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BUILDING ENVELOPE Mold Clean-Up and Prevention

Toxic mold presents a host of health and safety risks and potential legal problems for all kinds of facilities, but most specifically for schools and hospitals. This is because children and adults with a weakened immune system are especially at risk if toxic mold exists and is growing in a facility.



Although there are ways to clean and remove mold from surfaces and in the air, ultimately the most effective way to eliminate mold is by prevention.

Before digging deeper into the problems mold can cause, as well as how to prevent and remove it, some definitions and clarifications are in order. First of all, not all molds are injurious. Mold is found in literally every environment and it can be visible, invisible, harmful or harmless. The fact that mold spores exist in a facility does not necessarily mean that the building occupants who use the facility will become ill. However, visible mold, such as when black stachybotrys is present, has been proven to cause physical health problems. As a result, buildings and homes have been deemed uninhabitable due to the potential threat of illness and even death. In these cases, we are referring to toxic mold.

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Another thing to note is that mold is old. In fact, it is centuries old and if toxic, has caused serious health problems for hundreds of years. One reason we hear more about mold and its potential harm to human health today is because there is a much greater knowledge and understanding of mold and the problems it can cause.

However, another reason and possibly the key reason, is that mold may be more prevalent today than in years past. Since the 1970s, more air-tight buildings have been constructed in the U.S. to conserve energy. In some cases, buildings have become so airtight that moisture has difficulty escaping from the inner walls of a facility. This creates a fertile environment for mold growth.

In addition to the harm it can do to human health, mold can cause serious and expensive legal problems for all types of facilities, as well as the architects and contractors that design and build them. For instance:

- When former “Tonight Show” host Ed McMahon discovered that toxic mold had creped into his new 8,000-square-foot home, he filed a \$20 million lawsuit against several different parties involved in the construction of the house. By May 2003, his total settlement with the defendants had topped \$7 million.
- In 2002, schools in the Rio Grande Valley district of Brownsville, Texas stood empty, awaiting the settlement of their \$20 million lawsuit to remove mold from their schools and protect its 1,600 students.
- For more than a decade, toxic mold problems have caused many hospitals in the U.S. to deal with costly litigation issues, often costing millions of dollars and forcing many to close entire areas of their facility in order to remove the mold. It has been said that some plaintiff attorneys see “gold in mold.”

Prevention

The good news for facility managers in schools and hospitals is that they can help secure their properties against mold’s ravages. For the most part, mold is preventable but, it does take an investment in time, resources and energy.

The most significant way to prevent mold is to understand that mold needs a moist, wet, or damp environment in order to grow and thrive. By simply maintaining a clean and dry facility, facility managers can preclude dangerous mold growth.

“For instance, cleaning carpets with low quality carpet extractors can result in mold growth because they use more water than a high quality, low moisture portable extractor and/or have poor performing vacuum recovery systems,” says Bryant Thomson, corporate trainer for U.S. Products,

manufacturers of professional carpet, floor and restoration equipment. “Low moisture, hot-water extractors use about a third less water to clean and if the extractor has sufficient heat at the wand tip paired with advanced vacuum systems, drying time can be expedited as well.”

The U.S. Environmental Protection Agency suggests that carpets be dry within 48 hours after cleaning to prevent the possibility of mold growth. Using a low-moisture hot water extractor can reduce the drying time to just a few hours or less.

Building engineers must also set regular schedules to inspect their facilities for mold. Most toxic molds have a black or gray color, which can make them a bit easier to spot (in some situations); however, the color of the mold does not necessarily indicate if the mold poses a risk to building occupants or not.

Mold spores may be found in carpets, as referenced earlier, walls, insulation, ceiling tiles, tile and grout flooring, around windows, in air- conditioning systems, around leaky pipes, doors, even in ice makers—just about anywhere that is exposed to moisture for a prolonged period of time.

Size Does Make a Difference

As soon as mold is discovered, facility managers must decide what course of action is necessary. Often this can be determined by the actual size of the mold manifestation.

Danger levels occur when the mold infestation covers a size of roughly two square feet, according to some experts. “In addition, the concern grows if the mold has infested components such as insulation, drywall or carpet,” says Thomson. “If this has occurred, managers may need to take immediate action to first find and remove the source of dampness or wetness and then clean and/or remove the areas infected.”

If the mold patch is small it can usually be removed simply by cleaning. According to Thomson, the source of the dampness must again be located. After that, the area can be cleaned by scrubbing the areas with a commercial disinfectant or a mixture of bleach and water. “The cleaning crew must wear protective clothing, such as gloves and goggles, as well as carbon filter respirators,” he adds. “They must also follow the manufacturer’s instructions carefully and make sure the area is sufficiently ventilated.”

Thomson also advises against trying to “scrape” the mold off of walls and other surfaces. “This increases the chances that toxin-filled spores will become airborne, harm building occupants or even settle in a new area,” he says. “The goal is to always keep the mold clean- up operation confined to the problem area as much as possible.”

“Cleaning and removing mold from carpets can be problematic,” says Thomson. “Again the source of the problem must be determined. For instance, there may be moisture coming up from below the carpets or they may have been improperly cleaned with too much water.”

When cleaning mold as well as mildew stains from carpets, the carpets should be cleaned using a low-moisture, hot water extractor as mentioned earlier. Also, air movers should be placed over the just-cleaned area to help reduce drying time and a biocide may be sprayed or applied to the carpet as part of the cleaning process. However, in worst-case situations the carpet may need to be destroyed.

Airborne Mold Issues

According to a case study, a doctor at a major Midwest hospital became ill in 2000 because of mold found in a section of her office. The source, it was later determined was a leaking automatic sprinkler head in her office that is designed to open only in case of a fire.

To rectify the problem, contractors were called in to rip out a number of wall areas infected with mold. However, the doctor as well as the facility managers soon realized the situation became much worse after the construction work. Almost immediately the rest of her office as well as nearby hallways and office areas were contaminated with more spores. What apparently happened is the mold spores became airborne, infecting a variety of other surfaces in her office.

“After mold cleaning and remediation have occurred, the need to “scrub” the air is sometimes overlooked” says Thomson. “An air scrubber with a high-capacity HEPAfilter will trap and capture mold particulates so they do not harm other areas of a facility.”

Thomson recommends that facility managers select air scrubbers that have two speeds and up to 2200 CFM (cubic feet per minute of airflow). This way the machine can be used in smaller offices, as well as on entire floors.

Although there are ways to clean and remove mold from surfaces and in the air, ultimately the most effective way to eliminate mold is by prevention—which is well worth facility managers’ efforts. Not only can mold cause building occupants harm and illness, but many insurance policies exclude coverage for mold. This means that every dollar spent on schedule investigations, quick cleaning and remediation can save a facility literally thousands, if not millions of dollars should the mold problem spread. An expense which would hit school and hospital facilities particularly hard.

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