

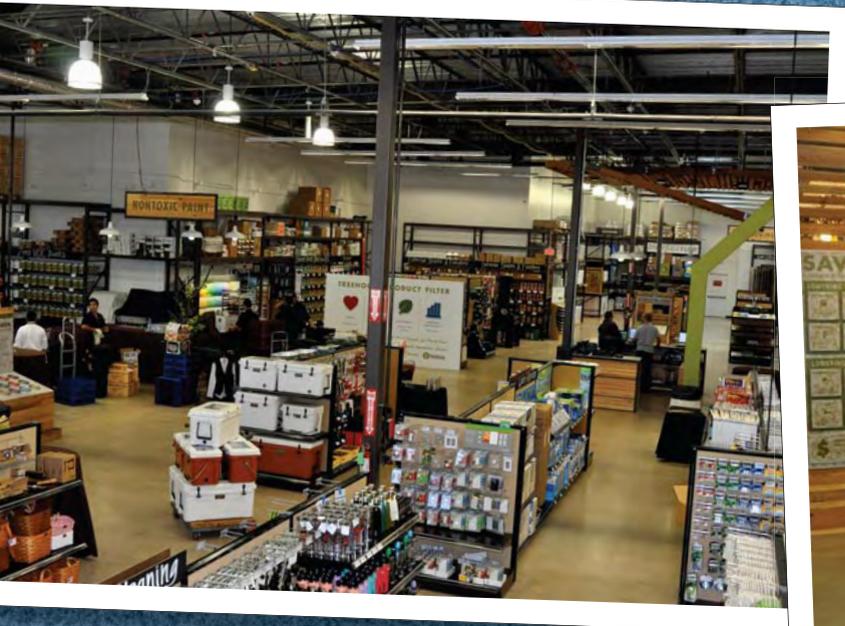
Building Green Product Dealer

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The Dealer
Makes It Happen



Treehouse Plants A New Model For Serving The Green Building Marketplace



A Prescription for Structural Pasteurization

A growing number of medical professionals are prescribing structural pasteurization as a proactive health solution in sick buildings, particularly for those with respiratory conditions or compromised immune systems.

It turns out that the structures that we live, work and play in can make us very sick.

Lurking in the walls, attics, crawlspaces, and subflooring—under sinks, toilets, showers, and other unseen areas—moisture damage from rain, plumbing leaks, sewage spills, and even humidity can cause unseen growth of mold, fungi, bacteria, and viruses.

Other dangers that can lurk within a structure include chemical odors, tiny dust mites, insects and rodents that could serve as vectors for disease.

These unseen dangers can lead to a serious case of “building-related illness,” leaving occupants feeling ill or exhibiting a variety of symptoms without knowing why.

While many of these potential threats can be tested for, it can be hard to reach, test, and remove them in all the walls, cracks, corners, and crawlspaces that remain inaccessible to human hands. Tests are expensive and can add up quickly, particularly if the potential cause of illness is unknown and multiple tests are conducted in search of an answer.

As a result, medical professionals today are recommending, and even prescribing, structural pasteurization as a proactive health improvement solution particularly for those with severe asthma, allergies, compromised immune systems, and other

serious conditions.

Structural Pasteurization

If structural pasteurization sounds familiar, it is an application of the principles that Louis Pasteur used to reduce microbiological caused food spoilage – most famously milk – in the mid-1800s, but applied to building structures.

Structural pasteurization is an engineered process in which high temperatures up to 160 °F are introduced for several hours to a structure or part of a structure to reduce bioorganisms to acceptable levels without damage to the structure.

As Pasteur asserted, at certain temperatures heat kills a variety of harmful bacteria and organisms in food. Heat applied to a building structure is just as effective in destroying active mold growth sites, bacteria, viruses, protozoa, insects, and other heat-sensitive pests and organisms. Formaldehyde, VOCs, and second-hand smoke are among other indoor irritants that can be addressed with heat.

“Structural pasteurization may provide doctors with a tool to treat the source of the problem, which may be within the individual’s residence or workplace, not just the symptoms,” says Chris Landon, MD, a pediatric pulmonary specialist and graduate of Stanford Medical School, who practices

Heat applied to a building is effective at destroying active mold growth sites, bacteria, viruses, protozoa, insects, and other heat-sensitive pests.



The ThermaPureHeat process applied to a residence.

in Southern California.

Dr. Landon has prescribed structural pasteurization as a proactive health solution for those with severe asthma or other serious respiratory conditions.

“Structural pasteurization kills dust mites,” explains Dr. Landon. “Heat denatures the protein in the insect, feces, and dead insect body parts to reduce the allergic response. It will also kill mold, fungi and bacteria and dry out the structure, making it difficult for it to grow back.”

