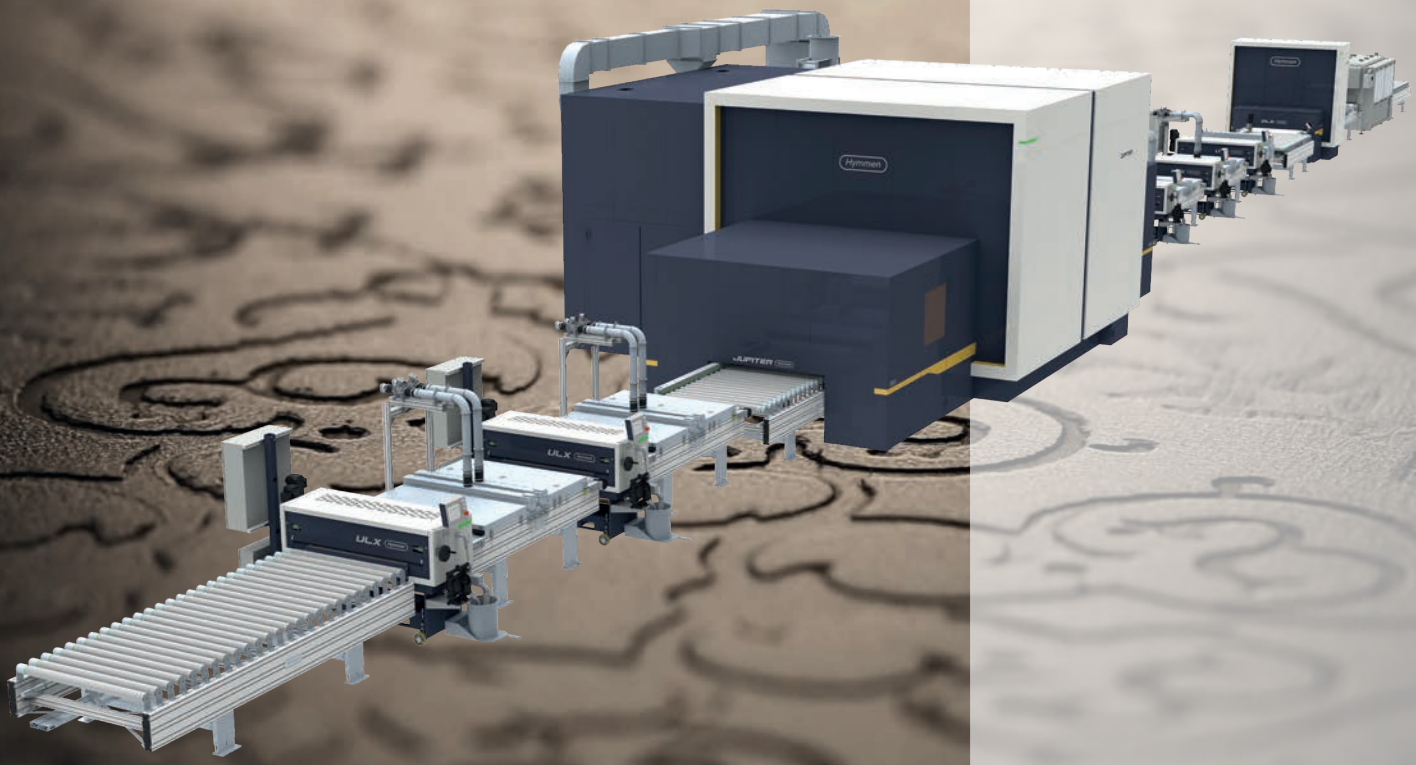
Industrial digital printing of decor and structure

Leading in flooring production



www.hymmen.com
www.i4f.com

Hymmen

Always a step ahead: Hymmen´s digital printing technology

Digital Printing for flooring and other decorative surfaces

Digital printing continues to play a crucial role in the future of flooring and other decorative surfaces as it enables unlimited design flexibility and can be applied to a wide range of materials. This facilitates faster response times to market demands and trends while reducing material waste.

The combination of reduced process costs and market differentiation is driving the significance of digital printing technology within flooring production.

Technology

From board feeding over primer, base color, digital printing, top coating to stacking of the boards – Hymmen's technology enables all commercial and technical benefits of digital single pass printing: flexibility, short changeover times and individualization of decors.

