

# Engineered Wood

FALL 2010

# JOURNAL



## ARIZONA RENDEZVOUS

APA Annual Meeting and  
Info Fair Preview

## DETECTING DEFECTS

Online Bond Analyzing  
For Quality Panel Production

## TOPS IN SAFETY

Sixteen Mills Earn Safety Awards

THE OFFICIAL PUBLICATION OF THE ENGINEERED WOOD TECHNOLOGY ASSOCIATION



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list for I-Joists

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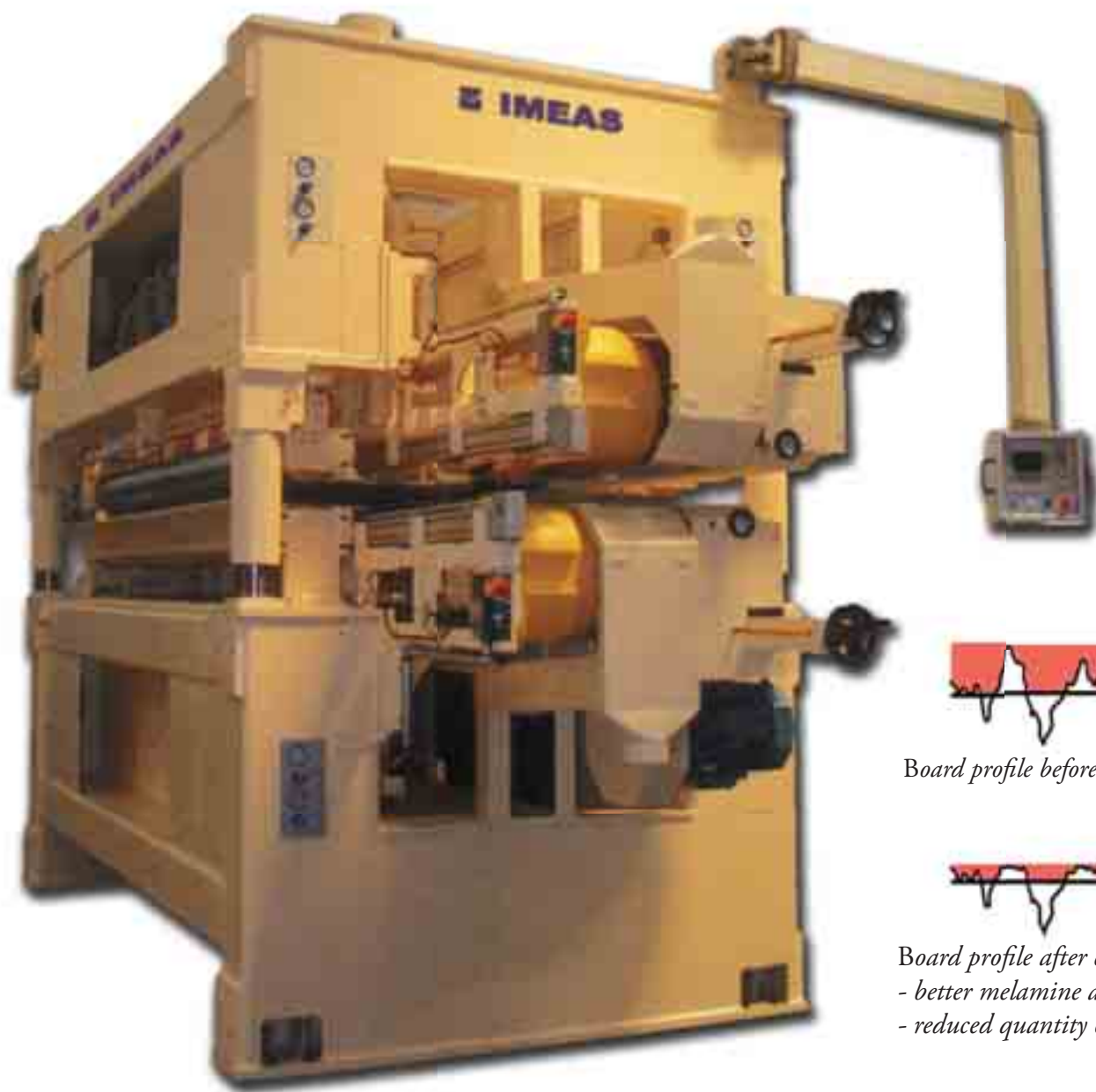
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# Engineered Wood

## JOURNAL

THE OFFICIAL PUBLICATION OF THE ENGINEERED WOOD TECHNOLOGY ASSOCIATION

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I-joists and glulams make good partners, as shown in this construction photo. I-joist compatible glulam depths are among the benefits of a new stock beam glulam standard published recently by APA. See story, page 12.

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## Rules and Regulations

Next month's congressional elections have been shaping up as a rare, if not unprecedented, national referendum of the proper role and scope of the federal government.

It's not difficult to understand why. The huge federal stimulus program, the massive federal debt, the passage of sweeping health care and financial reform legislation, the threat of an equally sweeping cap and trade bill, and the locking of legal horns by the Justice Department and the state of Arizona have ignited a heated national debate over the competing claims of federal supremacy, states' rights and individual sovereignty.

We'll know shortly the results of that national philosophical argument. Meanwhile, as noted in subsequent pages of this issue of the *Journal*, government rules and regulations continue to play out in the everyday operational trenches of the wood products industry.

A national wood composites formaldehyde emissions law, for example, was passed in Congress earlier this year. A deadline for compliance with a wood dust regulation requiring health hazard communication is coming up later this year in California. An Environmental Protection Agency (EPA) Boiler Maximum Achievable Control Technology (MACT) rule that creates disincentives for the use of renewable energy is pending, as is a USDA biomass regulation that threatens the availability of residual wood for value-added products. A weights and measures enforcement issue that brewed for years in California over conflicting panel thickness labeling provisions in industry standards versus National Institute of Standards and Technology (NIST) handbooks was finally resolved earlier this year, via revision to *Voluntary Product Standard PS 1*. The perennial battle to safeguard wood industry interests in state and locally adopted International Energy Conservation, International Residential and International Building Codes continues. And, of course, the fight goes on to elevate recognition of the merits of wood in green building standards and guidelines increasingly being adopted by government jurisdictions at all levels.

All of the examples cited above are or were challenges actively addressed by forest products industry organizations. And while the upcoming elections may be a vote on federal government reach, they are unlikely to provide relief from the kinds of regulatory matters with which forest products companies must deal on a daily basis. That underscores the ongoing importance of strong forest products industry organizations charged and equipped to successfully take the industry case, on all manner of regulatory issues, to the appropriate forums of decision-making.

Self reliance, in other words, should continue to be the industry watchword. Or, as an old proverb puts it, the best place to find a helping hand is at the end of your own arm.

## Safety and Health

Congratulations are due to the winning mills and companies of the latest APA Safety and Health Awards competition, all of whom are listed on pages 29 and 30.

Congratulations also to the APA Safety and Health Advisory Committee. Formed just last year, the committee has already made great strides in elevating awareness of mill safety as an industry priority. The committee has organized a safety and health workshop to be held in conjunction with the upcoming APA annual meeting. It has initiated development of a series of Safety Alerts designed to improve the sharing of safety ideas and measures for the benefit of the entire industry. It encouraged the APA staff to update and expand the safety and health section of the APA website, which was recently completed. And it is actively recruiting new Safety and Health Advisory Committee members from among the APA membership to increase participation and extend the benefits of safety-related efforts.

The work of the committee is important. And the progress to date is to be commended.



Jack Merry



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## National Formaldehyde Emissions Bill Signed Into Law

Legislation to establish national standards for composite wood product formaldehyde emissions passed in the both U.S. House and Senate and was signed into law by President Obama earlier this summer.

The bill, identified as the *Formaldehyde Standards for Composite Wood Products Act (Formaldehyde Standards Act, or FSA)*, directs the Environmental Protection Agency (EPA) to establish by January 1, 2013 new emission regulations under the *Toxic Substances Control Act (TSCA)*. The regulations become effective 180 days after promulgation.

The legislation, which encompasses particleboard, MDF, and hardwood plywood made or sold in the U.S., as well as products made from them, nationalizes standards adopted in 2008 by the California Air Resources Board (CARB). Neither CARB nor the new federal legislation makes reference to structural engineered wood products, which are therefore effectively exempted from the provisions of both sets of regulations.

The federal bill was supported by a broad coalition of industry, environmental, health and labor organizations, including the Composite Panel Association and The Sierra Club.

## CPA Calls for Fix to Proposed USDA Biomass Regulation

The Composite Panel Association (CPA) has called for a fix of a new regulation now under consideration by the U.S. Department of Agriculture that the association says “threatens the existence of many U.S.-based wood products manufacturers and could shut down entire industries if implemented in its current form.”

