

August-October 2006 Volume 3 | Issue 4

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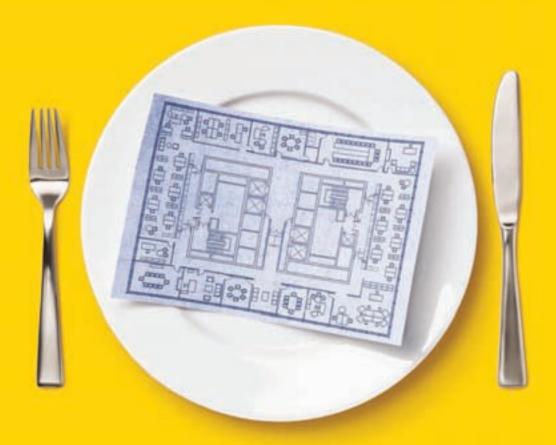
& MOISTURE MANAGEMENT MAGAZINE
The Magazine for Moisture Prevention and Remediation

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1. Most walls inside buildings are made of paper-faced drywall.

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August-October 2006 | Volume 3 | Issue 4

C ontents

features



Remodeler Beware

With the hottest rooms for remodeling also being areas prone to moisture problems, remodelers can bet they'll be exposed to mold damage at some point.

What's Weather Got to do With It?

It's not the rain, it's the humidity: are the humid territories along the Texas Gulf Coast more prone to incidences of mold (and resulting claims) than other regions in the state?

Connections Convention Preview

See what's in store with a preview of seminars, products and education ahead.

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On the cover

For the capable remodeler, mold growth will be an occasional challenge to work around—not an end result. See the article on page 24 for more on remodeling around



Photograph by Megan Headley

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remediation

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

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News22



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Home, Sweet Home

ast June, my grandparents moved from their home of nearly 50 years into a retirement community. My mom and step-dad bought their house and officially moved in. It's a beautiful home that my grandparents designed and built themselves in 1959. The backyard is a wide peninsula surrounded by Hampton Creek, all lovingly landscaped by my grandmother.

My mom began dreading the decision shortly before the move. It didn't take long for the rest of us to see why. As much time as my grandmother spent improving the appearance of the furnishings and garden, there had been virtually no structural updates to the house since it was built.

The whole family helped out with the small changes, from painting the bedrooms to updating the two-prong outlets, repairing seams in the drywall and other cosmetic changes. But once one item was repaired, ten more suddenly appeared—like the weekend my Mom decided to pull up the carpeting in the bathrooms.

"When we moved in that carpet kind of grossed me out, so in both bathrooms we took it up and could suddenly see all kinds of problems underneath," Mom says.

Removing the carpet revealed the bubbling linoleum and the source of the toilet leak.

"When we first took the linoleum off we found out we had to go all the way through and it was awful underneath; the wood was so drenched

through we had to shovel it off," Mom recalls with a grimace.

Pulling up the carpet somehow segued into replacing the toilet, in the time- and money-consuming way of this old home.

As for the main bathroom, Mom she's been convinced that replacing the rotting moulding (and who knows what else) beneath the window beside the tub and finally adding ventilation to the high-humidity area are better priorities.

After my conversations with remodelers in preparation for the article "Remodeler Beware" (See page 24), I'd learned that remodeling

for some of these professionals meant redoing what a DIY'er (or other contractor) had done poorly. Of course, when I asked Mom whether she'd consider hiring a professional, she shared some of her own horror stories about poorly done jobs. But what it came down to, she said, was that most

has been dreaming about adding beadboard along the walls, although



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continued on page 6

RAISING THE BAR ON THE COMPETITION

When demonstrating efficacy ShockWave was tested successfully in the presence of a 98% organic soil load as opposed to the EPA minimum and industry norm of 5%. In these conditions a "real world" situation is more closely replicated in the laboratory, where organic matter does not self-dilute down to 5%. Although the US EPA does not require such extreme testing, and no other manufacturer attempts this, it is the only way to identify how effective a product will be when used in actual field conditions.

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continued

Rebuttal to Consumer Report

I read with interest the short article in your magazine under the heading "Consumer Reports Finds Flaws in Mold Test Kits" (See March-April 2006 Moldmag, page 14). Please allow me to provide you with a few corrections and clarifications about our product that was mentioned in the Consumer Reports article and repeated in your magazine.

Point 1: Consumer Reports wrote, "In some samples, the vials with media leaked." We are aware of the very rare problem of some of the product leaking in the package and we have taken corrective action to prevent this in the future, as well as recalling all products that leaked.

Point 2: Consumer Reports wrote, "No expiration date." The Pro-Lab media does not have an expiration date because of its unique method of gelling after it is poured into the Petri dish. Our media does not begin to expire until after it is poured into the plate. Thus, the liquid part of the media has virtually no expiration date.

Point 3: Consumer Reports wrote,

"Claims that kit(s) can identify toxic mold, but the report the lab sends you can't tell you this." There are many molds that are myeotoxin-producing, many of which are easily grown and identified on the Pro-Lab media. We identify and report them when they are present.

Point 4: Consumer

Reports wrote, "Unused plates came back positive for mold growth." It appears that Consumer Reports exposed the plate under normal conditions, not in a postremediation containment. Plates exposed in this manner normally

of the professionals with whom she's spoken have been with large, highly-qualified companies that weren't interested in handling a small job or they were independent contractors who she didn't quite trust to do the job right—or be in business the next day.

"I find more and more the really good contractors who are really aware of this [mold] stuff tend to not like small jobs, and for me that's a problem because I'd likely do just one bathroom at a time," Mom says.

With two children in college. DIY repairs are a matter of efficiency and economy for my mom. So, for now, my step-dad is keeping his tools handy for when the next problem reveals itself.

"We're going to attempt to handle it on our own and hope and pray that one thing doesn't mushroom into something way too overwhelming."

If all goes well with the bathrooms, remodeling the kitchen is the next step...

Care to share tips or cautiontales of your own? Remediation and reconstruction experts will have the opportunity at two upcoming trade shows: Moldmag will be exhibiting in booth 631 at the Connections Convention, September 21-23 at the Las Vegas Hilton, and in booth 111 at the IAQA Convention, October 25-28 at the Gaylord Opryland Hotel in Nashville. Or, as always, please send your comments and stories to mheadley@moldmag.com. m



Megan Headley Editor, Moldmag

Point 5: You imply in the leading paragraph that all the "kits use malt

> extract culture plate." Pro-Lab does not use malt extract agar. Ours is a proprietary agar.

> Finally, with settle plates, as with any other culturing of airborne mold, the most informative level of interpretation usually requires that the analyst be able to distinguish among the predominant different

kinds. The analyst must also be sufficiently experienced to detect differences in seasonal frequency in

we use to base our determinations.

The Pro-Lab test kit is an inexpensive screening test that will aid in locating and examining mold amplifiers in residential buildings. The kits are best used in combination with a thorough inspection to detect any macroscopically visible mold growth.

I hope that I have been of some assistance in clearing up the misstatements in the Consumer Reports which you have reproduced in you periodical.

Sincerely,

John D. Shane, Ph.D. Vice President of Laboratory Services ProLab Inc. Weston, Fla. m

Questions? Opinions? Feedback? Send them to Reader Rant by emailing mheadley@moldmag.com.



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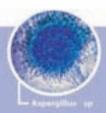


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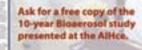
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Inside vs. Outside

Don't Blame the Building Envelope for Interior Moisture

Article by Colin Murphy and Lonnie Haughton. Murphy is a founder and managing partner of Exterior Research & Design LLC. Haughton is a construction codes and standards consultant with Richard Avelar & Associates.

hat do the following four contractors have in common?

- 1. The roofer for a 3-story condominium building is sued after mold and water damage occurs in a first floor unit—even though no similar damage is found within the second and third floor units.
- 2. The stucco and deck waterproofing contractors for a multistory residential building are sued after severe framing decay is discovered in a lower unit—even though the plaintiff's expert can provide no direct evidence that this damage has resulted from any stucco or waterproofing defects.
- 3. A vinyl siding contractor for a multi-building, multistory residential complex is sued after widespread areas of mold and moisture damage are found at the exterior face of the underlying gypsum sheathing—even though the damage is observed to be much worse on the interior side of this sheathing within the wall cavities.
- 4. A fiber-cement siding contractor for a multi-building, multistory residential complex is blamed for minor moisture staining and rusty fasteners found behind the building paper at the surface of the gypsum sheathing—even though there is no staining at the outer face of the building paper and spray testing of the siding cannot recreate any corresponding degree of leakage. Plaintiff's attorney demands total replacement of the siding and gypsum sheathing.

The most significant commonali-

ty between these four cases is that a subsequent investigation demonstrated that the sources of excess moisture in these buildings were located at the buildings' interior, not the exterior.

In case #1, the only evidence offered against the roofer was that one of the roof drains was positioned directly above the damaged area down at the first floor and destructive testing at this roof drain had found a small area of plywood decking with an elevated moisture content. These observations were deemed sufficient to initiate a claim against the roofer alleging harmful health effects to the first floor tenants due to mold proliferation within an interior wall.

Finding Solutions?

After months of legal maneuvering, permission was granted to the defense expert to open this interior wall, exposing the ABS drain piping that serviced the roof drain. Both the surface of the piping and the adjacent framing and wallboard were observed to be clean and dry, with no evidence of any past leakage from above. Permission then was granted to open a similar section of the interior wall at the second floor unit—where the ABS plastic drain pipe was found to have been punctured by a nail used to secure the wood baseboard trim. During winter rains over several years, leakage at this puncture had migrated down the wall to the lower unit. Despite evidence fully exonerating the roofer of any responsibility for this interior damage, plaintiff's attorney then issued a revised demand for \$10,000 to settle the claim.

Case #2 is a similar story in which plastic drain leaders from the roof gutters had been concealed inside wood-framed deck columns. Staples used to secure the stucco's metal lath to the OSB sheathing had punctured the hidden drain piping, which abutted the back side of the sheathing. The stucco contractor arrived at the project after the columns had been sheathed—should the contractor be blamed for not determining the exact positioning of the unseen piping?

Case #3 resulted from a failure to connect the clothes dryer ducts to the corresponding vents at the exterior walls properly. At almost every vent, warm moist air was being pumped into the wall cavities. The resulting damage was particularly severe near the vents. Yet after a multi-day investigation, the plaintiff's expert concluded that this damage had resulted from rainwater infiltration from the exterior due to the siding contractor's failure to ensure proper spacing of the nails used to the secure the vinyl siding.

Case #4 represents a common problem in residential buildings during winter months in some parts of the country—condensation of water vapor that is migrating, via diffusion and/or air convection, from the warm humid interior toward the colder, dryer exterior. The surging popularity of fibercement siding systems, which have very low vapor permeability ratings, has increased the likelihood of such vapor condensation in exterior walls of homes that have relatively high levels of interior humidity.

Different Perspectives

Sometimes the severity of the condensation damage makes the problem obvious to all observers; however, as discussed with Case

continued on page 10

#4, what about minor wintertime condensation over the course of a multiyear period that results only in rusty nail heads and minor staining of the sheathing? Do these conditions constitute a level of damage that necessitates total

replacement of the siding and sheathing? If so, why blame the siding contractor for vapor migration from the interior?

Case #4 is significant because it highlights a differing perspective between building envelope scientists and some construction defects professionals who limit their litigation work to representing plaintiffs. North America's leading guru of building envelope science is Dr. Joseph Lstiburek of the Westford, Mass.-based Building Science Corp., whose publication *Vapor Barriers and Wall Design* includes the following guidance:

"Acceptable performance implies the design and construction of building assemblies which may periodically get wet, or start out wet, yet are still durable and provide a long, useful service life. Repeated wetting followed by repeated drying can provide acceptable performance if during the wet period, materials do not stay wet long enough under adverse conditions to deteriorate."

