mold™
& MOISTURE MANAGEMENT MAGAZINE
The Magazine for Moisture Prevention and Remediation
Jan-March 2005 | Volume 2 | Issue 1

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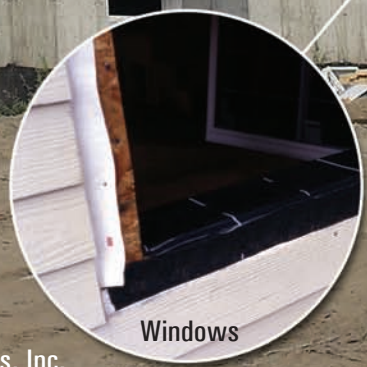
Products to Keep Homes Dry

Special Homebuilders' Section



A Publication of Key Communications, Inc.

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& MOISTURE MANAGEMENT

January–March 2005 | Volume 2 | Issue 1

See the special section for remediators starting on page 12.

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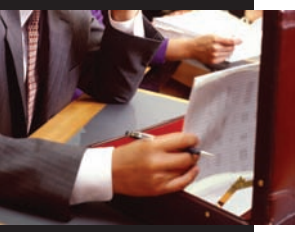

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SPECIAL SECTION: remediation

An in-depth section just for remediators, featured in every issue.

Message from the publisher

Welcome

My favorite episode of the old TV show *The Wonder Years* had 10-year old Kevin Arnold spending a day at his father's office. As part of a school project, young Kevin was to write a report about his father's career. It's a hellacious day for his father. In the course of it, Kevin learns that his dad, while king of the castle at home, is merely one in a long line of whipping boys at the office.

Ever the earnest student, Kevin dutifully begins to interview his father that evening. "So Dad," he says, "when did you decide you wanted to be a manager of distribution services?"

I thought about that scene when Mr. Fix-It himself, Lou Manfredini, was interviewing me on his Chicago radio show in early December. "So Deb," he said, "when did you know you wanted to publish a magazine about mold?"

Like Jack Arnold, I am doing something I never expected to do. But unlike him, I am doing something I love and enjoy doing besides. Oh I've heard a few snickers from people who say "a magazine about mold?" incredulously, but those come purely from the uneducated who don't have to deal with the issues or costs of moisture control.

Mold & Moisture Management (Moldmag) is the seventh magazine to be published by our parent company, Key Communications Inc. Originally conceived as a supplement to Key's *Door & Window Manufacturer™ magazine*, we were surprised to learn how much information is available about moisture prevention, control and abatement, and that the industry lacks a central clearinghouse of published information.

At nearly the same time, it became clear that major insurance companies were beginning to exclude mold and moisture damage from their coverages, putting the onus—and the cost of remediation—right back on the builder, contractors and the manufacturers of products they use. As one expert told me, "the burden for solution is moving from the insurer to the companies that actually constructed the edifice, and that's quite a burden."

So we premier Moldmag with a special emphasis on homebuilders and what they must do to avoid moisture problems. Our special section begins on page 30. Also in this issue, you'll find regular departments about science and technology (Wet Science, page 43), moisture litigation and court decisions (Court*Ship, page 40), the latest news (page 4), people (page 44) and much more.

You'll also become acquainted with our columnists, each of whom offers a unique and interesting view of some aspect of moisture control. A special section just for remediators, which begins on page 12, will appear in each issue. It's designed to give those involved in mold and moisture abatement a special section of their own.

Finally, please take note of the advertisers in this issue. They have products of such importance to the industry that they have chosen to advertise here. It is only through their support that we are able to bring you this issue.

Please let us know what you think. Comments, suggestions and even criticism are most welcome. Please feel free to contact me at 540/720-5584 ext. 111 or e-mail to dlevy@moldmag.com. I look forward to working with you and learning from you.

—Deb Levy

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PUBLISHED BY
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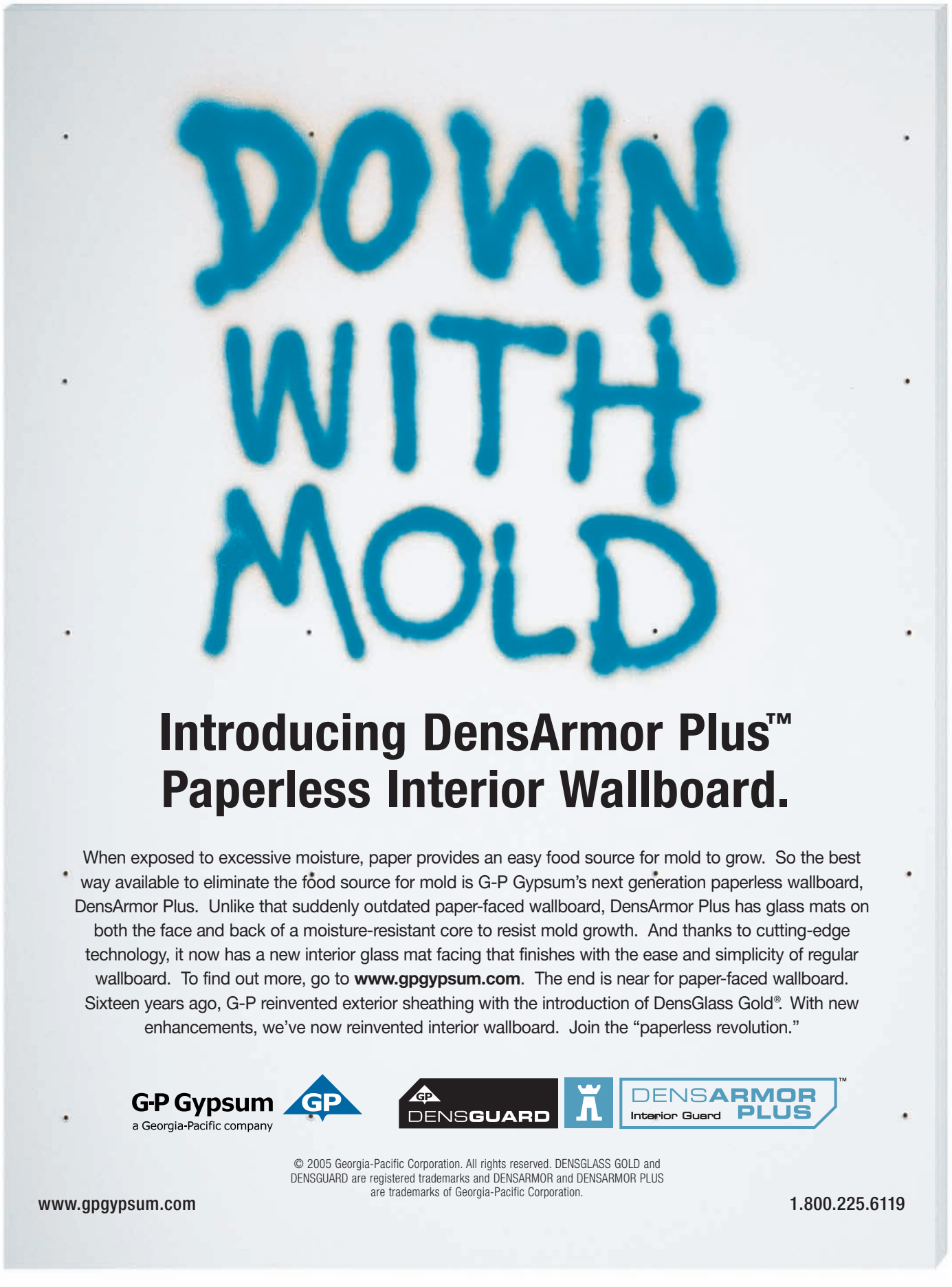

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ASSOCIATIONS

Two Associations Expand Work in Moisture Arena

At the November meeting of the Window & Door Manufacturer's Association (WDMA), staff member Jeff Lowinski explained the activities of the association's mold monitoring committee. According to Lowinski, a wood material or composites task group has been formed to determine mold resistance against k fungus. ASTM methods are being looked at to determine what needs to be measured.

In addition, the mold committee mentioned that the American Wood Preservers Association (AWPA) is developing a test method to determine mold and mildew. WDMA announced that it may adopt the method.

According to information from AWPA, a subcommittee P-6 task group has drafted a mold test standard, which is being validated through round-robin testing. Some data has been received, and comments regarding the procedure itself may result in modifications to the draft standard. A status report will be presented by the task group to subcommittee P-6 when AWPA meets again in May 2005.

www.nwwda.org or call 847/299-5200.

www.awpa.com or call 334/874-9800.

MBA Mold White Paper In Development

A mold task force operating under the D.C.-based Mortgage Bankers Association's (MBA) loan origination committee announced at its October 2004 meeting that it is in the process of developing a mold white paper.

The MBA meeting's minutes state that the paper will look at information on the historical view of mold, current industry perspectives, health, research, insurance, litigation, risk management, prevention and routine maintenance, detection, remediation, new technologies and the future. The committee anticipates that the paper will be open for comment by the MBA's Commercial Real Estate Finance/Multifamily Housing Convention (CREF), February 6-9, 2005, in San Diego.

www.mortgagebankers.org or call 202/557-2742.

COMPANIES

Steril-Aire Announces Move

Steril-Aire Inc., which manufactures and markets a line of UVC devices and accessories, has announced its move to an expanded corporate headquarters in Burbank, Calif. According to a company news release, the move has tripled the company's manufacturing capacity, as well as its sales and administrative office space. The new headquarters also features a fully equipped research laboratory.

"In less than ten years, the use of UVC energy for mold and microbial control in HVAC systems has gone from an unknown concept to a widely accepted practice," said Robert Scheir, president. "Our move to an expanded facility reflects this growing demand in the marketplace."

www.steril-aire.com or call 800/278-3745.

CertainTeed Fiberglass Shingles A Part of *This Old House*

CertainTeed Corp., of Valley Forge Pa., announced that the Emmy Award-winning television series, *This Old House*, chose its XT™ 30 AR fiberglass roofing shingles for the show's 25th anniversary project in Carlisle, Mass. The roof, chosen in moiré black, was intended to complement the architecture of the Greek Revival-style farmstead. The show premiered on PBS, December 23, 2004.

Literature

Mold and Moisture Magazine in the News

Mold & Moisture Management magazine has received its share of press in the months leading up to its January launch. The magazine, published by Key Communications Inc., of Stafford, Va., has been featured on CBS news and in a radio interview with Mr. Fix-it Lou Manfredini for his how-to show in the greater Chicago area. A variety of other media have also expressed interest in learning more about the new magazine.

www.moldmag.com or call 540/720-5584.

Radio personality Lou Manfredini spoke with Moldmag publisher Debra Levy about the launch of the new magazine.

By using fiberglass, the algae-resistant (AR) shingles remove a source of food for mold and mildew, helping prevent the growth of fungi in an area that is often overlooked.

"Over the years, it has been a pleasure to build a relationship with *This Old House* based on the philosophy that everything old can be new again," said Marcia Hannah, vice president of marketing for CertainTeed's roofing products group. "Through out donation, we are delighted to help the series celebrate its silver anniversary as we too celebrate a milestone of our own—our 100th year of service."

www.thisoldhouse.com.

www.certainteed.com or call 610/341-7328.

SPOTTED

Boston City Council Holds Hearing on Mold

Boston City councilor Maura A. Hennigan announced that a city council hearing was held in December to address the public health threat of mold and poor indoor air quality, as reported in an article from the *Transcript*. The discussion focused on what Boston can do as a city, a state and a region to educate the public and prevent further contamination.

U.S. Rep. John Conyers, Jr., D-Michigan, the ranking member of the House Judiciary Committee and sponsor of the U.S. Toxic Mold Safety and Protection Act, HR 1268, spoke at the Boston hearing. Conyers' proposed bill, also known as "The Melina Bill," was designed to generate guidelines for preventing indoor mold growth; establish standards for removing mold when it does grow; provide grants for mold removal in public buildings; authorize tax credits for inspection and/or remediation of mold hazards; and create a national insurance program to protect homeowners from catastrophic losses. An emergency appropriation bill was also included to help schools remediate contaminated buildings and improve air quality. The bill is currently under review by the House.

The aim of Hennigan's meeting was to educate the public about the problem of indoor mold and poor indoor air quality due to water intrusion in public and private buildings in the city, according to the article.

"This is a serious public health risk, and I look forward to continuing to raise awareness and educate the public about this issue by bringing in those who are knowledgeable on this matter," Hennigan said.

continued on page 6

Celebrity Case Brings Attention to Homeowner's Cause

After four days of deliberations, an Austin, Texas, jury awarded actress Sandra Bullock nearly $7 million in a trial against the architect and builder who constructed her lakefront home in Austin.

Three years ago the architect, M.B. Daneshjou, sued the actress, claiming she owed money to his company for designing and building her $6.5 million, 10,000-square-foot home. According to the article, Bullock counter-sued, claiming much of Daneshjou's construction work wasn't good enough to be a stand in for real craftsmanship.

Actress Sandra Bullock was awarded $7 million in a trial against the architect she says caused her home's mold problems.

Testimony during the two-month trial centered on the builder's non-compliance with Austin's building codes, construction defects including problems with flashing that caused excessive water intrusion, defectively-installed materials, damage to framing, rotting wallboard and the presence of stachybotrys mold. Because of the problems, Bullock chose not to live in the home and construction remained unfinished.

Daneshjou blamed problems on a former project manager and subcontractors. The jury found the project manager had breached his contract, but ultimately held Daneshjou responsible for damages.

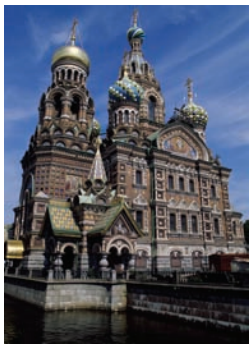
Bullock said in a written statement after the verdict was reached, "I felt firmly committed to see this process through to a just conclusion, no matter what the outcome, especially for all those homeowners who could never afford to come this far."

Daneshjou reportedly plans to appeal.

continued

Mold Plagues Historical Center of Russian City

Eighty percent of buildings in the historical center of St. Petersburg, Russia, are plagued by mold and toxic microorganisms, according to a report by city doctors cited in an article from the *St. Petersburg Times*. The article said that the city's architectural ensembles and monuments are suffering from mold as well.



Experts say historic buildings and monuments in St. Petersburg, Russia, are contaminated by mold.

Experts from the city's State Sanitary and Epidemic Control Board began surveying buildings in 2000, when doctors began receiving increased numbers of complaints from illnesses associated with mold, such as chronic rheumatism, asthma, skin allergies and tuberculosis. According to the board, one St. Petersburger dies of tuberculosis every 20 hours and doctors are putting the blame not on bad weather but mold.

"Paris has about as much rain as St. Petersburg does," said Vitaly Antonov, a leading researcher at the St. Petersburg Institute of Mycology, in the article. "The only difference is that there they repair the roofs on a regular basis, whereas our roofs are covered with rusty holes. The same is true for basements. If there is mold in a house—either inside or outside—it is the result of the irresponsible and poorly supervised work of the communal service staff, and in no way an inevitable attribute of humid climate."

Corroding walls and ceilings, mold and fungi are leading to the disintegration and collapse of roofs, ceilings and shelters over entrances, according to Antonov. Poor drainage systems are also blamed. Antonov said that when it rains, the water and all possible microorganisms are absorbed into city walls.

According to the article, doctors and restorers are recommending a mass program to drain basements and repair roofs around town, as well as a thorough upgrade of protection systems that stop rising dampness.

Residents of Mold-Infested Apartment Staying Put

Residents of a mold-infested apartment complex in Newberry, Fla., have refused to leave the complex to allow remediation and repairs, according to the local news station, WCJB. The owner of Schowanda Apartments, Bishop Williams, had notified residents by letter that they would need to leave before repairs could begin, however, most of the residents can't afford to move out.

According to the news report, the insurance company will not send money to make the necessary repairs until everyone has left, and as long as people stay at the complex no work will be done.

"Some of us in this building have been sick," said resident Marva Watts, "but we don't know if it's some kind of virus or if it's actually the mold."

KUDOS

EPA Honors County Schools for Exemplary Indoor Air Quality Program

Pinellas County Schools (PCS) in Largo, Fla., was among 12 schools and districts selected to receive the Environmental Protection Agency's (EPA) Indoor Air Quality Tools for Schools (IAQ TfS) 2004 Excellence Award. The award was presented at EPA's 5th Annual Indoor Air Quality Tools for Schools National Symposium, December 2-4, 2004, in Washington, D.C.

According to an EPA news release, the award recognizes exemplary indoor air quality programs and commitment to providing a healthy learning environment for students and staff. PCS was recognized for a program that was adopted shortly after a major mold outbreak more than 10 years ago in an elementary school that was only a year old. The outbreak resulted in an epidemic of bronchitis, headaches and ear infections and forced the school to close for 18 months for repairs that cost $1 million. After the mold outbreak, PCS adopted a management plan and appointed a single coordinator to standardize responses to IAQ concerns.

In 1995, EPA developed the voluntary IAQ TfS kit and program in response to government studies highlighting the deteriorating conditions of the nation's schools and the alarming rise in asthma cases, particularly among school and preschool age children. The EPA estimates that 25,000 schools and school districts across the country are now using the kit.

www.epa.gov/iaq/schools. m³

Briefly ...

Disaster Kleenup International Inc., a network of independent property damage restoration contractors based in Bensenville, Ill., has announced that four new members recently joined the organization. A.E. Fickert & Son, based in Dayton, Ohio; Evans Services, based in Springfield, Ill.; Pride Cleaning & Restoration, based in St. Louis; and Woodland Cleaning & Restoration, based in Wilmington, Del., all came on board in September.

A Growing Concern:

Condensation can lead to more than bacteria and molds. It can increase the likelihood of fungi, viruses, and mites that cause respiratory infections, allergies and asthma.

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The Manufacturer's Laboratory

A New Place to Start Reducing the Potential for Mold

by Larry Livermore

Larry Livermore is the program manager for the American Architectural Manufacturers Association (AAMA).

When it comes to the topic of mold, the multiplier reflected in the old adage "an ounce of prevention is worth a pound of cure" could be increased 100,000 times. Over the past few years, AAMA members have been working on numerous efforts to help improve air and water performance of installed windows and doors. Much can be done with product design to prevent the formation of mold in a building. However, using the best-designed and best-built fenestration product is no guarantee against the potential of mold formation. Proper installation—using approved procedures—is an important safeguard for preventing the occurrence of mold.

To that end, various AAMA member task groups are involved in developing standards and test methods that will help to reduce the potential causes of mold formation. These groups include:

- installation liaison task group;
- gunnable expandable foam air seals for rough openings task group;
- expanded cellular tape task group;
- self-adhering flashing task group; and
- mechanically-attached flashing task group.

Installation Liaison Task Group

The installation liaison task group was established to develop a standard test method for residential window installation. This test method allows individuals and companies to check various installation techniques and materials. The concept behind the test method was to standardize the requirements for submitting a product for testing and the format for reporting the test results, while also leaving room for variations of materials and methods used. In other words, the group hoped to establish a uniform standard that everyone could follow, but would allow any number of different materials and/or installation methods to be used to install the window or door frame. This test method will let new products and procedures come to the marketplace, yet provide a benchmark from which to test. While this effort has been ongoing for a few years, the work is near completion and a new standard test method should soon be approved.