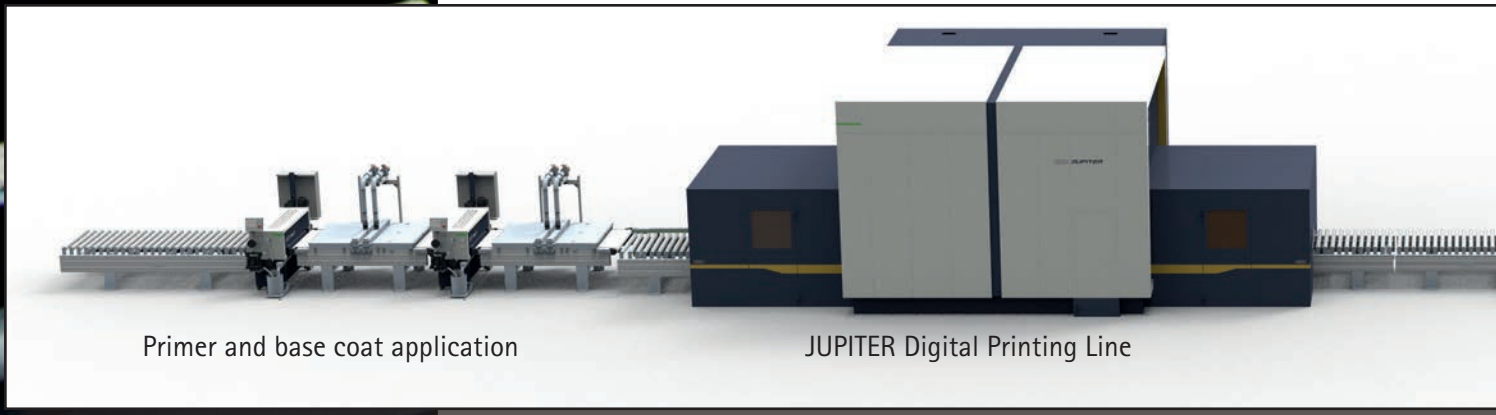
Furthermore, Hymmen offers solutions for both analogue and digital structuring (DLE) to generate embossed in-register textures.

Advantages

Hymmen has experience with over 50 installations of single pass printing plants worldwide. More than 80% of digitally printed flooring around the world is produced by using Hymmen technologies. As a technology leader, Hymmen provides digital printing solutions for all leading European flooring producers.

The global flooring industry has placed its trust in Hymmen's competence, proven industrial reliability as well as the cost-efficiency of its technology's production output. Additionally, customers benefit from Hymmen's end-to-end process knowledge including the necessary lacquering technology to reach class AC5.

The minimization of storage and production costs brings a rapid return on investment.



Primer and base coat application

JUPITER Digital Printing Line

Strong technologies secured by patent partnership

The ability to produce high quality digitally printed flooring has become strategically important for the future of the woodworking industry.

Hymmen has invented and patented innovative technologies for the production and digital decoration of flooring.

i4F® is a group of companies providing patents and technologies, dedicated to delivering the world's best and most cutting-edge technologies to the global flooring industry backed up by a robust patent protection infrastructure.

i4F's Patent Cluster Concept (PCC) is a 'pick and choose' patent menu offering licensees unprecedented transparency and flexibility. With i4F representing portfolios of patents across multiple categories, its PCC groups i4F represented patents falling under the same category in so-called "clusters". One such cluster is dedicated to Digital Printing technologies.

PATENTS & TECHNOLOGIES

Hymmen

To ensure that customers have access to innovative digital printing technologies, Hymmen and i4F have entered into an exclusive patent partnership to promote and develop this strong digital printing IP portfolio.

This new partnership gives i4F exclusive licensing rights for all Hymmen's digital printing patents and technologies for flooring production, including Hymmen's award-winning Digital Lacquer Embossing (DLE) technology.

Wear layer and structure layer application | Digital Lacquer Embossing (DLE plus) | Topcoat

JUPITER JPT-C: digital single pass printing in the capacity you need

The Hymmen digital printing solutions cover individual customers' capacity needs and individual production processes.

To meet this need, Hymmen offers a series of different line models JUPITER JPT-C: from a single plank line over the most common productions width of 1,400 mm up to large scale production of 2,100 mm boards.

Single-source supply by Hymmen, including intelligent handling systems for feeding and stacking of planks or boards, is possible to complete the production line.

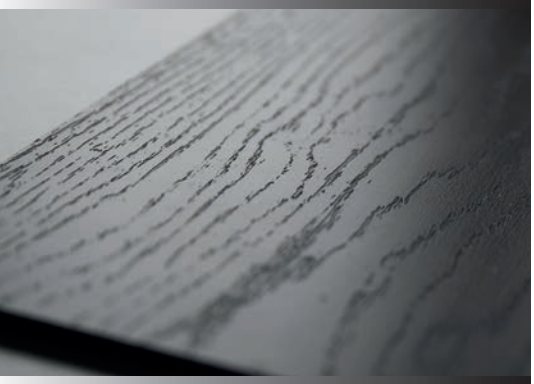
Jupiter
Digital Printing Line

The JUPITER JPT-C print-to-board lines deliver the following advanced features

- Design for 24/7 industrial production
- High-precision continuous substrate conveyor for maximum register accuracy
- Printing speeds of 25-50 m/min
- Reliable Xaar side-shooter printhead technology with an optical resolution of >1000 dpi by grey scale technology
- Intelligent mechanical and optical adjustment features for each printhead to ensure the highest color stability and print quality
- Stable printing process due to automatic cleaning and extraction functionality