CPA says that the USDA's Biomass Crop Assistance Program (BCAP), while well intended, is dangerously flawed because its list of eligible subsidized materials includes residual wood, such as sawdust and wood chips, that are already being used for higher value purposes in homes, furniture,

cabinets, doors, flooring, and other consumer and construction products. If left unchanged, the provision could, “wipe out the entire feedstock of U.S. composite panel manufacturers, estimated at \$400 million in 2010” by diverting it to the biomass fuel industry, CPA warned.

More information can be found on the CPA website at [www.pbmdf.com](http://www.pbmdf.com).

## Wood Dust Ruling Set To Take Effect in California

Wood product manufacturers producing in or shipping products to California have until December 12 to begin providing occupational and consumer wood dust warning labels under a ruling made last year by the California Office of Environmental Health Hazard Assessment (OEHHA).

The ruling, based on a determination by the International Agency for Research on Cancer that wood dust is a human carcinogen, is intended to protect those who may be exposed to wood dust in an occupational setting or who may be exposed as a consumer through a variety of environmental conditions, such as cutting a wood product. Occupational exposures can be handled by Hazard Communication using a Material Safety Data Sheet. Consumer exposures can be addressed by one of three approaches: a warning appearing on a product's label, product identification at a retail outlet, or public advertising.

More information can be found on the OEHHA website at [www.oehha.ca.gov](http://www.oehha.ca.gov). Additional compliance information is available to APA members from APA.

## Green Opportunity Task Group Organizes LCA Workshop

A workshop attended by members of an industry life cycle assessment (LCA) working group was held at the U.S. Forest Products Laboratory in Madison, Wisc. in July to advance the application of LCA research results in support of wood product industry green building initiatives.

The workshop was organized under the auspices of the Green Opportunity Task Group, an industry group formed last year to develop and execute a plan to capitalize on green opportunities for North American wood products. The plan focuses on four main areas of interest—research, codes and standards, marketing, and policy issues. Funding for the plan is being sought.

Workshop discussions focused on how LCA research work and results can be applied to support wood product industry green building initiatives. Current and future LCA research efforts were reviewed and prioritized, with emphasis on the need to further ongoing efforts to input wood data to the life cycle inventory databases, fill gaps in the CORRIM research that is the basis for much of the industry's LCA data, and document existing and new opportunities to broaden use and acceptance of LCA by key building professionals.

Participants at the workshop included representatives from the Athena Institute, Dovetail Partners, the U.S. Forest Products Lab, CORRIM, the Canadian Sustainable Building Coalition, American Wood Council, and APA.

## ANSI-approved Green Building Standard Completed

The Green Building Initiative (GBI) announced earlier this year the completion of the first and only American National Standard for commercial green building, as approved by the American National Standards Institute (ANSI).

The standard, officially named *ANSI/GBI 01-2010: Green Building Assessment Protocol for Commercial Buildings*, was derived from the Green Globes Environmental Design and Assessment Rating System for New Construction.

“The guidelines set forth by ANSI ensure that this new standard was developed in a way that gives all

stakeholders, including sustainability experts, architects and engineers, ENGOs and industry groups, a seat at the table," said GBI president Ward Hubbell. "This is a significant advancement in green building and the standard will be set apart from any green building rating system of its kind," Hubbell said.

## EPA Urged to Make Changes to Proposed Boiler MACT Rule

The Environmental Protection Agency's Boiler Maximum Achievable Control Technology (Boiler MACT) rule is so stringent that it could create serious disincentives for the use of renewable energy and be unsustainable for the forest

products industry and the nearly 900,000 individuals it supports, the American Forest & Paper Association (AF&PA) and the American Wood Council warned at an EPA hearing held earlier this year in Virginia.

"If EPA were to provide more flexible approaches in the Boiler MACT rule, it could protect the environment and public health while preventing severe job losses and billions of dollars in unnecessary regulatory costs," said Tim Hunt, representing AF&PA and AWC at the EPA hearing.

More information on the proposed rule can be found at [www.growthevote.org](http://www.growthevote.org).

## Product Standard PS 1 Revisions Completed

Revisions to *Voluntary Product Standard PS 1-07* were completed earlier this year and the amended standard republished by the U.S. National Institute of Standards and Technology (NIST) as *PS 1-09*.

Major changes to the document include provisions that resolve thickness labeling inconsistencies between *PS 1* and other National Institute of Standards and Technology (NIST) criterion used by weights and measures regulators; the addition of informational appendices on labeling requirements, plywood attributes related to green building, and formaldehyde emissions; clarification of sanding requirements; and new language on labeling one-sided MDO and HDO plywood.

The revised standard can be found on the NIST website at [www.nist.gov](http://www.nist.gov) or downloaded free of charge from the APA site at [www.apawood.org](http://www.apawood.org).

## Temperate Forest Foundation Ceases Operations

The Temperate Forest Foundation ([www.forestinfo.org](http://www.forestinfo.org)), a non-profit organization founded in 1989 to advance public understanding of the value of sustainable forest management, has ceased operations due to financial constraints resulting from the current recession.

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## Industry Watch

Best known for its Teacher Forestry Tours designed to better inform teachers about modern sustainable forestry, the Beaverton, Ore.-based foundation also produced educational videos and published *Eco-Link* monographs on a number of forest management and wood products industry topics.

A legacy program is being developed to make the programs and services formerly provided by the foundation available through other organizations.

### Joint Wood Composites Symposium Scheduled for April

A joint symposium combining the International Wood Composites Symposium and the International Symposium on Veneer Processing and Products will be held April 5-7, 2011 in Seattle.

The three-day event, sponsored by Washington State University, APA and FPInnovations, will cover a variety of topics, including raw material availability, life cycle assessment, product processing, specialty products, equipment and resin technology, product and performance standards, market and trade issues, and integrated technologies.

Papers on the above topics are invited for oral and poster presentations, with abstracts due by October 31. Sponsors also are being sought at the platinum (\$10,000), gold (\$5,000) and silver (\$2,500) levels.

More information can be found at [www.woodsymposium.wsu.edu](http://www.woodsymposium.wsu.edu).

### Website Launched to Facilitate Local Building Product Sourcing

A website designed to facilitate the supplying of building materials from local manufacturers has been launched at [www.specnearhere.com](http://www.specnearhere.com).

The new patent-pending online search engine "will help design professionals, public and private facility managers, contractors and purchasing agents keep the carbon footprint small," an announcement for the new site said. Subscribers can input the address of a project site, a material requirement and a designated radius up to 500 miles, and, in return, receive a custom map pinpointing the location of manufacturers of the specified product.

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## **APA Continues Efforts to Safeguard Panel Interests in New Energy Code**

APA conducted a survey of some 200 builders around the country earlier this year to determine how they might respond to stringent new energy conservation requirements under consideration for inclusion in the 2012 International Energy Conservation Code (IECC).

The survey was part of an ongoing effort by APA and allied organizations to safeguard wood product industry interests under the energy code, which will be the subject of International Code Council Final Action Hearings Oct. 24-31 in Charlotte, N.C. The IECC is under a mandate by the Environmental Protection Agency (EPA) to increase home and building energy efficiency by 30 percent. Many of the current code change proposals would favor foam insulation at the expense of wood products.

The survey results have been used by APA staff and the Residential Market Subcommittee in support of strategies for protecting and advancing provisions in the code that facilitate the use of wood.

Meanwhile, APA and others, including the American Wood Council and Federal Emergency Management Agency (FEMA), testified at International Residential Code (IRC) and International Building Code (IBC) hearings last May to help defeat proposals by the Foam Sheathing Coalition to effectively treat foam sheathing as a structural product and thus negatively impact structural wood panel sheathing market share.

## **Several Mills Join APA Membership Ranks**

Several panel and engineered wood product mills have joined APA over the past several months. The new member mills are:

- Coastal Forest Products, LLC, Chapman, Ala. (plywood)
- Peninsula Plywood Group, LLC, Port Angeles, Wash. (plywood)
- Montana Sustainable Building Systems, Whitefish, Mont. (glulam)
- Timber Technologies, L.L.C., Colfax, Wisc. (glulam)

- Savona Specialty Plywood Company Ltd., Savona, B.C. (specialty plywood)
- Murphy Plywood, Rogue River, Ore. (plywood)
- Boise Cascade LLC, Elgin, Ore. (plywood)
- Boise Cascade LLC, Kettle Falls, Wash. (plywood)

"It's an honor to welcome these fine operations to the APA family," said APA President Dennis Hardman. "These membership gains are further proof of the value our association provides. Not only is it remarkable for APA to have suffered no membership losses to our lower cost competitors, but for a trade association to gain members during a severe and prolonged recession is a real accomplishment."

## **APA Publishes New Stock Glulam Beam Standard**

A new performance standard for stock glulam beams designed to meet demand for a simplified product offering and reduced distributor stock-keeping units (SKUs) was completed and published recently by APA.