AAMA hopes to develop a standard test method for installing residential windows.

Sealants and Adhesives Task Groups

The expandable foam sealant and expanded cellular tape task groups were established to develop methods of testing how much pressure expandable foams and tapes exert on a framing system after installation. In the past, expandable foams—especially those applied using an aerosol can—were found to be the potential cause of excessive deflection of the window frame. This deflection was parallel to the face of the wall (toward the center of the frame). Manufacturers found that products installed with expanding foam around the perimeter had difficulties with sash operation. The foam and tape manufacturers learned of these concerns and set out to develop products that would reduce the level of expansion and movement of the frame. While these new products seem to answer the problem, the development of a test method was necessary to determine how much pressure is placed on the frame. Additionally, the manufacturers wanted to establish expansion pressure limits based on the allowable deflection of the window frames. The new term often used to describe foam products that are reportedly appropriate for window and door installation is "low expansion foam." While these products are currently on the market, the test method is still under development. Installers using these products should always consult with the foam manufacturer and window manufacturer to establish installation guidelines, limitations and applicability.

Flashing Task Groups

Self-adhering flashing is another product that is commonly used, and often misapplied, in the field. As with various types of sealant, self-adhering flashing must come in contact with a number of substrates and surfaces. Many of these products may require the application of a surface primer, such as with oriented strand board (OSB). The work of the self-adhering flashing task

"Only properly trained window installers who understand the need for following correct installation procedures can eliminate the liability gap that exists between the manufactured window and the framed rough opening."

group is to establish a test method that will better predict the performance of self-adhering flashing products in various conditions. The work of this task group should be complete in 2005. Based on the self-adhering flashing test method development, it was determined that similar issues should be addressed related to non-adhesive flashing products, so the mechanically-attached flashing task group was formed in October 2004.

The Importance of Proper Training

But mold prevention depends on more than just the performance of quality fenestration products. Only properly-trained window installers who understand the need for following correct installation procedures can eliminate the liability gap that exists between the manufactured window and the framed rough opening. One nationwide program that addresses this issue in a positive manner is the InstallationMasters™ program. Originally developed by AAMA, this training and certification program is aimed at installers of residential and light commercial windows and glass doors. InstallationMasters™ teaches installers the best practices and installation techniques for both new construction and replacement applications. Classes are conducted solely by accredited instructors, are based on tested and accepted practices, and cover topics from the proper selection and use of installation materials to final cleaning and product maintenance.

The work being done by AAMA is an indication of how important proper installation of the product is to our members. While the formation of mold is an issue of concern, it simply reinforces the need to develop test methods and procedures that will improve the installed performance of fenestration products. We look forward to continuing the development of test methods and standards to answer these needs in the future. m³

Resources

To learn more about the InstallationMasters program and how you can become certified, visit www.installationmastersusa.com.

The Consultants Corner

Taking a Proactive Approach toward New Industry Standards

by Colin Murphy and Lonnie Haughton

Colin Murphy is a founder and managing partner of Exterior Research & Design LLC, a building envelope forensics, testing and design consulting firm based in Seattle. **Lonnie Haughton** is a senior associate at ERD.

It's a hard truth that when building envelope defects are claimed, virtually everyone involved in the design and construction processes gets sued. It's an even harder truth that due to the high risks and costs of going to trial, insurance carriers for some of these parties will end up paying some amount to settle a portion of the claim, even when there is little or no clear evidence of direct responsibility for the water leakage and resulting damage.

When moisture damage or mold proliferation is claimed and the finger-pointing begins, the primary roles of the building envelope consultant are to:

1. Establish how and why the leakage occurred; and
2. Defend the client against unsupported or exaggerated claims.

To this end, one of the key questions asked by each of the many building envelope consultants representing the plaintiffs and defendants is: *Does the project design and construction conform to building code requirements and local industry standards?* Sometimes simple answers to this question are impossible, especially when considering new standards for construction practice published by national standards-writing organizations are not yet fully accepted at the regional and local levels.

Consider ASTM E 2112, *Standard Practice for Installation of Exterior Windows, Doors, and Skylights*, published in September 2002. The largest ASTM standard ever published, E 2112 provides detailed and comprehensive step-by-step protocols for installing and flashing residential and light-commercial windows and doors. E 2112 is such an important advancement in this field that the American Architectural Manufacturers Association (AAMA) developed the independent nationwide InstallationMasters program to spread the new gospel.

Even so, more than two years after its publication, E 2112 typically has been embraced by only the best building envelope designers and contractors and some forward-thinking window manufacturers. For most building professionals, E 2112 either remains a complete unknown or it is simply dismissed as being too radical.

Unfortunately, some of these unaware or dismissive designers and contractors currently are constructing buildings that soon will allow water infiltration through windows and doors, resulting in deterioration and/or mold growth. This, in turn, will result in a large building envelope defects claim against almost everyone with insurance coverage who ever stepped foot on the job site, including the designer, the contractor, the window/door installer, the flashing installer and the cladding and sealant installers.

At that time, several years in the future, some building envelope consultant is certain to issue a report asserting that E 2112 was the accepted local industry standard at the period of construction. He will further assert the failures by designer, contractor and installers to conform to its strict flashing and installation requirements makes all of these parties partially responsible for the mold and water damage—even if the source(s) of the leakage are not flashing or sealing failures. The defending experts then will issue opposing reports arguing that the E 2112 standards for proper design/construction

ASTM Standard E 2112

ASTM's standard E 2112, *Standard Practice for Installation of Exterior Windows, Doors, and Skylights*, was issued in 2001 to give builders information on all aspects of installation of fenestration units in a single opening in residential and light-commercial buildings. The standard addresses the integration of windows, doors, skylights, flashing, anchors, shims, sealants and building wraps, and the general interface between walls and openings.

"By far, the most important application is the recognition that the wall is one envelope with many components and there are different wall types which must be installed differently," said Barry Hardman, a building-envelope consultant from Temecula, Calif., and chairperson of committee E06 on performance of buildings. "We can no longer treat each component separately, as if it lived in a universe by itself. It just makes sense that all areas which penetrate the wall must be correctly integrated."

According to ASTM, the standard prevents not only water leakage, mold and rot, but also energy savings, enhanced durability, minimized maintenance due to professional integration of products, stability of the thermal envelope and enhanced long-term building value.

The standard is available online from ASTM for $58. To order, or view more information, visit www.astm.org and enter E 2112 in the standards search.

practices had not been "generally accepted" within the local market at the time of construction.

Eventually, the case will reach the hands of an arbitrator or jury who likely will conclude that: 1) an acclaimed window flashing standard published in 2002 surely should have been accepted locally after more than two years of nationwide promotion by AAMA, InstallationMasters and others; 2) the severity of existing water damage and mold growth is partially attributable to the failures to conform to E 2112 and; 3) the defendants' insurance carriers should contribute significantly to funding remediation of the water damage (most commercial policies now exclude mold remediation).

In other words, we predict that within the next few years some readers of this column will experience costly *retroactive* imposition of the E 2112 standards by legal fiat and will realize that the long-term risks of ignoring new standards can be much greater than the short term rewards.

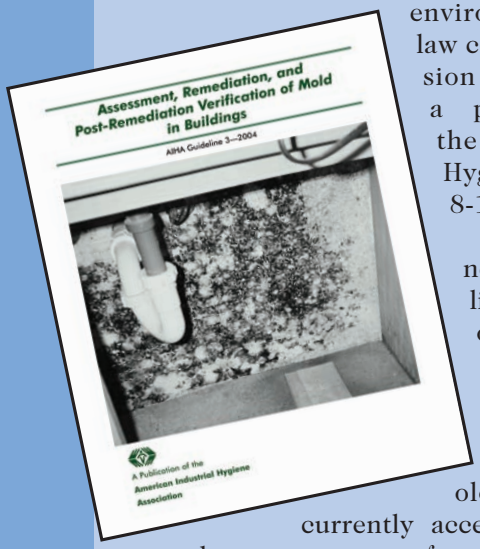
Consider, for example, that E 2112 calls for minimum 9-inch wide flashings at fenestrations and also requires flanged window and door units to be set into a continuous bead of sealant. From a long-term "risks vs. rewards" perspective, does it make sense to save a few dollars now by continuing to specify or install 4-inch wide flashings? What about the potential future risks for the well-known window manufacturer whose nationwide promotions for their 3-inch wide self-adhering flashing membrane includes assurances to contractors that no sealant behind flanges is needed when their flashing is installed?

The moral of this story is that in an era where multimillion dollar awards for claimed mold damage are becoming common, and the availability of mold coverage is increasingly limited, the key to business survival is to proactively embrace the new stricter standards and designs—don't wait for the retroactive bombshells from a future lawsuit. m³

GUIDELINES

AIHA Releases Mold Guideline for Industry Professionals

The American Industrial Hygiene Association (AIHA), an association of 12,000 members based in Fairfax, Va., has released a remediation guideline, *Assessment, Remediation, and Post-Remediation Verification of Mold in Buildings*. The guideline was developed by the association's biosafety and environmental microbiology, indoor environmental quality and law committees. A draft version was presented at a press conference at the American Industrial Hygiene Conference, May 8-13, 2004, in Atlanta.



According to an AIHA news release, the guideline describes the range of exposure assessment, hazard assessment and re-occupancy post-remediation verification methodologies and techniques currently accepted and available to conduct assessments of mold growth in residential and commercial buildings. It also outlines the minimum qualifications and proficiencies that define a competent remediation professional. These competent professionals would include, but are not limited to, certified industrial hygienists (CIHs) with education, training and experience in specific areas of science such as:

- exposure assessment;
- indoor environmental quality;
- heating, ventilating and air conditioning;
- microbial assessment and remediation;
- building science;
- law/communication;
- microbiology/mycology; and
- health effects.

AIHA is currently developing additional documents that will provide further guidance in this area. An updated version of the *Field Guide for the Determination of Biological Contaminants in Environmental Samples* is currently under development, and a new in-depth text on mold issues is also being prepared. The field guide is scheduled to be completed by the time of the AIHA national conference, May 21-26, 2005, in Anaheim, Calif., and the mold book should be released shortly thereafter.

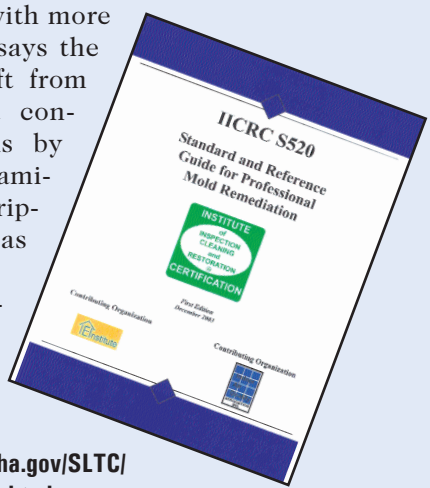
Assessment, Remediation, and Post-Remediation Verification of Mold in Buildings is regularly $45 and can be ordered at www.aiha.org/webapps/commerce or by calling 703/849-8888.

OSHA Names IICRC Mold Standard as Online Resource

According to a news release from the Institute of Inspection, Cleaning and Restoration Certification (IICRC), the Occupational Safety & Health Administration (OSHA) has cited the newly-developed IICRC mold remediation standard, *S520: Standard and Reference Guide for Professional Mold Remediation*, on its online list of indoor air quality resources. The OSHA resource site reported that the standard, "when properly applied, can assist remediators and others in determining criteria that trigger remediation activities or confirm remediation success."

According to the news release, the mold standard was developed to address industry concerns such as health effects from indoor mold contamination; properly addressing health and safety issues; recognition of major mold problems; training and experience requirements for professionals involved in remediation; liability issues; proper use of engineering controls to eliminate or reduce cross-contamination occurrences; judging when contents can be cleaned and when they should be disposed; and use of proper techniques to clean and restore building components and contents.

The IICRC released its procedural reference guide after four years of work with more than 20 associations. It says the standard provides a shift from setting numerical mold contamination action levels by instead giving mold contamination definitions, descriptions and conditions, as well as general guidance.



The standard is available by contacting IICRC at 360/693-5675 or through email at supplies@iicrc.org.

www.iicrc.org or www.osha.gov/SLTC/indoorairquality/otherresources.html.

REMEDIATORS IN ACTION

Home Solutions Subsidiary Awarded $1.3 Million Contract by Air Force Base

Home Solutions of America Inc., a Dallas-based provider of specialty residential services, announced that its PW Stephens Inc. (PWS) subsidiary has received a contract worth more than $1.3 million to remove mold from more than 240 homes at Camp Pendleton Air Force base in Southern California. According to a company news release, additional services may be performed under the contract, which could increase its size and scope.

"Our strong position in the market due to our expertise and longevity in airborne contaminate removal from the home continues to provide growth opportunities in California," said Scott Johnson, president of PWS. "The combination of continued backlog in California coupled with our recent contracts resulting from damage due to the hurricanes in Florida bode well for the 2005 fiscal year."

www.hsoacorp.com or call 214/623-8446.

MARCOR Remediation Works Around Guests in California Hotel

A new, 135-room residential-style hotel complex in Northern California recently underwent extensive mold remediation by MARCOR Remediation Inc., based in Hunt Valley, Md.

The hotel was experiencing rampant mold growth due to leaks that developed in the plumbing system months after the hotel's opening in 2003. Shower pans, sink drains, main supply lines and other areas involving connections to the main water supply were found responsible.

"It soon became apparent that the original plumbing contractor had made many errors and that extensive mold growth was the result," said Blaine Frost, regional manager.

Over a one-year period, MARCOR set up containment structures within 65 unoccupied units and in some hallway corridors, then began removing microbial contamination that was visibly apparent. In some areas, the company was required to perform interior demolition of certain contaminated building components, followed by reconstruction services.

As the building was occupied, the company was required to do the rebuilding as discreetly as possible, according to a company news release.

"Our staff had to maintain a most professional demeanor at all times," Frost said.

www.marcor.com or call 800/547-0128.

School's Denial of Testing May Lead to Lawsuit

According to an article in Florida's *Sun-Sentinel*, a teacher from the St. Lucie County, Fla., school district is facing disciplinary action for bringing in an unauthorized mold remediation firm to test her classroom's air. The incident is under investigation by the school district, which has refused to conduct tests for mold resulting from water damage caused by hurricanes.

Richard Lipsey, toxicologist at the University of North Florida in Jacksonville, said that teachers' complaints of bloody noses, coughing, runny noses and irritated eyes could be a sign of the presence of stachybotrys. However, staff and school officials have yet to schedule a meeting to track health complaints, according to the article. Once county disease trackers scroll through the dozens of complaints filed with the school facilities department in recent weeks, they can analyze if mold within the buildings is causing illnesses.

"The school must test for mold or they may be sued for bad faith," said Lipsey. m³

Have you heard of people using herbal remedies or full containment units to get rid of mold? Has your remediation firm had to work around unusual circumstances? Send your remediation stories and news to mheadley@moldmag.com.

Highlighting the Latest Technology

For Managing Mold and Moisture Problems at the AHR

The Air-Conditioning, Heating, Refrigerating Exposition (AHR Expo), February 7-9 in Orlando, Fla., will host more than 1,000 exhibitors with products and equipment from mold controls to all manner of air cleaning, filtering and purifying units. To learn more about the show, see our special preview on page 28, but to learn more about the products that will be featured, keep reading.

AIR PURIFICATION

AHR Booth# 4181: Drykor RCC-60 Integrates Four Products into One

Fayetteville, Ga.-based Drykor's alpha-release residential comfort conditioner RCC-60 integrates four products into one: cooling/heating, dehumidification, filtration of particles and removal of bacteria and microorganisms. The conditioner was designed to adjust room temperature and moisture automatically, independent of one another, while filtering and purifying the air in a room.

According to a company news release, the portable, four-wheeled machine removes up to 94 percent of microorganisms as well as 77 percents of particles larger than 5 micron. With no need for pipes, pump drainage systems or collection containers, it solves the problem of condensate water removal. In addition, it features low power consumption of only 800 watts.

www.drykor.com or call 678/817-0299.

AHR Booth #4787: BreatheCLEAN Uses UV to Destroy Mold

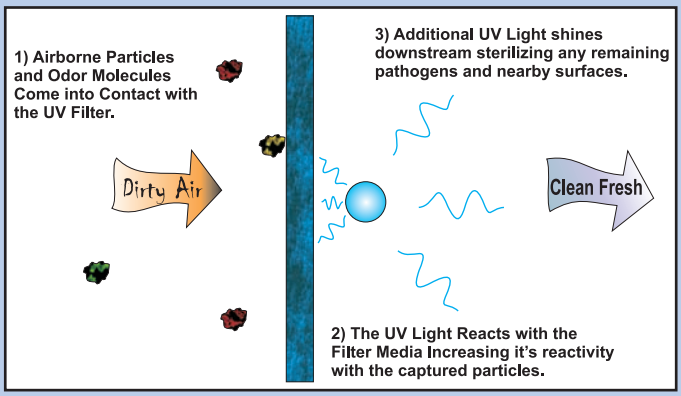
Peterson Air Purifiers LLC, of Bloomington, Minn., has introduced its BreatheCLEAN® whole home air purification system. The system installs directly into a home's central ductwork and is designed to destroy pathogens, including mold spores.

The purification system applies high-intensity ultraviolet light to destroy airborne microorganisms. The system plugs into a standard electrical outlet and operates continuously, drawing less energy than a 75-watt light bulb, according to company information. Two ultraviolet lights are included in the system, for a UV wattage of 24, amperage of .61 and total wattage of 72.

www.breatheclean.com or call 866/332-7247.

AHR Booth #4769: Triatomic Introduces New UV Light Filter Systems

Triatomic Environmental Inc., of Jupiter, Fla., has introduced a germicidal ultraviolet light filter system, Fresh-Aire. The ultraviolet light and 1-inch filter can be combined for installation into any standard 1-inch filter slot or filter grill. According to a company news release, the light reacts with



the filter to increase its reactivity with captured airborne particles. The combined approach is designed so that the ultraviolet light can target hard-to-reach areas downstream of the filter element, such as the AC coil, where it works to eliminate any remaining mold, mildew or fungus.

www.freshaireuv.com or call 561/748-4864.

Mitsubishi Electric Introduces Portable Air Purifier

Mitsubishi Electric's HVAC advanced products division in Lawrenceville, Ga., has introduced a portable air purifier that uses air quality sensors and three stages of filtration to find and eliminate contaminants, including mold. PlasmaPure utilizes a HEPA charcoal filter to reduce 99.9 percent of airborne contaminants, according to a company news release.

The purifier uses sensors to detect concentrations of contaminants in the air, then adjusts its inverter-controlled fan motor accordingly. The inverter fan is intended to save on energy and filter costs, because it runs only when necessary.

The 17-pound purifier was designed to be transported from room to room easily. A wireless remote control is also available.

www.plasmapure.com or call 866/475-2762.

DRYING

Moisture Solutions System Manages Problems from Capillary Action

Moisture Solutions LLC, of Madison, Wis., has introduced what it says is a new non-obtrusive drying technology designed to rid masonry and concrete of excess ground moisture. The electro-osmotic de-moisturizing (EOD) system is a green, low-energy, chemical-free method for managing moisture problems that result from capillary action.