Technical features of the JUPITER Digital Printing Line JPT-C

Nominal widths:	600 / 1400 / 2100 mm
Printing speeds:	25 - 50 m/min up to 35 m/min with DLE
Color system:	CMYK with 4, 6 or 8 colors incl. optional special colors
Printheads:	Xaar, 360 npi with >1000 dpi optical solution by grey scale technology
Inks:	UV-curing acrylic inks (Hymmen „Europa“)
RIP-software:	Colorgate
Wear layer technology:	Lacquer or film-based wear layers
Substrates:	Individual coating technologies are available for HDF/LVT/SPC etc.



Hymmen – Digital Lacquer Embossing DLEplus

Technology

Hymmen's award-winning DLE technology delivers unprecedented levels of highly realistic optics and haptics.

This patented, innovative technology achieves these convincing results by printing a transparent liquid medium into a layer of non-cured base lacquer using the proven technology of the Hymmen JUPITER Digital Printing Lines. Combined physical and chemical reactions create the deep and unique structures.

Advantages

- The most important feature is the creation of structures that are embossed-in-register (EIR) to the decor of the surface – regardless whether they are printed digitally or via an analogue method. This is the missing link to synchronous textures for UV-curing surfaces.
- This technology grants all commercial and technical benefits of digital single pass printing like flexibility, fast set-up times and decor individualization.
- The digital structuring supports the surface performance. All features like hardness, bonding, scratch resistance and chemical reliability of the core lacquer remain.
- Reproducable product characteristics thanks to proven digital structuring method.

Hymmen´s Digital Lacquer Embossing (DLE) won the Interzum Award 2019.

Technology for special structures

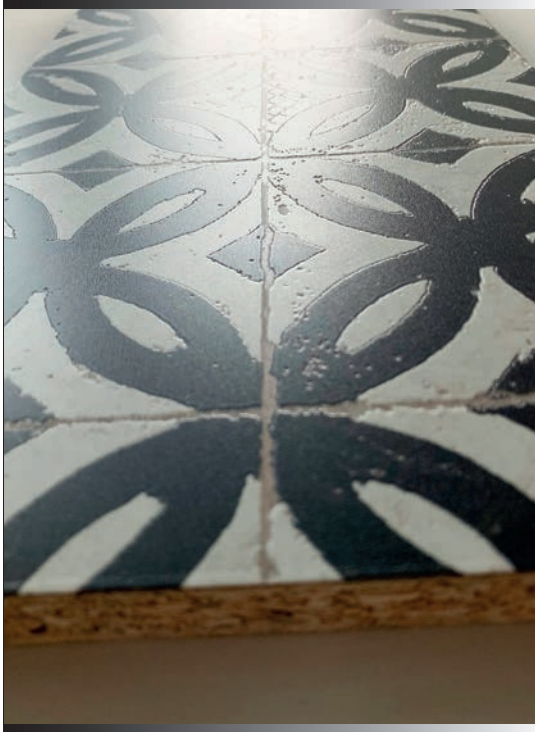
Further development of the award-winning technology

For realizing special designs and highly sophisticated structures, the process can be adjusted. Certain designs require striking depth effects and sharp edges to bring the digitally printed surface so close to nature.

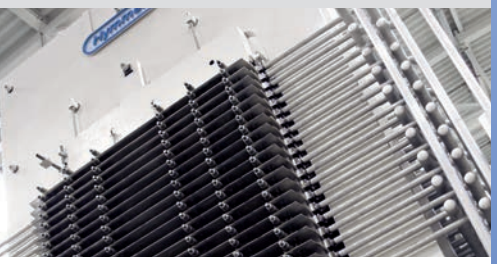
The DLEplus technology is the answer to these market demands. By modifying some of the process steps required for the conventional Digital Lacquer Embossing (DLE), the advantages of DLE are ensured.

This leads additionally to optimized haptic effects in the case of special structure designs:

- Deeper (up to 200 µm)
- Sharp and defined edges
- Special effects through high variability of depth
- Different gloss grades
- Embossing of fine lines and whole areas
- Highly realistic natural designs with additional features



Double Belt Presses



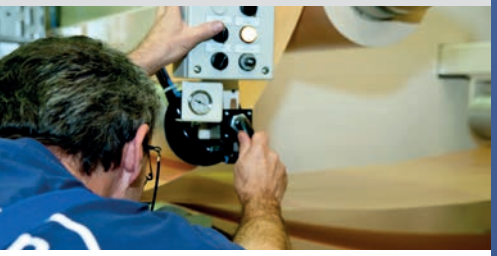
Multi Opening Presses

Laminating Lines

Lacquering and Direct Printing Lines

Industrial Digital Printing Lines

Process Automation



Service

PATENTS & TECHNOLOGIES

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