The new standard, *APA PRG-305 Performance Standard for APA EWS Stock Glulam Beams*, was developed in concert with APA member glulam manufacturers. It responds to customer requests for simplification of stock beam options in the residential and commercial floor and roof construction markets.

With an emphasis on 1.9E-2400Fb and 2.2E-3000Fb design properties, PRG glulam design properties can easily be compared with those published for other commonly used engineered wood beam and header products. Other PRG-305 benefits include:

- Standard widths of 3-1/2 and 5-1/2 inches to match conventional 2x4 and 2x6 framing
- I-joint compatible depths of 9-1/2, 11-7/8, 14, 16 and 18 inches
- Balanced layups that have the same load-carrying capacity regardless of beam orientation
- Zero camber
- Framing appearance classification
- Conformance with national product standard and building code requirements.

The new standard, together with additional design and product information, can be found at APA's glulam website, [www.glulambeams.org](http://www.glulambeams.org).

## **ANSI Rim Board Standard Approved**

The *ANSI/APA PRR 410-2010 Standard for Performance Rated Rim Board* was officially approved by the American National Standards Institute (ANSI) as an American National Standard in June and published shortly thereafter.

The standard covers the manufacturing, qualification, quality assurance, design, and installation requirements for engineered wood rim boards made of wood structural panels, structural composite lumber, and glulam. It was developed based on the *Performance Standard for APA EWS Rim Boards* (APA PRR-401), which has been published by APA since 1996 as an industry standard. With the publication of the *ANSI PRR-410* standard, engineered wood rim boards can be directly recognized in the building codes without expensive code evaluation reports.

APA is accredited by ANSI as a standards developer with the authority to develop American national standards under the ANSI consensus process.

## **Work Advances on ANSI Performance-Rated Timber Standard**

A newly formed ANSI committee of 26 voting members and six observers met at APA headquarters in Tacoma earlier this year to initiate development of a new standard for *Performance-Rated Cross Laminated Timber*, *ANSI/APA PRG-320*.

The standard will cover the manufacturing, qualification, and quality assurance requirements for cross-laminated timber (CLT). There are no existing American National Standards covering these products.

Key stakeholders include CLT manufacturers, distributors, designers, users, building code regulators, and government agencies. Retired APA Vice-President Tom Williamson was elected chair

## Dateline **APA**

of the committee and Borjen Yeh, APA technical services director, represents APA as committee secretariat. APA is an ANSI-accredited national standard developer.

Additional standards development information is posted on the APA website at [www.apawood.org/standards](http://www.apawood.org/standards).

### **APA Market Coordinator Vacancies Filled**

APA Field Services Manager Mark Halverson and Website/Publications Writer Kelly Devlin have assumed the market coordinator positions for the APA Nonresidential and Industrial Market Subcommittees, respectively.

Halverson replaces Engineered Wood Specialist Greg Bates, who left APA earlier this year. Devlin succeeds Halverson, who previously served as Industrial Market Subcommittee Coordinator.

APA market coordinators serve as liaisons between the market subcommittees of the Marketing Advisory Committee and APA quality, technical, field, marketing and other staff members charged with executing the association's strategic marketing plan.

APA's Residential, International and Supporting Programs market coordinators are, respectively, Field Services Director Tom Kositzky, International Marketing Director Charles Barnes, and Market Communications Director Marilyn LeMoine.

### **North American SIPs Production Down Nearly 20 Percent in 2009**

North American production of structural insulated panels (SIPs) fell 19.6 percent in 2009, according to an industry survey conducted by the Structural Insulated Panel Association (SIPA) with assistance from APA.

SIPs production last year totaled 42.33 million square feet, down from 52.6 million feet in 2008 and from 59.5 million feet in 2007. The production declines parallel the drop in new residential and commercial construction. Housing starts in 2009 were off 73 percent from



the 2.07 million starts during the peak year of 2005.

Of the 42.33 million square feet of SIPs production in 2009, 43 percent was consumed by the residential construction market, 32 percent by the nonresidential market, and the remaining 24 percent in non-building applications, according to the survey results.

### **Former APA VP Tom Williamson Elected PPA President**

Former APA Vice President Tom Williamson was recently elected president of PPA—Structural Wood Society. He succeeds George Sisterhenm, who completed his term.

Williamson, who retired from APA at the end of last year after 17 years with the association, provides industry consulting services and remains active in several professional organizations.

PPA (formerly Plywood Pioneers Association) was founded in 1964 to foster the bonds of friendship and fraternalism among members of the industry. The organization also publishes historical monographs of industry companies and funds scholarships for students working toward degrees leading to forest products industry careers.

Although originally formed as a group for plywood industry members, membership in the society today is open to individuals both retired and still working throughout the structural wood industry, including manufacturers, industry suppliers, research organizations, academia and allied interests.

More information can be found at [www.apawood.org/ppa\\_structuralwoodsociety](http://www.apawood.org/ppa_structuralwoodsociety).

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## Grenzebach's Wells Joins Advisory Committee

The EWTA Advisory Committee recently approved the addition of Tom Wells as Grenzebach Corporation's representative on the committee. He replaces Tim Fisher, who recently left Grenzebach to take a position at USNR.

Fisher, in turn, replaces Alan Knokey as USNR's committee representative and also retains his position as vice-chair of the committee.

## Pfeifer Elected Adhesives Subcommittee Chair

Paul Pfeifer, technical sales representative at Ashland Performance Materials ([www.ashland.com](http://www.ashland.com)), Vancouver, Wash., was elected chair of the EWTA Adhesives Subcommittee. He succeeds Earl Phillips of Hexion Specialty Chemicals, who resigned his position.

Phillips, who had served as subcommittee chair since the body was established in early 2007, played a key role in its formation and success as a forum for review and discussion of wood composites adhesives issues.

Pfeifer, a long-standing member of the EWTA Advisory Committee, also has served on the subcommittee since its formation.

The subcommittee is currently reviewing its mission and work plan, which encompasses four activity areas—green building issues, standards, test methods, and information transfer.

## At-Large Positions Added to Advisory Committee

The EWTA Advisory Committee approved the addition of two at-large positions to the committee membership. The positions, currently unfilled, can be from any of the existing membership categories—equipment/tooling, materials/supplies, services consulting, or APA member companies. Term limits are set at four years.

The committee also established four-year terms for the committee chair and vice-chair positions, with staggering terms. However, both the chair and vice-chair may be re-elected by a vote of the committee. The new membership policies were recommended by a Nominating Subcommittee established late last year.

## Membership Push Targets Safety- and Bioenergy-Related Companies

The EWTA Advisory Committee has endorsed increased efforts to recruit new members among companies providing safety products and services, and firms in the bioenergy sector.

Increasing the number of safety-related company members fits well with APA's recent efforts to elevate safety as an industry priority, while the bio-energy industry represents an emerging sector of growing direct or indirect importance to the APA membership.

APA and EWTA members are encouraged to forward contact information for companies in those sectors that they do business with to [terry.kerwood@apawood.org](mailto:terry.kerwood@apawood.org).

## G-P Chemicals Seeking Development Partners



Kim Tutin

Georgia-Pacific Chemicals LLC announced recently that it is seeking development partners to accelerate the advancement of significant technologies, support growth

opportunities, and address customer needs.

Partners are being sought within universities, private and federal laboratories, entrepreneurs, and corporations that have technologies of interest to leverage G-P Chemicals' own application and development capabilities, the company said in a news release.

Kim Tutin, a 24-year G-P Chemicals technology employee, has been appointed to the newly created role of technology and innovation scout. She is charged with identifying and commercializing diverse technologies and sustainable solutions addressing customer needs in the company's various areas of expertise, including thermosetting resins and materials used in building products,

paper, packaging, mining, and other industrial fields.

"Using an open innovation strategy provides the opportunity to channel the technology of our partners to meet both our visions and satisfy our customers' objectives," said G-P Chemicals Research and Development director Larry Gollob.

## Huntsman Reaches Insurance Settlement

Huntsman Corporation ([www.huntsman.com](http://www.huntsman.com)) announced recently that it has reached agreement with its reinsurance carriers to settle the company's claims related to losses from a fire at its Port Arthur, Texas, olefins facility in April 2006.

Under the agreement, Huntsman will receive \$110 million. The company previously collected \$365 million in insurance proceeds in connection with the fire.

Huntsman's president and CEO Peter Huntsman said the insurance proceeds will be used "to retire secured debt and further strengthen our balance sheet." He added that the company will have prepaid almost \$300 million of secured debt since the beginning of the year.

## G-P Adds to Product Offerings with Purchase of Grant Mills

Georgia-Pacific Wood Products' recent purchase of Grant Forest Products' oriented strand board and related facilities in South Carolina and Ontario improves the company's ability to meet customer demand for efficient, sustainable, and oversized products, the Atlanta-based company said in a news release upon completion of the sale.

The acquisition included Grant facilities in Allendale and Clarendon, S.C., and Englehart and Earlton, Ont.