According to company information, the surface mounted unit emits a low frequency radio wave to counteract forces that allow water to "wick" up porous material. The EOD system produces an electrical field between the building and earth to attract salt and water from the walls and slab to the surrounding earth. In addition, the system acts as a shield to prevent the re-entry of ground moisture. A Moisture Solutions dealer monitors system performance by measuring moisture content every two to three months.

www.moisture-solutions.com or call 608/663-4735.

VENTILATION

AHR Booth #3363: RenewAire's Breeze Exhausts Pollutants, Moisture

Breeze™ is an energy recovery ventilator (ERV) from RenewAire LLC of Madison, Wis., that exhausts pollutants and excess moisture to the outside, recovers heat from the exhaust stream during cold weather and precools and pre-dehumidifies incoming air during hot weather for high indoor air quality and little risk of moisture-related damage to homes.

According to a company news release, the key to Breeze's performance is its static-plate exchange core. Exhaust and outside air streams cross paths in the core, transferring both heat and moisture in the process. Because moisture is transferred in a gaseous state, no liquid water accumulates, which means that no drain or condensate pan is required.

Breeze features quick and easy installation to furnace/AC return air ductwork or to an exterior wall, and is sized for residences under 2,500 square feet.

www.breeze.renewaire.com or call 800/627-4499.

AHR Booth #2139: E-Z Aire Brings in Fresh Air

The E-Z Aire series from Des Champs Technologies, of Natural Bridge Station, Va., is an economical, self-contained, light-commercial make-up air system designed for remediation and to improve indoor air quality. It allows 100 percent of outside air to be brought in with virtually no auxiliary heating or sensible cooling required.

According to company information, E-Z Aire uses a counter-flow air-to-air heat exchanger, in which counter-flow airstreams are brought into close proximity and separated by the heat exchanger, which acts as a primary heat-transfer surface. This heat-transfer surface is configured to form a matrix with two separate air passages to ensure efficient heat-exchange that incoming air is never contaminated by the polluted exhaust air.

The system features up to 85 percent energy recovery, double-width double-intake blowers and an airflow capacity of up to 11,000 CFM. It includes integral defrost control and is available with re-usable or disposable filters, a weatherization package and fresh-air bypass damper.

www.deschamps.com or call 540/291-1111.

AHR Booth #4369: Power Vent Pro Designed for Residential Ventilation

The Power Vent Pro-4L (PVP-4L) from Soler & Palau Inc. of Pine Brook, N.J., was designed to circulate air for continuous low volume residential ventilation applications. UL and cUL safety-tested and approved, the ventilation system was licensed to bear the AMCA seal for airflow performance and is performance-certified by the Home Ventilation Institute (HVI).

PVP-4L is manufactured from high-grade galvanized steel and supplied with steel mounting brackets. It is suitable for working air stream temperature from –40 to 140 degrees Fahrenheit. It features permanently sealed, self-lubricating precision ball bearings and thermal overload protection cut-out. A backward curved centrifugal impeller is factory matched to an external rotor motor and dynamically balanced to eliminate vibration.

www.soler-palauinc.com or call 973/439-1001. m³

Flowing Downstream:
The Case of the Hidden Flood

by Peter Sierck

Peter Sierck is the director of Environmental Testing & Technology Inc., an investigative and consulting service for indoor environmental problems based in Carlsbad, Calif. Sierck, a registered environmental assessor and a certified indoor air quality professional, has conducted indoor air quality, moisture and mold investigations for more than 15 years.

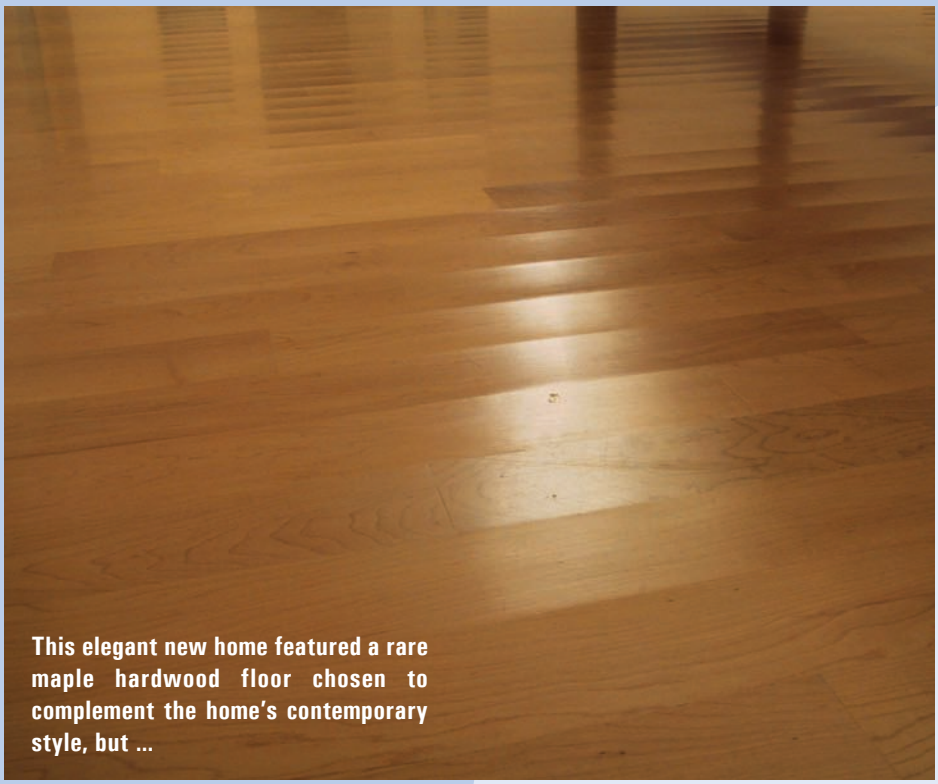
It happened in a beautiful house in Santa Monica, Calif., where a major remodeling had just been completed. The home featured an open space design with a generous sunk-in living room, a formal dining room with fireplace, a kitchen with granite countertops along all four walls with artistically painted cabinetry and a library on the first floor. The contemporary style was complemented with a rare maple hardwood floor throughout the house. Just one little detail was missing: the new sink did not have a water spray fixture.

Four days after the homeowner moved into the house, they contacted a plumbing company and inquired if a water spray fixture could be installed in the present sink assembly. The plumber inspected the sink and decided that it could be done with some welding work. The homeowner authorized the work to commence the next day.

The day after the plumbing company installed the water spray fixture, the kitchen sink cabinet was flooded. The water seeped into the cabinets and under the hardwood floor in the kitchen. Immediately, the plumbing company contacted a flood restoration company and the drying process began. Dehumidifiers and blowers were utilized to facilitate the drying. Since the flood had happened in the kitchen, it was decided that the drying efforts would be limited to the kitchen area only. The drying process lasted for nearly three weeks.

Soon thereafter, the homeowner noticed a lingering odor and contacted an industrial hygiene company to investigate. During the walk-through, it was noted that the hardwood floors in the dining room and sunk-in living room showed signs of cupping (warping). Subsequent moisture testing showed elevated moisture readings at the dining and living room hardwood floors while the kitchen floors were dry. No visible mold growth was observed in the accessible areas. It was also noted that drywall sandwiched behind the kitchen cabinet's back wall still tested wet when compared with reference areas.

The spore trap air sampling results yielded no elevated spore counts. However, the culturable air sampling results yielded a predominance of *penicillium* and *aspergillus* species, indicating the presence of fungal amplification sites.



This elegant new home featured a rare maple hardwood floor chosen to complement the home's contemporary style, but ...

Problem Opened to Further Testing

It was decided that destructive testing was necessary to evaluate the conditions present under the hardwood floor. The floor was installed on a sleeper system, where wood slats called sleepers are placed on the concrete slab, ¾-inch plywood is placed onto the sleepers and the ¾-inch hardwood boards are nailed into the plywood. The flooring system did not allow individual floorboards to be removed for inspection, so small portable containments were built for exploratory cut-outs in the dining and living room.

Once opened up, visible fungal growth was present on the

plywood sheeting and the sleepers. The readings of the moisture measurements in the sleepers and in the plywood were elevated and a laboratory analysis of the surface samples collected confirmed the presence of *penicillium* and *aspergillus*. Removal of the drywall sandwiched behind the cabinet also revealed active mold growth on the drywall materials.

It was suspected that the water had traveled throughout the first floor. More exploratory cut-outs confirmed that theory. The flood had affected the entire hardwood floor on the first floor and removal and reinstallation was recommended. The kitchen cabinets were removed to replace the swollen particleboard and the moldy drywall.

... There was nothing elegant about the extensive mold revealed beneath the hardwood floor.

Not to be Underestimated

By this point, the heavily inconvenienced homeowner demanded that the plumbing company cover all costs. The plumbing company then filled a claim against its liability insurance to cover all associated costs. In the end, the insurance company paid a total of $170,000 for costs that included: charges for the initial drying, industrial hygiene investigation and sampling, moving and storing costs for the contents, proper accommodation for the homeowners during the floor replacement, removal of kitchen cabinets for remediation of the drywall, removal of the entire hardwood floor, replacement of sub-floor plywood and sleepers, replacement of part of the wood flooring which was not in reusable condition, drywall reconstruction and reinstallation costs for the kitchen cabinets, hardwood floor reinstallation costs, touch-up repainting fees and final cleaning.

> "Once opened up, visible fungal growth was present on the plywood sheeting and the sleepers. The readings of the moisture measurements in the sleepers and in the plywood were elevated."

The bill was enormous because the distance water can travel under hardwood floors had been underestimated. Also, materials that were enclosed and could not easily be dried should have been identified and adjustments made to the drying procedures and methods. Finally, no flooring specialist or industrial hygiene company had been contacted during the drying.

So what is the moral of the story? It is of utmost importance to initially identify the extent and degree of all water-damaged materials to provide an accurate scope for the technical drying efforts. This also provides a baseline to verify that the affected materials are dry. The use of infrared imaging devices and penetrating and non-penetrating moisture testing devices could have eliminated the additional damage, the mold remediation and flooring system replacement costs. When moisture is detected early, hardwood floors with sleeper systems can usually be dried in place since air movement is possible throughout void spaces.

After months of inconvenience and legal maneuverings, the homeowners could finally move back into their newly remodeled home for the second time. The water spray fixture in the kitchen works well and they do not want to hear the word "mold" ever again. m³

Mold Litigation

A Reality or a Fantasy?

by J. Nick Badgerow and Kelly A. Campbell

J. Nick Badgerow and **Kelly A. Campbell** both practice law at Spencer Fane Britt & Browne LLP in Kansas City, Mo.

Mold—"the new asbestos"—is causing claims to erupt all around the nation. A number of factors have worked together to lead to this explosion in litigation. It is the purpose of this series of articles to discuss the phenomenon of mold litigation, and then to explore how one in the building trades industry might deal with it.

Publicity Causes Cases to Spread Like Mold

Most people have heard of at least one case involving large homes that have experienced mold, and which led their owners to file claims. For example, Ron Allison and Melinda Ballard had an 11,500-square-foot "dream home" on a 72-acre estate in Dripping Springs, Texas. After mold was discovered in their house, the Allisons and their son moved to a Four Seasons Hotel. The Allisons recovered a verdict of $32 million against their homeowners insurance company, although that amount was later reduced to $4 million.

In another Texas case, a jury awarded $1 million in August 2004 to 28 tenants of an apartment complex, where the defendants had hid and denied the existence of mold in the apartments rented by the plaintiffs.

A high-profile case that garnered the public's attention was related to the now-famous Erin Brockovich, who took the bonus money earned from the lawsuit portrayed in the movie bearing her name to purchase a million dollar house outside Los Angeles. According to Brockovich, however, the house became infested with mold, causing Brockovich and her family to become ill. This led to a *48 Hours* news report with national network exposure. Ms. Brokovich recently settled her case against the builder and homeowner's association.

So long as contingency lawyers believe there is money to be made, so long as "experts" believe they can join in the largesse, there will be claims.

Ed McMahon likewise joined the fray, claiming that incompetent remediation contractors increased his exposure to mold in his home.

Perhaps it should not be a surprise, then, that these large cases have captured the attention of the news media. One notable and widely viewed report was aired on the ABC news program *20-20*. The show, "Is Hidden Mold at Home Making You Sick?" aired March 23, 2004, and showed heart-rending scenes of families racked by asthma and other lung conditions, as well as cognitive impairments, and the loss of home and property.

"The New Asbestos?"

Claims arising from asbestos led to million dollar verdicts and the bankruptcy of any number of corporations. Asbestos claims may decline if new federal legislation passes, at which point the cottage industry of plaintiffs' lawyers and their experts may need a new enemy upon which to feed. Mold is a likely target.

Lawyers cannot create lawsuits on their own, however. They need "experts" to get past the judge who must act as gatekeeper to prevent fraud on the jury. Thus appears the new expert in mold and mold remediation, a topic that will be addressed in a future article in this column.

Fortunately, juries are not so blind. When confronted with the actual facts, juries can figure it out:

- Mold is everywhere and always has been.
- Mold can be treated when its source (moisture) is promptly and adequately addressed.
- Homeowners bear some responsibility for their own health by keeping their homes dry and reducing exposure to known allergens such as pet dander, grass or hay.
- There is more speculation than science in the expertise of self-proclaimed and self-certified mold experts.

When juries are presented with these facts fairly, they can and do arrive at the right decision.

A Paper Tiger

The threat of mold litigation cannot be minimized. There will always be mold in houses. So long as contingency lawyers believe there is money to be made, so long as "experts" believe they can join in the largesse, there will be claims.

The key is not to be alarmed or to overreact. The key is to be aware, to deal with problems and issues as they arise in a methodical and logical manner. Then, hopefully, this "new asbestos" will disappear like a spore in the wind.

For a discussion of how the mold industry experts created this industry, look for the next column in this series. m³

Problems Solved By the Press

There's no getting away from mold in the media, but these days, the consumer press is another place to find answers about what mold is, how to prevent it and how to get rid of it. These excerpts are examples of the concerns of homeowners seeking information about mold.

Home Inspector Advises, Mold is Beyond an Inspector's Scope

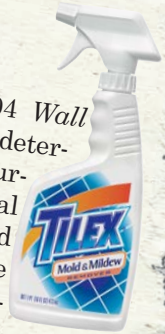
In the October 30, 2004 issue of *The Washington Post*, home inspector Barry Stone offered some advice to a homeowner who received "an outrageous estimate" on abatement for mold found on the wood framing in her attic. The original inspector had suggested using "foaming borade" to treat the mold. Stone offered another option and also some advice on further inspections.

According to Stone, mold evaluations are not within the scope of a home inspector and should only be performed by a professional abatement specialist. It should not be undertaken as a sideline by a home inspector who may not be aware of the most effective means of remediation. Stone added that he could find no product known as "foaming borade" in an online search, and that cleaning products that include borate compounds shouldn't be considered a cure-all.

Converting This Room Could Mean Creating Room for Mold

A homeowner planning to convert a dining room into a child's bedroom worried that covering up a window may mean creating a breeding ground for mold, in an October 18, 2004 article from San Francisco's *The Chronicle*. Bill Burnett, the paper's assistant real estate editor, and Kevin Burnett, a former Bay area builder, agreed that blocking the window with furniture or shelving would make a warm, damp environment with sufficient airflow for mold growth. They recommended removing the glass from the window and covering the opening with plywood. As a more aesthetic approach, they suggested building a temporary partition wall using 4-by-4 studs. They expected the partition would cost less than $100 and cause no permanent damage to the room. In that case, the advisors reminded the homeowner to leave one end of the wall open, perhaps covering it with a drape or making it large enough to use as a closet, to allow for sufficient airflow to stop the growth of mold and mildew.

Mold Cleaners Tested For Most Effective Results



An article in the October 12, 2004 *Wall Street Journal* did the dirty work in determining effective ways to kill shower curtain mold. A combination of commercial sprays, recommended remedies and elbow grease was applied to the same mold-covered shower curtain to determine which proved the most effective.

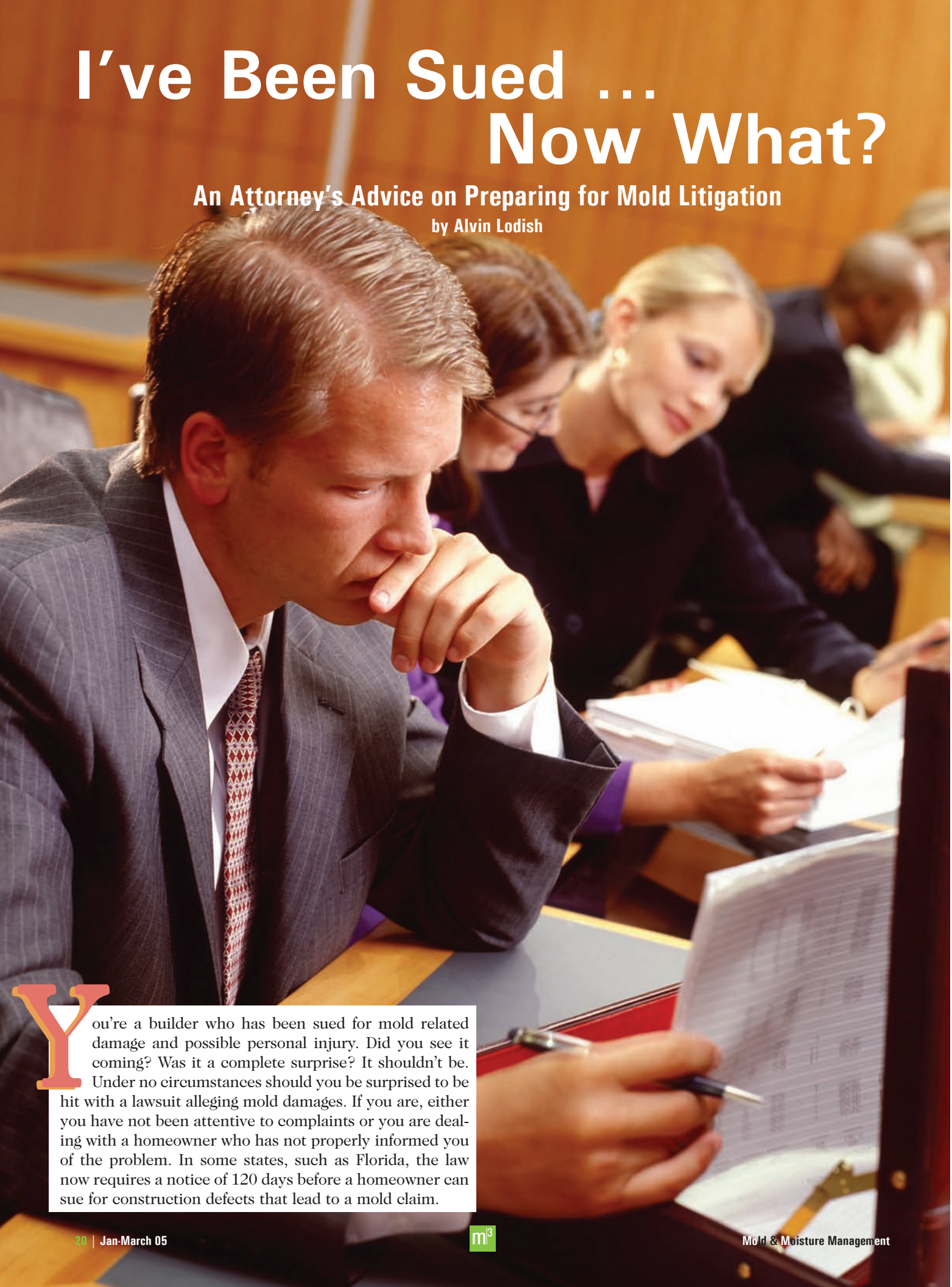
The most successful product, according to the article, was Tilex's Mold & Mildew Remover, which required no scrubbing and began producing effects after three minutes. After ten minutes and a rinse, the mildew was gone except for two faint yellow stains.

