Practically unlimited scope for flooring: Profiling with HOMAG double-end tenoners

The flooring market is currently evolving at a rapid pace, producing a continuous stream of new trends – such as an ever growing variety of decor finishes and different formats in the laminate sector. Another key development is the perfect imitation of surfaces such as wood or stone using LVT (luxury vinyl tiles) and natural wood floors in decor effects with a new look and feel.
These continuous changes in the marketplace represent an on-going challenge for flooring manufacturers as well as machine and plant suppliers. In a bid to launch innovative products onto the market and stand out from their competitors, many flooring manufacturers consider adapting their existing production facilities. The tendency is moving increasingly towards companies safeguarding their future by investing in more flexible and efficient production suitable for small batch sizes.

Benefitting from experience

Companies seeking to future-proof their production have the ideal partner behind them with HOMAG Group Engineering. With over 25 years of experience in the engineering of machines and plants for the flooring industry, the right solution can be configured no matter what the specific requirement. As well as its core competence in the field of double-end tenoners and throughfeed saws, HOMAG is also a proficient and reliable partner when it comes to the implementation of large-scale plant engineering projects in the flooring sector.

Almost 900 of HOMAG's double-end tenoners are currently operating successfully across the flooring industry (**Fig. 1**). Of these, around half are used for processing laminate, around 40% are used for parquet

processing and around 20% for processing cork.

LVT profiling at the LIGNA

Currently the most lively sector of the flooring industry is the LVT market. This floor covering method is enjoying enormous growth rates. These new products, in some case still very much in their infancy in terms of development, require whole new production methods. HOMAG has developed precisely the right double-end tenoner to meet the special needs of LVT profiling.

The challenge: Just like parquet, the decor side of LVT is extremely sensitive. To prevent any risk of shine marks, LVT products cannot be fed into the machine using support rails. For processing this type of product, HOMAG has consequently opted to use the same double-end tenoner machine concept which has proven highly successful for processing parquet. This ensures optimum processing quality by using a high-precision transport chain which guarantees processing without mechanical friction between the machine and decor surface. The transverse profiling of LVT also presents something of a challenge. Here too, HOMAG has devised a solution which includes the development of a special magazine for the transverse machine (**Fig. 2, Fig. 3)** which is ideally suited for working with these extremely soft, thin products. No fewer than 23 double-end tenoners for LVT processing already sold tell their own story. One of these was showcased at the Ligna 2013 in Hanover.

36 insulating panels per minute

HOMAG has also become something of an expert in the processing of insulating materials and **large panel formats**. Alongside customary floor coverings, HOMAG double-end tenoners are also capable of precision profiling materials such as OSB, wood fiberboard, plasterboard or cement fiberboard.The first angular plant featuring HOMAG double-end tenoners for processing large-scale wood fiberboard insulating panels (**Fig. 4**) has

recently been successfully installed on a customer's premises. Wood fiberboard panels (**Fig. 5**) have a highly rough and slip-proof surface, meaning that a conventional angular transfer of the kind used in double-end tenoners for floor production is unsuitable for the job. For this plant, a special angular transfer with hinging rails was developed (**Fig. 6**). After longitudinal processing, the panel travels along a roller conveyor to the angular transfer, causing the hinging rails to open and transfer the panel onto a second level. At the same time, the next panel is already arriving at the upper level. If the infeed area of the transverse machine is free, the second level then opens, the panel is fetched by vertical pneumatic lift rails and deposited on the infeed rails of the transverse machine (**Fig. 7**). In the meantime, the next panel can already be deposited on the second level. Using synchronous servo pusher cams (**Fig. 8**) the panel travels at the correct angle into the transverse double-end tenoner, where it is sized and profiled. The design featuring hinging rails, pneumatic lifting rails and servo pusher cams guarantees reliable, gentle-action angular transfer of large-scale panels. The plant is capable of processing up to 36 panels per minute.

