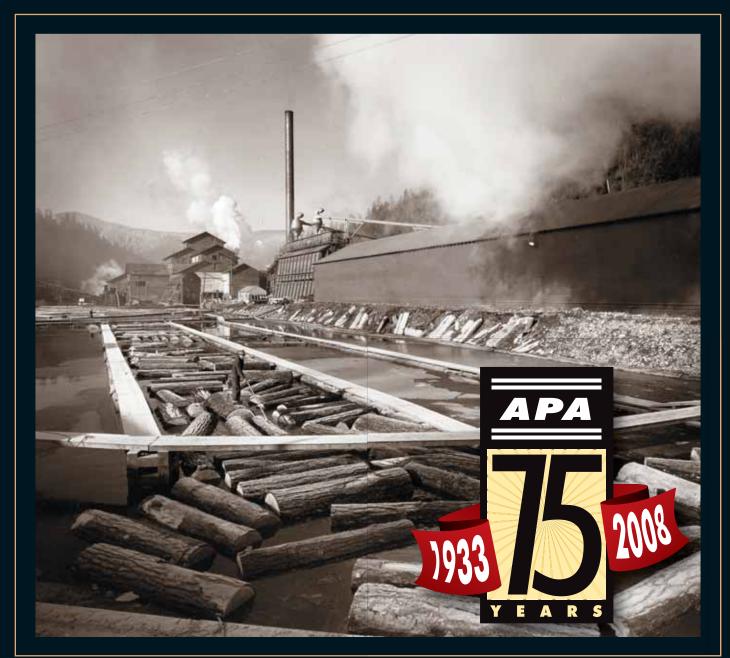
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VENUE VEGAS APA Annual Meeting and Info Fair Preview RAISING AWARENESS Gulf Coast Raised Wood Floor Program in Full Swing **REDUCING VARIATION** The Role of Statistical Process Control in Advancing Product Quality

THE OFFICIAL PUBLICATION OF APA - THE ENGINEERED WOOD ASSOCIATION



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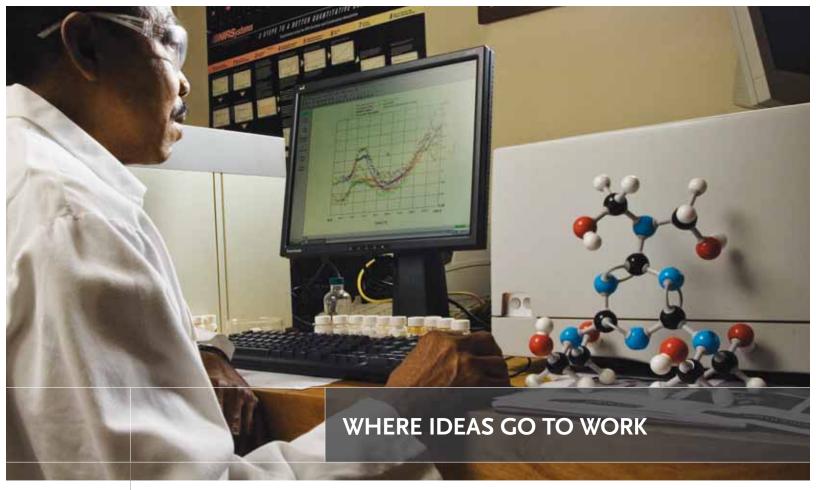
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departments

- 7 PRIMELINES
- 9 INDUSTRY WATCH
- DATELINE APA 13
- 43 UPCOMING **EVENTS**
- 43 READER SERVICES
- 45 **ADVERTISER** INDEX
- 46 **FINAL FRAME**



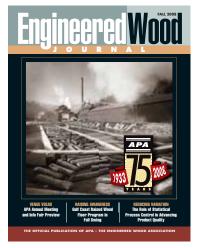
features

- VENUE VEGAS 16 **APA Annual Meeting** and Info Fair Preview
- page 16



page 30





About the Cover:

The log pond of an early Oregon plywood mill at about the time of the founding of the Douglas Fir Plywood Association in 1933. Now APA, the association is celebrating its 75th anniversary this year.

page 36

Engineered Wood Journal is produced for and distributed free of charge to APA members and other engineered wood product manufacturers; their equipment, product and service suppliers; and others with an interest in the industry.

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Gulf Coast Raised Wood Floor Program in Full Swing

36 **WOODWORKS AT WORK**

Nonresidential Construction Market **Initiative Begins to Gain Converts**

41 **REDUCING VARIATION**

The Role of Statistical Process Control in Advancing Product Quality

Published by:

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We're Making History

If you received this copy of the *Journal* in the mail, you also should have received a special *APA Commemorative Edition* in celebration of APA's 75th anniversary this year. The publication contains historical vignettes, a timeline of milestones, lists and photos of APA's past chairmen and top staff executives, information on the Plywood Pioneers Association and more.

The *Commemorative Edition* will be posted soon on the APA website. Additional hard copies are now also available free of charge while supplies last.

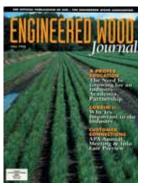
Since we're all in this thing together, happy anniversary to us, and to you—APA staff, APA members, EWTA members, retirees, friends, allies and stakeholders far and wide.

Speaking of Anniversaries



This autumn marks another milestone of sorts—the 10th anniversary of the founding of this magazine.

To quote from the first issue, the *Engineered Wood Journal* was established "in support of a primary association function—to serve as an information clearinghouse for the industry it



represents. We believe the *Journal* is a unique and valuable tool for exchanging information and improving communication among engineered wood product manufacturers; product, equipment and service suppliers; and others with a stake or interest in the engineered wood products industry."

To the extent that we've succeeded in meeting that goal, substantial credit is due the many industry suppliers—most of them members of the Engineered Wood Technology Association—who have advertised in the *Journal* over these past 10 years. Without you, the *Journal* would not have been possible.

So thanks. And hope to see you again in the next issue.

One More Thing to Celebrate

Given the state of the housing market, rising oil prices and the tottering economy, it hasn't been easy finding much in the news to celebrate this year. But there have been some exceptions.

One was the ruling by a senior judge for the United States Court of Federal Claims in favor of the estates of Wayne and Jean Hage in a marathon property rights case dating all the way back to 1991. You may recall that name Hage. They were the Nevada ranchers whom the federal government sought to deny water and other long-established grazing permit property rights. The ruling in favor of the Hage estate (Wayne and Jean are both deceased) is being hailed by property rights advocates as a landmark decision that should give pause to future government attempts to trample the property rights of its own citizens.

The outcome—including multi-million dollar compensation for unlawful "taking"—is particularly sweet in view of the bully tactics that reportedly were employed against the Hages over several years by federal agency bureaucrats.

Jack Merry



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Industry Watch

EPA Rejects National CARB Regulation but Agrees to Further Study

The U.S. Environmental Protection Agency (EPA) decided in June not to extend to the entire country stringent formaldehyde emissions standards that were adopted recently in California, but did agree to launch "a broad effort to gain greater scientific understanding of the potential health risks of formaldehyde's use in pressed wood products."

The petition seeking national adoption of the California Air Resources Board (CARB) emissions limits was initiated by the Sierra Club and several other environmental organizations, as well as private citizens.