Other methods included the chlorine-free Seventh Generation Shower Cleaner, NOW tea-tree oil and a mixture of vinegar and water, each of which required soaking and scrubbing the shower curtain to minimal results. Two hot-water washing machine cycles with bleach resulted in large rust-colored stains on the shower curtain and the lowest rating of effectiveness.

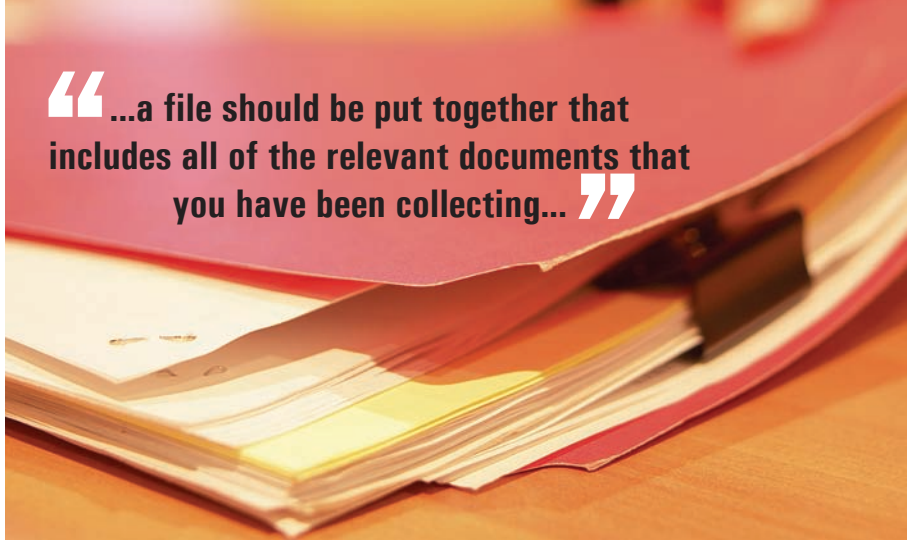
I've Been Sued … Now What?

An Attorney's Advice on Preparing for Mold Litigation

by Alvin Lodish



You're a builder who has been sued for mold related damage and possible personal injury. Did you see it coming? Was it a complete surprise? It shouldn't be. Under no circumstances should you be surprised to be hit with a lawsuit alleging mold damages. If you are, either you have not been attentive to complaints or you are dealing with a homeowner who has not properly informed you of the problem. In some states, such as Florida, the law now requires a notice of 120 days before a homeowner can sue for construction defects that lead to a mold claim.



Before You Reach "The Last Resort"

Certainly, the filing of a lawsuit should be the last resort in a mold dispute. There should have been reasonable efforts made to resolve the problems so that litigation would not be necessary. What did you do to minimize the chance of a lawsuit? Did you promptly respond to the homeowners' concerns? Did you take any steps to identify the cause of the mold or attempt to remediate? Responsiveness is a key issue for homeowners, particularly of recently built homes, and failure to respond in a timely manner to homeowners' concerns can lead to a lawsuit.

In the event that something does go wrong, be sure that you have a mold protocol to call upon. If you do not have a protocol in place now, put one together promptly. The protocol should list the steps to be taken if a mold problem arises and identify a "team" to handle the problem. The team should include a reputable environmental consultant who is experienced in indoor air quality or water intrusion investigations and a mold remediation company that is certified by the American Indoor Air Quality Council (AIAQ), the Institute of Inspection, Cleaning and Restoration Certification (IICRC) or the Indoor Air Quality Association (IAQA).

Having an established protocol is helpful in litigation. It shows that you're prepared and conscientious.

Documentation is the Key to Preparation

Perhaps the most important aspect of preparing for and successfully defending a lawsuit is to make sure that the problems and attempted solutions are well documented. This should start with the first contact by a customer service representative documenting the time, date and nature of the problem. Photographs are very important and should be dated. The documentation should also include any comments made by the homeowner as to any alleged personal injuries and any observations made by your staff. Employees should be instructed to assume that their notes and comments will be made public. In that way, their comments will be kept factual and specific. Memos are helpful if they are kept factual, contemporaneous and do not contain editorial comments that can be used to try and show some bias by the employee or the builder. It is a good business practice to keep complete notes and information for each of your homeowners.

Also, any physical evidence that was gathered and removed from the home, such as wood, insulation or portions of the HVAC system, should be saved in a sanitary environment. Keep in mind that it is not unusual for a case to take four to five years to go to trial and attempting to piece together what happened without contemporaneous notes or documentation will be very difficult.

After the Lawsuit Is Filed

The first thing to determine once a lawsuit is filed is whether or not you have insurance coverage and whether the claims made by the homeowner are a covered event. Reading and understanding the insurance policy is not easy and contacting your attorney for a coverage opinion may be necessary.

Clearly, it is also critical that you retain competent counsel who is experienced in dealing with mold issues and construction defects. To make the attorney's job easier and less expensive for you, a file should be put together that includes all of the relevant documents that you have been collecting concerning the homeowner, including the purchase and sale contract, any warranties, customer service documents, notes or memos concerning the mold problem and a list of employees who have interacted with the homeowner on behalf of the company.

The next step should be to determine who the relevant witnesses are and what expert witnesses may be necessary. Depending on the area of the country in which you live, retaining the best experts early can be important. Lawsuits, you will discover, are one reason why you should try to maintain good relationships with former employees. It is very common, due to the length of time it may take a case to be tried, that employees who have worked on a homeowner's mold problem may no longer be with the company. It may be appropriate to have employees who are no longer with the company sign an affidavit so that there is no confusion as to the employee's recollection. The affidavit can be referred to before deposition or trial.

Inspection of the home is important at this point. There may be strategic reasons why your attorney wants to wait to have an inspection, but generally it is better to have it sooner rather than later, and make sure your expert or consultant attends. Pictures and/or videotapes should be made at the time of the

continued on page 22

I've Been Sued ...
continued

inspection. If you wait too long for an inspection, the homeowner may remediate the problem, make repairs and thus change the condition of the home.

In addition, it is important to determine whether personal injuries are being claimed by the homeowner. If medical issues arise, records from the relevant doctors or hospitals should be obtained. It is important to know what steps the homeowner has taken to protect his own health. Obtaining a medical history of the homeowner is important if there is a claim of any personal injury since allergies and sinus conditions are the primary known side effects of exposure to certain kinds of molds.

Also, find out if the homeowner has insurance that may cover the damage and whether he made a claim. You need to see the policy to know whether the insurance company has subrogation rights against you if it settles with the homeowner.

It is important to review any contracts with the homeowner to determine your contractual and warranty obligations and to see if there is an attorney fee provision. Many contracts have attorney fee provisions that allow the prevailing party to collect fees. In order for a builder to analyze his risk and exposure properly, attorney's fees should be considered. In many states, such as Florida, attorney fee provisions are interpreted to be reciprocal even if the language appears to be one-sided.

An Ounce of Prevention

As with most things in life, preparation is the key to defending a lawsuit successfully. You cannot control whether you get sued, but you do control the documentation and preparation. Too often builders are not prepared for the inevitable. If you are involved in any facet of the building industry and have not been a party in a lawsuit, it could be simply a matter of time. As the saying goes, an ounce of prevention is better than a pound of cure. m³

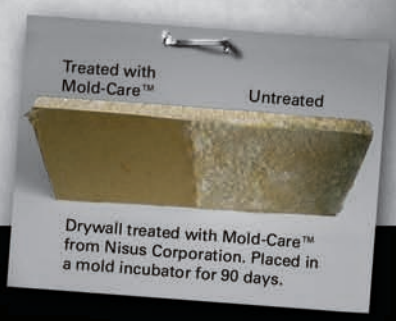
Alvin Lodish is a partner in the Litigation Department with the Miami law firm of Bilzin Sumberg Baena Price & Axelrod. He is currently handling numerous mold related cases throughout the State of Florida.

This product could make this magazine obsolete.

Mold and decay fungi can be a serious problem for builders, resulting in lawsuits and lost revenue. Fight back with Mold-Care™, a new product that prevents mold and decay fungi in wood and may help builders avoid charges of negligence. Sprayed on structural timbers and other building materials, Mold-Care soaks into the wood, providing long-term protection. For application to new construction by registered pest control companies and existing homes by certified mold remediators.

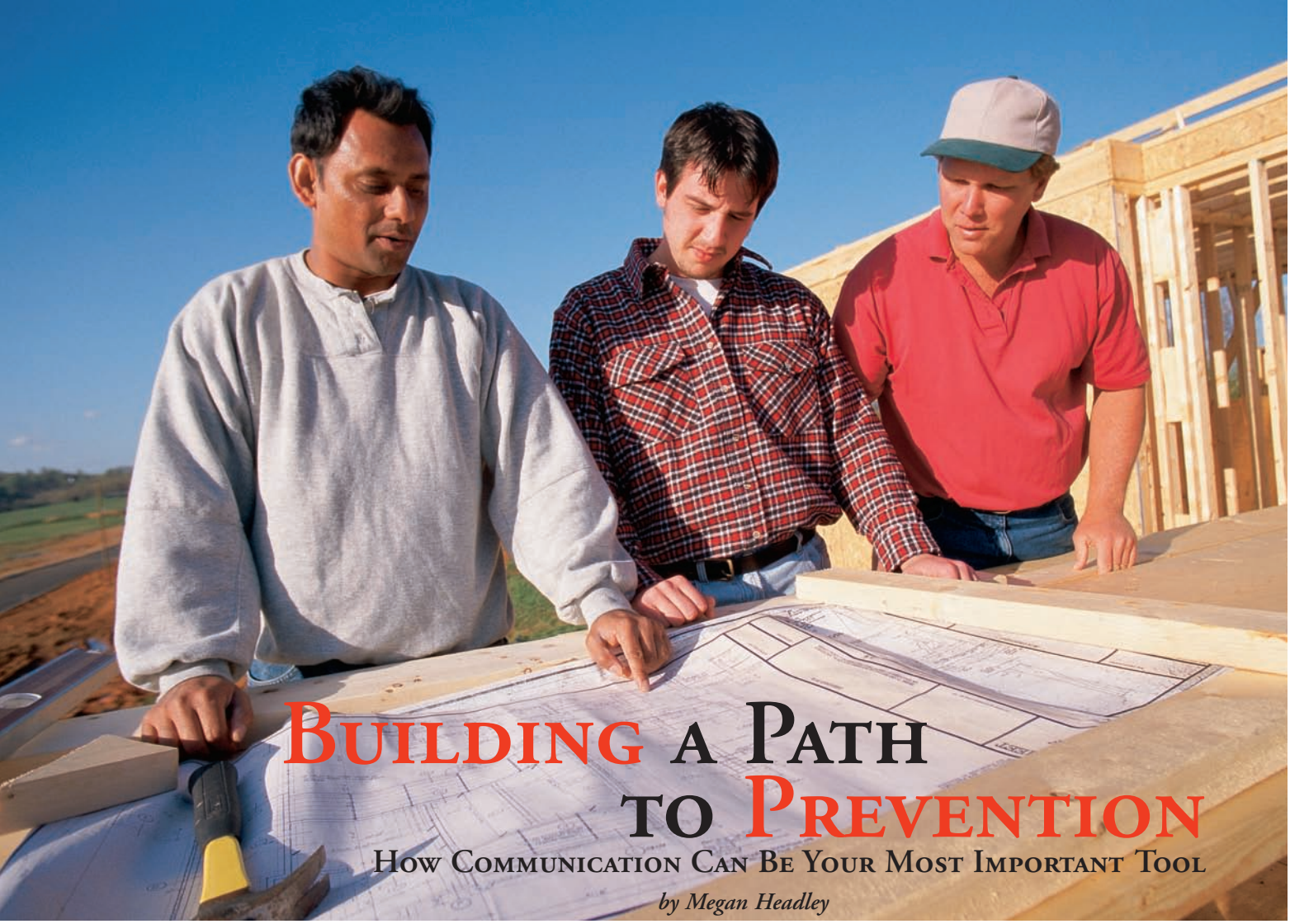
Nisus® CORPORATION

The World's Leader in Borate Technology



Drywall treated with Mold-Care™ from Nisus Corporation. Placed in a mold incubator for 90 days.

WWW.NISUSCORP.COM OR 800.264.0870



Building a Path to Prevention

How Communication Can Be Your Most Important Tool

by Megan Headley

When questioned about the history of mold growth in the structures his company builds, Michael Steffen, the quality director of Portland, Ore.-based Walsh Construction Co., couldn't recall any noteworthy problems. But when asked if he has any specific preventative measures in place to deal with moisture problems, he laughed.

"If you don't, you pretty much go the way of the dinosaur," Steffen said.

As that response seemed to indicate, mold litigation is more than a distinct possibility for a builder who doesn't take any preventative measures.

"Mold-related claims may eventually generate more litigation than asbestos," said William Crawford, an attorney with Crawford & Bangs LLP, in Covina, Calif., during a seminar on mold litigation. Today, many builders, homeowners and attorneys seem to agree with that belief.

The problem of increasing mold litigation is attributed in part to the outbreak of bad publicity given to mold in the 1990s, when homeowners began to fear its supposed health effects. All of that negative publicity has had one positive effect, however: homeowners are now becoming more aware of the dangers of mold and learning how best to prevent it. By serving as a resource to the homeowner, builders can further that process. Whether explaining to the homeowner proper preventative maintenance or furthering coordination between subcontractors, communication, if properly used, is one of the most powerful tools available to the builder. It can also be one of the best measures for preventing the future growth of mold and mold lawsuits.

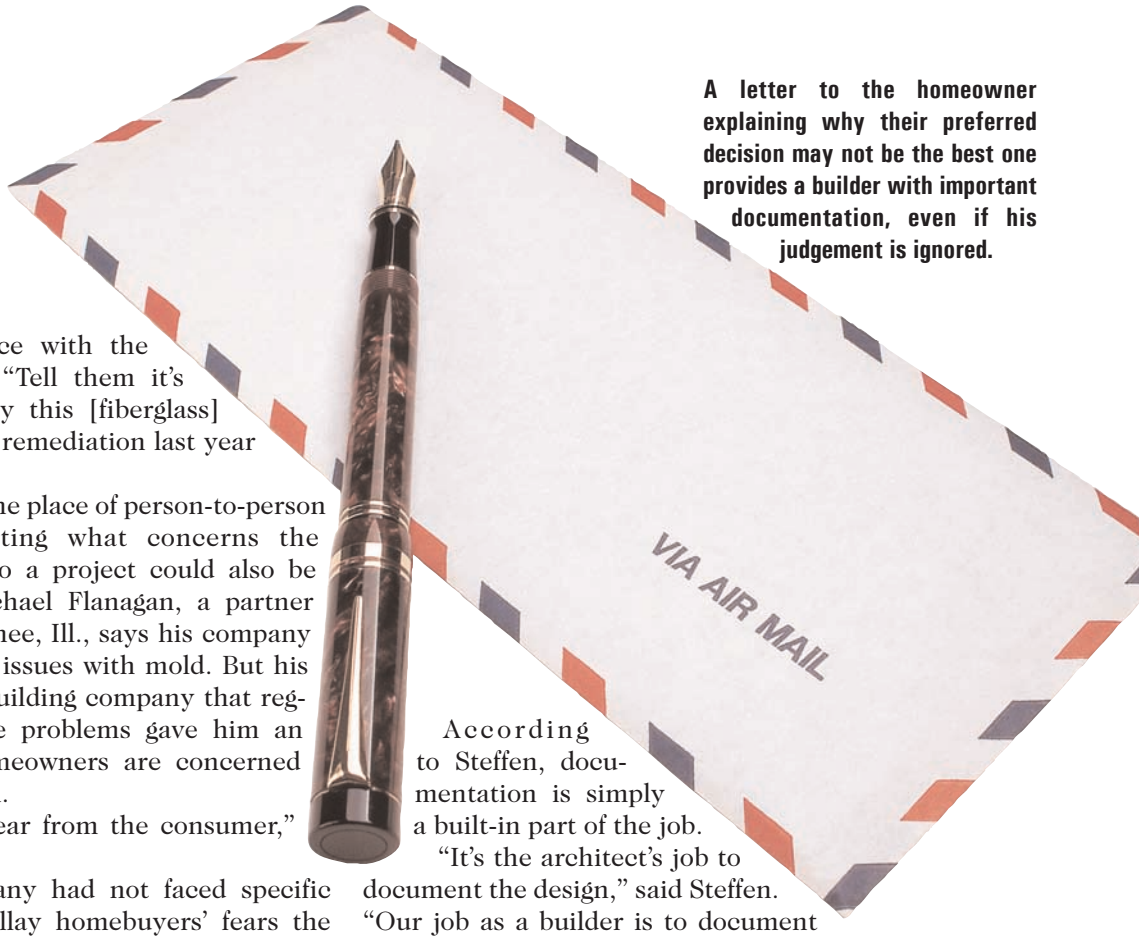
Becoming Aware of Homeowners' Concerns

At first, builders may feel that choosing materials for a mold-free home may put them at a disadvantage when it comes to price. Materials such as fiberglass shingles or wallboard eliminate a food source for mold, but they are generally more expensive than traditional materials.

However, Charles Perry, a principal with the Environmental Assurance Group, a consulting group based in West Hartford, Conn., feels strongly that a simple change in materials may go a long way toward reducing mold litigation.

"I don't think there's an overwhelming amount of mistakes builders make," said Perry. "I think it has more to do with materials being used."

Perry suggested that there is no better way to express the importance of mold prevention to a homeowner than just coming out and telling them why it's a good idea to go with a more expensive product.



A letter to the homeowner explaining why their preferred decision may not be the best one provides a builder with important documentation, even if his judgement is ignored.

"Take a proactive stance with the homeowner," Perry said. "Tell them it's going to cost $800 to buy this [fiberglass] sheetrock, but the average remediation last year was in excess of $40,000."

While nothing can take the place of person-to-person communication, anticipating what concerns the homeowner might bring to a project could also be helpful. For instance, Michael Flanagan, a partner with Orion Builders in Monee, Ill., says his company has not faced any specific issues with mold. But his experience with another building company that regularly dealt with moisture problems gave him an awareness that many homeowners are concerned with potential mold growth.

"There was more of a fear from the consumer," said Flanagan.

Even though the company had not faced specific problems with mold, to allay homebuyers' fears the issue had to be addressed.

"We have put a clause in our contract," said Flanagan. "If their problem is a result of a delay in communication [from them to us], we are not responsible."