Clarence Young, vice-president and general manager of Georgia-Pacific's structural panels business, cited two new product lines—DryMax™ High-Performance OSB and BlueRibbon Shield™ Specialty OSB—as valuable additions to the company's growing range of product offerings. DryMax High-Performance OSB is a moisture-resistant subflooring that features ink-jet nail patterns. It is fully sanded on both sides to

ensure a uniform thickness tolerance and excellent tongue-and-groove fit.

Blue Ribbon Shield Specialty OSB is wall sheathing designed to reduce air infiltration and help customers in high wind areas meet building codes. The product is available in lengths that match a variety of story heights and can span top-plate to bottom-plate, often eliminating the need for additional bracing and helping to reduce material costs.

Young noted that G-P is now also able to supply oversized panels and both FSC- and SFI-certified products.

## DSM Melamine Sold to Orascom

Royal DSM N.V., based in the Netherlands, announced recently it had reached agreement for the sale of its business unit DSM Melamine ([www.dsm-melamine.com](http://www.dsm-melamine.com)) to Orascom Construction Industries, the largest company listed on the Egyptian Stock Exchange. The sale also includes DSM's Agro business unit.

The sale of the two business groups is "an important step forward in the realization of (DSM's) Vision 2010 ambitions to focus on life sciences and material sciences," the company said in a news release. DSM Melamine is the world's largest producer of melamine.

## Siempelkamp Reports Second Best Year in Its History

The German headquarters of Siempelkamp GmbH & Co., KG ([www.siempelkamp-usa.com](http://www.siempelkamp-usa.com)) reported that the company's 2009 business results were the second best in the firm's 127-year history. Siempelkamp's three business units—machinery and plant engineering, foundry, and nuclear technology—all performed positively and contributed to the banner business year, the company said.

Siempelkamp CEO Hans W. Fechner said the company expects to operate at full capacity this year and into 2011.

## Adalis Packaging Group Moves to Corporate Campus

Adalis Corporation ([www.adaliscorp.com](http://www.adaliscorp.com)) announced that the Adalis Packaging Solutions group has moved from its

Minneapolis location to an expanded facility within the H.B. Fuller Corporate Campus in St. Paul, Minn. Adalis is a subsidiary of H.B. Fuller Company.

The new location, the company said, offers the Packaging Solutions team a larger space and features a brand new Packaging Development Center (PDC) that includes equipment, tools and technology for packaging design and development and rapid packaging prototyping. Custom package testing also can be done onsite.

## Ashland Resin Used in World Expo Pavilion Roof

Resin supplied by Ashland Performance Materials ([www.ashland.com](http://www.ashland.com)) has been used in the roof system covering the Theme Pavilion constructed for the Shanghai World Expo, which is underway through the end of October. The resin was selected for use in translucent fiberglass reinforced plastic (FRP) roofing panels that cover more than 172,000 square feet of surface.

"We are very proud to have supplied our high-performance Aropol resins to help with the successful construction of the Theme Pavilion for this global event," said Baochang Zhang, commercial director, Ashland Performance Materials, Asia.

## BASF Develops Online Product Finder

BASF Corporation ([www.basf.com](http://www.basf.com)) has developed an online company product finder to help customers locate products for various industries.

The product finder, located at [www.basf.com/productfinder](http://www.basf.com/productfinder), lists all of the main BASF products and matching market criteria. In addition to searching for products by name, users can also look up products by client industry, basic chemical substance, and availability in different countries. Each product line comes with a brief description, links for further information and contact details.

## Bio-Reaction Industries Forms Carbon Pollution Reduction Alliance

Bio-Reaction Industries ([www.bioreaction.com](http://www.bioreaction.com)) has formed an

alliance with Lenzing Technik GmbH and Golder Associates to provide customers throughout Europe with a single source for drastically reducing carbon emissions and addressing air pollution issues while also reducing energy costs.

Bio-Reaction's patented Bio-AIRSPHERES™ use soil-based microbes to digest chemicals that cause air pollution. "This is an exciting new technique being introduced to Europe from North America," said Samantha Arnold, senior atmospheric scientist at Golder Associates.

Lenzing Technik is Bio-Reaction's exclusive license partner. Golder Associates is a leading ground engineering and environmental services consultancy firm.

## Specialty Wood Journal Publisher Launches Wood Business Website

CLB Media, the Canadian publisher of *Specialty Wood Journal*, *Logging Management* and *Mill Product News*, has launched a new website addressing the entire primary wood market, including extraction, lumber and panel processing.

The site, [www.woodbusiness.ca](http://www.woodbusiness.ca), combines the key content areas of each of the company's separate publications as well as the content of the recently launched *Biofiber Business*, the company said in a news release.

"Readers want to get a strong sense of the market as a whole, beyond traditional segmentation. Wood Business will deliver that," said CLB Editor Ricki Normandin. *Specialty Wood Journal* is a member of EWTA.

## TurboSonic Receives \$900,000 Scrubber Order

TurboSonic Technologies, Inc. ([www.turbosonic.com](http://www.turbosonic.com)) reports that it has been awarded a \$900,000 order for its Turbotak Scrubber technology from a U.S. OSB manufacturer. The company said it expects the emissions control system to be delivered and installed this calendar year.

TurboSonic CEO Edward Spink said the order "represents the third major equipment order from the same international company for OSB press emissions control,

and is another example of our objective to target large multinational companies in our markets.”

## Dieffenbacher Appoints Director of Marketing and Communication

Roger Kautz has assumed the position of director of marketing and communication at

Dieffenbacher Group ([www.dieffenbacher.de](http://www.dieffenbacher.de)). He succeeds Gustav Aumüller, who retired.

Kautz worked most recently as the marketing director for INP Deutschland, which provides services to power plants and for large plant construction. Aumüller had been Dieffenbacher’s marketing director since 1998.

The marketing department at Dieffenbacher is organized as an independent company and will offer services to other companies in the capital goods industry by the end of this year, the company said in a news release.

## BASF Engaged in Carbon Capture Technology Development

BASF ([www.basf.com](http://www.basf.com)) and U.S. research institute RTI International, Research Triangle Park, N.C., are joining forces to develop a new cost-effective technology to capture carbon dioxide from waste gases emitted by coal-fired power plants and other industrial sources, BASF announced.

The development project is sponsored by a \$2 million cooperative agreement award from the U.S. Department of Energy as part of DOE’s stimulus-funded initiative focusing on energy-related research projects, BASF said in a news release.

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# ARIZONA RENDEZVOUS

## APA Annual Meeting and Info Fair Preview

**A**ssessments of the construction markets, a review of global fiber supplies and an APA safety and health workshop will highlight the APA annual meeting Oct. 17-20 in Tucson, Ariz.

Eric Belsky, managing director of Harvard's Joint Center for Housing Studies and a popular previous APA annual meeting speaker, will be the keynote speaker during the meeting's general session on Oct. 19. A nationally recognized scholar with housing research, teaching and public policy experience, Belsky will address the current state and future prospects of the U.S. housing market. Prior to joining the Joint Center, Belsky led the Housing Finance and Credit Analysis Group at Price Waterhouse LLP, was director of housing finance research at Fannie Mae and served as senior economist at the National Association of Home Builders.



Eric Belsky

Three discussion roundtables also will be held during the meeting. Scott Sedam, president of TrueNorth Development, a consulting, training and organizational development firm based in Northville, Mich., will lead an analysis of "What Builders Want Now: A View from the Street." The former



Scott Sedam

### APA Safety and Health Workshop Planned

The APA Safety and Health Workshop, scheduled for Oct. 20 as an adjunct to the annual meeting, will cover a number of important health and safety topics, including combustible dust hazards, safety motivation and best practices.

Organized by APA's Safety and Health Advisory Committee, the all-day workshop is designed for all levels of personnel with mill safety responsibilities. It is planned for Wednesday, the day after the safety awards presentation at the Chairman's Dinner on Tuesday night, thereby providing a double attraction and condensed schedule for mill personnel with limited available time away from their facilities. The event is open at no charge to both APA and Engineered Wood Technology Association members.

The workshop is part of the Safety and Health Advisory Committee's overall effort to elevate mill safety as an industry priority. APA also recently updated and expanded the Safety and Health section of its website at [www.apawood.org](http://www.apawood.org). The revised section includes the latest Safety Awards program winners (see story, page 29), best practices summaries, safety alerts and links to a number of safety-related organizations, government agencies and publications.

vice-president of Quality for Pulte Homes, Sedam will also give a presentation at the APA Marketing Advisory Committee on how lean building, cost control and quality improvement can benefit wood product manufacturers.

A second roundtable will feature RISI International Timber Director Robert Flynn, who will cover “The Global Fiber Market: Understanding Global Fiber Supplies and the Impact of Biofuels.” Flynn, a former forester for Champion International and longtime industry wood fiber consultant, will provide an update on the Pacific Rim woodchip market and how changes in fiber markets around the world are affecting U.S. markets.



