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AUTUMN 2016

Journal



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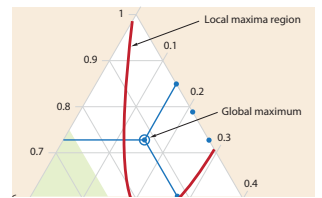
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ENGINEERED WOOD JOURNAL
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Engineered Wood Technology Association
7011 South 19th Street
Tacoma, WA 98466
Phone: 253-620-7237
ewta@engineeredwood.org
www.engineeredwood.org

MANAGING DIRECTOR
Terry Kerwood
COMMUNICATIONS DIRECTOR/EDITOR
Sheila Cain
MEMBER SERVICES DIRECTOR
Melinda Lilley
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About the Cover Photo:
A devastating tornado tore through a Dallas suburb last Christmas, revealing a number of building deficiencies in the homes it destroyed. A new report by APA details the mistakes made and offers measures builders can take to make homes safer in storms. See story on page 12



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CONNECTIONS**

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Looking Back: EWTA Remembers APA Leaders

APA lost a pair of plywood pioneers this spring with the passing of past President Bill Robison and former Quality Services Division Director George Sleet (see In Memoriam, page 10). Both contributed significantly to APA during their combined 80 (yes, 80!) years with the association and will be greatly missed by friends, family and colleagues.

I never met Bill, but I heard his name enough to feel as though I knew him. George was my dad, and he started working at APA before I was born. His job was important to him, and the conversations with my mom around the dinner table were always about APA. While I was too young at the time to understand the details of their discussions, the names of his coworkers became familiar. Bill's name was one that came up often. Bill was rising through the managerial ranks about the time George joined APA in 1964 as a laboratory technician. He served as a role model and friend to my dad as he, too, climbed the APA corporate ladder over the next nearly 40 years.

Bill's name isn't the only one that brings back memories of dinnertime discussions. Many, many others in the APA family were spoken of fondly at our home: Jack Merry, Loren Pollard, Bruce Lyons, Dennis Hardman, Ed Elias, Dale Lawrence, Bob Raymond, Mike O'Halloran, Alex Kuchar, and many others. Some of the stories were legendary: Kuchar (who is now with Weyerhaeuser) and my dad were in Cloquet, Minn., on Sept. 11, 2001, when the World Trade Center towers were attacked, and they decided to rent a car and drive more than 1,600 miles back to Tacoma. One of the two of them stopped along the way to buy clean underwear. The other one didn't see the point. I'm not at liberty to say which one was which....

My dad's coworkers remained good friends well after my dad retired in 2003, and could often be found hanging out in our basement visiting while my dad fixed their radio, outboard motor, lawnmower, and assorted other household items.

George cared for APA's members, too. He always remembered things about people – important life events and personal things like the birth of a grandchild or the academic accomplishments of a son or daughter. He remembered these details because he truly cared about people. As a result, members came to truly care about him; not only as a colleague but also as a friend. He visited members on their home turf; an extra step that would prove advantageous for both APA and the member companies. He traveled domestically and overseas – Dothan, Ala.; Saint Maries, Idaho; Ireland; Germany; Japan – and often found himself the recipient of the generosity of APA's members. Some of George's happiest times were spent salmon and steelhead fishing with industry friends from APA member company Ainsworth (now Norbord following a 2015 merger).

Both Bill and George's long tenure at APA shouldn't come as a surprise. Folks at APA stick around; something that didn't impress me until I graduated from college and job-hopped several times as I pursued my career as a journalist. Some of that likely has to do with their generation, but a good deal can be attributed to the culture at APA. APA hires good people who like what they do, so they stay.

I always knew my dad was well-liked, but it became even more obvious over the past several years. As editor of this magazine and communications director for EWTA, I am lucky enough to be able to attend the APA Annual Meeting and EWTA Info Fair each fall. I love talking to APA members who knew my dad and hearing stories about the times they worked or traveled together. While this year's meeting will be bittersweet, I hope to hear more about how my dad touched the lives of APA members.

EWTA Info Fair and APA Annual Meeting

This year's event will be at the Hyatt Regency Coconut Point Resort & Spa in Bonita Springs, Fla., and those of us here at EWTA look forward to connecting with many of you Nov. 5-8. The event is a great place to network, share ideas and catch up with old friends and colleagues. I anticipate sharing stories about the past – and making new memories.


scahin@engineeredwood.org

Online Vote to Determine Nation's Next Energy Code

The Coalition for Fair Energy Codes (CFEC) reports that only a small number of the nation's building code officials are expected to participate in an online voting process this November that represents the final step in determining the makeup of the nation's next energy code.

The first step in the development of the 2018 International Energy Conservation Code (IECC) occurred in April of this year, where CFEC and its allies succeeded in getting favorable code committee decisions on a number of energy code proposals that would benefit the wood industry. CFEC also testified successfully against proposals that would give foam plastic wall sheathing additional preferential treatment in the energy code.

The prediction of a relatively low turnout in this fall's online voting process

for the energy code is based on the immediate past code development cycle which concluded in 2015. According to APA Field Services Director and CFEC Executive Director Tom Kositzky, for the set of codes that were just updated last year, the fate of every code change proposal was determined by less than 400 governmental voters, with only 200-300 total votes cast for most code change proposals. While an increase in voters is anticipated for the energy code online voting scheduled for November, the number of votes on each proposal is still expected to be relatively modest, especially considering that thousands of International Code Council governmental members could vote.

"The expected number of voters participating in the online voting process

next month represents an opportunity for local building officials to take back their energy code from the special interests that benefit from product-specific mandates," according to Kositzky. "Whether an online vote is cast by a green building/sustainability officer in New York City or the building inspector in one of America's rural towns, someone's vote could make the difference between a product-neutral, performance-based energy code and one that threatens our industry's access to markets. APA staff, along with our members, are reaching out to those potential code official voters that are most likely to support our positions. Our message to them is that we need their participation in the upcoming online voting process in order to ensure that the 2018 IECC becomes an efficient and cost-effective energy code that also provides a level playing field for all performance-qualified construction materials."

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EPA Announces New Formaldehyde Rules

The U.S. Environmental Protection Agency announced in late July the long-awaited rules for the Formaldehyde Emission Standards for Composite Wood Products and finished goods made with these products (see related article, “VOCs from Wood Products: Emerging

Research – Pending Regulation?” page 22). The rules will apply to the law signed in mid-2010 that created a nationwide regulation closely modeled after the California Air Resources Board (CARB) Air Toxic Control Measure for Formaldehyde from Composite Wood Products. APA – The Engineered Wood Association has been involved in meet-

ings with CARB and EPA to assure that the language and rules provide clear exemption for structural wood products as intended during the inception of the CARB regulations.

Production Increases Across All Product Lines

Supported by increased housing starts and repair and remodeling compared to a year ago, North American production of structural panels and engineered wood products was up in the second quarter of 2016 versus that of 2015, according to a recently released APA Quarterly Production Report.

Led by a 7.8 percent increase in OSB production, structural panel production in the second quarter totaled 8.34 billion sq. ft., up 6.5 percent from the second quarter of 2015. Apparent consumption of structural panels (production plus imports, less exports) totaled 8.42 billion sq. ft. and was up 8.1 percent from the second quarter of 2015. With respect to engineered wood products, LVL led the production gains as second quarter production was up 9.4 percent from a year ago. Glulam and I-joist production were up 6.7 percent and 4.5 percent, respectively.

APA Completes Accreditation Audit

APA's Quality Services staff recently took part in an accreditation audit by the International Accreditation Services (IAS). APA's accreditation as an inspection agency is essential for recognition of APA marks by building officials in the U.S. The audit entailed review of inspection records, program policies, staff interviews and witnessing an APA auditor during an inspection of a member mill. The IAS audit did not reveal any major nonconformities, allowing APA to maintain this longstanding accreditation. The APA laboratories were also audited by the IAS under ISO/IEC 17025, General Requirements for the Competence of Testing and Calibration Laboratories, and achieved continued accreditation.



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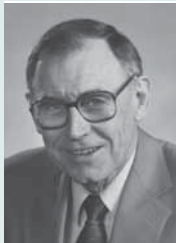
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IN MEMORIAM

William “Bill” T. Robison

Former APA President William “Bill” T. Robison, 91, died March 22 in Lakewood, Wash. Born in Knoxville and raised in Gallatin, Tenn., Mr. Robison held two degrees in agricultural engineering — a bachelor’s from the University of Tennessee and a master’s from Iowa State University. He served with the U.S. Army Air Corps in West Africa during World War II. Mr. Robison joined the association in 1951. During his tenure with APA’s Field Services Division, he was a field representative, regional manager in Atlanta, and assistant division director in Tacoma, Wash., before his appointment as director in 1965. He was named vice president, marketing, in 1972; vice president and general manager in 1981; and finally, president in 1984. He retired in 1992 after 41 years with APA. Mr. Robison is survived by four children, 10 grandchildren, eight great-grandchildren, and a sister. His wife, Eliza, preceded him in death.



Bill Robison

survived by his wife, Gail, daughter Sheila Cain (Sheila is the communications director for the Engineered Wood Technology Association and editor of this magazine), a grandson, and extended family.

J. David Barrett

Dr. J. David Barrett, 76, Professor Emeritus of the University of British Columbia Department of Wood Science, died April 5 in Vancouver, B.C. He was a leader in the field of wood mechanics and timber engineering and was influential in the application of wood as a structural material in engineering practice. Mr. Barrett joined UBC in 1984 as the head of the Harvesting and Wood Science Department and served as department head for a total of 15 years. He played a major role in developing the undergraduate Wood Products Processing program and establishing the Centre for Advanced Wood Processing. During his tenure, he educated, trained and mentored many students, many of whom have moved on to executive roles in the wood products industry and academia. Mr. Barrett was also recognized for his innovative and rigorous thinking as well as for his intimate understanding of business principles. He worked closely with the industry to ensure equitable technical consideration of Canadian wood products in domestic and international markets.



J. David Barrett

George T. Sleet

George T. Sleet, 74, died May 17 in his Tacoma, Wash., home. He was born and raised in Tacoma and held a bachelor’s in business administration with a chemistry minor from Pacific Lutheran University. He served for two years in the U.S. Marine Corps Reserves. He joined the APA staff in 1964 as a laboratory technician and went on to serve as a research technologist and director of the Quality Services Division. In 1992, he was promoted to vice president and secretary with responsibility for membership and held the position until his retirement in 2003. Mr. Sleet was noted for his ability to “fix anything” ranging from cars and outboard motors to plumbing and electrical and was always at home in the APA shop. He is



George Sleet

Maurice Rhude

Maurice John “Morrie” Rhude, age 91, died January 26 in Marinette, Wis. He was president and owner of Sentinel Structures, Inc., a manufacturer of glued laminated timber in Peshtigo, Wis. For more than 60 years he was active in the American Institute of Timber Construction (AITC). He authored numerous technical articles on engineered timber and helped develop the industry standards for glulam.

USGBC Broadens Acceptance Of LEED Forest Programs

The U.S. Green Building Council this past spring announced that the quarterly addenda to the LEED green building rating system will include a new pilot Alternative Compliance Path credit that broadens acceptance of legally sourced and certified forest products. The new

alternative compliance path for the forest certification credit provides recognition for the Sustainable Forestry Initiative, American Tree Farm System, Canadian Standards Association, and other PEFC-endorsed standards, in addition to the Forest Stewardship Council, which was already recognized by LEED.

With this change, architects, builders and consumers have a compliance path to earn points under the LEED v4 rating systems, including LEED for Homes v4 and all LEED 2009 rating systems, for using legal, responsibly sourced forest products certified through one of the recognized programs.

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APA Report Offers Building Guidelines Following Devastating Texas Tornado

by Sheila Cain



Photo courtesy of APA – The Engineered Wood Association

When a strong tornado hit the Dallas area in the winter of 2015, many homes were severely damaged, despite the fact that some were located along the edge of the tornado's path where winds were less severe.

When APA – The Engineered Wood Association sent a damage assessment team to Dallas in the aftermath of a devastating tornado last December, they were surprised at what they found. While the tornado reached an EF4 (severe) rating in certain areas, considerable damage to residences also occurred along the outer edges of the storm's path, where wind speeds appeared to be much lower.

After considerable study, the APA team concluded that there are several

cost-effective design details that builders and designers can implement to significantly mitigate storm damage, especially along the outer reaches of the area influenced by the storm vortex.

What They Found

The storm that hit the Dallas area the day after Christmas in 2015 was the first EF4 or stronger tornado ever recorded in Texas. It made landfall in the suburban towns of Garland and Rowlett and caused considerable structural

damage to a number of homes in that area. According to the National Weather Service, this tornado resulted in at least 13 fatalities and was part of a larger winter storm that included 12 confirmed tornadoes, mainly across North Texas.

APA representatives visited the most severely affected areas to find out the reasons behind the widespread structural failures. They learned it was often due to a lack of adequate connections. A continuous load path from the roof covering and siding (exterior cladding)

to the framing and to the foundation must be provided for reliable building performance. As with many post-damage assessments, most of the homes observed failed as a result of poor continuity along the structural load path.

The most common failures of the load path were seen at the roof-to-wall intersection. Many of the roof rafter-to-wall connections in this area were made using toenails through the roof framing and into the top plate of the exterior walls. Toenail connections are weak because they rely upon the withdrawal strength of nails, which is limited. Commonly available light-gauge metal connectors provide good performance in wood framing because the load is resisted in the directions perpendicular to the nail shank, instead of pulling the nail straight out. Presence of these metal connectors



Photo courtesy of APA – The Engineered Wood Association

Only one of the damaged homes observed by APA used uplift framing connectors tying the roof rafters to the top of supporting exterior walls. In this case, the Simpson H2.5A twist strap was observed with nails driven through the connector adjacent to the intended location instead of penetrating the connector precisely at the hole location, clearly not installed according to the connector manufacturer's recommendation.