If the problem is a result of improper construction, however, the builder is responsible—even if the changes were made at the request of the homeowner. In these instances, Crawford advises writing a letter to customers saying what should be done before doing what the customer wants. One of the most common charges in a construction defects case is negligence, which Crawford defines as "deviating from normal industry practices" or "doing or failing to do what should be done." If the homeowner requests a change that goes against a builder's better judgment, a letter explaining why the choice is not recommended may not change the owner's mind, but it could be the documentation you need to prove the owner was aware of the potential danger of their decision.

In addition to warning the homeowner, this type of documentation can be one of the most important methods of protecting yourself from a lawsuit. Written documentation provides a builder with proof that all decisions made during construction were made either as a preventative measure or at the request of the homeowner.

"We do this so the builder can say 'I know I took the precaution,'" said Teresa Orofino, marketing communications coordinator with insulation manufacturer Icynene Inc.

According to Steffen, documentation is simply a built-in part of the job.

"It's the architect's job to document the design," said Steffen. "Our job as a builder is to document changes in the design."

By keeping track of changes, from how many nails are used in a specific area to the size and shape of flashing, the contractor will have on hand what Steffen called "a record of issues raised in decision-making."

Finally, even after the homeowner and builder discuss every foreseeable precaution, a problem could still be found months or years after construction. An added service plan, in which a builder or contractor agrees to assist with future problems, will help builders and trades people to stay in touch with homeowners once the home is complete. If a problem does arise, quick action could lead to a solution other than litigation.

Sealing the Gaps Between the Trades

According to Crawford, mold litigation is increasing for two reasons. First, builders constantly use new products and face new problems, which is leading to "an evolution in environmental science." Second, there are construction defects—the results of poor construction, design and maintenance. Both of these problems, however, can be improved through strong communication among the individual subcontractors and between builder and homeowner.

"[It's] definitely important to talk to other trades people," said Orofino. "This is where building science

continued on page 26

Building a Path to Prevention *continued*

Using high quality, mold-resistant materials and coordinating building components can bring builders a step closer to a mold-free house.

stems from, the idea of all the trades working together."

Building science is a method of design, construction, inspection and testing that considers how all building components interact, including the foundation, walls, roof, doors, insulation and mechanical systems. By coordinating when and how components are installed, a structure can be designed that makes the most of all available methods of preventing the buildup of moisture.

According to Orofino, Icynene compares documentation from other trades to see how its insulation is affected by other systems, such as the HVAC, plumbing, building envelope and ventilation. Documentation of other elements of a building, including the mechanical systems, can show how the systems work together and what changes need to be made in the future.

"If there ever is a problem," Orofino said, "[we] can look at things like, 'Was the HVAC system too large?' 'Did it not get enough of the moisture out?'"

The company recommends developing a building plan to ensure that the products are used whose performance has been tested in combination with the other building components with which they will interact once installed. By being aware of differences between individual systems, the builder can work with trades people to create a system that works effectively as a whole.

Steffen noted that coordinating trades people is one of the most important ways his company prevents future moisture problems.

"The reality is, with building exteriors the moisture intrusion occurs with the interface between different materials, which is also usually the interface between the trades," said Steffen, citing the coordination between masons and glaziers as an example. "At the end of the day, when the building is sitting there in the rain, those systems work the way they're supposed to. It's the joints that pose a problem."

Perry sees the gap not so much between the "joints" of different products but between people with different priorities on the job. According to Perry, the trades have not been overly concerned with moisture problems in the past. He illustrated with a description of a visit he had made to a building site where he saw workers slicing through shrink-wrapped trim boards.

"The small pieces of lumber were absolutely black," according to Perry. He asked the man unwrapping the boards why.

"I don't think there's an overwhelming amount of mistakes builders make. I think it has more to do with materials being used."
– Charles Perry, a principal with the Environmental Assurance Group

"Sometimes the pieces just come that way," came the reply.

"Do you know that's mold?" Perry asked.

"What do you mean mold?" was the answer.

According to Perry, by that afternoon the builders were putting up sheetrock on those trim boards. He added, it takes only 24 to 48 hours for the mold to spread from those boards to the sheetrock.

While Perry attributes part of that particular problem to poor building materials—for instance, using materials covered in paper, a number one food source for mold—he also recognized that there is a long way to go toward teaching trades people, as well as homeowners, proper methods of moisture prevention. However, he doubts that simple education will be enough to make these practices permanent.

"When the EPA first formulated their environmental efforts around the United States, nothing really worked until they put punitive damages in place, unfortunately," Perry said. Communication is crucial, especially with subcontractors.

There is still another reason communication with subcontractors is crucial, according to Crawford. Breach of contract, the other charge often leveled in a construction defects case, is defined by Crawford as the material failure to comply with contracts that are written, oral, implied or incorporated by reference—in other words, what is written in other people's contracts. According to Crawford, subcontractors have the right to see the general contractor's contract, and should in fact demand to see what is outlined in a contract for which they may be held responsible.

Homeowner Education Could Lead to Less Litigation

When questioned, Richard Testa, construction manager for Drummond Company in Lakeland, Fla., said that he has only run into one problem with mold.

"With the one incident we had, our solution was to get in there and mediate to the best of our ability," said Testa.

Avoiding moisture problems in Florida seems particularly challenging for a homebuilder these days, when many remediation companies are still dealing with the results of this past summer's rash of hurricanes. "With the hurricanes, you can't keep the house 100 percent dry," said Testa.

His plan for prevention, however, cuts straight to the heart of the problem.

"We try to educate them," Testa said of the homeowners with whom he has worked.

Part of the problem of rising litigation may simply be homebuyer education; as information about mold and moisture-related problems becomes more widespread, one expects that homeowners and builders alike will become aware of what to look for before moisture problems get out of hand.

Everyone involved on a building project has the same goal of creating a structure that will suffer little damage with the passage of time. There are few tools more important to that goal than communication. While mold problems may not be completely eliminated, perhaps the results—wide-reaching lawsuits—can be.

Megan Headley is the editor of Mold & Moisture Management magazine.

Your Chance to Bloom

Two Upcoming Shows Provide Opportunities for Learning

Within weeks of the New Year, builders will find the first of two upcoming opportunities to raise their awareness of mold prevention to new heights. The International Builders' Show and the International Air-Conditioning, Heating, Refrigerating Exposition (AHR Expo) both offer a wide variety of exhibitors and seminars that will attack the problem of mold growth from different perspectives for similar results. Offered here is a glimpse at the shows that may help your business—not mold—flourish.

International Builders' Show

The International Builders' Show, January 13-16, in Orlando, Fla., will start the New Year off right for builders, with a chance to learn from more than 200 educational sessions, some of which are listed here, at right. The show, sponsored by the National Association of Home Builders (NAHB), will be

held at the Orange County Convention Center and will feature approximately 1,600 exhibitors, a number of them devoted solely to mold and moisture control, including **Moldmag** in booth W9227.

Pack your most comfortable shoes, since the convention covers more than a million-and-a-half square feet. A peek at some of the products that will be featured can be found in our special Homebuilders section on page 30.

IBS Seminars:

All seminars will be held at the Orange County Convention Center in downtown Orlando.

Thursday, January 13, 2005
Moisture & Energy Performance of Closed Crawl Space Foundations
8:30 a.m. – 10 a.m.
Speakers: Bruce Davis, research director, Advanced Energy; Cyrus Dastur, building science associate, Advanced Energy; Doug Bibee, Dow Chemical; and Jeff Tooley, owner, The Healthy Building Co.

Thursday, January 13, 2005
Mold and Moisture: Tips for Builders and Consumers
1:30 p.m. - 2:30 p.m.
Speakers: Kevin Powell, NAHB Research Center, and Sharon Oxley, National Center for Housing and Environment.

Saturday, January 15, 2005
Mold: Preventive Medicine
9 a.m. -10 a.m.
Speakers: Brad Oberg, chief technology officer, IBACOS Inc., and Jeffrey Inks, assistant staff vice president, construction and codes, NAHB.

Sunday, January 16, 2005
Cure for the Common Callback
11 a.m. -12 p.m.
Speakers: H. Edward Carr, Jr., president, Comfort Home of Central Pennsylvania; Mark Laliberte, vice president and principal trainer, Sheltersource Inc.; and Russell Nassof, principal, Environomics LLC.

Sunday, January 16, 2005
Is Precast Concrete Viable for Single Family and Multifamily Homes?
The program will discuss how panels prohibit moisture migration, virtually eliminating mold problems, among other topics.
11:00 a.m. - 12:00 p.m.
Speakers: Brian Goodmiller, national marketing director, Precast/Prestressed Concrete Institute; Gary Graziano, senior director of marketing and planning, High Concrete Structures Inc.; Harold Messenger, vice president of development, Altus Precast Co.; and Robert Clauson, sales engineer, Molin Concrete Products.

2005 AHR Expo

The AHR Expo will be held this year February 7-9 at the Orange County Convention Center in Orlando, Fla. The event, co-sponsored by the American Society of Heating, Refrigerating and Air-Conditioning Engineers Inc. (ASHRAE), the Air-Conditioning and Refrigeration Institute (ARI) and the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI), is expected to feature more than 1,600 exhibitors, with information on HVAC&R equipment, products, components, systems and services. A number of companies are listed as exhibitors of mold controls, while others offer all manner of air cleaning, filtering and purifying units. You can see some of the products from these exhibitors in our special Remediation section starting on page 12.

Show-sponsored educational sessions and ASHRAE-sponsored public sessions, some of which are listed here, are both free and open to the public.

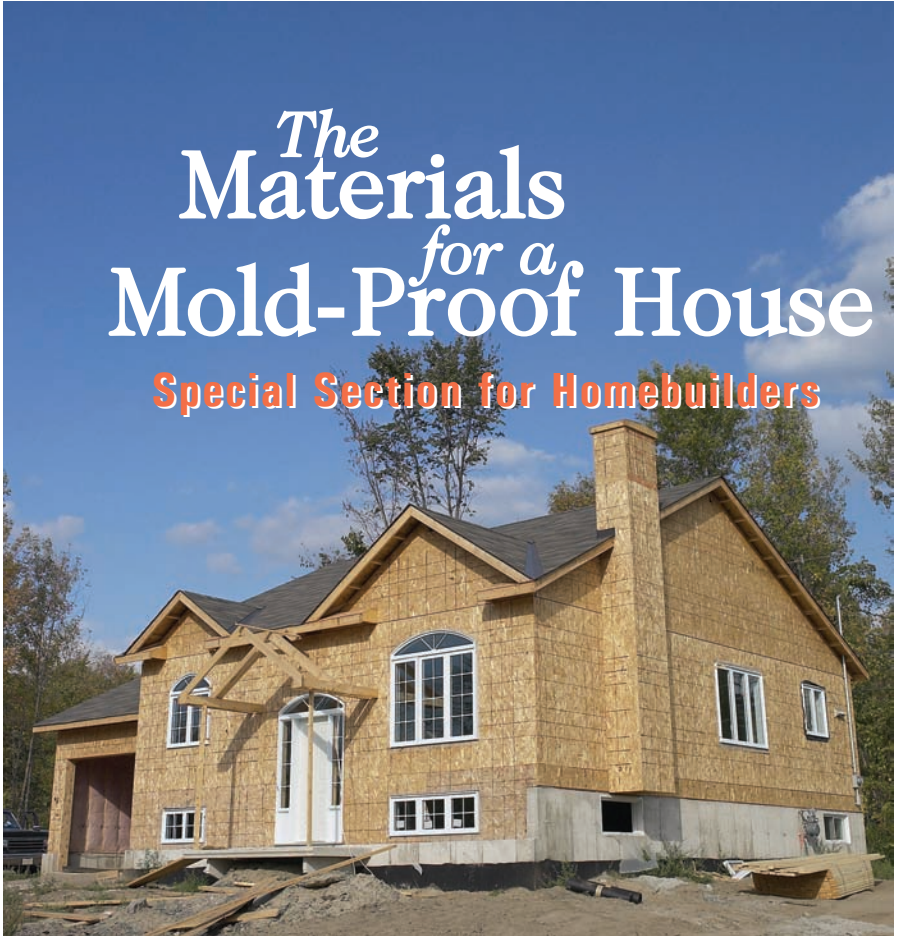
AHR Seminars:

Saturday, February 5, 2005
Preventing Moisture and Mold Problems: Design and Construction Guidelines (Code 61)
8 a.m. – 3 p.m.
The Wyndham Palace Resort.
Sponsored by the ASHRAE PDS.
Speakers: David MacPhaul, P.E., CH2M Hill, and J. David Odom, Liberty Building Diagnostics Group Inc.

Sunday, February 6, 2005
Designing Residential Ventilation Systems to Meet ASHRAE Standard 62.2 (Code 63)
2 p.m. – 5 p.m.
The Wyndham Palace Resort.
An ASHRAE short course.
Speaker: Don T. Stevens, Stevens and Associates.

Monday, February 7, 2005
Mastering Mold & Moisture in Southern Climates
3 p.m. – 5 p.m.
Orange County Convention Center.
An ASHRAE public session.
Speaker information not yet available.

Tuesday, February 8, 2005
Preventing IAQ & Moisture Problems in Schools & Commercial Buildings
10:30 a.m. – 12:30 p.m.
Orange County Convention Center.
Sponsored by AMCA.
Speaker information not yet available.



The Materials for a Mold-Proof House

Special Section for Homebuilders

Mold and moisture problems are often seen as a difficulty handled by remediators who rush in with equipment to clean old homes. However, there are ways of preventing mold before it starts with a plethora of building products, from structural panels to coatings and sealants to the all-too-crucial flashing. Some of the products listed here will be exhibited at the International Builders' Show (IBS), January 13-16, 2004, (see Your Chance to Bloom, page 28), but the descriptions here will give you an immediate opportunity to take in all the different measures available for making your next house mold-proof.

STRUCTURAL PANELS

IBS Booth #W9023: Amvic Concrete Forms Designed for Strength in Light Form

In response to demand for a more efficient and reliable building form, Toronto-based Amvic Inc. has introduced a new reversible insulated concrete form (ICF) design.

The new Amvic Building System features the company's FormLock™ interlocking system, which allows forms to be easily interlocked regardless of which direction the form is placed. Full-length webs have duplicate rebar holders for assured strength in either direction. Corners are quickly flipped to stagger the reversing FormLock system. According to company information, the ICF is light and easy to carry, and no leakage or form separation occurs during the concrete pour. It is easy to cut and shape, and makes unconventional wall shapes manageable.

www.amvicsystems.com or call 416/410-5674.

Gold Bond XP Wallboard to Reduce Threat of Moisture

The Gold Bond XP™ wallboard panels from National Gypsum, of Charlotte, N.C., were designed for use in interior areas for protection against moisture.

The panels consist of a moisture- and fire-resistant core encased in heavy, 100 percent recycled purple paper on the face side and heavy liner paper on the back, both of which are moisture-, mold- and mildew-resistant. The face paper is folded around the tapered long edges to reinforce and protect the core, and the ends are square-cut and finished smooth. According to a company news release, the panels score and snap easily, with no special handling requirements.

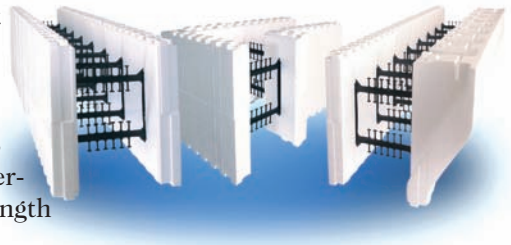
The panels are available in standard 8-, 10- and 12-foot lengths, with a width of 48 inches.

www.nationalgypsum.com or call 704/365-7300.

Inorganic and Waterproof ICF Available from Reward

Reward Wall Systems, of Omaha, Neb., has designed its insulated concrete form (ICF) wall systems, such as its iForm system, to prevent mold by removing a source of food and moisture. The company's ICF wall assembly consists of two inorganic types of material, EPS and concrete, that form an air-tight building envelope and makes it easy to control the humidity and moisture in a structure.

Suitable for both commercial and residential construction, iForm flat wall forms produce steel-reinforced concrete walls that are straight, square and plumb. Ties, 6 inches on center horizontally and 8 inches on center vertically, provide strength



during concrete pours. According to the company, the snap-in design of horizontal rebar in five different locations within the wall makes rebar ties unnecessary.

www.rewardwalls.com or call 402/592-7077.

IBS Booth #W1293: USG Introduces Two New Mold-Resistant Gypsum Panels

Chicago-based USG Corp. has introduced its SHEETROCK® HUMITEK™ moisture- and mold-resistant gypsum panels, specifically for use in interior areas. The panels feature tapered edges for easy finishing, they score and snap quickly and they require no special handling or installation procedures. In addition, they are classified by Underwriters Laboratory (UL) for fire resistance, surface burning characteristics and non-combustibility. The panels are available in ½- and ⅝-inch thicknesses and in 8-, 10- and 12-foot lengths.

In addition, the company has introduced a new type of interior wall panel for all types of applications. FIBEROCK® AQUA-TOUGH™ interior panels are made from 95 percent recycled materials and were engineered to provide increased resistance to abuse while outperforming paper-faced or glass-mat-faced panels. Their uniform composition provides water resistance through the core, and the panels are approved for use in wet areas, including tub surrounds. Independent laboratory tests confirm that the panels provide high mold-resistance when tested per ASTM D3273-00 standards.

www.usg.com or call 312/606-4000.

Trespa Meteon Offers Resistance to All Types of Weather

Trespa Meteon, from the Netherlands-based Trespa International BV, is a flat panel based on thermosetting resins, homogeneously reinforced with wood fibers and manufactured under high pressure and temperature. The resins are cured using the company's electron beam curing (EBC) technology and are suitable for a wide range of exterior applications.

According to the company, the panel is extremely weather-resistant, and moisture, including acid rain, has no effect on the surface or the core. Both the UV-resistance and color stability have a 4-5 classification on the International Grey Scale. Similarly, large or rapid temperature fluctuations do not affect the properties and appearance of the panel. In addition, it is highly impact-resistant and, because of its closed structure, dirt does not cling, according to company information.

The dimensional stability and workability of Trespa Meteon are comparable with those of hardwood, says the company, and standard tools for hardwood can be used for all kinds of processing. It is available in more than 50 colors and comes in three standard sizes.

www.trespa.com or call 800/487-3772.

Structure Insulated Siding From Alcoa Now Available

Pittsburgh-based Alcoa Home Exteriors has introduced its Structure™ insulated siding, a premium siding permanently bonded to STYROFOAM® extruded polypropylene (XPP) foam from Dow. According to company information, Structure retains 97 percent of its R-value over time and can improve the resistance to heat flow of exterior walls by up to 25 percent, resulting in lower energy costs and improved climate control. In addition, the siding's XPP STYROFOAM has a cellular structure that resists moisture.

Structure locks securely with Alcoa's patented T3-Lok System, is capable of withstanding 160 mph winds and also reduces high frequency noise and wind sounds by up to 50 percent. It is available in two premium profiles, double 6-inch and wide-style single 7-inch planks, and more than 700 baseline colors, including the new DreamColor.

www.alcoahomes.com or call 800/962-6973.