EPA said that under its planned scientific evaluation, it will develop risk assessments on the potential adverse health effects of formaldehyde emissions, evaluate the costs and benefits of possible control technologies and determine whether EPA action is needed to address any identified risks.

The agency also said it would work closely with the Department of Housing and Urban Development (HUD) on emissions issues related to manufactured housing.

ISO Establishes Sustainability Principles for Building Construction

The International Standards Organization (ISO) has established a new international standard covering sustainability principles for building construction worldwide.

The standard, *ISO 15392:2008*, *Sustainability in Building Construction-General Principles*, provides a common basis for communication among stakeholders such as builders and architects, product designers and manufacturers, building owners, policymakers, regulators, housing authorities and consumers, ISO said in a news release. The principles in the standard take into account that while the challenge of sustainable development is global, the strategies for addressing sustainability in building construction are essentially local and differ in context and content from region to region, the release stated.

Structural Board Association Acquired by TECO

The Structural Board Association (SBA) announced earlier this year that it is selling its assets to TECO, the Wisconsinbased building products certification agency.

The SBA board of directors "decided to dissolve the association, transferring its assets to TECO in a transition that will be completed by the end of 2008," according to an SBA news release. Those assets include the SBA name and logo, website name and rights, all technical information and rights to host future OSB World Symposiums.

SBA was founded in 1976.

Mountain Pine Beetle Infestation Continues to Threaten Alberta Forests

Mountain pine beetles continue to threaten the health of Alberta's forests despite extremely cold winter temperatures that slowed the rate of growth of beetle populations in parts of the province, the provincial government reported in late June.

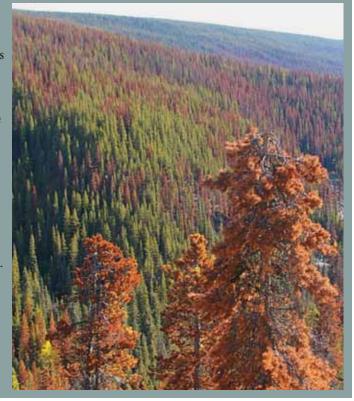
Surveys conducted in May and June indicated high rates of beetle winter survival across much of southwest Alberta and in several pockets of northern and west-central Alberta, the government said.

"Pine beetles may be here to stay in Alberta," said Sustainable Resource Development Minister Ted Morton. "We have to work harder to manage infestations and ensure the populations remain low."

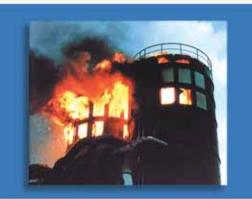
Mountain pine beetles threaten the health of 6 million hectares of pine forest in the province. Infestations began in west-central Alberta in 2006 following a wind-assisted in-flight of insects from British Columbia.

The Alberta government has earmarked \$55 million for pine beetle eradication efforts this year and spent \$138 million the previous two years. The province has lost an estimated 5 million trees to the beetle.

British Columbia, by comparison, has suffered the loss of some 3.5 billion trees to the beetle, or about half of the province's pine forests.



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Industry Watch

AIA and USGBC Announce Strategic Alliance Plans

The American Institute of Architects (AIA) and the U.S. Green Building Council (USGBC) announced in May they plan to form a strategic alliance and associated work plan in the areas of advocacy, education and research.

The alliance will include an annual leadership meeting, regular meetings between senior leadership staff and continuation of reciprocal sponsorship of USGBC's Greenbuild and AIA's annual convention.

"Our long history of collaboration, our shared heritage and the volunteer leadership roles many AIA members play within USGBC make a stronger working relationship a natural," the two organizations' leaders said in a jointly signed memorandum.

USGBC's LEED (Leadership in Energy and Environmental Design) Green Building Rating System[™] is considered by many to be weakened by its bias against wood and failure to recognize life cycle assessment criteria.

Dovetail Partners Publishes Green Building Programs Review

Dovetail Partners Inc., the Minneapolis-based nonprofit

organization dedicated to providing credible information about the impacts and trade-offs of environmental decisions, has published an up-to-date summary of recent green building program changes.

Titled Green Building Programs in the United States: A Review of Recent Changes Related to Designation of Environmentally Preferable Materials, the 18-page document describes recent updates and proposed changes to the most prominent green building programs in the U.S., including the USGBC LEED program, NAHB National Green Building Standard, and Green Globes.

The report can be viewed at www.dovetailinc.org.

Green Dealer Program Teams Up with Regional Associations

The Certified Green Dealer[™] Program, a web-based distance-learning certification program, announced recently that several regional lumber dealer associations will co-market the program to their members.

The co-marketing groups include eight regional associations with members in 20 states and the District of Columbia.

Launched in early 2008 under the auspices of *LBM Journal*, the program

is not affiliated with any particular national standards-setting organization. Certification of the lumber dealer is based entirely on demonstrated mastery by the dealer's personnel of "best practices" building science and green building basics, and requires the participation of 75 percent of a dealer's sales personnel.

More information can be found at www.CertifiedGreenDealer.com.

Convicted Eco-Terrorist Sentenced to 20 Years

Eric McDavid, 30, was sentenced in May to nearly 20 years in prison after being convicted in federal court of conspiring to commit eco-terrorist acts against various targets, including a U.S. Forest Service genetics lab.

Two others in the case pleaded guilty to lesser charges carrying a five-year maximum sentence in exchange for their testimony against McDavid. The case against McDavid and the others was built with the help of an FBI informant.

U.S. Attorney McGregor Scott said in a statement that the lengthy sentence "should serve as a cautionary tale to those who would conspire to commit life-threatening acts in the name of their extremist views."

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Q&A on Panel Thickness Labeling Issue Published

Questions and answers regarding new panel thickness labeling recommendations designed to satisfy National Conference of Weights and Measures consumer protection mandates are provided in a paper published in June by APA.

The four-page *Technical Topics* (Form TT-054) provides background on the discrepancy between thickness tolerances permitted in *U.S. Product Standards PS 1* and *PS 2* and those allowed in National Institute of Standards and Technology (NIST) handbooks used by state and local weights and measures agencies. That discrepancy led officials in California to begin red tagging structural plywood panels at some retail yards.

Following meetings by APA, AF&PA and allied interests with California officials, an agreement was reached to label panels with a supplemental thickness designation that is consistent with both NIST regulations and structural wood panel standards.

The paper, which can be downloaded as a PDF free of charge from the publications section of the APA's website, answers frequently asked questions about the agreement and includes example supplemental label and certification marks.

Three-Year Strategic Plan Updated

APA's three-year Strategic Plan, developed originally in 2006 and called Vision 2009, has been updated for the period 2008-2011.

The revised plan, reviewed and approved by the board of trustees at its meeting earlier this year, establishes five primary goals: 1) grow wood product share in major end-use markets; 2) increase membership; 3) provide a certification program that assures member compliance with standards; 4) exercise fiscal responsibility; and 5) maintain organizational effectiveness.

The entire plan, including background and assumptions, strategic imperatives for each goal, specific strategies, and performance metrics, is posted in the members-only section of the APA website.

Georgia-Pacific's Rehwinkel Assumes Chairmanship of APA

Michael Rehwinkel, vice chairman of the APA Board of Trustees, has assumed the chairmanship of the Association. He succeeds Jim Enright, who recently resigned from the position upon his departure from APA member company Standard Structures Inc.