Dr. Joe's 'no harm, no foul' perspective of acceptable building envelope performance is reasonable, obvious and consistent with ASTM E 2266-04 Standard Guide for Design and Construction of Low-Rise Frame Building Wall Systems Resist Water to Infiltration. However, many attorneys and their experts will cite minor surface staining after years of service at otherwise undamaged sheathing or framing as proof, ipso facto, that the building envelope must be reconstructed.

These four examples demonstrate that each investigation must be approached with an open mind. Most good construction professionals understand the numerous routes by which rainwater can infiltrate a poorly-constructed building envelope, but this knowledge should not blind them from also evaluating every reasonable possibility that the primary source of the observed moisture or mold damage is located within the building interior, not at the exterior envelope.





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Integrating the Weather-Resistant Barrier

Leak-Resistant Walls Require Attention to Window Flashing



Larry Livermore is the technical standards manager of the American Architectural Manufacturers Association.

key approach to minimizing the potential for water penetration of window openings is to take a couple of steps back and look at the wall in which the window is mounted as an entire system. The components of this system must interact properly to provide a complete weather-resistant barrier (WRB) from roof to ground. This concept focuses attention on the interfaces between those components, not just on the components themselves.

Flashing and sealants are at the front line of this interface when it comes to making windows a viable part of a building's WRB. Together with the facing material, flashing and the WRB must form an integrated and effective weather-resistive system. Doors and windows flashed correctly integrate flashing materials with the drainage plane to provide complete protection. Sealant and low expanding aerosol polyurethane foam can enhance the installation quality by sealing the rough opening against water penetration and air infiltration when the proper products are selected and the appropriate installation techniques are used.

Self Adhering Flashing

Self-adhering flashing is a flexible facing material coated on at least one side with an adhesive. It is used to bridge the gap between fenestration framing members and the adjacent WRB or sealed drainage plane material. Its purpose is to drain water away from the door or window to the exterior. It does not depend on mechanical fasteners (although they may sometimes be used to aid in

installation). Selfadhering flashing typically is sold in rolls of varying widths and comes with a release liner that is removed prior to application.

Some of these ("Type B" products) require use of a primer under certain field conditions. Type A products do not require a primer. Each of these types are categorized further by exposure level:

Level 1 is for exposures up to 122°

Establish Level 2 for exposure

Fahrenheit, Level 2 for exposures up to 149° Fahrenheit and Level 3 is for exposures up to 176° Fahrenheit.



The key performance attribute is that the flashing adhesive maintains a reliable moisture seal by not detaching from the substrate (e.g., sheathing) under a variety of realworld conditions. A new standard published last November, AAMA 711-05 Voluntary Specification for Self Adhering Flashing Used for Installation of Exterior Fenestration Product, describes tests used to simulate those conditions and specifies minimum performance requirements to assist the specifier in evaluating and selecting selfadhering flashing products. The standard also describes the application of the testing methods to verify performance: offers installation guidelines; and discusses the critical issue of compatibility of adhesives used in self-adhering flashing products with other building materials.



these types are categorized further by the gap between fenestration framing members and the exposure level: adjacent weather-resistant barrier or sealed drainage plane

Among the recommended performance tests, the standard spells out methods for testing water penetration resistance around nails and evaluates how well self-adhering flashing tape remains bonded to the substrate under conditions of constant stress after thermal cycling and water immersion. In the first case, five samples must be tested with nails partially driven in with no water present on the nail shanks or on the underside of the sheathing.

In the second, flashing is applied to five samples for each substrate tested and allowed to sit for 24 hours at room temperature, then the technician attempts to pull the flashing off the substrate by pulling at a 90° angle at a specified force. The test must be performed on four different types of substrates commonly used in construction: oriented strand board (OSB), anodized aluminum, vinyl and plywood. A 90° peel-off test is also performed after accelerated aging under UV light, 24 hours of exposure to elevated temperatures as

defined for Level 1, 2 and 3 and thermal cycling consisting of 25 cycles between 120° Fahrenheit and -40° Fahrenheit. The flashing must not pull loose from the substrate at a pull of force of at least 1.5 pounds/inch. Given that flashing will overlap in installation yet must maintain a viable water seal, there is also a peel test to see how well the flashing remains adhered to itself after exposure to elevated temperatures.

For the water immersion test, flashing is applied to a sample of aluminum and immersed in tap water for seven days. Again, the flashing must not pull loose from the substrate at a pull of force of at least 1.5 pounds/inch and not

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exhibit appreciable swelling or change in appearance or contour.

Other tests include cold temperature pliability at 0° Fahrenheit and tensile strength.

Typically, self-adhering flashing comes into direct contact with gunnable sealants. While the number of products on the market yields an almost unlimited combination of sealants and flashing, care should be taken to insure that the selected products are compatible. AAMA 711-05 suggests that material compatibility problems be avoided by selecting products from manufacturers who can demonstrate compatibility, avoiding "or equivalent" specifications and by obtain-

ing the flashing or sealant manufacturer's recommendations. When no other approval is possible, a test mock-up should be utilized.

Still under development is a second part to AAMA 711-05, which will provide guidelines for determining the minimum width and the installation procedure details for self-adhering flashing products applied under field conditions.

AAMA documents may be obtained online from the AAMA Publications Store at www.aamanet.org. For more information, contact Larry Livermore at 540/877-9957 or llivermore@aamanet.org.



Defusing a Ticking Time Bomb

How Air Barriers Can Protect Your Building from Mold

Gary Henry is a business communication specialist with PROSOCO, a national manufacturer of products for cleaning, protecting and maintaining concrete, brick and stone.

ir doesn't have to whip up into a tornado or hurricane to destroy masonry buildings.

Air, seeping through a tiny breach no wider than the seam between plywood sheathing panels, can do it.

In today's tightly constructed cavity-wall masonry veneer build-

ings, air pressure is usually different inside than outside.

How Air Leaks Wreck Buildings

In winter, inside air is often more humid. Occupants' daily activities, central heating and humidifiers combine for higher pressure and more water vapor in the air than during the summer.

Since high pressure always seeks low pressure, this relatively highpressure warm, moist air tries to get to the lower-pressure outside through any opening it can find. And it usual-

> ly finds one, even if it's just an electrical outlet or plumbing penetration.

> The humid, pressure-driven air gets into the wall assembly. It moves through the insulation, on its way to lower pressure, through planes of ever cooler air. As it gets closer to outside winter temperatures, this warm moist air finds its dew-point—the temperature cold enough to cause condensation.

> When the warm, moist air hits that "condensation plane," it releases its water. It may wet the insulation, or the sheathing. Of course if those components stay damp long enough, mold appears.

Same thing happens in reverse

during hot, humid summers. Warm, moist outside air gets into the cavity behind the masonry veneer through weepholes, failed mortar joints and other openings. It finds its way through sheathing seams, joints, connections and other openings in the structural wall, and then through the insulation and ever-cooler air as it nears the building's interior wall.

That wall is cool because of the air-conditioned room on the other side. If it's cool enough for a dewpoint, or if the air hits a chilled pipe, you know what happens then. Just like in winter, you get condensation and conditions for mold.

Masonry is Not to Blame

Mold remediation often involves tearing down walls—maybe not as violently as a tornado or hurricane, but it's not much fun. Neither are the lawsuits and insurance claims.

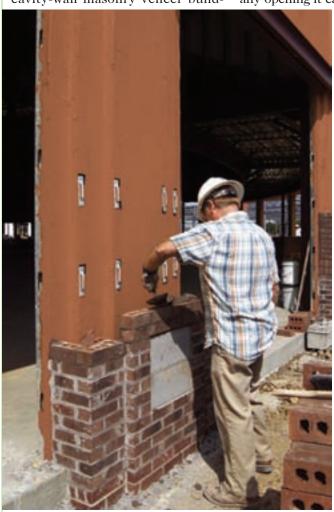
Maybe you've seen buildings under construction with tattered fabric sheet wraps, stapled to the sheathing, fluttering in the breeze. Those wraps are an attempt to stop the air leaks through the wall assembly. Obviously, if wind has torn them loose, they won't be very effective air barriers.

Once the masonry veneers go up, those buildings have every chance of becoming ticking time-bombs of mold.

Checkpoints for Effective Air Barriers

To keep the vapor out, coat that sheathing or concrete masonry unit (CMU) back-up with a durable, structural air barrier system that plugs every possible leak and meets these "big four" checkpoints for effectiveness.

continued on page 16



A mason installs a brick veneer over sheathing coated with a water-based, fluid-applied air barrier.

14 | August-October 06 Mold & Moisture Management

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masonry veneer lets warm moist air into the building envelope. If it finds its way through the structural wall, there is danger of condensation in the cooler recesses of the wall assembly. Air barriers stop the air flow at the structural walls. Below: Under a sink, pipes penetrate the wall assembly. Even though the gaps seem tiny, for air they are a super-highway. If there is a pathway to the outdoors conditioned air will blow out. Air barriers block those pathways.

Left: This opening in the

Continuous and seamless: the air barrier must be able to cover all the nooks, crannies, cracks and transitions of the sheathing or CMU backup, 100 percent, with no gaps, holes or seams. If there is the slightest hole, air gets through and the installation won't work.

Structural: it must stick like blue on sky to the structural wall. That's so it won't come off in wind during construction, or from air pressure differentials after the walls are up.

Durable: the air barrier must be able to resist weathering unprotected in case of construction delays, with no rips, tears or breaches of any kind or size—for months, if need be.

Vapor permeable: also known as "breathable." That is, water vapor or liquid water that gets into the wall assembly must be able to evaporate out again, through the air barrier. If the air barrier is impermeable and traps the water, or vapor, the wall won't be able to dry out.

Other features to consider: Is the air barrier easy and fast to install? Or labor intensive? Some products may be cheap to buy, but difficult and time-consuming to apply correctly. And if the barrier is fluidapplied, is it water-based or sol-

vent-based? Water-based systems are more likely to comply with volatile organic compound regulations.

Energy Savings

In winter, when warm inside air finds a pathway—even an indirect one—out of the building, it follows that pathway. It doesn't matter if the holes are small. In fact, the smaller the leak, the faster the air whistles through on its way to the great outdoors.

Under those circumstances, the building loses expensive, heated air just the same as if you left a window or door wide open. That might not have been a problem back in the days of cheap energy. It is now.

A 2005 study by the National Institute of Standards and Technology (NIST 7238) proved that by interrupting that pathway, properly installed air barriers can slice a building's natural gas costs by more than 40 percent, and electrical

costs by more than 25 percent.

Awareness of the costs and dangers of uncontrolled air movement through wall assemblies, and how to combat it, is swiftly growing throughout the masonry construction industry. The Brick Institute of America, the International Masonry Institute, and other industry groups are already at work educating their members about air barriers.

Because ticking time bombs aren't in anyone's interest.







INDUSTRY NEWS

New Rating Shows Building Materials' Mold Resistance

The GREENGUARD Environmental Institute (GEI) of Atlanta, and Air Quality Sciences Inc. (AQS), a Marietta, Ga.-based air quality testing and consulting firm, have released the results of a microbial resistance pilot study. The one-year study measured the ability of products to resist mold growth under adverse temperature and humidity conditions.

The study included the development of a ranking system that indicates a building material's resistance to mold growth. Once tested, a newly manufactured product receives a 1 to 4 performance rating—1 being highly susceptible to mold growth and 4 being highly resistant to mold growth.