UNDERLAYMENT

IBS Booth #S11051: Ice & Water Shield® Protects Roofs From Water Damage

Grace Construction Products, based in Cambridge, Mass., offers its Ice & Water Shield®, a self-adhered roofing underlayment, for premium roof leak protection.

The Ice & Water Shield is a self-adhering protective membrane that sits between the shingles and roof deck, providing residential and commercial roofs protection against the elements.

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The Materials for a Mold-Proof House *Continued*

According to company information, it will not crack, dry or rot and can be applied to all standard roof coverings. The membrane is composed of two waterproofing materials, a rubberized asphalt adhesive backed by a layer of high-density cross-laminate polyethylene. Embedded in the membrane is a "split-release on demand" feature called RIPCORD™.

In addition, Grace's Vycor® Plus self-adhered flashing membrane is now available with RIPCORD™ to simplify the flashing installation procedure and offer high-performance flashing by enabling proper integration of the flashing with other key moisture protection elements of the wall.

www.graceconstruction.com or call 866/333-3726.

MOLDICIDE

IBS Booth #S10867: Nisus Offers Mold-Care™ Moldicide

Unexpected severe weather during construction and water used in construction materials can create moisture buildup and turn homes into veritable mold incubators. With this in mind, the Nisus Corp., based in Rockford, Tenn., is offering its Bora-Care® with Mold-Care™ moldicide concentrate to control mold and decay that otherwise could continue while, or after, a structure dries.

Bora-Care, a termiticide, insecticide and fungicide, includes a specific disinfectant, also used to sanitize restaurants and hospitals and the active ingredient in Mold-Care. The company recommends treating all of the wood framing of a new home, including structural timbers, plywood, oriented strand board and drywall, as well as other materials that may face water damage from leaking pipes or condensation.

Nisus has also introduced Mold-Clean™ wood cleaner and surface conditioner, designed to remove mold and mildew stains and prepare wood surfaces for Bora-Care with Mold-Care.

www.nisuscorp.com or call 800-264-0870.

EnviroCare Corp. Introduces ForSite Coating

EnviroCare Corp., a manufacturer of mold- and mildew-resistant coatings based in Wilmington, Mass., has introduced ForSite. The patent-pending technology utilizes EPA registered/FDA approved engineered silver, which the company says has long-proven mold-, mildew- and bacteria-resistant properties. Unlike traditional, organic mildewcides, silver has long lasting surface efficacy without a tendency to wash away or degrade with time, according to company information.

ForSite can be used for most any interior and exterior application, is typically applied by spray, brush or roller and dries quickly.

www.envirocarecorp.com or call 800/463-2628.

COATINGS

IBS Booth #S10893: Protective Coatings Group Introduces FortiCel

FortiCel™, from Protective Coatings Group of Jacksonville, Fla., is a proprietary combination of technologies that prohibits mold growth on the applied coating surface of interior construction materials such as lumber, concrete, sheetrock and steel. In accelerated lab tests, the coating eliminated over 99 percent of mold, according to a company news release.

FortiCel can be sprayed on surfaces when structural framing is complete but before installing insulation. All surfaces must be free of debris, oil or grease and the product must be mixed thoroughly prior to and during application. It does not wash off, degrade or negatively impact construction deadlines.

www.protectivecoatingsgroup.com or call 904/378-8693.

IBS Booth #W9509: Wood Gard Mih Plus Serves Dual Purpose

No-Burn Inc., of Wadsworth, Ohio, has introduced its Wood Gard Mih Plus, a product with a dual purpose. Wood Gard Mih Plus has the same fire-resistant characteristics as the company's Wood Gard, but it also exhibits characteristics that will prevent the growth of stachybotrys charatum.

During the framing process, the product is applied to all exposed raw wood, ensuring that all areas of the structure are treated. After construction is completed, Wood Gard Mih Plus is already in the wall cavities,

attic space and other voids in the structure where black mold can grow.

The new product has been tested in accordance with ASTM D5590-94.

www.noburn.com or call 330/336-1500.

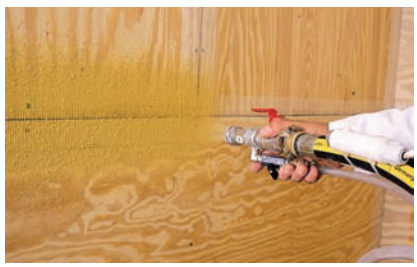
HOUSEWRAP

Three Sto Corp. Components Create Moisture Barrier

Sto Guard™, from Atlanta-based Sto Corp., is a seamless, fluid-applied air and moisture barrier. It was designed to provide protection under a variety of applications, including underneath brick, wood, vinyl, cement siding and exterior insulation and finish systems, as well as with cement stucco if used in conjunction with a bond breaker.

Sto Guard consists of three products, a spray or trowel applied joint treatment, a 9.5- or 4.25-inch wide adhesive reinforcing mesh and a waterproof coating applied to sheathing surfaces treated with the Sto Gold Fill joint treatment or to prepared concrete or concrete masonry wall construction. The three components create a durable structural air barrier and moisture barrier with high resistance to air leakage and water infiltration.

www.stocorp.com or call 404/346-0755.



WeatherTrek Promotes Water Drainage

Tyco Plastics & Adhesives, a part of Tyco International U.S. based in Princeton, N.J., is offering WeatherTrek™ to residential builders looking to control moisture in exterior wall constructions.

The housewrap features Valéron® engineered vented drain (EVD) technology, which promotes water drainage. WeatherTrek's three-dimensional engineered surface was designed to direct any moisture that gets past the exterior siding down and away from the wall. Fastened directly to the sheathing, the housewrap enables moisture to drain rather than pond along siding edges. A crush-resistant surface pattern provides a dual airspace between the siding and exterior wall sheathing, reducing inward solar vapor drive, in which water vapor is driven through the wall cavity by the sun.

www.tyco.com or call 609/720-4200.

IBS Booth #S10773: Home Slicker Offers Two Products in One

The Home Slicker® and Home Slicker Plus Typar® from Benjamin Obdyke, of Horsham, Pa., was designed as a cost-effective, labor and material saving, moisture-eliminating rainscreen and weather-resistant barrier. The Home Slicker's vertically channeled matrix speeds moisture movement downward and air movement upward. The patented three-dimensional structure provides a continuous space for drying, channels for drainage, a thermal break and pressure equalization, allowing moisture to escape quickly before it damages the sidewall materials.

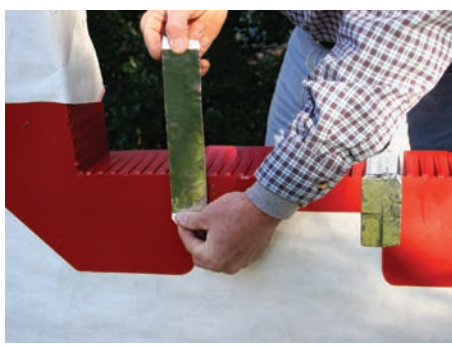
The new polypropylene matrix is rolled out on the wall system with the siding or cladding applied directly over it. According to company information, it reduces installation time since it acts as two moisture management products at once.

www.benjaminobdyke.com or call 800/346-7655.

FLASHING

IBS Booth #W9834: Water Out Introduces New Window and Door Pans

Water Out Inc., of Charlotte, N.C., has introduced its patent-pending Red Window and Door Pans, to effectively seal around window and door openings. According to company information, the new product is simple to use, does not require skilled assembly, does not depend on caulk or glues and positively channels water to the



continued on page 34

The Materials for a Mold-Proof House *Continued*

outside of the structure.

Since developing the pan flashing, the company has added several new products including a roof kickout flashing that works as both a right and a left, a door flashing kit for shower doors and a window and door head flashing that has integral drain channels and end dams.

www.wateroutflashing.com or call 704/771-9330.

IBS Booth #S10793: BOSIG Inc. Launches Two Products for Limiting Moisture Buildup

BOSIG Inc., of Fort Lee, N.J., has introduced its breathable Winflex® performance flashing. The 13-mil thick waterproof composite membrane was designed for use as a concealed flashing in windows, doors and other wall penetrations. Its layering consists of PES fleece laminated with a PA co-polymer. The membranes have integral self-adhesive strips of elastomeric resin and butyl placed on the underside edges of the roll.

According to a company news release, the Winflex flashing allows for the transmission of interior water vapor, reducing the potential for entrapment and condensation. It is also highly water-resistant. Winflex is compatible with all typical weather-resistant barriers, sealants and exterior wall coverings and is available in 9-, 13- and 15-inch width strips 82 feet long. It has been tested in accordance with ASTM and ICC-ES standards.

The company has also launched a new ridge ventilation product, Aeroflex 5000, designed to effectively reduce the moisture level in attic spaces.

www.bosig.com or call 201/302-6081.

IBS Booth #W9926: CactusBoard Designed to Dry Out Basement Systems

Basement Systems, based in Seymour, Conn., is offering a selection of products designed to reduce relative humidity and prevent mold growth, particularly in basements or crawl spaces.

The CactusBoard® and CactusBoard® II floor edging is an L-shaped moulding that forms a space between the edge of the basement floor and the wall and across the footing. This space allows all the water from the perimeter and the walls to drain down into the stone aggregate under the floor, which is drained by a sump or footing drains. Both CactusBoard variations come with a free wall-leak and crack repair for one year.

The company is also offering its CleanSpace® crawl space encapsulation system, which uses proprietary materials and methods to completely seal a building from the earth. The system lowers the relative humidity level within a structure to reduce or eliminate mold growth and rot.

In addition, the SaniDry™ basement and crawl space air system allows the homeowner to regulate the relative humidity within a home through this powerful dehumidification and air purification unit. A single 100-pint SaniDry dries up to 2,800 square feet and runs on 6.8 amps. It lowers humidity, prevents mold growth, removes musty odors and other allergens and saves energy on air conditioning and heating costs.

www.basementsystems.com or call 800/638-7048.

Jamsill Guard Offers Protection Against Water Damage

Jamsill Inc.™, of Talent, Ore., is offering its Jamsill Guard door/window sill pan flashing for protection against water damage. The flashing features seamless injection molded corners that completely wrap the sub-floor and plate. Its interior edge creates a continuous seal along the sill edge.

According to a company news release, the product should be installed in the rough opening before a door or window is installed, especially in extremely exposed areas. It is designed to fit most wood or aluminum sill widths, and can be used with either 2-by-4 or 2-by-6 wall construction and is not visible after installation. Jamsill Guard is available in six series.

www.jamsill.com or call 800/526-7455.

IBS Booth #W6548: ASTROpan™ Designed to Prevent Rot and Mold

Astro Plastics will be exhibiting its newly-created ASTROpan™, a door and window sill pan system that it says protects property against water and moisture damage. It channels water outside, limiting risk of water intrusion that could result in rot and mold.

According to company literature, it is easy to install on the job site. Adhesive caulk is included in the kits, which are packaged in 24 sets for 3-0 rough openings and 12 sets for 6-0 rough openings.

The system is available in standard jamb widths of 4.56 and 6.56 inches, and in two lengths, 38.25 and 74.25 inches.

www.astroplastics.com or call 800/334-4474.

SureSill Flashing System Available for Window and Door Installation

SureSill Ltd. of Austin, Texas, provides a technically-advanced, user-friendly flashing system for window and door installations. The company's system includes a sloped sill pan flashing, called SureSill™, and a sloped head flashing called HeadFlash™. The system was developed from years of experience in homebuilding, expert testimony and forensic engineering, according to the company.

The company's products and accompanying documentation, *Water Management Guide* and *Assembly Guide*, were designed to meet and exceed any window or door manufacturer's installation requirements, as well as the International Residential Building Code 2005, ASTM standards, AAMA guidelines and generally acceptable trade practices.

www.suresill.com or call 512/231-9469.

SEALANTS

DAP Kitchen and Bath Caulk Fights Microbes

Baltimore-based DAP has announced that its Kwik Seal Plus® kitchen and bath adhesive caulk now comes in a new color: biscuit/bisque. According to a company news release, the color was added to match the best selling off-white shades in sinks, tubs, toilets, fixtures and appliances.

Kwik Seal Plus is formulated with MICROBAN® antimicrobial product protection, which fights the growth of bacteria, mold and mildew that cause odors, stains and degradation of the caulk. According to company information, MICROBAN neutralizes bacterial and fungal growth where it lives and breeds so that the bead of caulk will be easier to keep clean and will stay cleaner between cleanings. In addition, the product features a watertight seal and maximum adhesion. It comes with a crack-proof guarantee and is easy to clean up after applying.

In addition to its new biscuit/bisque color, Kwik Seal Plus comes in white and clear. It is packaged in 5.5-fluid-ounce tubes.

www.DAP.com or call 888/327-8477.

IBS Booth #W3159: DensArmor™ Plus Offers Enhanced Mold Resistance

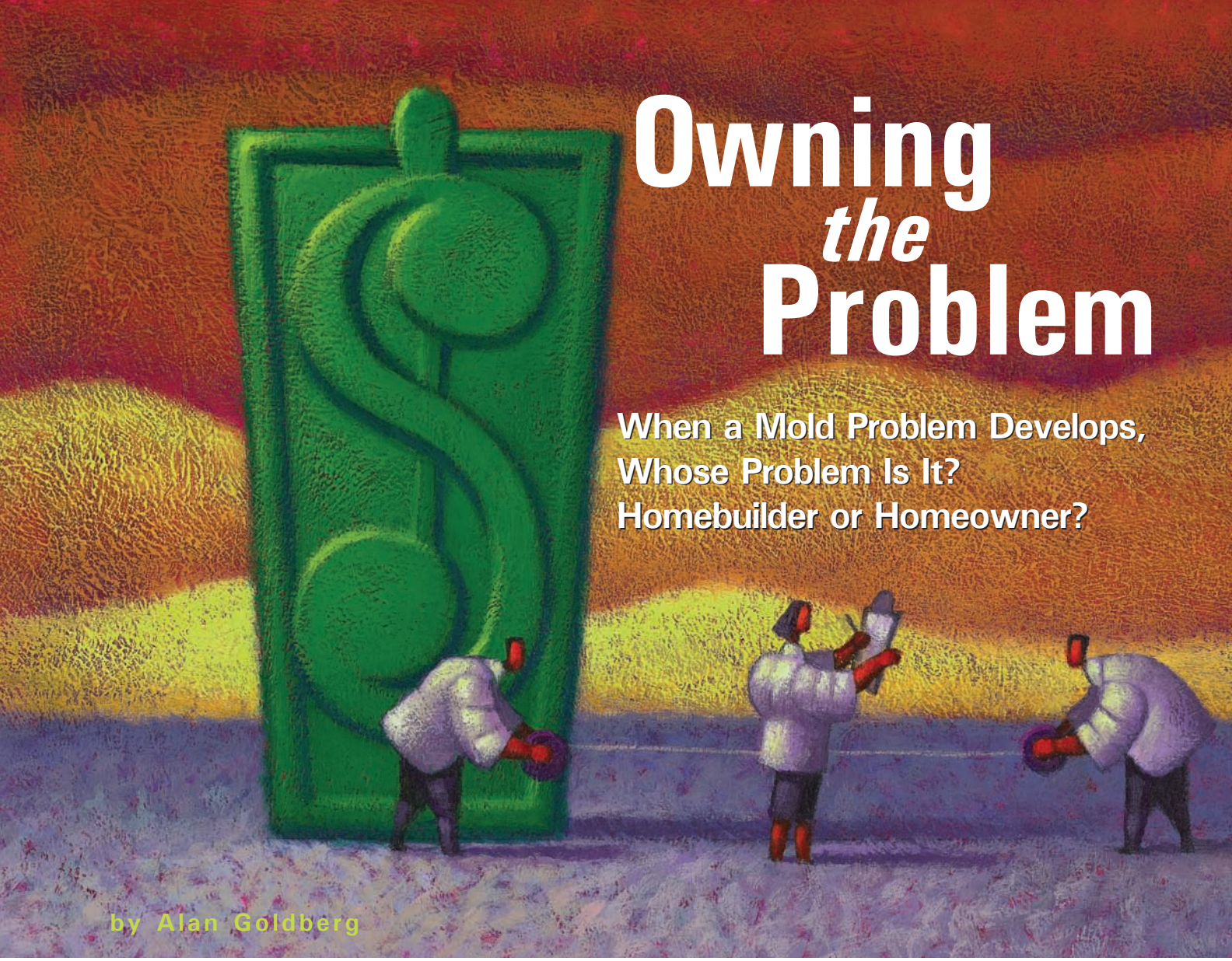
G-P Gypsum, a subsidiary of Atlanta-based Georgia Pacific Corp., has enhanced its DensArmor™ Plus moisture- and mold-resistant paperless interior wallboard. The panels now feature a glass mat facing, which results in a completely paperless interior wallboard that offers moisture and mold resistance and finishes easily, according to company information.

By removing the organic paper face and back found on standard wallboard and replacing both with inorganic glass mats, the new interior wallboard eliminates a known food source for mold. The core of the newly-enhanced DensArmor Plus has also been reinforced with inorganic glass fibers, increasing its strength and its ability to withstand weather.

According to company information, the wallboard features tapered edges for ease in treating joints. The glass mat surfaces finish the same as regular gypsum wallboard and conventional drywall nails and screws are used to fasten it. The product displays high moisture and mold resistance when tested as manufactured per ASTM D 3273.

"Advances in G-P Gypsum's patented glass mat DensGuard® technology have made it possible for us to manufacture the next generation of DensArmor Plus interior wallboard," said Dave Fleiner, president of G-P Gypsum. "This truly revolutionary product finishes like paper-faced drywall while providing important resistance to moisture and the consequent mold growth. Builders and contractors will appreciate the finishing ease and homeowners and building owners will appreciate the moisture- and mold-resistant benefits."

visit www.gpgypsum.com or call 800/225-6119. m³



Owning *the* Problem

When a Mold Problem Develops, Whose Problem Is It? Homebuilder or Homeowner?

by Alan Goldberg

Who bears responsibility when a mold or moisture problem develops, the homebuilder or the homeowner? The line of responsibility is based on many variables that, in the absence of standards, remain unclear.

Douglas Buck, director of governmental affairs for the Florida Home Builders Association, cut straight to this point. "I believe there is a general lack of standards," Buck said. He also pointed out a gray area that is difficult to define. "Since insurers [who now have exclusionary clauses] do not provide mold insurance for homebuilders, this issue is both fluid and dynamic."

Good Building Practices Make Perfect

Undeniably the best way of dealing with a mold problem is preventing it in the first place. Good building practices are an important part of that, as is homeowner maintenance. As more information becomes available about the best of both of these tactics, builders and homeowners should find it easier to choose the products and make the decisions that will make their home free of mold problems.

"In our business, we haven't had much of a problem," said Jeff Hansell, president of Hansell and Mitzel Homes, in Skagit Valley, Wash. "We are located in a damp climate where we have lived with this condition. Having said that, with the type of construction today, structures are built with a tighter envelope. We must pay close attention to moisture."

Hansell said his only exposure to mold issues was a result of neglect by customers. He pointed out that the homeowner has certain responsibilities as far as maintenance, citing recent legislation in his state—the affirmative defense law.

"About five years ago … mold was a hot issue that was covered extensively in many national publications," said Hansell. "Now we seem to be returning to simply dealing with preventing and removing it."