Current project: Production plant for cement fiberboard processing

The HOMAG Group Engineering flooring team is currently working on its first large-scale project to configure a production plant for cement fiberboard processing. The plant comprises a total of six different sections. Five of these are equipped with HOMAG Group machines, including an angular plant with HOLZMA pressure beam saw for trimming and dividing the up to 4 meter-long panels, and an angular plant featuring two HOMAG double-end tenoners, one longitudinal, one transverse, for trimming and chamfering large-scale or divided panels. The plant also comes with an integrated sawing and profiling line with one HOMAG throughfeed saw and two HOMAG double-end tenoners, one longitudinal and one transverse. This is responsible for dividing and profiling narrow products

and flooring elements. At the end of the line is a packaging plant waiting to receive both narrow and large-scale panel products. One of the special features of the sawing and profiling line is its throughfeed saw, which is capable of simultaneous dividing and chamfering. Another is the ability of this plant section to process double-width products. The longitudinal double-end tenoner here is additionally fitted with a saw. Cutting along the centre, this saw divides components which have already been profiled on both sides, while at the same time trimming a chamfer on the cut edge. The end products manufactured in this plant from cement board panels are used in a variety of different applications such as facade cladding, fencing and screen panels as well as flooring elements. The plant has a capacity of up to 25 panels a minute.

Innovative products call for production solutions which are not only innovative but also flexible. HOMAG Group products allow you to respond with the utmost flexibility to the demands of your customers. They offer scope for not only expanding your product spectrum but also streamlining your existing processes to cope with ever increasing product variance and diminishing batch sizes. What’s more, with HOMAG Group Engineering, you will also be opting for the ideal partner when it comes to individual, future-proof plant engineering projects.

Pictures courtesy of HOMAG Holzbearbeitungssysteme GmbH

Fig. 1: HOMAG double-end tenoner

Fig. 2: Magazine in transverse double-end tenoner with table support for LVT

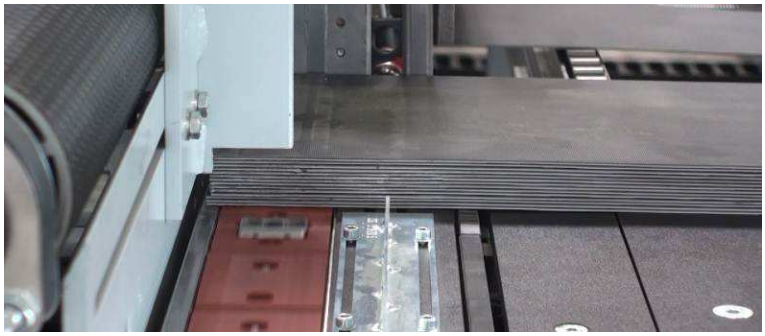

Fig. 3: Vacuum-powered holding-down system and special cams for reliable separation of luxury vinyl tiles.

Fig. 4: Angular plant with HOMAG double-end tenoners for profiling wood fiberboard panels

Fig. 5: Profiled wood fiberboard panels

Fig. 6: Angular transfer on two levels with hinging rails for wood fiberboard panels

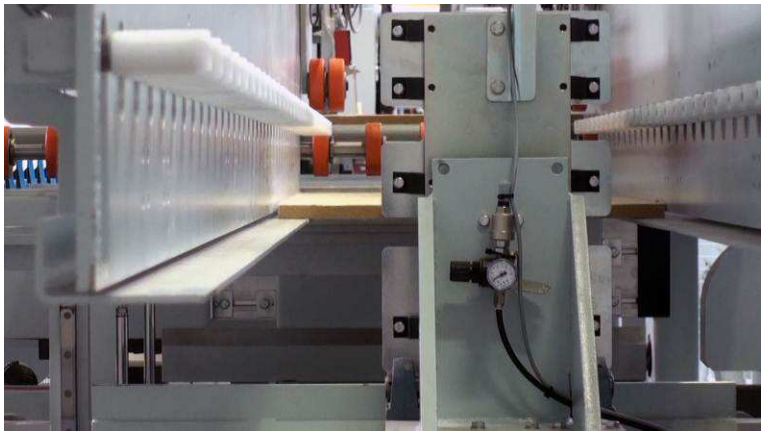

Fig. 7: Angular transfer on two levels with hinging rails for wood fiberboard panels

Fig. 8: Vertical pneumatic lifting rail and servo pusher cams at the transverse double-end tenoner infeed

For more information, contact

HOMAG Holzbearbeitungssysteme GmbH
Homagstraße 3–5
72296 SCHOPFLOCH
GERMANY
www.homag.com

Roland Dengler
Project Manager and Team Leader
HOMAG Group Engineering
Tel. +49 7443 13-2431
Fax +49 7443 13-8-2431
andreas.lorenz@homag.de

Author:
Verena Dengler
Project Processing
HOMAG Group Engineering
Tel. +49 7443 13-2691
Fax +49 7443 13-8-2691
verena.dengler@homag.de