Photo courtesy of APA – The Engineered Wood Association

After observing several tornado-damaged homes and considerable study, APA's Damage Assessment Team concluded that there are several cost-effective design details that builders and designers can implement to significantly mitigate storm damage, especially along the outer reaches of the area influenced by the storm vortex.

was only observed in one case among the homes where loss of the roof structure occurred.

Other types of failures observed included:

- Breaches in the building envelope:** Openings in walls due to loss of doors, windows and cladding systems were common. Weak garage doors often contributed to this type of failure, resulting in interior pressurization and exacerbating deficiencies within the load path.
- Inadequate attachment of exterior walls to the foundation:** In many of these cases, powder-actuated pins of varying lengths were used to attach the bottom of support walls to the concrete slab foundations. Although equivalent systems are allowed to be substituted, modern building codes generally specify deformed steel anchor bolts to be embedded into reinforced concrete foundations for attachment to wood framing.



Photo courtesy of APA – The Engineered Wood Association

In this home in Rowlett, Texas, failures were initiated adjacent to large openings such as this garage door. Wind in this area was consistent with a rating of EF0 to EF1 based on the degree of damage to roof coverings and nearby trees. Garages are more vulnerable to damage since they are less structurally redundant and often lack adequate lateral bracing at the walls containing the large vehicular opening.

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- **Failures associated with flexible wall sheathing:** Many of the homes observed incorporated a flexible, 1/8-inch-thick, laminated-fiber sheathing and were either fully or mostly clad with brick veneer on the exterior. Relatively flexible walls sheathed with laminated fiber were found to be largely incompatible with brittle brick veneer. In many cases, brick veneer walls were observed to have been damaged due to excessive out-of-plane or in-plane deformation, which was exacerbated by poor installation of brick ties. Fallen

brick was observed in many cases within the impacted area, and across a wide range of wind speeds.

Common Misconceptions

It's a common myth that buildings are at the mercy of all tornadoes, and that structural failure is unavoidable no matter how well a building is constructed.

This misconception is often used to justify a lack of attention to structural details. In truth, homes can be easily built to survive a majority of tornadoes.

Statistically, weaker tornadoes rated as EF0, EF1 and EF2 comprise 95 percent of all tornadoes. These smaller, less-violent tornadoes produce winds which a carefully constructed home can be expected to withstand. Even homes in the path of stronger tornadoes stand a chance if stronger building components are combined with more intentionally constructed connections.

Following the observation of the damaged homes, the conclusion of the APA damage assessment team was that much of the damage could have been prevented

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by following a list of guidelines developed by APA after the April 2011 “Tornado Super Outbreak” in the southeastern U.S. The guidelines, entitled “Building for High Wind Resistance in Light-Frame Wood Construction,” are available through the APA website. (See side story, “How to Get This Report”). Examples of measures suggested to make homes safer in storms include:

- Securely attach OSB or plywood sheathing to integrate the framing. Thoughtful location of horizontal joints in the wall sheathing can eliminate common discontinuities in wall framing and at the floor system rim board.
- Connect roof framing to the walls using metal connectors instead of just toenails.
- To complete the load path, attach the bottom plate of the wall to the foundation with anchor bolts and large plate washers.



Photo courtesy of APA – The Engineered Wood Association

Relatively flexible walls sheathed with laminated fiber were found to be largely incompatible with brittle brick veneer. In many cases, brick veneer walls were observed to have been damaged due to excessive out-of-plane or in-plane deformation, which was exacerbated by poor installation of brick ties. Fallen brick was observed in many cases within the impacted area, and across a wide range of wind speeds.



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This type of construction can improve building performance and safety for occupants in areas susceptible to tornadoes. Builders who incorporate these details can improve marketability of their products, resulting in better peace of mind for their customers. Once homeowners become aware of these options, demand for better safety provisions in single-family home construction is likely to increase. 

Dana Ohler, APA – The Engineered Wood Association’s writer and web content developer, significantly contributed to this report.

Sheila Cain (scain@engineeredwood.org) is communications director of the Engineered Wood Technology Association and editor of its Engineered Wood Journal.

How to Get This Report

This article is a summary of the recently published APA report entitled, “Texas Tornado Damage Assessment.” It can be downloaded for free (or a hard copy can be purchased for \$2) from the APA website. Visit www.apawood.org, click on the “Resource Library” tab, and search for Form SP-1177. The recommendations referenced in the article, “Building for High Wind Resistance in Light-Frame Wood Construction,” can also be downloaded at no cost from the APA Resource Library. Search for Form M310.



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VOCs FROM WOOD PRODUCTS

Emerging Research – Future Regulation?

By Steve Zylkowski



Image courtesy of Hexion

A wood sample is tested to CDPH 01350 specification; a testing protocol for assessing VOC emissions for the purpose of calculating resultant indoor air quality.

What do ice cream flavorings, perfume scents and the blue haze over the Smoky Mountains have in common? They all involve naturally occurring chemicals known as volatile organic compounds, or VOCs. VOCs are a complex array of organic chemicals, containing carbon and elements like oxygen and hydrogen, that normally exist as a vapor at room temperature.

The sharp, pleasant scent when walking through a pine forest is due to monoterpenes, a class of VOCs, emitted by many conifers to attract pollinators and repel harmful insects and animals.

Some aspects of tree respiration are well known, such as how trees convert carbon dioxide into oxygen and woody tissue. What is less understood is how the VOCs emitted by trees may impact the chemical balance of the air which, in turn, can impact such things as ozone formation; radiative properties that may affect climate change; and local air quality. Environmental scientists are currently studying natural VOC emissions from trees to help understand how forest emissions impact air quality.

Closer to home, the impact of VOCs from building products – including wood products – is becoming a new area of

research. Health and research organizations have been studying indoor air quality to mitigate potential responses, such as respiratory distress from certain VOCs, which may occur in people such as infants and the elderly with respiratory issues. Since VOCs are found in many building and consumer products, their concentrations are often higher indoors, particularly in newly constructed homes. Some green building programs and green product labeling programs recognize products that have undergone VOC testing, labeling and ongoing quality monitoring to assure low VOC emissions.

Testing VOCs from Wood Products

It may be possible to predict the concentration of VOCs in indoor air by using models that evaluate VOCs from sources like furniture, paint, carpeting, sealants and other building products. Researchers at the National Research Council have studied VOC emissions from various building materials as they impact indoor air quality, but there is limited data on the type and rate of VOC emissions from engineered wood products. To fill the knowledge gap, APA – The Engineered Wood Association has recently completed one phase of a study to benchmark the types and amounts of VOCs that occur from structural plywood, OSB, wood I-joists, LVL and glued-laminated timber. The study was partially funded by the U.S. Forest Products Laboratory with \$20,000 in support from the Engineered Wood Technology Association.

APA recently sampled wood products from normal production of member mills. The wood products were carefully wrapped and sealed to prevent con-

tamination and shipped to the Advanced Testing Services laboratory in Springfield, Ore. This is one of a handful of U.S. laboratories that is accredited by the International Accreditation Services to conduct testing in accordance with the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers". This method, also known as CDPH Specification 01350, is a testing protocol for assessing VOC emissions for the purpose of calculating resultant indoor air quality.

The method has similarities to formaldehyde testing methods. A controlled, sealed test chamber containing the test sample is maintained at constant temperature and humidity while a controlled air exchange system circulates clean air into the chamber. At intervals of 24, 48 and 96 hours, an air sample is taken and analyzed for VOC compounds. The measured VOC amount is reported on the basis of emission rate in weight of each specific VOC emitted per sample

area per hour. APA's web site (<http://www.apawood.org/research-in-progress>) includes a link to this Forest Products Laboratory supported research at APA, which includes more details of this study.

The wood products were sampled from routine production, so results are representative of commercial products. Only one sample of each wood product type was tested and given the natural variation that exists in trees, wood and production processes, the results of other products could vary. However, collectively, the sampling represented a variety of species, adhesive systems and processing used by the industry so the results provides some useful information.

The results show the total measured VOC emission rate for each product. Also shown are the most common VOCs measured for engineered wood products and which products emitted the VOC in measurable amounts (see side story, "VOCs Found in the Natural Environment").

Worth noting is that formaldehyde is one VOC that was emitted from all the

Measureable Amounts of Common VOCs in Wood Products

Product	Total VOC (ug/m ² -hr)	Formaldehyde	Acetaldehyde	Hexanal	Limonene	α-Pinene	Pentanal	β-Pinene	No. of Less Common VOCs
Plywood									
Doug-fir	24	y	y	n	y	y	n	n	0
So. Pine	796	y	y	y	y	y	n	y	1
OSB									
Aspen (w/Adhesive A)	642	y	y	y	n	y	y	n	1
Aspen (w/Adhesive B)	589	y	y	y	n	n	y	n	0
So. Pine	922	y	y	y	n	n	y	n	7
I-joist									
Doug-fir lumber flange	339	y	y	y	y	y	y	y	5
Doug-fir LVL flange	249	y	y	y	y	y	y	y	4
So. Pine LVL flange	1084	y	y	y	y	y	y	y	1
LVL									
Doug-fir	197	y	y	y	y	y	n	y	1
Doug-fir w/ sealer	699	y	y	n	y	y	n	y	0
So. Pine	2718	y	y	y	y	n	y	y	0
Glulam									
Doug-fir	462	y	y	n	y	y	n	n	0
So. Pine	893	y	y	y	y	y	y	y	1

This chart outlines the results of the recent APA tests to determine the types and concentrations of common VOCs in various engineered wood products.

Image courtesy of APA – The Engineered Wood Association

wood products. Formaldehyde emissions are one of the most widely studied and regulated chemicals in the wood industry. (See related brief on page 9 that discusses the recently announced release of the EPA rules for the National Wood Composite Formaldehyde Act.) Formaldehyde is naturally emitted from wood, and to some degree the emissions may be influenced by adhesives that contain formaldehyde. Acetaldehyde was also emitted by all wood products. These two VOCs made up a total of 12 percent of all emissions measured.

How is the VOC Emission Data Used?

Modeling air flow and VOC concentrations through buildings can be complicated, and several factors make predicting VOC concentration even more complex. These include:

- **The emission rate of various VOCs by indoor sources.** VOCs may be emitted by many building materials including paints, sealants, carpets, or cabinets and can also be emitted by many occupant activities.
- **The amount of the building material used in the home.** A large amount of a low-emitting material may contribute more to total VOCs than a small amount of a high-emitting material.
- **The extent the material is free to emit VOCs into the living space.** For example, VOCs from roof sheathing would generally be ventilated out of the attic, not into the home. Wall sheathing may or may not emit into the living space depending on the location and effectiveness of an air/vapor barrier.
- **Sealing or covering the building materials.** This may reduce their emission rate. For example, underlayment and tile would reduce the VOC emissions from plywood or OSB subflooring.
- **The air exchange rate within the home.** This dilutes the VOC concentration. Newer homes are designed to be more air tight to reduce energy usage and may have reduced air exchange rates.

VOCs Found in the Natural Environment

Volatile organic compounds (VOCs) are widely found and generated in nature. They serve many basic functions in nature and many have been synthesized or adapted to industrial processes or products. Following are brief descriptions of some of the VOCs commonly found in engineered wood products.

Formaldehyde is found in all wood products. Formaldehyde is naturally found in nearly all organic organisms and also results from combustion and respiration. Formaldehyde has been synthesized to be used in wood adhesives, cosmetics, pharmaceuticals and various other consumer products.

Acetaldehyde is also naturally emitted by all wood products. It is one of the most important aldehydes occurring widely in nature. Acetaldehyde occurs naturally in coffee, bread and ripe fruit, and is produced by plants.

Limonene is a naturally occurring colorless hydrocarbon classified as a cyclic terpene. The common form possesses

a strong smell of oranges. It is used in chemical synthesis as a renewables-based solvent in cleaning products and in cosmetic products as it has the odor of citrus. Limonene is used in food manufacturing and some medicines, and as a fragrance in perfumes, after-shave lotions, bath products and other such products that include fragrance.

Pinene, as the name suggests, is an important constituent of pine resin and is also found in the resins of many other conifers. Pinene occurs as a pheromone used by many insects in their chemical communication system. Pinene constitutes the major component of turpentine.

Pentanal is a naturally occurring VOC used in different flavors (e. g. fruit flavors) and as a vulcanization accelerator in rubber.

Hexanal is found in foods ranging from olive oil to pears to avocados. Its fruity flavor makes it a useful additive in the flavor industry.

- **The rate of VOC emissions from wood products.** This naturally decreases over time. The emission decay rate is factored into the calculation.

Studies of indoor VOCs from building materials are complex and rely on established material test methods, rational assumptions and environmental modeling techniques. Regardless of how well the VOCs are accounted for in design, it is impossible to control VOCs within a home without considering myriad occupant activities that can dramatically influence VOCs within a home.

Some sources of VOCs are well known, such as use of solvents, smoking, cooking, combustion/cooking with gas stoves, and burning candles. A recent study from Europe found short term spikes in VOCs from some common occupant activities such as:

- **Peeling oranges.** When three oranges were peeled, the amount of limonene and terpenes was 30 times higher than normal in the test room. These VOCs may also be emitted from wood products.

- **Smoking.** When two cigarettes were smoked in the test room, formaldehyde, acetaldehyde and acetone measurements increased dramatically.
- **Cleaning products.** When a commercially available cleaning product was used in the test room, the total VOC (TVOC) measurements increased 20-fold, mostly from the presence of limonene, which is often used to scent cleaning products.


VOC Standards Being Developed

Interest in VOCs and their effect on indoor air quality continues to grow. Industry associations such as APA, the Composite Panel Association, the Canadian Wood Council and the Forest Products Association of Canada are participating in research projects that may influence the development of standards that may impact the wood industry.