In one case, he prescribed it to good effect for a 3-year old boy who was allergic to mold in his home and previously hospitalized for asthma. “Reducing asthma and allergy triggers in a structure can reduce the patient’s reliance on inhaled corticosteroids, which can have negative effects when used long term,” says Dr. Landon.

Structural pasteurization will kill mold, fungi and bacteria while drying out the structure, making it difficult for them to grow back.

The Role of Filtration

Structural pasteurization, it should be noted, is not just a matter of applying heat to a structure. HEPA filtration plays a critical role in the treatment process by eliminating airborne contaminants that already exist, or that are stirred up during the convective heat process.

The combination of heat application with HEPA filtration, known as ThermaPureHeat, was co-invented and commercialized by David Hedman, a Stanford educated inventor and is available from licensed contractors throughout the United States and Canada.

In the ThermaPureHeat process, technicians use portable or stationary heaters, fans, and air scrubbers to move superheated air into the affected space, raising the temperature of a single room or entire structure to as much as 160 °F for



The ThermaPureHeat process applied to an entire building.

several hours.

The special HEPA air scrubbers are designed to capture increased airborne particulate matter, such as mold spores and insect parts found in household dust, which could otherwise aggravate applicators or sensitive individuals if not properly captured. The heat also accelerates the off-gassing of odors, VOCs and toxins even in inaccessible areas.

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. In instances of mild to moderate water intrusion of short duration, substrate removal may be unnecessary and unwarranted except when visibly contaminated or when architectural elements are compromised.

That's where heat treatments like ThermaPureHeat

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.

The Day After

When a slow leak in Betsy Dysart's kitchen sink led to standing water in an inaccessible crawl

space under her home for an undetermined amount of time, her 8-year daughter with epilepsy began having "nearly continuous seizures," according to Dysart, who homeschools her two daughters in Ottawa, Kansas. Dysart, who has a

strong sensitivity to mold, suspected mold as a culprit.

"She was having over 100 seizures a day, and we couldn't identify what was causing them," says

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.

Dysart. "My other daughter and I were also having terrible asthmatic attacks."

A plumber stopped the kitchen sink leakage, but could not address the problem under her home from which an "awful smell" arose. Because traditional cleaning in the crawl space was not possible due to space constraints, Barry Banzet, President of Ottawa-Kan.-based B&B Professional Cleaning and Restoration was brought in to structurally pasteurize the site using the ThermaPureHeat process.

"After structural pasteurization my youngest daughter's epileptic seizures stopped for that episode," says Dysart. "The severe asthmatic attacks my oldest daughter and I suffered were gone too. The ThermaPureHeat structural pasteurization was able to end the acute episodes we were having."

In another example of the efficacy of structural pasteurization, a woman faced continued respiratory issues and worsening fatigue over a period of five years, which required her to use a wheelchair. A team of doctors conducted a variety of tests, but were unable to determine the cause for some time.

Eventually, one of the members of the medical team asked if she had any pets. In addition to a dog and cat, the couple mentioned they had two pet cockatiels and testing later indicated the presence of high bacterial levels within their home that could be associated with bird disease. Blood tests also confirmed that she was infected by the "bird antibodies" as well.

The medical recommendations included the removal of the birds and a thorough janitorial cleaning of the entire home by a professional service.

The couple contacted a local company serving the Monterey Peninsula called Certified Disaster

Cleaning & Mitigation, Inc., to conduct a professional cleaning. When applicator John Martin assessed the situation, he instead recommended structural pasteurization because it could reach into places "the human hand can't reach."

Testing after the structural pasteurization revealed that the bacteria was reduced from very high levels to non-detectable in several before-after samples taken where the birds were kept for several years.

According to Martin, the woman's husband stated that three days after the structural pasteurization

she was able to get out of her wheelchair and was feeling better for the first time in months. Later, as her strength returned, she regained the ability to walk and move around at

various times of the day. Martin has since spoken to the woman's husband who feels that the only thing they can attribute her continuing progress to is the effects of the structural pasteurization and are very grateful.

While the growth of unseen dangers—from mold, fungi, bacteria, and viruses to chemicals, dust mites, bed bugs, and the pesticides often used to treat them – can be out of the reach of our hands in walls, cracks, corners, and crawlspaces, they need not be out of the reach of structural pasteurization.

As more medical professionals are prescribing structural pasteurization as a proactive health solution, particularly for those with respiratory conditions or compromised immune systems, our days of suffering from "building-related illness" may be numbered.

For more information, visit www.thermapure.com. You can contact Dave Hedman at E-Therm, Inc via email: davehedman@yahoo.com or by phone at 800-375-7786.

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