5 ways TO IMPROVE YIELD

Most peeling lines offer some scope for improvement. From increasing production efficiency and veneer recovery to improved quality, there are many ways to raise your profitability. There are a variety of technologies and operational enhancements that can help customers improve the productivity of their peeling lines. This article highlights some of the factors that go into improving and optimizing production efficiency, and how new Raute solutions like Block Centering Analyzer R7 manage to deliver their significant benefits.

1. ACCURATE BLOCK CENTERING

In the veneer making process, the factor that affects raw material use the most is accurate centering. Accurate centering results in the maximum number of full sheets and maximum value yield. The most sophisticated XY centering and block optimizing systems have integrated autocalibration that takes care of continuous centering accuracy and the best possible veneer yield. In centering process, the block is rotated and measured by accurate lasers to achieve true 3D image of block shape. This measurement data is processed by advanced algorithms to define an optimal block position to peel out maximum amount of veneer.

It is possible to replace old mechanical block centering equipment with a new "stand-alone" centering machine designed to be installed on the base of the existing equipment. Centering systems with previous generations of measuring equipment can also be modernized using the latest technologies.

Block charger maintenance is an important part of maintaining profitable veneer production. Regular preventive maintenance with inspections and calibrations ensure that centering accuracy will stay at a high level.

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2. SMALL CORE DIAMETER / OPTIMIZED VENEER QUALITY

Another important factor which affects veneer yield is the core diameter after peeling. Conventionally, core diameter is typically between 55-95 mm depending on the raw material and selected technology. However, the newest solutions enable the core diameter to be reduced down to even 25 mm. Precise, automatically position-controlled movements combined with optimum lathe settings enable excellent veneer quality down to a small diameter. Raute has developed and built modernization packages for all well-known lathe types and has successfully delivered hundreds of these worldwide. Adjusting and optimizing the lathe settings is, of course, needed to ensure high efficiency and optimum veneer quality.

3. VENEER GRADING AND CLIPPING

In modern peeling lines, veneer grading and clipping principles rely on moisture measurements combined with accurate machine vision and analyzing systems. It is possible to optimize veneer clipping using visual analyzers with defect detection. Modern machine vision technology can accurately analyze and grade veneer and waste in the peeling line. Starting the clipping at just the right place maximizes the number of face veneer sheets. Sorting veneers into moisture classes based on moisture measurements significantly increases the drying capacity and also improves the quality of the veneer because it reduces over-drying. It also results in significant energy savings in the drying process. In addition, sorting the veneer precisely on the peeling lines, early in the process, enables the veneer streams to be optimized in later stages of the production process.

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4. GREEN VENEER COMPOSING

Random veneer at the beginning of each peeled veneer mat can be graded and composed for full sheets in peeling line or in separate line. Green veneer composing enables even small pieces of good veneer to be utilized for plywood. Green veneer composing also means that only whole sheets are processed automatically before and after drying, instead of needing manual work to handle randoms. Clipping defects out of wet veneer also saves energy because the "waste" does not go to the dryer and so the dryer has a better filling level, giving the line higher capacity.

5. DATA COLLECTION AND ANALYSIS

Data capture, reporting and analysis are essential parts of maintaining modern peeling line production and process performance. Modern real time data capturing systems give you the tools to follow and analyze your operations. This lets you identify ways to meet production targets and optimize processes, as well as helping you identify actions needed to improve production performance. It is important to identify the root causes if production targets are not reached. Is the problem in the raw material, in a process phase or in the way the operator is running the line? With continuous monitoring and follow-up, it is easy to identify even small deviations or disruptions. This makes it possible to react quickly and make adjustments to ensure high raw material recovery, and high quality and production capacity. Raute has developed a modern data capturing and reporting system, MillSIGHTS, specially for plywood and LVL industries. Raute's MillSIGHTS is available for all new and existing production lines. Previous data capturing systems can be easily updated to MillSIGHTS.

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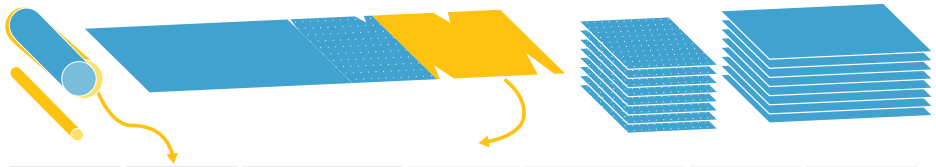
SUMMARY

Now is an especially good time to upgrade a peeling line because a new generation of technology is available, which delivers clear improvements in yield. In the last few decades peeling technology has improved remarkably and the latest innovations can be utilized to improve the performance of all well-known makes of machinery.

In many cases, modernizations are the most reasonable solution for raising production performance up to the same level as new machinery. A well planned modernization project will ensure short installation and start-up times, and it does not need to interrupt production at all. Whether you need a small upgrade or a complete new production line Raute is there to help. We make sure your mill stays efficient and profitable today and in the future.

YIELD ON PEELING – STEP BY STEP

Variations in yield values depend on the raw material, block diameter, length and selected technology and process. Every stage can be optimized for different production processes to get the highest possible value from the raw material.



	Core loss	Round-up loss	Block yield	Clipper loss	Yield to stack	Randoms	Full sheets
8 ft pine	5%	13%	82%	5%	77%	2%	75%
8 ft birch	9%	18%	72%	5%	67%	3%	64%
5 ft birch	6%	16%	78%	5%	73 %	2%	71%

Typical yield values for different peeling lines and raw materials. Accurate block centering has a significant effect on the overall peeling line yield.