Rehwinkel is president of wood products at Georgia-Pacific Wood Products LLC, in Atlanta, Ga. He joined GP in 2000 and was appointed president of wood products in 2006. Prior to that, he worked for 23 years in various financial and general management capacities, primarily in the paper industry. He has served on the APA Board of Trustees since 2006.

The Board also has elected Jeffrey Wagner, executive vice president, OSB at Louisiana-Pacific Corporation, as APA vice chairman. Wagner has worked at LP for approximately 30 years. Prior to his present position, he was vice president of forest resources, supply management and logistics. He too joined the APA Board in 2006. As vice chairman, he also takes on the chairmanship of the APA Finance Committee.



Michael Rehwinkel

Jeff Wagner



Member Committee Formed to Advise on APA Mill Safety Competition

An ad hoc committee of APA member company safety professionals has been formed to advise staff on APA's annual Mill Safety Awards Competition.

The committee is chaired by APA Vice Chairman Jeff Wagner, executive vice president of OSB at LP, and includes Pat Wright, Roseburg Forest Products Company; Mark Dicarlo, Roy O. Martin Lumber Co. LLC; Bill Sellen, Georgia-Pacific Wood Products LLC; Blu Santee, Plum Creek; Keith Harned, LP; and Christine Alford, Hood Industries Inc.

Begun in 1982, the competition recognizes the managements and employees of mills with the lowest incidence rates based on guidelines established by the U.S. Occupational Safety and Health Administration (OSHA). Nearly 150 facilities in the U.S. and Canada participated in the 2007 program.

The new committee has reviewed the existing program structure, eligibility, recognition of winners and other aspects of the competition and will recommend adjustments to the APA Board of Trustees.

APA Issues Advisory on Non-Certified Chinese LVL Scaffolding

APA has published a product advisory on noncertified Chinese scaffolding made of laminated veneer lumber following a series of tests on samples that showed serious performance problems with the imported product.

According to the tests, the Chinese samples exhibited bending stiffness 20 percent below the value labeled on the product and 30 percent below the allowable bending stress of comparable IVL scaffold planks manufactured in the United States. The tests also showed that the products' glue bond performance is inconsistent and that bond durability does not meet *PS 1* requirements. Moreover, the products failed to meet OSHA and ANSI certification requirements.

The advisory, titled *Imported Chinese LVL Scaffold Plank*, is available on the APA website. A news release on the test results also was prepared and distributed to the trade media.

Full House Test Report Posted

The results of the first phase of APA's threedimensional full house test program have been compiled in a report that is now available on the association's website.

Dateline APA

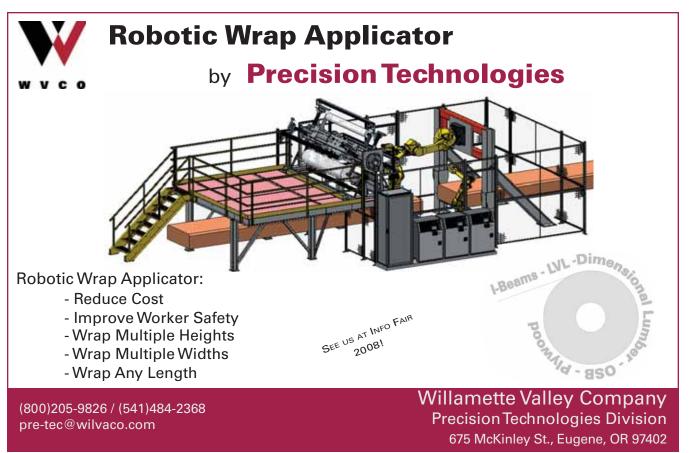
The report (T2007-73) documents the performance results of a variety of wall bracing configurations. Conducted on a "whole house" structure measuring 25 feet x 38 feet x 9 feet, the tests employ state-of-the-art lateral load equipment that measures a structure's system performance more accurately than is possible with traditional planar, two-dimensional test systems.

The primary purpose of the first phase tests was to support APA efforts to defend and broaden acceptance of wood structural panel wall bracing designs in the International Residential Code (IRC). Approximately 5.2 billion square feet of OSB and plywood were used in the U.S. last year for single-family wall sheathing.

Position Statement Addresses FEMA Trailer Formaldehyde

APA has developed a position statement in response to news reports that misleadingly suggest structural wood panels might be responsible for elevated formaldehyde





Dateline APA

levels found in travel trailers and mobile homes supplied by the Federal Emergency Management Agency (FEMA) to victims of Hurricanes Katrina and Rita.

The statement clarifies the difference between urea and phenol formaldehyde adhesives and explains that, because of their extremely low emission levels, structural plywood and oriented strand board manufactured to *PS 1* or *PS 2* either meet or are exempt from the most stringent standards and regulations in the U.S. and abroad. The elevated formaldehyde levels in the FEMA units were announced following an analysis by the U.S. Centers for Disease Control and Prevention (CDC).

Copies of the statement, titled *Facts on Structural Wood Panel Formaldebyde Emissions*, can be downloaded from the News and Information/Backgrounders section of the APA website.

Wood Products Council Plans Major Residential Market Research Effort

The Wood Products Council (WPC) has earmarked \$1 million over five years for a market research project on the use of wood in new residential construction and residential repair and remodeling.

The multi-year studies, to be managed for WPC by APA, will be conducted this year, in 2010 and then again in 2012. Research will benchmark and follow wood product volume and share compared with steel and concrete. Another study conducted in the same years will involve surveying consumers and builders in each of the 20 largest U.S. markets to gain new intelligence on the key drivers for specification and use of wood and nonwood products.

Results from all of the research will then be used for planning a comprehensive promotion campaign and as a benchmark for measuring progress.

APA Elected to Canada Wood Group Board of Directors

APA Vice President and Corporate Secretary Ed Elias will serve as the association's representative on the board of directors of Canada Wood Group, an alliance of wood products industry associations that coordinates funding for international market development projects sponsored by the Canadian and British Columbian governments. APA was approved recently as a member of the group.

Canada Wood Group maintains offices and engages in export promotion activities in Japan, China, Taiwan, South Korea, the United Kingdom and Belgium.

The organization's other members include BC Wood, CanPly, Coast Forest and Lumber Association, Council of Forest Industries, Forest Products Association of Canada, Quebec Wood Export Bureau, Western Red Cedar Export Association, and Structural Board Association.

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APA 2008 Annual Meeting and Info Fair Preview

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here better to celebrate APA's 75th anniversary than the "entertainment capital of the world"—Las Vegas?

Actually, the meeting will be held at the Ritz-Carlton Lake Las Vegas, Henderson, Nev., on the shores of a 320-acre private lake at the base of spectacular Nevada desert mountains. That's about 17 miles east of the famed Las Vegas Strip—far enough away to accommodate the meeting's important business agenda, but close enough for easy access when the work is done.

A key topic at the meeting will be the troubled housing market, with both a near-term outlook by Bernard Markstein, staff vice president for economics at the National Association of Home Builders, and a long-term forecast based on demographics presented by Dowell Myers, professor of urban planning and demography at the University of Southern California.

Roundtable discussions will focus on selling to the nonresidential construction market, adhesive issues and developments, and green building.

And a Technical-Quality Update session for both APA and EWTA members will cover a number of other important topics, including statistical process control, CARB and formaldehyde emissions regulations, APA's imported product test program, standards development and APA's construction systems test program.

