

completeLine – 18 years on the road to success

In the furniture industry, surface trends change more rapidly than Paris fashions. At the same time, the expectations invested in quality, appearance and feel are continuously on the increase, alongside demands for furniture which is ever more resistant and durable. HOMAG Group Engineering took a first decisive step towards addressing today's stringent demands way back 18 years ago when it came up with the completeLine technique.

completeLine plants are "all-rounders" in the truest sense of the word. They carry out sizing and profiling of unfinished panels, lamination of surfaces, simultaneous sealing and wrapping of the narrow surfaces along the longitudinal panel sides. The material to be coated, for instance chipboard, is wrapped in finish foils or decor papers in a continuous process. The result: a workpiece which has no visible join in the visible area of the longitudinal edge – with an identical appearance of the face and narrow surface.

The first plant was delivered to the furniture manufacturer Alsapan in France in 1995. To date, HOMAG looks back on an impressive total of 30 plants sold. In 2011 alone, no fewer than five **completeLine** plants were delivered to satisfied customers. In 2012, HOMAG has already completed the successful sale of two plants – both to IKEA supplier Swedwood.

On the subject of IKEA – over 80 % of supplied plants produce furniture components for the Swedish giant. In terms of international presence, complete Line plants have been supplied to customers in an impressive number of countries the world over: Brazil, USA, Sweden, France, Poland, Lithuania, Italy, Russia, Iran and Germany. Machines are due for delivery to Thailand and China still in 2012. Prestigious manufacturers of furniture including such names as

Nolte, Tvilum and EmmeGi have been avid users of this technology for many years.

HOMAG develops what the market demands

As happens with many innovations, development of the **completeLine** process by HOMAG was sparked by suggestions from major customers in the furniture producing industry. The vision was a simple one: "We need the furniture items produced to have a surface finish with a higher quality look and feel. The joint which remains visible after laminating the surfaces and edges of workpieces must go!"

This underlying idea turned into a customer need – and soon afterwards a demand from the furniture industry which could not be ignored. There was no doubt: A process was required which would comply with higher quality expectations while still remaining economical in terms of production costs. The result still claims undisputed pride of place in today's furniture production industry.

Over 95 % of plants used worldwide originate from the HOMAG Group

With the **completeLine** process, still patented by HOMAG today, a new generation of laminating technology was born back in 1994. In a joint development with FRIZ, HOMAG Group Engineering took the world of conventional laminating technology by storm: over 95 % of all the plants installed around the world for complete panel sizing, profiling, lamination and longitudinal edge wrapping originate from the companies of the HOMAG Group.

Four sides, a single pass

The vision of the early days had become a reality. What emerged was an ingeniously engineered high-performance laminating method for the four-sided coating and finishing of panels. Consequently both the surface of the furniture elements, and also the longitudinal edges are coated with decor material; in other words the workpiece is completely wrapped. The items of furniture that

find their way into the living room are high-quality pieces without a visible join in the visible area – produced in a single pass. Thanks to different working widths, the process is ideally suited for the furniture industry.

The steps which make up the production sequence can be equated to a perfectly coordinated team working together. The first stage is panel sizing and profiling of the raw chipboard panels with subsequent surface coating. The plants achieve production speeds of up to 60 m/min depending on the adhesive used (dispersion glue, urea, PU or EVA). The open-pored profiled longitudinal edges are then sealed (hot-melt glue, UV lacquer or UV cross-linking hot-melt glue). This process step is extremely important and forms the basis for the creation of smooth, impact resistant furniture edges despite the use of low-density chipboard and extremely thin coating materials.

During the last stage, the final special work step distinguishes these as uniquely special workpieces: Wrapping of the narrow surface on the longitudinal edge. From L-type to U-type profiles with butt joint for coating underneath: all customary edge profiles can be realized using the **completeLine** method.

Nothing out of joint

The jointless transition of the decor foil over the surface and edge unlocks the door for furniture manufacturers to achieve almost unrestricted design freedom. All available paper thicknesses, substrate materials and surface types (structure, high gloss etc.) are suitable. At the same time, quality is substantially enhanced and serviceability improved. Particularly noticeable, for instance, is a flawless surface finish for the edges of profiled chipboard panels, or extreme edge impact resistance – all factors which address the growing quality expectations of furniture buyers.

Performance increase of up to 35 %

However significant the technical and qualitative benefits of a process may be – economy continues to play a major role. With the **completeLine** technique,

users benefit from a staggering 35 % performance increase over conventional laminating methods. Short resetting times when changing edge profiles permit order-driven production. The minimal space requirement also deserves particular mention. As all the work steps take place in a single pass, the user saves an enormous amount of handling work, as the need for feeding and stacking are completely eliminated.

The qualitative benefits of the processed workpieces at a glance:

- Jointless cohesive decor finishes across the surface and edge (no longer any glue joint in the visible furniture area!)
- Closed, reliable filling of edge cavities for
 - ➔ Flawless edge finish
 - ➔ Greater impact resistance of edges

completeLine in figures

- Working widths of 250 to 1,220 mm
- Production speeds of 30 to 60 m/min
- Glue application quantity (EVA) on a surface of appr. 40-50 g/m²
 - ➔ with **reactTec** only **20 g/m²**
- Material consumption for edge compaction of an L-type profile 150 g/m²

Combination with reactTec is where the future lies

When laminating furniture surfaces, a distinction is drawn in the main today between the glue types urea, PVAC and hot-melt. All of these have certain benefits and drawbacks. Working in cooperation with the companies Henkel and Nordson, against this background the HOMAG Group developed the **reactTec** lamination technique. Using a newly developed adhesive with no open time, the partners have achieved the benefits of hot-melt gluing without its drawbacks using a new process. The **reactTec** laminating method scores through its high thermal resistance and a watertight glue joint, low space requirement and high production reliability.

Coating competence for surfaces and edges: reactTec with completeLine

Against this backdrop, the future of the furniture industry lies in the combination of **completeLine** and **reactTec**. Both in terms of surface coating and also the coating of narrow surfaces on longitudinal edges of the workpiece, impressive benefits can be achieved using the **reactTec** method: High performance using a continuous process, a high standard of surface quality in respect of hardness, heat and moisture resistance and an optically enhanced workpiece manufactured using low-cost substrate material. The HOMAG **reactTec** method is the ideal combination of process stability with almost exclusively positive technical characteristics.

Still today, HOMAG Group Engineering is the forerunner in this area of lamination technology. An exceptionally high standard of expertise based on experience gathered over many years and a combination of plant and process technology under a single roof form the sound foundation for this truly notable achievement.

Pictures courtesy of: HOMAG Holzbearbeitungssysteme GmbH

Fig. 1: Sizing and profiling

Fig. 2: Surface pre-heating station

Fig. 3: Surface lamination area

Fig. 4: Outfeed from lamination to the wrapping station

Fig. 5: Wrapping preheating station

Fig. 6: Profile wrapping

Fig. 7: Profiled panels

Fig. 8: Example of **completeLine** profiles

For more information, contact

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