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Photo courtesy of Sansin Corporation. Architect: SmithGroup.

About the cover photo:

Finishes protect the cross-laminated timber (CLT) at the DPR Construction headquarters in Sacramento, the first CLT structure in the city.



ENGINEEREDWOOD Journal

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PRIME LINES

IN THIS ISSUE...

2020 has been a year of challenges, adjustments, virtual meetings and working from home offices. As the global COVID-19 pandemic continues to impact how business is conducted, the engineered wood industry demonstrates its ability to adapt, as highlighted in the following pages of this issue.

Residential construction started the year strong and then fell sharply in March. Six months later, housing is leading the economic recovery. A surge in October shows home sales and residential construction provides a reason to be optimistic for prospects in 2021. Go to page 20 to read insights from APA's Market Research Director Joe Elling on what is driving the strong demand for wood products.

The structural and aesthetic benefits of wood is undeniable. As products develop and applications improve, challenges can arise. With an increase in the use of CLT in taller buildings, architects and building owners want to see the beauty of the wood. Check out "Coatings & Engineered Wood" on page 10 to learn about newer water-borne finishes that reduce the impact on the environment, while also preserving the natural beauty of the wood.

As people adapt to using virtual conferencing solutions and working remotely, the use and interaction with social media platforms is also changing. The pandemic has impacted and shifted marketing strategies for many. Flip to page 26 to read how marketing through social media can work for you. In the new year, watch for expanded online tools and social media sites that will give EWTA and APA members opportunities to stay connected and share industry news.

Thank you for your support and continued EWTA membership throughout this challenging year. I look forward to a time we can safely gather again for in-person meetings.

Wishing a safe and happy holiday season to all.

LaDauna Wilson

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MANY APA-CERTIFIED PRODUCTS ELIGIBLE FOR BIOPREFERRED® LABEL

Most APA-certified products are now eligible for labeling using the USDA-certified biobased product label. This program, authorized under the Farm Security and Rural Investment Act of 2002 (known as the 2002 Farm Bill), allows products that have been tested for the bio content to display the BioPreferred® label. Federal law directs federal agencies to purchase biobased products in categories identified by the USDA. The label documents the renewable content found in the product and can be used on product packaging and literature. Products currently listed include structural panels, I-joists, Rim Board®, cross-laminated timber and all categories of structural composite lumber. More information may be found at www.BioPreferred.gov.

Japan Projects Mark MIDPLY® Successes

Supported by CDN \$300,000 in funding from the Natural Resources Canada federal agency and the Province of Alberta, APA's export promotion program continues to make strides for Canadian members in Asian markets where the COVID pandemic has

wreaked less havoc. Through a September tradeshow exhibition, the APA Japan office promoted APA OSB sheathing with special ministerial approvals and innovative MIDPLY® wall systems to 6,000 building industry professionals. While observing strict protocols, they also conducted a well-attended seminar at the event.

Continued on next page



MIDPLY systems use more structural panels and lumber compared to conventional methods and are gaining in use in Japan. Success stories using the system and APA member OSB include a recently completed nursery school and three-story hospital project currently under construction. Given lessons learned, system improvements and adaptations, and additional completed testing, it is hoped that Canadian industry technical work in Japan may generate spillover benefits as North America looks into adopting the system to build taller and even more resilient wooden buildings.

Following up on these marketing and technical efforts underway, the APA Japan Office exhibited in person at another major construction tradeshow in November and through four technical seminars and workshops through early 2021 under strict COVID protocols.

Updated Environmental Product Declarations Now Available

As society increasingly asks for the assessment of net carbon effects on all activities, the Consortium on Research for Renewable Industrial Materials (CORRIM), American Wood Council and Canadian Wood Council have recently published Environmental Product Declarations (EPDs) for structural panels, LVL, LSL, glulam timbers and I-joists. These EPDs may be found at www.awc.org/sustainability/ epd. When provided to architects, engineers, designers and specifiers, they allow the average amount of carbon consumed in production of the product to be assessed as part of a building's overall carbon footprint. This information is vital for projects seeking accreditation through various green building organizations, including LEED.

Mark Halverson Retires After 30 Years of APA Service



Mark Halverson

APA said goodbye this summer to Mark Halverson, Field Services Manager, after 30

years of service. Mark joined APA in 1990 as a field representative based in New Jersey. He has fulfilled several roles since then, including pallet and container field team manager, member services liaison, where he oversaw the association's fee complaint service; regional field services manager and staff coordinator for both the nonresidential and industrial subcommittees of the APA marketing advisory committee.



APA 2020 GENERAL SESSION

The APA General Session Business Meeting will be held on Thursday, December 17, 2020, from 11:00–11:30 PST. The meeting will include the "State of the Industry" and "State of the Association" addresses by APA Chairman Jim Enright and APA President Ed Elias.



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COATINGS & ENGINEERED WOOD

A Necessity or a Luxury?

By Sjoerd Bos, Managing Director, Sansin Corporation

As wood buildings rise ever taller, we are reminded how flexible, strong and beautiful wood is as a building material. For architects, wood presents the opportunity to get creative with buildings in ways that aren't possible with steel or concrete.

According to ResearchAndMarkets.com, the global cross-laminated timber (CLT) market was valued at \$664M (USD) in 2018 and is projected to reach \$1.4M (USD) by 2024. Overall, tall timber construction is gaining in popularity for several reasons, ranging from economic and aesthetic to environmental.

Tall timber structures offer strong seismic and wind performance, and wood's natural properties—combined with the sheer size of the wood—lead to fire resistance. This is especially true for mass timbers due to charring and the fact that wood actually gets stronger as it dries from heat.

From an economic standpoint, mass timber allows for prefabrication, leading to shorter construction schedules and reduced costs. Environmentally, wood is the only building material that has the ability to remove carbon from the atmosphere throughout its lifecycle, even after disposal when wood fiber is recycled.

Another encouraging development is that the building code is lining up to support more mass timber construction. Starting in 2021, the International Building Code will allow for buildings between nine and 18 stories, depending on the exposure and fire-resistance of the wood.

Aside from structural advantages, wood is simply beautiful. If it were not for rain, wind, sun or snow, we would all let wood just weather naturally. However, architects and building owners want the wood to look beautiful over the life of the building. This is where a coating system plays an important role from construction to the grand opening and beyond.

DEVELOPMENT OF WATER-BORNE COATINGS

History indicates that builders have been treating wood for almost as long as they have used it as a building material. Wood tar – the resin that results from heating wood – has been traced back to the Iron Age in Scandinavia, and the Romans used tar to protect the wooden hulls of their ships. Linseed oil, also known as flaxseed oil, has been used for hundreds of years to protect and maintain wood

However, some of the more traditional oils, like linseed oil, lack UV protection, create a golden hue that is sometimes undesirable and can even support the growth of mildew. Furthermore, linseed oil is high in volatile organic compounds (VOCs), which contribute to smog and ozone depletion. Petroleum-derived solvents are even more

environmentally detrimental, requiring large amounts of energy to extract and ship the petroleum and then to process it into solvents.

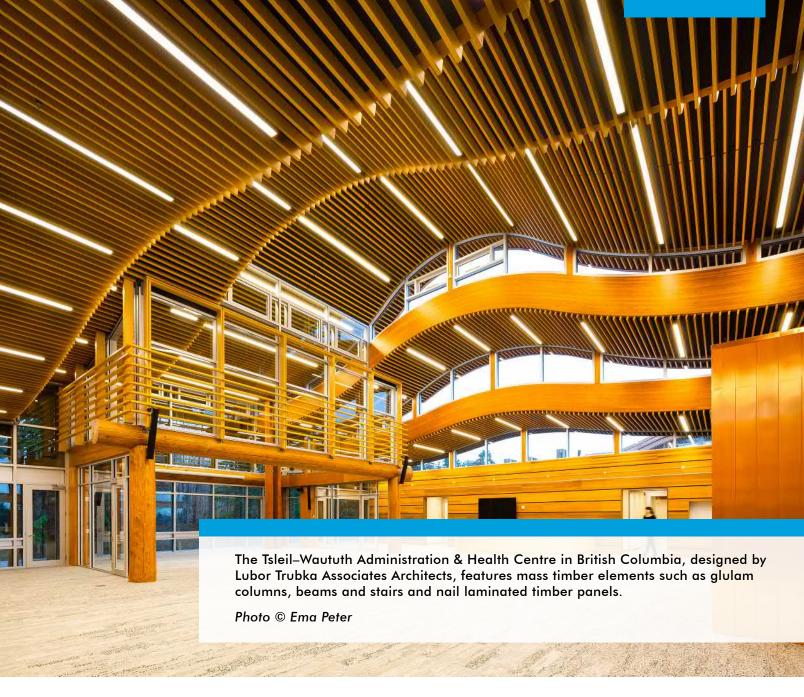
Over the last several decades, the industry wanted – and consumers and regulators were increasingly demanding – coatings that reduced the impact on the environment while also allowing for easy clean up and maintenance, along with improved productivity. The 1990 New Clean Air Act by the Environmental Protection Agency (EPA) required manufacturers to decrease the number of VOCs in their finishes.

Initially, water-based stains entered the market but became unpopular as they did not have the clarity, flow, penetration, water repellency or performance that users expected from an oil-based finishing product. Ultimately, waterbased coatings let finishers down, and some coaters insisted on using oil-based stains, despite the higher toxicity.

Water-Borne Penetrating Formula



Water-borne wood finishes combine the benefits of water- and alkyd-based coatings.



Eventually, newer water-borne technology was developed that utilized modified natural resins but used water to carry the finish into the wood. In this way, water-borne finishes were now able to deliver on the performance and beauty of traditional oil-based products while living up to their environmental promises. In addition to reducing environmental toxins, water-borne finishes offer UV stability and are a more user-friendly option with easy clean-up and maintenance.

It is important to note that the terms "water-borne" and "water-based" are often incorrectly used interchangeably. In truth, the technologies are very different. For this reason, applicators and contractors – especially those who have a history with the troublesome water-based finishes – need to understand the differences. In short, it is no longer necessary to use traditional oils and solvents to achieve the desired look and protection, especially if the project has an environmental scope in terms of toxicity, VOCs and the health of applicators and customers.



BEAUTY & PROTECTION – A FINE BALANCE

Architects design a building focused on the look, shape and beauty of the wood; they are not necessarily thinking about protection of the wood related to UV exposure, moderating the wood moisture content or dimensional stability. But it is important to consider a coating system and schedule that looks at the wood's journey to the construction site and the elements and conditions at the building site related to exposure and climate. Undercoats applied at the factory provide a way for CLT, glulam and other mass timber to repel the elements while allowing the wood to breathe and lose moisture at a controlled rate to reduce checking.

From an aesthetic standpoint, the substrate itself will be telling in terms of color, texture and species-specific features that can be highlighted. With architects, we go even a step further. Do we want a natural look for the grain of the wood to shine through, or is an opaque finish preferred? Do we want to see a natural matte finish or a fuller, richer result? The general rule of thumb with coatings is the darker the color, the greater the UV protection. So there is a trade-off between protection, beauty and the quest for a natural-looking finish.

PROTECTING MASS TIMBER IN THE FACTORY & ON THE JOB SITE

How and when to apply the finish is a decision that sometimes rests with the OEM or wood manufacturer. Several manufacturers have machines to prepare and apply one or more finish coats and a quality control system designed to ensure the product is applied in accordance with the coating manufacturer's published preparation and application procedures.

Due to potential exposure to UV and moisture during storage, transit and construction, manufacturers need a plan to minimize timber discoloration, mold and UV degradation, all of which can impact aesthetics and the ability of the subsequent coats to be applied properly.

Increasingly, mass timber manufacturers are choosing to apply all coats of the finish system in a factory setting, which yields many benefits. From a financial perspective, coating the wood before it leaves the wood manufacturer's warehouse is a revenue-generator that creates a new line of business and an added value to offer customers. Additionally, from a pragmatic standpoint, applying primers (i.e., undercoats) and topcoats in a factory ensures temperature, humidity, dust, lighting (for color match) and product mil thickness are controlled. Commercial sanders, sprayers or flood coaters, racks and packaging stations are also available, and a factory setting enables proper data recording and record-keeping. By delivering pre-finished product to the job site, the wood is protected in transit and in situ.

Another option is to apply just the undercoat in the factory to all six sides and then add the finish coats later at the construction site. For this to be effective and efficient, care must be taken to apply a penetrating undercoat, or sealer, that can also be utilized as the first coat of the complete finish system. A penetrating, breathable undercoat helps ensure the stability of the wood and protects it from moisture intrusion and UV damage in transit or at the construction site. This is especially important at the end grain, which is particularly susceptible to moisture intrusion issues. Additionally, the proper undercoat increases topcoat performance, especially when designed into a specific coating schedule.



Glulam panels are coated in the controlled environment of a factory setting. Photo courtesy of Sansin Corporation

It is also important for jobsite managers to insist that engineered wood be stored and handled with the same care as millwork material.

The best storage plan is to minimize storage altogether with deliveries coordinated between the fabricator and the contractor to coincide with erection timelines. When that is not possible, minimize inventory at the construction site and store the mass timber products in a covered area. Other best practices include preventing contact with wet ground, keeping the packaging intact so water can't get inside and carefully handling the engineered wood panels to prevent damage.

APPLICATION BEST PRACTICES

When coating all mass timber at the construction site, keep in mind that surface preparation is the best predictor of finish performance.

Proper sanding is a critical first step. Sand the surface with an appropriate machine capable of sanding efficiently to an appropriate texture, and then clean using compressed air or a vacuum. When coating large-surface engineered wood, well-stirred product is key (and continue

doing so throughout the application process). Test on an inconspicuous area to ensure proper color and penetration.

Apply the finish in as close to ideal temperatures as possible (70 degrees F/20 degrees C) and with humidity levels at 50 percent. Application on mass timber is best with a flood coater-type applicator, such as an HVLP airless applicator or a Juice Box sprayer. With sanding and flood coating, water-borne, penetrating finishes will dive into the wood for better and longer protection. Under-application of product only leads to later disappointment in performance.

When applying in controlled factory conditions, drying times should be dependable, based on the manufacturer's product data sheet. Utilizing drying racks and Infra-Red heat or ovens can speed up that process.

It is a good idea to take wet mil measurements to ensure the product is applied per the product data sheet and matches expected coverage. Also, retain control samples for later assessment, if needed. Sanding, correct dosage, even application of the product to all sides and proper drying and storage are the fundamentals of wood finishing for long-term success.

THE VALUE PROPOSITION FOR COATINGS

Making the proper decisions about architectural finishes for mass timber projects is a necessity, not a luxury. Starting with maintenance in mind during the design phase of a project helps ensure the enduring beauty and protection of an engineered wood structure. Making the right coating decisions at the design phase – and having a quality-control-driven plan on how to apply and protect the wood – will also protect the owner's investment in the structure and help keep the building looking as it did on day one.

ON-DEMAND WEBINAR SERIES



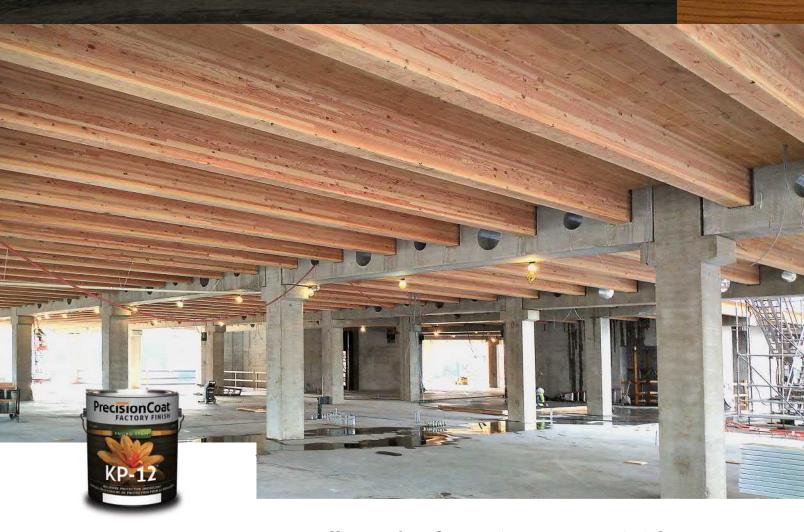
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ENTERING 2021 WITH MOMENTUM

Housing Leading the Economic Recovery

By Joe K. Elling

Residential construction started out 2020 with a bang. Housing starts in January and February averaged a seasonally adjusted annual rate of 1.58 million units, splitting single-family and multifamily starts between 970,000 and 610,000 units, respectively. Home sales and housing starts fell sharply beginning in March with the infiltration of the coronavirus. The all-handson-deck policy decisions on the part of Congress, the Trump administration and the Federal Reserve helped mitigate the impacts of the voluntary and mandated shutdowns of businesses and other economic activities.

