

# DIGITAL PRINTING AS A SUCCESS FACTOR IN FLOORING PRODUCTION

The JUPITER Digital Printing Lines from Hymmen remain the technology of choice for Classen – a leading supplier of laminate and PVC-free designer flooring. Dr Anke Pankoke, Head of Marketing at Hymmen, explains why

Classen has relied on the single-pass JUPITER technology from Hymmen since its first commissioning a decade ago and now uses five digital-printing lines. On the anniversary of the first line to produce laminate flooring at the Baruth site, let's take a look back at the success story of digital printing at the flooring manufacturer.

## THE MARKET SITUATION FOR DECORATIVE SURFACES IN THE FLOORING SECTOR

Classen customers showed the need to design their furnishings and therefore their floors more individually at affordable prices. The standard 'beech-ship's floor' look for flooring available in 2012 did not meet these needs any more.

Sales staff at Classen had been observing this for some time and predicted that for that reason their own customers – specialist and DIY stores – to be even more keen to differentiate themselves from their competitors by more attractive flooring designs.

## A CHALLENGE FOR ALL FLOORING MANUFACTURERS

Up to now, décor paper has been purchased from external service providers and glued (laminated) onto the core board. The minimum purchase for such decors is enormous, meaning that often 15–20,000m<sup>2</sup> of flooring needed to be processed. However, customers from the specialized trade often

wanted to purchase high-quality, exclusive flooring in quantities of less than 500m<sup>2</sup>.

The machine and plant-engineering company Hymmen also anticipated this market trend and began to develop digital-printing technology for décor specialists in the wood-based materials industry in 2008. To succeed in digital-printing technology

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in the flooring industry, industrial capacity, applicability to a wide variety of substrates and connection of the digitally printed surfaces in the production process were essential. In addition, high demands are placed on the quality of the surface, not only for the décor, but also aspects of chemical and physical abrasion resistance.

## JOINT DEVELOPMENT PROJECT

Ten years ago, digital-printing technology for flooring was in its infancy. "Nevertheless, we at Classen had the idea to enter digital printing and print certain decors for laminate floors ourselves," recalls Daniel Schwach, Head of the Pre-Coating and Digital Printing Division. "On the one hand, we wanted to constantly improve and be the innovation leader in our field. On the other, we wanted to respond even better to our customers' wishes for smaller batch sizes, exclusivity, décor variety and flexibility," Schwach added.

*"It was a pleasure to work with the Classen team"*

This was Classen's motivation for setting up a digital-printing project team and so the development partnership with Hymmen began. The main impetus for investing in the technology – which is now ready for series production – was its cost-effectiveness, outstanding print quality, high process speed and printing in widths of 2,100 mm.

"We at Hymmen were pleased to win Classen for this forward-looking technology so early on," says Dr René Pankoke, CEO and owner of Hymmen. "The confidence in the co-operation in this new business field is



Daniel Schwach, Head of Pre-coating and Digital Printing, Classen Industries GmbH



Carsten Buhlmann, Managing Director, Classen Industries GmbH



Dr. René Pankoke, CEO and owner Hymmen GmbH Maschinen- und Anlagenbau



Carsten Brinkmeyer, Head of Business Development, Hymmen GmbH Maschinen- und Anlagenbau





Digital printer Classen Industries GmbH (Source: Classen)



certainly due to the good experiences Classen has had in the past with other production technologies from Hymmen," Pankoke added.

A two-meter-wide, single-pass printer for sheet goods was unique ten years ago. "Right from the start, we focused on modularity

***"In the five digital-printing systems of the Classen Group, more than 750 printheads reliably do their job every day"***

and maximum operational reliability of the components. That's why we didn't shy away from the challenge of a system with a printing width of more than two metres," says Pankoke.

Carsten Brinkmeyer, Head of Business Development at Hymmen continues: "It was a pleasure to work with the Classen team. The

co-operation was always solution oriented even when dealing with the usual problems in the context of a new development. The result has delighted everyone. The use and operation of 120 printheads in one machine was an enormous challenge at first," admits

Brinkmeyer. "How times change is shown by the fact that today, in the five digital-printing systems of the Classen Group, more than 750 printheads reliably do their job every day."