Don Pratt, president of Wake-Pratt Construction Co. in Auburn Hills, Mich., and an expert witness in cases involving moisture and mold, pointed out that litigation generally takes place because a builder neglected to do something that allowed water to infiltrate or a homeowner neglected to control humidity and created a climate for mold to exist.

"From the builder's standpoint, dealing with water infiltration is very doable. Make the appropriate repairs and the root cause of the problem is solved. But where the problem is caused by the homeowner, it is more difficult to solve because that often requires a change in lifestyle."

Pratt explained, for instance, that the high humidity that often creates moisture on windows can be caused by any number of conditions in the house and the homeowner has to be made aware of these and take some corrective action.

"I like to see humidity in a home under 40, at a temperature of 68 to 72° Fahrenheit," Pratt said. "That is not difficult to achieve today because of the tightness."

"As far as the mold problem, we use standard practices to control it," said Pat Bunn, director of construction for JS Hovnanian in Mt. Laurel, N.J.

Tighter buildings are a part of those practices, as is the coordination of systems.

"Because of the temperatures in this region, we build our homes with radiant, in-floor heating," said Mike DeFelice, owner of Yates Excavating Inc. in Punxsutawney, Pa. "Instead of an air-handler, we use a hot-air furnace, which provides a dual-heating system. By circulating the air this way, we are able to prevent moisture and eliminate the conditions that allow mold to form. This is really the key to a very complex problem."

"Well-built homes using technologies such as air-to-air exchangers rarely have mold problems," added Christine Schwanke, director of communications for the Wisconsin Builders Association.

Proper management of construction and implementation of good practices is also essential. For instance, trusses should not be left exposed to the elements.

"We stress the importance of using care at the job site by telling builders not to accept material that is wet, keep materials dry and install only materials that are dry," said Kevin Powell, research analyst at the National Association of Home Builders (NAHB) Research Center.

According to Buck, what makes the mold issue somewhat complex is that it is often caused by a secondary problem. For example, a construction defect could potentially allow water intrusion that, in turn, could lead to mold.

Legislation Could Enforce Participation

Understanding what causes mold problems is one thing, but seeing that people become actively involved in preventative measures is another. In one state, mold was an impetus for legislation.

"We're talking about common sense actions that have been improved." -Paul Cauduro, director of government relations for Home Builders of Dallas

"Mold is the catalyst that led to the formation of a state agency, The Texas Residential Commission," said Paul Cauduro, director of government relations for the Home Builders of Dallas. "This agency was formed … to implement building standards for home construction, including standards related to mold and moisture." *(see box page 38)*

Cauduro pointed out that builders were a main force behind the formation of the commission because they recognized the need to educate the industry and the public and, as part of this process, to change long-held per-

continued on page 38

ceptions and misinformation about mold and dealing with litigation.

"We're talking about common sense actions that have been improved," said Cauduro. "Take, for example, a problem where the homeowner plants trees or shrubs or installs a sprinkler system that is too close to a home and there is intrusion of water, which creates mold. Should the consumer have been aware? How much of an obligation did the builder have to inform the homeowner? These types of situations, which have always been gray areas, are now being addressed through standards."

Cauduro explained that, prior to the formation of the commission, the homebuilder was always considered responsible. It was never clearly defined what was tolerable and it was the builder who was often held responsible for paying all costs. As a result, housing costs skyrocketed as did liability insurance policies held by builders. The new standards define what is acceptable with regard to construction practices and how the construction performs over time.

Statewide registration is another aspect of the commission. As of March 2004, builders in Texas must register their companies as well as every home they build. Cauduro said this procedure would make it possible to track easily any problems that may develop.

Cauduro also commented on "right-to-repair" laws. With recent right-to-repair state legislation, a builder has the opportunity to inspect areas in question and offer to make repairs, rather than resorting to expensive and time-consuming litigation.

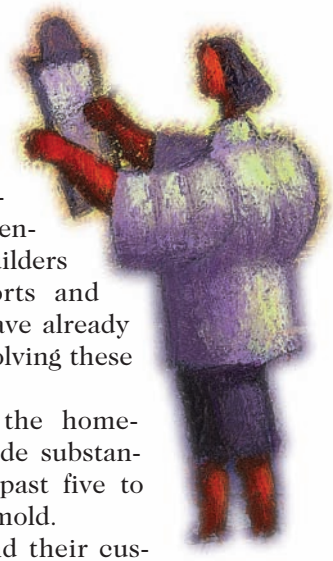
"We've told our builders that when a mold problem occurs, treat it like a fire. Take care of it immediately," he said.

Resources:

➡Learn more about Washington's affirmative defense law from the Building Industry of Washington (BIAW) at www.biaw.com/legislative.asp.

➡Learn more about the Texas Residential Construction Commission by visiting www.trcc.state.tx.us.

➡Learn more about waterproofing and other guidelines, or how to request a mold seminar, by visiting NAHB at www.nahb.org or its ToolBase Services at www.toolbase.org.



An End to Mold Claims and Problems?

It is clear that action must be taken during construction to prevent potential mold growth. Some builders feel that education efforts and inspection of buildings have already gone a long way toward solving these problems.

According to Powell, the homebuilding industry has made substantial progress within the past five to seven years dealing with mold.

"Educating builders and their customers about mold—what causes it, how to prevent it and how to control it—has made quite a difference. We are seeing less and less of the serious mold issues we confronted years ago."

Powell said that he believes the simple and direct advice given to homebuilders and homeowners has helped minimize the problem.

"Mold is an indication of a problem. If you notice [moisture], don't sit back and address it when it is convenient or you could face a serious mold problem. For new homeowners, we say, 'call the builder immediately. Don't put it off.'"

Powell pointed out that larger builders have formed teams that deal with moisture management so they have more expertise.

"As far as educating the industry, we give seminars to homebuilding associations throughout the country to educate members on the causes and prevention of mold. As a result of prompt and appropriate response to moisture, a builder or contractor's liability is also reduced."

Buck added that there are new construction practices for waterproofing and related activities available through the NAHB, which offers guidelines for controlling or preventing mold. In addition to NAHB and its state affiliates, there are numerous other organizations that provide resources.

While that four-letter word and the control of moisture will always be a concern of homebuilders and homeowners, the issues of costly litigation and liability insurance are being resolved through education, performance standards and creative initiatives.

Alan Goldberg is a contributing writer for **Moldmag**.

Home and Business Owners Struggle with Mold and Insurance

Before home and business owners can decide how to fix a mold problem, they also have to consider how to pay for it. According to the Insurance Information Institute (III), a trade association based in New York, mold contamination is covered under a homeowner's insurance policy only if it is the result of a covered peril. Like rust, rot and mildew, mold is specifically excluded in standard policies, unless it follows a covered peril such as water damage from a burst pipe. The exclusion of mold puts a tremendous burden back on builders and contractors. Most mold problems, however, stem from conditions such as excessive humidity, leaks, condensation or flooding. III recommends routine cleaning and maintenance to keep those types of water damage from growing into a mold problem. Other than that, there is little that insurance will do.

"The biggest problem that builders—like homeowners— face is that there used to be coverage for mold problems," said Charles Perry, principal with the Environmental Assurance Group, a consulting group based in Hartford, Conn. "That's now gone."

Even where coverage exists, it is limited. An article from the Fredericksburg, Va., *Free Lance-Star* explained that mold problems had been specifically excluded from coverage until courts began to distinguish between mold caused by a covered peril or as a result of maintenance problems. Some companies now may decide to cover all mold claims for a higher price, while others may exclude it while offering an endorsement that allows mold coverage to be added or exclude it entirely. With the variations between policies and the confusion over what is and isn't covered, many insurers are inserting language in their policies designed to prevent confusion about companies' different stances on mold, according to III.

Regardless of how policyholders might feel, from the insurance companies point-of-view these higher prices and exclusions are the most effective way of keeping overall rates down.

"There were more than 600,000 claims from Hurricane Andrew in Florida, most with water damage, and not a single mold claim," said Sam Miller, executive vice president of the Florida Insurance Council, in a report for the council. "Mold claims were unheard of in other states as well, but there is now a national mold hysteria ... Homeowners' rates in Texas doubled in about two years because of mold claims filed by about one percent of the state's policyholders. Mold claims produced significant rate increases in California as well."

Florida in particular is in danger of increasing rates,

with repairs still being made at the end of 2004 for damage resulting from the year's particularly destructive hurricane season. According to Miller, Florida's Office of Insurance Regulation moved to prevent a problem in their state by capping mold coverage in the basic homeowners insurance policy, while also offering insurers the option of additional coverage.

Before these caps and exclusions, awarding of damages for mold caused insurers to raise rates nationwide. According to the *Free Lance-Star* article, it is the "reinsurance market" that affects national rates in that way, or the insurance that insurers use when they have to seek assistance due to a tremendous number of claims, such as after a national disaster. On the other hand, III stated that if insurers are going to be asked to pay claims for something that is not covered in the policy, the price of home insurance will inevitably rise.

III reported that before 2000, mold related claims were generally around the thousand-dollar mark. By 2002, homeowner claims averaged $100,000 or more and commercial claims were in the millions. Insurers paid out approximately $3 billion in mold-related claims, more than double the $1.3 billion paid the previous year. III also stated that the homeowners mold crisis reached its peak in 2002, but commercial areas are now spotlighted for their problems with mold and insurance. Areas such as commercial property, commercial liability, products liability, builders' risk/construction defects and workers' compensation have all been affected, with claims that can reach well into the millions. Overall, experts agree that this is a problem that is going to continue until specific federal standards are approved to help regulate every aspect of the mold issue. m³

Tribe Seeks Compensation for Contaminated Homes

Residents of a southern Manitoba First Nation have filed a lawsuit accusing the Canadian government of ignoring a toxic mold problem, according to an article from CNEWS, a part of Canada's CANOE media network. In the statement of claim, the Dakota Plains Nation demanded compensation for the government's alleged failure to address widespread contamination that it has known about for years.

"There are 32 dwellings and they've all been confirmed to have contaminants in the air," said Chief Orville Smoke at a news conference. "I think the lawsuit will bring attention to something that has been ongoing."

According to the article, two families were forced by their doctor to leave the community because of health problems attributed to mold. Many others have left as a result of similar symptoms including respiratory problems and chronic colds.

Gilbert Savard, a Manitoba spokesperson for Indian and Northern Affairs Canada, reported that the Department of Indian Affairs had given the Dakota Plains about $700,000 for emergency home repairs during the past year. He said department officials have also met regularly with the community to try to improve drainage in the area. Manitoba's *Daily Graphic* reported that the cost of draining the land, which sits between the Assiniboine River and Rossendale hills and acts as a natural water channel, is expected to be approximately $3 million.

The *Graphic* described the houses on the reserve as bungalows, many built more than 40 years ago. The houses sit on gravel beds in a high-moisture environment without basements and have dirt-covered crawl spaces, providing a perfect environment for mold. All of the 32 homes on the reserve are allegedly contaminated and between 25 and 28 of the homes are still occupied.

Stan Myran, the band's health adviser, said it has already cost more than $1 million to fix the houses and it could cost about $18 million to repair or rebuild the houses in their current location. According to Myran, relocation to drier ground would be the best solution.

Mold Wrongful Death Case Sets Precedent

Kevin Gramling and Steve Pratt with Klinedinst Attorneys, a law firm based in San Diego, set a precedent in successfully defending mobile home owners and insurers against a wrongful death case attributed to mold, according to a news release from the firm.

The case, *Dayton et al. v. Highlands Mobile Home Estates et al.*, began with the sale of a mobile home to a 60-year-old woman and her two-year-old grandson. The plaintiffs claimed that the home was infested with mold and that they had suffered physical ailments including respiratory problems, skin rashes, chronic fatigue and immune suppression as a result of their exposure. When the elder plaintiff died in 2001, pathologists determined the cause of death was an overwhelming fungal infection in her lungs. The plaintiffs had asked the jury for more than $7.5 million.

During the trial, Gramling and Pratt established that the mobile home was not infested with mold and that indoor mold levels were consistent with outdoor levels. They also proved that the defendants were reasonable in their repair efforts, both before and after the plaintiffs moved in. In addition, the attorneys showed that any alleged exposure to mold did not cause the illnesses the plaintiffs were claiming and did not cause the death of the lead plaintiff. m³

Nearly 600 Plaintiffs to Receive Settlement for Mold Problems

An article in the Brownsville, Texas, Brownsville Herald announced that a settlement has been reached between builders and designers of two local schools and the nearly 600 plaintiffs who sued on account of high mold levels that allegedly caused them personal injury.

"This is the first case of its kind in the country where students, parents and teachers have brought a lawsuit for personal injuries based on personal injuries from so-called toxic mold," said Peter M. Zavaletta, attorney for the plaintiffs, in the article.

The case, *Angel Castillo and Maria Rosalba Castillo, et al. v. Carroll Dusang and Rand Inc., et al*, was originally filed November 26, 2001, by 92 plaintiffs concerned about the high levels of mold found in the school. In January 2002, the schools were closed and did not reopen until March 2004.

According to the article, the settlement will be divided among parents, on behalf of the students, and employees of Aiken Elementary and Besteiro Middle School. The amount was undisclosed but said to be enough to cover medical costs.

ASTM Standard Nears Completion

The American Society for Testing Materials' (ASTM) mold assessment committee, a part of the ASTM environmental assessment, risk management and corrective action committee, E50.02, has been charged with creating inspection guidelines for finding and documenting visible mold and water damage in commercial and multi-family buildings.

According to an ASTM news release, committee E50 initiated the draft of its *Guide for Readily Observable Mold in Commercial Buildings* in October 2003 to provide a basis for uniformity. The goals of the subcommittee are to establish a standard practice for screening commercial real estate for readily observable mold, improve the quality and consistency of mold screenings and ensure that the practice of conducting mold screenings is appropriate, reasonable and reflective of current good industry practice. It is also designed to help the user assess the need for further assessment or action beyond that identified in the standard. The inspection will be a stand-alone document, which can be added to other property inspection forms.

"Mold-screening surveys provide interested parties involved in real-estate transactions with information regarding the presence of visible mold resulting from water/moisture intrusion and/or generation within buildings," said Robert Barone, R.A., president of Moisture & IAQ Solutions Inc., of White Plains, N.Y., and co-chairperson of the E50.02 subcommittee. "Involved parties use a wide range of assessment and screening scopes to address visible mold. Without a standard format, mold screenings lack a standard baseline for assessment."

The task group has been meeting for more than 18 months and is close to completing the standard. ASTM anticipates being finished by May 2005.

contact Barone at robert.barone@moistureiaq.com.

N.C. Building Code Council Accepts Study's Conclusions on Crawl Space Ventilation

Although crawl space ventilation is required by the 2003 International Residential Code (IRC), a study conducted by the U.S. Department of Energy and the Raleigh, N.C.-based research company Advanced Energy (AE), *A Field Study Comparison of the Energy and Moisture Performance Characteristics of Ventilated Versus Sealed Crawl Spaces in the South,* has changed the minds of some builders. The study had concluded that crawl spaces with foundation vents actually increase the buildup of moisture and cause houses to lose energy. At its September 2004 meeting, the North Carolina Building Code Council (BCC) voted to adopt new crawl space code language reflective of the study.

According to Sharon Gladwell, AE director of corporate communications, the language for the state code is currently undergoing final review by state attorneys. If accepted, the new language will be included in the next print version of the code, which will be released in January 2006. Some municipalities may allow use of the accepted code prior to the printing date, although it will not be actively enforced until that time.

The joint study compared over a period of two years 12 nearly identical Habitat for Humanity homes, four with the traditional vented spaces and eight with closed crawl spaces. The study came to three conclusions. First, it found that foundation vents add excess moisture to crawl spaces during humid and wet weather, particularly in the summer. The excess moisture promoted mold-growing conditions. Next, ground vapor retarders such as polyethylene do not keep crawl spaces dry enough on their own to prevent mold growth. Finally, closed crawl spaces without foundation vents were found to stay dry all the time, particularly during the summer and humid weather.

www.crawlspaces.org or call 919/857-9000. m³

The study suggests foundation vents in crawl spaces may increase moisture buildup in the summer ...

... and that closed crawl spaces without foundation vents stayed dry all the time.

Photos courtesy of Advanced Energy

Following Hurricanes, Some Insurers Step Back While Lloyd's Steps In

Following the series of hurricanes that struck Florida in September 2004, a number of U.S. insurers reduced coverage of disaster-prone areas as well as of homeowners who filed multiple claims, according to an article in the *Wall Street Journal*. As a result, Lloyd's of London has stepped in to fill the void.

According to the article, growing mold problems were one cause of insurer's growing claims, which have led to the reduced coverage. Lloyd's, the British firm described by the *Journal* as the "insurer of the uninsurable" for covering such things as oil tankers and movie stars' legs, has picked up a growing share of homes valued above $500,000 in coastal regions and fire-prone areas in the West. The firm has become a primary option for homeowners whose policies are not renewed.

Lloyd's is part of the surplus market, whose rates and policy terms are not regulated by state insurance departments. The firm is actually an insurance market made up of many smaller insurers that write policies themselves or provide capital to cover larger risks. People who don't qualify for surplus coverage often turn to state-operated insurers who charge high rates and frequently offer policies that don't insure a home's contents or include liability coverage.

After the 2004 hurricans hit Florida, many insurers reduced coverage in disaster prone areas, letting Lloyd's step in.

Homeowners "Clued" in to Insurance Report

According to an article in the San Marco, Fla., *Sun Times*, a homeowner's insurance could be in danger of rising simply from inquiries about mold coverage, whether a claim is filed or not.

According to the article, insurance companies record any claims or inquiries made by a homeowner in a comprehensive loss underwriting exchange, or CLUE, report. ChoicePoint Asset Co., an Alpharetta, Ga.-based firm, initially developed the reports to prevent fraud. However, the article said that rising insurance losses over mold incidences has led insurance companies to use these reports to determine the risk of insuring a property or customer.

According to the Colorado law firm Frascona, Joiner, Goodman and Greenstein PC, CLUE reports are generally used to evaluate potential customers. This can pose a problem for future homeowners if two claims have been filed within three years, showing the individual as a high risk. Since moisture problems have posed such an enormous problem to insurance companies, even inquiries about mold suggest a high risk. Moreover, an insurance company can turn down a homeowner based on the history of their property as revealed by the report. If the property's previous owner filed claims, the potential homeowner's policy may be canceled within 60 days of purchase. According to the article, homebuyers who don't get their insurance until just before closing could find out afterwards that they aren't covered. Once an insurance company has dropped them, it will be difficult to find another company willing to take on the risk.

CLUE reports can be obtained for the home or property by the individual who currently owns it. The reports are available from ChoicePoint for $9 for each report requested via standard mail and $12.95 for each electronic report, although some states offer free or reduced fee reports.

➡ **www.choicetrust.com.** m³

Residential Mold Related Insurance Claims:

By date of original water damage claim.

Year	No. of Claims
1987	1
1988	3
1989	3
1990	9
1991	7
1992	6
1993	13
1994	35
1995	39
1996	62
1997	49
1998	129
1999	2,774
2000	7,564
2001	9,563
2002	6,093
2003	2,593
Total Claims:	**28,943**

Source: Policyholders of America.