The housing industry has benefited the most from the efforts taken by the policy makers at the Federal Reserve to drive down interest rates. Since June, the rate on a 30-year fixed-rate mortgage has been less than 3%, a historic low. Despite the increase in unemployment, new home sales surged and averaged a seasonally adjusted annual rate of 973,000 in the third quarter. Single-family starts have increased, but home builders have not been able to keep up with the increase in demand. (Figure 1.)

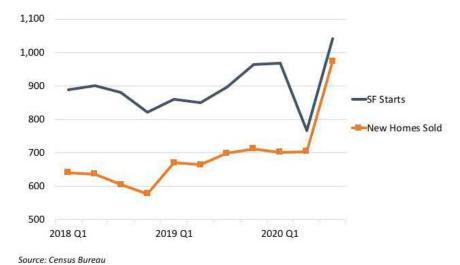
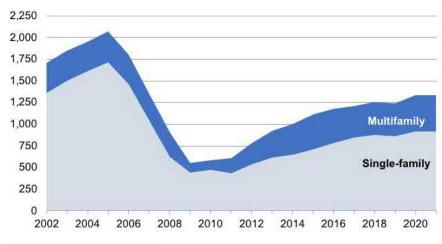


Figure 1 - Single-family Starts and New Homes Sold

Demand for existing homes has also been extraordinary. Sales in the third quarter ran at a seasonally adjusted annual rate of 613,000, the highest sales rate since 2006. The jump in sales has stretched the inventory of homes for sale to a point where it is truly a seller's market. The median price of existing homes sold in the third quarter was up almost 12% from the third quarter of 2019. (Figure 2.)



Source: Census Bureau. APA Forecast.

Figure 2 – U.S. Housing Starts

ENTERING 2021 WITH MOMENTUM

The strength in new home demand drove home builder sentiment to a record high in October. The combination of that with the catch-up builders face in completing the homes sold in the third quarter points to single-family construction remaining near one million at an annual rate through the first quarter. Statements made by Federal Reserve Chair Jerome Powell and other board members imply monetary policy will remain accommodative through at least the first half of 2021.

There is clear evidence that factors such as favorable interest rates, tech-oriented businesses permitting employees to work from home, concerns about personal safety and high taxes are driving those who live in major cities, such as New York City, San Francisco and Chicago, to move to smaller and more affordable localities. The rate at which this is happening and prospects for more of the same next year helps to explain why home builders cite lot availability and land prices as their top two concerns, which could hamper construction activity in the second half of 2021.

RENTAL MARKET FACING CHALLENGES

A variety of forces supported strong demand for rental housing in the second half of the prior decade. The events since the coronavirus outbreak are changing the attractiveness of investing in rental housing. Efforts by the federal government to provide income support to the unemployed have not been enough to prevent an increase in renters not making payments, not making full payments or using credit cards to make the rent payment. At the same time, rental property owners have not been given forbearance on operating costs or property taxes. The Center for Disease Control moratorium on renter eviction ends on December 31, so we might see many displaced renters in 2021. These developments are changing the perceived attractiveness of investing in rental housing, meaning there is downside risks to the outlook for multifamily construction.

ANOTHER YEAR OF 1.35 MILLION STARTS IN 2021

New home demand should remain very healthy through the first half of 2021, especially on the part of young-adult-headed households as they







take advantage of the record low mortgage rate. Home builders have responded to this segment of the new home market, as evidenced by the continued decline in the average size of new homes started. Based on data through the first half of 2020, the average size of new homes started is expected to be 2,460 square feet, down 8.5% from the 2015 peak. Single-family starts in 2020 are projected to total 930,000 and multifamily starts, 420,000. The outlook for 2021 calls for the mix between single-family and multifamily starts to be similar to 2020. The outlook for 2020 and 2021 puts the level of residential construction near the trend demand for new housing units based on the sum of household growth, replacement of units damaged by natural disasters, units removed to transition the land to other uses and accommodation of second home demand. (Figure 3.)

REPAIR AND REMODELING GOING STRONG

Wood products demand also got a big boost from homeowners stepping up their repair and remodeling spending in 2020. This is evidenced by the projected 6% increase in sales at building materials and garden equipment dealers. What initially drove the relative strength in sales at these establishments was that they were deemed essential. Following that was the one-time

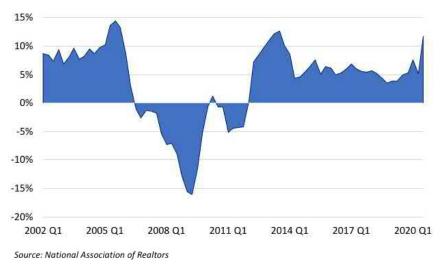
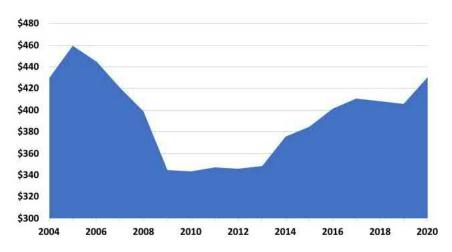


Figure 3 – Median Sales Price of Existing Homes Sold



Source: Census Bureau, BLS

Figure 4 – U.S. Sales at Building Materials and Garden Equipment Dealers

\$1,200 grant from the federal government to support the economy, with recipients using some of that money for home-improvement-related purchases. The shift to work at home also led some to spend on goods that enhanced their ability to be as productive at home as in the office. (Figure 4.)

Some of the factors driving the strength of repair and remodeling in 2020 will likely diminish in 2021. Even so, we should expect growth in the 2–3% range. Many homeowners took advantage

of the record low mortgage rate in 2020 to refinance their mortgage. The reduction in their mortgage payment will free up income that can be used for increased home improvement spending. In addition to lowering their payment, homeowners have increased the equity cashed out in the refinance process. That is likely to continue, contributing to additional repair and remodeling spending in 2021.



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Joe K. Elling (joe.elling@ apawood.org) is Director of Market Research for APA – The Engineered Wood Association.







SOCIAL MEDIA MARKETING

Adapting to the Pandemic

By Robin West

There is no doubt that 2020 has been the year of change. A lot has shifted this year, including how people use and interact with the social media landscape.

Social media plays a more important role than ever in the marketing strategy for many businesses. It provides an opportunity to reach new audiences, connect, engage and share information with your existing customers, grow your brand, increase traffic to your website and more.

But how have social media behaviors changed since the COVID-19 pandemic? And how can you adapt to these changes for the benefit of your business?

TIMES OF UNCERTAINTY BRING BOOM OR BUBBLE?

With the start of the coronavirus pandemic, we also saw a social media boom. According to the <u>Digital 2020 July Global Statshot</u> report produced by DataReportal, We Are Social and Hootsuite, as of July 2020, social media users have increased by over 10% from the previous year, resulting in nearly 400 million new users.

Not only are there more users on social media, but users are also spending more time on the platforms. The Global Web Index Q3 2020 Social flagship report, showed that in May, 32% of North American social media users reported that they were spending more time on social media due to the pandemic.

However, that same study suggests that the boom may be more of a bubble. The amount of time that younger users are interacting with the platform is declining, and social media use is likely to return to previously normal levels. Nevertheless, it is also likely that at least some user behavior and habits developed during the last few months will remain.



It should be noted that many complexities impact how people interact on social media during this time, including your industry and how it has been affected, how individual states are addressing the crisis and how your customers are impacted by, and responding to, pandemic changes.

So, how can you leverage these changes to maximize social media engagement?

BEST PRACTICES FOR SOCIAL MEDIA MARKETING IN 2020

■ **Post When Your Audience is Online:** The pandemic has changed the way that users interact with social media platforms. With the widespread implementation of remote work and school, users may be interacting with social media at different times than before. As algorithms continue to shift to favor engaging and relevant posts, it remains critical to post at times that will maximize engagement.

Unfortunately, there is no magic "one-size-fits-all" posting time. <u>Sprout Social</u> recently published updated guidelines for optimal posting times during COVID-19. This can serve as a good starting place, but ultimately,

it may take some experimentation and looking at your own social analytics—more on that later—to narrow down the best time to post for your audience, business and industry.

• Video-based Content: Video content historically performs well, and the changes that have accompanied the pandemic have only expanded the demand for video-based content, as live streams and virtual events continue to gain popularity. Social media platforms are anticipating this trend, as we see more and more platforms expanding their video capabilities.

As social media use continues to increase, platforms become more saturated, and video content is a great way to stand out from the crowd. So, if you've been thinking about incorporating video content into your strategy, now is the time.

■ **Short and Sweet:** We've all heard the claim that a human's attention span is shorter than a goldfish. Whether or not this is true, the abundance of information on social media over these last few months will likely continue to impact user's attention spans. Keep visuals captivating, and text short, sweet and exciting.

■ **Hashtags:** Social media continues to influence the behaviors of people seeking more information about a brand, product or service. According to the same Global Web Index Q3 2020 Social flagship report, 42% of all internet users are turning to social media to find more information about brands.

Implementing hashtags is a great way to help potential customers find you and boost post engagement. Include specific hashtags that are relevant to your audience and content. Keep them simple, easy to remember and stick to just a few, as using too many can appear spammy.

• Monitor Your Analytics: We should continue to anticipate changes. Checking analytics is an effective way to look at how your social media content and strategy is aligning with changing user behaviors. Analytics provide a snapshot into what's working, and what's not, to help you formulate a strategic plan to adapt as things change.

Decide which analytics are most important to track, measure and compare. It's helpful to have benchmarks, or past data, to compare with the current data. This way, you can see growth or decline and can adjust your strategy accordingly. The native analytics tools are a great place to start, but there are other options if you want to combine all your analytics into one convenient dashboard.

It's hard to say with certainty what exactly the next few months will bring for social media marketing. But what is certain is that it will remain vital to stay flexible with your social media strategy and continue to monitor and adapt to changes.

Robin West is the Advertising and Public Relations Specialist at APA.





Innovation and Excellence Celebrated In Spite of a Pandemic

EWTA members are typically recognized at the APA Annual Meeting and EWTA Info Fair for innovative practices and excellence in service. This year, we ask APA members to vote for the award winners via an electronic ballot. Votes for the Supplier of the Year Awards are cast based on quality, service and delivery. The winners will be announced in January and highlighted in the Spring 2021 Journal.

Below are entries for the Innovation of the Year entries

(in alphabetical order, by company), followed by a list of the Supplier of the Year award candidates (sorted by category). Additional information about the awards program is available on EWTA's Supplier Awards webpage at www.engineeredwood.org/awards.

To recognize the outstanding service of so many members, the EWTA Advisory
Committee implemented a new rule in 2019 that no member is eligible to win two consecutive years.

2019 SUPPLIER OF THE YEAR WINNERS:

Consulting and Service:

Hatton Brown/Panel World Magazine

Equipment and Tooling:

Con-Vey, LLC

Materials and Supplies:

Willamette Valley Co.

2019 INNOVATION OF THE YEAR WINNER:

KTC Industrial with Nova Robotics

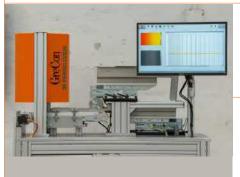
Click below for more information on last year's winner.

VIEW WINNERS ▶

INNOVATION OF THE YEAR ENTRY A

3D ParticleView

Entered By: Fagus GreCon



Date of First Use: July 2020

Benefit 1: Reduction of material loss in the screening process due to early changes of the ring flaker

Benefit 2: Reduction of glue usage by providing better control over the number of fine particles

Results: Exact reporting of the length, width and height of the wood particles

Description:

The 3D ParticleView is a measuring unit that assesses the wood particle quality. The particles are taken from the process downstream of the knife ring flaker and are placed in the particle view. The unit will use a patented laser line and camera to measure the length, width and thickness of each particle.

INNOVATION OF THE YEAR ENTRY B

Precision Coat KP-12 Product Family

Entered By: Sansin Date of First Use: 2012



Benefit 1: Dramatically improves topcoat performance for timbers, dimensional laminated lumber and engineered wood.

Benefit 2: Protects wood during manufacturing and construction processes.

Results: 1) With KP-12 undercoat, the Quebec City Amphitheatre was protected from outdoor weathering during a lengthy construction timeline, but still able to be top coated with the final finish in situ. Still going strong since 2015. 2) The University of British Columbia Earth Systems Sciences Building has stood the test of time with KP-12. 8 years + on exterior in a natural color no less. One of the premier early mass timber examples.

Description:

Penetrating aqueous low-VOC protective undercoating for structural wood, dimensional lumber, engineered wood and mass timber subject to wet conditions. Designed for machine and HVLP airless application. Tintable formula reduces swelling, wood rot, moisture absorption and protects against UV degradation and staining.

INNOVATION OF THE YEAR ENTRY C

Chattermark Roughness System

Entered By: Steinemann Technology USA, Inc. Date of First Use: April 2020



Benefit 1: 100% quality control

Benefit 2: Operator notice that panel surface is trending toward B-grade/

Reporting of all panels processed

Results: Cost saving due to less B-grade panels

Description:

The Chattermark Roughness Scanner (CRS) assesses whether the quality of the surface lies within a defined tolerance range, defined by the customer. Detects the surface quality of sanded wood-based panels. Continuous quality monitoring of designated roughness and chatter mark to maintain A grade panels.

The following information is as claimed by the entrant. EWTA and APA make no claims as to the veracity of the information, nor do they endorse any particular entry.

SUPPLIER EXCELLENCE

Supplier of the Year Award Candidates

APA members will choose Supplier of the Year winners in three categories (Consulting/Services, Equipment/Tooling and Materials/Supplies) based on quality, service and delivery. Below is a list of candidates, which includes all EWTA members.

CONSULTING AND SERVICES

BMI Contractors, Inc.

CMA engineering Inc.

Cogent Industrial Technologies

Evergreen Engineering, Inc.

Hansen-Rice, Inc.

Hunt, Guillot & Associates LLC

KTC Industrial Engineering Ltd.

Mid-South Engineering

Nondestructive Inspection Service

*Panel World Magazine / Hatton-Brown Publishers, Inc.

Union Pacific Railroad

University of Tennessee, Center for Renewable Carbon

EQUIPMENT AND TOOLING

A-Lert Construction Services

Altec Integrated Solutions Ltd.

ANDRITZ Inc.

Argos Solutions LLC

Baumer Inspection GmbH

BETE Fog Nozzle, Inc.

BID Group

BRUKS-SIWERTELL

Brunette Machinery Company

Inc.

Clarke's Industries, Inc.

Coil Manufacturing, Ltd.

Connexus Industries Inc.

*Con-Vey

COSTA Sanders LLC

Dieffenbacher Customer Support, LLC

DO2 Industriel

Dürr Systems, Inc.

Electronic Wood Systems, N.A.

Fagus GreCon, Inc.

Flamex, Inc.

FROMM Packaging Systems

Globe Machine Manufacturing

Company

Grenzebach Corporation

Guardian Chemicals Inc.

H.B. Fuller

HASHIMOTO DENKI Co., Ltd

HAWE Hydraulik

HexArmor

Hexion Inc.

IBC, International Bar Coding Systems & Consulting Inc.

IMAL-PAL Group

IMEAS Inc.