In 2013, the first system, Jupiter-C 2100 – comprising 120 printheads, four colours and a high-precision transport system for printing

on plates with a feed speed of 25m/min – was installed and put into operation.

In Baruth, the production process for digital printing begins with print-base paper being laminated onto 5.35m<sup>2</sup> HDF carrier boards. Classen's own decor is printed on top of this in a single pass using the digital single-pass printing process. To protect and further shape the surface, a single-pass liquid resin is applied in several stages. Classen also uses the LLT (Liquid Laminate Technology) process developed in-house. The board is then fed through a double-belt or short-cycle press, where corresponding all-over or synchronous structures are pressed into the surface.

On the press, with a total length of 45m, plates with a maximum width of 2,040mm

*Continued over*





Checking print quality and inspecting print heads (Source: Classen)



can be digitally printed. At a production speed of 25m/min, a production output of up to 50,000m<sup>2</sup> can be achieved in 24 hours.

Classen is more than satisfied with the quality of the decors produced by the Hymmen digital-printing system. "I actually didn't expect our digitally-printed decors to

**"At a production speed of 25m/min, a production output of up to 50,000m<sup>2</sup> can be achieved in 24 hours"**

look more brilliant than the ones we get from our decor printer in gravure," stated Carsten Buhlmann, Managing Director of Classen Industries, Baruth.

"With digital printing, we can realize exclusive designs according to customer wishes from a batch size of 500m<sup>2</sup>. Designs and variations that were not possible before can now be printed on a laminate plank. The set-up times on the presses are so short that we can also produce repeat orders at short notice," adds Schwöch. Another advantage of digital printing is that the high-quality surfaces with synchronous pores become even more precise.

In the meantime, because it is printed directly onto the board, Classen has printed more than 100 million m<sup>2</sup> of laminate flooring



Classen flooring digitally printed with Synchronpore on the MFC double belt press (Source: Hymmen)

with this line. "Not only is the printing of the files, which can be up to 4GB in size, of particular importance, but also the handling and transport of the sheets, which can be up to 5,35m<sup>2</sup>, must be carried out with high precision and with the desired spacing. The special vacuum precision transport, which is

over 14 metres long, is a unique guarantee for high quality," emphasises Brinkmeyer.

Finally, it is the qualification of the operating personnel and the professional handling of the high-tech system by the employees that makes this performance possible. The Classen employees can be justifiably proud of the resource-saving production process and the environmentally oriented approach.

#### A DEVELOPING SUCCESS STORY

Classen excels in identifying and utilizing optimization potential in flooring production from incoming goods to shipping logistics. The investment in digital-printing technology was one of its trend-setting decisions. The company found the right technology partner in plant engineering with Hymmen. By the

**"Classen also decided to use digital-printing technology in flooring production at its Kaisersesch site"**

end of 2014, after a very instructive start-up phase, the production team at Classen, Baruth had the digital printer and the printing technology safely under control. It was possible to produce so cost-effectively and flexibly that a second digital printer was purchased in 2015. After only two weeks,

production was able to go into four-shift operation.

Enthused by the success story at the Baruth production site, Classen also decided to use digital-printing technology in flooring production at its Kaisersesch site. Here, the successful PVC-free CERAMIN wall and floor coverings are now decoratively printed on a width of 1,400mm using three digital printing lines. In one line, Hymmen's Digital Lacquer Embossing (DLE) is used for surface synchronous digital structuring.

#### CONCLUSION

With the five Hymmen digital-printing lines now installed, Classen produces a good 30 million metres<sup>2</sup> of PVC-free design and laminate flooring per year. In Kaisersesch, the entire flooring production uses digital-printing technology and, in Baruth, a third of the laminate flooring. Classen was one of the pioneers in industrial digital printing in the surface industry and will always stay on the ball and help shape its future. ■

**Dr Anke Pankoke is Head of Marketing at Hymmen GmbH Maschinen- und Anlagenbau**

Link to film digital printing at Classen on YouTube



**Further information:**  
Hymmen GmbH Maschinen- und Anlagenbau,  
Germany  
tel: +49 521 58060  
email: [info@hymmen.com](mailto:info@hymmen.com)  
web: [www.hymmen.com](http://www.hymmen.com)