"This easy-to-use rating system will greatly assist architects and specifiers by taking the guesswork out of selecting the best building materials that resist mold growth as well as supporting product manufacturers in their efforts to provide products that meet this critical need," said Marilyn S. Black, PhD, chief executive officer and chief scientist with AQS.

A trial of the test method included a nine-month laboratory study (Phase 1; for more information on Phase 1, see July-September 2005 Moldmag, page 52), followed by a yearlong pilot study of products submitted for testing (Phase 2). Results confirmed and validated the choice of mold, consistency of results from control samples, the time course of mold growth and that different materials respond differently. Ten manufacturers of insulation, adhesive, flooring and wallcovering products accepted an invitation to participate in Phase 2 of the study.

GEI is using the rating system to develop product certification criteria for mold resistance as more data becomes available on key construction and furnishing materials.

"The test method that supports the rating system determines microbial resistance of new materials as manufactured and not as installed, soiled or weathered. As such, the test does not guarantee product performance, since installation, modification of materials, weathering, aging, and building operation and maintenance may impact the microbial resistance of materials," said Dr. Black.

The test method is based on the U.S. Environmental Protection Agency's (EPA) research guide, published as ASTM D 6329-98 (2003), Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers.

The final pilot study report is available free from the GREEN-GUARD website at www.greenguard.org. A white paper that

Quality Built Tracks Common Construction Defects

Quality Built of Poway, Calif., a risk management firm providing inspections and quality assurance services to homebuilders and commercial developers, has released the results of its 2005 Construction Defect Data Survey. The firm collected information on 31,995 completed homes and condominiums across the United States between October 2004 and 2005, looking for information on the most common construction defects, their frequency and their cost to home and building owners.

Among other results, the study showed that in single-family home construction, the single highest risk problems included such potential mold inducing problems as improper framing around doors and windows, building paper and housewrap installation flaws and missing structural connections. According to information from the company, none of these defects are visible to the homeowner upon completion of the home, but can be corrected easily during construction if identified early.

The study also showed that of the top 100 construction flaws for both single-family and multi-family projects, all top risk issues were related to either a building code requirement or an installation standard. These top defects, amounting to more than \$204.2 million in corrected defects, would have been preventable if the installer had followed the plans and installation instructions.

Cost to Repair Defects After Construction (Average Per Unit)

Defect	Single Family Homes	Multi-Family Homes
Foundation	\$339	\$340
Framing	\$1,844	\$1,198
Building Envelope	\$2,209	\$1,051
HVAC	\$91	\$123
Plumbing/Electrical	\$243	\$252
Life Safety	\$169	\$1,331
Roofing-Decking	\$233	\$131
Thermal	\$91	\$95
Acoustic	NA	\$35
Total	\$5,398/home	\$4,556/home
Source: Quality Built		

provides perspective on the usefulness of this new test method and rating system is currently available on the Aerias - AQS IAQ Resource Center website (www.aerias.org or www.aqs.com).

MERGERS AND ACQUISITIONS

PCG Recognizes Growth with Merger, Award

Protective Coatings Group (PCG) of Jacksonville, Fla., has announced that it has merged with its distribution partner Allen-Oyler, with all principals remaining equal partners. The two companies have merged to form one direct line of product supply.

According to information from

Allen-Oyler, the staff of both companies has remained in place. The company says that the merger is a result of the positive reception of all the PCG products and a reflection of the rapid growth of the mold industry.

In addition, PCG has announced that its FortiCelTM mold prevention coating has been fully approved as a Mold Help resource and awarded the organization's Seal of Approval.

The Mold Help Organization is a consumer advocacy and intervention group for mold issues. According to information from PCG, FortiCel is the only protective coating that Mold Help has approved.

In order to become a Mold Help approved fungicide or coating, companies are required to submit their products to the organization's testing, conducted by Dr. George Carroll, chief scientist at Eugene, Ore.-based laboratory MouldWorks, and Professor Emeritus of Biology at the University of Oregon. While submitting to testing, PCG asked that Dr. Carroll not be told which products were already in the market and which were in development, to eliminate any possible unconscious bias in the testing.

The Mold Help evaluation letter sent to PCG stated, "Upon careful evaluation, the Mold Help Team has concurred upon your evaluation and wholeheartedly agrees that your product, FortiCel, is a true benefit to consumers in the prevention and inspection of mold problems."

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AIR FILTRATION

ProMark Totally Cleans Air

Total Spectrum™ air purification from ProMark Associates Inc. of Skokie, Ill., uses a new technology designed to augment conventional, media-based air filtration. The filter is able to destroy molds, viruses, bacteria, allergens and other pollutants. According to information from the company, the product is capable of removing pollutants down to levels of outside air or better.

Total Spectrum features a sequencing of filters, UV lights and dynamic chemistry that destroys airborne contaminants. Conventional media filters remove particulates. A series of 4-inch deep prefilters are included. A proprietary photo-catalytic oxidation (PCO) section removes gaseous pollutants, generates oxidation and reduction chemistry and regenerates a bed of activated carbon or other suitable media. This stops any chemistry that could pass through the PCO section. The carbon is contained in patented PMA 25 media modules that minimize pressure drop and maximize residence time.

A second media bed, filled with alumina-based media (PG300) in PMA25 modules, removes any remaining chemistry. Air quality sensing monitors are installed before the final catalytic filter. This filter ensures that no dynamic chemistry passes downstream and back into occupied space.

The product features a control box on the outside of the housing, which offers a visual indication of when filters need to be changed, and a self-cleaning capability.

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COATINGS AND CLEANERS

Rhino Hide Removes Unwanted Mold Spots

Mold and mildew stains can be difficult to remove from wood, masonry and composite surfaces. To remove such stains, Rhino Hide of Eaton Park, Fla., offers its UltraMean[™] product, which the company says cleans and restores exterior surfaces around the home safely.



Completely bleach-free, UltraMean does not damage wood fibers as can caustic cleaners, according to the manufacturer. It can also remove mill glaze from new wood before finishing and clean tanning stains from cedar, redwood and other bleeding woods.

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DuPont Redesigns Tyvek Coveralls for Comfort

DuPont Personal Protection of Richmond, Va., has redesigned its Tyvek coveralls, used in mold remediation and other applications, with a variety of new features designed to provide workers with a more comfortable fit and improved mobility.

The new design was based on extensive market research which uncovered that improved fit and durability were key garment attributes sought by end-users, according to information from the company. In order to confirm that the new coverall design met end user needs, the company initiated exhaustive customer wear trials, beginning last year, in five different U.S. regions.

The new comfort fit design, with more room through the chest and shoulder, enables an increased range of movement, especially while the worker is stretching or bending. It reduces tears, while providing a move tailored fit.

According to the company, Tyvek is an inherent barrier to particles less than 1 micron in size. There are no films or laminates to abrade or wear away. In addition, the fabric is highly breathable.

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Fungicide Controls Mold Regrowth

Controlled Environment Solutions Inc. of Monticello, Minn., has now made available Modec's MDF-500 antibacterial disinfectant fungicide, cleaner and deodorizer for all professional contractors. According to information from the company, the EPA-registered MDF-500 decontamination solution has been demonstrated to be fungicidal against fungal spores, and meets requirements for hospital use. The company says it has also been shown to be an effective agent for microbial volatile organic compounds and mycotoxins. MDF-500 mitigates conditions caused by these metabolites of mold, and retards mold regrowth for an extended period after application.

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DEHUMIDIFIERS AND DRYERS

MovinCool® Helps Prevent Mold Damage

The MovinCool® portable air-conditioning unit from Denso, based in the U.S. in Long Beach, Calif., has the capability to prevent mold and mildew damage. Its unique spot-cooling technology effectively aids in drying out and dehumidifying mold-prone areas on an ongoing basis, or in the event of a disaster when damage occurs from leaks or flooding.

MovinCool units can help speed up the drying process with flexible ducting options and various spot drying configurations, according to information from the company. In the fast-drying setup, MovinCool uses high volume warm air to extract moisture faster than using fans or dehumidifiers alone. The units can also cool and dry at the same time by simply ducting the warm air from the room.

For low-temperature conditions, the Office Pro Series is available, while the Classic Plus Series is suitable for high-temperature applications. All MovinCool units are verified for performance by the independent testing laboratory ETL and are UL and CUL safety listed.

Each MovinCool model is completely self-contained, portable and designed to fit a wide variety of home, work and building space areas. A unit can be brought in to handle problem spots in minutes and can move quickly from place to place as needed because they simply roll in, plug in and turn on to provide instant spot cooling and drying in any critical area. They also have capabilities to pump water 100 feet to reach faraway drains (pump optional, collection tank standard).

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Munters Introduces Energy-Efficient HCU

The new humidity control unit (HCU) from Munters Moisture Control Services (MCS) of Glendale Heights, Ill., combines cooling and desiceant dehumidification technologies in one energy-efficient system to control dew point temperatures in hot, humid climates. It is suitable for use in structural drying, temporary humidity control in building construction and condensation and corrosion control in surface preparation and coating applications.

The HCU is capable of delivering dew points below 45-degrees in even the highest humidity load conditions. This is done using less energy and providing comfortable outlet temperatures, according to information from the company.

Traditional systems first cool the air to reduce its overall moisture content. Then, the air is reheated lower its overall relative humidity. The HCU removes humidity utilizing a packaged refrigeration system in conjunction with an active titanium silica gel desiccant wheel. The unit operates cost-effectively because the desiccant wheel is regenerated using recycled heat from cooling components. The end



result is a unit that controls humidity with a coefficient of performance (COP) that is up to 65 percent higher than a typical air conditioning system.

Features of the HCU include a built-in digital controller, remote monitoring capabilities, high-efficiency scroll compressors, titanium enhanced silica gel wheel with carbon and variable frequency drives for capacity control.

MCS offers two HCU rental units, depending on job requirements—the HCU-3000 featuring 2400-3400 nominal cfm and the HCU-6000 with 4000-6000 nominal cfm.

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KUDOS

Orkin Partners with National Center for Healthy Housing, Charities to Battle Mold

Working with the National Center for Healthy Housing (NCHH), national pest control company Orkin Inc. of Atlanta donated time and services in June to assist Home Clean-Out, sponsored by Catholic Charities' Operation Helping Hands and the Association of Community Organizations for Reform Now (ACORN), in



efforts to clean up New Orleans neighborhoods and restore homes. After volunteers from these organizations identified and gutted 98 flood-damaged homes, many of which were occupied by low- to mid-income, elderly or disabled residents with little to no flood insurance, Orkin's volunteer team of 13 began work.

Orkin's Ready Response Team applied BORA-CARE® and MOLD-CARE™ products, manufactured by Nisus Corp., to help protect homes from mold growth. As a secondary benefit, this application of BORA-CARE discourages termite activity, which has increased in New Orleans due to the wet conditions.

While these organizations donated volunteers and time, other companies donated products and services: Safety South (safety products), Nisus (BORA-CARE® and MOLD-CARE™ products) and Systems Environmental (sprayers at cost).

MERGERS AND ACQUISITIONS

UVDI Acquires Sparks Technology Inc.

UltraViolet Devices Inc. (UVDI) of Valencia, Calif., a manufacturer of UV products for air and water treatment, has acquired Sparks Technology Inc (STI) of Batavia, Ill.

STI is the exclusive patented license holder of the bonded particulate structure (BPS), a process in which activated carbon is bonded into a monolithic form that still maintains a significant level of open pore structure. This new structure provides major advantages over existing filtration technologies, according to UVDI.

Combining the technologies of UVDI and STI enables both companies to freely develop and launch hybrid technology products envisioned for their customer's specific needs. Development has begun on products for the mold remediation, medical products and indoor air quality markets.