Itipack Systems

KADANT Carmanah Design

Kimwood Machinery, Inc.

Koch Knight, LLC

LIMAB North America

Lundberg

Matthews Marking Systems

Meinan Machinery Works, Inc.

Mereen-Johnson LLC

Metriguard Technologies Inc

Mill Machinery LLC

MSK Covertech, Inc.

NESTEC, Inc.

Nextwire

Nicholson Manufacturing Ltd.

Panel Machinery & Controls, LLC

Raute

REA JET

Samuel Packaging Systems

Group

Siempelkamp LP

Signode Packaging Systems

SMARTECH (TIP)

SonicAire

SparTek Industries

Spraying Systems Co.

Steinemann Technology

USA, Inc.

Sweed Machinery, Inc.

Taihei Machinery Works Ltd.

Tebulo Industrial Robotics

TSI

USNR

Venango Machine Company,

Veneer Services, LLC

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Westmill Industries USA Corp.

MATERIALS AND SUPPLIES

Adwest Technologies

Albany International

Alpha Wax USA

Arclin - Performance Applied

Ashland Specialty Ingredients

ATCO Wood Products Ltd.

Axalta Coating Systems

BASF - We create chemistry

Bates and Company, Inc

Chem-Trend LP

Clarke Veneers and Plywood

Coastland Wood Industries Ltd.

Covestro LLC

Dominion Chemical

Company, Inc.

Evertree

Franklin Adhesives & Polymers

Fusoni

Georgia-Pacific Chemicals LLC

Henkel

Huntsman Polyurethanes

Idemitsu Lubricants America

Corporation

Intertape Polymer Group

JAX, Inc.

Lonza Wood Protection

McLube

Northwest Adhesives, Inc

OCI Melamine Americas

Owens Corning - InterWrap

Paneltech

Permapost

Sansin Corporation (The)

SASCO - Polymer Solutions

Group, LLC

Siemer Milling

Stratachem Solutions Group LP

Walker Emulsions

Wanhua Chemical (America)

Co., Ltd.

Waxian International

*Willamette Valley Company

^{*2019} Supplier of the Year Winners



Looking forward to

Strength Through Connections

The Engineered Wood Technology Association is the leading North American organization of suppliers to the engineered wood products industry.



IOIN

EWTA membership provides vital connections with your customers in the North American engineered wood industry through a variety of networking platforms.



EXHIBIT

EWTA's Info Fair supplier exhibition, held in conjunction with APA – The Engineered Wood Association's annual meeting, provides face-to-face opportunities with key decision-makers.



ADVERTISE

EWTA's Engineered Wood Journal provides a highly cost-effective method to deliver your advertising message to a target-rich readership of your customers.

Learn more about the benefits of EWTA membership WWW.ENGINEEREDWOOD.ORG

7011 So. 19th St., Tacoma, WA 98466-5333 • 253-620-7483 ewta@engineeredwood.org • LaDauna.Wilson@apawood.org



The Engineered Wood Technology Association (EWTA), the related nonprofit supplier organization of APA – The Engineered Wood Association, serves as a networking and information transfer vehicle between North America's engineered wood product manufacturers and their product, equipment and service providers.

EWTA membership falls under four categories:

- Consulting/Services
- Equipment/Tooling
- Materials/Supplies
- APA member manufactures (all members of APA are automatically members of EWTA)

The following directory provides a list of 2020 EWTA members organized by category and includes company descriptions and contact information. Visit www.engineeredwood.org/member-directory-contacts for the online directory and additional filter options. It's just one of many tools designed to help members connect with each other and the industry.

For more information about the benefits of membership or for a membership application, visit www.engineeredwood.org/-about or contact LaDauna Wilson at ladauna.wilson@apawood.org.



CONSULTING AND SERVICES

EWTA members in the Consulting and Services category provide support in one or more of the following subcategories: Energy Management; Engineering Services; Industrial Construction and Installation; Industry Communication/Research; Maintenance/Inspection; On-Time Performance Systems; Plant Design and Construction; Project Management; Recruiting and Staffing; Software/Computing/IT; Specialty Services; Value-Added Services/Treating/Embossing.

Go to the online Consulting and Services directory

BMI Contractors, Inc.

BMI Contractors Inc, is a machinery installation contractor specializing in the wood products industry for nearly 40 years. We operate across North America and have installed complete plywood, OSB, LVL and I-Joist facilities. We have replaced, rebuilt or modernized individual machinery lines including over 100 veneer dryers and a significant number of plywood presses, LVL presses and OSB presses. We pride ourselves in innovation and are responsible for completing three veneer dryers that were rolled into place after their construction. Our crews are ready to assist you in achieving your goals for timely, efficient, safe and cost-effective plant improvement projects.

Contact:

David Brown – President Phone: 503-375-2222 Email: dbrown@ bmicontractors.com 4375 Turner Rd. SE Salem, OR 97317 www.bmicontractors.com



CMA engineering Inc.

Since 1986, CMA engineering Inc. has accomplished a number of projects in the manufacturing end of the forest products industry, including the conceptual design, budget preparation, process engineering, detail engineering (mechanical, electrical, civil and structural), equipment procurement, project management, construction management, PLC/HMI programming and start-up of board plants (OSB, Particleboard and MDF), plywood and veneer mills, bioenergy plants, engineered wood product plants and sawmills.

Contact:

Claude Malette - P. Eng.
Phone: 705-360-5525
Email: cma@cmaeng.com
60 Wilson Avenue, Suite 101
Timmins, ON P4N 2S7 Canada
www.cmaeng.com

Cogent Industrial Technologies

From greenfield to modernization projects, clients across the globe leverage our technology expertise in wood-based panel-board and pellet plants to successfully define, design, build and operate their industrial operations. Our services include: Project management, process engineering, plant-wide integration, industrial safety, electrical power, automation and controls, industrial IT and operations performance management.

Our integrated approach connects equipment, processes and people to increase productivity, reduce operational cost and improve efficiencies.

Contact:

Bijan Shams - President
Phone: 604-207-8880
Email: bijan.shams@
cogentind.com
13775 Commerce Parkway,
Suite 300
Richmond, BC V6V 2V4 Canada
www.cogentind.com

Evergreen Engineering, Inc.

Evergreen is a multi-discipline (mechanical, electrical, civil/ structural and environmental) engineering firm. From project planning and feasibility studies through detailed engineering, construction management, maintenance and process consulting, to start-up and commissioning support, Evergreen can handle any project in your mill. Our wood products experience includes OSB, LVL, I-Joist, Particleboard, MDF, Hardboard, WPC, Pulp & Paper, Lumber, Plywood, Chemical and Resin plants. "Our mission is to provide customized support to move our client's vision to reality by delivering practical engineering solutions, displaying project leadership and contributing technical expertise."

Contact:

Aaron Edewards - Director, Industrial Business Development Email: aedewards@eeeug.com

EUGENE OFFICE:

Phone: 541-484-4771 1740 Willow Creek Circle Eugene, OR 97402-9152

ATLANTA OFFICE: Phone: 404-267-1471 8607 Robert Drive, Suite 100 Atlanta, GA 30350

EVERETT OFFICE: Phone: 888-484-4771

13322 Evergreen Way, Suite 201

Everett, WA 98204

www.evergreenengineering.com

Hansen-Rice, Inc.

HRI - Industrial projects, concept to commissioning. Experienced, trusted, long-term industrial GC partner: Safety (EMR < 1 for 21 years running, .75 avg. Current EMR .62), 100% open-book cost transparency, speed to market, certainty, critical path control, risk mitigation, Assured Delivery, and single source accountability. Proven nationwide: Local greenfield/brownfield projects for engineered wood, pulp & paper, bioenergy, recycling, and related industries. HRI deploys a strong team of content experts (deep EWP experience), proven engineering partners, dedicated program managers, and competent project leadership to collaborate with Owner/Clients throughout the project. Master planning, site evaluations, project management. HRI: Your fully-integrated industrial contractor.

Contact:

Terry Kerwood – Business Manager, Industrial Programs Phone: 208-442-4208 (Office)

Cell: 253-431-Wood

Email: tkerwood@hansen-rice.com

1717 E. Chisholm Dr. Nampa, ID 83687 www.hansen-rice.com



Hunt, Guillot & Associates LLC

Hunt, Guillot & Associates LLC (HGA) is a multi-disciplined project management and engineering design firm. HGA has been serving the forest products industry since the firm's founding in 1997. HGA continues to provide expertise to the engineered wood products, LVL, I-joist, OSB, plywood, particleboard, glulam and lumber industries.

Services provided include project management, feasibility studies, preliminary engineering, detailed design engineering and on-site technical support services.

Contact:

Jason McIntosh - Director of Business Development HGA Phone: 318-255-6825 Email: jmcintosh@hga-Ilc.com 603 Reynolds Drive PO Box 580 Ruston, LA 71270 www.hga-Ilc.com

KTC Industrial Engineering Ltd.

"Great projects start here." Expertise, experience, and proven track record second to none. Our staff has designed 24 greenfield plants and completed over 600 projects in the engineered wood industry over the past 30 years. KTC utilizes proven methodology to design machinery and processes while supporting the project management team with accurate budgets and schedules. We are now taking the risks out of projects with Dynamic Process Modeling and Advanced Project Tracking technology.

Contact:

Jan Karnik - President
Phone: 604-592-3123
Email: jan.karnik@ktceng.ca
#218-12877 76th Avenue
Surrey, BC V3W 1E6 Canada
www.panelboard.net



Mid-South Engineering

Mid-South Engineering is a full service, consulting engineering firm that provides a broad range of professional engineering services. Our multi-disciplined staff has served industrial, government, and commercial clients since 1969 with a particular expertise within the forest products industry. With offices in Arkansas, North

Mid-South Engineering continued:

Carolina, Maine, and British
Columbia, Mid-South can
serve clients across all of North
America. Our services include
Engineering, Project Development,
Project Management, and
Construction Services. We
welcome projects from small
troubleshooting efforts to large
greenfield plant installations, as
Owner's Engineer or as part of a
turn-key project.

Contact:

Scott Stamey - Vice President Phone: 919-481-1084 Email: sstamey@mseco.com 200 Mackenan Drive Cary, NC 27511 www.mseco.com

Nondestructive Inspection Service

Nondestructive Inspection Service (N.I.S.) was incorporated in 1960. Since that time we have taken preventative maintenance to higher levels of predictive maintenance while saving our customers costly unpredictable down time on all types of process equipment along the entire production line. We are the established leader in applying our knowledge of NDT and perfecting inspection procedures to exceed industry standards. In the case of wood processing and construction board plants, over the last 30 years we have developed, tested and implemented significant innovations on the standard inspection techniques to shrink costly inspection downtime and

Nondestructive Inspection Service continued:

overcome the issues of inspecting difficult-to-reach parts of the equipment.

Contact:

Ed Hauldren - VP of Operations Phone: 304-562-6835 Email: ed@nisforndt.com 2825 US Route 60 East PO Box 220 Hurricane, WV 25526 www.nisforndt.com



Panel World Magazine/ Hatton-Brown Publishers, Inc.

Panel World publishes six issues per year for domestic and international readership with emphasis on mill project startup articles. Product coverage includes structural and non-structural wood products. Panel World also hosts the biennial Panel & Engineered Lumber International Conference & Expo (PELICE).

Contact:

Rich Donnell - Editor
Phone: 334-834-1170
Email: rich@hattonbrown.com
225 Hanrick Street
PO Box 2268
Montgomery, AL 36104
www.panelworldmag.com

Union Pacific Railroad

Union Pacific Railroad is the principal operating company of Union Pacific Corporation (NYSE: UNP). One of America's most recognized companies, Union Pacific Railroad connects 23 states in the western twothirds of the country by rail, providing a critical link in the global supply chain. In the last 10 years, 2010-2019, Union Pacific invested approximately \$35 billion in its network and operations to support America's transportation infrastructure. The railroad's diversified business mix includes its Bulk, Industrial and Premium business groups. Union Pacific serves many of the fastest-growing U.S. population centers, operates from all major West Coast and Gulf Coast ports to eastern gateways, connects with Canada's rail systems and is the only railroad serving all six major Mexico gateways. Union Pacific provides value to its roughly 10,000 customers by delivering products in a safe, reliable, fuelefficient and environmentally responsible manner.

Contact:

Anne Brummett – Manager Marketing | Industrial Phone: 402-544-5209 Email: ambrummett@up.com 1400 Douglas Street Omaha, NE 68179 www.up.com

University of Tennessee, Center for Renewable Carbon

The Center for Renewable Carbon is a state-of-art research facility at The University of Tennessee. The CRC has nine faculty conducting research on forest products, sustainable biomaterials and bioenergy, http:// renewablecarbon.tennessee.edu/. The laboratories include wood composite laboratory steaminjected presses, destructive testing lab, conditioning chambers, dry kiln laboratory and new laboratory capabilities for sustainable biomaterials preprocessing, pretreatment research, thermochemical and biochemical conversion, and product analysis. Also, unique analytical capabilities for nanotechnology sustainable biomaterials are available. The CRC has M.S. and Ph.D. concentrations in Sustainable Biomaterials and Wood Science Technology. The CRC provides world-class industry training programs in SPC/Lean, DOE, and data mining.

Contact:

Timothy Young - Ph.D. - Professor Phone: 865-946-1119 Email: tmyoung1@utk.edu 2506 Jacob Drive Knoxville, TN 37996-4570 www.spc4lean.com Go to the online Consulting and Services directory for additional details.

EQUIPMENT AND TOOLING

EWTA members in the Equipment and Tooling category provide products and support in one or more of the following subcategories: Accessory Tools/Equipment; Controls/Electronics/ Optimization/Automation; Custom Equipment/Tooling; Dryer Systems; Environmental; Fastening/Fasteners/Hardware; Finishing Line Systems; Grading/Scanning; Hydraulics/ Hydraulic Systems; Labeling/Marking/Bar Coding; LVL, Laminate & Other EWP Equipment; Material Handling Equipment; Panel Handling Equipment; Panel Production Equipment; Panel Repair/Patching; Presses and Press Lines; Primary Processing Equipment; Quality Control Equipment and Systems; Resin Application Equipment/Spray Lines; Safety Equipment and Supplies; Sanding and Finishing Equipment; Stranders/Debarkers/Logging; Support Equipment; Veneer Processing and Drying; Wax/Material Application Systems; Wrapping, Strapping and Packaging.

Go to the online Equipment and Tooling directory.

Adwest Technologies
- See CECO
Environmental:
Adwest Technologies,
Fisher-Klosterman,
HEE-Duall

A-Lert Construction Services

A-Lert Construction Services was established in 1979 and specializes in design and manufacturing as well as installation of equipment in the wood and grain industries. We offer everything from single and triple-pass rotary dryer drums, flash tube and steam tube dryers with the ability to process both organic and inorganic materials across a wide variety of manufacturing industries. We also offer the process piping, trommel screening, conveying and Cleanaire systems often needed with these systems as well.

A-Lert Construction Services continued:

A-Lert serves as a specialty fabricator and replacement parts supplier for all existing M-E-C systems.

Contact:

Jordan Stewart - Sales Manager Phone: 620-607-4035 Email: jstewart@centurionind.com 120 West Madison Fredonia, KS 66736 www.centurionind.com

Altec Integrated Solutions

Altec designs and manufactures precision machinery and advanced controls equipment. We create innovative solutions to solve the toughest application demands in the veneer and plywood manufacturing industry and amusement park industry. With our facilities in Coquitlam, BC and Diboll, Texas, we continue to expand our products and

Altec Integrated Solutions continued: services, setting new benchmarks for innovation and integration.

Contact:

Chris Bartlett - Vice President Phone: 604-529-1991 Email: cbartlett@alteconline.com # 120 - 185 Golden Drive Coquitlam, BC V3K 6T1 Canada www.alteconline.com



ANDRITZ Inc.

