IN THE NEWS

EDITED BY TED CUSHMAN

New ASHRAE Ventilation Standard Published

But controversy continues as NAHB and gas appliance manufacturers take aim at subjective air quality definitions

While DOE has enjoyed smooth sailing on energy code revisions, a committee working on a residential ventilation standard for the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has had a much rougher voyage. Published over home builder and industry objections in December after eight years of work, ASHRAE Standard 62.2, "Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings," is still dogged by controversy.

The standard's troubles began almost immediately when a residential subgroup split off from ASHRAE's Standard 62 committee in 1996. The problems stemmed in part from the difficulty of defining the standard's dual goals, preserving occupant health and maintaining comfort. No authority has ever set standards for exposure to pollutants in residential indoor air, so the committee has had to finesse the issue with general language. The standard's definition of "acceptable air quality" still relies on largely subjective assessments, defining

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SPECIAL REPORT:

Why OSB Prices Went Over the Top

by David Damery

Builders may be surprised to see OSB prices behaving differently than sawn lumber prices, but students of economics shouldn't be. It's straight out of Economics 101: a classic example of the difference between an industry with many producers and one with just a few.

Sawn lumber: many competitors. The market for solid sawn lumber resembles the ideal of pure competition. If you think the price from your regular supplier of 2x4s sounds a bit too high, you get on the phone and call around. Supply can adjust quickly as mills shut down temporarily in times of weak demand or add a shift when prices spike. By stocking extra inventory to cover fluctuations, wholesale and retail middlemen take the more extreme price changes out of the system, but they don't change the underlying picture — in fact, they help the market more efficiently find the "true" price where demand equals supply.

OSB: few big producers. Plywood and OSB prices can also be competitive at times, but not these days. That's because there are far fewer OSB or plywood plants than sawmills. OSB producers are big corporations with serious market clout; through mergers and acquisitions, these big firms are getting bigger and fewer. In fact, the top five producers now account for 70% of production in North America. Louisiana-Pacific, the leading OSB producer, has

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OFFCUTS

In spite of recent gains, women still own a scant 8% of the U.S.'s 2.6 million construction businesses, according to a wire service report. Women make up just over 9% of construction employees nationwide, and hold mostly clerical and administrative jobs.

The U.S. has cut countervailing import duties charged to Canfor, Canada's largest wood exporter, according to Canadian press reports. The U.S. slaps an average 27% surcharge on incoming Canadian wood, to make up for what the Commerce Department argues are unfairly low fees Canada charges its logging firms to cut publicly owned trees. But Canfor established that it pays more for the timber resource than the U.S. had assumed, and the Commerce Department has agreed to lower the firm's duty to just 12%.

In his second executive order as California's governor, Arnold Schwarzenegger has terminated all pending regulations. At least for 180 days, that is, while the governor's office conducts a review of each rule to see whether it conforms with the California Administrative Procedures Act, which, in the words of the governor's order, "requires that all adopted regulations be easily understandable, the least burdensome and effective alternative [sic], …and minimize the economic impact to the regulated communities." Specifics were not available, but presumably the California Building Standards Commission's adoptions of the *NFPA 5000* building code and the *International Residential Code* are affected, decisions that would not take effect until 2006.

Ventilation Standard Published

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acceptable air in part simply as a condition when most people don't complain, and partly as a low likelihood of overexposure to specific contaminants (but without naming them or setting any permissible exposure limits).

But 62.2 has more concrete problems: Since 1999, the committee has failed four times to release the document for public comment because they could not reach consensus with the National Association of Homebuilders (NAHB) and the Gas Appliance Manufacturers Association (GAMA) around either general principles or practical details. Home builders questioned the whole rationale and basis in science for linking specific ventilation rates with definite health risks and felt that engineers should not attempt to evaluate such issues. Appliance makers objected to provisions that would limit certain types of units and argued that regulating their equipment was the province of other documents such as the *National Fuel Gas Code*.