In conjunction with the acquisition, UVDI has added Ken Kubitz to its management team and appointed Steve Pegg president of STI.

In-Viro Care Introduces Spanish Training Sessions

In-Viro Care Inc. has announced the availability of Spanish training sessions for mold remediation, duct cleaning services and indoor air quality investigations.

All training sessions are conducted by Carlos Gonzalez Boothby, the company's technical director. He has more than 16 years of experience in conducting indoor air quality (IAQ) investigation, remediation and consulting services. Gonzalez is a certified indoor environmentalist (CIE) and a certified mold remediator (CMR) through the Indoor Air Quality Association (IAQA); a certified air system cleaning specialist (ASCS) through the National Air Duct Cleaners Association (NADCA); a certified mechanical hygienist by the ASCR; and a registered mold inspector (RMI) with the Environmental Education Foundation. He currently serves as consulting director for the IAO division of the Interamerican Association of Carlos Gonzalez Boothby, technical director of Sanitary and Environmental Engineering and the same position for the In-Viro Care Inc., stands in the company booth Environmental School of the Metropolitan University.



at the Puerto Rico OSHA Annual Meeting.

COMPANY NEWS

ITC Debuts New Training Facility

The Infrared Training Center (ITC) Americas, a part of Flir Systems Inc., moved into new custom built headquarters in Billerica, Mass. The new facilities include a main classroom with stadium seating, an application lab, conference/secondary classroom, staff offices.

Students in the main classroom are provided with power, internet connectivity and video/computer monitors so they can practice on their infrared camera without having to use the eyepiece. Students also have access to computers at their seats so they can learn and practice producing reports and analyzing thermal images.

a student break area, a cafeteria and The new ITC training facility offers hands-on learning opportunities to students.

The application lab includes building science, piping, motors and couplings, electronic and electrical lab stations. A variety of problems are simulated for the students to find and measure. Many labs are instrumented with thermocouples so temperatures can be compared with the infrared camera readings.

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Remodeler Beware

Megan Headley is editor of **Moldmag**.

emodeling is definitely in style these days. Turn on the television any day of the week, and viewers can find shows on recreating their home, and more home magazines than ever are telling homeowners it's possible to create their dream home by simply updating and transforming their own space.

"Remodeling is very popular right now; it's almost becoming a fashion statement," says Robb King, vice president of operations for Paul Davis Restoration and Remodeling in Jacksonville, Fla.

According to the National Association of Home Builders' (NAHB) Remodelors Council, remodeling accounts for 40 percent of all residential construction and improvement spending and almost two percent of the U.S. economy. Many of these makeovers are for homeowners looking for a new style to express themselves. Others are looking to add space for growing families or to make a home more accessible for aging residents. Although these homeowners may feel prepared to live in a disrupted environment for the time it takes to create the changes they want, they may not be prepared for the possibility of mold slowing down the project.

Other homeowners, however, remodel to recreate something that has been destroyed. For them, the reconstruction process following water damage or a mold remediation may become an opportunity to create something better than they had before.

"If you've had a major kitchen loss or had a major fire, why not take that opportunity to ... [pay] maybe 50 percent of what you would normally pay and have the kitchen you've always dreamed of?" asks King.

The Top Remodeling Spots

Among the most popular areas to remodel are kitchens and bathrooms.

"The bath is the highest [choice for remodeling] and then kitchens are next, and that's national," says King. "And unfortunately those are both wet areas."

"The kitchen and bathroom remain the most popular areas for remodeling," says Vince Butler, NAHB Remodelors Council chairperson and president of Butler Brothers Corp. in Clifton, Va. "I believe people invest their money in the parts of the home where they expect to spend the most time. Those two areas certainly meet that criteria and it doesn't hurt when studies show the return on invest-

ment is highest there as well."

Finished basements are also a top choice for remodeling.

"Finishing is definitely something that's very popular right now," says Jim Kesslick, president of Value Dry Inc. of King of Prussia, Pa., whose company specializes in remodeling basements. "The return on a finished basement [is greater] compared to an addition, especially with housing prices as they rise. People have to buy less of a house than they would otherwise; once the kids come they need a place to put the kids, or themselves or all of their stuff."

Each of these three top remodeling spots are also infamous problem areas for mold, so it's no surprise



People invest time remodeling rooms in which they spend a lot of time, says Vince Butler, chairperson of the NAHB Remodelers Council, and kitchens are among the top picks.

When Modifying Means Mold Remediation

that some water damage restoration companies find themselves focusing on remodeling as well.

"Value Dry started based on waterproofing, so it was sort of related to mold remediation," says Kesslick. "Then we added on the remodeling simply because a lot of the places that had water problems had finished basements that were ruined with mold."

Since Value Dry employees essentially were reconstructing basements anyway, it seemed a natural step to add the remodeling aspect of the business.

According to King, Paul Davis has historically been a restoration company.

"We've always done some remod-

eling just because we do specialized construction," he says. "Over time we have branched out ... within the last five years have we gotten very serious about it."

The shift from restoration to remodeling is also a shift from simply repairing a devastated home to creating a positive experience.

Reconstruction is "trying to take them from crisis to calm; with remodeling it's from vision to life," says King. "We actually have a lot of fun with the remodeling."

There are other similarities between the two tasks. Both remod-

continued on page 26

2006 Remodeling Show Sneak Peek

From show floor education to live clinics and classroom instruction, the Remodeling Show provides valuable tools and resources for remodelers. The 2006 Remodeling Show, sponsored by the National Association of Home Builders (NAHB) and the NAHB Remodelors Council, will be held October 19-21 at Lakeside Center McCormick Place in Chicago.

The newest feature of this year's show is the Kitchen and Bath Showcase. Located in a separate pavilion on the exhibit floor, the showcase will consist of four demonstration areas-two for kitchen and two for bath. Two of the four areas will be working sets to host hands-on installation clinics, while the others will be finished versions of their in-construction counterparts.

"Kitchens and baths are the core of the remodeling industry," says kitchen and bath designer Jamie Gibbs of Jamie Gibbs and Associates in New York, "These rooms also tend to be the highest budget areas of a remodel."

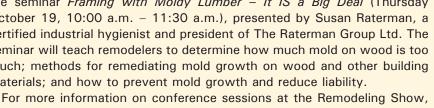
knowledge on products, planning and design.

Gibbs also says that while kitchens and baths have huge profit potential, they can have potentially low profit margins due to inexperienced job planning and high material costs. The showcase is designed to give remodelers

Education continues on the show floor with nearly 20 "how-to" installation clinics. Remodelers Mike Guertin and Mike Sloggatt, two clinic presenters, will take center stage as they present topics that include how to combat mold.

For attendees looking for specific business or production education, the show features more than 80 sessions in eight tracks. Be sure to check out the seminar Framing with Moldy Lumber - It IS a Big Deal (Thursday October 19, 10:00 a.m. - 11:30 a.m.), presented by Susan Raterman, a certified industrial hygienist and president of The Raterman Group Ltd. The seminar will teach remodelers to determine how much mold on wood is too much; methods for remediating mold growth on wood and other building materials; and how to prevent mold growth and reduce liability.

call 800/681-6970 or visit www.TheRemodelingShow.com.





Remodeler Beware continued

eling and reconstruction require the homeowner to essentially live with the contractor, the tools and the mess and stress of construction for some time.

"Whenever you have any type of construction, or rebuilding or remediation, it's inconvenient," says King.

"However," as he notes, "with remodeling you have a lot more discretion.'

That is, the homeowner and contractor can discuss a timeframe for the job and schedule it to fit both their needs.

King also says that the interface with the customer is "totally different" in the two fields.

"When you have a crisis, the need is there and they can't wait until you leave," he says. "With remodeling it's more about vision, and dreams ... it's a celebration."

Finding Mold on the Job

Unfortunately, the situation can just as easily go in the opposite direction. That is, rather than following a major mold remediation, the remodeling process can also lead to the discovery of a mold problem.

Shawn Palme, owner of K & S Remodeling in White Bear Township. Minn., handles all types of residential remodeling. He says that it's not unusual to find mold on the job.

"A lot of it's into the wall cavities," says Palme, adding that many of the moisture problems are from remodeling or remediation jobs that were "improperly done."

"A homeowner decided they were going to sheetrock a basement, there's no vapor barrier, etc.," he says, listing some possible culprits.

Kesslick says that sometimes he arrives at homes with large amounts of visible mold, and the homeowners just consider its removal to be part of the remodeling job.

and years and you've gotten some water behind it ... The showers and sink bases seem to be the worst."

"When we do find it, it is most often in bathroom walls around tubs and showers where a persistent leak has been occurring," agrees Butler.

Palme says that when he finds mold he uses Kilz or bleach to treat the area, after the water problem is corrected.

"You get rid of the water source and then you don't have a mold issue," Palme says.

"There are so many people out there that think they're a builder or remodeler because they've got that hammer."

-Shawn Palme, K & S Remodeling

"A lot of people know that they have a serious problem that's related to the water intrusion," says Kesslick. "So a lot of times we show up and the places are in varying degrees of moldiness ... sometimes I'm actually quite surprised at how bad people let it get."

Other times, the growth is hidden and discovered only when the major changes are begun.

"Most of the bathrooms are more than 20 years old, although most of the homes we go into are reasonably well maintained, so a lot of times it is hidden," says King. "You have tile walls that have been leaking for years

Butler says his company will usually correct small-scale mold problems.

"If it is an isolated area and the cause is apparent we would probably handle it internally, but anything more extensive or of questionable origin would cause me to reach out to a specialist," says Butler.

He shares an anecdote about one job he handled himself: "The worst was a crawl space of an older home where there was no vapor barrier and groundwater was entering the area regularly. The joists subfloor were heavy with mold and rot.

"We removed the joists, subfloor, etc. and completely reconstructed the floor system. We also added a vapor barrier and ventilated the crawl space. Obviously, we corrected the groundwater problem as well."

When mold isn't a part of the reconstruction plan, it's an ugly surprise for homeowners. Palme says that the unfortunate surprise can bring out the bad side of clients.

He says that the most common response he gets from homeowners in response to the discovery of mold growth is "leave, we'll rip it out."

"They don't want to pay that hundred some dollars to have it properly done," Palme says.

that he is sure to write in the con-



tract that the homeowner didn't let him touch the mold problem, should the problem escalate and lead to litigation.

Palme recalls, "We've had a few issues with homeowners, where we said, alright fine, if you're not going to do it our way, we'll walk off the job."

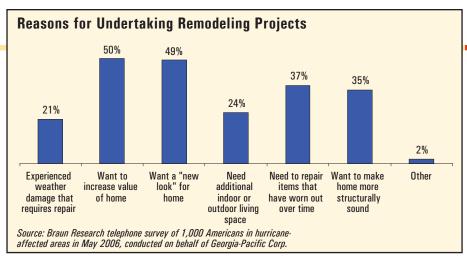
Reconstructing a Bad Remodel

It's frustrating enough to discover a complication like mold growth on the job. But the popularity of the doit-yourself trend can lead to some instances of an emergency remodel, when professionals find themselves correcting problems that could perhaps have been avoided.

"People are very excited about getting involved in a project but they don't understand a lot of times the skills that are required to pull it off," says King.

"A lot of times people will create their own problems," admits Kesslick.

Palme adds that much of the mold he finds is the result of "a homeowner or another contractor."



months later I ended up ripping out the ceiling of a four-season sunroom from a water issue," Palme says. "And I'm not the only one—I've had two or three other contractors with the same thing."

Palme says he has talked with state officials who say they've heard these problems and are working to address them, but until then contractors have to work with the code.