With a comprehensive range of technically advanced products and more than half a century of experience, ANDRITZ Wood Processing Global Product Group can supply a customized system for all the stages of your log handling, debarking and wood and bark processing operations worldwide. ANDRITZ is specialized in supplying complete

ANDRITZ Inc. continued:

systems including total project management, all relevant process equipment and control/automation systems. Our range covers all sizes of plants. Our globally organized project group can take responsibility for all stages of your project: Design, Manufacturing, Transportation, Erection, Commissioning, Start-Up, Staff Training. The level of each project service can be structured to match your specific project requirements.

Contact:

Jarno Kamarainen - Director, Wood Processing North America Phone: 770-640-2467 Email: jarno.kamarainen@ andritz.com 5405 Windward Parkway, Suite 100W Alpharetta, GA 30004 www.andritz.com



Argos Solutions LLC

Argos offers a full range of optical inspection and process control systems that replaces manual grading and patching of wood products. With more than 25 years of experience and installations in more than 30 countries, Argos provides the latest technology of vision-based scanning systems for the plywood, composite and furniture industry. Argos is a single source supplier for inspection and grading after the press, sander, cut-to-size, including edge inspection systems, and automatic patching systems for plywood and parquet panels.

Argos Solutions LLC continued:

Contact:

Richard Lepine - General Manager Phone: 919-428-1262 Email: Richard.Lepine@ argossolutions.no 2013 Castleburg Drive Apex, North Carolina 27523 www.argossolutions.no

Baumer Inspection GmbH

Baumer Inspection GmbH specializes in optical surface inspection systems. In over 35 years of quality service, we have installed more than 750 systems world-wide and are a leader in scanners for fully automatic inspection and process control. Baumer Inspection offers inspection systems for particle boards, wood fiber boards (MDF, HDF), paper, film and foils, flooring and surfaces of furniture panels as well as edge inspection systems. Our highly skilled and motivated team always pushes the limit of what is possible to bring you the newest innovation in vision technology for the wood working industry.

Contact:

Stefan Eisenkohl - Head of Sales & Engineering

Phone: +49 7531 9943-12 FAX: +49 7531 9943-44 Cell: +49 170 8350986

Email: lfleischhackl@baumer.com

Lohnerhofstrasse 6

78467 Konstanz, Germany www.baumerinspection.com

BETE Fog Nozzle, Inc.

BETE's FlexFlow® Spray Systems and Electric HydroPulse® Automatic Spray Nozzles provide solution confidence for precise applications of resin, wax, water, and release agents during engineered wood production. Addresses problems involving overspray or under-spray to ensure production efficiency for chips, mats, cauls, or belts.

Contact:

David Adams - National Sales Manager Phone: 413-834-4302 Email: dadams@BETE.com 50 Greenfield St. Greenfield, MA 01301 www.bete.com

BID Group

The privately-owned BID Group has over 35 years of experience in providing industry-leading solutions for its highly valued customers in the wood processing industry. As one of the largest integrated suppliers to the wood processing industry and the North American leader in the field, BID Group is your one-stop source for comprehensive and innovative solutions that exceed our customer expectations. The ability to provide a complete, smart connected, turnkey manufacturing facilities that includes engineering, project management, installation, startup, and after sales service furthers the BID Group companies' strategic value to its customers.

BID Group continued:

Contact:

Anne-Marie Levesque –
Director, Business
Phone: 453-435-2121
Email: Anne-marie.levesque@
bidgroup.ca
18095 rue Lapointe,
Mirabel, QC J7J 1E3
www.bidgroup.ca

BRUKS-SIWERTELL

Bruks Siwertell is a market-leading supplier of dry bulk handling and wood processing systems. With thousands of installations worldwide, our machines handle your raw materials from forests, fields, quarries and mines, maintaining critical supply lines for manufacturers, mills, power plants and ports. We design, produce and deliver systems for loading, unloading, conveying, storing, and stacking and reclaiming dry bulk materials, alongside equipment for chipping, screening, milling and processing wood for the biofuel, board, saw mill, pulp and paper industries.

Contact:

René van der Merwe - Sales Manager, North America Phone: 770-849-0100 Email: sales@bruks.com 5975 Shiloh Road, Suite 109 Alpharetta, GA 30005 www.bruks-siwertell.com

Brunette Machinery Company Inc.

Specializing in wood processing machinery and material handling systems for the Forestry and Biomass industries: CBI Grizzly Mill, BioSizer®, Chippers for Pulpchips or Micro-Chips, Electric Log Sweeps, Log Decks, Log Singulators, Rotary Debarkers, Vibrating Conveyors. Custom engineered solutions to take control of your fiber supply and get more from your mill.

Contact:

Kirk Forbes - President Phone: 604-522-3977 Email: sales@brunettemc.com 8717 - 132nd Street Surrey, BC V3W 4P1 Canada www.brunettemc.com

CECO Environmental: Adwest Technologies, Fisher-Klosterman, HEE-Duall

Adwest Technologies provides high efficiency Regenerative Thermal and Catalytic Oxidizers (RTOs and RCOs) for engineered wood, OSB, MDF, laminating, veneer drying, and resin VOC abatement. Adwest can provide compact 2 chamber RETOX RTOs as well as multi chamber RTOs up to 400,000 SCFM flow rates. Our Fisher-Klosterman, Inc (FKI) division provides ultra-high efficiency cyclones and venturi scrubbers for boiler and wood manufacturing applications, while **HEE-Duall provides Bioreaction**

CECO Environmental: Adwest Technologies, Fisher-Klosterman, HEE-Duall continued:

biofilter and scrubber systems for VOC abatement. We also service, rebuild and relocate RTOs, RCOs, Biofilters and scrubbers for the wood products markets including Smith, Pro-Environmental and all other brands.

Contact:

Adwest
Phone: 714-632-9801
Email: jyerkes@onececo.com
680 Langsdorf Dr.
Fullerton, CA 92831

Jeff Yerkes - Key Account Manager,

Clarke's Industries, Inc.

www.cecoenviro.com

Clarke's provides a broad range of products for the Panel Board Industry. The products include Material Storage and Metering Bins, PyroGuard Spark Detection and Extinguishment System, Hi Speed Abort Gates, Back draft Dampers and Explosion Venting, Waste Wood Processors, Rotary Screens and Classifiers, Rotary Airlocks/Feeders, Fans, Dust Collection and Pneumatic Conveying Systems.

Contact:

Andy Clarke - President
Phone: 541-343-3395
Email: andyc@clarkes-ind.com
660 Conger Street
PO Box 2428
Eugene, OR 97402
www.clarkes-ind.com

Coil Manufacturing Ltd.

Coil Manufacturing is the leading manufacturer of rotary drum blenders and spinning disc atomizers for resin application in the engineered wood industry.

Contact:

Mike Coil – General Manager Phone: 604-596-7578 Email: mdc57@telus.net or mike@coilmanufacturing.com 8269 - 130th Street Surrey, B.C., V3W 7X4 Canada www.coilmanufacturing.com

Connexus Industries Inc.

Connexus Industries Inc.
manufactures and distributes
specialized chain, attachments and
sprockets for OSB manufacturing
plants. We also are manufacturers
of Laharco Laser Diodes and
Rens-Metal Shark Metal Detectors.
Locations in Atlanta, Quebec,
Portland & Vancouver. Formerly
Viking Chains, I'ANCO Products
and Lacey Harmer Inc.

Contact:

Cliff Lane - President & General Manager Phone: 604-882-1602 Email: clane@cnxsind.com 27474 Gloucester Way

Langley, BC V4W 4A1 Canada www.connexusindustries.com



Con-Vey

Con-Vey, LLC—previously known as Con-Vey Keystone, Inc.—is headquartered in Roseburg, Oregon at their full-service facility of over 100,000 sq. ft. Beginning as a fabrication and machine shop in 1946, Con-Vey has become a leading manufacturer of material handling equipment. From steel fabrication to custom robotic automation, Con-Vey is a proven, high quality supplier offering innovative solutions to customers around the world. For more information, visit www.con-vey.com.

Contact:

Dave Larecy - President Phone: 541-672-5506 Email: sales@con-vey.com 526 NE Chestnut Roseburg, OR 97470

www.con-vey.com



COSTA Sanders LLC

Building on 60+ years of experience manufacturing industrial calibrating, sanding and polishing equipment, Costa's large panel series machines continue a tradition of rugged world-class machinery that made Costa an industry leader in the field of industrial sanding-calibrating equipment. These "super duty" solutions are engineered and manufactured to the highest

COSTA Sanders LLC continued:

quality standards, in modular frames, with the right combination of working units, motors, and feed speeds that best fits the industrial process of today and tomorrow. Costa Sanders offers machine solutions engineered expressly to fit each client's own manufacturing environment and production needs - whether particleboard, fiberboard, plywood, OSB, or CLT. Our sanding systems are capable of processing up to 145" wide panels with thicknesses up to 13" at the required industry production speeds.

Contact:

Eric Johnston - Sales Director -Panel Division

Phone: 336-434-6644
Email: eric.johnston@
costasanders.com
107 Seminole Drive
Archdale, NC 27263
www.costasanders.com

Dieffenbacher Customer Support, LLC

Dieffenbacher is an international group of companies specializing in the manufacturer of press systems and complete production systems for the wood, automobile and supplier industries. As an independent fifth generation family company, we have stood for continuity, tradition and reliability for over 140 years. Our Wood business unit plans and implements complete solutions for the manufacture of wood-based panels, such as particleboard, MDF, OSB and LVL plants.

Dieffenbacher Customer Support, LLC continued:

Contact:

DO2 Industriel

The DO2 Rapid Wrapper Automatic packaging system offers outstanding performance. Over the years, DO2 keeps improving and can now automatically wrap panels, engineering wood, finish products and an I-joist solution is on its way. Each wrapper is built to fit the mill production in term of speed and package dimensions with a lot of flexibility. The wrapping machine's electrical, mechanical and pneumatic components, its design, the programming structure and tactile interface have all been designed for easy use and no-hassle operations. All of the wrapper's components are robust and maintenance-free. Built with durability and efficiency in mind, the wrapper will optimize your plant's production on a daily basis.

Contact:

Patrick Sasseville – Director of International Development Phone: 888-276-0554 Email: info@do2.ca 303 8th Avenue Dolbeau-Mistassini, Quebec G8L 1Z6 Canada www.do2.ca

Dürr Systems, LLC

Dürr MEGTEC, LLC offers multipollutant clean-air solutions to the engineered wood products industry that meet stringent emissions regulations: wet scrubbers and wet electrostatic precipitators for highefficiency particulate, blue haze and condensed salts removal for dryers and press vents; dry electrostatic precipitators for particulate removal from energy sources, and ultrahigh-efficiency RTO/RCO systems for VOC abatement. We also offer pulse jet fabric filters (baghouses), SNCR systems for NOx control, and cyclonic dust collectors. The Dürr MEGTEC aftermarket group also provides upgrades, parts, and service for every make of air pollution control equipment for the engineered wood products industry.

Contact:

John Giesfeldt
Phone: 920-339-2787
Email: info@megtec.com
830 Prosper Street
PO Box 5030
DePere, WI 54115
www.babcock.com

Electronic Wood Systems, N.A.

EWS North America was founded in 1993. We are a leading supplier of quality control measuring systems for the wood composite panel board industry, including: Thickness Gauges, Blow Detection, Press Protection Devices, Spark Detection & Extinguishment Systems, Mass (WPUA) Measuring, non-contact Weigh Scales and Density Profile Measuring Systems.

Electronic Wood Systems, N.A. continued:

Contact:

Steven Mays - Partner
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3720 SW 141st Avenue,
Suite #206
Beaverton, OR 97005-2349
www.ews-usa.com

Fagus GreCon, Inc.

Since 1911, Innovation is Our Tradition. MEASURING SYSTEMS: Improves your bottom line. Check out the full range of inline measuring systems: thickness gauges, blow & delamination detector, moisture meters, raw density profile. Weight per unit area across the whole production width at the mat former and after the press. Detect surface defects on décor panels and flooring. SPARK **DETECTION & EXTINGUISHING** SYSTEMS: Provides safety for your production. Detect sparks and extinguish them before the filter. Detect heat buildup in silos, bag houses and storage bins. Outlined in NFPA 69, 654 and 664 standards. Factory Mutual Approved.

Contact:

Todd Havican
Phone: 704-912-0000
Email: sales@grecon.us
648-A Griffith Road
Charlotte, NC 28217
www.grecon-us.com



Flamex, Inc.

Flamex Inc. is a leading supplier of customized industrial process fire prevention and protection equipment. We specialize in the protection of facilities that handle combustible dusts that utilize pneumatic dust collection and air filtration systems. To address the process fire hazard inherent in various industrial applications, our company pioneered the utilization of a new technology in North America by introducing the FLAMEX Spark Detection and Extinguishing System in 1977 and the MINIFOG PressProtect System in 1997 for the protection of Industrial Presses. The flexibility of these systems allows their use in other hazardous areas such as Thermal and Hydraulic oil rooms where AFFF Foam Fire Fighting systems can be utilized for further protection.

Contact:

Ed Pridgen - Minifog Product

Manager

Phone: 336-299-2933 Email: epridgen@

sparkdetection.com

4365 Federal Drive Greensboro, NC 27410 www.sparkdetection.com

FROMM Packaging Systems

FROMM Packaging Systems for the lumber Industry consists of heavyduty machinery. Our equipment covers all packaging solutions for the forestry industry (timber, plywood, MDF, HDF, chipboard, etc) with strapping machines, wrapping and waterproof machines. We develop and produce a wide variety of systems for unitizing and palletizing goods for transport: strapping machines and systems, pallet stretch wrapping machines, together with all necessary consumables. Established in 1947, the Swiss company pursues a policy of logical vertical integration while upholding traditional values such as proximity to customers, quality consciousness, continuity, independence and environmental awareness, which are the reasons for decades of success.

Contact:

Francesco Belloni Phone: 917-698-2052 Email: francesco.belloni@ airpadusa.com 85 Fulton St

Boonton, New Jersey 7005 USA frommstrappingsystems.com

Globe Machine Manufacturing Company

Globe Machine offers single machine centers along with complete systems to the following industries: OSB, MDF, particleboard, plywood, strawboard, moulded door skins, Globe Machine Manufacturing Company continued:

membrane presses, siding, LVL, laminate flooring and sheet plastics. Globe Machine is the leader in the supply of automated I-joist assembly systems and has achieved a leadership role in the cement fiberboard industry and moulded door skin lines. For 100 years Globe Machine has served the forest products industry.

Contact:

Phone: 253-383-2584
Email: sales@globemachine.com
701 East "D" Street
PO Box 2274
Tacoma, WA 98421
www.globemachine.com

Mike Tart - Sales Manager



Grenzebach Corporation

Grenzebach is a leading global manufacturer and supplier of drying systems for the veneer and building materials industries with over 400 dryer installations worldwide. Our veneer product line includes jet and longitudinal dryers, infeed and outfeed systems, and veneer grading and stacking systems. Grenzebach has completed extensive rebuilds and upgrades on all makes and models of veneer, wallboard, and ceiling tile dryers. Grenzebach Service supplies complete parts and service (on-site and remote) for all building materials drying systems.

Grenzebach Corporation continued:

Contact:

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grenzebach.com
10 Herring Road
Newnan, GA 30265
www.grenzebach.com

Guardian Chemicals Inc.

Providing solutions, results and meaningful service has earned Guardian Chemicals Inc. the enviable industry reputation as the "go-to" people for chemical technology and services. Our extensive research and development group, in-house ISO 14001 certified manufacturing and products like our revolutionary patented PRESSGUARD series release agent technology for MDI resins in continuous and multi-opening presses, keep us at the forefront of the engineered wood industry. From W.E.S.P. and Scrubber treatment technology, process chemicals and defoamers to maintenance chemicals, odor control and corrosion prevention, Guardian's wood group provides our partner clients with a complete package along with the flexibility to adapt products to the specific needs of each individual application and customer.