**Robert Flynn**

The third roundtable, led by Wayne Trusty, president of the Athena Sustainable Materials Institute, Merrickville, Ontario, will deal with green building and sustainability issues. Trusty, a frequent speaker at sustainable building conferences, has some four decades of experience in environmental policy, forest industry economics, water resources, transportation, energy markets, regional development and life cycle assessment.

Other business sessions and social events during the meeting will include:

- The 17th Annual Info Fair product, equipment and service supplier exhibition, featuring more than 50 EWTA exhibitors.
- Marketing Advisory Committee meeting, with a new market forecast by APA Market Research Director Craig Adair and updates on APA strategic marketing activities.

- Residential, Nonresidential, Industrial and International Market Subcommittee meetings.
- Glulam Management and I-Joist/SCL Management Committee meetings.
- EWTA Advisory Committee and Adhesives Subcommittee meetings;
- Golf and tennis tournaments.
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- EWTA-sponsored opening night reception.
- Chairman’s Dinner, including safety awards presentation.



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# 2010 Info Fair Exhibitors

Partial list as of August 6

Info Fair, held annually in conjunction with the APA annual meeting, is sponsored by the Engineered Wood Technology Association (EWTA), APA's related nonprofit supplier organization.



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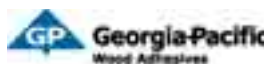
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# Variation Discovery

by Timothy M. Young, Ph.D.

**V**ariation in engineered wood processes results in higher than necessary operating targets, higher raw material usage, higher energy usage, and lower overall competitiveness of a business organization. Discovering sources of variation should be a key strategy for engineered wood manufacturers. Current economic conditions require that businesses have a renewed focus on reducing sources of variation that lead to higher than necessary costs and jeopardize product quality. Process variation leads to re-manufactured production runs and product waste, and jeopardizes customer value.

The development of large capacity real-time data warehousing and the expansion of computing capabilities near the end of the 21st century allowed engineered wood manufacturers the ability to store large quantities of process data acquired from PLC

networks. The advancements in statistical computing capabilities and affordability of statistical software also allowed engineered wood manufacturers to greatly improve their knowledge of sources of variation that lower process throughput and product quality.

Most engineered wood manufacturers have real-time data warehouses and electronically stored lab databases. Most engineered wood manufacturers, however, are unable to take advantage of the “stored knowledge” in their database. Many manufacturers use data warehouses for simple “trend analysis,” which has limited value for process prediction and identifying hidden variation. Many believe that this industry to be “data rich, but knowledge poor.”

I believe the following are essential elements for using data mining and predictive process modeling to improve process knowledge:

## Establish a Culture of Learning

Discovering sources of hidden variation is dependent on the culture of the organization. Data mining and predictive process modeling cannot be successfully implemented until the culture of a manufacturing facility or business organization accepts the philosophy of data-driven decision making. Data-driven decision making eliminates bias and minimizes the risk of making wrong decisions. I believe that intellectual capital is the most underutilized resource in many engineered wood manufacturing facilities;

## Data Mining and Predictive Process in Modeling of Engineered Wood Processes

it is a resource that requires minimal investment to develop (people love to learn).

## Data Fusion

The method in which data are stored in real-time data warehouses and lab databases limits direct implementation of successful data mining and process modeling. Feedstock material passes under sensors for the PLC network (e.g., temperature, pressure, speed, weight, etc.) on the production line at different points in time relative to the time at which material is pressed or formed into its final product.

Before data from the real-time data warehouse can be useful for data mining, the data for each sensor must be time-lagged from the time at the final pressing stage. Time lags are dynamic given changes in line speed. The distance from the outfeed of the press back to the sensor must be measured and used for dynamic time lagging. In some instances dynamic time lags must



# Data quality verification is the most important step in the data mining and process modeling procedure.

be calculated for feedstock material that is stored in bins.

Once the real-time data is appropriately time lagged, a median from a sample of real-time data from the data warehouse must be estimated. It is recommended that this median be estimated from a sample of 33 records in the data warehouse. This median estimate for each sensor is then fused with data records from the lab database to create a useful relational database for data mining and process modeling.

## Data Quality Verification

Data quality verification is the most important step in the data mining and process modeling procedure. Results of process models are meaningless unless the data quality is verified. The data quality from the fused relational database (lab and PLC data) should be assessed using appropriate statistical methods (e.g., histograms, quantile plots, box plots, etc.). Outliers in the database should be carefully assessed. Imputation methods should be used for missing or null fields in the database. Many regression methods are dependent on the shape of the distribution of the response variable and violation of assumptions reduces the usefulness of process model results.

## Knowledge of Regression Techniques

Many regression techniques exist for data mining and process modeling. The simplest and most traditional of these techniques is multiple linear regression (MLR) and stepwise regression. MLR can be useful when the dataset is relatively homogeneous, assumptions of normality of the response variable are met, independent variables are not correlated, and the data are time independent.

Violations of the assumptions of MLR lead to erroneous results and false conclusions. More contemporary and better methods for data mining and process

modeling include partial least squares (PLS), boosted regression trees, principal components analysis (PCA), ridge regression, neural networks, and combinations of these techniques. A key step before modeling the response variable, which can be a key product attribute (MOR, IB, etc.) or process variable (weight variance, time-to-final position, etc.) is pre-selection from the vast array of independent process variables.

Variable pre-selection is a key step and many techniques are available (e.g., genetic algorithms, Bayesian information criteria, Aikake's information criteria, etc.). If the regression techniques give *poor prediction of the validation data set* (future or new values), *model results are of very limited use for identifying sources of variation.*

## Adaptive Predictive Process Models

Engineered wood panel manufacturing processes are frequently changing. Changes in the process occur at shift change, from equipment changes, from changes in wood, from changes in resin composition, etc. Predictive models of the process are generally temporary as a result of the frequent changes to the process, and models must be frequently updated, i.e., new models must be created. The key to good predictive models is to assess the quality of model prediction on the validation data set (new data).

## Common Model Variables—"The Critical Few"

The key to any continuous improvement effort that focuses on variation reduction and cost savings is identifying the important process variables that are inducing process or product variation. Recall W. E. Deming referred to these as the "critical few." Data mining and predictive process modeling allows engineered wood manufacturers to quantify the common process variables that are inducing variation.

Variables that are continually occurring in successful predictive models are a statistical roadmap to the "critical few" variables creating variation. This critical few identifies the direction for the continuous improvement effort. Some of these variables may represent *hidden sources of variation*. However, *common variables from process models that have poor predictive capability are meaningless*. Focusing on common variables from poor predictive process models can result in incorrect decisions, wasted resources, and false conclusions.

## Real-time Deployment of Predictive Process Models to Operations

When senior and technical management believe the culture of the organization is appropriate for deployment of predictive process modeling, real-time model results should be deployed to operations personnel. This may require the development of appropriate client tools on the organization's network.

Great care must be taken at this step. Operations personnel (supervisors and operators) must have sufficient training in the meaning and usefulness of the tools. Improper training and use of the predictive modeling information may lead to increasing variation instead of reducing variation (e.g., "Deming's Funnel Experiment"). However, operations personnel are a key component of the variation reduction effort. Their input into identifying and diagnosing sources of variation is invaluable.

Reducing sources of variation in engineered wood manufacture results in lower targets, lower cost of manufacturing, and improved product quality. Competitive pressures in the wood composites industry are not likely to subside. Variation reduction and continuous improvement through the use of statistical methods represents a proven method of reducing costs without risk or capital investment. If you cannot accurately quantify variation, how will you reduce variation? ●

*Timothy Young is a professor at the Center for Renewable Carbon, University of Tennessee in Knoxville. He can be reached at tmyoung1@utk.edu, 865-946-1119.*



# Detecting Defects

by Marshall Lloyd

**D**elaminations and blows are serious detriments to quality panel production, resulting in excessive raw material use and waste, panel rejects, poor customer satisfaction, and ultimately loss in profits. Use of an on-line bond analyzer provides quality production assurance and significantly reduces the production of defective panels. In order to fully optimize production, it is important to completely understand why panel defects occur and the various options available to manage them.

Several factors contribute to defects in panel production. The two most common defects occurring in all types of panels, including particleboard, MDF, oriented strand board, laminated veneer lumber and plywood, are delaminations and blows. Delaminations occur when glued laminate or board material doesn't bond properly. Blows are small air pockets or voids, resulting primarily from vapor development caused by excessive moisture or excessive material.

## Online Bond Analyzing for Quality Panel Production

Delaminations and blows also occur when the amount of material is insufficient and the reduced thermal conductivity in the press cannot adequately heat zones. An inaccurate application of glue or resin, a change of glue formulation, or a poor glue batch, can also greatly increase the risk of defects. Variations in wood, inadequate drying or pressing time, or even a simple equipment malfunction can all result in defective panels as well.