A series of major revisions, including dropping any rules that might address pollution from unvented gas burners, were not enough to persuade NAHB and GAMA, so ASHRAE 62.2 has now been published over their objections. In a final appeal, NAHB, GAMA, the American Gas Association (AGA), the Association of Home Appliance Manufacturers (AHAM), and ASHRAE member Rodney King raised a litany of issues: cost of compliance, conflicts with other standards, lack of technical basis for some provisions, and the absence of any authoritative standard for indoor air quality or occupant exposures to pollutants. With these appeals rejected by ASHRAE, NAHB promised a procedural appeal to the American National Standards Institute (ANSI) and vowed to continue resistance even after that. "Should all appeals fail," commented the NAHB-sponsored publication *Nation's Building News*, "the standard would still not be mandatory until building codes reference it and state and local jurisdictions adopt and enforce the code."

Dropped from the final draft of Standard 62.2 were a mandate for CO detectors and a provision for exhaust ventilation of rooms containing "vent-free" equipment. Still in place are a few main provisions: a requirement for mechanical ventilation in most homes, sized according to occupant load and square footage (almost all homes would need 80 cfm of air or less); mandated kitchen exhaust fans; backdraft testing of atmospherically vented heating equipment; and airtightness testing for air handlers located in garages.

Similar rules are already code in some jurisdictions, but few builders anywhere currently implement all of 62.2's requirements. If the standard is referenced by the *International Residential Code* — or merely gains wide credence as a de facto "cover your rear" legal standard — builders will be making adjustments in the way they manage indoor air. Whether this will bring any health benefits or reduce complaints, however, remains to be seen.

OFFCUTS

Indiana's highest court has upheld the state's power to regulate isolated wetlands, reports the *Indianapolis Star*. A U.S. Supreme Court ruling in 2000 stripped that authority from the Army Corps of Engineers, holding that the phrase "waters of the United States" used in the 1972 Clean Water Act did not refer to small wet areas unconnected to rivers or lakes. But in a case brought by a Fort Wayne developer, Indiana's Supreme Court ruled that the state's authority over isolated small wetlands derives not from federal law, but from a 1935 state law and from the 1943 creation of the state's Water Pollution Control Board.

The Seattle Planning Commission is recommending zoning changes that would allow homeowners to build small detached housing units next to existing single-family homes on lots throughout the city, says a report in the *Puget Sound Business Journal*. The commission also wants to see "cottage" housing made up of small detached dwellings that share a common yard permitted in parts of the city. Advocates claim that the change would help solve Seattle's shortage of available housing without adding to sprawl and traffic congestion.

Minneapolis resident Roy Nguyen is happy with the location of the home he's building near the city's airport, even though hundreds of jets fly over the property at 200 to 800 feet every day. According to the *Minneapolis Star Tribune*, Nguyen bought the lot at a tax auction for $64,000. Minneapolis has spent hundreds of millions of dollars on noise abatement measures for homes near the airport, but Nguyen calls the noise issue "subjective." "Vacant lots are rare in the city," he told the paper. Citing the area's relatively low crime rates, he said, "I'd rather be close to a plane than be shot at."

Home Depot has announced the purchase of RMA, Inc., the nation's third largest replacement window and siding installer. With 20 branch offices and 985 employees nationwide, Atlanta-based RMA has been installing products for Home Depot since 1998. Home Depot is the second largest retailer in the U.S. and has been expanding its installed sales business by 40% a year, says the company.

Insulating Forms Handle TNT Blast in Military Demonstration

After a blast demonstration involving ICF structures last spring at the U.S. Marine base in Quantico, Va., military builders are taking more interest in insulating concrete forms. According to Insulating Concrete Form Association (ICFA) director Joe Lyman, officials have included ICF suppliers in a working group put together to find cost-effective ways to engineer blast-resistant housing and work buildings on bases at home and overseas.

A poured concrete box, protected by foam forms, shows no structural damage from a 50-pound TNT charge detonated 6 feet away.

The TNT's power is shown by its effect on a steel wall set up to reflect the blast onto the ICF targets. The charge punched a large hole in the reflector and pulverized the concrete pedestal the TNT rested on.

For the ICF demonstration, ready-mix and ICF companies built six boxes using off-the-shelf ICF systems and locally supplied standard concrete and rebar, then blasted the structures with 50-pound TNT charges. Hit with the blast from 6 feet, ICF boxes suffered no worse effects than singed and compressed foam and some minor concrete cracks. Observers reported no structural damage.