Guardian Chemicals Inc. continued:

Contact:

Greg Pecharsky - Vice President Phone: 780-998-3771 Email: gpecharsky@ guardianchem.ca 155-55202 SH 825 Sturgeon Industrial Park Sturgeon County, AB T8L 5C1 Canada www.guardianchem.com

Por Klastinalo

Hashimoto Denki Company, Ltd.

Hashimoto Denki Company, Ltd was established in 1946 in Nagoya, Japan, the Japanese woodworking machinery capital. Our company specializes in manufacturing machinery for high-efficient and value-added plywood and veneer production, ranging from veneer lathe lines to panel sizing lines. We offer machinery for total plant operation of veneer, plywood and LVL, serving the worldwide marketplace.

Contact:

George Mori, General Manager Phone: +81-566-53-6902 Email: mori-j@hdk-co.com 5-1-17 Shinden-Cho, Takahama City, Aichi, Japan 444-1301 www.hdk-co.com/english

HAWE Hydraulik

HAWE Hydraulik is a well-respected, worldwide, German based company with offices in over 20 countries. HAWE's primary business is providing high quality hydraulic components through modular design and energy efficient solutions. HAWE offers a full range of products from high pressure valving to custom hydraulic units and manifolds to complete hydraulic systems including motion controls. We are a complete solutions provider.

Contact:

Steve Kathan - Industrial Group Manager Phone: 503-222-3295 Email: s.kathan@hawe.com 12990 SE Highway 212 Clackamas, OR 97015 www.hawe.com

HexArmor

HexArmor is a global PPE (personal protective equipment) manufacturer that uses innovative technologies to build high performing hand protection, arm/ body protection and eyewear. At HexArmor, we understand the daily challenges faced by safety teams in the wood products industry. Working to meet growth and operational expectations while keeping employees safe on the job can be a tough balancing act. Injuries are costly. Down time and lost productivity damage company reputations and slow growth. Let HexArmor help you build a PPE program that keeps you

HexArmor continued:

operationally efficient while giving your employees the best opportunity to go home safely to their families.

Contact:

Patrick Beadling - Director of Account Services Phone: 616-459-4144 Email: patrick@hexarmor.com 2000 Oak Industrial Drive Grand Rapids, MI 49505 www.hexarmor.com



Hexion Inc.

Hexion Inc. is a leading global source for adhesives, resins, formaldehyde, melamine and derivatives serving a broad range of markets including the forest products, foundry, automotive, construction, composites, electronics and oilfield industries, operating more than 50 manufacturing plants in North America, Latin America, Europe and Asia/Pacific. The Forest Products division of Hexion Inc. is the global leader in supplying resins, adhesives, wax emulsions and ancillary products to the forest products industry. Customers use our materials to manufacture a wide range of composite and engineered wood products including plywood, particleboard, oriented strandboard, medium density fiberboard, structural beams, furniture, mouldings and millwork.

Hexion Inc. continued:

Contact:

Steve Banick

Phone: 541-741-6650

Email: Steve.Banick@hexion.com

180 East Borden Street Columbus, OH 43215

www.hexion.com

IBC, International Bar Coding Systems & Consulting Inc.

IBC, International Bar Coding Systems & Consulting Inc. - An integrated manufacturer of individual piece wood product specific printer applicators. Complete solutions for finished or in-process packs we offer Automated Package labelers (AutoLabeler) for veneer, OSB, MDF, plywood, lumber and EWP. We manufacture tags and labels for any labeling system and are a single source provider for turnkey solutions. We offer Vendor Managed Inventory of consumables and integrated data collection systems across North America. We provide full design, build, onsite service, preventative maintenance, training and consulting on a system wide or mill by mill basis.

Contact:

Chris Pedersen - President Email: cpedersen@ibcworld.net Phone: 250-493-3201 1940 Barnes Street Penticton, BC V2A 4C3 Canada www.ibcworld.net



IMAL-PAL Group

Established in the 1970's, the Group is a world leader in the manufacture and supply of equipment and systems. Its extensive production program is able to supply complete turnkey plants for the treatment and processing of fresh and recycled wood, in both the wet and dry areas, for production and processing of particleboard, MDF, OSB, plywood, pellets, pallet blocks and pressed wood-based products in general. IMAL is a leading manufacturer of glue dosing and blending systems and supplies the most innovative online and laboratory quality control devices that are found in virtually all the production plants around the world.

Contact:

Andrew Jowett - President Phone: 509-855-3411 Email: andrew.jowett@imalpal.com IMAL-PAL Group, Inc. PO Box 870949 Stone Mountain, GA 30087

www.imalpal.com



IMEAS Inc.

IMEAS is a world leader in surface finishing solutions, with over 3,000 machines operating worldwide. 2016 marked IMEAS's 50th Anniversary of Innovation and Service to the Wood Products Industry. IMEAS sanding and grinding machines are used to achieve precise surface finish and thickness on a wide variety of products such as plywood, LVL, CLT, composite wood panels, decorative laminates, flooring and solid surface products, etc. IMEAS specializes in extra wide machines - 12' (3.6 meters) and cross-belt sanding for wood products.

Contact:

Nathan Rutherford - President Phone: 678-364-1900 Email: imeas@imeas.net 1125 Commerce Drive Suite 200 Peachtree City, GA 30269 www.imeasinc.com

Itipack Systems

Itipack Systems has been in business since 1970. We are a manufacturer of automated strapping systems.

Contact:

Bert Kuik - NA BD/Sales Director Phone: 905-333-3695

Cell: 360-594-2338

Email: bkuik@itipacksystems.com

919 Zelco Drive

Burlington, ON L7L 4Y2 Canada

www.itipacksystems.com

KADANT Carmanah Design

KADANT Carmanah provides leading edge technology and equipment to optimize fibre utilization for the production of wood-based panels. KADANT Carmanah's products include SmartDISC Stranders, SmartRING Stranders, Rotary Debarkers and Conveying/Feeding equipment for the oriented strand board market. As a global leader in stranding technology, KADANT Carmanah holds an impressive 80% of this market share.

Contact:

Carlos Vieira - Director, Capital Sales

Phone: 604-299-3431 Email: info.carmanah@ kadant.com

Unit #8 15050 54A Avenue Surrey, BC V3S 5X7 Canada www.kadantcarmanah.com

Kimwood Machinery, Inc.

World's leading producer of new equipment and OEM parts for Kimwood Sanders, Hogs and Handling Equipment, Stetson-Ross Planers and Moulders, Ferrari Resaws and Tri-State Equipment.

Contact:

Mike Simmons - Vice President

Sales & Service

Phone: 800-942-4401

Email: msimmons@kimwood.com

77684 Highway 99 South Cottage Grove, OR 97424

www.kimwood.com

Koch Knight, LLC

A domestic manufacturer and alobal leader of ceramic media for Regenerative Thermal Oxidizers (RTO). Our media is designed to work in normal to your most challenging application environments. A mixed bed of our FLEXERAMIC® structured media and LPD® random media offers optimal heat transfer and full bed utilization while our GR (Glazed Resistant Alumina) material is produced for OSB Dryer and other applications for the wood products industry. We manufacture our ceramic media domestically and stock over 100,000 cubic feet at our East Canton, Ohio facility at any given time to accommodate current and future customers for quick response and short lead times.

Contact:

Matt Thayer - VP Sales and

Marketing

Phone: 330-488-1651 Ext. 210

Email: matthew.thayer@ kochknight.com 5385 Orchard View Drive SE PO Box 30070 East Canton, OH 44730

www.kochknight.com

LIMAB North America

LIMAB supplies non-contact laser measuring systems for composite panels and engineered wood products, including thickness and squareness measurements, and blow detections on panels.

Contact:

Jens Svensson - President Phone: 704-321-0760 Email: jens.svensson@limab.com 9301-B Monroe Road Charlotte, NC 28270 www.limab.com

LDX Solutions (Dustex | Lundberg)

LDX Solutions is a global supplier of air pollution control systems to process industries including the engineered wood products industry. State-of-the-art systems that include the Geoenergy E-Tube Wet ESP, GeoTherm RTO and GeoCat RCO Oxidizers and Geoenergy Wet Scrubbers. Geoenergy systems have provided environmental compliance to the engineered wood products industry on wood dryers, press vents and boilers since 1984.

Contact:

Robert Cox – Sales Manager Phone: 770-429-5575 Email: Rcox@LDXsolutions.com 8271 154th Ave NE Suite 250 Redmond, WA 98052 www.lundbergllc.com

Matthews Marking Systems

Matthews Marking Systems, established in 1850, is a leading supplier of marking and coding equipment for the engineered wood and building products industries. Matthews supplies ink jet printing solutions for applications including grade marking, nail patterns, traceability and large format logo printing. We also offer a variety of inks, specific to the wood industry, including water based, fast dry and VOC free.

Contact:

Donna Meade - Strategic Initiatives Manager

Phone: 800-775-7775
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Pittsburgh, PA 15206
www.matthewsmarking.com

Meinan Machinery Works, Inc.

Established in 1953 in Japan, Meinan develops and manufactures innovative machinery for veneer and plywood production, and holds hundreds of worldwide patents. Meinan's revolutionary "spindleless" lathe drives logs on their circumference with spiked discs instead of spindles, resulting in better veneer quality, higher recovery, and extremely close thickness tolerance. The lathe is part of an automatic veneer peeling line featuring automatic knife changing, automatic

Meinan Machinery Works, Inc. continued:

stacking, and green composing of random width veneer to save labor costs and increase dryer utilization. Meinan also manufactures scarf composers, grading systems, automatic layup lines, and sanders. Represented in USA by Merritt Machinery, LLC in Lockport, NY.

Contact:

Jimmy Nakaya - Sales Director Phone: 716-434-5558 U.S. Representative: Merritt Machinery, LLC

Contact: Anna McCann, President

Email: amccann@

merrittmachinery.com

10 Simonds Street Lockport, NY 14094 www.merrittmachinery.com

Mereen-Johnson LLC

Mereen-Johnson has been setting the standard for the woodworking and engineered materials industries since 1905 and offers a complete line of Gang Rip Saws, Profiling Machines, Cross Cutting Equipment, Sizing Systems, I-Joist equipment, and related material handling designed for reliable, high speed production with minimal maintenance. Mereen-Johnson also offers a complete line of solid wood processing equipment such as fixed arbor and shifting blade straight line multiple Rip Saws, Rough Mill Optimizing and Material Handling, Moulders, Single and Double End Tenoners, CNC controlled Dovetailers, and Box Clamps.

Mereen-Johnson LLC continued:

Contact:

Dave Olson - Corporate Sales

Manager

Phone: 612-529-7791

Email: info@mereen-johnson.com 5201 East River Road Suite 301 Minneapolis, MN 55421 www.mereen-johnson.com

Metriguard Technologies Inc.

High-speed Metriguard veneer graders operate in LVL and structural plywood mills worldwide. Laboratories depend on Metriguard Panel Bending & Performance Testers to evaluate structural panels. The new Model 840 tests OSB used as I-joist web stock. For MSR/MEL lumber producers, Metriguard offers the Model 7200 for longitudinal installations and the Sonic Lumber Grader for transverse installation, both are compatible with scanners. The Model 312 Bending Proof Tester is a standard in MSR QC labs. With over 40 years in the engineered wood products business, Metriguard has the knowledge and equipment for grading and testing structural veneer, panels and lumber.

Contact:

Dan Uskoski - VP Sales Phone: 509-332-7526

www.metriguard.com

Email: duskoski@metriguard.com 2465 NE Hopkins Court Pullman, WA 99163

Mill Machinery LLC

Mill Machinery is a provider of new and reconditioned machinery to the veneer and panel industries. Mill Machinery's inventory of production machinery includes veneer lathes, veneer stackers, dryers, plywood presses, sawlines, grade bins, panel feeders, sanders, hogs and related support equipment. Mill Machinery's Magnum line of new machinery includes press loading/unloading systems, press platens, hydraulic units, flying saws, panel feeders, panel stackers and conveyors.

Contact:

Tim Peterson - President Phone: 503-720-0540 Email: tim@millmachinery.net 31678 South Highway 213 Molalla, OR 97038 www.millmachinery.net



MSK Covertech, Inc.

MSK Covertech is a systems manufacturer that specializes in a variety of End-of-Line Packaging Systems, which include Pallet/ Load Automatic Bagging Systems (Auto-Baggers) that provide 5 sided protection for a variety of Engineered Wood Products. With over 4,700 installations world-wide since 1975, a local North American presence based just outside of Atlanta, GA, and with offices and

MSK Covertech, Inc. continued:

service locations around the world, MSK is ready to serve your End-of-Line Packaging needs.

Contact:

Daniel Grupp, Sales Engineer Phone: 770-928-1099 Email: daniel.grupp@msk.us 600 Cherokee Parkway Acworth, GA 30102 www.mskcovertech.com

NESTEC, Inc.

NESTEC, Inc. is a turnkey provider of thermal oxidation systems for the wood products industry including regenerative thermal oxidizers (RTO) including online bake out, regenerative catalytic oxidizers (RCO), process scrubbers, Wet Electrostatic Precipitators (WESP), duct design, secondary heat recovery, system upgrades, energy audits, inspections and parts. Our key staff of engineers has over 300 years of experience in the field of thermal oxidation and has participated in solving air emissions problems for the wood products industry since the early 1990s. Whether you need a new air pollution control system or require upgrades and improvements to an existing RTO-WESP system, NESTEC, Inc. is your best resource to ensure a successful project.

NESTEC, Inc. continued:

Contact:

James L. Nester - President Phone: 610-323-7670 Email: jnester@nestecinc.com 222 East Main Street Pen Argyl, PA 18072 www.nestecinc.com

Nextwire

Nextwire is a North American company with over 50 years of manufacturing and engineering experience in woven fabrics for the Engineered Wood Industry. Nextwire CleanSheen II caul and press screens have greatly impacted the industry with extended life resulting in lower cost per board foot. Nextwire can provide these screens with attached tow bars which are manufactured from stainless or plain steel. All caul screens, press screens, and tow bars are manufactured to individual mill site specifications. Nextwire also manufactures preheater, intermediate and tray belts as well as a variety of products in stainless steel and synthetic material.

Contact:

Charlie Brown – VP of Sales Phone: 870 628-6378 Email: cbrown@next-wire.com 701 E. Arkansas Ave. PO Box 159 Star City, Arkansas 71667 www.next-wire.com

Nicholson Manufacturing Ltd.

Industry Leader in ring debarking technology since 1948.

Contact:

Ron Hait, Director of Capital Sales Phone: 250-654-2235 Email: forestsales@nmbc.com 9896 Galaran Road PO Box 2128 Sidney, BC V8L 3S6 Canada www.debarking.com

Panel Machinery & Controls, LLC

At Panel Machinery & Controls, our focus is to provide the most up-todate and trouble-free Equipment design, Servo Motion Control and Automation systems for the Engineered Wood Products Industry. Our engineering staff has years of experience in quality-designed and field proven equipment and controls for the Plywood Industry. We have service technicians experienced with hydraulic & electrical motion control, capable of on-site trouble shooting and programming of all brands of PLC's and motion controllers. We are a United Laboratories 508A certified panel shop experienced in custom panel design and fabrication. Call or E-mail for more information.

Contact:

Roger Daniels - President
Phone: 503-744-0830
Email: roger@panel
 machinerycontrols.com
5422 SE International Way
Milwaukie, OR 97222
www.panelmachinerycontrols.com



Radian Robotics (Prev. Tebulo N.A. Ltd)

We are thrilled to announce that Tebulo Industrial Robotics will become Radian Robotics effective January 2021! This has been part of a larger rebranding process that has come about due to tremendous growth. We would like to thank our customers for helping us make this happen, and we look forward to working with you as Radian Robotics!

Radian (Tebulo) is a robotics integrator specializing in endof-line solutions for the wood industry. We use robotics for stenciling/end-striping, barcoding, material handling, wrapping, and many more custom solutions. Ask how we can set your products apart from the competition.