One recent activity related to indoor air quality is the new standard recently released by Canadian Standards Association, CSA O160, "Formaldehyde

emissions standard for composite wood products.” This standard applies most directly to the testing and limits for formaldehyde as applied to composite wood panels (such as particleboard and MDF hardwood plywood) creating compatibility to the U.S. Formaldehyde Act and the California Air Resources Board (CARB) regulations. The standard includes an appendix that provides background on how VOC emission test results can be measured to calculate indoor air VOC levels.

Related research, funded by Health Canada and being conducted at the National Research Center in Ottawa seeks to further study building materials and their impact on indoor air VOC levels of newly constructed homes. The study will look at various building materials, including wood products that emit into the indoor air.

The study of VOCs in the built environment is complex, and is an area that will require further study to assure that data on engineered wood products are available to answer questions that arise from designers, specifiers and regulators. 

Steve Zylkowski is the director of APA's Quality Services Division. He has participated in research and standards development on testing wood products. He can be reached at (253) 620-7420 or steve.zylkowski@apawood.org

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AFFORDABLE HOUSING: NAVIGATING THE HEADWINDS AND UNCERTAINTIES

APA Annual Meeting and Info Fair Overview

This year, APA member manufacturers, EWTA members and suppliers set sail into the uncertain waters of the housing market. APA hosts its Annual Meeting in Bonita Springs, Fla., Nov. 5-8 with a focus on the challenges and opportunities that today's market presents for the wood products industry.

The theme of the meeting – Affordable Housing: Navigating the Headwinds and Uncertainties – will be woven through the workshops and presentations at the multi-day event, held at the Hyatt Regency Coconut Point Resort and Spa. The meeting includes guest speakers, panelists and roundtable discussions, as well as cocktail hours, awards dinners and sporting events. The Engineered Wood Technology Association's annual Info Fair supplier exhibition also joins the line-up.

The extended weekend program kicks off on Saturday with several advisory, marketing and subcommittee meetings – including the EWTA Adhesives and

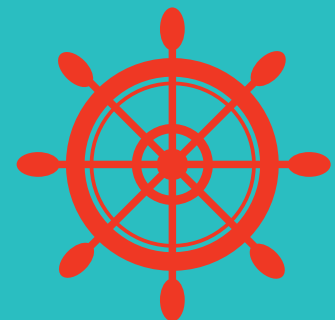
Technical Subcommittee and the EWTA Advisory Committee. The day wraps up with an EWTA-hosted reception for APA and EWTA members and meeting attendees.

Sunday is a day for socializing and friendly competition: the golf tournament, cripple coot shoot and tennis tournament are scheduled in the morning. Info Fair opens that evening, accompanied by a hosted reception.

Workshops and presentations make up the bulk of Monday's presentations, starting with the General Session. The keynote session, entitled "The Outlook for Affordable Housing," will be a panel discussion moderated by APA Board Trustee Mike Dawson. Panel members include a representative from the Leading Builders of America and an author and columnist from Forbes magazine. They will discuss a number of factors that are impacting the affordability of single-family home ownership. They will review the state of home affordability today, discuss the outlook for the next five

years, and consider how the affordability of single-family homes is impacting the multifamily market.

- Clayton Traylor is a nationally recognized expert in the field of housing policy with more than 25 years of experience in both the private and public sector, and will speak to the big builders' position. He is currently a consultant for Leading Builders of America, which represents many of the largest homebuilders in the country. LBA engages in public policy dialog at the federal and state levels and is actively engaged in issues that have the potential to impact home affordability.
- Author Bethany McLean will represent the financial perspective on the panel. She has worked as an investment banking analyst at Goldman Sachs, a reporter and editor-at-large for Fortune magazine, a contributing editor for Vanity Fair magazine, a columnist for Reuters and a contributor to CNBC. She has written extensively about the



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**NOVEMBER 5-8, 2016
BONITA SPRINGS, FLORIDA**



Clayton Traylor



Bethany McLean



Brent Weil



David Prevatt



John Drebing Jr.

rise and fall of Enron and recently authored, *Shaky Ground: The Strange Saga of the U.S. Mortgage Giants*.

The panelists will convene in a roundtable session following the General Session to respond to additional questions and lead a conversation on the outlook for affordable housing.

A second roundtable discussion will be held later that afternoon entitled,

“Workforce Solutions for Wood Products Manufacturers: Bridging the Skilled Labor Gap.” Brent Weil from the Manufacturing Institute of the National Association of Manufacturers (NAM) will lead this discussion on how manufacturers can address the skilled labor gap and put programs in place to attract younger generations to the industry.

The mid-day Marketing Advisory Committee’s (MAC) featured speaker will be David Prevatt, as associate professor in the department of civil and coastal engineering at the University of Florida and an expert on the mitigation of extreme wind damage in low-rise construction. He is the principal investigator of a RAPID research project funded by the National Science Foundation to

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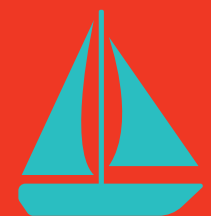
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**2016 APA
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Schedule of Events

(As of publication. Check the APA meeting agenda for latest schedule.)

document damage to residential buildings following the tornado that devastated Tuscaloosa, Ala., in 2011. He also took investigation teams to Joplin, Mo., and Garland and Rowlett, Texas, to survey tornado damage. The MAC meeting will also include updates on the year's activities and plans for the 2017 marketing program. APA Market Research Director Joe Elling will present his latest market forecast.

The day-long Safety and Health Workshop is highlighted by a presentation from John Drebing Jr., an international safety speaker and author, called, "Would You Watch Out for My Safety?" The talk will cover how companies can help employees reduce costs, increase profits and build a stronger safety culture that prevents injuries. Throughout the day, the Safety and Health Workshop will feature idea- and information-sharing sessions with a focus on practical techniques and concepts for improving mill safety programs and performance records. Scheduled speakers include Greg Ellisor of Weyerhaeuser and Terry Evans of Boise Cascade Company, among others.

In addition to the Sunday evening reception, the Info Fair supplier exhibition will be open twice on Monday – from noon to 1:30 (including a buffet lunch) and again from 5:30 to 7 p.m., coinciding with a reception to kick off that evening's APA Chairman's Dinner and Safety Awards Program. Here, APA members who have made significant advances in mill safety will be honored, along with winners of EWTA's Supplier and Innovation Awards, and the weekend's sporting event winners.

As always, the Annual Meeting allows plenty of time for networking and relaxing. The Spouses' Program on Monday will take participants on a lunch and cruise through the saltwater portion of the Everglades National Park and Forest. The hotel also includes a spa and salon featuring a number of services.

Registration for the Annual Meeting begins at the resort on Saturday at 8 a.m. and continues through 5 p.m. See the schedule of events at right for the complete meeting agenda.

SATURDAY, NOV. 5

8 am – 5 pm	APA Registration Desk Open
10:30 am – Noon	EWTA Adhesives and Technical Subcommittee
11 am – 1 pm	International Market Subcommittee (<i>APA members only</i>)
12:30 – 2:30 pm	Glulam Management Committee (<i>APA members only</i>)
2 – 2:30 pm	Info Fair Exhibitor Meeting (<i>exhibitors only</i>)
3 – 4 pm	EWTA Advisory Committee
3 – 5 pm	I-Joist Management Committee (<i>APA members only</i>)
4 – 5:30 pm	Industrial Market Subcommittee (<i>APA members only</i>)
4:30 – 5:30 pm	Chairman's Reception (<i>invitation only</i>)
5:30 – 7 pm	EWTA Reception

SUNDAY, NOV. 6

8 am – 1 pm	Golf Tournament
8 am – 2 pm	Cripple Coot Shoot
10:30 am – 12:30 pm	Tennis Tournament
11 am – 5 pm	APA Registration Desk open
3 – 5 pm	Nonresidential Market Subcommittee (<i>APA members only</i>)
5 – 7:30 pm.	Info Fair and Reception

MONDAY, NOV. 7

7 – 8:30 am	Buffet Breakfast
8 am – 5 pm	Registration Desk Open
8:30 – 10:15 am	General Session Panel Discussion: Affordable Housing <i>Navigating the Headwinds and Uncertainty</i>
10:30 am – 3:30 pm	Spouses' Program
10:30 – 11:30	Roundtable Discussion: <i>Outlook for Affordable Housing</i>
10:30 – 11:30 am	Special Presentation: <i>Would You Watch Out for My Safety?</i>
10:30 – Noon	Residential Market Subcommittee (<i>APA members only</i>)
10:30 am – 5 pm	Safety and Health Workshop
Noon – 1:30 pm	Buffet lunch and Info Fair
1 – 1:45 pm	Roundtable Discussion: <i>Workforce Solutions for Wood Products Manufacturers: Bridging the Skilled Labor Gap</i>
2 – 4:30 pm	Marketing Advisory Committee
5:30 – 7 pm	Info Fair and Reception
7 pm	Chairman's Dinner and Safety Awards Recognition

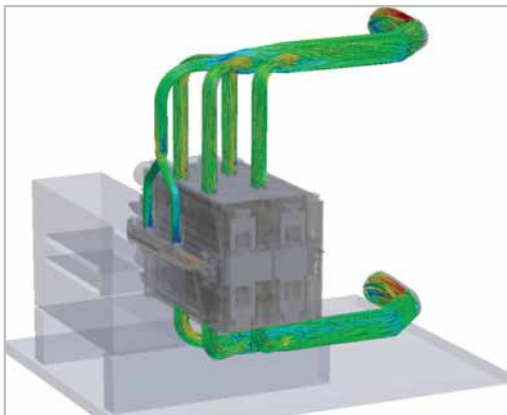
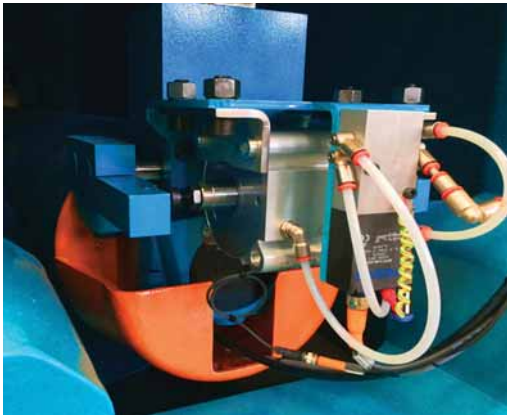
TUESDAY, NOV. 8

6:30 am	Board of Trustees Breakfast
7:30 – 11 am	APA Board of Trustees



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Business Manager, Composite Wood Products

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Kevin Gordon
Sales Director, Sweed Machinery, Inc.

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PO Box 2268
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Fax: 334-834-4525
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Panel World magazine is published six times per year and covers the domestic and international veneer, plywood, OSB and composite board industries.

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Presque Isle, ME 04769
Contact: Tyler Player
Phone: 207-764-6811
Email: tyler@playerdesign.com
PDI offers complete drying island packages including equipment supply, design and installation. PDI Drying Systems are designed to meet the diverse needs of today's manufacturers. The result is innovative equipment that provides cost-effective and environmentally compliant performance, responsive to even the most stringent guidelines.



PFS - HAWE HYDRAULIK
BOOTH No. 39

SILVER SPONSOR

12990 SE Highway 212
Clackamas, OR 97015
Contact: Dan Wilson
Phone: 503-222-3295
Fax: 503-225-5976
Email: d.wilson@hawehydraulics.com
PFS - HAWE is a hydraulic company offering Engineering and Support to the Forest Products Industry. The tradition of providing superior hydraulic components and systems was established by Pacific Fluid Systems in 1977. Providing Solutions to a World Under Pressure.



PROCESS COMBUSTION CORPORATION
BOOTH No. 64

SILVER SPONSOR

5460 Horning Road
Pittsburgh, PA 15236
Contact: Robert Miller
Phone: 412-655-0955
Email: pcc@pcc-sterling.com
For 45+ years, PCC has designed, supplied & serviced combustion, heat transfer & pollution control systems worldwide. With offices in Pittsburgh, USA; China and England, PCC is a global leader in pollution control. Our custom thermal/ biological oxidation designs minimize system costs, especially energy consumption, while meeting environmental regulations.

USNR

USNR is proud to support the activities of the APA. Its plywood and panel business, derived from the Coe Manufacturing legacy, has been a supporter of EWTA and the Info Fair from the beginning. Info Fair is a significant and important venue for communicating directly with our North American customers.

Alan Knokey
Vice President, USNR

alan.knokey@usnr.com
360-225-8267

Thank You!



SAMUEL PACKAGING SYSTEMS GROUP
BOOTH No. 69

GOLD SPONSOR

204 Meadow Ridge Court
Canton, GA 30115-6623
Contact: Dave Gagnon
Phone: 678-372-4096
Fax: 678-493-7035
Email: dgagnon@samuelstrapping.com
Samuel Packaging Systems Group offers a range of state-of-the-art industrial printing and labeling solutions to suit any application in the forest products industry.



SAMUEL PACKAGING SYSTEMS GROUP - CODING & LABELING

BOOTH No. 68

2370 Dixie Road
Mississauga, ON V3M 5V9 CANADA
Contact: Jory Katz
Phone: 905-279-9580
Email: jory.katz@samuel.com
Samuel Packaging Systems Group offers a range of state-of-the-art industrial printing and labeling solutions to suit any application in the forest products industry.



RAUTE
BOOTH No. 52

GOLD SPONSOR

GOLF TOURNAMENT SPONSOR

1633 Cliveden Avenue
Delta, BC V3M 6V5 CANADA
Contact: Martin Murphy
Phone: 604-524-6611 x 379
Fax: 604-521-4035
Email: martin.murphy@raute.com
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. Raute provides profitable solutions for large mill-wide projects as well as individual process lines, line modernizations, and equipment upgrades.