As usual, the meeting will feature the Info Fair supplier exhibition sponsored by the Engineered Wood Technology Association, a full complement of committee meetings, reports by APA Chairman Mike Rehwinkel and President Dennis Hardman, safety competition awards, the Chairman's Dinner and more.

See the official meeting guide for complete information on event times and locations.



In and Around Las Vegas

What's to do in and around Las Vegas? The list of shows, events, tours and other attractions (not to mention casinos) is virtually endless. Luckily, the Las Vegas Convention & Visitors Authority keeps track of the 24-7 action and displays it all on its website at www.lvcva.com.

The site's Shows & Events section recently listed approximately 75 variety shows, comedy acts, magic routines, plays, musical revues and other entertainment events on the Las Vegas Strip alone, and nearly that many more attractions elsewhere in and around the city. Among them are Jay Leno, Circus Acts, Bodies—the Exhibition, Comedy Stop, Cirque du Soleil, Barry Manilow, Titanic—The Artifact Exhibit, and CBS Television City, where attendees can watch and rate new television shows.

There are also numerous museums, theme parks, thrill rides, exhibits and free spectacles around the city, including animatronic statues, light shows, dancing waters and circus acts.

For those wishing to get out and about a little further and having time before or after the meeting, there are a number of regional attractions, including Hoover Dam, Lake Mead, the Grand Canyon, Zion National Park, Death Valley, and Area 51, site of a high security military base and among some associated with UFOs, aliens, extraterrestrials and government conspiracies. Tours to all of those and other attractions are offered.

Complete information on Las Vegas events, attractions, tours, shopping, dining, transportation and other aspects of the city can be found at www.lvcva.com.

SPEAKER LINE-UP

Technical-Quality Update, 3:30 - 5 p.m., Sunday, Sept. 21

Standards Development APA Construction Systems Research Borjen Yeh, Director, Technical Services Division, APA

Statistical Process Control and Quality Assurance Trends CARB and Formaldehyde Emissions Regulations Steve Zylkowski, Director, Quality Services Division, APA

APA Imported Product Test Program Tom Williamson, Vice President, Quality Assurance and Technical Services, APA

General Session, 8:30 - 10:15 a.m., Tuesday, Sept. 23

Welcome, Business Session and State of the Industry Jim Enright, Chairman, Board of Trustees, APA

Near-Term Outlook for Housing Bernard M. Markstein, Vice President for Economics, National Association of Home Builders

Demographics and the Long-Term Outlook for Housing Dowell Myers, Professor of Urban Planning and Demography, University of Southern California

State of the Association Dennis Hardman, President, APA



Roundtable Sessions, 11 - 11:50 a.m. and again 1:30 - 2:20 p.m., Tuesday, Sept. 23

Selling to the Nonresidential Construction Market Keith Coonce, President, Panelized Structures, Inc.

Adhesive Issues and Developments Joe Bevilaqua, President; Phenolic and Forest Product Resins, Hexion Specialty Chemicals

Green Building Legislative Update Erin Shaffer, Vice President for Federal Outreach, Green Building Initiative

PHOTO NOT AVAILABLE

Marketing Advisory Committee Meeting, 2:30 - 5:00 p.m., Tuesday, Sept. 23

Production and Market Outlook Craig Adair, Market Research Director, APA

APA Gulf Coast Rebuilding Program Bob Clark, Engineered Wood Specialist and Manager, Gulf Coast Rebuilding Program, APA



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Partial list as of July 1

Info Fair, held annually in conjunction with the APA annual meeting, is sponsored by the Engineered Wood Technology Association (EWTA). EWTA is a related nonprofit corporation of APA—The Engineered Wood Association and serves as a liaison between engineered wood product manufacturers and their suppliers.



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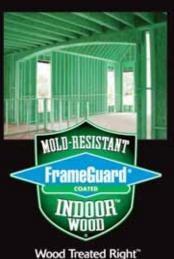


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Awareness

Gulf Coast Raised Wood Floor Program in Full Swing

by Georgiann Gullet and Kevin Hayes

ome builders and buyers from Florida to Texas are getting the word on wood.

APA, the Southern Pine Council (SPC), their member manufacturers and other industry partners are delivering construction strategies, product support and educational outreach throughout the Gulf Coast in a broad-based effort to increase the awareness, acceptance and use of raised wood floors, as well as wind-resistant walls and other wood construction systems.

APA activities are aimed at educating Gulf Coast builders, framers, designers and building code officials about the merits of wood construction through seminars and demonstration homes, while SPC is concentrating primarily on creating consumer awareness of and demand for raised wood floor features and benefits. The two highly coordinated and complementary programs are intended to be the first phase of an even broader North American residential construction market program under the auspices of the Wood Products Council (WPC), an incorporated nonprofit alliance comprised of North American wood products associations.

SPC—a joint marketing effort created in 1988 by the Southern Forest Products Association (SFPA) and Southeastern Lumber Manufacturers Association (SLMA)—launched its raised wood floor campaign around the start of the new millennium.

Wood product manufacturers had been losing market share to concrete slab-on-grade construction for decades. The trend didn't make sense, though, considering the multiple benefits of raised floor construction when compared to slabon-grade, especially in regions at risk for flooding or areas of expansive soils where slabs are prone to cracking.

As a result, SPC began the uphill battle of teaching people what early builders knew—in many areas and circumstances, raising a home's floor above the ground is the smartest way to build. The campaign began with a product performance facts brochure and print ads for building trade publications. In 2003, Cathy Kaake, SFPA's director of engineered and framing markets, started networking with floodplain managers and others who focus on managing flood risks. In 2004, SPC published its raised floor systems design and construction guide, and a Web site devoted to the advantages of raised floors (www.raisedfloorliving.com) was developed in January 2005.

The groundwork was well established by the time Hurricane Katrina struck, bringing massive flooding along the coast of Mississippi and in the metro New Orleans area. Hurricane Rita soon followed, flooding parts of southwest Louisiana and southeast Texas. SPC immediately ramped up its raised floor efforts and introduced a television advertising campaign in the New Orleans and Mississippi coastal areas in 2006.

Ironically, many of the SFPA staff members responsible for carrying out the raised floor effort worked from firsthand knowledge of what a flood could do. Most of them lived in the metro New Orleans area and were forced from their homes for weeks. Several returned to homes that had been flooded. One of the affected staffers was Kaake, who approached her work with floodplain managers with a new passion.



APA, the Southern Pine Council and their members provided expertise and materials for the construction of several raised wood floor decks as part of Habitat for Humanity's 25th annual Jimmy and Rosalynn Carter Work Project in Biloxi, Miss.

She has since made dozens of presentations to builders, designers, floodplain managers, code officials and others about constructing homes that resist wind and flood hazards. One of her primary messages is to elevate homes with a raised wood floor system instead of building a mound of fill and then topping it with a concrete slab, a method that impedes the drainage of floodwaters and can exacerbate flooding for neighboring properties.

One way to measure the educational campaign's progress was to track how many people visited the raised floor Web site to learn more. Results were encouraging. More than 300,000 visitors went to the site from its inception through 2007. Budgetary restrictions limited how far SPC could take its campaign until additional funding was obtained through a grant associated with the U.S.-Canada Softwood Lumber Agreement (SLA).

This funding has made a world of difference, allowing SPC to considerably expand the scope of its efforts. For starters, the campaign has moved into Houston, traditionally one of the nation's top markets for new construction and an area at risk for hurricane-related flooding.