Contact:

Jim Kay – President Phone: 905-639-7370

Email: info@radianrobotics.com

70 Lancing Dr.

Hamilton, ON L8W 3A1Canada www.radianrobotics.com



Raute

Raute is Your Partner in
Performance. Global expertise
in wood products technology
and innovation driven, Raute
continually leads the market
in developing cutting-edge
advancements in the production
of plywood, LVL, and engineered
wood solutions. Raute provides
profitable solutions for large millwide projects as well as individual
process lines, line modernizations,
and equipment upgrades.

Contact:

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1633 Cliveden Avenue
Delta, BC V3M 6V5 Canada
www.raute.com

REA JET

REA JET

REA JET has been a global leader of coding and marking solutions for the engineered wood industry for over 30 years. Whether you're looking to print APA grade stamps, large logos & graphics, 2D scannable barcodes or nail grid patters, REA JET has flexible and reliable systems designed to run at high speeds and hold up in the

REA JET continued:

harshest environments. Contact REA JET today to learn more about our products, capabilities and all of your traceability needs.

Contact:

Nicole Richie - Marketing Manager Phone: 440-332-0555 Email: nrichie@reajetus.com 7307 Young Drive Walton Hills, OH 44146 www.reajetus.com

Samuel Packaging Systems Group

With over 50 years serving the lumber and forest products industry, Samuel Packaging Systems Group, offers their customers in the Engineered Wood industry a single source supply for all of their strapping and packaging requirements. Samuel's product line includes steel and plastic strapping, pneumatic and manual hand tools, seals, edge protection, stretchwrap, product identification equipment and fully automated strapping systems. Our industry leading VK-30 strapping head has been used in both new and retrofit applications to convert our customers from steel to polyester strapping. Samuel is a leader in strapping for engineered wood products, and had the first AAR approved polyester strapping.

Samuel Packaging Systems Group continued:

Contact:

Bob Hadden - Forest Industry Manager

Phone: 800-667-1264

Email: bob.hadden@samuel.com 2278 - 192nd Street, Unit 109 Surrey, BC V3S 3X2 Canada www.samuelstrapping.com

Siempelkamp LP

Siempelkamp is a systems supplier of complete process equipment for the wood-based-panel industry. In addition to the ContiRoll generation 9 Continuous press, Multi-opening presses, as well as sanding, cut to size and stacking lines for the panel board industry, Siempelkamp provides the full range of process machinery. With its subsidiaries Sicoplan, the engineering company for complete plant engineering; Pallmann for debarking lines, chippers, stranders, and other size reduction machinery; Buettner for energy systems, dust and multifuel burners and dryer systems, the complete process machinery portfolio is covered. Siempelkamp LP provides the service support, modernizations and spare parts for North America.

Contact:

Dirk Koltze - President Phone: 704-424-4141

Email: d.koltze@siempelkamp-

usa.com

200 N. Cobb Pkwy., Suite 302

Marietta, GA 30062

www.siempelkamp-usa.com

Signode Packaging Systems

Signode is a global manufacturer of steel and plastic strapping and the application equipment and accessory products for each. Our protective packaging systems for the Lumber and Panel Industries are centered around the material that ultimately secures loads for handling, shipping and storage, plastic or steel strapping. We offer a full range of application tools, equipment and accessories to complete your strapping system. Our Forest Products Industry sales, equipment service, customer service and engineering departments can help you design the optimum protective packaging system for your application.

Contact:

Claude Gregory - Forest Products Industry Manager Phone: 828-850-9777 Email: cgregory@signode.com 3624 West Lake Avenue Glenview, IL 60024 www.signode.com

SMARTECH

Smartech is a leading global technology company focused on generating game-changing technologies for production lines of varied manufacturing sectors. With its autonomous manufacturing suite, which enhances operators' work, and smart manufacturing modules such as wax & resin reduction technology, press machine optimization, and more, Smartech is trusted by the world's

SMARTECH continued:

leading manufacturers to supply innovative, high-value technologies that transform their businesses.

Contact:

USA Contact:

Rami Arbili: Director of North & South America Phone: 925-322-7373 Email: Rami.arbilii@smartech.com 411 Waverly Oaks Road #420 Waltham, MA 02452, USA www.smartech.com

SonicAire

SonicAire engineered combustible dust fan systems provide safety, economic and regulatory compliance solutions to facilities that generate fugitive dust, including wood products and furniture manufacturing and multiple other industries. SonicAire systems robotically reduce fugitive dust accumulation using highvelocity, high-mass airflow that creates an overhead barrier. This proprietary BarrierAire[™] technology controls the direction of the dust and forces it to the floor by preventing upward currents and stagnant air that keeps dust in suspension, preventing accumulation of fugitive dust in overhead and hard-to-reach places, Contact SonicAire Sales support at 336-712-2437.

SonicAire continued:

Contact:

Chuck Morrison – Vice President of Sales

Phone: 336-712-2437

Email: cmorrison@sonicaire.com

3831 Kimwell Drive

Winston-Salem, NC 27103

www.sonicaire.com

SparTek Industries

SparTek Industries manufactures high quality machinery with the latest cutting edge technology for many industries including Plywood, LVL, Rubber and others. Today's high volume Plywood production Lay-Up Lines place an emphasis on efficiency. SparTek's lay-up lines, Hot and Cold Presses, Loading and Unloading equipment, Glue Application systems and other equipment are designed to meet these demands. Helping customers meet and exceed their production and operating goals is a driving force at SparTek. We are here to help you meet your goals and to do so requires innovative technology and machines designed to work at the highest operating speeds.

Contact:

Mike Cook - CEO
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2221 North Argyle
Portland, OR 97217
www.spartek.com



Spraying Systems Co.

Spraying Systems Co. is the world's leading manufacturer of spray technology equipment. Our offering includes a family of PanelSpray® systems for applying release agents, moisture, resin, wax or other various chemistries to wood substrate, mats, cauls or belts. These systems ensure the precise volume of fluid is applied even when operating conditions like wood throughput or line speed change. Our line also includes a PanelSpray System for precise nail marking on oriented strand board and the industry's largest selection of spray products for use in humidifying, marking, cleaning and coating operations. We serve our customers around the world from our 12 manufacturing facilities and 90 sales offices.

Contact:

Brian Valley - Director - Industrial Solutions

Phone: 630-517-1283

Email: brian.valley@spray.com

100 W. Lake Dr.

Glendale Heights, IL 60139

www.spray.com

Steinemann Technology USA, Inc.

Established in 1917 For Total Surface Quality, Steinemann provides complete solutions for the entire sanding process: from high performance, cutting edge sanding machines, to top quality sanding belts, smart Sprint insert systems and an innovative process control system. Customers benefit from a cleverly designed modular machine concept which fits their specific needs and finishing quality. The result is a consistent panel quality, maximum availability and best cost efficiency. Steinemann's portfolio is rounded off by a broad range of global sales and service networks. With headquarters in St. Gallen Switzerland and hubs in China, Malaysia, Russia and Charlotte, NC, USA, Steinemann fulfills its promise and is close to the customer's site.

Contact:

Dan Murphy - President Phone: 704-522-9435 Email: d.murphy@steinemann.com 4607 Dwight Evans Road Charlotte, NC 28217 www.steinemann.com



Sweed Machinery, Inc.

SWEED is known in the industry as the superior choice for providing full veneer dryer infeed and outfeed systems, dry, green and random veneer stackers, veneer saws, turners, and hoists. SWEED also specializes in all replacement parts for Raimann and Skoog patchers, and manufactures, sharpens and repairs patcher dies. SWEED provides the latest technology and exceptional craftsmanship; helping processors achieve higher production goals with less downtime. Based in Oregon, USA, SWEED offers unmatched quality, customer service, engineering, and technical support.

Contact:

www.sweed.com

Kevin Gordon - Sales Director Phone: 800-888-1352 Email: kgordon@sweed.com 653 2nd Avenue PO Box 228 Gold Hill, OR 97525

Taihei Machinery Works Ltd.

Taihei is a specialized manufacturer of veneer and plywood machinery, fully committed to the development and production of equipment that meets customer needs. We are driven by the goal of providing proprietary machinery that is second to none to our customers around the world. Taihei is the leading manufacturer of automatic knife grinding and honing machines. Other Taihei products include horizontal hot presses up to 140 openings, veneer jet dryers, veneer stackers, glue spreaders, reeling systems, and finger jointing equipment.

Contact:

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Tebulo Industrial Robotics – See Radian Robotics

TSI

TSI designs and manufactures complete panel finishing lines for OSB, particleboard and MDF. This includes saws with such features as automatic position change and adjustable blade exposure. Highspeed sorting and stacking

TSI continued:

of panels is easily achievable with TSI's "primary stacker" solution. TSI also supplies Heat Energy and Drying and Pollution Control Systems for OSB and Particleboard based on Single Pass Recycle technology. The Dryers are proven to increase productivity and reduce emissions compared to other systems. Heat Energy includes Step Grate Furnaces in conjunction with Sigma Thermal and Pollution Control solutions include Wet ESP and RTO systems developed by TSI to work at optimum efficiency with TSI Dryers.

Contact:

Andrew Johnson - Vice President Phone: 425-771-1190 Ext. 128 Email: ajohnson@tsi-inc.net 20818 44th Avenue West Suite 201 Lynnwood, WA 98036-7709 www.tsi-inc.net



USNR

With the addition of Ventek's veneer scanning, grading, and handling solutions to USNR's lathe, dryer, and downstream product portfolio, USNR now offers tightly integrated mechanical and optimization solutions for the plywood industry. USNR products are known to increase recovery, value, and yield, improving mill profitability. USNR also manufactures machinery for beam lamination, finger-jointing,

USNR continued:

and presses for the composite board industry. Committed to superior customer service, USNR offers OEM parts, training, and 24/7 support around the globe. 800-BUY-USNR.

Contact:

Chris Van Ackeren - Sales Manager, Veneer Systems Phone: 360-225-8267 Email: chrisvanackeren@usnr.com 1981 Schurman Way PO Box 310 Woodland, WA 98674 www.usnr.com

Venango Machine Company, Inc.

Venango Machine and our sister company, Custom Engineering, are complete platen services providers to the forest products industry. We provide new platens for every make of press in the industry for manufacturing of all board products. Our product line includes small specialty platens for lab applications, intermediate sized platens for particle board, OSB, and LVL in both multiple platen and continuous processes. We also provide complete platenrefurbishing programs that include flow and pressure testing, weld repair and re-machining to original specifications. Our technicians also provide assistance in platen change outs and in-press weld repair. Please contact us for all your platen requirements.

Venango Machine Company, Inc. continued:

Contact:

Nyla Vogel - Sales Manager Phone: 814-739-2211 Email: nvogel@venango machine.com 14118 Route 8-89 PO Box 239 Wattsburg, PA 16442 www.venangomachine.com

Veneer Services, LLC

We build profitable machine solutions based upon better engineering. We take pride in the fact that our machines run reliably with minimum operating costs yielding you the greatest efficiency and profits. Every prototype machine ever built is running today. We were the first and still the only company to build a voice activated veneer bundle grading line. We developed the most accurate debarker/planer system ever built and then we built a fully automated butt flare reducer to go with it. Our veneer chipper is proven to use less energy and produce better chips. Our veneer machine rebuilds have allowed our customers to improve profits while saving them as much as 50% over the price of a new machine.

Contact:

Dane Floyd - President and CEO Phone: 317-346-0711 Email: dane@veneerservices.com 50 Washington Street, 3B Columbus, IN 47201 www.veneerservices.com



Westmill Industries USA Corp.

WESTMILL® has become an industry leader in the manufacture of NEW Veneer Dryers with a very strong emphasis on competitive value. WESTMILL® provides custom and standard machinery together with engineering services for the plywood and veneer industry. WESTMILL® also stocks replacement parts for every make and model of veneer dryer with dedicated warehouses in Oregon, Georgia and Vancouver, B.C.

Contact:

Mike Crondahl - President, Owner Phone: 604-607-7010 Email: crondahl@westmill.com 3063 275 A Street Aldergrove, BC V4W 3L4 Canada www.westmill.com Go to the online Equipment and Tooling directory for additional details.

MATERIALS AND SUPPLIES

The following EWTA members provide support in one or more of the following subcategories: Adhesives/Resins; Binders/Extenders/Fillers; Chemicals/Additives/Coatings; Lamstock/Lumber; Replacement Parts and Supplies; Specialty Supplies; Strapping and Packaging Supplies; Veneer/Overlays; Wax/Release Agents/Lubricants/Emulsions.

Go to the online Materials and Supplies directory.



Albany International

Albany International is a global advanced textiles and materials processing company founded in 1895. We are headquartered in Rochester, New Hampshire and employ approximately 5,000 people worldwide. Our 26 manufacturing operations are strategically located in 13 countries to serve our global customers. Albany International's core business is production of custom-designed engineered fabrics and process belts, used to manufacture all grades of paper from lightweight technical paper to heavyweight container board. In its family of emerging businesses, Albany belting technologies process unique materials for engineered wood producs particularly for wood forming in OSB, PB and MDF/ HDF manufacturing. Visit us @ Albint.com.

Albany International continued:

Contact:

Tom Israel - Product Manager-Americas

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Alpha Wax USA

We supply a wide range of waxes, always fully tailored to meet our customers' specific wishes. Moreover, we exclusively supply the highest possible quality, such as our Shell Waxes. But it's not what we do that really makes us stand out on the market: it's how we do it. Your problem, our challenge!

Contact:

Joe Lasponara

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wax.com

27 Turkey Run

Hopewell Junction, NY 12533 usa.alphawax.com/en/products

Arclin - Performance Applied

Based in Roswell, Georgia, Arclin is a leading producer of innovative bonding and surfacing solutions for the building and construction, industrial materials and natural resource markets. Arclin provides bonding solutions for a number of applications including structural wood panels, engineered wood, composite wood panels, nonwovens and paper saturation. As a world leader in paper overlays technology, Arclin provides high value surfacing solutions for construction and building products, decorative panels and industrial specialty applications for North American and export markets. For more information please visit http://www.arclin.com.

Contact:

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Manager

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Springfield OR 97477
www.grclin.com

Ashland LLC

ISOSET® adhesives from Ashland have been specially formulated for engineered wood product applications. ISOSET adhesives applied in I-joist, glulam beams and structural finger jointing wood applications provide manufacturers with high-strength, structural bonds. They cure fast, clean up easy and dry in a neutral wood color offering an alternative to traditional phenolresorcinol-formaldehyde (PRF) type adhesives. ISOSET adhesives provide excellent resistance to moisture, elevated temperature and creep making them an ideal choice for engineered wood products. Ashland, LLC. (NYSE:ASH) is a Fortune 500 specialty chemical company providing products, services and customer solutions throughout the world.

Contact:

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Email: mvlaisavich@ashland.com Atrium II – North Tower – Suite 500

5475 Rings Road Dublin, OH 43017 www.ashland.com

ATCO Wood Products Ltd.

Located in British Columbia, ATCO Wood Products is a forest management company and a producer of softwood veneer. ATCO specializes in producing custom softwood veneer for plywood and engineered wood products customers in both Canada and the United States.

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Mark Semeniuk - Chief Operating

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2073 Hepburn Drive

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Fruitvale, BC V0G 1L0 Canada www.atcowoodproducts.com

Axalta Coating Systems

With a wide range of products and technologies, Axalta Coating Systems is the leader in the Wood Coatings Industry for the Building Products market.

Contact:

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1717 English Road High Point, NC 27262

www.axaltacoatingsystems.com

BASF - We create chemistry

BASF - We create chemistry --Global supplier of MDI to the wood industry with extensive experience in MDI conversions.

Contact:

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America

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1609 Biddle Avenue

Wyandotte, MI 48192-3736

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Bates and Company, Inc.

Bates & Co. is an industry leader in providing various support products to the forest product industry. Extenders and fillers comprise the majority of sales, especially those customers extending phenol formaldehyde adhesives for use in plywood, LVL, and hardwood. Bates has also expanded its scope and reach by forming a joint venture, Bates-Willamette, LLC, with a strategic partner in the industry.