REA JET
BOOTH No. 59

SILVER SPONSOR

7307 Young Drive
Walton Hills, OH 44146
Contact: Nicole Richie
Phone: 404-310-9055
Email: nrichie@reajetus.com
REA JET offers technology with excellent flexibility & variable implementation for the day-to-day needs of a demanding production environment. REA JET's product range includes large character ink jet printers (DOD), high resolution ink jet printers (HP print technology and piezo), small character ink jet printers (CIJ), laser systems, spray mark systems and labeling systems.



SASCO CHEMICAL GROUP, INC
BOOTH No. 45

PLATINUM SPONSOR

3131 Piedmont Road NE, Suite 103
Atlanta, GA 30305
Contact: Bill Holbrook
Phone: 706-766-6888
Email: bholbrook@sascochemical.com
Researcher and manufacturer of release agents for the engineered wood industry.

SIEMPELKAMP LP
BOOTH No. 48

SILVER SPONSOR

3506 High Hamptons Drive
Charlotte, NC 28210
Contact: Dirk Koltze
Phone: 704-540-3701
Fax: 704-540-3707
Email: d.koltze@siempelkamp-usa.com
The Siempelkamp Group of Companies are world leaders in the supply, installation and startup of equipment and complete production plants for the manufacture of wood based panel products, energy systems, dryer systems, panel handling and finishing systems.

SIGNODE®

SIGNODE PACKAGING SYSTEMS
BOOTH No. 47

PLATINUM SPONSOR

2701 Chester Ridge Drive, Suite 103
High Point, NC 27262

Contact: Claude Gregory
Phone: 336-259-9327
Fax: 336-436-9070
Email: cgregory@signode.com

Signode is the world's leading manufacturer of automatic high strength polyester and steel strapping systems, lumber and panel wrapping systems, and loading and bracing systems for the forest products industry.



Smart air innovations.™

SONICAIRE
BOOTH No. 30

SILVER SPONSOR

CRIPPLE COOT SHOOT SPONSOR

3831 Kimwell Drive
Winston-Salem, NC 27103

Contact: John Sanders
Phone: 336-712-2437
Email: jsanders@sonicaire.com

SonicAire is a progressive air-engineering firm with a mission to eliminate the problems with fugitive dust through its line of SonicAire® fans. All the fans apply the new, innovative BarrierAire™ technology system, a robotic engineering platform that creates an overhead barrier to prevent wood dust from accumulating. The SonicAire 2.0 was developed specifically for the complexities of timber and wood dust.



SPAR-TEK INDUSTRIES
BOOTH No. 27

SILVER SPONSOR

2221 North Argyle
Portland, OR 97217

Contact: Rodney Bell
Phone: 503-283-4749
Fax: 503-289-1621
Email: rjb@spartek.com

Spar-Tek Industries designs and builds customized equipment for panel layup and pressing systems as well as feeders, stackers, and other panel and veneer handling equipment. We maintain parts for old Superior and newer Spar-Tek equipment and have 24 hour emergency parts and service assistance. Our mechanical engineering department will customize equipment for special applications and our controls department can update and automate old controls with state of the art PLC systems.



Veneer Services is a technology company supplying leading solutions for veneer production and processing. From the log yard to panel production, we have the machinery and experience to make you more profitable. Our Raute partnership for the hardwood industry expands our range of offerings. At Veneer Services Knowledge Comes Standard.

Dane Floyd
President, Veneer Services

dane@veneerservices.com
317-346-0711



Thank You!



Spraying Systems Co.®
Experts in Spray Technology

SPRAYING SYSTEMS CO.
BOOTH No. 2

GOLD SPONSOR

899 Carol Court
Carol Stream, IL 60188

Contact: Brian Valley
Phone: 630-517-1283
Email: brian.valley@spray.com

Spraying Systems Co.'s turnkey PanelSpray® Systems precisely spray resin and wax in OSB blenders, accurately add moisture to wood mats prior to pressing and evenly apply release agent to equipment when using MDI resins. Our automated systems optimize the use of expensive chemicals and have improved production efficiency at plants worldwide.

STEINEMANN TECHNOLOGY USA, INC
BOOTH No. 35

SILVER SPONSOR

4607 Dwight Evans Road
Charlotte, NC 28217

Contact: Daniel Murphy
Phone: 704-522-9435
Fax: 704-522-9435
Email: d.murphy@steinemann.com

Steinmann: Because the last link in your production chain needs to be just as strong as all the others. Steinmann's wide belt sanding machines are ideal for all substrates such as particleboard, MDF, plywood, OSB, laminates and other materials. Because we offer such a broad range of models and working widths – with the added benefits of modular design – our machines can be tailored to suit your individual manufacturing processes and quality requirements.



WESTMILL INDUSTRIES

For Westmill Industries, a customer-oriented engineering and supplier of veneer dryer solutions and associated parts, EWTA membership is an important part of our marketing plan. The benefits include top notch research, showcase events and direct business-to-business networking opportunities with other members. I encourage EWTA membership for anyone in the industry!

George Harmati,
Sales Manager, Westmill Industries

www.westmill.com
604-607-7010

Thank You!



TEBULO

TEBULO NA LTD
BOOTH No. 40

GOLD SPONSOR

SUPPLIER AWARDS PROGRAM SPONSOR

70 Lancing Drive
Hamilton, ON L8W 3A1 CANADA
Contact: Jon Vanspronsen
Phone: 905-639-7370
Email: jvanspronsen@tebulo-na.com

Tebulo provides the newest and most advanced technology for marking, labeling, and barcoding in the forestry industry. Tebulo uses robotics for stenciling sidewall identification, end-stripping and coding – with availability to use multiple colors. Robots present high reliability and minimal maintenance – over 99% availability. Let your product stand out from the competition!

THE HT GROUP
BOOTH No. 38

7718 Wood Hollow Drive, Suite 100
Austin, TX 78731
Contact: Nad Elias
Phone: 512-345-9300

Email: nad.elias@thehtgroup.com

The HT Group is a total-solution staffing firm that provides companies with timely top talent and custom-tailored staffing strategies through three specialized divisions — HT Staffing, HT Professional and HT Technical. HT has a specialized focus in manufacturing operations, production, and engineering recruiting across industries.



STRATACHEM SOLUTIONS GROUP LP
BOOTH No. 80

PLATINUM SPONSOR

CRIPPLE COOT SHOOT SPONSOR

533 Church Street, Suite 360
Nashville, TN 37219

Contact: Mike Larke

Phone: 866-489-9377

Email: mlarke@stratachemsolutions.com

Specialty Chemicals and process solutions for all forest industries. Site specific chemical formulations, field service and meaningful technical support that makes Stratachem your solutions group.



SWEED MACHINERY, INC
BOOTH No. 42

PLATINUM SPONSOR

653 - 2nd Avenue
PO Box 228

Gold Hill, OR 97525

Contact: Kevin Gordon

Phone: 866-800-7411

Email: sweed@sweed.com

Sweed is known in the industry as the superior choice for providing full veneer dryer infeed and outfeed systems, veneer saws, stackers, hoists, turners and scrap choppers. Sweed also specializes in all replacement parts for Raimann and Skoog patchers, and manufacturers, sharpens and repairs patcher dies. Based in Oregon, USA.



TSI
BOOTH No. 67

GOLD SPONSOR

20818 - 44th Avenue West, Suite 201
Edmonds, WA 98020

Contact: Andrew Johnson

Phone: 425-771-1190 x 128

Fax: 425-775-8363

Email: ajohnson@tsi-inc.net

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. High-speed sorting and stacking 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.

**USDA FOREST PRODUCTS LABORATORY
BOOTH No. 29**

One Gifford Pinchot Drive
Madison, WI 53726

Contact: Karen Martinson
Phone: 608-231-9450
Email: klmartinson@fs.fed.us

The Forest Products Laboratory (FPL) is the national research laboratory of the United States Forest Service, which is part of USDA. Since its opening in 1910, the FPL has provided scientific research on wood, wood products and their commercial uses in partnership with academia, industry, tribal, state, local and other government agencies. The focus of the Forest Products Laboratory is to promote healthy forests and forest-based economies through the efficient, sustainable use of the nation's wood resources.

USNR

**USNR
BOOTH No. 79**

PLATINUM SPONSOR

CRIPPLE COOT SHOOT SPONSOR

GOLF TOURNAMENT SPONSOR

PO Box 310
1981 Schurman Way
Woodland, WA 98674

Contact: Tim Fisher
Phone: 360-225-8267
Fax: 360-225-8017
Email: tim.fisher@usnr.com

USNR manufactures complete panel production lines including Coe brand lathes, computerized chargers, core drives, tray systems, dryers, stacking systems, lay-up lines, and presses. USNR also supplies machinery for beam lamination, finger-jointing and presses for the composite board industry. Committed to superior customer service, USNR offers OEM parts, training, and 24/7 service.



**VENEER SERVICES, LLC
BOOTH No. 77**

PLATINUM SPONSOR

50 Washington Street, Suite 3B
Columbus, IN 46201

Contact: Dane Floyd
Phone: 317-346-0711
Fax: 317-346-0811
Email: dane@veneerservices.com

Veneer Services provides efficient and profitable machines, supplies, and services to the veneer, plywood, architectural panel, and lumber industries. Our Biomass Engineering & Equipment division can supply other needs of the industry, including: Log Decks * Roller Debarkers * Smart Conveyors - drag conveyors * Feeder Bins * Storage Solutions * Trailer Loading * Butt Flare Reducers



**VENTEK, INC
BOOTH No. 56**

GOLD SPONSOR

CRIPPLE COOT SHOOT SPONSOR

GOLF TOURNAMENT SPONSOR

4030 West 1st Avenue, Suite 100
Eugene, OR 97402

Contact: Rodger Van Voorhis
Phone: 541-344-5578
Fax: 541-344-3780
Email: rodger@ventek-inc.com

From green-end automation to robotic panel repair, Ventek combines cutting-edge machine vision technology with robotics and material handling equipment providing complete automation solutions.



**WANHUA CHEMICAL
(AMERICA) CO., LTD
BOOTH No. 66**

SILVER SPONSOR

3803 West Chester Pike, Suite 240
Newtown Square, PA 19073

Contact: Jacob Sturgeon
Phone: 613-796-1606
Email: jacob.sturgeon@us.whchem.com

Wanhua Chemical (America) Co., Ltd. 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 Wood Panel industry. Wanhua Chemical (America) Co., Ltd. is renowned for its high quality WANNATE products and dependable supply chain that Composite Wood Panel producers depend on.



**WESTMILL INDUSTRIES USA CORP
BOOTH No. 46**

PLATINUM SPONSOR

GOLF TOURNAMENT SPONSOR

3063 - 275 A Street
Aldergrove, BC V4W 3L4 CANADA

Contact: Mike Crondahl
Phone: 604-607-7010
Fax: 604-607-7099
Email: crondahl@westmill.com

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.



W V C O

**WILLAMETTE VALLEY COMPANY
BOOTH No. 51**

GOLD SPONSOR

GOLF TOURNAMENT SPONSOR

1075 Arrowsmith Street
Eugene, OR 97402

Contact: Tony Vuksich
Phone: 541-484-9621
Fax: 541-484-1987
Email: tony.vuksich@wilvaco.com

WVCO is a specialty chemical producer of epoxies, putties, urethane fillers, coatings, primers and sealers, as well as glue mix additives. Automated application systems utilizing robotics and vision are also part of what we do.



**WOOD-BASED COMPOSITES CENTER
BOOTH No. 63**

SILVER SPONSOR

Virginia Tech - Oregon State
1650 Research Center Drive (MC 0503)
Blacksburg, VA 24061

Contact: Linda Caudill
Phone: 540-231-7092
Fax: 540-231-8868
Email: lcaudill@vt.edu

Preparing and training your future professionals. A National Science Foundation Industry/University Cooperative Research Center, the WBC is the leading source for pre-competitive research and education in wood-based composites.



**WPS INDUSTRIES &
EAGLE PROJECT SERVICES, LLC
BOOTH No. 14**

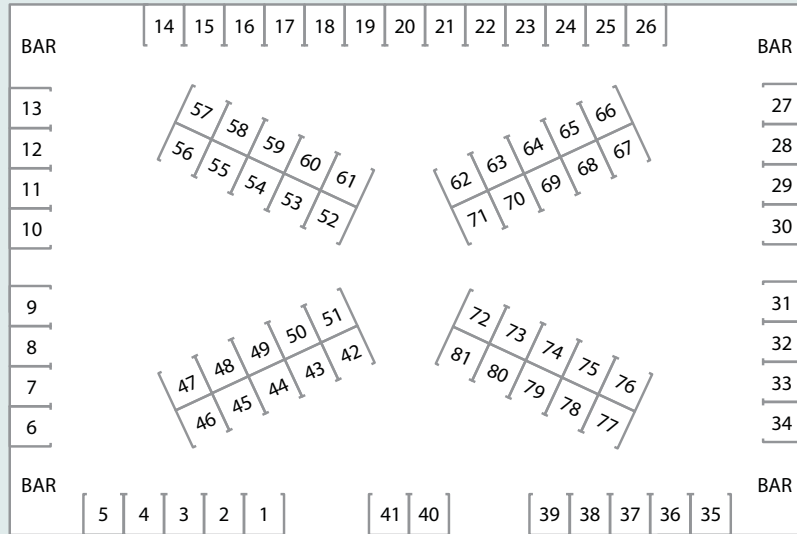
GOLD SPONSOR

228 Industrial Street
West Monroe, LA 71292

Contact: Doug Steed
Phone: 318-812-2800
Fax: 318-812-2810
Email: dsteed@wpsindustries.com

WPS is a full service fabrication and installation provider for Wood Products, Biomass, Oil & Gas, Environmental, Power and various other industries. Eagle Project Services, LLC provides detailed engineering and project management services to the same industries.

