Oregon Wood Innovation Center

Connecting people, ideas, resources

COMING OWIC EVENTS:

- **July 10-11:** Formaldehyde Regulation Workshop **Eugene, OR**
- **Spring 2007:** Wood Adhesion Short Course

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California Regulates Formaldehyde Emissions of Panel Products

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Sacramento, 4/27/07. California's Air Resources Board voted in favor of an Air Toxic Control Measure that limits formaldehyde emissions from wood products. These regulations are expected to have serious consequences for wood products manufactures in Oregon and their customers in California. The measure targets hardwood plywood, MDF and particleboard panels. There is uncertainty if the regulation may affect other products such as structural plywood and I-joists in the future.

In contrast to formaldehyde regulations in Europe and Japan, this law implements a cap limit on formaldehyde emissions which will be implemented in two separate phases. The board identified three target groups in its regulation order: (1) manufacturers and producers, (2) importers and distributors, and (3) fabricators of value-added products. It is the first regulation of this kind where the entire industry is affected.

The regulators reasoned a decrease of 500 fewer tons of formaldehyde released into the outdoor air every year justifies the additional cost to consumers. During the boards hearing, the public debate focused on enforcement issues. Ms Barbara Riordan, board member, noted that California better learn from failures and mistakes made in the European and Japanese implementation of similar regulations.

The implications for Oregon's Forest Products Companies and its professionals are difficult to assess. Some Forest Products companies strongly endorsed California's efforts, while others opposed the legislation pointing to unacceptable high costs to the consumers. How will this regulation affect you as a professional? To answer this question, OWIC has teamed up with the Willamette Chapter of the Forest Products Society to offer a workshop that will allow people in the industry to gain an understanding of the impacts of this new regulation. The information for the workshop is below:

Large formaldehyde test chamber at PSI, Inc. in Eugene, OR.

Formaldehyde Regulation Workshop

This unique event will be held at the **Valley River Inn in Eugene**, Oregon on **July 10th and 11th, 2007**.

Please visit our Event Web-site at: http://owic.oregonstate.edu/formaldehyde/ to register and for the latest information.

Features and Highlights of the Workshop include:

- Speakers from Industry, CARB, Universities and Associations (CPA, HPVA, WKI, AHFA, and others). See the website for the current program.
- An exciting panel discussion and open forum.
- Tour of large ASTM 1333 chambers (Hexion – Springfield, PSI – Eugene) See how laboratories implement ASTM methods.
- Demonstration of formaldehyde measurement approaches — a unique opportunity to get hands-on experience.
- E1 European and Japanese F-star Regulation and Perspectives. Learn about the famous Wilhelm Klaudnitz Institute (WKI) from its director.

We look forward to seeing you in Eugene!

For more information contact: wvcfps@yahoo.com , or Chris Coleman – WWPA (503-306-3472), or Scott Leavengood OWIC (541-737-4212), or Erwin Schutfort – PSI (1-800-324-5024).

This obviously contentious issue will influence wood technologists and other professionals in our industry. We encourage you to contribute your viewpoint to the Willamette Valley Chapter by writing a note to: wvcfps@yahoo.com . We look forward to sharing comments with you in our upcoming newsletter and forums.

Featured Researcher: Milo Clauson

The featured researcher for the month of June is Milo Clauson. Milo is a Sr. Faculty Research Assistant in the Department of Wood Science and Engineering at OSU. Milo has worked in the College of Forestry for about 20 years and at OSU for over 32 years.

Milo describes himself as a high-tech millwright. During a week's time, his work activities range from helping an undergraduate student on a project to helping a graduate student define the details of a test project, to giving forklift and overhead crane driving lessons, discussing signal processing and data capture issues on a project, repairing an old Mac diesel truck, and writing computer code.

Milo started his research career in the spring of 1971 when he joined the College of Oceanography (later to become COAS) at OSU in the Department of Marine Geology and Geochemistry. During his research time with OSU his work covered global climate modeling, sediment transport mechanics, benthic flux measurements covering the Pacific Ocean from the Aleutian Islands south to the Antarctic and into the Mediterranean Sea. One of the high points of this work was participating in a multi-year sequence of deep ocean dives with the research submarine ALVIN near the Galapagos Islands. These dives have been showcased in the popular TV series produced by National Geographic and NOVA. A few years later he participated in submersible research dives into Oregon's Crater Lake.

After 12 years, he left research at OSU and started a business that provided a deep water subsurface navigation software package. The system was used by oil companies, construction companies, research, and military customers to work in the deep ocean environment.

After traveling and working globally with this system, he burned out, sold off the business and started looking for slightly lower pressure jobs.

In October 1986 he rejoined OSU at the College of Forestry within the Department of Forest Products with Dr. Jim Wilson. Their research again covered a wide range of topics but were largely related to non-destructive testing methods to assess mechanical properties of wood. They also worked on energy utilization in the industry, an area that Jim still is actively perusing even in his retirement.

Milo has been with the wood mechanics/engineering group for the past 12 years. His work in this area involves testing of any materials or components related to wood products. He is the principle contact and function as lab manager for the Gene D. Knudson Engineering Laboratory located in Richardson Hall on the OSU campus.

With the broad range of his background, Milo provides support largely to the Department of Wood Science and Engineering as well as Forest Engineering, Forest Science, and OSU Chemical Engineering.

