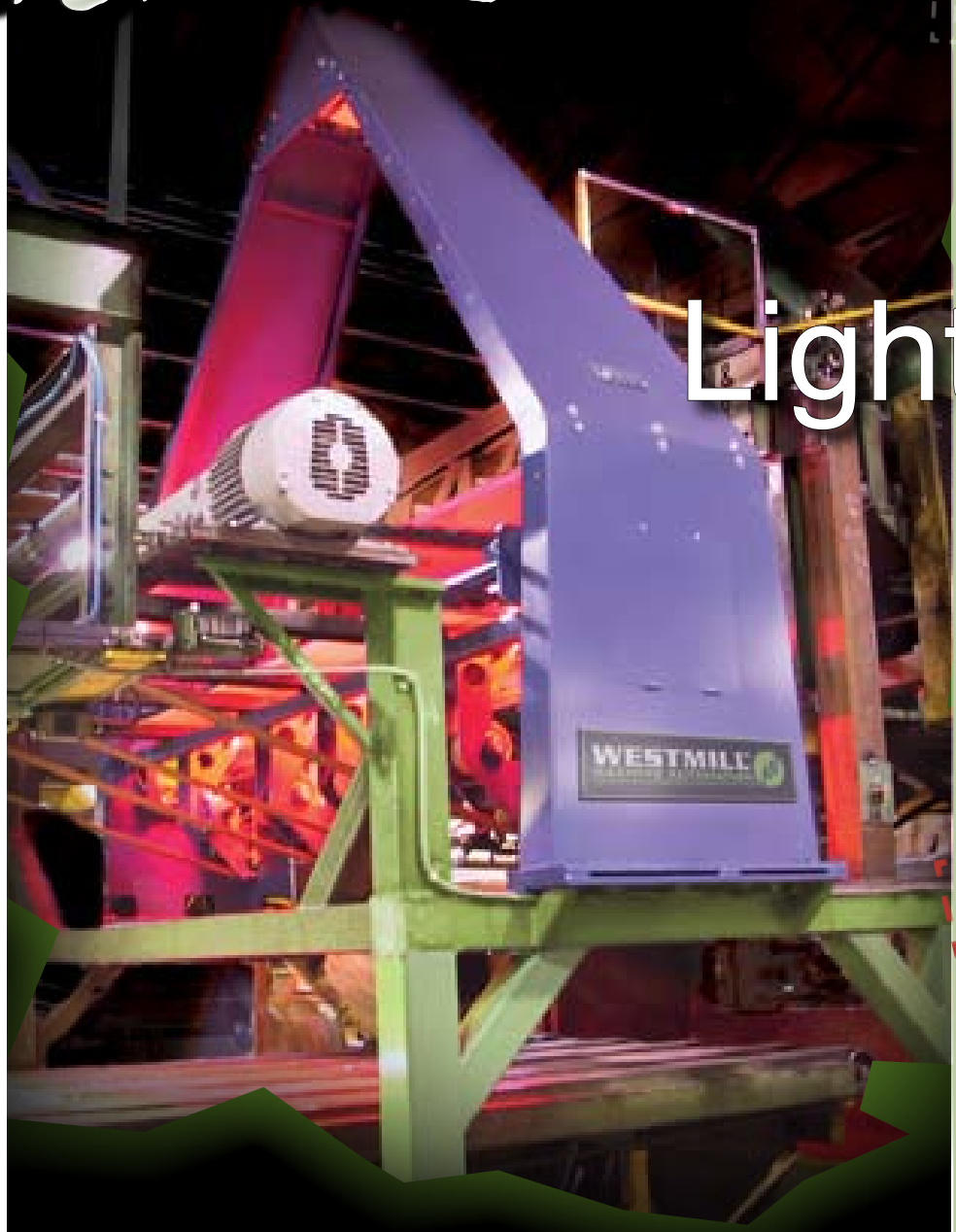
Meet green veneer's worst nightmare:



WESTMILL™
MACHINE AUTOMATION

LightSORT™

Green Veneer Moisture Measuring System

IT'S LIGHTSORTED

Don't let rogue veneer ruin your production dreams...

TURN ON THE LIGHT

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what is LightSORT™?

Introduced commercially in 2006, LightSORT™ is the patented green veneer moisture measuring system that will revolutionize how your mill sorts and dries veneer.