King says that he has been asked on occasion to come in behind another remediation company who didn't necessarily finish the job.

"Typically if we're going in behind other mitigation contractors it's

"When you have a crisis, the need is there and they can't wait until you leave ... With remodeling it's more about vision, and dreams ... It's a celebration."

-Robb King, Paul Davis Restoration and Remodeling

"Unfortunately, about 85 percent of my work is following behind another contractor," Palme says. "There are so many people out there that think they're a builder or remodeler because they've got that hammer."

He adds, "We're required to have a license in our state and I think that license is worthless."

Part of the problem, he believes, isn't just the contractors—it's the building code.

"Some of the ways the states are telling us to build, you're guaranteed to have a mold issue," Palme says.

He recalls one project where he "went round and round with a home inspector" over one code issue.

"I built it to the code ... and four

because they didn't dry the structure," says King.

He says it's often a case of a homeowner hiring a local carpet company whose core business is not drying.

"We test before we start reconstruction," says King.

Kesslick adds that he recommends his clients wait to remodel until they can be sure the water damage has been fixed.

"We'll recommend that they wait a little while, that the humidity and water problems are solved, before the commencement with the remodeling," says Kesslick.

As he mentions, unless his company did the waterproofing, he can't be sure of how thoroughly the job was done.

Growing Awareness

Although, as Palme recounts, finding mold growth isn't likely to make homeowners happy, more homeowners are becoming aware of the great damage that mold can cause if left uncorrected.

"The average homeowner is more aware of the mold issue than in the past and probably takes it more seriously. That concern leads to them wanting to have a professional handle the issue so they can be assured it is corrected and they have some documentation when they sell the home," says Butler.

"There's clearly raised awareness around mold, as opposed to ten years ago," says King. "And they do engage in the conversation [about mold]."

Butler adds that, these days, it is important for anyone involved in the construction industry to have some awareness of mold.

"Their customers are certainly aware of the mold issue and, many times, have an incorrect understanding of the causes, corrections and prevention of mold," he says. "The potential liability alone should be enough for them to get as much information and education on the issue as possible."

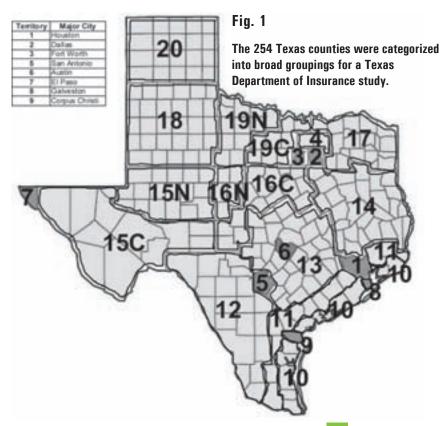
With remodeling activity still on the rise, there will likely be many more chances for the nation's remodelers to learn about the correction of mold problems—hopefully with an eye toward preventing such problems in the future.

What's Weather Got to do With It?

Correlations Between Mold Insurance Claims and Weather Databases in Texas



By Douglas Kosar, principal research engineer, and Dragan Nikolovski, graduate research assistant, both of the Energy Resources Center in the College of Engineering, University of Illinois at Chicago. The paper was presented at the Symposium on Improving Building Systems in Hot and Humid Climates in July.



e all know limiting moisture problems and mold growth in homes requires a combination controlling moisture levels in interior spaces and managing water vapor transport and bulk water intrusion in the building envelope. But might climate have something to do with the prevalence of mold growth in a given location? In 2001, the Texas Department of Insurance (TDI) issued a Special Call for Homeowners Mold Experience to compile a database of information about mold claims. This cursory analysis couples that database with key historical weather conditions from the National Climatic Data Center (NCDC) for that same time period to show more humid climate zones in Texas to be more prone to incidences of mold and resulting mold claims. A statistical correlation between higher outdoor dew point temperatures and greater numbers of mold damage claims (per 1,000 policyholders) is clearly

evident. However, no such clear correlation is evident between precipitation amounts and the number of mold damage claims.

Background

Recent research has brought recognition that the infiltration of humid air and the intrusion of rainwater into building envelope cavities are significant and often dominant mechanisms for moisture transport in wall and roof systemsⁱ. Moist air infiltration through a home's envelope can be driven by winds or negative pressurization caused by exhaust fans, unbalanced air distribution and/or leaky ductwork. In hot and humid climates, colder surfaces in the envelope created by air conditioning the interior can create an elevated relative humidity (RH), or even set up a condensation plane where infiltrating moist air can reach its dew point temperature. For mold to grow, spores must be present along with nutrients under conducive temperature and humidity conditions. Inside or outside the home, mold spores are always present in the air and most common building materials have nutrients to support mold growth on their surfaces. When the RH adjacent to a surface is above 70 percent and the dry bulb temperature is between 40° and 100° Fahrenheit, the conditions are sufficient for mold growthii. Infiltrating air can raise the RH to that threshold level for limited mold growth on surfaces, or even saturate building cavities for extensive mold colonization. Repeated water intrusions through rain penetration of wall and roof systems or plumbing leaks into building envelopes can produce the same, and often more, catastrophic results.

In recent years the Texas insurance industry has seen a four-fold

Figure 2. Mold Claims and Average Dew Point Temperature Correlation

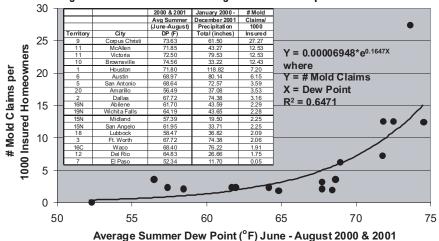
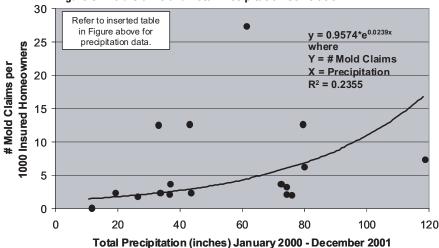


Figure 3. Mold Claims and Total Precipitation Correlation



increase in water damage losses with such claims accounting for 60 percent of all homeowner losses by 2002ⁱⁱⁱ. This crisis led to the implementation of policies with clearly stated mold exclusions and "buy back" provisions at limited mold remediation liability levels for covered water damage in homeowner policies^{iv}.

Those in the insurance field have long recognized the increased risk of homeowner property coverage in areas prone to natural disasters, and homeowners living in the affected areas are seeing greater property insurance cost increases than those outside such regions. The recent trends in mold coverage are another example of identifying,

and even separating out, high risk elements from mainstream homeowner policies and charging more for that additional risk coverage.

In the instance of mold coverage though, the combined insurance industry and individual state commission response has been especially swift and sweeping in states like Texas, with dramatic increases in such losses. As the understanding of the building science field grows regarding how construction practices, building operations and climate all factor into mold production, however, then a more refined approach may emerge that better assigns cost to the leading risk fac-

continued on page 30



Table 1. Mold Data Territory Summary for 2000 -2001

Territory	Sample Cities	Average Cost per Policyholder	Average Cost per Claim	Number of Claims Per	Percent Territory Cost
		per Year		1,000 Insureds	Above
					Statewide Cost
1	Houston	\$292.02	\$40,547	7.2	58.10%
2	Dallas	\$113.59	\$35,995	3.16	-38.50%
8	Galveston	\$232.24	\$33,203	6.99	25.70%
9	Corpus Christi	\$1,367.95	\$50,169	27.27	640.50%
10	Beaumont, Brownsville, Angleton	\$559.25	\$44,988	12.43	202.70%
11	Orange, Liberty, Victoria, McAllen	\$443.33	\$35,374	12.53	140.00%
999	Texas Statewide	\$184.74	\$38,997	4.74	0.00%

Source: Texas Department of Insurance (TDI). 2002B. "Mold Data Territory Summary," TDI,

ttps://www.apps.tdi.state.tx.us/inter/asproot/commish/news/clips2002.asp?id=83.

tors. This paper makes an initial, cursory attempt at better understanding the relationship between weather factors and mold claim activity.

Mold Insurance Claims Database

In 2000, the insurance industry first began uniquely coding and separating out mold losses from water damage claims. In 2001, TDI issued a Special Call for Homeowners Mold Experience for the period January 1, 2000 through December 31, 2001, to the top five insurance carriers representing 70 percent of the residential policies in the state. The policies covered single family (detached and attached) homeowners, but not mobile homeowners, condominium owners or renters. The Mold Data Territory Summary for the period January 1, 2000 through December 31, 2001 is reproduced in part in Table 1.

The first column of Table 1 identifies a territory from the state insurance benchmark rate system at that time. The territories are broad groupings of all 254 Texas counties, with single county territories established where there is a major city (*See Figure 1*). Of particular interest are the territories near the moisture laden air masses of the Gulf of Mexico. Territory 8, 9 and

10 consists of the counties and major cities immediately on the coast. The so-called second tier counties (one county removed from the coast), with the exception of Houston (Territory 1), comprise Territory 11^{vi} .

It is the number of mold claims (per 1,000 insured homeowners) that will be the basis for the correlations to key weather data parameters. The second column identifies sample cities in that territory which serve as the basis for weather data location selections.

Weather Database

Infrequent or short term exposure of low temperature surfaces to higher dew point air will not likely result in major mold damage, but if those conditions are prolonged, mold growth can be sustained. Generally, it is recommended that the dew point conditions be averaged over weeks or months when investigating the potential for condensation due to infiltrating air^{vii}. A three month average for dew point temperature is used in this analysis.

The weather database generated for the mold claim correlations encompasses three weather parameters considered relevant for mold development: dry bulb temperature, dew point temperature and precipitation. Only 16 of the 23 territories in Table 1 had sample cities with weather stations providing data for all three of the selected weather parameters.

Mold and Weather Correlations

Figures 2 and 3 plot the number of mold claims per 1,000 insured homeowners versus the average dew point temperature (for the summer months of June through August) and total precipitation, respectively, for the combined years of 2000 and 2001. The dry bulb temperature data was not plotted because average summer data for all cities were in the range sufficient for mold growth.

For sustained mold growth, the average moisture level at a building surface must be fairly high, generally 70 percent RH or greater, for weeks or months. At a 75° F dry bulb temperature, which is typical of a residential air conditioning setpoint, 70 percent RH is equivalent to a dew point temperature of 64.5°. In hot and humid climates, where average outdoor monthly dew point temperatures during the summer reach 64.5° F or higher, infiltrating air can generate 70 percent and higher RH to sustain mold growth on surfaces cooled to 75° F in building envelopes. Per Figure 2, all the territories that exhibit greater than the statewide average of 4.74 mold claims per 1,000 insured homeowners shown in Table 1, also display the highest average summer dew point temperatures of 69° F or greater, sufficient to create the mold growth conditions above. The highest mold claim and dew point Territories of 1, 9, 10 and 11 are the counties and cities along the Gulf Coast. Most of those same Territories also experience some of the highest average costs per mold claim, well above the statewide average of \$38,997 (Table 1). A simple exponential equation was applied to the data in Figure 2 to relate the number of mold claims to the dew point temperature. The resulting curve fit correlation achieved an R² of about 0.65.

Per Figure 3 though, no such trend of increasing mold claims with precipitation is seen among the scatter of data points. A review of 2000-2001 weather events for the Texas Gulf Coast revealed a few major weather events, including a record-breaking heat wave in 2000 and a tropical storm producing large rainfall in 2001, but no hurricane activity that might have trig-

gered large numbers of water damage claims in this two year period. The same simple exponential equation form resulted in a much poorer correlation of the number of mold claims and the precipitation amounts in Figure 2B with an R² of about 0.24.

