



The paper forms a kind of tube and thus encloses the print product. Crosswise and longitudinal gluing with hotmelt adhesive ensures that the envelope is sealed on all sides.

# Avoiding Film

**SUSTAINABILITY** ■ Whether it's leaflets or magazines with multiple inserts, all of them are usually wrapped in film to keep everything together. The material is light and cost-effective - but not always environmentally friendly. With K-Wrap, the printing company Kohlhammer Druck is now launching a product that packs these products in paper - even personalising each package thanks to digital printing. This has been made possible thanks to a packaging system from Hugo Beck.

■ Managing director Steffen Franzisi and his team at Kohlhammer Druck, based in Obertürkheim, near Stuttgart, Germany, were actually looking for a classic paper packaging system - because due to the growing public awareness of sustainability, more and more customers, especially publishers, have been seeking an alternative to film wrapping their products. After months of joint development work with German machine manufacturer Hugo Beck, and following extensive test runs, Kohlhammer now has a system that can pack products up to an A4+ size - but which also boasts many other options.



**We have to make it clear to the public that printed products are more sustainable than many digital media.**

Steffen Franzisi,  
Managing Director, Kohlhammer Druck

## SUSTAINABLE AND PERSONALISED.

"Initially, we just wanted to pack magazines in paper. But the more we talked about this with our customers, the more ideas and new product approaches emerged," said Franzisi. "What else could we do with the system, we thought, and how could we create added value?" In his opinion, it is precisely this added value that will ultimately determine the success of any alternative to film wrapping. After all, it will be difficult for paper as a packaging material to hold its own against the much cheaper film on price alone. But individually printed paper, with added value, may well do.

And this is exactly what K-Wrap delivers. The packaging paper is first printed, on the company's inkjet roll printer, a Truepress Jet 520 HD, which

is capable of applying different, personalised content to every copy. And not only on the front of the paper, as the rougher inside can also be printed with personalised messages or numbers. Anything can be printed on the paper; whether a customer wants to print a cover letter onto the pack, display a competition, or print editorial highlights of the contents to encourage a purchase or some other interaction, the only real limits are your own imagination - and the space needed for postal shipping.

Paper packaging can thus do something that is very difficult to achieve with film: create an emotional bond with the reader.

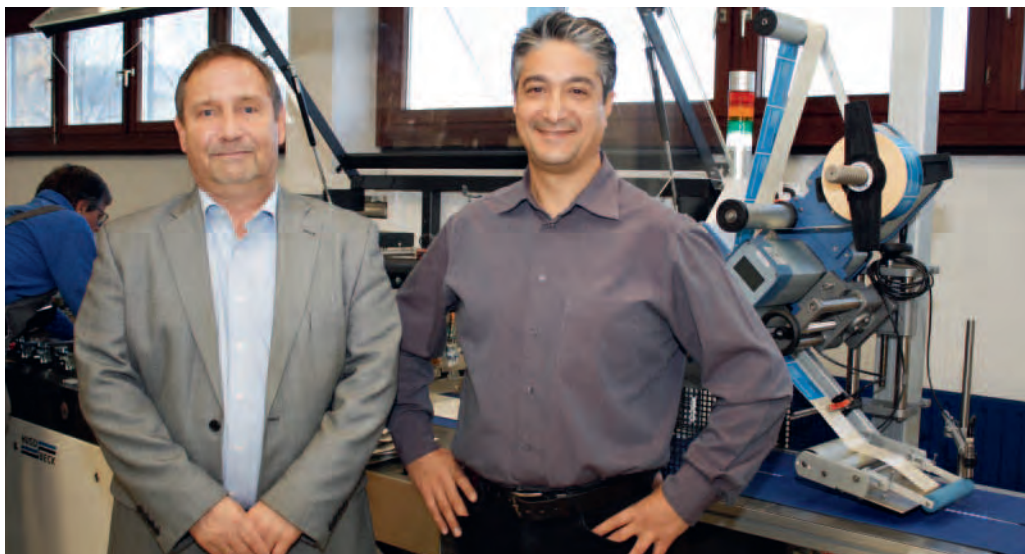


*Products up to size A4+ can be packed in K-Wrap. In terms of thickness, up to 50mm is technically possible. The next few weeks will determine what actually works best in practice. The front of the envelope can be printed with personalised content, and the address is printed on the back, or a label is applied.*

