, cmap = plt.get_cmap('coolwarm')) ax3d.contourf(X, Y, Z, offset = -1, cmap = plt.get_cmap('coolwarm')) plt.yticks(range(0, len(correlations.index)), correlations.index, fontsize = 8, rotation = 90) plt.xticks(range(0, len(correlations.columns)), correlations.columns, fontsize = 8, rotation = 90) 19 fig.savefig('plot.png', dpi=300) fig

... AND ITS ASSOCIATED, VERY MANAGEABLE CODE CELL.

🖋 AUTHOR: SBR

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Voith



Unlocking potential Boosting your winder

Voith Paper specialists provide full-line supplier expertise, experience and engineering to maximize winder performance and production, while minimizing complexity, risk and total maintenance costs. The broad portfolio of innovative winder solutions ensures higher winder availability and eliminates capacity bottlenecks.

A winder that keeps pace with the paper machine can be a critical driver of productivity in the paper mill. In contrast, one that cannot is often a source of bottlenecks, costly maintenance and loss of production. The challenge is to identify and successfully implement the optimal solutions that boost the key performance indicators for the end-of-line winder section and the entire paper mill.

voith.com





Mondi Expands Packaging Portfolio and Capacity



MONDI EXPANDS PACKAGING PORTFOLIO AND CAPACITY BY COMPLETING ACQUISITION OF SCHUMACHER PACKAGING'S WESTERN EUROPE
OPERATIONS

Mondi has completed the acquisition of the Western Europe assets of Schumacher Packaging, expanding the product range, capacity and innovation available to customers demanding high-performance, sustainable packaging at scale. For existing Mondi customers, the expanded product range and enhanced production flexibility supports the growing demand for sustainable packaging solutions. Customers joining from Schumacher Packaging gain full access to Mondi's comprehensive product portfolio and services, industry-leading sustainability credentials, reliable delivery systems and strengthened security of supply.

"This acquisition significantly strengthens our corrugated packaging business, extending our footprint in Western Europe and offering strong vertical integration opportunities. We are delighted to welcome our new Schumacher Packaging colleagues to Mondi. Together we will expand our eCommerce and FMCG offering, particularly in Western Europe, presenting exciting opportunities to introduce the Group's unique range of products to a wider array of customers as they increasingly transition towards more sustainable packaging solutions," comments Andrew King, Mondi Group Chief Executive Officer.

Among the acquired sites, the two state-of-the-art mega box plants in Ebersdorf and Greven (Germany) deliver best-in-class asset performance and quality. By adding solid board solutions to the portfolio, Mondi provides eCommerce and FMCG customers with sustainable packaging that protects products while optimising logistics.

"This acquisition is all about delivering more for our customers – greater capacity, enhanced supply security, and a broader range of sustainable packaging solutions to help them succeed. Bringing together the expertise of our new colleagues from Schumacher Packaging with Mondi's capabilities strengthens our offering even further, enabling us to drive greater innovation and value for the customers we serve," comments Markus Gärtner, CEO Corrugated Packaging, Mondi Group.

In addition to the benefits of an expanded portfolio and value chain integration, the combined expertise of Schumacher Packaging and Mondi can support customers further by reducing waste, cutting carbon emissions and improving operational efficiency.



THE COMBINED EXPERTISE OF SCHUMACHER PACKAGING AND MONDI CAN SUPPORT CUSTOMERS FURTHER.

O EDITOR: SBR

Alfa Laval Expands its Hygienic Valve Portfolio



■ LEAKAGE DETECTION BUTTERFLY VALVE WITH THINKTOP V50.

Alfa Laval is expanding its hygienic valve portfolio by introducing the Unique SSV Pressure Relief Valve and the Leakage Detection Butterfly Valve, alongside new smaller sizes of the Unique Mixproof CIP and Unique Mixproof Process valves. By broadening its range, Alfa Laval reaffirms its commitment to providing reliable, high-performing solutions that ensure safe processing, protect product integrity, and safeguard consumers while addressing the evolving needs of the hygienic industries.

"By prioritizing product and equipment safety in combination with efficiency and reliability, we continue to support manufacturers in the dairy, food, beverage, and home and personal care industries," says Paw Kramer, Portfolio Manager, Valves and Automation at Alfa Laval. "These additions provide manufacturers with greater flexibility to customize valve solutions to meet their processing requirements."

Prevent overpressure with the Alfa Laval Unique SSV Pressure Relief Valve

When peak performance under pressure is critical, the Unique SSV Pressure Relief Valve protects hygienic processing lines, particularly those with positive displacement pumps, from overpressure. Paired with and

powered by Alfa Laval ThinkTop® technology for valve monitoring and control, it safeguards process efficiency, productivity and safety. Pressure relief setpoints are easy to adjust onsite to accommodate changing conditions. Built on the proven SSV platform, this modular valve shares spare parts with other Unique SSV valves, simplifying maintenance and reducing service costs. Fully CIP-able regardless of the pressure setting, the valve ensures reliable hygiene and performance while minimizing downtime.