Conclusions

This cursory analysis shows more humid territories along the Gulf Coast of Texas as more prone to incidences of mold and resulting mold claims. A statistical correlation between higher outdoor dew point temperatures and greater numbers of mold damage claims (per 1,000 policyholders) is clearly evident. However, no such clear correlation is evident between precipitation amounts and the number of mold damage claims.

These cursory conclusions must be tempered by several other considerations noted by TDI^{ix}. First, "mold, per se, was not a covered peril" under a homeowner policy, according to TDI. For a homeowner to be covered, the mold "had to have resulted from a covered peril, such as water damage from say a

burst pipe." Second, the TDI noted dramatic differences in "claims consciousness" in certain territories that pre-existed the dramatic rise in mold claims. TDI specifically cited Corpus Christi, where slab/foundation water seepage "claims rampant." were Coincidentally, Territory 9 was also "number one on the mold hit parade." Finally, the TDI data consisted of "mold claims reported in 2000 and 2001," which "might have arisen out of events that had occurred years earlier."

Notwithstanding all these other considerations, the consistent trend in mold claim increases above the statewide average seen in multiple territories with higher sustained outdoor dew point temperatures is worthy of strong consideration. The infiltration of moisture laden outside air and the formation of high percentage RH/condensation planes provide a building science basis for mold production in the envelopes of houses. If nothing else, this phenomenon could accelerate and worsen a mold situation initiated by a preceding covered water damage event. m

Resources:

The complete database is summarized on the Mold Resources Page of the TDI website, www.tdi.state.tx.us/commish/mold.html.

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- iii Mills, E., R. Roth, and E. Lecomte. 2005. Availability and Affordability of Insurance Under Climate Change: A Growing Challenge for the U.S., Ceres, http://www.ceres.org/pub/publication.php?pid=74.
- iv Texas Department of Insurance (TDI). 2002A. "Montemayor Further Expands Homeowners' Options," TDI, https://www.apps.tdi.state.tx.us/inter/asproot/commish/news/clips2002.asp?id = 49.
- v Yerak, B. 2005. "Allstate's Ads Push Agenda." Chicago Tribune, November 24, Business section, 1 and 3.
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- viii National Weather Service (NWS). 2000. Storm Signals, Houston/Galveston, Texas NWS Office, Volume 57, Spring 2001, Weather Records Shattered in 2000, http://www.srh.noaa.gov/hgx/stormsignals/.
- National Weather Service (NWS). 2001. Storm Signals, Houston/Galveston, Texas NWS Office, Volume 60, Spring 2002, 2001 Climate Summary, http://www.srh.noaa.gov/hgx/stormsignals/.ix TDI 2006.

Energy Environment

IRS Issues Procedures for Tax Reductions on Energy-Efficient Buildings

n June 2, the Internal Revenue Service (IRS) issued Notice 2006-52, which provides information on how commercial building owners or leaseholders can qualify for tax deductions by making their buildings more energy efficient. The commercial building deduction was enacted in the Energy Policy Act of 2005 and allows taxpayers to deduct the cost of energy-efficient property installed as part of a commercial building (the provision was codified in IRS Section 179D. This section relates to commercial buildings placed into service after December 31, 2005 and before January 1, 2008).

Under this provision, the deductible may be as much as \$1.80 per square-foot of building floor area for buildings that achieve a 50-percent energy savings target. Buildings below the 50-percent threshold may also qualify for a deduction of up to 60 cents per square-foot of building floor area if they meet a 16 ²/₃-percent energy savings target.

On publicly-owned projects, there is a provision that allows the credit to pass through to the "person primarily responsible for designing the building." This means that the architect or design-builder could take advantage of the deduction in these instances.

According to Notice 2006-52, if the three energy-using systems noted (interior lighting, HVAC and the water heating system and the building envelope) reduce annual energy power costs by more than 50 percent than a reference building, the taxpayer may receive a one-time deduction of up to \$1.80 per square-foot of the



The Hearst tower in New York is an example of an energy-efficient commercial building.

building. The notice also requires that a 50-percent reduction be accomplished completely through energy and power cost reductions from the HVAC, hot water and interior lighting systems. Buildings not meeting the 50-percent reduction may qualify for a partial deduction (up to 60 cents per square-foot) if one of the three energy-using sys-

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completely eliminates the use of hazardous chemicals, according to the company. It also eliminates secondary waste streams, as the dry ice disappears on impact. Cold Jet offers low air and ice consumption to provide for a cost-effective operation. According to information from the company, the Disaster Restoration system is ergonomic and intuitive, easy to operate, fast, effective and reliable.

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Booth #404: ICEsonic Blasts Mold with Dry Ice

The ICEsonic Model E from RSG Technology of Dover, N.H., is now available for the mold remediation industry.

The ICEsonic Model E is suitable for entry level dry ice blasting, according to information from the company. Effective for a large number of applications, the Model E weighs only 65 pounds and offers portability and maneuverability. The unit features a minimum blasting pressure of 70 pounds per square inch (PSI) and maximum of 145 PSI. The stainless steel, fully pneumatic system is easily maintainable, according to the company. It comes with a 16-foot hose, 10-inch aluminum nozzle and blasting gun assembly.

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COATINGS

Booth #406: Fiberlock Technologies Offers EPA-Registered Coating

Fiberlock Technologies is offering AfterShock™, an EPA-registered antimicrobial coating designed to kill residual mold and mildew remaining after pre-cleaning contaminated surfaces. AfterShock also inhibits the future growth and spread of mold and mildew on the cured film surface. Designed for residential and institutional buildings, the company says its durable, 100-percent acrylic sealant can be used on a variety of surfaces.

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BOOKS

Booth #807:

Mold Manual Gathers Remediation Information

Building Environment Consultants Inc. of Jupiter, Fla., is offering a manual on mold remediation. *Fungal Contamination: A Manual for Investigation, Remediation and Control*, written by Hollace S. Bailey, PE, CIAQP, CIE, CMR, provides access to information and procedures by gathering together the key information on mold remediation in one easy-to-read book.

According to information from the company, Fungal Contamination: Manual for Investigation, Remediation and Control was written so that someone with a minimal scientific background can gain the knowledge and understanding needed to address mold assessment, remediation and prevention or control of mold. The book is designed to help mold remediation professionals provide a better service, by giving a solid introduction to the field and dispelling misconceptions. It also doubles as an impartial reference source for others working to control mold and for those affected by mold in their homes and workplaces including facility managers, engineers, architects, building owners and maintenance workers.

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Booth #411: Multitasking Microban® X-580 Kills Bedbugs Too

In addition to its mold-control properties, Unsmoke-Microban Systems of Coraopolis, Pa., has announced that its Microban X-580 also kills bedbugs. Microban uses flower power (a naturally derived insecticide) to kill insects. According to information from the company, Microban is EPA-registered for use on mattresses. In addition, it protects stored fabrics against textile destroying insects for six months.

The product is a water-based bactericide, fungicide, deodorant and insecticide all in one formulation. One application kills mold, mildew, insects and bacteria odors and provides long lasting residual protection.

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Microban X580 Institutional Spray Plus is EPA-approved for both spray and ULV fog application. No mixing is required before application. It can be applied via sprayer to porous surfaces at a rate of 1,500 square feet per gallon.

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Booth #432: **Benefect®** Disinfectant and Fungicide

Benefect disinfectant from Sensible Life Products of Flambrough, Ontario, is an EPA-registered disinfectant that uses botanical ingredients that are FDAapproved for use in food or Generally Recognized as Safe (GRAS)-listed.

Rinsing or wiping is not required on construction materials due to these foodgrade safe ingredients. There are no warnings or precautionary statements on the label and no personal protective equipment is required during the

Benefeet

application of this product, therefore reducing liability. Benefect can be applied by pump sprayer, ultra low volume sprayers and electrostatic sprayers or

> simply as a wipe during the remediation process. A Category IV toxicity rating by the EPA makes Benefect disinfectant a

for contrac-

safe

tors involved in all water, mold or fire damage applications.

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DRYING EQUIPMENT

Booth #206: **Dryvex Unit Uses** New Technology to **Restore Flooded Buildings**

The patent-pending Dryvex MC4500 drying system from Ground Heaters Inc. of Spring Lake, Mich., restores flooded buildings and structures quickly and efficiently with a new DryvectionTM technology.



INFRARED CAMERAS

Booth #509: **FLIR Offers New Options**

FLIR Systems Inc. of North Billerica, Mass., is offering an affordable infrared camera designed just for building inspectors. According to the company, the lightweight BCAM™ can be used to quickly and easily highlight and analyze structural and moisture issues, store images and document results.

The BCAM measures infrared light to produce crisp thermal images on a 3.5-inch color LCD screen, showing the inspector damage that cannot be seen with the naked eye. The camera can be used to reveal wet surfaces behind enameled walls and wallpaper, track leaks to their source and monitor the drying process.

In addition, the company has announced that it will deliver fully radiometric jpeg image storage as a new upgrade to its InfraCAM™ and BCAM thermal imagers. This allows users to make any temperature measurement of any pixel after the image has been saved.

QuickView™ 2.0 thermal imager software allows the user to select different color palettes, level and span, or even a moving spot locator to zoom in on a target area. In addition, an MPEG 4 live video feature enables users to display real-time images through their PC. Similar to Windows Update technology, FLIR is offering automatic web updates for its QuickView™ 2.0 thermal imager software.

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Dryvection is a convectionbased drying system that utilizes heat and air movement by using outside air rather than recycled air to dry flooded buildings and their contents. The outside air is conditioned to low relative humidity and blown into the building through flex ductwork. As the fresh, dry air circulates throughout the building, it absorbs large quantities of moisture. A thermostat automatically controls the desired inside temperature while a second blower extracts the moisture-laden air out of the building. According to the manufacturer, this technology allows for quick drying and eliminates any potential mold or bacteria growth to the building.

The MC4500 provides an airflow rate of 4,500 cfm. It can handle up to 15,000 square feet at saturation, or up to 270,000 cubic feet of space, removing up to 900 gallons of moisture per day depending on ambient conditions. The unit weighs 6,500 pounds,

MOISTURE METERS

Booth #603:

Extech Humidity Alert Meter Displays Dew Point Reading

Extech Instruments, based in Waltham, Mass., has announced that its 445814 humidity alert meter has been awarded the National Health and Wellness Club Member Tested and Recommended Seal of Approval. Members evaluated the moisture measurement tool, giving it high marks in categories such as performance, quality, appearance and competitive advantages.

The humidity alert meter is designed to monitor environmental conditions such as temperature, humidity and dew point that set the stage for mold growth in laborato-

ries, storage areas, manufacturing assembly areas and other controlled environments. It features a user-settable alarm and will warn users, both audibly and visually, when adverse conditions occur. It also includes a remote probe that can either clip onto the meter or extend on

an 18-inch cable, where the user can take measurements behind walls, in ducts or in other difficult to access areas. The 445815 can be field-calibrated with the optional calibration kit and has a rear calibration adjustment pot with max/min and a reset function.



A large digit LCD screen allows for the simultaneous display of humidity, temperature and dew point. The meter measures humidity from 10 to 99 percent RH and temperature from 14° to 140° Fahrenheit.

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and features an adjustable hitch that can be set up for either a 2 5/16-inch ball or pintle hook for towing capabilities, and can be towed behind vehicles that can haul up to 1,000 pounds of tongue weight.

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Booth #619: Interlink Offers a New Way to Dry

According to Interlink Supply of

tes

Salt Lake City, Utah, the thermal energy systems (TES) it offers drastically reduce structural drying time and the chance for mold to grow. A single unit can be used for small to mid-size jobs, or multiple units can be used on large jobs.