2016 EXHIBIT FLOOR PLAN



- 1 Flamex, Inc.
- 2 Spraying Systems Co.
- 3 Mill Machinery LLC
- 4 Con-Vey Keystone, Inc.
- 5 Kimwood Corporation
- 6 IMEAS Inc.
- 7 Dürr Systems, Inc.
- 8 Combilift USA
- 9 Koch Knight LLC
- 10 IMAL-PAL GROUP
- 11 Mereen-Johnson LLC
- 12 IBC, International Bar Coding Systems & Consulting Inc.
- 13 Panel World Magazine / Hatton-Brown Publishers, Inc.
- 14 WPS Industries / Eagle Project Services LLC
- 15 Itipack Systems
- 16 Argos Solutions AS
- 17 LIMAB
- 18 McLube Division, McGee Industries, Inc.
- 19 KADANT Carmanah Design
- 20 H.B. Fuller
- 21 Baumer Inspection GmbH
- 22 Lundberg
- 23 Franklin International
- 24 Panel Machinery & Controls, LLC
- 25 Dieffenbacher USA, Inc.
- 26 Guardian Chemicals Inc.
- 27 Spar-Tek Industries
- 28 ANDRITZ Inc.
- 29 USDA Forest Products Laboratory
- 30 SonicAire
- 31 InterWrap
- 32 Hunt, Guillot & Associates LLC
- 33 Biele, S.A.
- 34 Georgia-Pacific Chemicals LLC
- 35 Steinemann Technology USA, Inc.
- 36 Clarke's Industries, Inc.
- 37 Nicholson Manufacturing Ltd.
- 38 The HT Group
- 39 PFS - HAWE Hydraulik
- 40 Tebulo NA Ltd.
- 41 NESTEC, Inc.

- 42 Sweed Machinery, Inc.
- 43 Chem-Trend LP
- 44 CMA engineering Inc.
- 45 SASCO Chemical Group, Inc.
- 46 Westmill Industries USA Corp.
- 47 Signode Packaging Systems
- 48 Siempelkamp LP
- 49 BASF - We create chemistry
- 50 Player Design Inc.
- 51 Willamette Valley Company
- 52 Raute
- 53 Matthews Marking Systems
- 54 Meinan Machinery Works, Inc. / Merritt Machinery, LLC
- 55 Hexion Inc.
- 56 Ventek, Inc.
- 57 Globe Machine Manufacturing Company
- 58 Electronic Wood Systems, N.A.
- 59 REA JET
- 60 Grenzebach Corporation
- 61 ALTEC Integrated Solutions, Ltd.
- 62 AkzoNobel Wood Adhesives
- 63 Wood-Based Composites Center
- 64 Process Combustion Corporation
- 65 Connexus Industries Inc.
- 66 Wanhua Chemical (America) Co., Ltd.
- 67 TSI
- 68 Samuel Packaging Systems Group - Coding and Labeling
- 69 Samuel Packaging Systems Group
- 70 Metriguard, Inc.
- 71 Brunette Machinery Company Inc.
- 72 Ashland Specialty Ingredients
- 73 Babcock & Wilcox MEGTEC
- 74 Henkel
- 75 Evergreen Engineering, Inc.
- 76 Arclin - Performance Applied
- 77 Veneer Services, LLC
- 78 BRUKS Rockwood
- 79 USNR
- 80 Stratachem Solutions Group LP
- 81 COSTA Sanders LLC

Thank You!



- AkzoNobel Wood Adhesives
- ALTEC Integrated Solutions, Ltd.
- Arclin - Performance Applied
- Babcock & Wilcox MEGTEC
- Baumer Inspection GmbH
- Connexus Industries Inc.
- Electronic Wood Systems, N.A.
- Evergreen Engineering, Inc.
- Flamex, Inc.
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- Metriguard, Inc.
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- Siempelkamp LP
- SonicAire
- Spar-Tek Industries
- Steinemann Technology USA, Inc.
- Wanhua Chemical (America) Co., Ltd.
- Wood-Based Composites Center

Thank You!



SUPPLIER AWARDS 2016

Innovation and Excellence Highlighted

The winners of this year's Supplier Awards – which encompass the Supplier of the Year award as well as the Innovation of the Year award – will be announced at the APA Annual Meeting in Bonita Springs, Fla., in November, as well as in the Spring 2017 issue of the *Engineered Wood Journal*.

Supplier of the Year award winners are determined by a vote of APA members via email ballot before the annual meeting. Votes are cast based on Quality, Service and Delivery.

Innovation Award winners are also determined by APA member email votes, combined with in-person votes at EWTA's Info Fair during the APA Annual Meeting.

We have a record number of entries for this year's Innovation of the Year Awards. Below is a preview of the entries (in alphabetical order by company) followed by a list of the Supplier of the Year award candidates (sorted by member type). Additional information may be found on the supplier awards web page at www.engineeredwood.org/awards.

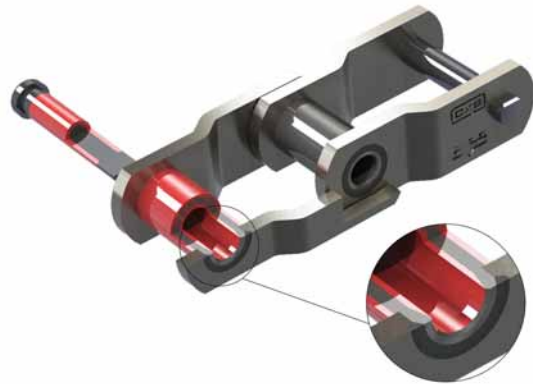


INNOVATION OF THE YEAR – ENTRY A

Connexus Welded Steel "Plus" Chain

Entered by: Connexus Industries

Description: The Connexus Welded Steel "Plus" Chain features a unique "No Seam Barrel" which eliminates premature stretch. It is welded flush on the outside of the sidebar which eliminates interference with the sprockets. This unique innovation has been proven to increase the lifespan of the chain by 30 percent on many applications, including double-strand rakeback conveyors in an OSB mill.



INNOVATION OF THE YEAR – ENTRY B

Resi-Boost (TM) Additive

Entered by: Georgia-Pacific Chemicals

Description: Resi-Boost additive for LVL and plywood reduces over-penetration of the adhesive, leaving more resin solids on the surface, thus decreasing the spreads and lowering glue usage. In addition, Resi-Boost additive cuts press times by lowering the temperatures needed for a solid bond, all resulting in cost savings.

When used in conjunction with Georgia-Pacific Chemicals wood adhesives, Resi-Boost can result in increased throughput through hot presses, reduction in the temperatures needed for effective bonds and reduction in glue usage.



INNOVATION OF THE YEAR – ENTRY C

Meinan Automated Veneer Lathe Line with Automatic Stacking and In-Line Green Veneer Composing

Entered by: Meinan Machinery Works Inc.

Description: The Meinan peeling line provides recovery improvement to lower material costs (10 percent yield increase in Douglas fir study), automation to lower labor costs (one operator runs the entire lathe line and stackers), and technology to reduce glue and energy costs (consistent peel thickness tolerance within +/- .002" to +/- .004" with less log conditioning).

Features include 3-D vision scanning of blocks with PC optimization, spindleless peeling to two-inch core with no spinouts, higher full sheet recovery, fully automated handling and sorting of random fishtails fed directly into patented green veneer composers. Composed veneer sheets are fed into the dryer instead of random size strips, reducing labor and drying costs.



INNOVATION OF THE YEAR – ENTRY D

Signode BPX Strapping Machine

Entered by: Signode Packaging Systems

Description: The BPX compression strapping system delivers maximum packaging reliability in a simple to operate and easy to use machine. Its streamlined design with innovative, built-in features enables faster cycle times and more consistent package performance.

Unlike other systems, the BPX pre-folds edge protectors prior to placing them on the load to ensure consistent strap tension. Battens are precisely delivered to the load and held securely in place until strapping has concluded.



INNOVATION OF THE YEAR – ENTRY E

Sweed Versatile Veneer Stacker

Entered by: Sweed Machinery

Description: The core functionality of Sweed's stacker is based on proven technology with an added major innovation: the Versatile Veneer Stacker uses adjustable dual plenums, which allow the stacker to easily and efficiently adjust to multiple lengths of veneer. Sweed's adaptable solution keeps the stacker concept simple and makes changing over (from one length to the next) as easy as a push of a button.

Sweed's innovative and efficient solution to multiple lengths also applies to standard length operations. The even-enders are infinitely adjustable, giving the operator flexibility to move or adjust the plenum as needed, maximizing the ability to maintain a clean stack. With adjustable plenums there are no extra knockdowns or valves. This optimizes the standard quantity of components, while still allowing complete adjustability.



INNOVATION OF THE YEAR – ENTRY F

Dynamic Wood Equilibration Control for Veneer Dryer

Entered by: USNR

Description: The Dynamic Wood Equilibration Control for Veneer Dryer balances the volume of humidity in the veneer dryer, despite the unique moisture content of each veneer sheet.

Both ends of the dryer are equipped with proprietary modulating controls that effectively seal the dryer under all normal operating modes. In addition, dry veneer moisture sensors modulate the speed of the conveyor chains, effectively varying the rate that moisture enters the drying chamber. The result is incredibly uniform drying across the full range of veneer thicknesses and species.

Benefits include higher quality, more uniform moisture content veneer; significant reduction in thermal and electrical energy costs; 25-35 percent reduction in labor costs; and 10-20 percent reduction in dryer exhaust to treat.



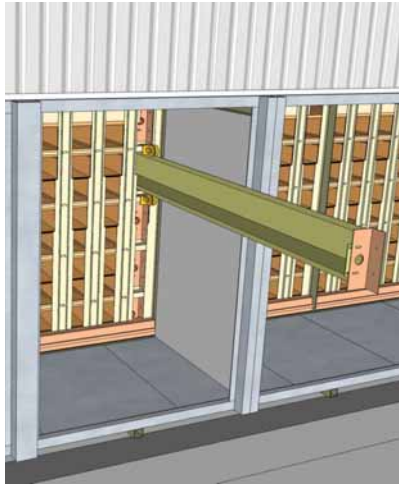
INNOVATION OF THE YEAR – ENTRY G

Removable Roll Baffle System (Patent Pending)

Entered by: Westmill Industries USA Corp.

Description: Westmill's new Removable Roll Baffle design not only provides a superior seal, but also provides users with a quickly replaceable roll baffle (stop-off wall) with the ability to change baffles in only minutes – not hours.

Benefits include a reduction in in-plant dryer emissions while helping meet OSHA requirements for Workers Environmental Safety. Measureable benefits include energy savings, improved veneer quality, reduced fire risk, in-plant emissions and dryer downtime.



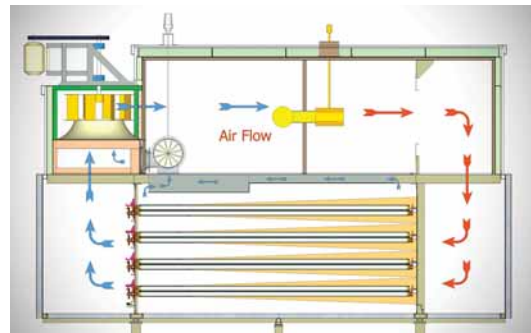
INNOVATION OF THE YEAR – ENTRY H

WestVac Veneer Dryer Emission & Control System (Patent Pending)

Entered by: Westmill Industries USA Corp.

Description: Westmill's WestVac Dryer Emission and Control System is a very cost effective means of sealing the entire veneer dryer and improving overall veneer dryer performance without the need of using a separate exhaust fan or auxiliary heat source as required on other systems.

This is done by effectively controlling the pressure at the ends of the dryer in order to keep gases from leaking either into or out of the dryer itself. The result is a high-humidity drying environment. The system does not remove emissions from the veneer dryer. Instead, Westmill has developed its innovative and revolutionary Re-Intro-Duct™ Technology which eliminates the need of using a costly seal-section exhaust fan combined with an auxiliary heat source.

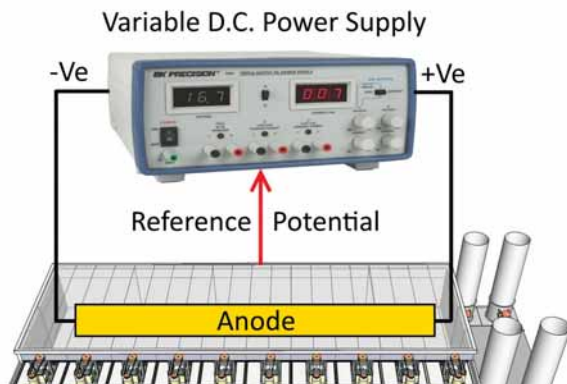


INNOVATION OF THE YEAR – ENTRY I

Whole Dryer Impressed Current Cathodic Protection System (Patent Pending)

Entered by: Westmill Industries USA Corp.

Description: Westmill's Impressed Current Cathodic Protection System provides an effective and permanent means of corrosion protection over an entire veneer dryer. The system protects a wide range of metallic structures in extremely varied environments. ICCP is not experimental, it is a proven technology. It has been successfully used for decades in many industries. The protected structure becomes cathodic, thus suppressing the electronic migration of metal and virtually eliminating corrosion altogether from occurring. This is critical to providing effective and extremely long-term protection to susceptible structures.



INNOVATION OF THE YEAR – ENTRY J

Wil-Spray 500

Entered by Willamette Valley Company

Description: Wil-Spray 500 is a water-based, odorless spray adhesive eliminating the need for staples/hot melt to affix overlays to veneer in the matching process. A superior bond between the overlay and veneer is achieved with a larger bond area reducing overlay damage during layup process. It has enabled automation of the matching process, reducing labor and eliminating strenuous actions.

Customers have quantified increased production, reduced fall down, and reduced product cost associated with this product. Automation has been developed for this process through the use of spray guns and automatic spray systems.