Defects in production are an unfortunate but common problem in the industry. While it is not possible to completely prevent all defects from occurring, it is possible to eliminate a vast majority of them by analyzing defect trends and optimizing the production process on-line.

An on-line bond analyzer, placed after the continuous, multi- or single-opening press, scans panels as they pass for any production delaminations or blows. The analyzer provides precise monitoring of the location, size and duration of any defects, and records them in a history log. This log can then be used to determine any trends in production so adjustments can be made on-line to rectify any ongoing errors in production. For example, if the bond analyzer records a blow or a series of blows in a specific area on every panel, then by correcting the press or gluing process in that area future blows can be eliminated.

Although too short press time increases defects, if press time is prolonged the manufacturer must also accept reduced

## An on-line bond analyzer, placed after the continuous, multi- or single-opening press, scans panels as they pass for any production delaminations or blows.

productivity—and higher production costs. If, after a relatively long period of time, no defects are detected, the operator may elect to shorten the press time in order to optimize production.

Not every defect in a panel results in unacceptable quality production. Depending on the type of panel being produced, the specific customer and the end product, certain quantities and sizes of blows may be admissible. A bond analyzer can be programmed according to the manufacturer's specifications and predetermined tolerances can be adjusted for any production run. Small defects can normally be ignored. However, if the defects begin to increase in number or size, this may indicate the development of a problem in the production process.

Even the most rigid trend analysis monitoring cannot prevent all defects. The remaining small percentage of panels produced with blows or delams, however, can be surface or edge-marked in the defective areas for easy identification after stockpiling.

The portion of the panel without defects can then be salvaged, or the entire panel sold for products with less stringent quality requirements. Whichever the manufacturer determines, the resulting waste elimination assures an increase in customer satisfaction and profits.

A non-contact bond analyzer uses ultrasonic transmissions to scan the panel. When a blow or delam appears, the ultrasonic waves are weakened considerably, and an alarm is activated based on predetermined tolerance levels for acceptable defects.

The analysis of each panel is recorded in the SPC (Statistical Process Control) and can be stored and recalled at any time. Besides allowing for detailed panel inspection and trend analysis, this feature is also valuable to the manufacturer as verifiable quality documentation for the customer.

New advances in software technology provides visual representations of panels and defects through 3D charts and graphs,

user-friendly window displays for parameter inputs, and searchable production statistics, as well as networking capabilities for integration with other on-line production systems.

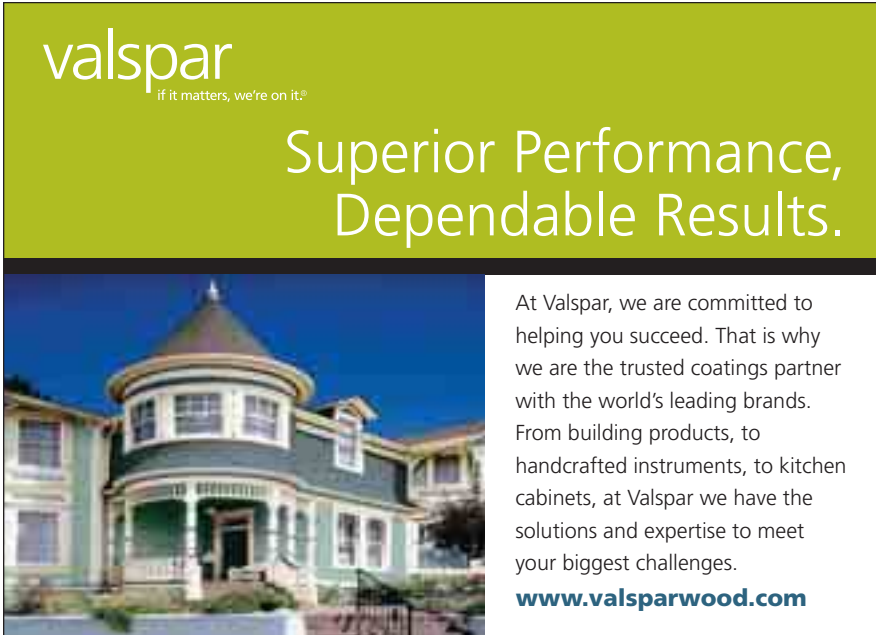
There are several other features to consider before purchasing a bond analyzer. It's important to be sure the equipment you purchase will meet your individual manufacturing needs both for the present and in the future.

Considerations include:

- What width of panels do you produce, and can the analyzer accommodate that width?
- How thick are the panels to be measured, and can the analyzer accommodate that thickness?
- Is it modular so it can expand with your production?
- Can it be customized for your specific production needs?
- What type of operating system and software does it use?
- Is there a limit to the number of panel measurements that can be stored? Is the software programmable for changes in production specifications? Can you determine the size or frequency of defects that activate alarms?
- What is its construction and durability?
- What does the maintenance entail? Is it self-calibrating? Does it have automatic cleaning?
- Does it have programmable testing?
- What technical support and warranties are included?

As with any equipment purchase, the determining factor is your return on investment. Exactly how much a bond analyzer will reduce waste and increase profits is different for every manufacturer. However, with shortened press times, on-line determination of defect trends allowing for immediate adjustments to production, defect-marking to salvage panel portions and reduce waste, verifiable quality documentation and reduced customer claims, and overall optimized production, a bond analyzer is guaranteed to improve the bottom line of any manufacturer. ●

*Marshall Lloyd is a sales representative with GreCon, Inc. ([www.grecon-us.com](http://www.grecon-us.com)), Tigard, Ore. He can be reached at 503-641-7731, [sales@grecon-us.com](mailto:sales@grecon-us.com).*



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# TOPS in SAFETY



## Sixteen Mills Earn Awards in Latest APA Safety Awards Competition

**L**P's oriented strand board mill in Tomahawk, Wisc., earned the coveted Innovation in Safety Award in the latest Safety and Health Awards Program sponsored annually by APA for the structural wood panel and engineered wood products industry.

The LP plant took the innovation prize for designing and deploying a special outside debarking and conveyor system for stringy bark species that mitigates debarker discharge plug ups and the risks associated with clearing the raw material bottlenecks by hand.

Among the criteria for the Innovation Award is demonstration that the innovation reduces occupational injuries or illnesses. The entry can be submitted by a mill, a group of mills or an entire company. Twenty-four Innovation entries were submitted in 2009, more than doubling the 10 entries in 2008.

Norbord, Toronto, Ont., and Stark Truss Company, Inc., Canton, Ohio, also won Safest Company Awards in their respective categories. Norbord, a leading North American manufacturer of oriented strand board, earned top honors among companies with four or more mills with a 2009 average Weighted Incident Rate (WIR) of 4.58. Stark Truss, which produces glulam timber and wood I-joists, won its award in the category for companies with three or fewer mills. The company posted a perfect 0.00 WIR for 2009.

The awards program, begun in 1982, honors the managements and employees of companies and mills with the lowest severity-weighted incidence rates based on guidelines established by the U.S. Occupational Safety and Health

**INNOVATION IN SAFETY AWARD**  
LP—Tomahawk, Wisconsin  
Outside Debarker and Conveyor System

SAFEST COMPANY AWARDS	Average WIR	Average TIR
Norbord (Companies with four or more mills)	4.58	1.12
Stark Truss Company, Inc. (Companies with three or fewer mills)	0.0	0.0

ANNUAL SAFETY AND HEALTH HONOR ROLL				
Division I (Under 400,000 Hours)				
		Hours	WIR	TIR
1st Place	LP Panguipulli, Chile	320,966	0.00	0.00
2nd Place	Norbord Nacogdoches, Texas	294,889	0.00	0.00
3rd Place	LP Roxboro, North Carolina	245,528	0.00	0.00
Division II (Over 400,000 Hours)				
		Hours	WIR	TIR
1st Place	Norbord Cordele, Georgia	409,982	0.00	0.00
2nd Place	Georgia-Pacific Wood Products LLC Camden, Texas	1,162,974	0.17	0.17
3rd Place	Georgia-Pacific Wood Products LLC Warm Springs, Georgia	653,509	0.31	0.31

THREE-YEAR SAFETY AWARD (2007-2009)				
Division I (Under 400,000 Hours)				
		Avg. Hours	Avg. WIR	Avg. TIR
LP	Wilmington, North Carolina	261,777	0.33	0.33
Division II (Over 400,000 Hours)				
		Avg. Hours	Avg. WIR	Avg. TIR
LP	Panguipulli, Chile	417,208	1.12	0.11

Administration (OSHA). It employs a Weighted Incident Rate that is calculated using both the number and severity of recordable incidents. Since 2008 was the first year that WIR was used, awards and reports for 2009 continue to also show Total Incident Rate (TIR), the measure used in previous years.

