

HEAT, HUMIDITY, AND RAIN, OH MY – MOLD!

Tim Popp is Vice President of Consulting at TTI Environmental Inc., a company often called in by school districts and other public entities to assess and conduct testing for industrial hygiene, asbestos, lead, and mold, among other issues. Popp has significant experience with mold in school buildings. “School buildings are prime areas for mold growth,” said Popp. “They have a lot of food sources and are susceptible to elevated humidity levels caused by the changing environment in New Jersey.”

He said essentially there are two ways school districts typically develop a mold situation:

- A water intrusion event (roof leak or a broken pipe, etc.)
- Humidity/Water Vapor

“Most school districts are really good at dealing with water intrusion problems,” said Popp, “they can see it. With humidity issues, it’s much more difficult, and it’s harder to detect and manage. There were so many districts that had mold issues from humidity this year.”

Popp said the weather – climate change – really is taking a toll. “In New Jersey in the last few years,” explained Popp, “it’s like we are living in Georgia, when it comes to sustained high humidity. In addition, there has been so much rain, the water

table is higher, the ground around buildings is so saturated.”

High sustained humidity and water vapor in the air can cause mold. “Most school districts,” explained Popp, “aren’t looking at humidity. Most older school buildings don’t have humidity gauges.” He said that sometimes, even in newer buildings with air conditioning and gauges, there could be a mechanical or operational problem that is enabling higher humidity levels. “Additions, for example, may have newer systems that are negatively impacting portions of the building, or exhaust fans that are creating a negative pressure which is pulling in unconditioned, hot, humid air,” said Popp. He noted the older sections of buildings are too warm and the air conditioning in the new section keeps running to cool everything down. “Some of the buildings are cooled down too much during unoccupied times,” explained Popp, “it’s creating a dew point on building contents and components.”

Big Mold Culprit? Waxing Floors in Summer

One of the greatest culprits in creating mold in school districts, according to Popp, is waxing the floors or steam cleaning the carpets in August, in preparation for the school year. “Essentially,” said Popp, “doing the floors is a water event. The floors

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Mold on a metal door frame.

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are stripped and waxed, and the schools are not understanding the increased impact that has on the humidity level in their school. It's the perfect condition for mold growth."

There are a lot of small things districts can do, noted Popp, including changing the time of year they wax the floors. "Waxing the floors is a big issue," said Popp. "The districts have to prep the area correctly, especially if they also are steam-cleaning carpets. They need an industrial dehumidifier running the whole day before the work is done. They should leave it there until the humidity level drops below 60 percent." Popp also suggested that it would be a good idea to shut the outside dampers.

- According to Popp, mold will stop growing at a humidity level of 50 percent, but he said in New Jersey, 60 percent is about all that can be achieved in the summer months.

Popp said many energy consultants brought in by districts to help control costs, suggest setting thermostats too high to adjust the cooling in those buildings during unoccupied periods. Popp suggests running the air conditioning systems even though the building is not occupied, but close the fresh air dampers during unoccupied times, to enable the systems to remove more humidity.

He said another big issue is when districts make renovations that impact the building envelope. "This also can seriously impact humidity levels in buildings," said Popp.

Recognizing Humidity Issues

Popp said there are some keys to recognizing mold situations before they become advanced. "Is there an odor? Does the room, hallway, etc., smell like a musty basement," asked Popp? "Then there likely is the beginning of a potential mold issue."

He also suggests getting a gauge and checking the humidity levels in the building. According to Popp, if the humidity level is above 70 percent, "you likely will have mold." A high-powered flashlight can help you see mold growth as well.

"It's impossible to see it all," said Popp, "and it likely will be in different stages of its lifecycle. Sometimes, you can see mold, but the air samples are fine – it's not an absolute test. Mold is a lot like a dandelion seedpod. The wind blows, and the seeds go all over. Mold is very similar. Mold spores get into the air in different ways. Sometimes it is by moving furniture or cleaning, other times it moves and grows as it matures."



Mold on a wooden door. Tim Popp said if you are looking for mold, start looking at things that are at a four-foot level and below.

Knowing where to look can be significantly helpful. Popp explained that water vapor sinks. "So, if you are looking for mold, start looking at things that are at a four-foot level and below," said Popp. "Mold often grows under desks and tables."

Late June and early September are key times for mold growth, as a result of air conditioning when students and staff are in buildings, according to Popp. "Often, air conditioning is lowered, making everything ice cold. Then, when the system is turned down or shut off, condensation adheres to metal objects such as doors and windows, and even on wood. Mold starts to grow," explained Popp.

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Have a Plan and Be Prepared

Popp suggests the first thing to do is to educate yourself and your staff. “There is a lot of really good information out there,” said Popp. He noted that the [EPA Tools for Schools](#) outlines everything and has good checklists that can help districts. “The advice from the EPA is to get everyone in the district involved in indoor air quality – mold falls under that category – including administrators, board members, staff, teachers, parents, etc.,” said Popp. “Everyone should get together to review the materials and identify, as a group, the potential issues in the district. The EPA checklists are great. You can make them simple and appropriate for your district.”

- Popp said creating a list of those items that need to be improved is critical. “It enables the district to budget for things that they can do without spending a lot of money.”

If you find there is a mold issue, “don’t panic. You need a plan, you need a consultant, and you need to communicate. Hysteria comes from a lack of communication and a lack of knowledge. Give parents and the community the knowledge, keep them informed, and things will be much better,” said Popp.

Popp said districts typically have a consultant come in and do an initial inspection. He or she will evaluate the condition, ask questions to help determine the potential cause, and note any visual signs of mold. If you get results that are not good, explained Popp, sometimes it is necessary to go back and expand the investigation to other areas. He said the consultant will then develop the mold remediation workplan, which includes directions on what needs to be done, how it should be treated, and what it will take for it to be considered cleared.

The next step is hiring a remediation contractor – they actually do the work to get rid of the mold. The objective of a mold remediation is not to kill the mold, but to remove it. Popp said a dead mold spore is just as much of an allergen as a live one. The contractor will follow the workplan developed

by the consultant. Typically, the consultant will go back and inspect the work to clear it. “In the case of large projects, where a whole school might be involved,” said Popp, “the consultant may be in and check every other day or once or twice a week.”



Bulletin boards are not exempt from mold.

Final Thoughts

“BAs know all about mold,” said Popp. “It definitely is that four-letter word because no one has any money to deal with this and the timing is never good.”

One of the points that concern Popp is the likelihood that insurance companies are going to start limiting their liability. “They can only take so many claims,” said Popp. “They will likely continue to cover things like roof leaks or other water intrusions events, but I think it is possible that they will start limiting coverage for humidity related events, because of the weather issues in the state.”

Part of the issue for the BAs is that the insurance companies don’t act quickly enough to tell the districts what they will pay, explained Popp, “and the district can’t wait. They must hire everyone to take care of the issue immediately. Remediating mold is not something that can wait.”