Using vision-based technology, Light**SORT**™ beams a specific light wave through the veneer and uses complex algorithms to determine exact moisture content. After more than two years of mill trials and refinement, the technology has proven it can measure moisture content and sort veneers of any saturation, species and thickness with an accuracy unparalleled by existing technology such as radio frequency heads.

Light**SORT**™ was jointly developed by Forintek Canada Corp. and Westmill Machine Automation Ltd., with funding support from the National Research Council's IRAP program.

Revolutionary

Beta testing

Between August 2005 and May 2006, the new Light**SORT**™ technology was subjected to extensive on-site beta testing. This interactive beta test cycle, undertaken at a large B.C. plywood mill, involved a number of tests including system integrity verification, green-end stacking accuracy, and dryer output and productivity measurements.

A case study conducted by Forintek from February to June 2006 using a new steam-heated jet dryer on-site at the test mill showed Light**SORT**™ **improved drying productivity by approximately six per cent**. Testing was based on a three-bin sort that compared the existing radio frequency (RF) sort accuracy and related dryer production to that of the new Light**SORT**™ system.

In a recent 'Canadian Wood Products' magazine article, the General Manager of the beta test site mill was quoted as follows: *"What I can conclusively say at this point is that the increments of adjustment with the Light**SORT**™ technology are more accurate than the old RF system."*

The beta site has since added a fourth sort (light heartwood) to its original three-sort strategy (heartwood, light sap and heavy sap). The fourth sort was added to specifically capture the in-between 'transitional' sheets of veneer. With the Light**SORT**™ system's ability to measure both the peak and average moisture content, the plant successfully fine-tuned its sorting process to capture these problem sheets into a separate bin, and then created a specific dryer recipe to maximize recovery.

"By adding the fourth sort we are definitely seeing gains, as we have reduced the amount of re-dry significantly and are dealing more with re-feed," the beta site Manager noted. *"My objective was to try and eliminate re-dry in the heart system and that is what we have achieved."*

He then added: *"The real benefit to this Light**SORT**™ system would be if we had additional bins added onto our green stacker and were able to separate sap woods into many very tight sorts."* This would bring the plant's production up even further.

Beta site conclusions: With tighter control of a simple three-bin sort offering a six per cent increase in dryer production along with reduced over-dry and re-dry rates, the potential for even larger production gains through expanded green veneer sort strategies is terrific.

It was determined that by isolating and sorting specific 'transitional' veneer as the peel quickly transitions between moisture contents (sap to L.sap to heart), and by handling these problematic sheets differently during the drying process, the Light**SORT**™ technology can enable plants to increase overall dryer production by reducing their over-dry and re-dry rates.

Beta site testing of LightSORT™ at a B.C. plywood mill.

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Early adopters reap rewards

After it was introduced to the market, it didn't take long for Light**SORT**™ to attract the attention of industry innovators.

In winter of 2006, Tolko Industries Ltd.'s Kelowna Division was the first mill to purchase and install the revolutionary new system as part of a restructuring plan intended to make Tolko a top marketer and manufacturer of specialty forest products.

"Even in the face of adversity, Tolko is adopting high-tech solutions," said Westmill™ President Mike Crondahl. "It shows new technology such as Light**SORT**™ can help mills succeed within an increasingly competitive environment."

Key benefits

Maximizes dryer production while reducing the overall energy used during the drying process by minimizing over-dry and re-dry rates.

Guaranteed sort points eliminate claims due to inaccurate RF moisture sorts.

Uses a specialized light wave rather than contact-dependant sensors to achieve highly accurate moisture content readings and providing a significantly higher degree of accuracy over RF sensors.

Handles problem green veneer sheets by sorting using *average* moisture content, peak moisture content, or a customizable peak/average hybrid.

Allows for fine-tuned sorting with real-time and historical reporting functions, including running and daily totals, species and bin totals, number of sheets per bin or per sort, and average or peak moisture content in any stack.

Guaranteed Light**SORT**™ accuracy

For **SELLERS OF GREEN VENEER**, Light**SORT**™ provides a means to eliminate claims due to inaccurate RF moisture sorts. It provides guaranteed accuracy of veneer sort points, and can back this up with a printed report detailing the specific sort information for each stack. Customers will receive exactly what they expect.

For **BUYERS OF GREEN VENEER,** ask your suppliers to consider sorting with a Light**SORT**™.