Big or small, TES and the Reets Evaporative Method will dry the structure faster than traditional drying methods because the equipment concentrates heat on the water trapped inside, according to the company. The TES power plant generates high temperature in a unique heat exchange fluid. Then it

> pumps the fluid through its insulated hoses to the thermal exchange (TEX) units. The TEX unit transfers the heat from the fluid to the air and cranks it out to an enclosed area (tenting or carpet) floated using air movers. According information from the company, it is more portable and less expen-

sive than larger units and dries in record time.

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Booth #119: Air Quest Systems Offers Dependable Dehumidifiers

Air Quest Systems Inc. (AQS) of Kiln, Miss., manufactures light-weight, durable and dependable desiccant dehumidifiers varying in sizes from 900 to 10,500 cfm.



The latest piece of equipment is the 1200 process cfm condensating desiccant known as the DESCON-1 "Go To War With Moisture." The DESCON-1 no longer requires the operator to vent the react air from the space as it's dried. It includes a pumpout station that pumps out the moisture removed from the air

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into a large bucket or down a drain line. The unit features stainless steel construction and is only 32 ½ inches wide with large casters for easy maneuverability.

The equipment is designed to handle harsh environments, from shipyards to water damage restoration jobs. In addition, the company is able to customize equipment to suit users' unique needs.

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TOOLS AND EQUIPMENT

Booth #201:

New Restoration Kit from Dri-Eaz

Dri-Eaz of Burlington, Wash., is offering an all-in-one moisture measurement system for restorers. The new Restoration Kit includes the full-range MMS Plus and the Hammer Probe—together with all the accessories needed to assess virtually any water damage situation.



According to information provided by the company, the star of the kit is the full-range MMS Plus; it is three meters in one, with hygrometer, pin and pinless measurement modes. The MMS Plus now measures 0 to 100 percent relative humidity (RH) and 32° to 122° Fahrenheit with the HumistickTM probe (also compatible with HygrostickTM probe), pro-

SOFTWARE

Booth #821:

Moisture Mapper Software Manages Projects

Moisture Mapper, from Moisture Mapper International Inc. of North Reading, Mass., is the first available software for managing all aspects of a water damage restoration project. Available for a monthly user fee, the web-based software allows drying contractors to centrally manage operations both locally and at remote offices, accurately justify component costs and format technical evidence of the drying project.

Moisture Mapper guides the water-damage restoration professional stepby-step through industry-accepted standard procedures, generates standardized technical reports that document conditions throughout the restoration process and identifies the cost components of the project as they relate to the drying of materials. It also provides blank forms needed by project managers.

According to information provided by the company, insurance adjusters and property managers will find that the Moisture Mapper software provides a technically meaningful methodology, simple standardized reports and a potential database of drying standards by geographic regions.

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viding temperature, dew point, grains per pound, moisture content and data logging. It measures moisture in wood, drywall, concrete and concrete block, stucco, plaster, masonry and other build-

ing materials. It can store and download up to 1,000 measurements from as many as 20 different jobs. The kit also includes logging software and all standard accessories.

Also included is the Hammer Probe, which can penetrate through structural materials like sub-floors and framing to a depth of 1.38 inches. The insulated pins determine the exact moisture content of wood or the wood moisture equivalent (WME) percentage of other materials.

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Booth #104: Taraco Launches New Rocket Sprayer

Taraco Enterprises of Duke, Okla., is offering its patented Rocket Sprayer. According to information provided by the company, the easy-to-use Rocket Sprayer operates with all types of mold remediation and decontamination chemicals.

The unit is actually two sprayers

in one: a backpack and cart sprayer. Durable, yet compact and lightweight, the unit offers a continuous and consistent adjustable spray pattern. According to the company, the 12-volt battery-operated, 5-gallon unit will spray more than 70 gallons on one battery charge.

The Rocket Sprayer has been field-tested in decontamination. It



features molded receptacles in the tank for pump pressure adjustment and battery recharging. It includes a high quality, 15-foot hose and a spray wand with an adjustable conejet tip. Different sized fan tips are available. The unit comes assembled and ready to use, with a battery charger included.

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Booth #600: Mighty Machine Cleans Mold-Contamination

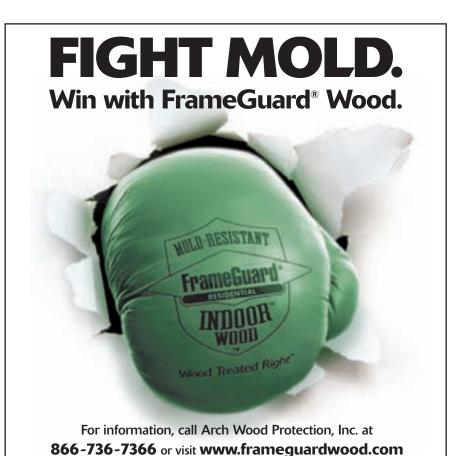
The Mighty One is a new, powerful cleaning system from Morantz Ultrasonics of Philadelphia.



According to information provided by the company, traditional problems with cleaning mold are solved with this system. Ultrasonic cleaning is the application of mechanical sound waves to the cleaning process. The process utilizes a digital generator powering transducers submerged in a tank of hot water. Utilizing this digital sound wave technology, The Mighty One can clean mold-contaminated items of all sizes quickly and easily. With the touch of a lever, a unique pneumatic lift system lowers and raises large, heavy items into and out of the tank. Crevices and cavities are cleaned with precision.

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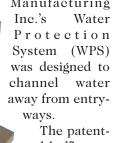
roduct Parade



SILLS AND FLASHING

Pemko's Protection System Directs Water from Doors

Ventura, Calif.-based Pemko Manufacturing Inc.'s



ed baffle sys-

tem's pressure equalization technology uses the wind's natural pressure to redirect water before it can collect and cause damage. As rainwater accumulates near the door's opening, the sill collects the water on the underside of the door. The wind's natural air pressure forces

the water collected in the pan system under the sill, where specially designed redirection chambers route the water back out to the front side of the sill and away from the doorway.

The sill surpasses ADA/WDMA/CSA Standards and is warrantied to remain leak-proof, rot-proof and maintenance-free, according to the company.

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TotalFlash™ Integrates Moisture Control Solutions

Mortar Net USA Ltd. of Gary, Ind., has introduced the TotalFlash cavity wall drainage system. The new, fully-integrated flashing system combines several moisture control methods into one easy-to-handle, easy-to-install flashing panel.

The product uses a polyester mesh that prevents damming by mortar and grout droppings. It features a stainless steel drip-edge, end dams and pre-attached termination bars. No-clog weep tabs direct moisture away from the cavity. Precisely defined lap joints indicate exactly where to overlay the flashing for protected seams.

According to the company, the product can be installed by one person and is available in 5-foot panels.

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HOUSEWRAP AND BARRIERS

Valéron Vortec™ **Channels Water Away**

Valéron Vortec, from Valéron Strength Films of Houston, is a moisture management solution for the building and construction industries, engineered specifically to facilitate



drainage of moisture in wall cavities. Vortee is a thin, flexible plastic film micro-perforated and engineered with a pattern of dimples and bumps that is installed on the exterior of a home or commercial building during construction. The engineered-surface facilitates water drainage by channeling water that gets past the siding, away from a structure's exterior wall surface, thereby reducing the chance of mold and mildew.

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SUBFLOOR

Georgia-Pacific Provides Water-Repellent Sub-Floor

Atlanta-based Georgia-Pacific has introduced a new solution for residential builders interested in protecting sub-floors before the roof and exterior walls go up during the initial stages of the construction process. Plytanium® DryPly™ Plywood, with a water-repellent coating, absorbs up to 40 percent less water than plywood without the protective coating for up to four weeks—the average time sub-floors are typically exposed during the construction process.

Using Plytanium DryPly plywood for sub-floors can help builders avoid problems such as delamination, warping and excessive swell of the edges. In fact, the company is offering a 100 percent builder satisfaction guarantee against delamination, edge swell and joint sanding.

Plytanium DryPly plywood is available to professional dealers and retail lumber yards exclusively through BlueLinx Corp.

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Turn to CertainTeed Building Science for greater knowledge and better performing buildings. Building Science reaches beyond any one component of a structure; it focuses on all materials interacting as a fundamental system. CertainTeed understands how the relationships between the building envelope, mechanical systems and occupants affect the performance of any building. Our Building Science department works regularly with building professionals to assist them in designing and constructing buildings that achieve maximum performance.

Bring our knowledge to your next assignment. www.certainteed.com/buildingscience 800-441-9850





c o n t i n u e d

COATINGS

FrameGuard® Mold-Resistant Coated Wood Introduced

Arch Wood Protection Inc. of Smyrna, Ga., has introduced FrameGuard to protect wood from mold and other pests. The chemicals enable wood in interior locations to resist mold, termites and fungal decay.

The coating is applied by a spray or dip at a wood treating plant, OEM plant, lumber mill, distribution yard or other facility where coverage can be precisely controlled. The solution is a water-based, proprietary combination of patented and EPA-registered active ingredients that protect against mold and wood-destroying organisms. In addition to its use on lumber and plywood, the coating can be applied to oriented strand board, parallel



strand lumber, laminated veneer lumber and wood l-beams. The coating is readily identified by a green colorant mixed in with the active ingredients.

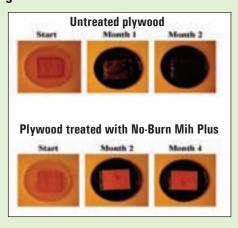
"FrameGuard coated wood has been shown to be an effective method for preventing the growth of mold and fungi. It can also help to protect suppliers and contractors against litigation claims," says Scott Hoffman, business manager for interior treatments at Arch Wood Protection.

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No-Burn Offers Protective Coating

No-Burn® Inc. of Wadsworth, Ohio, offers a non-toxic, non-carcinogenic product that can be applied during construction or post-construction to completely protect against mold growth and fires.

All of the company's mold-resistant coatings carry a Class-A Rating and meet or exceed all laboratory test standards from such testing organizations as ASTM, Underwriters Laboratories and the National Fire Protection Association. In addition, a grow-



ing number of lenders around the country are giving discounts on mortgages for a home that is protected by No-Burn, according to information provided by the company.

Homeowners may save up to one-half percent on their effective APR on 15- and 30-year mortgages. For about one percent the cost of a home or business, No-Burn says it can treat these structures. The company says that some insurance groups are offering 15 percent savings on homeowner's insurance if its products are used.

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Carlisle Rolls Out Its Barriseal Vapor Barrier System

Carlisle Coatings and Waterproofing of Wylie, Texas, offers air and vapor protection with Barriseal. This above-grade system can be roller- or spray-applied to a variety of concrete surfaces to prevent air and vapor intrusion.



Barriseal is a water-based asphalt emulsion modified with a blend of synthetic rubbers and special additives, which cures to form a flexible, monolithic air/vapor barrier for many substrates in eavity wall construction.

Barriseal-R is roller-applied and Barriseal-S is applied using special spray equipment. The barrier can be applied to concrete, green concrete, CMU or exterior gypsum structural walls to be covered with an exterior finish wall system. The air and water vapor barrier is non-flammable and solvent-free, and performs with strong elongation and recovery. The seamless membrane features a smooth, clean finish.

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Grace Construction Introduces Perm-A-Barrier® VP

Grace Construction Products, headquartered in Cambridge, Mass., has introduced Perm-A-Barrier VP, an acrylic air barrier membrane.



Perm-A-Barrier VP is designed for use in wall assemblies above grade and is suitable for new and remedial commercial and residential construction. It is applied by spraying it directly onto substrates. According to the company, this application method requires minimal surface preparation and eliminates the need for fastener holes that can promote air and water penetration.

