

BILLIONS AT STAKE!

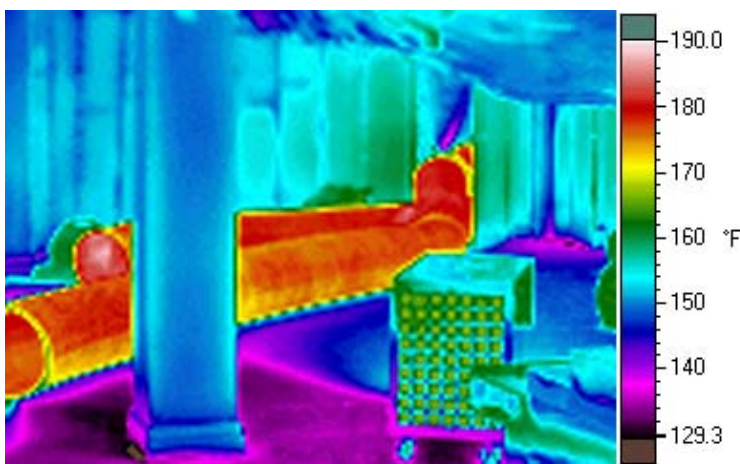
Heat Treatment Method Provides Water Damage/Mold Relief

Escalating water damage and mold liability could cost insurers and property owners

By Alan Forbess

For insurers facing extraordinary exposure from Hurricanes Katrina and Rita, the bad news continues. Serious mold contamination is now threatening water-damaged homes and commercial properties throughout the region. With losses estimated to rise beyond \$90 billion in flooded New Orleans and the Gulf Coast, the more than 15,000 adjusters dispatched aren't nearly enough to handle the region's estimated two million claims. Hurricane Wilma and recent flooding in the Northeast are only compounding the problem, for where there's flooding that is not addressed immediately, mold growth and resulting claims will surely follow. Moreover, the hurricanes may just be the start of painful times for insurers and property owners if the disruptive weather patterns predicted for the rest of the century by Purdue University researchers prove correct.

With all this bad news piling up, the insurance and real estate industries could use some good news for a change. A revolutionary new heat treatment process established in California is looking like it could be the silver lining to a very cloudy period, providing an alternative methodology which could save the insurance and real estate industries billions of dollars. ThermaPureHeat may be a big



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part of the solution. ThermaPureHeat has proven to be an effective alternative to traditional demolition-based remediation and building dry-out methods, potentially saving US insurers billions of dollars over the next several years.

The process, developed by E-Therm, an environmental remediation innovator based in Ventura, Calif., uses superheated ... air to disinfect, decontaminate, and dry out buildings in much the same way heat is used to pasteurize milk and kill bacteria in wine.

In the ThermaPureHeat process, technicians use propane-powered portable heaters and air blowers to inject superheated air into the affected space, raising the

temperature of a single room or entire structure to as much as 160 degrees Fahrenheit for several hours. Heat has shown to be effective in destroying active mold growth sites, and kills viable mold spores, bacteria, viruses, insects, and other heat-sensitive pests and organisms. Heat also accelerates the off-gassing of odors and toxins, even in inaccessible areas, without the use of chemicals. One of the main benefits of heat is that the proper application can dry out wet buildings much quicker than the traditional method of simple air movement and dehumidification typically used by flood restoration contractors.

Whether applied to aid in disaster recovery or in addressing

more routine water intrusion problems, insurers and property owners are finding that heat offers an effective alternative or adjunct to costly traditional demolition-based mold remediation and flood restoration.

Used in conjunction with limited “remove and replace” remediation or as an alternative to it in some instances, the heat treatment process could minimize liability and increase clearance testing success rates. Heat also allows the contractor to treat many building materials in place, avoiding the cost and expense of unnecessary removal of walls, flooring, cabinetry and furnishings.

Drawbacks of Traditional Mold Remediation

Traditional mold remediation typically includes limited or extensive demolition of impacted building materials, and extensive cleaning using techniques such as wire brushing, sanding, HEPA vacuuming and microbial wipe down. This has been the standard mold remedy, which is costly and time consuming. As with all response actions, the more extensive the tear down the higher the build back costs.