Then specify exactly what moisture range you want to have! If you have an option to purchase Light**SORT**ed or 'RF' sorted veneer, don't settle for less than a guaranteed perfect sort.

If you don't believe it, let us prove it to you by allowing us to re-sort your existing green veneer stacks using a Portable Light**SORT**™ system. We guarantee you better sort results than your existing 'contact-based' RF system.

Energy efficiency award

Light**SORT**'s improvements to the veneer drying process won its inventor a prestigious Canada Energy Efficiency Award. Forintek Canada's Chunping Dai and other scientists from Forintek's Western Laboratory (located at the University of British Columbia) worked closely with Westmill Machine Automation Ltd. to create and perfect the revolutionary Light**SORT**™ green veneer moisture measuring system.

The technology uses a specialized light to determine the moisture content of green veneer, resulting in less over-dry and re-dry, reduced energy consumption and increased dryer production. Given that veneer drying consumes 80 per cent of a plant's total energy cost, mills using Light**SORT**™ could potentially save hundreds of thousands of dollars each year on energy consumption alone, while at the same time reducing production bottlenecks.

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Features

Operating the technology

New technology doesn't have to be complicated to operate. Based on years of industry experience, the LightSORT™ system was designed to be user-friendly and intuitive.

MAIN OPERATOR INTERFACE SCREEN

This screen displays:

- system status,
- species and thickness being peeled,
- sort points currently set,
- total number of sheets sorted into the various bins, and
- a graphical representation of the actual real-time sorting as it takes place.

From this screen, the operator can access the set sort-point screen to fine-tune the sort criteria, as well as access various historical screens to retrieve information required for reporting or production scheduling.

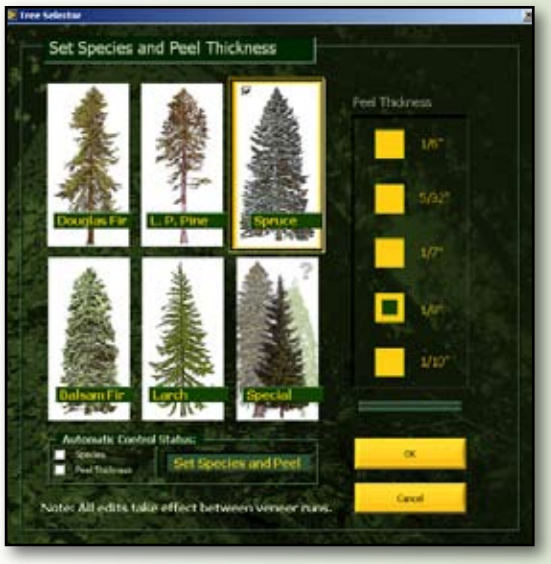
Space between the upright beige bars: actual peel taking place in real time

Green dots: average moisture content of each veneer sheet

Red dots: corresponding peak moisture content of each veneer sheet

Colour band below: which bin the sheet was assigned to.

SPECIES AND PEEL THICKNESS



Using LightSORT™, the species and peel thickness can be set automatically using lathe outputs, or manually (if lathe outputs are unavailable.)

This section of the Main Operator Interface Screen allows the operator to quickly reference which species and thickness is currently being peeled, or manually choose both the species and thickness if required for optimization or experimental reasons.

OTHER FEATURES

Comprehensive veneer records include sheets since system start-up and last reset, daily totals, total for current species and thickness, total sheets seen, valid/sorted sheets.

Bin records include number of sheets per bin/stack, percentage of total sheets assigned to each bin, peak and average moisture content for each bin/stack, and more.

Several user-selectable graphical and numerical viewing formats are provided.

Features

SORT POINT EDITOR

Using the Sort Point Editor panel, operators can adjust the sort point/bin transitions for each species and thickness. This allows the mill to fine-tune the sorting parameters to suit any criteria, including very specific dryer recipes or even to fulfill a veneer customer's specific order preferences.

Light**SORT**™ captures both the average and peak moisture content for each sheet, allowing the mill infinite sort possibilities. Sort point edits can be used temporarily, saved as a named *preset*, or saved as the new default if they prove to be effective.

STATISTICS REVIEW

The various statistical review panels enable the operator to monitor critical system parameters over various time windows. For example, the system can be configured to display monthly, weekly, daily, per-shift or even hourly totals. Percentage breakdown by grade, sheet counts and moisture content, and other key parameters are tabulated for a particular time interval and displayed in the Statistics Review panel.

