

The technological leading edge: HOMAG face end crack optimizing saw for friezes

New solution HOMAG FPL 620 minimizes losses during plank production

Seasoning cracks at the face ends of friezes are a widespread problem known in the timber industry as an unavoidable evil. The frequency of their occurrence and their intensity are dependent predominantly on factors such as timber type, seasoning speed, cross-section and dividing length relative to log cross-section.

This is why friezes are generally purchased with a defined length allowance, which in turn can vary depending on the product group and origin. These length allowances are then usually sawn off on both sides, centred to a greater or lesser degree, resulting in a situation in which cracks can still exist on one side or the other. This is due to the one-size-fits-all cutting process used, which frequently means that trimming takes place at the wrong end where there are no seasoning cracks, or else the crack is deeper than anticipated. In these cases, it would make sense for the available maximum material allowance to be cut only at the face side where the crack actually exists.

As a consequence of the still remaining defect, the frieze can no longer be used for the planned product with a specified fixed length, for example for plank pattern flooring. At this juncture, considerable added expense has already been incurred, primarily due to the occurring raw material losses and also in terms of handling.

As this process is followed, for instance, by sawing the top layers for the pattern planks out of the frieze, this can even bring about a multiplication

effect.

However, this not the most critical aspect of the process, as under certain circumstances depending on the downstream operation, it is possible for the quality defect to go unnoticed until the final inspection, meaning that the costly value adding processes performed up to this point have been completely wasted. And worse still: The end user could be the first one to notice the defect, resulting in complaints and dissatisfied customers.

HOMAG recognized this problem area and decided to join forces with a renowned manufacturer of flooring planks to design an optimized machine capable of eliminating around 90% of waste otherwise occurring in this field, depending on the specific application. These benefits make the innovative face end crack optimizing saw HOMAG FPL 620/04/25 the ideal solution for the parquet industry.

The process optimization concentrates fundamentally on in three different sequences: Face end cracks only on the left, only on the right or on both sides. In both cases where a crack occurs only on one side, the maximum available length allowance is cut off on this side. On the other side, only a minimal distance of just around 1 mm is removed. Where cracks occur on both sides, and where there are no detectable cracks, the cutting process is centred and performed on both sides. In every case, the originally intended fixed length, which is entered by means of menu prompting, is fully automatically offset against the variable workpiece lengths and the applicable optimization sequence. The economic cost benefit differs for each individual plank producer, but is certainly a worthwhile investment in any event.

The technical data for the machine can be summarized as follows:

This specially designed machine is fitted with four units. Processing takes place at feed rates ranging from 10-40 m/min. With a dog spacing of 1,000

mm, this allows a maximum cycle speed of 40 friezes per minute.

Product formats for friezes have been fixed at lengths of 500- 2,300 mm and widths of 70- 300 mm. Also processable are part thicknesses of 25- 60 mm, as well as the excessive thickness tolerances or so-called spiral grain, i.e. twisted planks, which can occur in this type of product. The maximum workpiece overhang achieved is 185 mm, and the maximum cutting dimension realized per side is 160 mm.

The optimization process is automated by means of dynamic NC axes and a suitable image processing system. The waste pieces are guided through a large waste piece hopper onto a waste conveyor running underneath the machine.

This machine represents another major contribution towards resource saving and improved product efficiency from the company HOMAG. The enthusiastic initial response from affected sections of the timber industry demonstrates a high degree of receptiveness to the new solution, which in conjunction with HOMAG Engineering was developed at HOMAG and successfully implemented on the customer's premises within just five months.