The additional funding also allowed SPC to commission research to establish what consumers currently think about raised floors (these results varied by region), what's most important to them when it comes to building a new home (cost), where they get their information (the Internet ranked highest) and whom they trust when it comes to homebuilding advice (engineers topped the list). This information helped SPC and its advertising agency—The Ehrhardt Group of New Orleans—formulate a new ad campaign and pinpoint where additional education was needed.

APA, meanwhile, has been focusing on education and training in the design and construction community. Raised wood floors have been a high emphasis target market for years, but hurricanes Katrina and Rita made them an even greater priority. A Gulf Coast team was established to schedule training seminars, initiate demonstration projects with local builders and conduct research that will eventually lead to best-practice construction recommendations for raised wood floors, insulation, air-tightness



Building professionals visit a raised floor bome featured on a green bomes tour beld in conjunction with NAHB's Green Building Conference earlier this year in New Orleans, La. A number of Southern Pine Council member companies donated products to the project.

and wind resistance. And Bob Clark, an APA-engineered wood specialist based in Michigan, was given the day-to-day assignment of managing the program.

Like SPC, APA also has been awarded SLA-related funding for a wide array of market-building activities, thereby leveraging the investment of its members. By working together and pooling their resources, APA and SPC are able to assure that their members' investments are not wasted on duplicative efforts.

Here's a look at some of the projects undertaken by SPC and APA so far in 2008.

• Based on research conducted last spring, SPC launched a two-month television advertising campaign in mid-May. The ads were tailored to the interests and concerns that research identified in the various markets. In addition, one ad focusing on the "green" advantages of wood and raised floors aired in all of the markets. The TV spots appeared in the Houston and New Orleans metro areas, as well as in Baton Rouge and Lake Charles, La.; Biloxi and Gulfport, Miss.; Mobile, Ala.; and Pensacola, Fla. The campaign



clearly hit the mark, with visits to the Raised Floor Living Web site increasing by almost 70 percent in the first two weeks the ads ran. The number of searches for a raised floor builder through the site's building pro locator also grew from 74 in April to 827 in May.

- APA and SPC are helping to fund a study to determine what types and methods of insulation work best for controlling moisture under raised floor structures. Results are expected in the summer of 2009. To help ensure that raised floor systems perform as well as possible in high winds and floods, SPC is providing funding and APA technical expertise for a project to develop prescriptive pier foundation and footing requirements that are compatible with the American Forest & Paper Association's "Wood Frame Construction Manual."
- SPC worked with a New Orleans builder on a raised floor two-story home visited by 200 building professionals during a tour of green homes held in conjunction with the National Association of Home Builders' (NAHB) National Green Building Conference last May in New Orleans. SPC will use the demonstration home for additional educational events. SFPA staff has also worked with developers and other officials to encourage the use of raised floor construction in two Baton Rouge area projects.
- SPC helped sponsor the builders of a multifamily home and church featured in the season finale of ABC's "Extreme Makeover: Home Edition." Both structures featured raised floors, as well as plenty of Southern Pine and ample shots of wall panels and parallel-chord trusses. The show was expected to have more than 25 million viewers.
- Cathy Kaake continues her work with floodplain managers, FEMA officials and insurance professionals who manage risks in flood-prone areas. She was able to deliver her message in a presentation to a very receptive audience at the 2008 annual conference of the Association of State Floodplain Managers.
- SPC and APA teamed up to promote raised floor construction through an exhibit at NAHB's 2008 International Builders' Show. In all, SFPA staff will bring the raised floor message to

building and design professionals and others at more than 20 trade shows during 2008.

• In May, APA took part in the Jimmy and Rosalyn Carter Work Project, a fiveday event involving the construction, rehabilitation and framing of nearly 250 homes in particularly hard-hit areas of the Gulf Coast. APA arranged the delivery of five raised wood floor decks in Biloxi that served as construction stages for 42 future Habitat for Humanity homes. Habitat's construction superintendents were exposed to raised wood floor techniques and came away impressed with their ease, speed and volunteer-friendly features.

• APA has partnered with Champion Builders in Port Allen, La., to build two identical homes—one slab-on-grade, the other on a raised wood floor—to track real-world time and material costs for each foundation. APA will track customer preferences for foundation type as construction progresses. Open house builder and real estate agent

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training events also are planned during the construction process.

- APA is overseeing the construction of two raised wood floor homes in Mobile, Ala., as part of a cost study in cooperation with the U.S. Forest Products Laboratory, SFPA and the NAHB Research Center. The study, which includes nine homes throughout southern Mississippi and southern Alabama, will analyze cost data for three slab-on-grade, three slab-on-elevated fill and three raised wood floor foundations. APA has contracted with BC Daniels Inc., a custom builder based in Mobile, to build the raised wood floor homes and to hold educational events at the site once floor construction is complete. Results will be featured in trade and consumer marketing.
- In Houston, APA is coordinating a 3,000-square-foot wood-framed demonstration home project with GreenHaus Builders, the company that built Houston's first LEED Gold-Certified residence. Owner Michael Strong will open the house to designers and builders throughout the construction process.

APA and SPC member products and wood construction systems meeting green building guidelines will be showcased. And through SPC's efforts, Houston CBS affiliate KHOU will follow the home's progress with a series of live segments on its morning show, "Great Day Houston." Strong will also promote the home on his weekly radio show, "Home Improvement Hotline."

- APA has held a series of residential design and construction seminars throughout the year that, in addition to raised wood floors, cover high wind design, call-back reduction, building code compliance, moisture control and green building.
- APA created a Gulf Coast demonstration house program tagline—E3House and launched a Web site, www.e3house. org, that features program plans, event schedules, project images and the latest news on Gulf Coast activities. The "E" in E3 stands for *Elevate* (build to a higher standard with raised wood floors), *Educate* (provide ongoing training for builders, designers and code officials) and *Endure* (emphasize wood-framed

construction's durable and sustainable, or green, qualities).

The prospects for increasing wood industry share of the residential floor market are strongly supported by the results of a consumer preference survey conducted recently by NAHB. For the United States as a whole, 42 percent of consumers prefer wood-framed first floors, compared with 25 percent for concrete slab, according to the survey results. The remaining onethird had no preference, was not sure or didn't know. And while the preference for concrete slabs was only 25 percent, concrete represents 53 percent of total first-floor area.

These numbers suggest that a wood floor promotion campaign, such as the one now being conducted by SPC and APA, could and should yield positive results.

Georgiann Gullet (ggullet@sfpa. org) is communications manager at the Southern Forest Products Association in Kenner, La. Kevin Hayes (kevin.bayes@apawood.org) is public relations manager at APA, Tacoma, Wash.





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WoodWorks at Work

Nonresidential Construction Market Initiative Begins to Gain Converts



he North American wood products industry's nonresidential construction market campaign, called WoodWorks, is ramped up and going strong on a number of fronts in key markets.

The program was launched last year by the Wood Products Council (WPC) in recognition of the long-term opportunity to increase wood's market share through sustained support of design and construction professionals.

"Our objective is to provide resources that allow architects, engineers, contractors and others to design and build nonresidential structures out of wood more easily and at less cost," said Dwight Yochim, national director of the WoodWorks program.