Contact:

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Release Innovation™

Chem-Trend LP

Chem-Trend has long been known as a global leader in the development of release agent technology to the world's industries. Our sealers, release agents and lubricants are rapidly gaining acceptance in the wood composites industry, offering significant productivity improvements including increased through-put, improved output quality and definition, cleaner conditions/environment, greater productivity, less downtime and increased costs savings.

Contact:

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Clarke Veneers and Plywood

Clarke Veneers and Plywood is an international trading company of wood products, specializing in imports, exports and domestically traded veneers - including hardwood and softwood species for structural panels, in MDO, HDO and other applications requiring clear, sound faces. Clarke Veneers and Plywood continued:

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Coastland Wood Industries Ltd.

Coastland has grown from a single line veneer mill to a triple line mill with an offsite drying facility, two barge loading facilities, and three log sorts. Our infrastructure has grown as our customer needs have grown with efficiency, and safety as key drivers. Our facilities compliment other capacity in our region, resulting in a healthy forest industry that further benefits Coastland and our customers. Quality: We strive to deliver quality in every aspect of our business, it touches everything we do; quality is job security. Our reliable grades allow our customers to accurately control the structural properties of their products.

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Covestro LLC

Covestro LLC is a world-leading supplier of high-tech polymer materials. Thanks to our global presence and close proximity to our markets, we are the partner of choice for a variety of industries. For manufacturers of composite wood products, consistent product quality and process advantages make Covestro's Mondur® pMDI your natural choice for binding wood composites. Offering extensive R&D and strong technical service, Covestro is your source for binders and binder technology. The excellent property performance of wood composites bonded with Mondur pMDI products makes them especially suited for use in specialty applications; particleboard, laminated-stranded lumber, moisture-resistant OSB, OSB webstock and OSB flooring.

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www.covestro.com

Dominion Chemical Company, Inc.

Wax nuances are our expertise. With over 60 years of experience in the wax business, Dominion Chemical offers rare and valuable working knowledge as well as trust and proven abilities to bring

Dominion Chemical Company, Inc. continued:

solutions, support and alternatives to provide the exact product you want. With locations in Virginia and Georgia, Dominion Chemical's capacity to blend, package and create specialty wax formulations will meet your unique needs. We offer an exceptional emulsification process, state of the art blending, compounding, packaging and experienced personnel as well as a full service wax lab dedicated to your needs for R&D, QC, and general product evaluation.

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Evertree

Evertree is the designer, manufacturer and supplier of bio based and renewable adhesive solutions (both unique bio based adhesive compositions plus innovative application dispensing technology) used in the manufacture of composite wood panels. Our initial product family Green Boost™ delivers significant cost savings to the composite wood products manufacturer through a combination of sizable resin cost savings and several process efficiency improvements.

Evertree continued:

Additional benefits of Green
Boost™ include an improved
environmental footprint, via
reductions in VOC's and emissions
of hazardous materials during
the manufacture and use of the
composite wood product, all
while maintaining similar wood
composite panel properties.

Contact:

Joe Lynch – General Manager -North America Phone: 856-650-3660 Email: joe.lynch@evertreetechnologies.com 727 Norristown Road Ambler, PA 19002 www.evertree-technologies.com

Franklin Adhesives & Polymers

Franklin Adhesives & Polymers, a division of Franklin International, manufactures adhesives for the domestic and global wood furniture, millwork and engineered-lamination markets. We have led the way in the innovation of wood adhesives and various types of wood bonds and have developed adhesive solutions for many applications in the wood product manufacturing plant. Under the trusted brand names Titebond, Multibond, ReacTITE and Advantage, our products provide superior performance in wood assembly, solid edge and face gluing, engineered product lamination and finger jointing.

Franklin Adhesives & Polymers continued:

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Business Development Manager

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Fusoni

Fusoni develops and manufactures release agents and additives for panel board manufacturing, and also for paper impregnation processes. Our chemicals expertise extends to other industries, such as release applications in bakery, polyurethane systems, and other applications. For almost 40 years we have been serving clients in Europe, Asia, Africa, Australia and the Americas. We add value through chemistry, and work closely with our customers, helping them improve the properties of their products and reducing production cost through excellent release and additive performance. We look forward to working with you to make your products better and your business more profitable.

Fusoni continued:

www.fusoni.net

Contact:

Adrian Yovanovich - President Phone: 210-712-7803 Email: ayovanovich@fusoni.us 422 Mesa Loop San Antonio, TX 78258



Georgia-Pacific Chemicals – Wood Adhesives

Georgia-Pacific Chemicals offers a portfolio of thermosetting resins for plywood, oriented strand board and laminated veneer lumber applications as well as customformulated solutions to meet our customers' specific needs. Our innovative RESI-BOOST® adhesive technology, when used in combination with RESI-BOND® and RESI-MIX® adhesives, has demonstrated decreased press times as much as 10-20% without sacrificing bond quality nor increasing temperatures. It can lower glue usage as much as 3-10%. RESI-BOOST adhesive technology joins our other quality products - WOODWELD® spray dried powders; RESI-STRAN® and RESI-BOND liquid adhesives; and RESI-MIX® and RESI-MIX® Ultra ready-to-use mixed adhesives.

Georgia-Pacific Chemicals – Wood Adhesives continued:

Contact:

Georgia-Pacific Chemicals – Wood Adhesives Phone: 866-4GPCHEM

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Email: gpchemical@gapac.com 133 Peachtree Street NE Suite 10 Atlanta GA 30303

Atlanta, GA 30303 www.gp-chemicals.com



H.B. Fuller

Our fast setting, strong bonding tapes and glues deliver near zero waste veneers. Zero waste = more profit. Our patented rotary applicators are designed to increase production uptime and eliminates costly and ineffective chillers. Our wood team has over 50+ years of market experience to ensure the right solution for hardwood and softwood veneer in the plywood, parquet and LVL markets. Our industry first Dry & Green Welding tapes are a next generation solution for eliminating laps and gaps while further maximizing drier efficiency. Our goal is simple - help you make more money and build better wood products.

Contact:

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Henkel

Henkel is the world's largest Adhesive company, LOCTITE® PURBOND is a world leading brand in Polyurethane and Polyurethane Hybrid adhesives for engineered wood bonding, offering ductile bond lines, zero Formaldehyde, zero solvents with a wide range of open and set times for Glulam, CLT, Finger jointing, and innovative applications, both cold setting and RF/hot pressing. LOC-TITE HB Xxx2 Purbond is the ONLY 1 component, high production adhesive certified to North American Glulam, CLT, Finger Jointing and I-Joist requirements. With a strong North American sales and technical team and a fully equipped wood lab, we can provide the solutions, support and technology to meet the demanding requirements of engineered wood bonding and innovations of the future.

Contact:

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www.furniture-buildingcomponents.com

Huntsman Polyurethanes

For more than 30 years, Huntsman has been a global leader in the production of MDI-based resin binders for particleboard, medium-density fiberboard and oriented strand board. Our dedicated Composite Wood Products teams are committed to helping our customers reach their goals in all market conditions. There is no added formaldehyde (NAF) with Huntsman's RUBINATE® resins, and can be qualified as exempt under CARB Standards and EPA TSCA Title VI.

Contact:

Richard Tyler - Business Manager Phone: 470-303-3605 email: richard_tyler@ huntsman.com 10003 Woodloch Forest Drive The Woodlands, TX 77380 www.huntsman.com Idemitsu Lubricants America Corporation continued:

IDEMTISU also produces PFPE/ PTFE grease for high temperature roller bearings, hydraulic, gear, and heat transfer fluids specifically formulated for panelboard presses. IDEMITSU manufactures products in Louisville, KY and has a nationwide distribution network to serve our customers. IDEMITSU has a team of lubrication and reliability experts that are ready to help improve reliability and reduce lubrication related parts replacement, downtime, and labor costs.

Contact:

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Idemitsu Lubricants America Corporation

IDEMITSU Lubricants America offers engineered wood industry members a full line of proprietary lubricants including high-temperature chain oils, steel belt, rolling rod and bending rod oils approved for use in Siempelkamp ContiRoll®, Küsters/Metso, and Dieffenbacher continuous presses.

Intertape Polymer Group

Intertape Polymer Group® (IPG®) is the market leader in protective fabrics with over 25 years of experience in the wood industry. IPG is an integrated supplier and manufacturer of woven coated lumber wrap. IPG's wrap offers the ability to advertise your corporate logo in up to four colors and increase brand awareness throughout the transportation process. Available in various weave strengths and colors to fit your needs.

Intertape Polymer Group continued:

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Lonza

Lonza Wood Protection

Lonza Wood Protection is a global leader in the development and supply of innovative technologies to improve the performance of wood products, making them resistant to termites, fungi, fire (flamespread and smoke development), mold and moisture. Lonza offers formulations specifically designed for the treatment of engineered wood, including Permatek® glueline treatments designed to work in harmony with resins as well as water repellents and mold prevention treatments to keep EWPs bright. Additional Lonza products include Wolman® residential preservatives, SillBor® borate treatments, Wolmanac® CCA and Chemonite® ACZA industrial preservatives, Dricon® fire retardants, FrameGuard® mold inhibition, and AntiBlu® anti-sapstain line. With global operations and an unparalleled offering of services and expertise, Lonza is dedicated to the success of its customers.

Lonza Wood Protection continued:

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lonza.com

1200 Bluegrass Lakes Parkway Alpharetta, GA 30004 www.wolmanizedwood.com

McLube

McLube is a globally recognized leader in the release and lubrication industries headquartered outside Philadelphia, USA. Founded in 1954, McLube has remained at the forefront of the release agent, anti-stick, and lubrication markets by providing quality, tailormade coatings complimented by unparalleled technical assistance and customer service. Our Formulation Chemists have applied their decades of experience in the resin and composites molding industry to develop superior platen sealers and release agents for the tenacious resin binders used in the wood press industry. Contact McLube for more information, on-site technical assistance, and samples of our proven formulas. McLube is a brand of McGee Industries, Inc.

McLube continued:

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Glenn Dublisky -

Sr. Technical Representative

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Aston, PA 19014-0425

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Northwest Adhesives, Inc.

Northwest Adhesives, Inc. offers high performing, cost efficient, "pre-coated" tapes for composing wood veneers, parquet flooring or LVL veneer into durable, continuous full sized sheets. When used with Northwest "spot glues" our PS-tapes provide a continuous, more durable wood assembly and improves lay-up efficiency and reduces cost. Some customers also invest in "Re-Coat" where they use both Spot glue and PS-tape together for best holding power. In the late 1990's Northwest Adhesives, Inc. started manufacturing pre-coated strings and tapes to supply to the plywood industry for veneer composing. Since our beginning we have grown to become a global leader in manufacture, sale and technical service for pre-coated hot melt strings and narrow tapes for veneer composing on Raute, Durand-Raute, Hashimoto, Kuper

Northwest Adhesives, Inc. continued:

Contact:

Bryan Asbury – General Manager

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4325 S. Lincoln Street Washougal, WA 98671

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OCI Melamine Americas

OCI Melamine is a melamine crystal supplier. Melamine crystal is used in the manufacture of formaldehyde based resins commonly found in decorative surfaces, OSB, plywood and other panel products.

Contact:

Rhonda Pizzolato - Customer

Service

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or

info.melamine@ ocinitrogen.com

c/o Advanced Louisiana

Logistics - ALL

501 Louisiana Avenue, Suite 201 Baton Rouge, LA 70802

www.ocimelamine.com

Owens Corning® - WeatherPro®

Owens Corning® is the largest supplier of coated woven wrap to the Engineered Wood Industry. It's custom-printed WeatherPro® packaging products are designed to maintain product integrity throughout transportation, inspection and storage of sawn lumber, plywood, OSB, all types of beams, I-Joists and composite wood products. Owens Corning® is a vertically integrated, global manufacturer of innovative coated woven products serving a wide variety of markets. Consistent product quality is achieved by using state-of-the-art equipment along with a strong commitment to partnership with our customers, employees, and suppliers. Owens Corning's global supply chain efficiency is achieved by our strategic manufacturing and distribution centers located throughout North America, Asia & Europe.

Contact:

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owenscorning.com
2650 Fassitt Road, Bldg. #200
North Charleston, SC 29406 USA
www.weatherpro-wraps.com

Paneltech

Paneltech is a young and growing, forward-thinking company comprised of people who have common values and share a common goal: providing environmentally responsible leadership in manufacturing the best performing products for industry. Our panel overlays are designed for high performance end uses and superior processability. They are designed to increase the value of the wood products they cover by increasing their durability, enhancing their appearance, and creating uniform surfaces to enhance the product's end use.

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Manager
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David Wentworth - General

Permapost

Permapost provides custom pressure treating solutions for engineered wood products used throughout the U.S.A. and Asia.

Contact:

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PO Box 100 Hillsboro, OR 97123 www.permapost.com

Sansin Corporation (The)

Backed by over 30 years of proven performance with large commercial, residential and mass timber wood buildings and structures, Sansin is the global leader in developing highperformance factory finishes that deliver the color, durability and performance that architects, engineers and builders can count on. From undercoats. treatments and preservatives to finishes and fire retardants, Sansin's Precision Coat products provide wood protection for a variety of substrates and engineered wood products, including cross-laminated timber, siding, OSB, glulam, millwork and timbers. Sansin continues to deliver environmentally friendly wood coatings that enhance performance without compromise.

Contact:

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SASCO Chemical, **A PSG Company**

Polymer Solutions Group is an innovative manufacturer of proprietary and custom polymer additives, dispersions, and performance chemicals for the rubber, wood, consumer, construction, and medical industries, SASCO's TechKote® Release Agents, Additives, and Platen Conditioners are chemically formulated for all composite and structural panel applications. Together we strive to deliver customer-centric solutions that improve our customers' products, processes and performance.

Contact:

Clancy Redmond - Director of Sales and Business Development Phone: 734-582-3573 Email: credmond@ polymersolutionsgroup.com 827 Pine Ave. Albany, GA 31701 www.polymersolutionsgroup.com

Siemer Milling

Siemer Milling produces and markets Glu-X. Glu-X is an All-Natural Chemical Free special glue extender milled from wheat, and used expressly as the protein-starch adhesive for the wood panel (plywood) industry. This proprietary product was developed from the trade secret processes with the contributions of plywood manufacturers, master millers, adhesive scientists and cereal chemists.

Siemer Milling continued:

Contact:

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111 W. Main Street Teutopolis, IL 62467 www.siemermilling.com



Stratachem Solutions Group LP

Stratachem Solutions Group LP provides chemical solutions specifically for the wood products industry. With over 50 years of technical wood products experience, and a world class research and development group, we are prepared to take on tough process issues. We specialize in release agents for continuous and multi-opening presses, as well as environmental equipment chemical solutions. WESP water treatment chemistry, to keep WESPs and RTOs running up to design capacities. We are dedicated to customer satisfaction and understand the importance maintaining the highest levels of process efficiency while decreasing the cost of manufacturing.

Stratachem Solutions Group LP continued:

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Walker Emulsions

Walker Emulsions is a supplier of high quality, highly effective emulsions for the wood composite industry. We have a selection of emulsions that will fit the needs of high to low temperature pressing and we can make products specifically to match your process.

Contact:

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Gregg Hale -Western North America Phone: 541-953-5783 Email: ghale@walkerind.com 1420 Flintridge Ave Eugene, OR 97401 www.walkerind.com

Wanhua Chemical (America) Co., Ltd.

Wanhua Chemical is the fastest growing and largest MDI producer globally with best-in-class technology and world-leading state-of-the-art manufacturing sites producing WANNATE® PMDI binder solutions to customers and partners in the Composite

Wanhua Chemical (America) Co., Ltd. continued:

Wood Panel industry. Wanhua Chemical is renowned for its high quality WANNATE products and dependable supply chain that Composite Wood Panel producers depend on. Wanhua Chemical has worldwide operations with a local commitment to customers, including ongoing investments in technical resources and infrastructure in North America, further strengthening Wanhua's technical service and supply commitments to the Composite Wood Panel industry.