## Who is Hugo Beck?

■ Hugo Beck was founded in 1955 as a "workshop for turning parts". Over the years it has become a specialist in the development and construction of flowpack, paper and film packaging systems as well as print finishing machines able to achieve performances between 3,000 and 18,000 cycles/hour. With its packaging solutions, the German mechanical engineering company, based in Dettingen/Erms, serves not only the graphics industry, but also very different sectors such as pharmaceuticals and medical technology, as well as the food, cosmetics, wood and glass sectors, to name but a few. A total of around 110 employees are involved in project planning and customer-specific production of the various packaging systems.

➔ [www.hugobeck.com](http://www.hugobeck.com)



Jörg Schwarzbeck, Hugo Beck sales manager Germany Southeast and Switzerland, and Özkan Meral, technical manager at Kohlhammer, have further developed the paper packaging system in the past few months, adding additional units and functions and putting everything to the test again and again.

Together with the fact that paper, as a renewable and completely recyclable raw material, is much more sustainable than many films, paper packaging is a real alternative to film.

"We have to make it clear to the public that printed paper products are much more sustainable than using film, especially in terms of recycling," said Franzisi. "What's more, it has been proven that printed products are kept for longer and are therefore more effective than any other media. Another plus point for the use of paper packaging."

**ANYTHING BUT ORDINARY.** The technology behind paper packaging is not new. Machine manufacturer Hugo Beck already had systems in its portfolio back in 2008 that could do the job. Nevertheless, as Hugo Beck sales manager Timo Kollmann explained, the demand for alternatives to film packaging has been increasing significantly, especially since the mass public debate on climate protection and the pollution of the world's oceans. However, the enquiries are not only about printed products, as the packaging systems from Hugo Beck are used in a wide range of industries for a variety of products. But very few companies have been as creative as Kohlhammer.

*The smart thing about the new paper packaging system from Kohlhammer is that the paper packaging can be individually printed in advance on the Truepress Jet 520 HD inkjet roll. This means that each envelope can have its own personalised design, as shown by Kohlhammer sales manager Matthias Rack (left) and managing director Steffen Franzisi (right), using a company-owned example. And the inside of the cover can also be customized, as the picture on page 21 shows with the recurring K-Wrap logo.*

The basis for the K-Wrap system is the Paper X Hybrid Advance machine from Hugo Beck. But, at Kohlhammer's request, Hugo Beck integrated numerous additional devices around the packaging modules, such as six insert stations with friction and rotary feeders, a label dispensing module, an inkjet printing unit as well as a compensating stacker and cross-bander. This meant that all the essential components for mail dispatch were in place.

The system is therefore not equipped simply for packaging a product - it can also selectively add individual inserts depending on the data record, apply labels or, true to "Late Stage Customisation", print addresses via DOD inkjet shortly before stacking. "With all this, we are creating completely new services and products for ourselves", said Franzisi. "That's really exciting. And who knows

where it will take us?" With packaged magazines, selective insertion or individual, automated mailing production, the possibilities are seemingly endless.

**MATERIALS SCIENCE.** However, before the paper packaging system could be fully up and running at the printing plant, numerous design, integration and coordination tasks, as well as several test runs have been necessary. In order to achieve a consistent sustainability strategy, the right material also had to be found. As Matthias Rack, sales manager at Kohlhammer, explained, there were three key issues: "The first question was, what can we print with our inkjet roll? The second question was, which of these materials can we also use for packaging? And the third question was, what does the printed and pack-



## Multi-functioned

■ The K-Wrap paper packaging line from Kohlhammer can do more than its name suggests. In order to guarantee the functionalities required by the printing company, the processing line was equipped with a number of additional units. It now includes:

- a main product feeder
- six insert stations (friction and rotary feeders) for inserting or placing inserts
- the packaging unit, including unwinding of the paper web, tube formation, cross and longitudinal gluing with hotmelt and product separation
- a label dispenser and a drop-on-demand inkjet printing module
- a stacker
- a bundle label printing/applying station
- a cross-bander.