"In 2007, only 11.5 percent of U.S. nonresidential buildings were framed in wood. And yet, not only do building codes permit greater

Wood Solutions Fairs

Wood Solutions Fairs are multi-faceted, day-long educational events that focus on the use of wood in commercial buildings. They combine topical seminars with relevant trade booths to deliver a comprehensive educational experience for individuals considering or using wood in nonresidential structures. From safety and durability to code issues, green building and more, Wood Solutions Fairs provide the kind of in-depth and practical information that can be applied to projects immediately.

The California and Southeast markets have each hosted their first Wood Solutions Fairs. California saw more than 600 participants at the Long Beach Fair—primarily engineers and architects—while the fair in Charlotte attracted close to 400 people, also predominantly engineers and architects. Upcoming Wood Solutions Fairs include:

- Sept. 30 San Francisco, Calif.
- Oct. 16 Atlanta, Ga.
- Nov. 5 Minneapolis, Minn.
 For program details or to register, visit www.woodworks.org.

wood use, wood also provides significant benefits in terms of design flexibility, reduced environmental impact and lower cost. This clearly represents a sizable opportunity for the wood industry."

According to Yochim, the year-one focus is on securing field teams in the three initial markets; developing resources such as the Web site, print materials and presentations; and hosting educational events on topics such as wood-related code issues, fire protection, wind and seismic design. These efforts have begun to establish WoodWorks as a reliable source of quality information.

"At the heart of the program is the need to educate target audiences on the various technical issues related to nonresidential wood design," he said. "But in so doing, there's also the need to dispel preconceived ideas that are biased against wood and to overcome the obstacle that some designers are simply in the habit of choosing other materials."

The program includes several different types of educational events, from full-day workshops focusing on technical issues related to wood design, to luncheon seminars featuring several high-profile speakers, to Wood Solutions Fairs, which include concurrent seminars and trade booths and attract hundreds of people.

Regional teams also offer in-house presentations to individuals or firms (e.g., all of the architects in one company interested in seismic issues). Their goal is to build relationships and identify potential projects in which wood can play a leading role. They also offer code, engineering and architectural support. Third-party consulting also is available for code variances, short-term research assignments and other needs. So far, field teams in California and the Southeast have supported 13 building projects and have influenced at least \$1 million in additional wood product sales. One notable example is the Materials Demonstration Lab at California Polytechnic State University (Cal Poly). This project offers tremendous promotional value because of the reputation of the institution and the academic interests of its future occupants—engineering, architectural and construction management students.

One of the challenges discovered by WoodWorks early on was the lack of wood design software and scarcity of wood information in the most popular design packages.

To help remedy the situation, WoodWorks has entered into a partnership with RISA Technologies, a leader in structural analysis and building design software. This joint venture will expand RISA's popular software to incorporate wood design features, giving architects and engineers greater flexibility and choice in the selection of materials for nonresidential buildings.

Once the RISA software is updated, it will incorporate information on building code requirements, gravity design, diaphragm modeling and design, shear wall modeling, analysis and design, lateral force design, hybrid design and several other features. The upgrade will be Building Information Modeling (BIM)compatible and is being released in two stages. The first software release, which occurred in August, incorporated flexible shear wall design. The second release, slated for December, will allow the design of wood diaphragms.

"Our software sets the standard for building design," said Bruce Bates, president of RISA Technologies. "The addition of a wood design component is something we've been planning for some time, and this partnership with the Wood Products Council has allowed us to increase the pace while also benefitting from the expertise of engineers who work with



WPC partner associations like APA. It will open up a world of possibilities to designers wanting to work with wood."

For design professionals with current licenses for RISA software, the new wood design features will be received automatically as part of their regular upgrades. WoodWorks will also be working directly with design professionals who agree to design a nonresidential building with wood and with RISA to provide training on the updated software.

Another challenge that WPC is seeking to address through the WoodWorks program is

the lack of wood design education in university curricula.

WoodWorks recently announced a partnership with Cal Poly to develop a set of virtual educational courses covering the use of wood in nonresidential building design. The courses are intended for initial use in undergraduate- and graduate-level engineering programs and for the continuing education of industry professionals.

Although Cal Poly-Pomona is taking a leadership role, the project will involve multiple campuses of California State University and

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MEGTEC Systems Industrial & Environmental Products 1-800-558-2884 www.megtec.com the University of California, private universities and other colleges throughout the country. Prominent faculty members from several notable universities have also joined the effort of developing course content, including the University of California at Berkeley, Washington State University, Oregon State University and the University of Massachusetts.

"The long-term goal is to ensure that emerging design professionals have the skills to design nonresidential structures in all of the major building materials—including wood," said Mikhail Gershfeld, professional practice professor of civil engineering at Cal Poly-Pomona. "When selecting structural materials for a project, designers need to consider a variety of factors. The lack of training and understanding of strength, limitations and proper use of a particular material shouldn't be among them."

First initiated by APA and Cal Poly, the agreement includes the development of 30 learning modules for use as part of basic and

Regional Focus, National Support

The WoodWorks program operates in three distinct markets—California, the Southeast (Georgia and the Carolinas) and, most recently, the North-central United States (Minnesota, Wisconsin and Illinois). These regions were chosen based on the level of construction activity, potential for local support and other criteria, and together represent about 30 percent of the potential market gain for wood in the United States.

A campaign of this magnitude requires an extremely broad range of technical, communications and educational support, most of which is available via the existing wood products associations and the many supplier, distribution, design and construction organizations present in the market.

Activities in the three regions are customized to suit the "wood culture" in each area. For example, in California, where wood use is already fairly prevalent, there is greater focus on providing the tools to broaden its use and raise the profile of existing successes. In the Southeast, where the use of wood is less common, there is a greater need to provide basic education to encourage specifiers to consider using wood. advanced wood design courses. The courses are being developed under the umbrella of a newly established Wood Education Institute that consists of an advisory and development committee represented by a number of universities, design professionals and wood industry representatives. The courses will be available for use by colleges nationwide and will be offered to practicing professionals as online, hybrid or conventional courses. For more information, visit www. woodeducationinstitute.org.

Celebrating excellence in wood use and design is an important element of the program and is viewed as critical to creating interest among design and building professionals and building owners. WoodWorks held two awards programs from 2007 to 2008—one in California and one in the Southeast. Both followed the same format, with awards for engineering, institutional wood design, commercial wood design, green building and interior beauty of wood, and both included ceremonies in conjunction with a Wood Solutions Fair.

"The quality of submissions was fantastic," said Bryan Schuyler, regional director of WoodWorks California. "They're a real testament to the fundamental value proposition of the WoodWorks program — that wood provides more value in terms of its beauty, design flexibility and environmental attributes for less cost than other major building materials, all while meeting fire, safety and other code requirements."

Nominations are now being accepted for programs in all three regions. Entry details are available at www.woodworks.org. "Growing the wood market is more of a marathon than a sprint," said Kelly McCloskey, executive director of the WoodWorks program. "We've had a good start-up, put a great team in place and started making headway. It's still early, but with two markets in full swing and a third gearing up, the program is already showing that, when the industry works together, we have an impact."

Change in Legislation Prompts Tour of Wood-Frame Schools

With encouragement from APA, the American Forest & Paper Association and Anthony Forest Products, the state of Arkansas recently overturned regulations that prohibited the use of wood in school buildings.