TECHNOLOGY

Invention Uses Electricity to Clean Mold

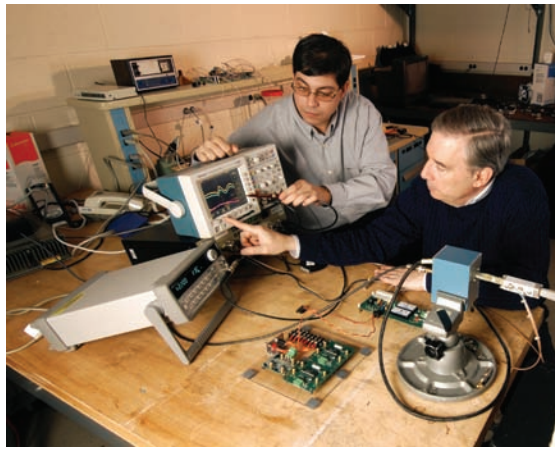
Physicist Paul Goudy Jr. likened his new mold-killing machine to a microscopic bug zapper in an article from the *Milwaukee Journal Sentinel*. The cold plasma generator applies high-voltage electricity to ambient air to produce ionized oxygen, or ozone, and ionized oxides of nitrogen. Goudy's newly renamed company, Cold Plasma Inc., manufactures the patent-pending machine.

According to the article, the gases produced by the machine seek and suck up moisture, destroying mold as well as odors. Goudy says that the process improves on standard ozone-producing machines, because he has found a way to ionize air at higher than usual voltages—25,000 volts compared to more typical 3,000- to 4,000-volt systems. It costs $600 or less to treat a house.

According to Goudy, for a short time the chemicals used by the sanitizer are highly reactive and unsafe for people, pets and plants. However, within an hour or so, the gases have dissipated and the building is once again safe.

Researchers Developing Mold Radar

Researchers at the Georgia Technical Research Institute (GTRI) are working with radar technology to develop a device that, when held against an area of gypsum wallboard, will be able to detect the amount of mold growing on the other side. Senior scientists Gene Greneker and Otto Rausch are hoping that the device will allow builders to minimize destructive investigation of structures and also prove less expensive than current methods.



Researchers at GTRI hope to develop a device that will minimize the need for destructive mold investigations.

The researchers are hoping to produce a small, handheld prototype unit similar to a stud finder. Greneker envisions a system that would map mold behind a wall. If the radar-based device indicated dampness, then a contractor would know where to probe for damage.

In an initial experiment in January 2004, researchers used the radar system to scan a small panel of wallboard that had been soaked in water and injected with non-toxic fungal spores. They were encouraged by the early results.

"Mold is a common problem, especially in humid, southern climates, but people are often not aware of it because it's occurring behind a painted or wallpapered wall," said Victor DeJesus, a GTRI research scientist. "Then it's too late when they realize it. The wallboard must be replaced."

According to DeJesus, the two-year government-funded study is expected to be complete by September 2005.

www.gtresearchnews.gatech.edu or call 404/894-2214.

STUDIES

New Study Looks at "Healthy" Homes

Air Quality Sciences (AQS), a Marietta, Ga.-based air quality testing and consulting firm for the commercial market, has released a new study on mold in homes, *Air and Dustborne Mycoflora in Houses Free of Water Damage and Fungal Growth*. This is the complete report from a study conducted by AQS in 2002 for the U.S. Department of Housing and Urban Development.

The goal of the study was to determine typical types of mold found in homes in the Southeast. Data was collected from 50 single-family homes in metro Atlanta, none of which had a history of water damage. Unlike most studies, which look at complaint buildings, this one set out to look specifically at "healthy" buildings, or buildings that were free of any indication of moisture problems.

"What people had thought for some time was exactly what we found," explained Dr. Elliott Horner, director of the microbial laboratory at AQS and lead on the project, in an interview. "Predominantly the types of mold we found were those found outdoors."

Most importantly, according to Horner, "Indicators of water damage were notably absent."

Those indicator molds would include, for example, the well-known stachybotrys. Since other studies had looked predominantly at complaint buildings, it had not been proven that certain types of mold are naturally found indoors and others arrive only with moisture problems.

According to AQS, this new study is an important step in creating a baseline against which to compare data from suspected problem homes.

www.aqs.com or call 770/933-0638.

A Minute With ...

Glenn Fellman, IAQA

Glenn Fellman

Glenn Fellman is the executive director of the Indoor Air Quality Association (IAQA), a non-profit organization with more than 2,400 members that was established to promote education and research for IAQ practitioners. Since education is the goal of the Rockville, Md.-based association, Glenn took some time to share with **Moldmag** what he knows about mold and the importance of being aware of its effects.

What was your involvement with the IAQA prior to accepting the position of executive director in 2000?

I was a member of the IAQA board of directors when the association's management was being handled by one of its founding members. I had career experience in running non-profit trade groups, so when the founding member announced he no longer wanted to do the work, the board turned to me to take over. Prior to that, I worked with groups like the National Air Duct Cleaners Association; Institute of Inspection, Cleaning and Restoration Certification; National Air Filtration Association; Associated Air Balance Council; and a few others that are not related to indoor air quality.

What do you feel are some of the benefits of joining the IAQA?

Information and education are the most tangible benefits. Our members receive a monthly IAQ newspaper, *Indoor Environment Connections*, and a bi-monthly newsletter, *In the Air*. IAQA conducts more than 50 training classes each year in partnership with our training providers, plus we have an outstanding annual meeting and exposition that draws more than 800 people. Other benefits of membership include access to our online legislative matrix that tracks IAQ and mold related bills in all 50 states, IAQ publications that the association produces alone and in tandem with other organizations, marketing support, referrals to potential customers and much more.

> "Yes, mold can affect health, especially among those with asthma, allergies or compromised immune systems. But I think another important issue that is overlooked is property value."

Why do you think it's important for people to know more about mold?

A lot of times people focus on the health aspects of mold, but the truth is that the scientific community has not done nearly enough research to prove direct links between mold exposure and severe health consequences. Yes, mold can affect health, especially among those with asthma, allergies or compromised immune systems. But I think another important issue that is overlooked is property value. Mold contamination damages property and is very costly to correct. Preventing mold growth is smart economics: it's a lot less expensive to be proactive by controlling moisture and other factors that result in mold growth than it is to be reactive to a mold problem that is destroying a home or building.

People also need to act more quickly when they find or suspect a mold problem in order to minimize the damage. If you had termites eating away the structure of your building, you would have it treated immediately. Mold should be viewed the same way.

What is the mold question that you are asked most often? How do you answer?

The question I hear most is: "How do I select a qualified investigator or remediator?" There are, unfortunately, some charlatans out there in the unregulated mold industry. Of course, I tell people to look for a consultant or contractor who has been trained and certified by IAQA. Our Certified Indoor Environmentalist (CIE) program is great for people who diagnose mold and IAQ problems, and our Certified Mold Remediator (CMR) program is the best in the industry for those who remove mold. There are many other organizations that train and/or certify, but only a few who I am comfortable referring a consumer to for a mold consultant or remediator. Some of the other organizations for whom I have respect include the American Indoor Air Quality Council

(AmIAQ), Indoor Environmental Standards Organization (IESO) and the Institute of Inspection, Cleaning and Restoration Certification (IICRC).

In what direction do you see mold standards and regulation moving? What do you see as being the most important standard coming up?

The first (and only) standard for mold remediation, IICRC S520, was published at the beginning of 2004. IAQA, IICRC and a group called the Indoor Environmental Institute were the principal designers of the standard. It is a very important standard and thankfully it has been widely-adopted in the last 12 months. I am not aware of any other standards for mold inspection or remediation being developed; however, there are a number of guidelines being written. AIHA is expected to release important guides for inspection and remediation next year.

As far as regulation goes, don't look to the federal government. States continue to be the place for regulations. Texas and Louisiana have licensing regulations governing mold inspectors and remediators. About a dozen other states saw legislation die in session last year that would have set up similar programs. We anticipate 2005 will be busy with IAQ and mold bills as well. IAQA has a very active government affairs committee that monitors state bills and comments to state lawmakers.

We read a lot in the news about high profile law cases involving mold. What do you think of these cases?

If the insurance industry did a better job responding to water damage cases, we wouldn't see so many high profile mold cases. If you look at the Melinda Ballard case or the Ed McMahon case, in both instances you see botched attempts to fix small problems resulting in huge problems a few months later.

Has your home ever been affected by mold?

Unfortunately, yes. The home I live in now was constructed five years ago and thankfully it is mold-free. But my previous residence was a 45-year-old home with a leaky basement. We battled that mold problem by having the foundation repaired and an expensive remediation performed.

In your own home, what preventative measures have you taken?

My current residence is newly-constructed and well built. Still, I check the roof and basement after big storms to make sure they haven't leaked. We also have several HEPA-filtered room air cleaners running in the house. Also, we make sure our HVAC system is well maintained.

If not constantly worrying about leaks and floods at home, how do you spend your free time?

My wife, Lisa, and I have three children ages 5, 2 and 2 months. We can't remember what "free time" is!

If you would like to share information about new employees, recent appointments or outstanding coworkers, or if you or someone you know is interested in being profiled in a future issue, please email mheadley@moldmag.com.

APPOINTMENTS

Tyco Names Two Communications Leaders

Gwen Fisher

Tyco International, a manufacturer of adhesives and housewrap based in the U.S. in Princeton, N.J., has appointed communications vice presidents for two of its core business segments. **James Pomeroy** will oversee all strategic marketing and communications at Tyco Engineered Products & Services and **Gwen Fisher** will lead the marketing and communications operations at Tyco Plastics & Adhesives.

Previously, Pomeroy was vice president of communications for Tyco Plastics & Adhesives. Prior to coming to Tyco, Pomeroy worked in various sales, marketing and communications positions during a 28-year career with GE.

Fisher joined Tyco International as director of corporate media relations in November 2003. Prior to Tyco, she was manager of global product communications at Merck & Co.

"Both Jay and Gwen bring tremendous talent and expertise to their new roles and will play an integral part in our efforts to build Tyco into a world-class operating company," said Charles Young, senior vice president of marketing and communications. "We are fortunate to have leaders of their caliber in our organization providing support for Tyco's key businesses."

➡ **www.tyco.com or call 609/806-2293.**

NEW HIRES

DKI Appoints New Regional Marketing Director

Disaster Kleenup International Inc. (DKI), a network of restoration contractors headquartered in Bensenville, Ill., has appointed **Summer Street** regional marketing director. Street will be responsible for sales, marketing and industry-relations activities for the company, principally in the Midwestern United States.

Street comes to DKI from the Chicago Conservation Center, a facility for the restoration of fine arts, where she was vice president of marketing. Previously she worked in marketing for suburban public transportation. m³

Putting A Face to the Court Cases

I recently woke listening to an interview on WGN radio in Chicago about the new magazine. I find it a great idea to help inform those in the industry as to the importance of mold and moisture management.

One way you could possibly get this point across to builders is to put a face to the devastation that mold can do to families. There are families whose lives are forever ruined, children permanently injured, adults whose health can never be restored. There are many families who have had to walk out of their homes with only the clothes on their backs, everything lost. Builders advertise their homes as THE ideal home, how about showing them the devastation when they don't deliver? There are other faces to the mold problem besides the court cases.

Sherry Wied,
Mold Survivor

Good Luck and Success

I received your news release and must say, this is a great magazine idea. Many professionals like me deal with moisture and mold issues on a daily basis and did not have a publication for our specialty. So, congratulations. We are looking forward to reviewing the magazine.

Good luck and success.

Peter H. Sierck
Director
Environmental Testing
& Technology Inc.
Carlsbad, Calif.

Ideas? Opinions? Feedback? Send them to Reader Rant at mheadley@moldmag.com.

Calendar 2005

January 13-16, 2005
International Builders' Show
Orange County Convention Center.
Orlando, Fla.
Sponsored by NAHB.
Contact: NAHB at 202/266-8109.

February 7-9, 2005
AHR Expo
Orange County Convention Center.
Orlando, Fla.
Co-sponsored by ASHRAE, ARI and HRAI.
Contact: AHR Expo at 301/694-5243.

February 10-12, 2005
Lumber and Building Materials Expo
Seaport World Trade Center.
Boston.
Sponsored by the Northeastern Retail Lumber Association.
Contact: NRLA at 518/286-1010.

February 14-16, 2005
Building Science: Understanding and Controlling Moisture in Buildings
Holiday Inn Fisherman's Wharf.
San Francisco.
Sponsored by the American Industrial Hygiene Association.
Contact: AIHA at 703/849-8888.

February 27 - March 2, 2005
AAMA 68th Annual Meeting
Marriott Harbor Beach Resort.
Fort Lauderdale, Fla.
Sponsored by AAMA.
Contact: AAMA at 847/303-5664.

March 16-17, 2005
Midwest Builders Show
Donald E. Stephens Convention Center.
Rosemont, Ill.
Sponsored by Home Builders of Greater Chicago.
Contact: tradeshow coordinator Kelly Cilek at 630/627-7575.

April 4-7, 2005
Indoor Environmental Health & Technologies Conference
Sheraton Hotel.
New Orleans.
Sponsored by the National Association of Lead and Healthy Home Grantees.
Contact: Steve Weil at 800/590-6522.

May 19-21, 2005
AIA National Convention and Design Exposition
Mandalay Bay Convention Center.
Las Vegas.
Sponsored by AIA.
Contact: AIA at 202/626-7300.

May 21-26, 2005
AIHce 2005
Anaheim Convention Center.
Anaheim, Calif.
Co-sponsored by the American Industrial Hygiene Association and the American Conference of Governmental Industrial Hygienists.
Contact: AIHA at 703/849-8888.

May 31-June 3, 2005
PCBC 2005
Moscone Center.
San Francisco.
Sponsored by the California Building Industry Association.
Contact: PCBC at 800/956-7469.

June 21-24, 2005
A&WMA 98th Annual Conference and Exhibition Conference
Minneapolis.
Sponsored by the Air and Waste Management Association.
Contact: A&WMA at 412/232-3444.

September 14-16, 2005
21st Century Building Expo and Conference
Charlotte Convention Center.
Charlotte, N.C.
Presented by the North Carolina Homebuilders Association.
Contact: NCHBA at 919/676-9090.

September 27-October 1, 2005
Insights 2005
Las Vegas.
Sponsored by Disaster Kleenup International.
Contact: DKI at 800/567-8047.

October 6-9, 2005
IAQA, NAFA & IESO Annual Meeting and Expo
Hilton at Walt Disney World.
Orlando, Fla.
Co-sponsored by the Indoor Air Quality Association, National Air Filtration Association and Indoor Environmental Standards Organization.
Contact: IAQA at 301/231-8388.

October 8-11, 2005
AMD 42nd Annual Convention
New Orleans.
Sponsored by the Association of Millwork Distributors.
Contact: AMD at 727/372-3665.

November 16-19, 2005
SMACNA Annual Convention
Marriott's Desert Springs Resort and Spa.
Palm Desert, Calif.
Sponsored by SMACNA.
Contact: SMACNA at 703/803-2980.

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Pemko Manufacturing Co.	22	800/283-9988	800/283-4050	pemko.com
Protecto Wrap	11	800/759-9727	303/777-9273	protectowrap.com

Get the Basics of Mold

What It Is, How It Is Formed and How You Can Prevent It

Even if you can already explain the difference between a fungus and a mold, you may not have all the answers to today's mold problems. Because of this, each issue of **Moldmag** will provide a basic tutorial on various aspects of mold and moisture management. This month we're starting at the very beginning, with an explanation of what makes up mold and what makes it a problem.

• What is mold?

Mold is a natural presence in our environment. It is alive, but is neither a plant nor an animal. Mold is a type of fungus and part of a group of living organisms that are very common and serve an important role in the environment—antibiotics and yeast are types of mold, for example. It is unknown how many species of mold exist, but some experts estimate that there are more than 300,000. They are found in virtually every environment and can be detected, both indoors and outdoors, any time of the year.

Of the four things mold needs to grow, moisture is the easiest to control.

• How does mold reproduce?

Mold seeks moisture, warmth and food to grow. It will form in wet or damp areas in temperatures between 40 and 100 degrees Fahrenheit. Mold spreads by creating microscopic reproductive cells called spores, which waft through the air continually. When they land on a damp spot, they may begin digesting whatever they landed on in order to survive. Spores thrive in warm, damp and humid conditions and can grow on items such as wood, paper, carpet, foods and insulation. They can be found outdoors in decomposing leaves and vegetation, among other places. Indoors, they can be found where humidity levels are high, such as basements or showers.

• Is mold bad?

A few years ago, it became evident that mold was an enemy of the home. In a paper for HomeSafe Environmental Inc., John Gura, the company's president and senior mold inspector, noted stories about toxic mold infestations accompanied by high-profile lawsuits that have made headlines. One report said a homeowner's house was so contaminated by toxic stachybotrys mold that it "cannot be cleaned," so the local fire department burned it for practice. Another couple was featured on national TV giving a tour of the million-dollar mansion they had to evacuate because of mold.

It is important to note that all molds have the potential to cause health effects. While outdoor molds are natural in the environment, indoor molds should be avoided. Molds produce allergens, irritants and, in some cases, toxins. People can experience a variety of health problems from inhaling or touching mold spores, including headaches, breathing difficulties, allergic reactions and aggravation of asthma symptoms. The types and severity of symptoms depend on the types of mold present, the extent of an individual's exposure, the age of the individual and their existing sensitivities or allergies.

• How does mold get in a building?

Mold can enter a building in many ways: through open doors and windows, on the fur of a pet or through a heating or air conditioning system, for example. Mold may also form inside the house. Prime spots for mold growth are areas where flooding or leakage has occurred in roofs, pipes, walls or areas around over-watered houseplants. In 48 hours, a moist environment and an organic food source can lead to mold growth.

The presence of mold can also be the result of a building's design. Over the past few decades, changes in building practices in response to energy concerns have resulted in "tighter" buildings than in the past. Tighter buildings mean an increased potential for inadequate ventilation. Buildings that can't breathe can't dilute indoor pollutants, such as mold, that are contained in the building.

• I've got mold; what should I do?

Mold requires water to grow. If the moisture source is eliminated, so is mold growth. While it cannot be kept entirely out of a home, regular housecleaning and maintenance can often prevent mold problems before they arise. If mold is detected in a home, it should be cleaned promptly and the water problem fixed. It is important to dry water-damaged areas and items within 24 to 48 hours. m³

Sarah Batcheler is an editorial assistant for Mold & Moisture Management.

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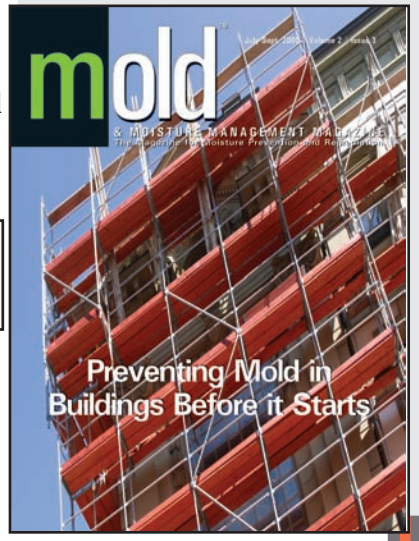

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