

## Water Damage Mitigation Drying Technology

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### ABSTRACT

The water damage restoration industry has changed dramatically the last 10–15 years when looking at water damage mitigation technology and the perspective of restoring rather than removing and replacing affected materials.

When there are weather-related catastrophes, like flooding, the porous materials in the affected structures will need to be removed and replaced in most cases, but the structural framing, which can generally be restored, can now be dried quicker using new and more efficient equipment and procedures. On everyday water losses, like water line bursts, appliance malfunctions, etc., when there is rapid response by a qualified contractor, it is now possible to save most, if not all, of the affected building materials and contents by utilizing new, more efficient drying equipment and procedures.

Restoration contractors must be able to restore as many of the affected materials as possible to gain credibility with insurance carriers that they are assisting in reducing overall severity of the loss while also getting the policyholder back to normal as quickly as possible.

The history of mitigating water-damaged structures and contents has been plagued with horror stories of contractors causing mold from incomplete drying, ripping and gutting a structure when many materials could have been saved, and overall little accountability and poor documentation. Too often, contractors with little or no training cause insurance adjusters and property owners to have a cynical view of restoration contractors in general. Even today there are many contractors that do not spend the time and money necessary to properly train their technicians and make sure they have the best diagnostic and drying tools available.

Fortunately, organizations such as the Restoration Industry Association, Institute of Inspection, Cleaning and Restoration Certification, and the Indoor Air Quality Association have worked diligently to bring a level of training, certification, and accountability to this industry. In the water damage restoration industry, you can point to the IICRC S500 Standard and Reference Guide for Professional Water Damage Restoration (2006 version) which achieved the approval of the American National Standards Institute, as the first set of guidelines that became widely used to hold contractors accountable to ensure their methods and equipment were validated and the drying process documented properly to protect all materially interested parties.

Within the last 10 years, “flood houses,” structures that are intentionally flooded to study the effects of water on various materials, as well as test equipment and train technicians, have become more prevalent along with a better focus on the science of drying

and restoring materials. Finally, instead of only one major equipment manufacturer, there is healthy competition between several major companies striving to develop better, more efficient equipment that make it possible to dry more quickly and save more materials.

Change can be painful but usually has many positive outcomes, and in the water damage restoration industry, it is now possible to prequalify restoration contractors by their knowledge level of the science of drying and use of more efficient drying equipment and technology.

CodeBlue, a third-party administrator for insurance carriers, has built two “flood houses” on college campuses to better train their employees as subject-matter experts in water damage so they can fairly and accurately hold restoration contractors accountable. These flood house classes are a combination of classroom and hands-on training that allow the students to not only learn about the industry standards and science of drying, but also have the opportunity to use what they learn to dry an 1,800 square foot home that was flooded 24–36 hours prior with over 1,500 gallons of water! The firm simulates an actual residential water loss claim by saturating a variety of building materials, like hardwood and engineered wood flooring, different types of carpet and cushion, ceramic tile, drywall, plaster, plywood, OSB, wood framing, etc. Students then develop a drying plan that is in accordance with industry standards, execute their plan, and monitor drying progress. The structure is built on a concrete foundation, finished basement, and a crawlspace to

provide the students an experience that reflects what they would see in the real world in a variety of different residential situations. The flood house built on Chippewa Valley Technical College campus in Eau Claire, Wisconsin, has been flooded over 50 times without removing and replacing carpet, cushion, drywall, plaster, base trim, hardwood flooring, ceramic tile, wood framing, etc., even after 50 floodings! The flood house built on the Clark State Community College campus in Springfield, Ohio, called the Disaster Recovery Learning Lab, has been flooded over 29 times! The students have to take an IICRC-approved exam in order to become certified in water damage restoration upon completion of the course. The classes are open to contractors, insurance adjusters, and company employees, so different perspectives are represented and there is an open exchange of ideas. It is important to have the different stakeholders involved in water damage losses represented so, through education, they can obtain better understanding and common ground.

Because CodeBlue does not sell equipment, their flood houses serve as unbiased, independent testing laboratories to test new equipment, meters, and technology, such as their recent testing of water activity versus moisture content in terms of establishing reliable criteria for preventing microbial growth on building materials. Moisture content readings of affected materials have been the major gauge for successful drying until now. Water activity, which has strong scientific credentials and 70 years of research, may be another way to prove affected materials are returned to a state that will not promote microbial growth.<sup>1</sup> Testing is ongoing.

Different drying technologies have been strongly debated in recent years with advocates of refrigerant low grain dehumidifiers, desiccant dehumidifiers, and heat drying all saying their methods are the best. After extensive testing at the company flood houses as an independent third party, the determination is that all three of the different drying methods work, but some work better than others in certain circumstances. The key is to know what method to use in what circumstance. To determine that, three questions must be answered:

1. What will save the most materials?
2. What will dry the quickest to get the occupants back to normal?
3. What is the most cost-effective method?

Heat drying is the latest popular quick-drying method being promoted in the industry, but unfortunately, many contractors purchased the new heat

equipment without going through the training on when and how to use it properly. It is important that each new drying technology be independently tested and contractors held accountable to using the equipment properly. Every drying project must be properly documented to prove type and amounts of equipment and length of drying time, as well as that all affected materials were returned to preloss conditions.

In the past, property insurance claims were mostly awarded to contractors because of relationships they had cultivated with local agents and adjusters or because they were part of a national franchise organization. CodeBlue's business model is that contractors should compete for claim referral opportunities by having the best record of rapid response, preventing unnecessary demolition, and utilizing the most efficient equipment, all while using methods that are in accordance with ANSI-approved standards. The goal is to return the structure and contents to preloss conditions as quickly and efficiently as possible with the least amount of demolition and disruption. The water loss claim should go to the most qualified, best performing contractor, not the one that has the best marketer. This includes identifying the contractors with the best customer service ratings for it is equally important as technical proficiency.

The water damage restoration industry has entered a new era that focuses more on science, standards, and documentation. New products and procedures are being developed every year. Industry standards are being updated and improved. The average technician can no longer just be able to move heavy furniture, cut out materials, and suck up the water. The new technician must have a good education in the science of drying, understand the latest industry standards, as well as be prepared to provide detailed documentation of their drying process to all materially interested parties. Because of this new focus, individuals and companies who are new to the industry or want to increase their value in the marketplace have a real opportunity. Mitigation contractors must be able to prove how their technicians are trained and educated. They must be able to restore rather than replace and prove their methods are in accordance with industry standards while documenting drying targets and results based on proven science.

The CodeBlue business model is an example of how communities, colleges, and businesses can work together to better educate the workforce, while simultaneously raising the bar of expectations for contractors to ensure a better outcome. It is an exciting time to be a part of this industry for things are changing, and where there is change there is opportunity!

<sup>1</sup> Decagon Devices/Aqua Lab on Water Activity  
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