Lyman says compression of the polystyrene foam forms protected the concrete by absorbing and distributing part of the load. "We know polystyrene can absorb impact," he says. "It's been tested in other situations, like wrapping a TV with it and dropping it 10 feet. But we surprised the [military observers]; they told us the blast would demolish our box."

The performance of a steel wall set just inches from the charge to reflect its force was impressive, says Lyman. "But that wall costs hundreds of dollars a square foot. Our system is $70 a square foot including drywall and finish exterior, and it provides excellent protection."

Clean, Smart, and Natural: BuildingGreen Picks Top 10 Products

Green" is a hard term to pin down, especially if you're not an expert. So when a client has green leanings, choosing the best products can get tricky.

One good place to turn for guidance is BuildingGreen, Inc., the publisher of *Environmental Building News*. BuildingGreen's *GreenSpec Product Directory* lists more than 1,700 products selected by *EBN*'s editors based on their own criteria (neither *EBN* nor *GreenSpec* accepts paid listings or ads).

BuildingGreen's latest Top 10 list of green products gives an idea of how the group defines environmental value. Choices for the residential market include a soy-based insulation, a "smart" vapor barrier material, a latex paint made with castor oil, an energy-conserving hot-water recirculator, and a water-powered motion-sensing faucet. Here's how each product earned its green credentials:

- BioBased 501 soy-based spray insulation (www.biobased.net): reduces energy use; is made with renewable materials; is economical compared with petroleum-based urethanes.
- MemBrain humidity-responsive vapor retarder (www.certainteed.com): by preventing moisture damage and mold, improves building durability and indoor air quality.
- American Pride latex paint made with castor bean oil (Southern Diversified Products, 601/264-0442): uses renewable materials; improves indoor air quality.
- Taco D'mand hot-water delivery system (www.taco-hvac.com): saves water-heating energy by preventing standby and delivery losses.
- TOTO EcoPower self-powering sensor-controlled faucet (www.totousa.com): conserves water and energy.

BioBased 501, a no-CFC, no-VOC spray urethane foam made from soy oil instead of petroleum, leads BuildingGreen's Top 10 product list for 2003.

New web resource. BuildingGreen's knowledge base is now online as an integrated suite of tools at www.buildinggreen.com. With three fully searchable cross-referenced modules, the BuildingGreen suite supports in-depth research as well as quick product browsing: In addition to the product listing, members get access to twelve years of *EBN* and a database of 60 green-building case studies.

In Fire's Aftermath Come Builder Shortage, Mudslide Risk

It's part of the California culture: Take your chances with earthquake and fire, and if disaster strikes, start over. Hundreds of homeowners wiped out by October's wildfires are already vowing to rebuild their homes.

Their determination will have to overcome two immediate obstacles: Press reports say many were not insured as well as they assumed, and payouts may not cover all the costs of reconstruction. Just as critical is a looming shortage of builders and specialty trades. Even before the fires, Southern California contractors had more work than they could manage. And homes originally blasted out as tract houses may have to be rebuilt by custom contractors, an inherently slower process. Wait times of a year, 18 months, or longer are likely.

Next up: rain and mud. If that's not enough, experts say fires in Southern California's explosive chaparral brush are typically followed by powerful mudslides known as "debris flows." Chaparral contains oils and resins designed to protect the plants from drying out. The oils burn like gasoline, then leave a water-repellent residue on the fine hillside dust. When heavy rains come (as they will), the hydrophobic dust collects into a mass that flows like concrete and can crash down hillsides like a freight train, pushing cars, boulders, and homes ahead of it. Major earthworks in the hills are designed to direct and restrain the flow, but officials don't expect the channels and basins to work perfectly, and some homes that escaped fire will almost certainly be crushed by debris flows.

And afterwards? They'll rebuild.

Why OSB Prices Went Over the Top

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boosted its market share from 20% to 27% in the last three years by swallowing competitors.

The trend toward fewer and bigger producers is likely to continue, because the sheer scale of panel production favors huge companies. These days, a new OSB mill costs close to a billion dollars and can pump out 2 million or more square feet of panels a day. Each new plant to start operations is bigger and more technically sophisticated than the last.