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Waxian International

Waxian supplies solutions through relationships and technology. Our team assists customers with wax formulations, wax supply, refinery of raw materials, and global supply and sales of both petroleum and non-petroleum wax products.

Contact:

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www.waxianinternational.com



WVCO

Willamette Valley Company

Willamette Valley Company manufactures epoxies, putties and urethanes for upgrading all wood substrates, and also makes a wide range of water based coatings, primers and sealers. Willamette also makes many fillers and extenders for wood adhesives and plywood glues. Pretec, the company's equipment solutions division, specializes in the design and manufacture of advanced fluid systems and the integration of robotic application systems.

Contact:

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APA HIGH-STRENGTH SHEAR WALL RESEARCH

Multi-year Project is Underway

By Dr. Borjen Yeh

To address the need for high-strength shear walls, especially in midrise residential buildings, APA is actively pursuing research to develop shear wall systems using a modified MIDPLY® wall configuration that was originally developed by FPInnovations in Canada about 10 years ago. This multi-year research project is a joint effort between APA, FPInnovations, the University of British Columbia (UBC) and the University of Alberta (UoA) and will include full-scale shear wall tests, computer modeling and design methodology development for force transfer around openings, as well as acoustic and fire performance. The Engineered Wood Technology Association (EWTA) provides partial funding support for APA and UBC on this project.

The current design values for wood-frame shear walls constructed with wood structural panels and studs were established based on APA research conducted in the 1980s. In the last few decades, these design values have not increased, while the design lateral loads required by the building codes and design standards, such as ASCE 7 Minimum Design Loads and Associated Criteria for Buildings and Other Structures, have been regularly revised and increased. For example, a study has shown that the design seismic forces have increased as much as 72% in Vancouver, BC, between the 2010 and 2015 editions of the National Building Code (NBC) of Canada. The increased lateral loads are also noticeable in high wind regions.

This imbalance between the design loads and shear wall resistance has left the designer with limited options. These options include:

1) increasing the number of shear walls for a given building. This may not always be possible, especially when the available exterior shear wall areas are dwindling, such as in the podium construction where view-windows are a common feature, or

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2) switching to other shear wall types, such as steel frame walls, in which wood structural panels are not used.

The modified MIDPLY® wall being tested, shown in Figure 1, has the same stud orientation as a conventional light-frame wall to support the vertical gravity load and to accommodate electrical wires and plumbing. In addition, flat studs are installed opposite of the wood structural panel (WSP) sheathing, such as plywood and oriented strand board (OSB), so that the nailed connection is loaded in a double-shear mode, which could increase the shear capacity of the shear wall.

Figure 2 shows one of the shear wall tests recently conducted at the new APA high-bay research laboratory. Results of a shear wall test based on the cyclic loading protocol of Method C of ASTM E2126, Standard Test Methods for Cyclic (Reversed) Load Test for Shear Resistance of Vertical Elements of the Lateral Force Resisting Systems for Buildings, are shown in Figure 3.

While the shear wall tests are still in progress, preliminary results suggest that the strength of the shear wall can be significantly increased, while maintaining comparable shear wall ductility and drift capacities to a conventional light-frame wall constructed with similar sheathing thickness, nail size and spacing. It is expected that the research results will serve as a basis for a new APA System Report that can be used by structural engineers in North America to design wood structures that require high-strength wood shear walls using wood structural panel sheathing.

Dr. Borjen Yeh (borjen.yeh@apawood.org) is Director of Technical Services at APA – The Engineered Wood Association.

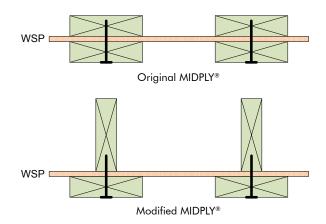


Figure 1. Modified MIDPLY® Wall Configurations Using Wood Structural Panels (WSP)

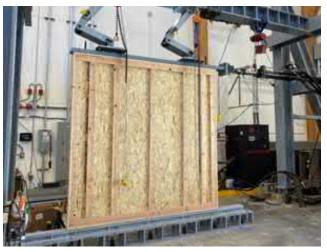


Figure 2. A high-strength shear wall test is conducted at the new APA laboratory.

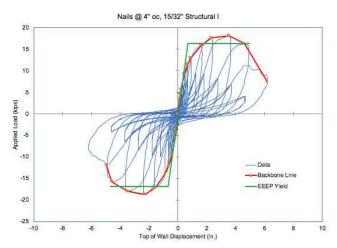


Figure 3. Results of a high-strength shear wall test under cyclic loading.



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Recognizing Operational Excellence

APA – The Engineered Wood Association recently announced the winners of its 2019 Safety and Health Awards. The APA program is the premier safety award program for the structural panel and engineered wood products industry in North America. The awards encourage and recognize operational excellence with the goal of reducing injury and illness rates.

Eighty-five APA-member structural wood panel and engineered wood product facilities in the U.S., Canada and abroad participated in the 2019 program. A total of 17 facilities representing six APA member companies earned awards in various competition categories. Some of the mills were multiple award winners. While the program awards are limited to APA members, data are collected from both member and non-member mills in order to provide a broad-based industry performance benchmark.

Resolute-LP Engineered Wood and LP won Safest Company Awards in their respective categories, and Resolute-LP Engineered Wood and Roseburg Forest Products Company topped the competition for the innovation awards.

INNOVATION IN SAFETY AWARD

Equipment-Based Innovation Winner

Resolute-LP Engineered Wood Larouche, Quebec

"I-Joist Clamp for Web to Flange Separation"

Jeff Wagner Process-Based Innovation Winner

Roseburg Forest Products Company
Coquille, Oregon

"Laser Walkway"

SAFEST COMPANY AWARD			
Company Name	Average WIR	Average TIR	
Resolute-LP Engineered Wood (Companies with three or fewer member mills)	0.00	0.00	
LP (Companies with four or more member mills)	3.64	0.66	

In addition to the Safest Company and Innovation awards, other competition categories include Safety Improvement, Annual Safety and Health Honor Roll, 3-Year Safety Award and Incident Free Honor Society. The annual honor roll, three-year average and safety improvement categories are divided into three divisions based on the type of product manufactured at the mill.

The Equipment-Based Innovation in Safety Award went to Resolute-LP Engineered Wood in Larouche, Quebec, for its I-joist clamp for web flange separation. During the production of I-joists, flanges on the leading end can separate from the web at the outfeed of the assembly process before moving into a curing oven. Prior to the development of this tool, mill staff would repair the joist using a long stick or piece of lumber, but this placed staff in a position that could lead to hand injury or long-term ergonomic issues. This tool was

ANNUAL SAFETY & HEALTH HONOR ROLL		
Division I (Plywood)	WIR	TIR
1ST PLACE		
Boise Cascade Company Medford, Oregon	0.27	0.27
2ND PLACE		
Boise Cascade Company Chester, South Carolina	0.27	0.27
Division II (OSB)	WIR	TIR
1ST PLACE		
LP	0.00	0.00
Swan Valley Minitonas, Manitoba		
2ND PLACE		
Norbord	0.00	0.00
Barwick, Ontario		
Division III		
(Glulam, I-Joist, LVL and SCL)	WIR	TIR
1ST PLACE		
LP	0.00	0.00
Wilmington, North Carolina		
2ND PLACE		
LP	0.00	0.00
Red Bluff, California		

SAFETY AWARDS

3-YEAR SAFETY AWARD (2017 - 2019)

Division I (Plywood)	WIR	TIR
Boise Cascade Company Chester, South Carolina	1.64	0.52
Division II (OSB)	WIR	TIR
LP Two Harbors, Minnesota	0.24	0.24
Division III (Glulam, I-Joist and SCL)	WIR	TIR
Boise Cascade Wood Products, LLC White City, Oregon	0.85	0.85

SAFETY IMPROVEMENT AWARD (2017 – 2019)

2017 WIR	2018 WIR	2019 WIR
0.73	3.88	0.27
2017 TIR	2018 TIR	2019 TIR
0.73	0.52	0.27
2017 WIR	2018 WIR	2019 WIR
0.00	0.69	0.00
2017 TIR	2018 TIR	2019 TIR
TIR	TIR	TIR
TIR 0.00 2017	TIR 0.69 2018	TIR 0.00 2019
7IR 0.00 2017 WIR	7IR 0.69 2018 WIR	71R 0.00 2019 WIR
	0.73 2017 TIR 0.73 2017 WIR	WIR WIR 0.73 3.88 2017 2018 TIR TIR 0.73 0.52 2017 2018 WIR WIR

developed to allow for the "clamping" of the flange back onto the web at a safe distance from the conveyor and oncoming joists using leverage instead of force. Its design allows for staff to easily convert from one joist depth to another with a simple pin at the hinge spot.

The Jeff Wagner Process-Based Innovation winner was Roseburg Forest Products
Company in Coquille, Oregon, for its Laser
Walkway. Pedestrian-forklift congestion is an ongoing concern at almost any manufacturing site. A team was established to identify specific areas of concern and devised a plan to reduce or eliminate the risks in these areas. The team decided that the best course of action was to use laser walkway markers at several locations.

Typically, paint has been used to mark the designated walkways, but these marks required constant repainting due to continual forklift traffic. Use of the lasers has eliminated this ongoing maintenance item. The lasers and associated flashing lights and/or stoplights are activated by push buttons on either side of the walkway or by use of photo eyes. The lights are placed on a timer that allows adequate time for pedestrians to traverse the path, but not an excessive amount to make forklift operators complacent with the laser's presence. As a result, pedestrians keep better to the designated path and mobile equipment operators' awareness of occupied paths is heightened.

Since 1982, the APA awards program honors the management and employees of companies and mills with the lowest Weighted Incident Rate (WIR), which is calculated using the number and severity of recordable incidents reported on the mill's annual OSHA (Occupational Safety and Health

Administration) report. As 2008 was the first year that WIR was used, awards and reports for 2009 through 2019 continue to also show Total Incident Rate (TIR), the measure used in previous years.

The 2019 average Weighted Incident Rate (WIR) for the structural panel and engineered wood industry was 8.11, an increase over last year's WIR of 6.99. The 2019 Total Incident Rate (TIR) was 1.60, also an increase over last year's TIR of 1.41. As with all activities, it is expected to see some movement of these values over time, and fluctuations remind the industry to continue to ensure that systems and processes are in place to strive for the long-term improvement of these metrics. WIR is calculated using both the number and the severity of recordable incidents.

The 2019 Safety and Health Awards program was the 12th year of the program under a revitalized safety effort spearheaded by an APA Safety and Health Advisory Committee comprised of several APA member company safety professionals. Under the committee's guidance, three main goals were established: make the APA program the premier safety awards program in the industry, encourage the sharing of best practices as a means to improve the industry's safety culture and programs and, most importantly, improve the industry's overall safety performance.

APA is proud of industry progress to develop and implement systems and processes that continue to decrease incidents and improve worker safety. More information on the APA Safety and Health Awards Program can be found on the Association's website at www.apawood.org.

INCIDENT FREE HONOR SOCIETY

Company/Location	Product	WIR*	TIR**
Boise Cascade Wood Products, LLC Roxboro, North Carolina	IJ	0.00	0.00
Calvert Co., Inc. Vancouver, Washington	Glulam	0.00	0.00
LP Newberry, Michigan	OSB	0.00	0.00
LP Peace Valley OSB Fort St. John, British Columbia	OSB	0.00	0.00
LP Red Bluff, California	IJ	0.00	0.00
LP Swan Valley Minitonas, Manitoba	OSB	0.00	0.00
LP Two Harbors, Minnesota	OSB	0.00	0.00
LP Wilmington, North Carolina	LVL	0.00	0.00
Norbord Inc. Barwick, Ontario	OSB	0.00	0.00
Norbord Inc. Nacogdoches, Texas	OSB	0.00	0.00
Resolute-LP Engineered Wood Larouche, Quebec	IJ	0.00	0.00
Resolute-LP Engineered Wood Saint-Prime, Quebec	IJ	0.00	0.00

^{*}Weighted Incident Rate (WIR)

^{**}Total Incident Rate (TIR)



It is not too early to start planning for the 2021 EWTA Info Fair and APA Annual Meeting. The event is scheduled for Oct. 16–19 at the JW Marriott Desert Springs Resort & Spa at Palm Desert, California. Following safety guidelines set for events and exhibits, registration information is expected to be sent out in April. Sponsorship cost and benefits information will be available at www.engineeredwood.org/ info-fair. For more information, contact LaDauna Wilson at ladauna.wilson@apawood.org.

EWTA Advisory Committee Welcomes New Members and Recommends 2021 Budget

The EWTA Advisory Committee met Oct. 28 jointly with the Adhesives and Technology Committee through video conference. The meeting provided an opportunity for the members to hear updates on membership, finances, communications, research projects and Info Fair activities.

Trevor Wendt, representing Raute, and Mike Cook, representing SparTek Industries, Inc.,

joined the committee, filling positions left open as a result of departures from their companies.

The committee finalized the association's 2021 budget with income of \$352,950 and expenses of \$359,336, resulting in a year-end deficit of \$6,386 and cash reserves of \$184,750.

The proposed budget was forwarded and approved at the APA Board of Trustees meeting held Nov. 12.

EWTA-Sponsored Research Funds Deferred

Due to the cancellation of Info Fair and loss of revenue, EWTA's Advisory Committee voted to defer some of the \$95,000 budgeted in 2020 for research projects. The first phase of nonresidential moisture design, details and brochure were moved to the 2021 APA Strategic Marketing Plan, with APA funding.

The hybrid wall project with the University of British Columbia (\$50,000) continues, but was split with \$25,000 contributed in 2020 and the other half in 2021. See page 65 for a report on the preliminary results.



EWTA EXPANDS ITS SOCIAL MEDIA PRESENCE

More people are turning to social media, and EWTA is adding resources to connect with members and others in the engineered wood industry. Look for EWTA on LinkedIn, Facebook and Twitter in the coming months as those accounts are developed and expanded.

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EWTA WELCOMES NEW MEMBER



BID Group of Companies joined EWTA as a member earlier this year. With 15 locations across North America, the privately-owned BID Group has over 35 years of experience in providing industry leading solutions for its highly valued customers in the wood processing industry. Anne-Marie Levesque, Business Development Director, can be reached at 450-435-2121 and Anne-marie. levesque@bidgroup.ca

Name Change Coming for Tebulo Industrial Robotics

Effective January 2021, Tebulo Industrial Robotics will change its name to Radian Robotics. The name change is part of a larger rebranding process driven by the business's growth. With an expansion into different market segments and development of new applications, the team has doubled in size and has outgrown the partnership with our European division.

New Data Sheet Available for HAWE's PSL Size 3

HAWE has published a new data sheet for its proportional directional spool valve types PSL size 3. This valve series is used in mobile hydraulics, such as those used in loading cranes, lifting platforms and construction machines.

HAWE Chairman of the Supervisory Board Elected VDMA President

Karl Haeusgen is the newly elected President of VDMA (Mechanical and Engineering Industry Association). With around 3,300 members, the VDMA is the largest network organization and an important voice for the mechanical engineering industry in Germany and Europe.

International Bar Coding (IBC) has Moved

IBC relocated to their new 13,000 square foot building in Satikw Crossing, Penticton, BC, in October. With expanded production capacity and manufacturing space, a brand-new printing press with increased speed and printing capabilities, larger sales offices and (best of all) a new lunchroom, International Bar Coding will be ready to serve their clients both locally and internationally.

Raute Delivers Panel Repairing Technology

Raute has launched a new and unique panel repair station and next-generation panel repairing line. Automatic panel repairing increases the cost efficiency of plywood production, ensures that the final quality of the panels is more uniform and makes it easier to control the various panel grades.

The ordered machinery and equipment will be delivered by the end of 2021. The equipment will be engineered and manufactured mainly in Raute's production unit in Nastola, Finland. Some work will also take place in Raute's unit in Vancouver, Canada. The machine vision technology for controlling panel repairing will be delivered from Raute's unit in Kajaani, Finland.

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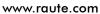
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