Siempelkamp

ContiRoll® generation



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- unmatched accuracy
- unmatched flexibility

Siempelkamp – Leadership in technology

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 (all EWTA members):

Consulting/Services (10)

Casey Industrial, Inc.	Nondestructive Inspection Service
CMA engineering Inc.	Panel World Magazine/Hatton-Brown Publishers, Inc.
Evergreen Engineering, Inc.	The HT Group
Hunt, Guillot & Associates LLC	University of Tennessee, Center for Renewable Carbon
KTC Panelboard Engineering	
*Mid-South Engineering Company	

Equipment/Tooling (66)

ALTEC Integrated Solutions, Ltd.	Kimwood Corporation
ANDRITZ Inc.	LIMAB
Argos Solutions AS	Lundberg
Babcock & Wilcox MEGTEC	Matthews Marking Systems
Baumer Inspection GmbH	Meinan Machinery Works, Inc.
Biele, S.A.	Mereen-Johnson LLC
BRUKS Rockwood	Metriguard, Inc.
Brunette Machinery Company Inc.	Mill Machinery LLC
Clarke's Industries, Inc.	NESTEC, Inc.
Coil Manufacturing, Ltd.	Nicholson Manufacturing Ltd.
Columbia River Staple & Lumber Wrap, Inc.	PFS - HAWE Hydraulik
Combilift USA	Pallmann Industries, Inc.
Connexus Industries Inc.	Panel Machinery & Controls, LLC
Con-Vey Keystone, Inc.	Paslode
COSTA Sanders LLC	*Player Design Inc.
*Cross Wrap Ltd.	Process Combustion Corporation
Dieffenbacher USA, Inc.	Raute
*Dürr Systems, Inc.	REA JET
Electronic Wood Systems, N.A.	Samuel Strapping Systems
ESOT	Siempelkamp LP
Flamex, Inc.	Signode Packaging Systems
Globe Machine Manufacturing Company	Spar-Tek Industries
GreCon	Spraying Systems Co.
Grenzebach Corporation	Steinemann Technology USA, Inc.
H.B. Fuller	Sweed Machinery, Inc.
IBC, International Bar Coding Systems & Consulting Inc.	Tebulo NA Ltd.
IES - Integrated Environmental Solutions	TIP - The Industry Pivot
SonicAire	TSI
IMA America, Corp. and Schelling America Inc.	USNR
IMAL - PAL GROUP	Venango Machine Company, Inc.
IMEAS Inc.	Veneer Services, LLC
*Itipack Systems	Ventek, Inc.
KADANT Carmanah Design	Westmill Industries USA Corp.
	WPS Industries / Eagle Project Services LLC

Materials & Supplies (39)

AkzoNobel Wood Adhesives
Albany International
Arch Wood Protection, Inc.
Arclin - Performance Applied
Ashland Specialty Ingredients
BASF - We create chemistry
Chem-Trend LP
Clarke Veneers and Plywood
Covestro LLC
*Dominion Chemical Company, Inc
Eastman Chemical Company
Engineered Coated Products, a division of Intertape Polymer Group
*Franklin International
Fusoni U.S.
Georgia-Pacific Chemicals LLC
Guardian Chemicals Inc.
Henkel
Hexion Inc.
Huntsman Polyurethanes
Idemitsu Lubricants America Corporation
InterWrap
JAX, Inc.
Kalesnikoff Lumber Co.
*Koch Knight LLC
*Kop-Coat, Inc.
McLube Division, McGee Industries, Inc.
Michelman
OCI Melamine
Paneltech
Permapost
SASCO Chemical Group, Inc.
Stratachem Solutions Group LP
*surfactor Americas LLC
US Borax Inc.
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Willamette Valley Company
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ADVANCED ANALYTICS

Using Big Data to Improve Your Company's Competitiveness

by Timothy Young

We live in a world where electronic transactions for business are commonplace and occurring at ever-increasing rates. Nearly everyone reading this article has a smart phone of some type and most people conduct some type of business every day – whether it's shopping, searching for information or summoning a car – using a software app. Some now define our society as a digital society made of digital citizens.

The terms “big data” and “advanced analytics” are often used when discussing the workings of a vast number of successful companies, including Google, Amazon, FedEx and Netflix. Almost everyone has used one or more of these companies in conducting personal or company business. Many highly successful companies collect large amounts of data and use mathematical and statistical algorithms, or “pragmatic algorithms,” to enhance revenues and improve profitability while

focusing on lowering costs. The financial business sector uses “financial engineering” to conduct automated business transactions at ever-increasing speeds.

The engineered panel industry, while using forward-thinking technology in many capacities, has largely lagged behind in its efforts to fully embrace big data and advanced analytics to increase competitiveness. Are we trying to drive our processes by looking in the rearview mirror?

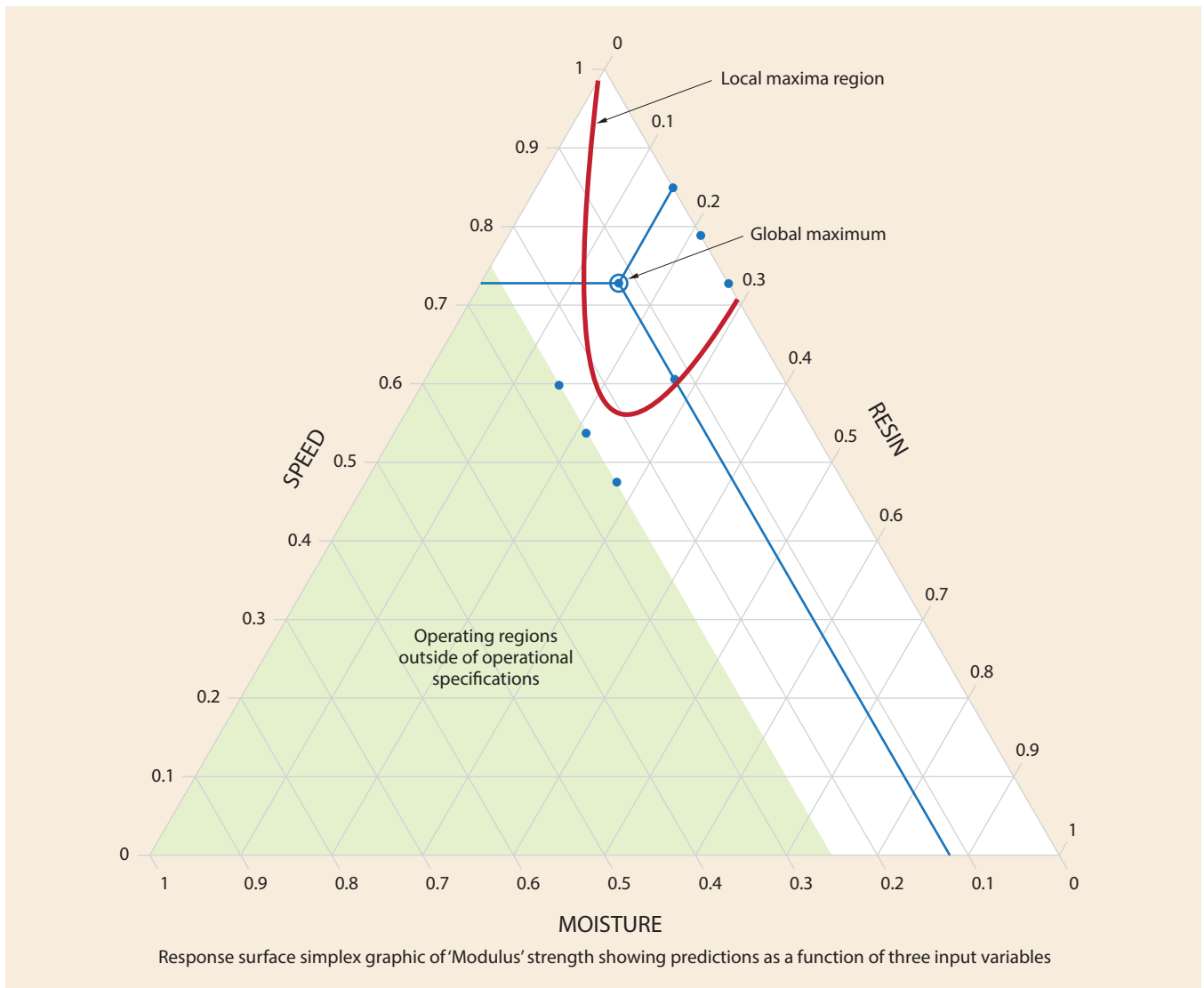


Image courtesy of Tim Young

This graph, a “ternary plot,” represents optimum settings to maximize modulus for three process inputs: line speed, moisture and resin, with the maximum conditions highlighted at the cross hairs.

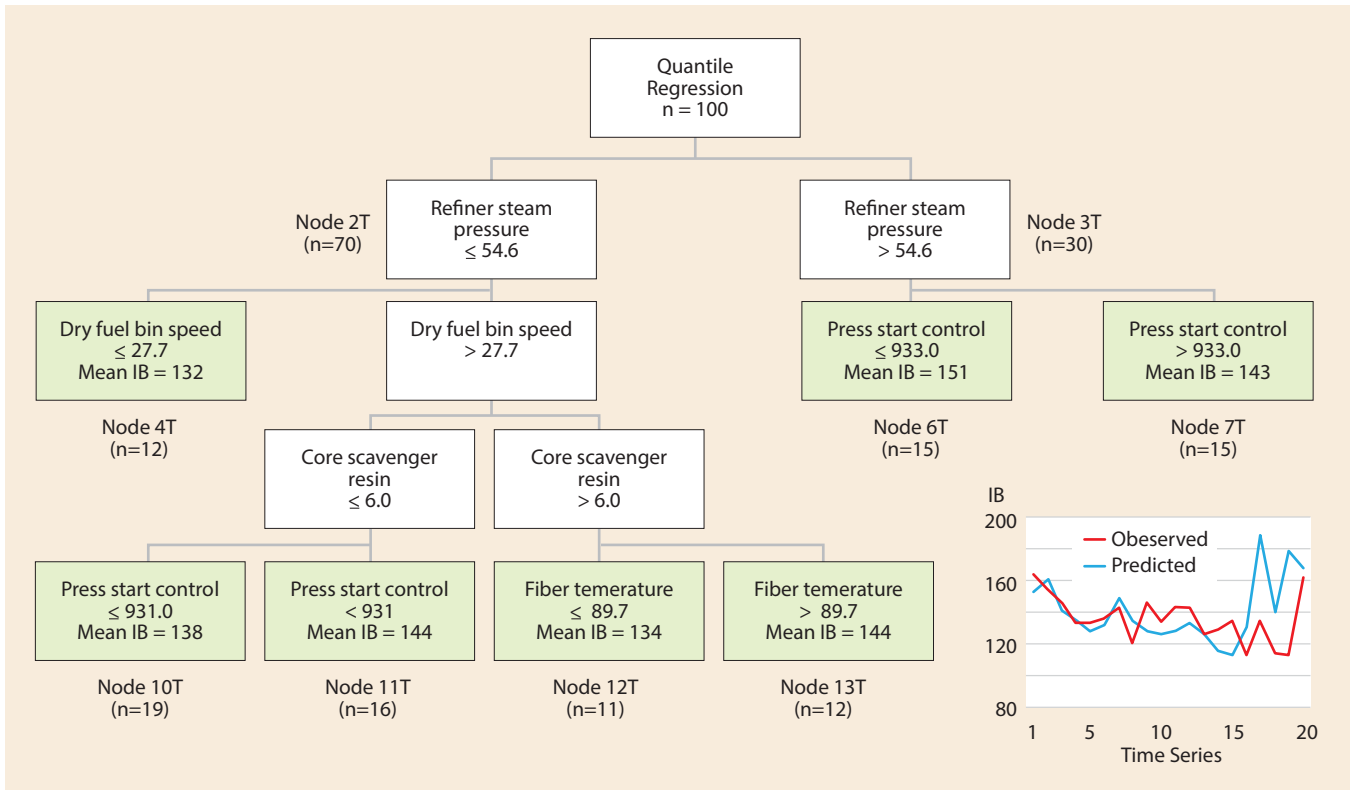


Image courtesy of Tim Young

This graph is a regression tree that explains interactions of process variables that lead to different levels of internal bond (IB). Actual IBs and predicted IBs are represented on the graph in the lower right-hand corner.

Simple Data Reporting: Is it Enough?

For more than two decades, plants that manufacture engineered panel products have used real-time data warehousing to monitor processes. Technical labs have software databases documenting the quality of product. The business functions of accounting and marketing have adopted improved software systems for business transactions, SAP business software, etc. Control rooms in plants have increased their visualization of data by adding larger and more monitors. Some companies have control rooms that have such a large array of monitors that they resemble a stock exchange or space-agency launch control room.

Most companies have built smart phone applications for management that allow them to monitor both business transactions and process performance. However, has the increased visualization of data from online sensors led to more effective decision-making by the operations personnel in the control room? Has improved decision-making by operations

kept pace with the large databases and advanced analytics? Perhaps it is time for the engineered panel industry to transition from simple data reporting and rethink how it uses big data and advanced analytics to continually improve competitiveness and business performance. Which brings us to the question: How?

