

WALK THIS WAY

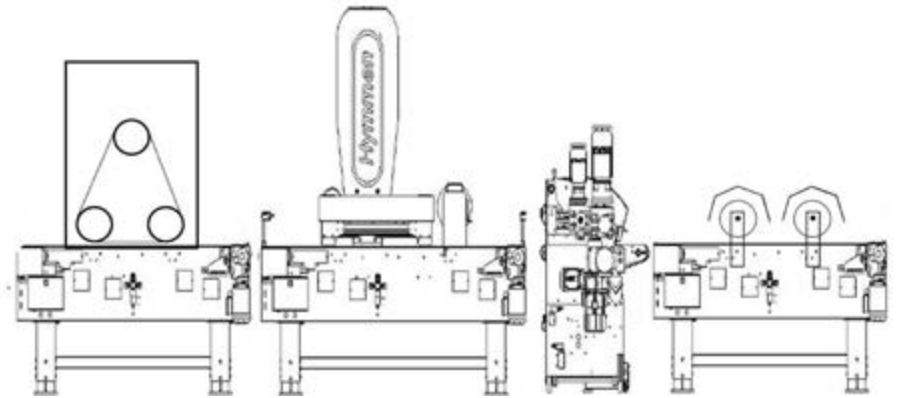
The digital structuring of surfaces is a very new technology. Dr. Anke Pankoke gives an insight into the development of digital staining and explores its potential to transform printed flooring

Digital Printing is already an established technology in the woodworking industry. Initially manufacturers focused on decorative print, then digital structure print entered the market.

Based on the knowledge of Digital Lacquer Embossing (DLE)-technology, a new innovative method has been created: a digitally-applied UV protective lacquer. This will lead to completely new product opportunities, in particular in the parquet industry, where it offers a substitute for traditional methods of wood staining. The following article gives a deeper insight into the latest developments of the German machine manufacturer and technology company, Hymmen.

BENEFITS OF DIGITAL PRINTING

Digital printing provides some basic essential benefits: it enables industrial production of small batch sizes, the embedding of digital print in process chains in the decor industry, individualised mass production, speedy reaction to market trends, short retooling times and low warehouse costs. Digital printing creates products which would be impossible with analogue technology. Extra-

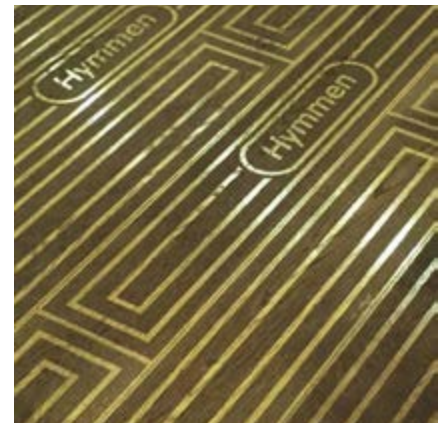


Staining method using digital printing

long pattern repeats, designs with 25 or more different boards, without repetition and designs with motifs which spread over multiple boards (logos, mosaic etc.) are just

'Hymmen has developed and patented the Digital Lacquer Embossing technique'

a few examples of decorative options. It is fair to say that printing decorative designs digitally with CMYK inks has become more or less established. The production of digitally printed flooring with Hymmen Jupiter printing lines alone is estimated at 70 million m²/year.



Digitally stained flooring with lines and logo



Digitally stained board with logo



A floor produced using digital staining was shown for the first time at Ligna 2019, the trade fair for woodworking and wood processing plant, machinery and tools, in Hannover



Adding characteristics, such as cracks, knots or colouring using a digital printing mask

DIGITAL STRUCTURE PRINTING

The digital structuring of surfaces is a very new technology. Hymmen developed and patented the Digital Lacquer Embossing (DLE) technique. One of the most important properties, alongside the appearance of the flooring, is its surface structure. However, the flexibility of digital printing is hampered by the inflexibility of the analogue structuring processes – decorative designs cannot be changed without losing time, and pattern repeats can be infinitely long etc. When it comes to the surface feel, the analogue structuring processes cannot keep up the pace. This is where Hymmen's DLE comes into play. It can be connected directly to a Jupiter digital printing line or even be used for digital structuring of surfaces printed and lacquered in other ways.

STAINING USING DIGITAL PRINTING

The basic idea of DLE has now been picked up on in order to create a further product which previously was only possible to produce with analogue techniques: furniture finishes and flooring which are decorated with a stain.

Formerly, staining was only ever possible over the entire product surface. The only way to include patterns and shapes in the design was by masking. Taking this method as inspiration, and using the DLE machine technology already developed, Hymmen has created a method and the patent is already pending.

In the first step, the wood is fine-ground in order to reduce standing fibres. Digital printing is then used to apply a highly transparent ink to the areas which are not to be stained. The ink is cured and the stain is then applied and distributed. A topcoat is finally applied to seal and protect the wood.

The applied ink layer is very thin (5–8 microns) and can be removed with a fine 'cleaning grind', meaning that a second passage with another stain colour or treatment with an open-pored seal is possible.

DESIGN OPTIONS

At the outset, every new technology is faced with the same challenge: how do you bring together this new technology with existing products? And this is where you have to think outside the box. It isn't always necessary to replace existing solutions with new technology. New technology can create something new or just something extra. ■

Dr. Anke Pankoke is Head of Marketing/PR at Hymmen

Further information:

Hymmen GmbH Maschinen- und Anlagenbau, Bielefeld, Germany
tel: +49 521 5806 0
email: A.Pankoke@hymmen.com
web: info@hymmen.com

INKS MADE FOR LIFE

SCREEN · DIGITAL · PAD

MARABU INKS FOR COMPLEX MANUFACTURING PROCESSES.

Smart and flexible: Our inks are tailored to your specific production processes, enhancing speed and reducing downtime.

Your link to ink: marabu-inks.com