Enhance safety with the Alfa Laval Leakage Detection Butterfly Valve

Product safety and efficiency are the hallmarks of this straightforward Leakage Detection Butterfly Valve. When powered by an Alfa Laval ThinkTop for valve monitoring and control, it enhances reliability due to real-time valve monitoring and control. Integrated leakage detection enables rapid response to potential issues, maintaining performance. A single seal, disc and actuator make the valve compact and lightweight while reducing installation, operating, and maintenance costs. Fully CIP-able, the valve guarantees more uptime, continuous operations, long-lasting performance, and energy, water and cleaning media savings.

A wider range of mixproof valve sizes

Alfa Laval is also extending its Unique Mixproof range with two new sizes -1" (DN25) and $1\frac{1}{2}$ " (DN40) - of the Unique Mixproof CIP and Mixproof Process valves. These smaller double-seat mixproof valves offer high cleanability, pressure resistance, and adaptability to meet diverse hygienic processing needs. With these new sizes, manufacturers can easily integrate more compact CIP skids, valve matrices and dosing lines into hygienic processing lines while maintaining the safety that mixproof valves deliver.

Meeting industry demands with an expanded portfolio

The latest additions to Alfa Laval's valve portfolio demonstrate our commitment to meeting the evolving needs of industries where safety, efficiency and reliability are paramount. With the Unique SSV Pressure Relief Valve, Leakage Detection Butterfly Valve, and smaller Unique Mixproof CIP and Process Valves, Alfa Laval continues to provide practical, high-quality valves that enhance operational performance across a broad spectrum of applications.

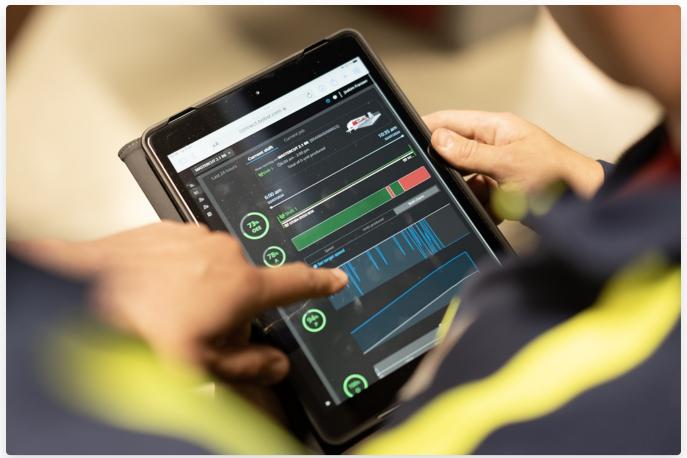


☐ UNIQUE SSV PRESSURE RELIEF VALVE WITH THINKTOP V50.

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Stora Enso Uplifts Production Efficiency and Capacity



■ BOBST CONNECT DASHBOARD USED BY STORA ENSO PACKAGING.

Stora Enso Packaging has seen a production capacity uplift of 4.4% and a production efficiency increase of 3.3% after implementing Bobst Connect. Stora Enso Packaging's two converting plants in Skene and Jönköping, work closely together to produce consumer packaging, transport packaging, grouped and retail-ready packaging, and corrugated sheets. Its Jönköping site is equipped with advanced machinery from Bobst, including two MASTERCUT 2.1 flatbed die-cutters and two MASTERFLEX flexo post-printers. Alongside machinery, the partnership between Bobst and Stora Enso includes the integration of Bobst Connect, customized training, and comprehensive machine support through the Bobst Maintenance Plus service plan.

The Bobst Connect platform generates real-time production data to empower Stora Enso Packaging's teams with critical machine insights for optimal performance and informed decision-making. Alongside this, Bobst has also supplied bespoke training to upskill the Stora Enso Packaging production team and provides proactive maintenance and support through the Bobst Maintenance Plus plan.

Fredrik Wiell, Maintenance Manager at Stora Enso Packaging, adds: "Bobst has been a partner to Stora Enso for many years – it's simply one of the best corrugated packaging machine suppliers. After implementing

Bobst Connect, we saw a production capacity uplift of 4.4% and a production efficiency increase of 3.3%. We have now reached a machine availability of 98.5%, which is a great outcome for us.

"We wanted more knowledge of how our machines are running, to maximize our efforts, and we've also seen decreased machine downtime and reduced waste. Digitalization and connectivity are very important for us, and we've invested in several training packages from Bobst, tailored to our needs, as well as the comprehensive Maintenance Plus service plan to keep our machines operating at their best."

Karim El-Jamal, Technical Service Manager at Bobst Scandinavia, comments: "In a corrugated packaging industry that constantly demands more, our partnership with Stora Enso shows the impact of collaboration and innovation. By providing advanced technological solutions built around the needs of the market, and the dedicated support that Bobst is known for, we help partners like Stora Enso achieve new levels of performance and efficiency."