Recognizing that similar legislation exists in Georgia, North Carolina and South Carolina, the WoodWorks team decided to leverage this achievement by promoting the Arkansas decision and inviting a delegation of school officials and architects from the Southeast to tour wood-frame schools in California. Tour sites included single- and twostory schools in Los Angeles, Corona and San Diego, as well as a school under construction to showcase wood framing in action.

In California, 60 percent of schools are of wood-frame construction because of its well-documented ability to withstand heavy winds and seismic forces and wood's superior environmental attributes. In addition to being the only major building material that's renewable and sustainable over the long term, wood outperforms other materials using life cycle assessment criteria such as global warming potential, air and water pollution and embodied energy.

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The Role of Statistical Process Control in Advancing Product Quality

by Timothy M. Young, Ph.D.

any experts consider the American quality revolution of the 1980s a response to an American quality crisis that reached economic proportions. The conditions of the business quality crisis of the 1980s are very similar to the current economic crisis faced by U.S. businesses and especially the wood composites industry.

The current economic crisis of unprecedented oil prices and a severe decline in housing starts with constrained capital markets have some wood composites companies renewing their emphasis on variation reduction, cost savings and quality improvement. The original quality revolution of the 1980s led to the use of statistical process control (SPC) with an emphasis on variation reduction.

The use of SPC and statistical methods for variation reduction are core philosophies of Continuous Improvement and Total Quality Management. SPC, Design of Experiments and the use of statistical methods to quantify variation are key principles of the more contemporary Six Sigma Quality and Lean Six Sigma (LSS) philosophies. Six Sigma Quality and LSS philosophies promote reduction in longterm variation so that only 3.4 parts per million defective are manufactured. What business person would disagree with such philosophies?

Taguchi's popular philosophy in Japan of minimizing variation around the target has existed since the 1970s and has been widely documented as a key philosophy for reducing costs and improving product quality. Taguchi's philosophy also promotes moving the target toward specification limits as variation is reduced where costs savings are easily realized, e.g., lower weight targets due to variation reduction, lower thickness targets due to variation reduction, lower resin targets due to variation reduction, energy savings from lower targets, etc.

Traditional quality control suffers in that it is reactive to problems with an overemphasis

on inspection and sorting. Continuous improvement philosophies are proactive with a focus on prevention and early detection of problems. Continuous improvement philosophies are data-driven with the use of defendable statistical methods for diagnosing problems. Opinions are discounted in datadriven continuous improvement philosophies.

Continuous improvement of wood composite manufacturing processes is based on using statistical methods to quantify variation. Shewhart (1931) and Deming (1986, 1993) categorized variation as "natural or common-cause variation" and "special-cause variation." Quantifying natural variation is considered by many notable scholars to be the genesis of continuous improvement, e.g., if variation cannot be quantified, how will variation be reduced?

Natural variation comes from the system, e.g., variation within a flaker, variation between flakers, variation within a press platen, variation between platens, variation within a former, variation between formers,

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variation between operators, etc. Special-cause variation results from an assignable cause, e.g., machine stop, flaker blade damage, platen damage, shift-change, etc. Both natural and special-cause variation represent a cost to any wood composites manufacture. Most scholars agree that special-cause variation should be identified and investigated vigorously using statistical tools, team meetings, engineering studies, etc. Natural variation and specialcause variation are accurately quantified by use of the Shewhart control chart.

I believe there are essential steps toward variation reduction and continuous improvement. The steps are:

- Change is dependent on the culture of a manufacturing facility, e.g., if the present culture of the work force and management will not accept data-driven decision-making, and the use of statistical methods to diagnose sources of variation that lead to avoidable costs, do not dedicate resources to continuous improvement at this type of manufacturing facility. Intellectual capital is an underutilized resource in most manufacturing facilities.
- Develop a data warehouse system of sensor data and a secure electronic database of destructive test results. Link these data sources real-time with modern data fusion methods. Ensure that appropriate and verifiable time-lagging of sensor data is done in the fused database. Verify the data quality of all databases. Continuous improvement cannot be initiated without high-quality data.
- Quantify the measurement variation of key process sensors and measurement devices. Reduce the variation of unacceptable measurement variability for important measurement devices. Avoid hand-held measurement devices if possible. Use histograms to verify data quality.
- Link key product attributes desired by the customer with what Deming called the "critical few" process variables that influence these product attributes. The use of market analysis can identify highly desirable customer attributes. Statistical methods such as design of experiments (deductive reasoning) and data mining (inductive reasoning) can help identify the "critical few" process variables that influence the key product attributes. Note many statistical methods require the process to be in a state of statistical control with constant variance in order for such

methods to be accurate in quantifying the "critical few" process variables.

- Quantify the cost of variation to the organization using the Taguchi Loss Function. Develop an acceptable loss function for your mill.
- Implement control charting of key product attributes and the "critical few" process variables to quantify natural variation and special-cause variation. Control charts are an early detection tool for preventing problems. Do not require operators to maintain a large number of control charts. Train key management and operations personnel in the use and understanding of control charts.
- Use the cost-adjusted Pareto Principle as a method for prioritizing sources of variation that will be investigated, e.g., organize types of special-cause variation by cost to the organization. The cost-adjusted Pareto Principle leads a direct focus on sources of variation that are the most detrimental to the business performance of the organization.
- Use root-cause analysis and the Ishikawa philosophies of organized brainstorming (e.g., Ishikawa diagram or Fishbone chart) to categorize sources of variation for the key product attributes and the "critical few" process variables. Adopt developing "Fishbone" charts within "Fishbone" charts to work upstream towards rootcauses of sources of variation.
- Adopt the scientific method or the "Plan-Do-Check-Act" cycle of the aforementioned steps. Variation reduction and continuous improvement do not have a stopping point, it is a journey.

Competitive pressures in the wood composites industry are not likely to subside in the near-term. Many believe the industry is undergoing a permanent restructuring toward mills that are highly competitive. Variation reduction and continuous improvement through the use of statistical methods represents a proven method of reducing costs without investment of funds or capital.

If you cannot accurately quantify variation, how will you reduce variation?

Timothy Young is an associate professor at the Forest Products Center, University of Tennessee in Knoxville. He can be reached at tmyoung1@utk.edu or 865-946-1119. Information on statistical process control seminars that be conducts can be found at www.spcforwood.com.

Upcoming Events

SEPTEMBER

21-24 APA Annual Meeting and Info Fair supplier exhibition, Henderson, Nev., 253-620-7429, www.apawood.org.

OCTOBER

1-3	National Lumber & Building Material Dealers Association ProDealer Industry
	Summit, Chantilly, Va., 202-367-1169, www.dealer.org.

NOVEMBER

12-13	North American Building Material Distribution Association Annual Convention National Harbor, Maine, 888-747-7862, www.nbmda.org.			
15-17	North American Wholesale Lumber Association Traders Market, Dallas, Texas, 847-870-7470, www.lumber.org.			
19-21	U.S. Green Building Council Green Building Conference, Boston, Mass., www.greenbuildexpo.com.			
JANUAR	Y			
20-23	International Builders Show, Las Vegas, Nev., 800-368-5242 ext. 8111, www.buildersshow.com.			
MARCH				
31- 4/1	WSU International Wood Composites Symposium, Seattle, Wash., 509-335-2262, www.woodsymposium.wsu.edu/.			
APRIL				
16-17	American Institute of Architects Gulf Coast Green 2009 Symposium and Expo, Houston, Texas, www.gulfcoastgreen.org.			
10-21	American Institute of Timber Construction Annual Meeting, San Diego, Calif			

- 19-21 American Institute of Timber Construction Annual Meeting, San Diego, Calif., 303-792-9559, www.aitc-glulam.org.
- 27-29 NAHB Building for Boomers & Beyond: 50+ Housing Symposium, Philadelphia, Pa., 800-368-5242, ext. 8338, www.nahb.org.
- 30-5/2 American Institute of Architects National Convention and Design Exposition, San Francisco, Calif., www.aia.org.