Ninety-three APA member structural wood panel and engineered wood product facilities in the U.S., Canada and abroad participated in the 2009 program. A total of 16 mills representing seven APA member

companies—Anthony Forest Products Co.; Georgia-Pacific Wood Products, LLC; LP; Norbord; Rosboro; Shelton Lam and Deck; and Stark Truss Company, Inc.—earned awards in various competition categories of the 2009 program. Some of the mills were multiple award winners.

All major product categories produced by APA's membership were represented among the winning mills, including oriented strand board, plywood, glulam timber, wood I-joists and laminated veneer lumber.

In addition to the Safest Company and Innovation awards, other competition categories include Safety Improvement, Annual Safety and Health Honor Roll, Three-Year Safety Average, and Incident Free Honor Society. Fourteen 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 two divisions based on hours worked annually—more than or fewer than 400,000 hours.

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 118 mills reported data for 2009. The 2009 industry Total Incident and Weighted Incident Rates were 2.18 and 10.64, respectively, up slightly from 1.99 and 10.02 in 2008.

The winning facilities and companies will be recognized and their safety accomplishments celebrated during the Chairman's Dinner at APA's annual meeting in October in Tucson, Ariz. Award plaques also will be presented to the winning mills by APA President Dennis Hardman or other APA management staff.

The 2009 safety awards program was the second year under a revitalized safety program effort spearheaded by an APA Safety and Health Advisory Committee comprised of several APA member company safety professionals. Under the committee's guidance, three main goals were established: make the APA program the premier safety awards program in the industry, encourage the sharing of best practices as a means to improve the industry's safety culture and programs, and most importantly, improve the industry's overall safety performance.

To those ends, several new initiatives are under way, including plans for industry safety workshops, the first of which will be held immediately following the APA annual meeting this fall; development of an industry safety professional database for more effective sharing of best practices and safety alerts; and expanding the safety and health section of the APA website to make it a more useful industry safety information clearinghouse and networking tool.

More information on the APA Safety and Health Awards Program can be found on the Association's website at [www.apawood.org](http://www.apawood.org). ●

SAFETY IMPROVEMENT AWARD			
Division I (Under 400,000 Hours)			
	2009 WIR	2008 WIR	2007 WIR
LP Carthage, Texas	0.00	0.00	8.23
100% Improvement	0.00	0.00	0.55
Division II (Over 400,000 Hours)			
	2009 WIR	2008 WIR	2007 WIR
LP Panguipulli, Chile	417,208	1.12	0.11
100% Improvement	0.00	0.00	0.34

INCIDENT-FREE HONOR SOCIETY			
Division I (Under 400,000 Hours)			
	HOURS	WIR	TIR
Norbord Cordele, Georgia	409,982	0.00	0.00
LP Panguipulli, Chile	320,966	0.00	0.00
Norbord Nacogdoches, Texas	294,889	0.00	0.00
LP Roxboro, North Carolina	245,528	0.00	0.00
LP Carthage, Texas	234,243	0.00	0.00
Georgia-Pacific Wood Products LLC Fordyce OSB, Fordyce, Arkansas	221,131	0.00	0.00
Georgia-Pacific Wood Products LLC Grenada OSB, Duck Hill, Mississippi	182,637	0.00	0.00
Anthony Forest Products Co. El Dorado, Arkansas	129,405	0.00	0.00
LP Wilmington, North Carolina	113,979	0.00	0.00
LP Red Bluff, California	102,735	0.00	0.00
Stark Truss Company, Inc. Beach City, Ohio	46,374	0.00	0.00
Shelton Lam and Deck Chehalis, Washington	34,872	0.00	0.00
Georgia-Pacific Wood Products LLC Ocala, Florida	31,554	0.00	0.00
Rosboro Springfield, Oregon	27,212	0.00	0.00

# DEFINING LEAN

by Paul Hoernschemeyer  
and Scott Sedam

In its simplest form, lean is the relentless pursuit, identification and destruction of waste in all forms of product and process. Lean is not merely cost control or cost reduction. Lean is not simply slashing overhead, cutting staff or decreasing specifications and features on product, rendering it hard to sell. Lean is not one more round of rebids forced upon your suppliers and trades. These approaches mean pain for everyone. *Lean is the systematic destruction of waste in product and process.* It is eminently simple; its fundamental logic is inarguable.

## Lean is:

- A set of guiding principles and analytical tools focused on what customers need and are willing to pay for. If the customer won't pay for it, eliminate it. If you cannot eliminate it, reduce it. The goal may sound familiar, but Lean process is markedly different than the methods builders have used in the past.
- A culture of continual waste reduction. No sacred cows graze here. Improvement ideas are expected *from* all quarters—management, front line workers, contractors, and suppliers—all who touch our process or product. Lean applies *to* all functions—land development, design, engineering, sales, construction, finance, accounting,

What it Is, What it Does,  
and **How to Put it to Work**



purchasing, warranty service, and administration.

- Objective. Truth and fact are paramount. Opinion, gut instinct, intuition, habit and tradition must all stand up to factual, measureable scrutiny. Most traditions and even most habits began for good reason and serve a purpose. But whereas times change, habits don't, so it's safe to presume old assumptions need updating.
- Transformational. Lean enables us to see our world with new eyes. Much of what we believe to be business as usual, or things we may sense as waste but believe are simply unavoidable, can no longer be overlooked. You will be taken aback at what you uncover, and you will be surprised at what you are compelled to change.

## What Does Lean Do?

Eradicating waste through Lean improves *everything*. Schedules improve. Production improves. Quality Improves. Sales improve. Supplier and trade relations improve. Margins improve. Morale improves. Management effectiveness improves.



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## Lean:

**Cuts waste.** And thereby reduces cost. Everyone has waste in their product and process; what's difficult is to recognize it when you see it. This lies at the heart of Lean. *Everyone believes they know how to recognize waste.* You will quickly learn that is not true. Because of our habits, practices, traditions and processes—because of how we are raised and trained—most of us have very limited vision in this regard. The good news is that waste is not difficult to spot once you lean to see with new eyes—*Lean eyes.*

**Shrinks cycle time.** A key tenet of Lean is "*flow*"—how to dramatically smooth the production process. The old saying "time is money" was never more true. But what the saying does not tell you is how *much* money. What does an extra day in your schedule cost you? Do you really know? Here's a hint; the interest charges you obsess about are only a small fraction of the total cost. Lean thinking will show you the real answer.

**Improves process.** With Lean, "best practices" become "best known methods." Standardizing processes makes variation visible, more controllable, and easier to improve. Lean uses *Five Whys* to drill down to root causes; first time quality goes up and rework goes down. Think about all the "fixes" you have in place, originally intended to temporarily correct errors when there was little time to permanently resolve them. Have yesterday's temporary fixes become today's SOP? Lean Thinking forces such fixes to the surface.

**Leverages workers.** When Lean is adopted, no one holds back, including the suppliers and trades who know more about the products and processes than any of us. Our best information on what really goes on comes from those who are actually doing the work. While this can be scary for managers because undesired information may surface, *that's exactly what you want to happen.* One caution: don't kill the messengers.

If someone who exposes waste in your company is chastised for bringing it to light, or someone is punished for having allowed the condition to exist, you'll turn off the tap and destroy the process.

**Challenges management.** Lean has little respect for the status quo, and it expects challenges to the status quo be carefully considered. Senior managers especially must learn to not only accept, but *welcome* those who would "*mess with*

*my world*"—provided the motivation is improved product and process. Lean challenges systems, processes, methods, materials, procedures, habits, structures and assumptions. Everything is fair game.

## The Need to Succeed

Every Lean practitioner has his or her own list of what is necessary to succeed with Lean. There are hundreds of books, websites, articles and columns available for your education but here are the basics:

**Embrace change.** Fear of maintaining status quo must exceed the fear of change, or change will not happen. Most businesses that launch into Lean are those confronted with serious problems threatening their livelihood. Coincidence? Not at all. Fear is a potent driver. The current housing downturn is powerful motivation for most builders. Just as important, it also drives your employees, suppliers and trade contractors to change.

**Believe that Lean is the right change.** Lean is just one of many business models, but one that industries around the world have turned to with undeniably positive results. You may find marginal gains by playing at the edges, picking and choosing, but you will reap vast compounded rewards by fully committing and jumping in with both feet.

**Understand Lean principles.** Know what you're getting into and what is required. This is the purpose of this white paper. It's not rocket science, but it is an undeniable change in paradigm. Lean is truly, "*Learning to see with new eyes.*"

**Think Lean.** Lean practitioners have learned the hard way that *lean thinking* needs to come before *lean tools*. There is an entire chest of tools available – 5S, Five Whys, Heijunka, Kaizen, Takt Time, One Piece Flow, Just In Time, Poka Yoke, Pull, Kanban, etc. —each of which has a purpose. Some tools you can employ independently and they just make good sense. But if you learn to *think Lean* first, the tools come together in an order right for you and produce results.