Fig. 1:
Face end crack optimizing saw HOMAG FPL 620/04/25



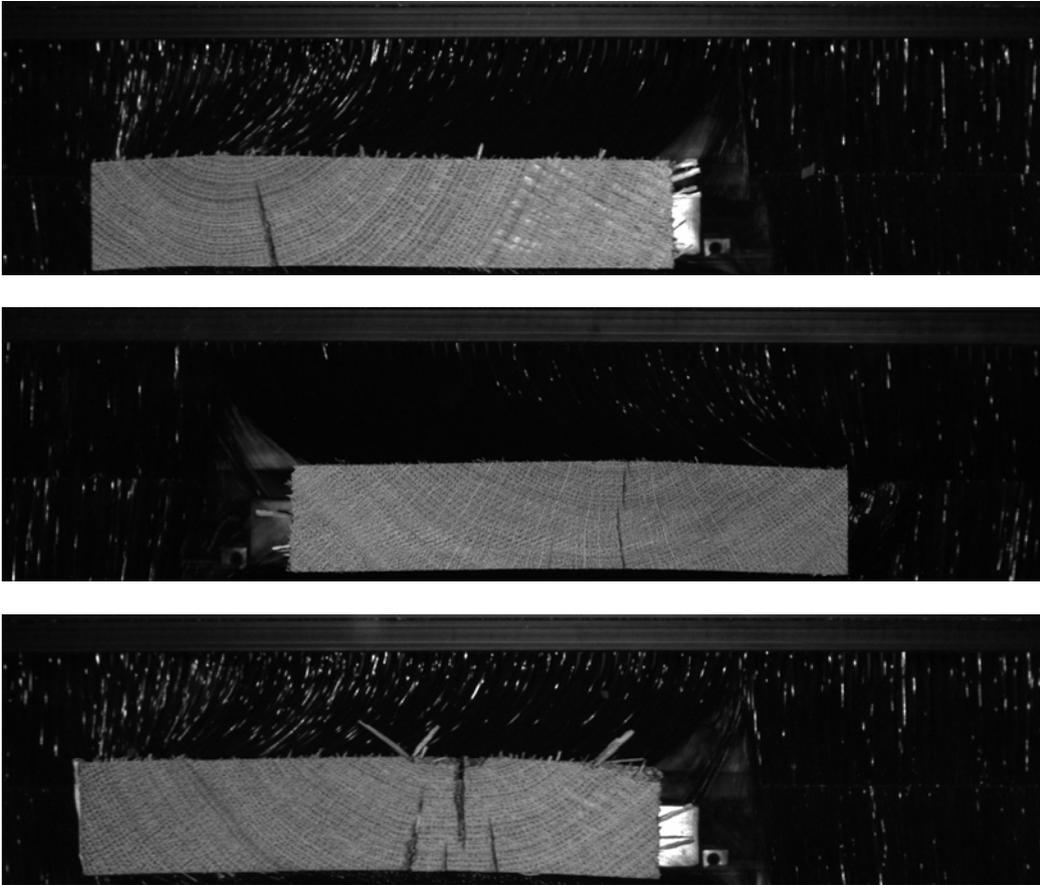
Fig. 2:
The infed side with screen for image evaluation



Fig. 3:
Infeed situation



Fig. 4:
Specially developed top pressure beam with precision dogs



Figs. 5, 6 and 7:
Camera image evaluation with crack detection

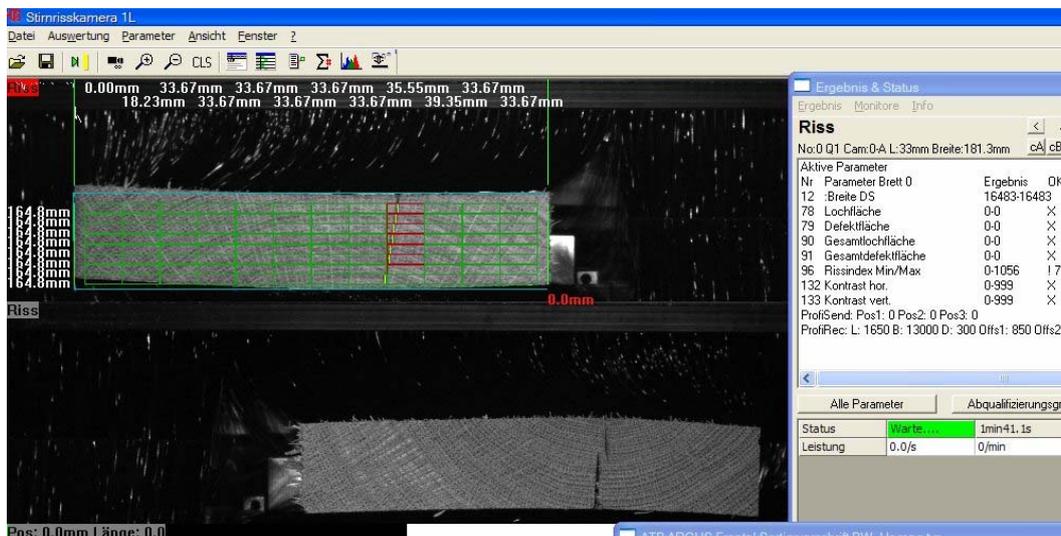


Fig. 8:
Screenshot of image evaluation by the operator

For more information, contact

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