Combining Bobst's technological expertise and customer-centric approach with Stora Enso's industry position, the Jönköping site has set a new benchmark for efficiency and performance in the corrugated packaging sector. More information can be found in the company's latest video testimonial https://youtu.be/YzI7Rcenk-U.



FREDRIK WIELL, MAINTENANCE MANAGER AT STORA ENSO PACKAGING.

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Unlocking the Untapped Potential of Paper Recycling



WINNETOU AND OLD SHATTERHAND: INPUT MATERIAL FROM MIXED WASTE STREAMS.

bio-fibre MAGAZINE

The demand for sustainable solutions in packaging has never been higher, particularly in the food industry, where consumers are increasingly drawn to products that promise environmental responsibility. This trend has sparked a significant shift towards paper-based packaging, driven by market forces and regulatory imperatives. The global paper packaging market is expected to reach USD 75.64 billion in North America and USD 97.6 billion in Europe by 2025, with CAGRs of 3.9% and 4.8%, respectively, by 2030. The food industry is a key driver, with liquid cartons becoming one of the fastest-growing packaging types, fueled by consumer preference and sustainability goals. However, recycling remains a significant challenge.

Despite the rapid adoption of paper solutions, a considerable amount of paper, especially from mixed waste streams, remains unrecycled. Studies have revealed that, in Germany, lightweight packaging waste could supply 100,000 tons of high-quality paper annually, yet persistent challenges hinder its potential. The EnEWA project, led by Stadler Anlagenbau GmbH and industry partners, has demonstrated the technical feasibility of recycling paper from mixed waste, but regulatory barriers remain.

The rising challenge of paper-based packaging

The food industry is witnessing a remarkable shift towards paper packaging, driven by environmental concerns and consumer demand. Companies are heavily investing in sustainable paper solutions, such as Pulpex's paper bottles made from responsibly sourced wood pulp. However, recycling, particularly from composite packaging, remains a challenge. The combination of paper, plastic, and aluminum layers complicates the recycling process, making it energy-intensive and prone to contamination, while regulatory obstacles further hinder progress.

The regulatory hurdle

The regulatory landscape is designed to ensure the safety and quality of recycled materials used in food contact applications, though approaches vary. EU regulations are prescriptive, with a high level of scrutiny on the sources of recycled fibers, which poses challenges for using mixed waste paper in food packaging. North American regulations, on the other hand, focus more on general safety and good manufacturing practices, allowing more flexibility but placing greater responsibility on manufacturers to ensure compliance.

"The EnEWA project has shown that with the right technological adjustments, such as improved sorting and sanitization processes, high-quality paper can be recycled from mixed waste streams," explains Annika Ludes, Product Engineer at Stadler. "However, to fully realize this potential, changes in the regulatory landscape are essential. Amendments to guidelines could pave the way for more sustainable use of recycled paper in the food industry."

The EnEWA project's contributions

The EnEWA project has provided compelling evidence that recycling paper from mixed waste is technically feasible. It demonstrated that through innovative sorting technologies and adapted processes with drymechanical sorting, wet processing, and sanitization, secondary fibers could be obtained and used in paper production without significant contamination issues. Sorting technologies such as Near-Infrared (NIR) sensors were optimized to identify and separate composites. Additionally, processes like hot dispersion under overpressure successfully reduced microbiological contamination.

Beyond technological advancements, the EnEWA project has engaged with regulatory authorities and developed recommendations towards a more flexible regulatory approach to regulations, backed by scientific data from worst-case scenario experiments.

The future of paper recycling

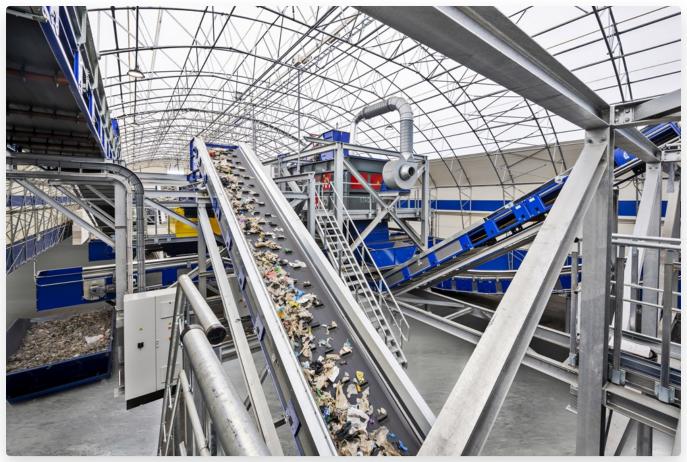
The EnEWA project has put the spotlight on the untapped potential of paper recycling, showing that the technology exists to recycle significant amounts of paper from mixed waste. However, unlocking this potential requires a concerted effort to overcome regulatory barriers and improve waste management practices. By addressing these challenges, we can turn what is currently a lost resource into a cornerstone of sustainable packaging, driving the industry towards a more circular and environmentally friendly future.



OVERVIEW OF SUBCATEGORIES.



☑ THE ENEWA PROJECT TEAM AT IFAT 2024.



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