“Cost escalates when suspected mold requires the tear down and build back of structures that may be salvageable,” says Joe McLean, CEO of Alliance, a Calif.-based environmental contractor that deals extensively in mold and asbestos remediation. “For instance, if a consultant specifies removal of a 4-foot perimeter on four walls because moisture has wicked up one, the tear down and build back of showers, cabinets, countertops and such can significantly increase costs.”

Because insurers often cover building structures, their contents, as well as loss of use, long remediation projects that vacate the occupants for weeks or months can also rack up high secondary costs. The cost for replacement housing, meals - or

more significantly, the cost of insuring lost business - can, in fact, sometimes exceed remediation costs.

Inaccessible areas such as wall cavities, crawlspaces, headers, doorjambs, and vapor barriers present another dilemma. Either spend prohibitively to reach, remove, and replace building structures in these inaccessible areas - or leave them with potential live mold or mold spores which could pose a re-infestation hazard.

Removal and replacement of mold-affected areas can also be complicated by other factors - such as when building structures like studs or floor joists are structurally necessary, or when historical features such as frescos, carved wood, or decorative plasters prove difficult or prohibitively expensive to replace.

Reining in Mold Liability

Some in the industrial hygiene community feel that the sky-high cost of mold liability can be brought back down to earth by refocusing on the basics.

“Mold remediation today is stuck in the mindset of early asbestos remediators who believed that everything had to be ripped out regardless of the cost,” says Michael Geyer, P.E., C.I.H., C.S.P., who’s President of Kerntec Industries, a Calif.-based environmental consulting firm. “Remediators later learned that asbestos could be more effectively

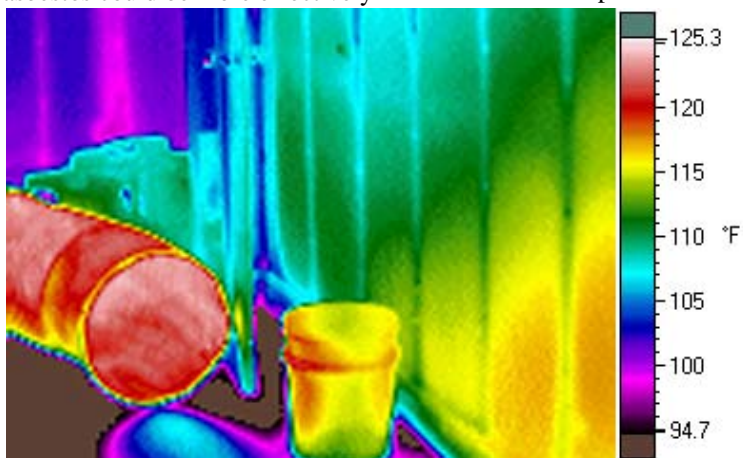
managed in place at lower cost in many instances; the same is true of mold today.”

According to Geyer, the industrial hygiene community has been focusing on the symptom - mold - while failing to properly address the cause - moisture.

“If physical removal is the only acceptable remediation method, you may as well demolish the building,” says Geyer. “Because you can’t simply scrub mold off the surface when its roots grow into the substrate.” Geyer explains that mold, as a fungus, is a plant without chlorophyll whose roots grow into the substrate of building materials and whose spores are like the seed-bearing fruit of a tree.

“To properly handle mold, you have to handle the moisture problem,” adds Geyer. “Applying heat through a process like ThermaPure’s is not only lethal to mold and other biohazards like bacteria and insects, but it also dries out the substrate, structure, and architectural elements. This helps prevent future recurrences since the substrate is no longer hospitable to growth.”

“Mold in a wall cavity doesn’t necessarily need to be removed as long as it’s effectively killed and not part of the occupied space,” says Geyer. “In instances of mild to moderate water intrusion of short duration, substrate removal is usually unnecessary and unwarranted except when visibly



ThermaPureHeat also accelerates the off-gassing of odors and toxins, even in inaccessible areas.

contaminated or when architectural elements are compromised. That's where heat treatments like ThermaPure can be effective for managing mold in place. It penetrates cracks, crevices, and typically inaccessible areas like wall cavities at a fraction of the cost of removal and replacement."