This type of statistical information can be invaluable for managing and tracking inventory, production planning, historical trending, or determining the exact amounts of different grades of veneer produced from various species and peel thicknesses. This data can ultimately help mill management answer important productivity questions, such as the relative sale value of fiber according to moisture content.

SIX-PANEL DISPLAY

This real-time display panel offers a unique view of the last six sheets of veneer through the system.

Using this panel, operators can verify green-end operations and monitor sorting accuracy visually. Each sheet's average and peak moisture content is clearly noted, as well as its bin assignment.

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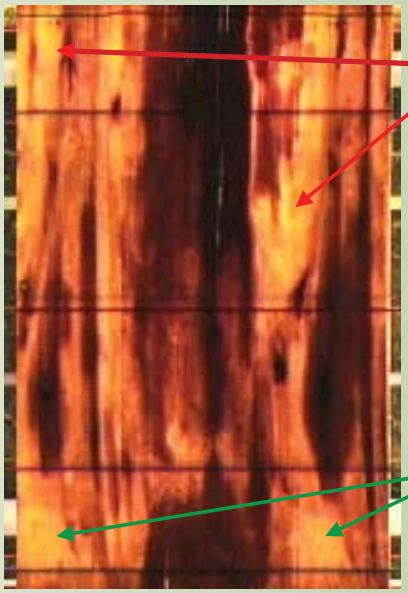
Finally – a solution for identifying rogue transitional green veneer

What is '*transitional veneer*'? Transitional veneer occurs in regions between the sapwood and the heartwood of a log. Depending on the species, this region can be very narrow, or it could be very broad. It is within this transitional region that accurate veneer sorting becomes the most difficult, while being the most important to accurately classify.

Mis-sorted transitional sheets are often the culprits when high re-dry and over-dry rates are detected after the dryer, and can also be a primary source of *'blows'* at the press, and '*delams'* in the field.

The transitional sheet in the image to the right, for example, would normally be classified as light sap using traditional averaging methods. However, it also has a number of peak moisture pockets of sufficient width and density to create a problem for even drying. If not dealt with property, this sheet is a perfect candidate for a blow or delam.

With Light**SORT™,** users can customize various settings so that veneer can be sorted to either an *average* moisture content, a peak moisture content, or to a customizable peak/average hybrid. By allowing mills to finely tune their sort points and move these problem sheets into a separate bin, Light**SORT™** enables the development of unique drying recipes to maximize production while minimizing or eliminating over-dry and re-dry veneer altogether.



High peak moisture content areas of sufficient size and density to be deemed a possible problem area.

Peak moisture content areas of smaller size and lower in height (as well as close to edge).

Determining peak and average moisture content

The graph below illustrates the problems that can occur during RF sorting, and how LightSORT's ability to sort using both average and peak moisture content can remedy this problem. This graph depicts a 300-sheet sort and compares two sheets – both seen as heartwood, but actually having considerably different peak moisture contents.

Red arrows: a 'rogue' sheet with an average moisture content of heartwood but a huge peak moisture content - which could cause issues for drying and, later, product quality.

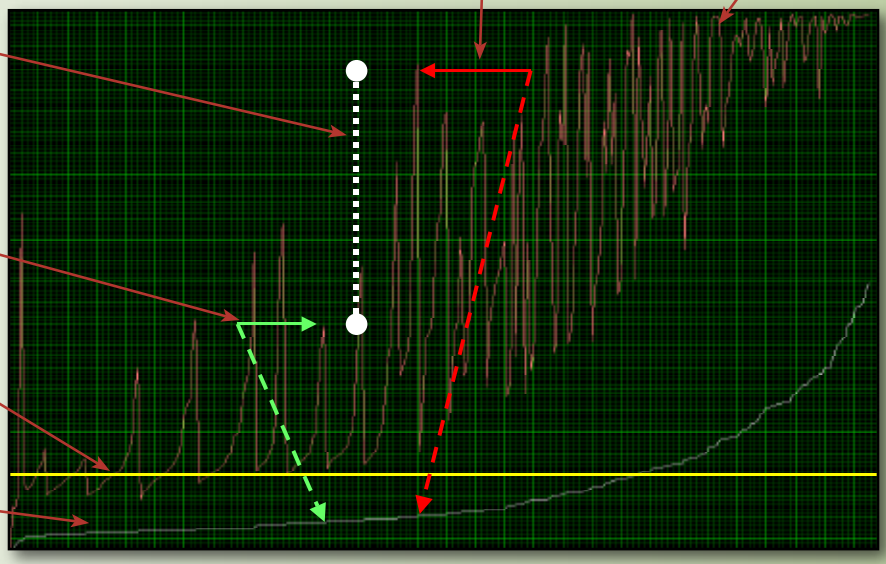
Pink lines: peak moisture content of sheet indicated at top of each pink spike.