**Find an experienced guide.** Nothing is more important than street-level experience leading the way. It's like having a guide through the wilderness: you might have a map but that doesn't mean you can find your way and avoid the pitfalls. A smart person (or company) learns from his or her mistakes. A *really* smart person (or



company) learns from the mistakes of others. Be the latter. It will save you time and money.

**Seek incremental change.** Although you can realize gains quickly, you cannot get from here to there in one leap. You need a leader who can see over the horizon in order to know what small steps are needed today to have you in the right place for tomorrow.

**Be flexible.** Lean represents more than 50 years of evolution, but it is far more than the sum of its parts. While many Lean gurus decry any variation whatsoever from their personal version of Lean process, at times you may need to deviate from Lean dogma. Remember: Toyota started the Toyota Production System to work for Toyota; they did not start something generic called “Lean.”

**Engage the entire workforce.** Once your finances are secured, your workers and your contractors hold the keys to your company’s success or failure in this market. Tap that resource. Talk with them, consult with them, listen to them—*leverage them*—and they will reward you. Ignore them, dictate to them, and try to work in

## Lean is a genuine culture shift, so take it deep and make it stick.

spite of them and they will punish you. This is where a proven, structured process is invaluable.

**Manage middle management.** The role of middle management is so often overlooked, yet they can make or break lean implementation. Middle managers are heavily vested in their careers. They may fear anything that gives younger employees an edge, like learning something new. On the other hand, when middle management buys in, progress moves quickly. This is so important that we’ve given it special treatment in *Paralyzing Practices* below.

**Reject bureaucracy.** Bureaucracy is the enemy. Lean has little respect for artificial bureaucratic barriers. If you have bureaucrats invested in a safe yet marginally productive status quo, you will have a fight on your hands. Caution: if you yield to the

bureaucrats in your organization and keep inefficient systems in place, the message you send is “some waste and non-performance is OK.” Translated by your workforce it will mean, “Other people have to change, but not me.” You’re sunk.

**Respect your workforce.** Workers willing to grow and change are a manager’s dream; workers afraid of layoffs try to insulate themselves. Change should make things better and provide opportunity. Change that leads to layoffs? Do everything you can to avoid it. Change that allows more production from fewer resources, or change that simply frees resources to do important things you could never get around to before is good.

**Collaborate.** Good ideas are good ideas no matter where they originate. Lean thrives on management that sets guiding principles



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# Lean is the systematic destruction of waste in product and process.

to encourage continual improvement, that expects subordinates to behave accordingly and contribute regularly, and that holds everyone accountable.

**Care for the customer.** It begins with a person who wants your product. Value Stream Mapping, for instance, starts with the customer's expectations when the order is first placed, and ends with the customer's experience in using your product. If you have people who don't care for your customer, in whatever capacity they are in, you lose. Even paper handlers play a role. (Look around your offices and count how many in boxes, out boxes, and paperwork batches you have. Batches and handling represent waste and cost, neither of which your customer wants to pay for. Neither should you.)

**Reinforce yourself.** Any change to your company needs repetition and reinforcement; without reinforcement, people revert to comfortable and ineffective habits. Whenever you have the chance, ask about progress. Drill the culture. Make it an important part of every meeting, every memo, every project, and every personnel evaluation. Leave no doubt that participation is not an option. This is about survival, now and in the future.

**Face the brutal facts.** A hallmark of an effective management team is the ability to accept uncomfortable, even bruising feedback without recriminations and punishment. No more protecting sacred

cows. A sacred cow subject to honest evolution either survives and becomes a valuable part of your system, or is eliminated for good.

**Be resolute.** Lean is a genuine culture shift, so take it deep and make it stick. Don't accept a shallow, surface change, or, to paraphrase a frustrated coworker, "They're rearranging the deck chairs on the *Titanic*." Same furniture, different look, identical results.

**The Learning Organization.** Albert Einstein said, "Insanity is doing the same things over and over again, and expecting different results." You'll never get better this way. Doing things differently requires genuine, focused learning. If you or those in your company are afraid to learn—or if they will not admit they need to learn—you will fail.

## Paralyzing Practices

As you launch into any significant business change initiative, you will encounter formidable obstacles. Here we review just three of many, but three from our experience that are dangerous.

**Nodding Head Syndrome.** Killer one is a deceiving mix of public consent and private denial. The Nodding Head Syndrome is most visible when change is announced publicly before adequate understanding and buy-in from the management ranks. You have seen them, the heads nodding in agreement around a conference table, yet those nodding heads don't *really* understand their roles and responsibilities and what this initiative means to their day-by-day work. You thought you were on the path to success but now you are losing momentum. Interest wanes and daily emergencies take the wind out of your sails. It's avoidable if you gain buy-in ahead of time and know how to identify the signs and how to respond when you see them.

**Veto of Inaction.** Active subversion is not the only way to block an initiative. Simply *not* acting can be just as deadly. Killer two has the advantage of being stealth, and therefore reduces the risk for anyone who chooses to not participate. If caught, non-participants will offer logical reasons why they couldn't comply. There are telltale signs if your organization suffers from this malady, though you may not be aware of its impact until too late. They key and the cure is a system for genuine management accountability.

**Not Me First.** This is perhaps the most insidious of the Killer three because it is often raised by an otherwise willing participant. Not Me First will have several well-founded reasons to withhold their personal investment in the success of an initiative. There may be too many other critically important issues on his or her plate. Maybe the risk is too high until success has been demonstrated elsewhere. Maybe it's too visible to the client, the customer, the suppliers, other managers, the employees, whomever, should we *not* succeed. You've heard the arguments and maybe even used them yourself. Everyone must become vested in the success of Lean. When someone withholds support from common cause, others fear comparison and will worry about protecting themselves, quietly watching for key moments when they, too, can back off. ●

*Paul Hoernschemeyer is director of operations and Scott Sedam is president of TrueNorth Development, Inc. (www.truen.com), a consulting, training and organizational development firm based in Northville, Michigan. Mr. Sedam will give a presentation at the APA Marketing Advisory Committee meeting in October on how lean building, cost control and quality improvement can benefit wood product manufacturers.*



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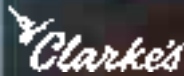
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# Upcoming Events

## 2010

### OCTOBER

- 13-15** National Lumber & Building Material Dealers Association ProDealer Industry Summit, Orlando, Fla., 202-367-2359, [www.dealer.org](http://www.dealer.org)
- 17-20** APA Annual Meeting and Info Fair, Tucson, Ariz., 253-620-7429, [www.apawood.org](http://www.apawood.org)
- 20** APA Safety and Health Workshop, Tucson, Ariz, 253-620-7420, [www.apawood.org](http://www.apawood.org)
- 24-26** Southern Forest Products Association annual meeting, Savannah, Ga., 504-443-4464, [www.sfpa.org](http://www.sfpa.org)

### NOVEMBER

- 3-5** North American Wholesale Lumber Association Traders Market, Chicago, Ill., 800-527-8258, [www.nawla.org](http://www.nawla.org)
- 15-17** National Lumber & Building Material Dealers Association Annual Meeting, Colorado Springs, Colo., 202-367-1169, [www.dealer.org](http://www.dealer.org)
- 16-18** North American Building Material Distribution Association Annual Meeting & Show, Colorado Springs, Colo., 312-747-7862, [www.nbmda.org](http://www.nbmda.org)
- 16-19** Greenbuild Expo 2010, Chicago, Ill., 800-795-1747, [www.greenbuildexpo.org](http://www.greenbuildexpo.org)

## 2011

### JANUARY

- 12-15** International Builders' Show, Orlando, Fla., [www.buildersshow.com](http://www.buildersshow.com)

### MARCH

- 21-24** Structural Insulated Panel Association annual meeting and conference, Greenville, S.C., [www.sips.org](http://www.sips.org)

### APRIL

- 5-7** Joint International Symposium on Wood Composites and Veneer Processing and Products, Seattle, Wash., [www.woodsymposium.wsu.edu](http://www.woodsymposium.wsu.edu)
- 13-15** International Wood Products Association World of Wood, New Orleans, La., [www.iwpawood.org](http://www.iwpawood.org)

### MAY

- 10** International Wood Markets Group Global Wood Products Industry & Market Conference, Vancouver, B.C., [www.woodmarkets.com](http://www.woodmarkets.com)
- 11** PricewaterhouseCoopers 24th Annual Global Forest & Paper Industry Conference, Vancouver, B.C.
- 12-14** American Institute of Architects Convention & Design Exposition, New Orleans, La., [www.aia.org](http://www.aia.org)
- 16-18** 11th International Conference of Wood & Biofiber Plastic Composites, Madison, Wisc., 608-231-1361, [www.forestprod.org](http://www.forestprod.org)

### JUNE

- 19-21** Forest Products Society 65th International Convention, Portland, Ore., 608-231-1361, [www.forestprod.org](http://www.forestprod.org)

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