Don't Demolish the Bottom Line

When a water loss incident with detectable but no visible mold affected office space at a Juvenile Hall in a Monterey County, Calif., gross removal including the impacted wall cavity was estimated at \$20,000. Instead, the County opted to manage the mold in place using the ThermaPure process. The impacted area was heated to 160 degrees Fahrenheit while maintaining 145 degrees Fahrenheit in wall cavities and other inaccessible spaces in excess of two hours. Mold remediation protocol including critical barriers, negative air containment, and HEPA vacuuming were implemented as well.

Afterward, post remediation viable samples analyzed by Hygeia Labs of Pasadena, CA revealed no viable mold/fungi detected within the impacted wall cavity. Costly gross remediation was avoided and inaccessible areas received additional drying. The savings to the County using ThermaPure in lieu of gross remediation was \$17,000.

Because ThermaPure treating a structure generally takes less than eight hours, no multiple day move outs are required. This minimizes business disruption and loss as well as any secondary costs such as for housing or meals.

A Case Study

Recently, a large investment group purchased a student housing complex at a major Southern California university. During the due diligence period,

building inspections revealed water damage or elevated moisture levels in 109 of 122 residential units, along with an extensive termite problem. Complications included an accelerated restoration schedule, budget constraints, and a summer occupancy schedule which was already booked.

The consultant recommended the ThermaPureHeat process to restrict demolition to only those areas where physical damage or visible mold growth was present. Of the 109 units needing remediation, only 10 units required extensive demolition, including cabinetry or shower stall removal. ThermaPure effectively killed the mold in inaccessible areas, allowing minimal removal and replacement as part of site remediation.

This significantly cut required restoration time and costs. All units were HEPA cleaned and sampled as part of traditional post remediation testing, with all 122 units passing. By working in selected buildings and moving quickly through the complex, the university was able to house specialty groups and camps throughout the summer, meeting its stated obligations and generating revenue without interruption.

Total savings were estimated at \$4 million using ThermaPure compared to traditional remove and replace remediation, which would have closed the facilities to summer use and required extensive tear down and rebuild expenditure. The heat treatment simultaneously eradicated the termite infestation.

"Heat treatments like ThermaPure's are a win-win for the insurance company and property owner," says Michael Geyer, P.E., C.I.H., C.S.P. "Heat is even being used to achieve final clearance on tough traditional remediation projects where typical methods often fail. It can be used to salvage moisture-damaged contents instead of disposal and can help preserve historical

properties in lieu of destructive removal."

PDG Environmental, a national environmental remediation contractor, used the ThermaPure process in New Orleans after recent hurricane activity. "We used it to polish off any mold or bacteria left after traditional remediation on a commercial site that was flooded with sewage-contaminated water," said John Regan, Chairman and CEO of PDG Environmental. "It dried out the building extremely quickly and helped us meet clearance levels."

Geyer adds, "Had the heat treatment been widely used in New Orleans and other hurricane ravaged areas, buildings with minor to moderate water damage could have been rapidly rehabilitated for far less than typical remove and replace remediation."

Since ThermaPure can raise temperatures in targeted areas or entire structures to levels lethal to biological pests, it has been successfully used against mold and fungi, bacteria and viruses, insect infestations, and to improve indoor air quality by accelerating the off-gassing of odors and toxins.

Alan Forbess is President of Criterion Environmental, a full-service environmental consulting firm based in Ventura, California. He is a Registered Environmental Assessor in the State of California and a Certified Microbial Consultant with the American Indoor Air Quality Council. He has provided expert witness testimony in several legal cases and managed over 1,000 mold assessments for commercial, residential and educational properties. For more info, visit www.thermapure.com; call 805-641-9333; fax 805-648-6999; email info@thermapure.com; or write to E-Therm, Inc. at 180 Canada Larga Road, Ventura, CA 93001.