White dotted vertical line: indicates the difference between the peak moisture conent of two sheets. Both would have been sorted as heartwood without Light**SORT™**. Now, we can sort these rogue sheets (red arrows) and deal with them separately.

Green arrows: a veneer sheet with an average moisture content of heartwood and a typical (low) heartwood peak moisture content.

Yellow line: a plant's typical cut-off point for heartwood (with anything below being dried as heartwood veneer.)

White line at the bottom: average moisture content of each sheet



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Added value

What you get with your LightSORT™ system

LightSORT™ will be a critical production component in our customers' green veneer line. Careful component design and a customer service support team assures you the utmost in system uptime and reliability.

Everything is included with the system to ensure your overall satisfaction. From initial fabrication to after-sales service, rest assured that your LightSORT™ will become a solid, trouble-free link in your production chain.

To guarantee this, the following items are included with each system sold:

- **Pre-engineering site visit** – Working with your plant personnel, a Westmill™ Field Engineer will carry out a preliminary site-planning visit to discuss installation locations and plant requirements before the system is built.
- **On-site installation assistance** – A Westmill™ Field Engineer will attend the installation and supply assistance to the mill or contractors.
- **On-site optimization** – complete system optimization takes place after the installation process to optimize system threshold and tolerance levels, initialize mill-specific configuration parameters, and set initial green veneer sort points for most common species/peel configurations.
- **On-site training** – thorough operator and administration training takes place on site during installation.
- **Critical spares kit** – customers receive all critical components required to maintain the system to peak operating condition and assure minimal downtime, including a tool kit designed specifically for the LightSORT™ system.

Beta site testing of LightSORT™ at Richmond Plywood in B.C.

- **Preventative-maintenance service contract** – a one-year PM service contract is included in the original sale (two visits total at six-month intervals). Extended Service Contract periods are also available.
- **Upgrades** – software upgrades are provided at no cost for the first year and are also included with the optional extended PM service contracts.
- **Warranty** – a standard warranty period of one year begins from the date of installation, with optional extended warranties available to a maximum of five years. Damaged or consumable items (such as lighting) are extra, with everything else being covered during the warranty period.
- **Technical support** – 24/7 technical support is available from a Westmill™ Field Engineer for up to one year after installation.
- **Office support** – unlimited office support is provided prior to and during installation, with unlimited office technical support provided for one year after installation.

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Leading edge, innovative – and backed by the Westmill™ reputation

Based in British Columbia, Canada, Westmill Machine Automation Ltd. specializes in providing cutting-edge machine automation systems and services for the panelboard industry. We supply the advanced machine automation systems that help keep our clients ahead of the competition.

We help our clients compete and prosper within this highly competitive global marketplace by continuously seeking out innovative products and methods, along with quality service improvements to stay one step ahead of the technology curve.

We are confident that the LightSORT™ Green Veneer Moisture Measuring System will revolutionize your veneer sorting and drying process... and we guarantee it won't be the last innovation you see from us!

About Forintek Canada Corporation

Forintek Canada Corp.
www.forintek.ca

Forintek Canada Corp. is Canada's national wood products research institute. It supports the forest products industry in optimizing manufacturing processes, extracting higher value products from the available resource, and meeting customer's expectations of performance, durability and affordability.

Based on priorities identified by mill members and government advisors, Forintek delivers technological solutions to lumber, panel and other value-added wood products industries, focusing on manufacturing processes or attributes, drying, protection, building systems and more.

Forintek also conducts market and economic studies and plays a key role in the development of national and international building codes and standards.

Westmill Machine Automation Ltd.

3063 275A St., Aldergrove, B.C. V4W 3L4 • Tel: 604-607-7020
Toll-free: 1-877-607-7010 • Fax: 604-607-7099

For specific information, contact:
Mike Crondahl, President, crondahl@westmill.com
Brian Martin, General Manager, Automation, martin@westmill.com

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