Once cured, Perm-A-Barrier VP forms a "breathable" membrane that allows the escape of water vapor, yet acts as a water drainage plane. It provides UV-resistance and can be left exposed for up to five months before cladding is applied.

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GreenGuard® Ultra Wrap **Keeps Wall Systems Dry**

Lake Forest, Ill.-based Pactiv Corp.'s building products division is offering GreenGuard Ultra





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Wrap, a nonwoven and non-perforated housewrap.

According to its maker, Ultra Wrap reduces the risk of mold development and preserves the energy characteristics of the home by protecting against air and moisture leaks at the wall system. Constructed from a special non-perforated film, the product is able to achieve one the industry's

highest permeance levels.

The product features a plastic reinforcement, which provides added strength and durability. It offers tear resistance and UV-stability for up to four months. Additionally, its translucent design makes it easy to find studs, edges, corners and openings for hassle-free installation.

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Greenguard, ARMR Rank Top 10 States at Risk for Mold

ontrary to popular belief, climate is not a good gauge for mold risk, according to a new ranking of states at risk for mold contamination on commercial and residential property. In the relative hazard ranking model developed by American Risk Management Resources (ARMR) and now being used by Greenguard Environmental Institute (GEI), "dry states" intermingle with predictably high-risk mold zones, but Texas beat them all (See What's Weather Got to do With It on page 28).

The GEI/ARMR relative hazard ranking model was developed by comparing mold losses on insurance claims with premiums paid on property and liability coverage in each of the 50 states. The hazard

ranking model does not reflect claims associated with the 2005 hurricanes that struck the Southeastern United States.

"Mention mold right now, and the Gulf Coast comes to mind first, but the contamination on real estate hit by hurricanes was generally less significant overall than mold growth caused by inferior building materials or poor construction," said Carl Smith, chief executive officer and executive director of GEI. "It's counterintuitive to think of shopping centers in Phoenix or casinos in Las Vegas as being at risk for mold, but it makes sense when you examine the causes of mold and problems often caused by modern building practices and materials."

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States at Risk for Mold Contamination

Top 10Relative Hazard Mold Ranking
Texas
Florida
Oklahoma
South Carolina
Nevada
Arizona
California1.73
South Dakota1.47
Tennessee
Kansas
Bottom 5Relative Hazard Mold Ranking
Wisconsin
West Virginia 0.07
Alabama
Massachusetts
Minnesota

Insurance Companies Still Battling Katrina Lawsuits

Numerous lawsuits debating "wind vs. water" damage are still pending along the Gulf Coast, more than a year after Hurricane Katrina.

In May, U.S. District Judge L.T. Senter Jr. ruled that provisions in a State Farm Fire and Casualty Co. policy that exclude certain damage from Hurricane Katrina are unenforceable, according to the *Associated Press*.

The case centered around a couple whose Long Beach home was damaged by the storm. According to the article, the couple argued that the wording of their policy's "flood exclusions" were ambiguous and could not be enforced.

Senter ruled that the insurance company cannot rely on an "ambiguous" language in a clause that introduces what events are excluded from coverage. The judge did agree with State Farm, however, that tidal surge is not covered, the article said.

In a similar case involving Allstate Corp., Senter ruled that the policies

excluding coverage of damage caused by Hurricane Katrina's tidal waters are valid and enforceable.

The Gulfport, Miss., couple at the center of that case had also alleged that the wording of their policy's flood exclusion was ambiguous and thus could not be enforced.

Senter decided that "the exclusions are drawn quite broadly, and they have the clear purpose of excluding damage caused by inundation from coverage."

Meanwhile, more than 240 Gulf Coast homeowners have filed a joint lawsuit against Nationwide Mutual Insurance Co. for refusing to cover property damage from Hurricane Katrina, according to *The Sun Herald*. The federal suit alleges that Nationwide denied the policyholders' claims without investigating whether wind or water was responsible for damage. The plaintiffs allege that the insurance company denied many claims on the basis of a "one-size-

fits-all" engineering report that blamed all of the damage on storm surge, according to the article.

Similar suits had been filed in Florida regarding the series of hurricanes that struck in 2004.

A July article in the *Capital Bureau* says that lawyers for Citizens Property Insurance are appealing a ruling that the company should pay for the damage done to Florida homes caused by hurricanes, even though the insurance company judged the damage to have been primarily caused by flooding. A similar appeal was made in May by Florida Farm Bureau Casualty.

The lawyers for the hurricane victims argue that Florida law required insurers to cover a home destroyed by wind, even if flood water caused some, according to the article. The insurance law has since been revised, limiting coverage to the damage the homeowner can prove was caused by the wind.

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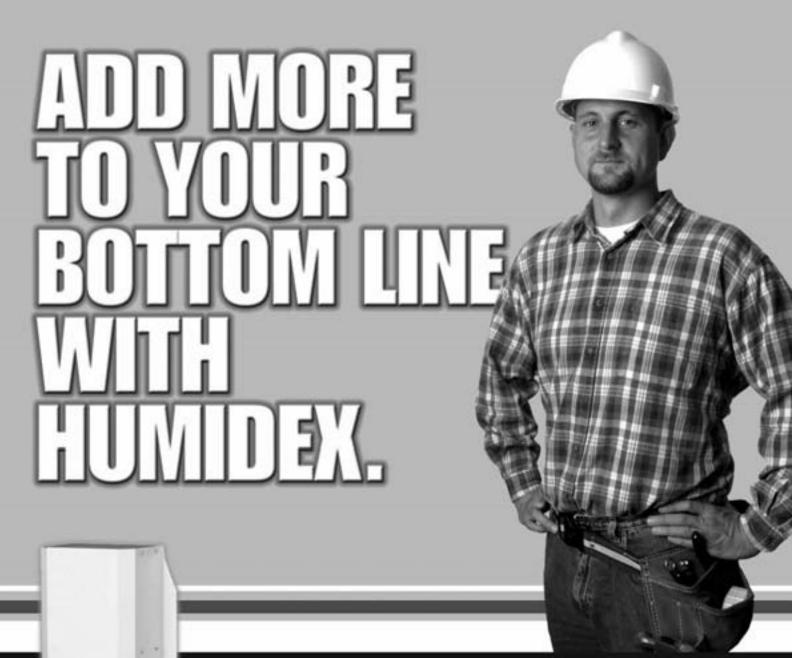
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35	Arch Wood Protection	866/736-7366	770/801-1990	www.frameguardwood.com
10	Carlisle Coatings & Waterproofing Inc.	800/527-7092	972/442-0076	www.carlisle-ccw.com
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45	Humidex Atlantic	866/486-4339	516/204-8118	www.humidexatlantic.com
47	Indoor Air Quality Association	301/231-8388	301/231-8321	www.iaqa.org
50	Infared Solutions	800/760-4523	763/551-0038	www.infaredsolutions.com
35	Microban Systems Inc.	800/332-6037	412/262-7150	www.microbansystems.com
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7	National Gypsum Co.	800/628-4662	800/329-6421	www.nationalgypsum.com
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Remodeling Industry Sees Growth—Mold Growth

ometimes mold growth is the motivation to gut a room and start over with a new design. Sometimes it's the unpleasant discovery once fixtures are moved and walls are torn down. Either way, mold and moisture problems and remodeling are closely linked. With more people coming to that realization, it's only a matter of time before mold removal has its own television show on one of the home design networks ... well, maybe not. However, the remodeling misadventures below have come straight from the consumer press.

Redskins Training Facility Treated for Bacteria, Mold

The Redskins have remodeling been their training facility in order to keep away infection causing bacteria mold, according to an article in the Fredericksburg, Va.,



addition to a new Jacuzzi, the facility has received Free Lance-Star. In new carpeting and a fresh coat of paint, all sprayed with the antimicrobial treatment SportsAide, from SportsCoatings of Rochester Hills, Mich. According to the article, this is the first team in the NFL to use the product, which is designed to control mold, bacteria, The antimicrobial protection is primarily an fungi and algae.

attempt to prevent infections caused by the bacterium methicillin-resistant Staphylococcus aureus, or MRSA, according to the article. The infection can be transferred through contact with infected players or objects hosting the bacteria. In the last two years, there have been five cases of Redskins players being

In addition to spraying the antimicrobial, each air infected with the bacteria. vent in the facility was checked for mold; mold growth was removed from one vent near the trainer's room. An ultraviolet light filtering system has been

installed in the whirlpool near the locker room, which has also been treated with the product. According to the article, the product will soon be applied to FedEx Field.

Hard Rock Cleans Up Its Act

Remodeling can lead to some nasty surprises, as a shop in the Seminole Hard Rock Hotel and Casino complex in Hollywood, Fla., discovered in July, according to an article in The Miami Herald.

Larry Carino, spokesperson for Tequila Ranch, told the newspaper that the restaurant had knocked out a kitchen wall as part of its plans for expansions when the mold was discovered.



Meanwhile, next door The Body Shop had been working to renovate its mold problem—the store's assistant manager said the mold growth covered the back of the store from floor to ceiling and was also in the store's ventilation system. The assistant manager told the paper that she and six other employees had become sick as a result of

Seth Norman, director of the National Association of Mold Professionals, spoke with the newspaper and said that the process of renovating an establishment that has a mold problem can take days or weeks, depending

"The store has to be completely sealed off, the air has to be contained, exteriors have to be removed, and the interiors have to be treated," Norman told

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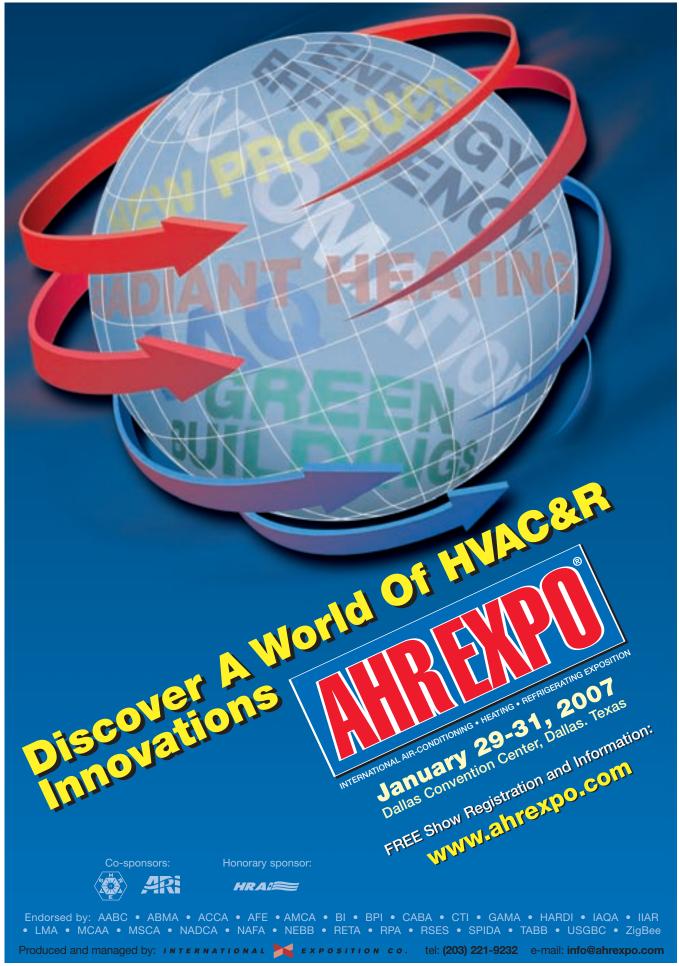
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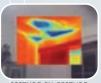


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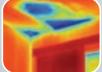
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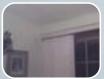
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