aged product look like after it has gone through the mail?" "And suddenly you find you're deeply immersed in materials science in its purest form," added Franzisi. In order to find the best solution in the interaction between paper, adhesive and mechanical stress, various materials were tested and test shipments were also carried out by mail. Theoretically, the paper packaging line can process substrates between 70 and 130 g/m<sup>2</sup> in different compositions. "This could be using recycled or standard paper, light, dark, kraftliner, long fibre or short fibre. There are huge possibilities," explained Jörg Schwarzbeck, sales manager Germany South East and Switzerland for Hugo Beck.

In the end, the choice fell on a paper with a grammage of 80 g/m<sup>2</sup>, made, of course, from 100 per cent recycled materials. Kohlhammer will initially offer two colour options: "K-Wrap Stone-grey" and "K-Wrap Clay", a paper with a slightly warmer appearance. The paper is glued with a hot melt glue - but the development teams at Kohlhammer and Hugo Beck will not reveal more at this point.

**PUTTING TO THE TEST.** But the work is far from complete, explained Özkan Meral, technical manager at Kohlhammer: "We're now at the point where we have to develop a formula depending on product width, length and height so that we can then use it in full production on any job." Matthias Rack added: "On the packaging line, we no longer have the opportunity to react and add, say, 5mm, because then the sections might no longer fit. So we have to check exactly how much overhang we need for products of varying formats and thicknesses." This is because the data must be adjusted for the later packaging process even before printing. If it's set up properly, the packaging unit can reach a speed of up to 8,000 copies per hour, or 133 cycles, according to Jörg Schwarzbeck. With each additional function or insert, however, the output can be reduced, just as one would expect from traditional mailroom technology.



*The paper packaging system is based on the "Paper X Hybrid Advance" and has been extended by several units in cooperation with Kohlhammer (see box on page 20). When the system is fully installed, it will measure almost 26 metres in length and can pack much more than just paper.*

The next few weeks and months will show which parameters will ultimately make the line run best, and for which products - because the printing company already has many orders with which to test the paper packaging system in minute detail.

**STRICTLY CLIMATE NEUTRAL.**

Kohlhammer doesn't do things by halves. As such, the company applies the sustainability concept to all of its processes, including the development of K-Wrap. For example, for the time being only items produced at Kohlhammer will be packaged with this technology. "We want to ensure that sustainably produced products are also shipped in sustainable packaging," said Franzisi. In addition, paper packaging will be offered only in a completely climate neutral form and will be labelled accordingly. "We are not doing this because it's trendy, but because we strongly believe that we have to do something. And if the companies

publishers or brand companies are really serious about it, they can do something too," concluded Franzisi. And maybe their first step towards this could be to replace the film packaging of their products with personalised paper packaging.

Judith Grajewski

## Sustainability at all levels

■ For Kohlhammer Druck, sustainability is not just an "in" topic due to public demand, but a profound part of the company's philosophy. This can be seen not only in the paper packaging system, but in all areas of the company. For example, at the end of 2019, the fully automatic CtP exposure line was converted to processless plates, which not only saves a lot of energy, but also reduces washout chemicals and fresh water use. At the same time, productivity has been increased from previously 60 to 140 plates per hour. For Steffen Franzisi and his team, every new investment is not only about the performance parameters of the systems but also about how resource-conserving they are. With this in mind, an old Heidelberg 10-color perfecting press was replaced with a new XL 106 eight-colour perfecting press with push-to-stop technology in April last year. And the washing programmes and alcohol additives were optimised so that production in this area is also as environmentally friendly as possible. In addition, many areas of the company have already switched to LED lighting. And Kohlhammer is currently working on its own climate initiative for reforestation.

➔ [www.kohlhammerdruck.de](http://www.kohlhammerdruck.de)



*Kohlhammer intends to offer two recycled materials for the packaging: "K-Wrap Stone-grey" (left) and "K-Wrap Clay" (right, visible from the rougher inside) with 80 g/m<sup>2</sup>. All paper packaging is produced and labelled in a climate neutral way (above).*