Producers in the driver's seat. In a concentrated industry like OSB production, price behavior depends on market conditions. When mill capacity is high compared to demand, OSB pricing resembles a competitive market: The producers fight for business to keep their huge, costly plants producing around the clock. Prices drop toward costs, leaving little room for profit. That's how the OSB market looked in 2002 — a flat price curve, with most mills barely covering costs and some losing money.

But when demand approaches the limits of production capacity — especially if distributors and retailers have low inventories — things can change in a hurry. Economists notice a pattern that holds true in many different concentrated industries: When sales get close to the "magic number" of about 93% of producer capacity, markets tend to flip from competitive, cost-based pricing to producer-driven pricing. Manufacturers hop into the driver's seat the way OSB producers did last summer, when industry figures showed demand rising from 89% of capacity before June to almost 96% from July on. Once the line was crossed, producers put the pedal to the metal, boosting the wholesale price on the benchmark 7/16-inch North Central OSB from $197 to $465, an increase of 136%.

Hoping to make up for recent hungry years, these firms may be reluctant to drop prices as quickly as they pushed them up. Even so, high prices are not likely to stay with us for too much longer, because three factors are working to bring them down:

New capacity. One big new panel plant can have an instant impact on the market, and several are expected to start production in the next 24 months.

Imports. In a shrinking world, U.S. suppliers face increasing foreign competition. Brazilian plywood is one example.

Product substitution. No law says builders have to use OSB. The minute OSB costs more than some other sheathing product, they won't hesitate to switch.

There's one more wild card for 2004: the economy. Panel products, especially OSB, rely more exclusively on the new-home industry than do other wood products. If mortgage rates rise and the building market slows, panel prices will be hit harder than the more diverse sawn lumber market.

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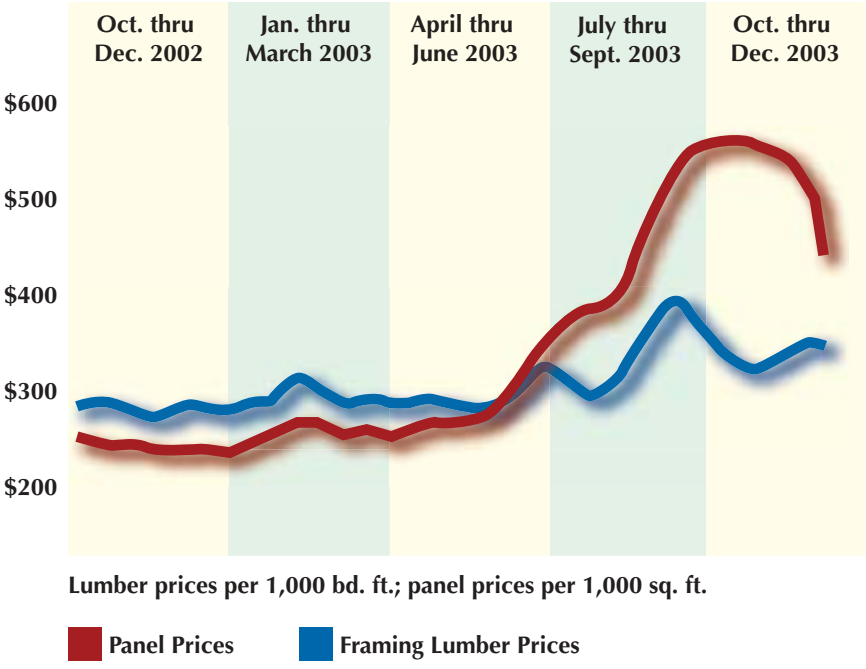
Recent Prices: Lumber vs. Structural Panels



Fall and winter price data bears out a September prediction by University of Massachusetts professor David Damery, who told *JLC* he expected framing lumber prices to drop sharply and soon, but that OSB prices would hold their peak longer before the inevitable decline. The many small companies producing sawn lumber have to take market prices as a given, he argues, but big players in the relatively concentrated panel industry can flex their muscle to move prices when demand approaches production limits.