Barriers to Advanced Analytics

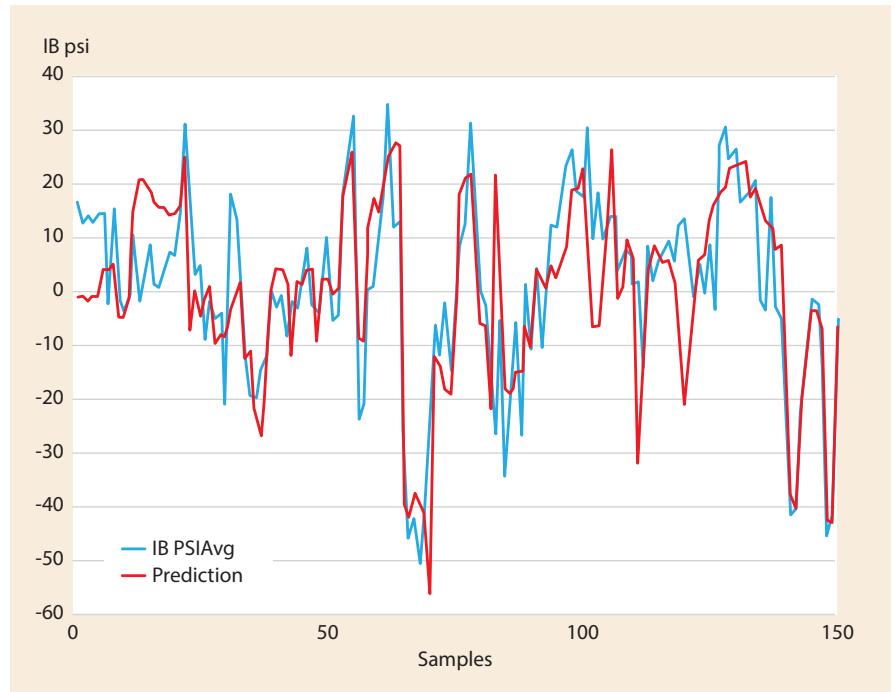
There are several barriers that exist for many engineered panel companies that inhibit the use of advanced analytics as a tool to improve product quality and lower costs of manufacturing. A key barrier is the creation of a relational database that fuses the data from the process data warehouse with the data from the testing lab. Unfortunately, a key constraint for creating this relational database is that the process data warehouse exists on the process network, and the testing lab database exists on the business network – separated by a firewall. Even though the software technology for communicating across these networks is trivial, the barrier against this merger of networks

Getting Started Using Advanced Analytics

- Define the goal and create the right team of people. Get permissions from executive-level IT managers.
- Define services and key attributes of products that define customer value
- Define key process parameters you think are aligned with key attributes of products
- Make sure you have a hardware server dedicated only for advanced analytics.
- Create the relational database.
- Start the data mining effort for advanced analytics.
- Develop a reporting structure (keep it simple as related to the goal – such as “on-time arrivals”).
- Develop a one-page report that everyone in the organization can understand.
- Bottom-line: How do the metrics of the report relate to customer value and improved business performance?

is sometimes due to protective corporate policies. Companies like Google, Amazon, FedEx, Apple, Microsoft, and others, have long ago overcome restrictive company policies that hinder improved decision-making.

Another barrier that must be overcome is improper time alignment of the sensor data stored in the process data warehouse. Material flow in the engineered panel manufacturing process from the wood yard to the pressing stage passes across many sensors at different times relative to the time the panel is pressed into a final product. Unfortunately, the process data warehouse sets the time stamp collected from the sensors at periodic intervals (five minutes) or at delta-change (i.e., only stores data when a value changes). This improper time alignment is a barrier to more advanced analytics and makes it difficult for operations personnel to go beyond basic trend analyses; which are useful, but are subjective and dependent on experience level. This time alignment problem of sensor data is compounded by the lack of accurate time stamps on panels that are pulled from the production line for testing. Both of these problems are easily overcome with the use of software technology that aligns the process data in time as a function of the line speed or pressing cycle. Accurate time stamping of lab test boards can easily be automated at the sampling location on the process line.



This graph represents real-time predictions of IB (red) and actual IB (blue) for multiple product groups displayed as a standardized prediction accounting for variations in scale associated with IB for different products.

Image courtesy of Tim Young

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A relational database of the process and lab data can result in an immediate and significant improvement in knowledge of sources of variation by highlighting new data patterns and establishing a platform for predictive capabilities through analytics. Improved knowledge of sources of variation and enhanced predictive capabilities can result in less reject of product, a reduction of order rescheduling, lower manufacturing costs, and optimal operations targets for weight, resin, etc.; all of which result in improved business performance.

Potential Benefits of Advanced Analytics

Once a relational database has been created, it offers many potential benefits for the organization. Given the advanced capabilities of analytical software and its relatively low cost, improved knowledge of the process can be gained through data visualization and correlations which may also lead to more advanced predictive statistical models of key process parameters (time to closure, weight variation, etc.) and product quality attributes (CSL, modulus, thickness swell, etc.). This goes far beyond trend analyses, and offers additional “root-cause analysis” benefits to enhance statistical process control analyses. Advanced analytics is a business strategy for successful companies of the future. Many companies outside the engineered wood panel industry now have executive positions within the organization to drive analytics-based decision making throughout the organization.

So why not create a relational database of your process? The cost is relatively low given that once the software code is created, the data fusion process is automated. A relational database of key process parameters and product attributes opens up a panacea of benefits for advanced analytical analysis. Advanced analytics is a gateway for lower costs of manufacturing, improved product value and overall improved business competitiveness. 

Timothy M. Young, Ph.D, is a professor at the University of Tennessee's Center for Renewable Carbon. He can be reached at tmyoung1@utk.edu.

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STAYING SAFE

2015 APA Safety Awards Honor Manufacturers

APA – The Engineered Wood Association announced the winners of its 2015 Safety and Health Awards, a program that encourages and recognizes safety and operational excellence in the North American structural panel and engineered wood industry.

Abitibi LP Engineered Wood and LP won Safest Company Awards in their respective categories, while the coveted Innovation in Safety Award went to two winners: LP of Jasper, Texas, for the Equipment-Based Innovation Award, and Boise Cascade of Kettle Falls, Wash., for the Jeff Wagner Process-Based Innovation Award.

LP, a producer of engineered wood products in Canada, the U.S., and South America, earned top honors among companies with four or more mills, with a 2015 average Weighted Incident Rate (WIR) of 2.27. Abitibi LP Engineered Wood, which produces I-joists at mills in Larouche and Saint Prime, Quebec, won its award in the category for companies with three or fewer mills. The company posted a perfect 0.00 WIR for 2015.

The Jasper LP mill's original "Secure Clamp for Saw Chain Lifting" equipment innovation and the Kettle Falls Boise Cascade mill's "Safety Performance Recognition Program" took top honors out of 23 Innovation in Safety Award entries. The idea for the "Secure Clamp for Saw Chain Lifting" came from a millwright who witnessed a lifting sling break during change-out of crosscut saw chains. He fabricated a device that clamps securely to the chain and provides a proper connecting point for the lifting sling, making changing chains safer and faster, too.

"Safety Performance Recognition Program," the Kettle Falls Boise Cascade site's entry, is a new initiative that ties safety reporting to charitable contribu-

tions. The company agreed to donate 25 cents to a local charity for every quality safety observation form ("All-in-One" card) submitted by employees. The program proved to be both popular with employees and successful in achieving its goals. Employee participation in safety

reporting more than doubled for the year, and the mill had a good safety record for 2015, reporting the second-lowest incident rate in 10 years. The community at large also benefitted from the program, with Boise Cascade distributing \$5,300 in donations to charities in 2015.

Continued on page 58

INCIDENT FREE HONOR SOCIETY	Product	WIR*	TIR**
Abitibi – LP Engineered Wood <i>Saint Prime, QC</i>	IJ	0.00	0.00
Abitibi – LP Engineered Wood <i>Larouche, QC</i>	IJ	0.00	0.00
Norbord <i>Cordele, GA</i>	OSB	0.00	0.00
LP Brasil <i>Ponta Grossa, PR</i>	OSB	0.00	0.00
LP <i>Thomasville, AL</i>	OSB	0.00	0.00
LP <i>Carthage, TX</i>	OSB	0.00	0.00
LP <i>Panguipulli, Chile</i>	OSB	0.00	0.00
LP <i>Tomahawk, WI</i>	OSB	0.00	0.00
Louisiana-Pacific Canada Ltd. <i>Dawson Creek, BC</i>	OSB	0.00	0.00
Norbord <i>Guntown, MS</i>	OSB	0.00	0.00
Norbord Joanna <i>Kinards, SC</i>	OSB	0.00	0.00
LP <i>Houlton, ME</i>	SCL	0.00	0.00
Norbord <i>Jefferson, TX</i>	OSB	0.00	0.00
Louisiana-Pacific Canada Ltd. <i>Maniwaki, QC</i>	OSB	0.00	0.00
Boise Cascade Company <i>St-Jacques, New Brunswick</i>	IJ	0.00	0.00
LP <i>Red Bluff, CA</i>	IJ	0.00	0.00
Anthony Forest Products Co. <i>Washington, GA</i>	Glulam	0.00	0.00

* Weighted Incident Rate (WIR)

** Total Incident Rate (TIR)

APA Safety and Health Advisory Committee Members

Greg Ellisor, Chairman
Weyerhaeuser

Terry Evans, Vice-chairman
Boise Cascade Company

Perry Dalmer
Tolko Industries Ltd.

Keith Harned
LP

Bryan Kimball
Murphy Company

John Myers
Roseburg Forest Products Co.

Sam Newbill
Hood Industries, Inc.

Peter Quosai
Norbord

Terry Secrest
RoyOMartin



INNOVATION IN SAFETY AWARD

**Equipment-Based
Innovation Winner:**

LP – Jasper, TX
“Secure Clamp for Saw Chain Lifting”

**Jeff Wagner Process-Based
Innovation Winner:**

Boise Cascade Company – Kettle Falls, WA
“Safety Performance Recognition Program”

SAFEST COMPANY AWARDS

	AVERAGE WIR	AVERAGE TIR
Abitibi - LP Engineered Wood (Companies with three or fewer member mills)	0.00	0.00
LP (Companies with four or more member mills)	2.27	0.56

ANNUAL SAFETY AND HEALTH HONOR ROLL

Division I (Plywood)	WIR	TIR
1st Place RoyOMartin – Chopin, LA	3.70	0.69
2nd Place LP Brasil – Ponta Grossa, PR	6.65	1.85
Division II (OSB)	WIR	TIR
1st Place Norbord – Cordele, GA	0.00	0.00
2nd Place Louisiana-Pacific Canada Ltd. – Fort St. John, BC	0.00	0.00
Division III (Glulam, I-Joist and SCL)	WIR	TIR
1st Place LP – Houlton, ME	0.00	0.00
2nd Place LP – Red Bluff, CA	0.00	0.00

THREE-YEAR SAFETY AWARD (2012-2014)

Division I (Plywood)	Avg. WIR	Avg. TIR
RoyOMartin – Chopin, LA	3.86	0.83
Division II (OSB)	Avg. WIR	Avg. TIR
LP – Panguipulli, Chile	0.00	0.00
Division III (Glulam, I-Joist and SCL)	Avg. WIR	Avg. TIR
Abitibi - LP Engineered Wood – Saint Prime, Quebec	0.00	0.00

SAFETY IMPROVEMENT AWARD (2012-2014)


Division I (Plywood)						
Boise Cascade Company – Elgin, OR						56.94% Improvement
2013 WIR	2014 WIR	2015 WIR	203 TIR	2014 TIR	2015 TIR	
27.45	19.42	11.82	4.33	5.55	1.42	
Division II (OSB)						
Norbord, Joanna – Kinards, SC						100% Improvement
2013 WIR	2014 WIR	2015 WIR	2013 TIR	2014 TIR	2015 TIR	
10.01	6.76	0.00	1.88	1.23	0.00	
Division III (Glulam, I-Joist and SCL)						
– No mill qualified for award						

Begun in 1982, the APA awards program honors the managements and employees of companies and mills with the lowest Weighted Incident Rate (WIR) that is calculated using the number and severity of recordable incidents reported on the mill's annual OSHA (Occupational Safety and Health Administration) report. Since 2008 was the first year that WIR was used, awards and reports for 2009 through 2015 continue to also show Total Incident Rate (TIR), the measure used in previous years.

Seventy-one APA-member structural wood panel and engineered wood product facilities in the U.S., Canada, and abroad participated in the 2015 program. A total of 23 facilities representing eight APA member companies – Abitibi LP Engineered Wood, Anthony Forest Products Co., Boise Cascade Company, Louisiana-Pacific Canada Ltd., LP, Norbord, Potlatch, and RoyOMartin – earned awards in various competition categories. Some of the mills were multiple award winners. See the complete list on page 57 for more details.

In addition to the Safest Company and Innovation awards, other competition categories include Safety Improvement, Annual Safety and Health Honor Roll, Three-Year Safety Award, and Incident Free Honor Society. Seventeen mills achieved a zero incident rate for the year and thus were named to the 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.

While the program awards are limited to APA members, data is collected from both member and non-member mills in order to provide a broad-based industry performance benchmark. A total of 71 mills reported data for 2015. The 2015 industry Total Incident and Weighted Incident Rates were 2.34 and 11.25, respectively.

The winning facilities and companies will be recognized and their safety accomplishments celebrated during the Chairman's Dinner at APA's annual meeting in November in Bonita Springs, Fla. Award plaques also will be presented to the winning mills by senior APA management staff. 

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Departing APA Trustees Honored at Board Meeting



Allyn Ford



Don Grimm



Tom Ray

Three departing APA Trustees were recently honored at a meeting of the APA Board of Trustees. Don Grimm, outgoing president of Hood Industries, retired in June and is leaving the APA Board. During his 12 years on the APA Board, Grimm served on the APA Retirement Committee, was chair of the APA Finance Committee and most recently served as vice-chair.

Allyn Ford, president of Roseburg Forest Products, is also retiring and resigned from the APA Board of Trustees after 10 years of service.