Along the winding road of research, Milo found himself in several South American events of note, a coup de eta in Peru, the over through of Salvidor Allende in 1973 in Chile, in Peru during the Falkland events, and Panama just prior to the US invasion. He has also had the pleasure of working with great researchers and hardworking talented students. Who says science can't be both fun and high risk?

State of the Nation's Forests

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The Society of American Foresters recently released "The State of America's Forests" which is available for viewing at http://www.safnet.org/aboutforestry/StateOfAmericasForests.pdf. The report discusses how the forests of the US compare to those of other forest-rich countries, how the area of forestland and volume of growing stock in the US has changed over time, carbon sequestration, and the status of forest certification in our forests.

In addition to informing stakeholders about the current state of US forestlands, the report has the purpose of showing how the conservation, management, and utilization of forests in the US compares with efforts in other nations. The report also outlines problems that threaten to diminish the future health and productivity of the public and private forests on which we depend.

This report not only focuses on the forest resource but also on production and consumption of forest products in the US. The report concludes with a chapter on the importance of a maintaining a healthy forest industry.

Ask the Expert

Have questions related to wood? The faculty of the Wood Science and Engineering Department at OSU have the expertise to handle almost any question about wood. Simply submit your question using the Ask the Expert form (http://owic.oregonstate.edu/askexpert.php). Please be as specific as possible.

The following are examples of recent 'Ask the Expert' questions:

Question: We are building a replica of Otto Lilienthal's glider of 1894. Lilienthal used Willow because of its ability to bend and its strength to weight ratio. We are in the Seattle area and have had no luck finding a source. Could you suggest what kind of willow it might be? Is it available commercially? If not, is there a place we could go and cut some ourselves? We asked another replica builder in Germany. He responded that the species of willow is not important and suggested cutting in spring so that you can peel the bark very easy without tools.

Answer: Regarding which species of willow it might be, I just found a reference to Salix pentandra (laurel or bay willow) on the Otto Lilienthal Museum website. See http://www.lilienthal-museum.de/olma/dreh.htm at the bottom of the page. The page is in German and I find no reference to Salix or willow on the English version. There is information on laurel willow at http://plants.usda.gov/java/profile?symbol=SAPE4 Given that it is not a species native to the U.S., you're likely to have trouble finding a local source. But as your German contact said, perhaps you other native willow species would be OK.

Your best bet may be to simply contact a custom sawyer. You can find a list of custom sawyers in Oregon in the Oregon Forest Industry Directory at: http://www.orforestdirectory.com/

Question: Is there any development work being done on small scale wood fired electrical generators? We have a 1000 acres we are growing timber on and could burn a cord or two a day forever of waste wood. It would make sense to be able to convert it to electricity and sell it to the power company. The wires are in place.

Answer: I know of one company that makes small-scale wood-fired electrical generators. The company is Community Power Corporation of Littleton, Colorado. Their website states that their BioMax product is "A small modular distributed energy biomass power system based on downdraft gasifier technology that uses high bulk density fuels such as woodchips and nut shells to produce both heat and power. System options include stationary (enclosure or containerized) as well as a mobile trailer version."
As far as generating your own heat and power, I think the BioMax units (and there may be other companies, I don't know) are designed to do that. Selling power back to the utilities is a different story though. I would suspect you have to be a pretty big player (like a pulp mill or large sawmill) to get a power purchase agreement with the utilities. You could try contacting someone with the Oregon Department of Energy for more information.

Question: Do you have a list of softwood kilns in Oregon?

Answer: I can't say I've ever seen a list of kilns. The Forest Service did a report called Kiln drying lumber in the United States: A survey of volume, species, kiln capacity, equipment, and procedures, 1992-1993. This probably doesn't get to what you're looking for though.

Are you wanting to know where you can get custom lumber drying done? You can find that in the Oregon Forest Industry Directory under Advanced Search then choose Drying under Services.

If you're more interested in simply knowing which mills have dry kilns, we could probably back our way into it using the directory. That is, search for firms that produce pine, hem fir, or alder lumber. Chances are, those mills will have dry kilns.

Question: I live on the coast, and have a problem with mold on the north side of our house. Every year I spray with a Jomax/chlorine, solution, brush the surface and rinse with a power washer. I then have to reapply stain to my redwood siding. What is the best way to deal with this condition, and do you have recommendations about what products are most effective for dealing with it, including stains that might inhibit/prevent mold growth? Thanks for your help.

Answer: Are you sure what you're seeing is mold? Redwood is also known to experience extractive bleed and iron stain. Extractives give highly-colored woods like redwood their color, however they can leach with changes in moisture content, migrate to the surface, and thus discolor light-colored finishes. The extractives would be similar in color to the wood - i.e., reddish for redwood.

Iron stain is common in woods such as redwood and cedar that contain a lot of tannin. The stain is usually black and often occurs around nail heads. However, if you're using a wire brush to clean the siding, the metal from the brush can also cause iron stain on the wood. Iron stain from a wire brush would look black and blotchy - much like mold.

If the discoloration is due to mold, a stain that also contained a mildewcide might do the trick.

The US Forest Products Lab in Madison, WI is a good source for information on finishing, including how to address the different sources of stain (mold vs. iron stain vs. extractive bleed). See for example:

- Solid-Color Stains on Western Redcedar and Redwood Siding
- Water Repellents and Water-Repellent Preservatives for Wood
- Paint, Stain, Varnish, or Preservative? It's Your Choice

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