

## **HOMAG with new processing solution for LVT flooring**

**No other type of floor covering can match the growth rates currently being enjoyed by luxury vinyl tiles (LVT for short). This new product group, largely still in the infancy of its development, is forecast to reach a worldwide market potential of around 100 – 150 million square metres within just a few years. To help meet this enormous demand, HOMAG has developed a number of new production techniques which are currently being tested by the first manufacturers.**

Generally speaking, a distinction is made between two different types of finished flooring. The first are floors using HDF/MDF substrate, generally installed using a floating glue-free laying system. The other flooring type comprises solid LVT products in thicknesses of 4 – 6 mm. These are laid either using a self-adhesive method on the substrate, or floating using a self-adhesive rebate connection or a glue-free profile produced by trimming, similar to that used in laminate flooring.

The main benefit of this type of LVT product is its scope for creative decor designs, which in no way lags behind that of laminate flooring. LVT floors also offer a highly structured surface ideal for imitating planks or tiles. The products are also far softer, making them less noisy to walk on compared to laminate. They are also extremely resistant to abrasion due to a PUR layer or lacquering with highly wear-resistant lacquers, have a minimal add-on height and can be laid using the simplest of means. While products laminated onto HDF/MDF substrates continue to suffer with expansion problems due to the effects of moisture, this problem does not affect the new solid LVT products. Their minimal installation height of just 4-6 mm is another added bonus.

Laminated products on HDF/MDF substrates have been produced to date in most cases by existing finished cork product manufacturers and manufacturers with existing equipment for foil or HPL laminating. These manufacturers found it a relatively easy matter to substitute the previous surface material by outsourced LVT material. Profiling takes place in the familiar HDF/MDF substrate, with only an optimized tool required for trimming the LVT top layer. As this product has similar strength properties to those of finished cork parquet, for instance, it can also be simply packaged and stacked ready for shipping using the existing automatic packaging plants.

"We consider laminated LVT to be only an interim product. The main advantage of LVT over all other options lies in the manufacture of solid products with a glue-free locking system profiled into the material. This is why our development efforts have concentrated on the profiling of thin, solid LVT products", explains Roland Dengler, Flooring Team Leader at HOMAG Engineering. This threw up the following challenges:

- Profiling extremely thin and soft products. Transverse profiling presents a particular challenge here, as the products tend to yield towards the outer ends and have to be supported.
- Prevention of "smearing" and melting of the material during profiling
- Prevention of shine, in particular in products with highly structured surfaces
- Reduced electrostatic charging of chips, so guaranteeing chip extraction
- Transport of extra-thin workpieces through the profiling and packaging system
- Creating a chamfer at the often highly embossed surface, in order to guarantee a good transition

As China, South Korea and Taiwan are home to 90% of the production capacity for the raw material, the majority of available profiling capacity is also located in this region. As a result, the initial development for this product was performed at HOMAG Machinery in Shanghai. HOMAG Engineering is able to draw on a fund of collective expertise in this field. Following the successful conversion of a plant in Korea, a contract is now in progress for the construction of a new plant for profiling solid LVT products. The new plant will produce LVT with an all-round click profile for a German manufacturer, and will soon be ready for delivery.

Experience gathered in Asia has been deployed to full advantage in the plants now operating in Europe.

With more double-end tenoners for profiling flooring elements dispatched in 2010 than in 2008 and 2009 put together, HOMAG is confident that this trend is set to continue over the coming years with the support of the new LVT profiling plants.



**Fig. 1:**  
Transport of thin, flexible solid LVT workpieces through the transverse profiling line



**Fig. 2:**  
Special device to reduce static charging of LVT chips integrated in the dust hood.



**Fig. 3:**  
Side view of a DEP for profiling 4 mm luxury vinyl tiles with click profile

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