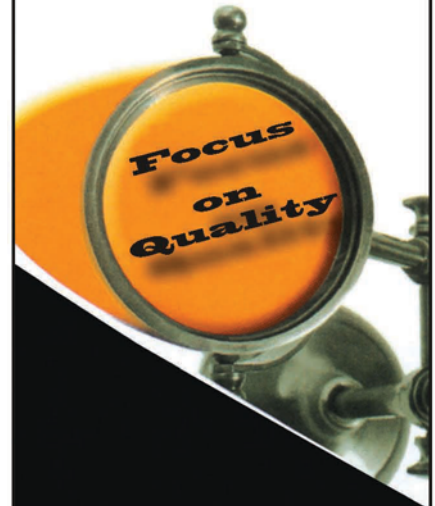
Tom Ray, vice president for Northwest resources and manufacturing for Plum Creek, left the APA Board with the acquisition of Plum Creek by Weyerhaeuser. Ray was a member of the APA Board for six years and served on the APA Retirement Committee.

“We appreciate the commitment that these gentlemen have made to this industry and thank them for the time and leadership they have provided to the Association,” said APA Chairman Mark Luetters.

EWTA Committee Member Promoted at Roseburg

Steve Killgore, former vice president of sales and marketing at Roseburg Forest Products, has been named vice president of the company’s solid wood business and marketing. In this role, he will be

responsible for all aspects of the solid wood business including sales and manufacturing of lumber, plywood and engineered wood products. Killgore also serves on the EWTA Advisory Committee and was recently elected to the APA Board of Trustees.



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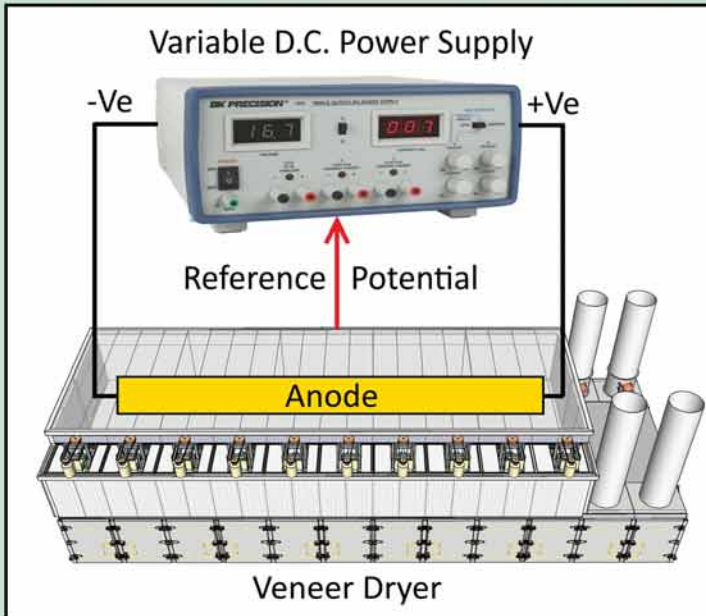
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Contact Information:
Timothy M. Young Ph. D.
The University of Tennessee
2506 Jacob Drive
Knoxville, TN 37996
865.946.1119
tmyoung1@utk.edu

WESTMILL Announces 3 Important Innovations

After investing heavily in R & D over the past years, Westmill is very excited to make the first official public disclosure about three new - **Patents Pending** Innovations. Each of these systems is in operation today and has proven itself very effective.

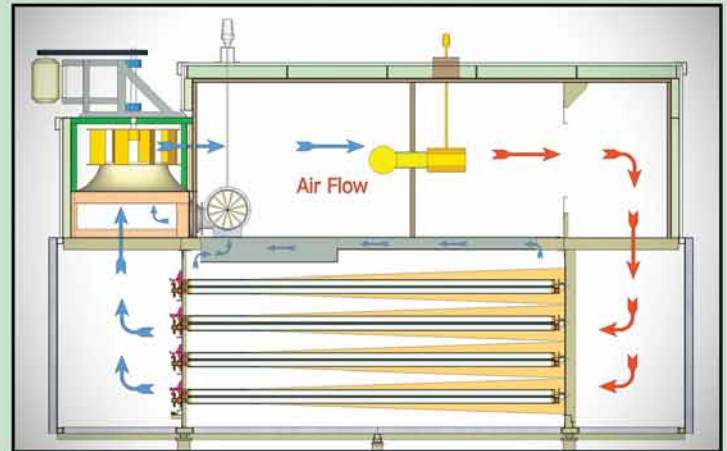
Veneer Dryer 'ICCP' - Impressed Current Cathodic Protection System



System Benefits:

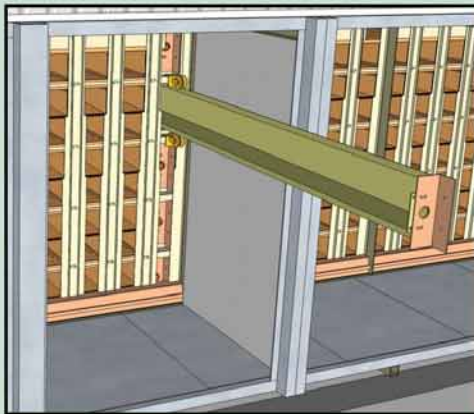
- Veneer Dryer Corrosion Protection

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- Greatly increased dryer production
- Retrofittable onto new or existing Jet Dryers



Removable Roll Baffle System

System Benefits:

- Reduce in-plant dryer emissions
- Help meet workers environmental air-regulations
- Energy savings, fire risk reduction
- Pitch and voc reduction
- Retrofittable onto existing jet dryers
- Replace Roll Baffles in minutes vs. hours without having to remove jet tubes or dryer rolls.

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EWTA Welcomes New, Returning Members

EWTA recently welcomed seven new companies as members:

- **Cross Wrap Ltd.** (www.crosswrap.com), based in Siilinjärvi, Finland, specializes in manufacturing board packaging lines for MDF, plywood, veneer, cement fiber board and other board manufacturers. Sales Director Kalle Kivelä can be reached at kalle.kivela@crosswrap.com.
- **Dominion Chemical Company Inc.** (www.dominionchemical.com) is based in Petersburg, Va. The company blends, packages and creates specialty wax formulations. Vice-president Maclin Ferrell can be reached at maclinferrell@dominionchemical.com.
- **Dürr Systems Inc.** (www.durr-cleantechnology.com) is based in Southfield, Mich., and supplies solutions – from planning to implementation to service – to reduce emissions in diverse industry sectors, including the wood processing industry. Account Manager Scott Brayton can be reached at scott.brayton@durrusa.com.
- **Franklin Adhesives & Polymers** (www.franklinadhesivesandpolymers.com) is based in Columbus, Ohio. The company – a division of Franklin International – manufactures adhesives for the domestic and global wood furniture, millwork and engineered-lamination markets. Business Development Manager Joshua Bartlett can be reached at joshbartlett@franklininternational.com.
- **Itipack Systems** (www.itipacksystems.com), a returning member, is based in Burlington, Ontario, Canada. The company is a manufacturer and integrator of custom strapping and robotic equipment for the lumber and panel industry worldwide. Arnold Hulzebosch can be reached at ahulzebosch@itipacksystems.com.
- **Koch Knight LLC** (www.kochknight.com), based in Canton, Ohio, is a domestic manufacturer and global leader in RTO ceramic media. The company's GR™ (Glazed Resistant Alumina) material is used for OSB dryer applications and the wood products industry. Skip Anderson can be reached at james.anderson@kochknight.com.
- **Kop-Coat Inc.** (www.kop-coat.com), a returning EWTA member, is based in Pittsburgh, Penn., and offers patented wood protection technologies against termites, decay, mold, stain and weather damage. Sales and Product Specialist Josiah Wilfong can be reached at jwilfong@kop-coat.com.
- **Mid-South Engineering Company** (www.mseco.com) is based in Cary, N.C., and is a full-service, consulting engineering firm that provides a broad range of professional engineering services with a particular expertise within the forest products industry. Vice-president Scott Stamey can be reached at [sstamey@mseco.com](mailto:ssstamey@mseco.com).
- **Player Design Inc.** (www.playerdesign.net) is based in Presque Isle, Maine, and offers complete drying island packages including equipment supply, design and installation. President Tyler Player can be reached at tyler@playerdesign.net.
- **surfactor Americas LLC** (www.surfactor.com) is based in Lacey, Wash., and custom designs phenolic, melamine and other resins for use in state-of-the-art impregnation processes to meet specific customer needs. President Roy Nott can be reached at roy.nott@surfactor.com.

Evergreen Engineering Opens Atlanta Branch Office

Eugene, Ore.-based Evergreen Engineering has opened a branch office in Atlanta, Ga., to pursue opportunities in the southeastern U.S. The Atlanta office, located at 8607 Roberts Dr., will begin with 10 employees and is expected to grow.

Electronic Wood Systems Announces New Division

Electronic Wood Systems and Electronic Wood Systems North America recently announced the establishment of its new Technology Wood-Based Composites division, which will combine competencies in wood-based composites technology; measuring systems and corresponding physical background; and data analysis and evaluation. The creation of the division is in response to the increasing integration of technology in the manufacturing environment. Konrad Solbrig is the director of the new division.

ALTEC Acquires Demco Manufacturing

Vancouver, B.C.-based Altec Integrated Solutions recently announced that it has acquired Demco Manufacturing Inc. of Diboll, Texas. The acquisition adds significant fabrication and machining capacity to Altec's growing list of capabilities. Altec recently moved to a new 22,000-sq.-ft. facility with 8,000 sq. ft. of office space and 14,000 sq. ft. of warehouse and shop space. Demco's 28,000-sq.-ft. facility includes a machine shop, fabrication facilities, warehouse

and office space. The company designs, manufactures and services parts and equipment primarily for the wood-based panel industry.

SonicAire Fan Finalist For IWF Achievement Award

The SonicAire 2.0 fan was named a finalist – one of 21 out of 76 total entries – in the 2016 Challengers Distinguished Achievement Award, presented by the International Woodworking Fair. The award is bestowed annually to companies that have developed innovative technology for the woodworking industry. The fan is made by SonicAire (www.sonicaire.com) and was created to address the challenges of combustible sawdust in mills.

USNR Opens Facility In Jacksonville

USNR recently announced that it has opened a new facility in Jacksonville, Fla. It is located on 10 acres of land and offers more than 150,000 sq. ft. of flexible

manufacturing and warehousing space, as well as a large office complex for the company’s Jacksonville-based sales, engineering, project management, service

and operations personnel. The offices also include a new training center, with facilities to host customers and provide technical training.

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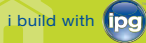
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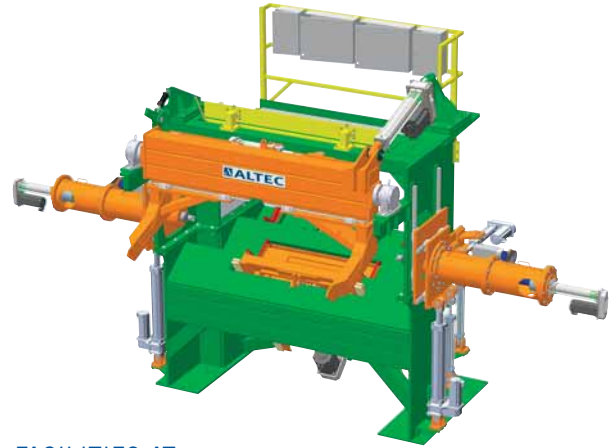
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2016

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- 11-13** Southern Oregon Occupational Safety and Health Conference, Ashland, Ore., www.orosha.org
- 13** WoodWorks Mid-Atlantic Wood Solutions Fair, Philadelphia, Pa., www.woodworks.org
- 19-21** Southern Forest Products Association 2016 Annual Meeting, Williamsburg, Va., www.sfpa.org
- 25-26** Fourth International Processing Technologies for the Forest and Bio-based Products Industries Conference, St. Simons Island, Ga., www.forestprod.org
- 26-28** Under 40 Leadership Summit – Building Design + Construction, Chicago, Ill., www.bdcnetwork.com
- 26-28** North American Wholesaler Lumber Association (NAWLA) Traders Market 2016, Las Vegas, Nev., www.nawla.org

NOVEMBER

- 1-3** 2016 North American Association of Floor Covering Distributors + North American Building Materials Distribution Association Annual Convention, Chicago, Ill., www.distributorconvention.org
- 2** WoodWorks Central Florida Wood Solutions Fair, Orlando, Fla., www.woodworks.org
- 5-8** APA Annual Meeting and EWTA Info Fair, Bonita Springs, Fla., www.apawood.org, www.engineeredwood.org/info-fair
- 29-12/2** Western Pulp, Paper and Forest Products Safety and Health Conference, Portland, Ore., www.http://osha.oregon.gov/conference/

2017

JANUARY

- 10-12** National Association of Homebuilders International Builders' Show 2017, Orlando, Fla., www.buildersshow.com

MARCH

- 7-9** WoodMac China 2017, Shanghai, China, woodmacchina.net

APRIL

- 27-29** American Institute of Architects Convention 2017, Orlando, Fla., convention.aia.org
- 30-5/3** Composite Panel Association Spring Meeting, Los Cabos, Mexico, www.compositepanel.org

MAY

- 22-26** LIGNA: World Fair for the Forestry and Wood Industries, Hannover, Germany, www.ligna.de

JUNE

- 26-28** Forest Products Society 71st International Convention, Starkville, Miss., www.forestprod.org

To contact our editorial department:

Mail: 7011 So. 19th Street, Tacoma, WA 98466
 Phone: 206-784-5989
 Fax: 253-620-7245
 E-mail: scain@engineeredwood.org

For rate or other advertising information, contact:

Melinda Lilley
 253-620-7493
mlilley@engineeredwood.org

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For EWTA membership information:

Contact Terry Kerwood, 253-620-7237, terryk@engineeredwood.org.

For Info Fair exhibiting information, contact:

Melinda Lilley
 253-620-7493
mlilley@engineeredwood.org

For APA member product questions or assistance:

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