MAY

- 8-10 NAHB National Green Building Conference, Dallas, Tex., 800-368-5242, ext. 8338, www.nahb.org.
- 11-12 Forest Products Society 10th International Conference on Wood & Biofibre Plastic Composites, Madison, Wis., 608-231-1361, ext. 20, www.forestprod.org.

JUNE

11-13	Southern Forest Products Association Expo 2009, New Orleans, La.,
	504-443-4464, ext. 214, www.sfpaexpo.com.
16-19	Construction Specifications Institute Construct 2009, Indianapolis, Ind.,
	www.constructshow.com.
21-23	Forest Products Society 63rd International Convention, Boise, Idaho,
	608-231-1361, ext. 208, www.forestprod.org.

SEPTEMBER

28-30 Forest Products Society International Conference on Wood Adhesives 2009, Lake Tahoe, Nev., 608-231-1361, ext. 208, www.forestprod.org.

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Industrial Printing Systems for:

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- Doors and Windows
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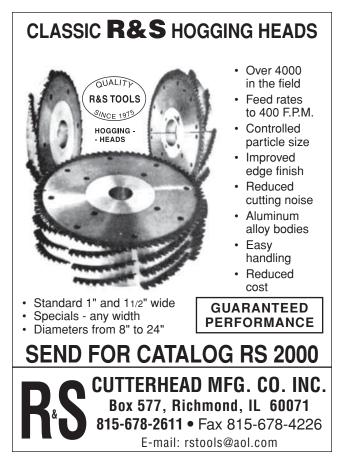


Printing on the edge or face of wood board is where REA is the best. Print quality and reliability are outstanding.



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Acrowood Corneration	. www.acrowood.com4
•	. www.acrowood.com
	. www.archinemicals.com
Ashland Chemical Co.	. www.arciin.com
Asilialiu Gleffiidai GO. Drow Industrial	. www.ashland.com Inside Front Cover
	. www.axinanu.cominside from cover
	. www.basf.com
	. www.betalasermike.com
Clarke Veneers and	. www.betalaseimike.com
	. www.clarkeveneers.com Outside Back Cover
	. www.claussenall-mark.com
	www.combilift.com
	. www.dieffenbacher.de
	. www.ellbay.com
	. www.evergreenengineering.com
	. www.flamexinc.com
	. www.generalkinematics.com
Geoenergy, A Division of A.H.	
Lundberg Associates	. www.lundbergassociates.com
	. www.grecon-us.com10
	. www.grenzebach.com28
Hexion Specialty Chemicals	. www.hexionchem.com24, 25
International Beams	. www.internationalbeams.com
JAX USA Lubricants/Behnke	
	. www.jax.com
MEGTEC Systems	. www.megtec.com
Murphy Plywood	. www.murphyplywood.com45
The New York Blower Co.	. www.nyb.com22
	. www.nordicewp.com15
	. www.paneltech.biz40
	. www.permapost.com Inside Back Cover
	. N/A
	. www.rea-jet.com
Scoopsoft/BCE	
	. www.scoopsoft.com32
Siempelkamp Maschinen-und	
	. www.siempelkamp.de39
Southern Forest Products	
ASSOCIATION	. www.sfpa.org
	. www.spartek.com
	. www.stantec.com
	. www.sud-crientie.com
	. www.umbertools.com
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Advertiser Index

ADHESIVES

ADHESIVES
Arclin
CAST ELASTOMERS
Willamette Valley Company14
CATALYSTS Süd-Chemie, Inc12
COATINGS Willamette Valley Company14
CONTINUOUS PANEL SYSTEMS FOR LVL
Dieffenbacher GmbH + Co. KG35
CONTROL SYSTEMS Spar-Tek Industries, Inc26
CUSTOM APPLICATION SYSTEMS
Permapost Inside Back Cover
Willamette Valley Company14
CUSTOMIZED HANDLING SOLUTIONS COMBILIFT Ltd
CUTTING HEADS
R&S Cutterhead Mfg. Co., Inc44
DESIGN ENGINEERING Stantec42
DISPENSING EOUIPMENT
Willamette Valley Company14
DRYER SYSTEMS
Acrowood Corporation4
Grenzebach Corp
The New York Blower Co22
ENGINEERED WOOD MANUFACTURERS
Murphy Plywood
Nordic Engineered Wood15
ENGINEERING SERVICES Evergreen Engineering, Inc
EPOXIES
Willamette Valley Company14
EQUIPMENT/MACHINERY
Spar-Tek Industries, Inc26
EQUIPMENT/PARTS & SALES Willamette Valley Company14
EXP0 2009
Southern Forest Products Association40
FOREST PRODUCTS Paneltech International, LLC40
I-JOISTS
International Beams
INKS Willamette Valley Company14
winamotto valicy oompany14

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LASER TECHNOLOGIES
Beta LaserMike Americas40
LUBRICATION
JAX USA Lubricants/Behnke Lubricants
& Pressure-Lube., Inc
MACHINERY
Siempelkamp Maschinen-
und Anlagenbau GmbH & Co
MARKING SYSTEM SUPPLIERS
REA Elektronik, Inc
,
MATERIAL HANDLING EQUIPMENT The New York Blower Co
MOISTURE METERS & SPARK DETECTION
Grecon, Inc
NON-STRUCTURAL LVL
Clarke Veneers and
PlywoodOutside Back Cover
PLANARS - 4 SIDED
Timber Tools
POLLUTION CONTROL
Geoenergy, A Division of
A.H. Lundberg Associates26
MEGTEC Systems
The New York Blower Co
POLYURETHANES
Willamette Valley Company14

PRINTING & GRADING Claussen All-Mark33
SCREENING EQUIPMENT General Kinematics Corp18
SEALERS Arch Wood Protection28 Willamette Valley Company14
SERVICE & INSTALLATION (EQUIPMENT) Spar-Tek Industries, Inc26 Willamette Valley Company14
SOFTWARE Scoopsoft/BCE Business Solutions32
SPARK DETECTION & EXTINGUISHMENT FLAMEX, Inc34
SPECIAL POLYMERS & ADHESIVES Ashland Chemical Co. Drew IndustrialInside Front Cover Hexion Specialty Chemicals24, 25
STRUCTURAL & DECORATIVE VENEERS Clarke Veneers and PlywoodOutside Back Cover
WOOD GRINDERS West Salem Machinery11
WOOD PATCH COMPONENTS Willamette Valley Company14



Congratulations to APA on your 75th Anniversary. Your leadership in bringing the industry together to overcome marketplace challenges has set the pace for future engineered wood growth.

Mu

John Murphy President

Final Frame



How times have changed! An early demonstration of the strength and stiffness of plywood is depicted in this undated photo from the archives of APA, which this year celebrates its 75th anniversary.

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