

There seemed to be some misconceptions at last night's HDC meeting about how mold is remediated from a building like the John Newnan Chestertown Armory and how to keep it from reappearing. I thought I would provide a quick primer on the subject.

Since there are no federal or state standards for mold removal, the standard of practice is the private industry standard from ANSI: Standards for Professional Mold Remediation, Third Edition.

I call your attention to the following from a slide from the PowerPoint deck provided by David Myrick of Valor Mold Removal [this was attached to the email transmitting this document or available on savethearmory.org]. This is out of the ANSI standard.

The remediation of different building materials depends on their porosity, their Condition (1, 2, or 3), and their structural integrity. Additionally, remediation methods can depend on the exposed substrates. Careful evaluation of materials containing layers with multiple porosities (composite materials) is appropriate. The following table represents the generally accepted remediation procedures for building materials affected by Condition 3 mold contamination. Contaminated materials should be carefully evaluated before attempting mold remediation. If structural components have been compromised and need to be removed, a qualified structural engineer should be involved in decisions to remove such components.

Porosity*	Materials	Remediation
Porous	drywall, ceiling tiles, insulation, particle board, medium-density fiberboard (MDF), carpet and similar porous materials	discard
Semi-porous	wood, brick, plaster, block, concrete, plywood, oriented strand board (OSB) and other semi-porous materials	abrasive methods: wire brushing, sanding, media blasting, or other appropriate methods.
Non-porous	glass, metal, laminate, plastic, porcelain, ceramic and other non-porous materials	surface cleaning: damp wiping, HEPA-vacuuming, or other appropriate methods.

*S520 definitions for the purposes of this table:

Porous: Building materials that easily absorb or adsorb moisture and, if organic, can easily support fungal growth
Semi-porous: Building materials that absorb or adsorb moisture slowly and, if organic, can support fungal growth
Non-porous: Building materials that do not absorb or adsorb moisture or have been surface treated and do not easily support fungal growth

The process for mold remediation is to remove all the items contaminated with mold that are easily removed, such as ceiling tiles, floor tiles, drywall, furniture, etc. These are the "porous" items shown above. These items would be removed in a renovation of a building anyway. The second stage is to deal with the "semi-porous" and "non-porous" items in the building. In the case of the Armory, most of the work would be to resolve the mold issues with the semi-porous brick, concrete, and block materials that

cannot be easily disposed. The mold on these surfaces would be removed through abrasive methods and the industry has seen great success with dry ice blasting. The dry ice sublimates (i.e., goes from solid to gas) after it is used and all that is left is the mold. The mold is either vacuumed or removed through temporary air filtration devices (Valor provides slides on that process).

Once the mold remediation contractor finishes their work, the building is allowed to come to a steady-state after running the HVAC system in the building for about a week and then third-party compliance sampling is conducted. This would be like the sampling MMTS did for the college. Since mold is ubiquitous in the environment, the compliance sampling is used to determine if the mold levels in the building are at or below those found outside the building at the same date and time. If they are below or the same, then the remediation is successful. If higher, then the mold remediation contractor is called back in to conduct more remediation until levels are deemed acceptable.

Once the remediation is declared a success, it is incumbent on the building operator to ensure relative humidity (RH) levels are kept below 60 percent (ASHRAE standard) through running the HVAC, maintaining the building envelope, and ensuring water doesn't intrude through the foundation. I use the analogy of getting your teeth cleaned at the dentist. On the day that you have your teeth cleaned, you are pristine. However, if you don't brush your teeth regularly after that day, you are going to revert to a nasty set of teeth very quickly. Continued maintenance is key.

Last night, Greg Moore brought up the subject of mold returning to a building that had mold remediation done to it. I would say this is the exception rather than the rule. Excessive moisture is the primary factor in mold growth since mold spores are everywhere in nature. The key is maintaining the building systems to ensure RH levels are kept to an acceptable level and that moisture is not entering the building envelope.

You have probably received a statement from Jeremy Rothwell, who served in the Maryland Army National Guard at Chestertown until it was disbanded in 2005. In his discussions with members of the unit, those older members never recall the building having a mold issue, except for the days after Hurricane Isabel when that State of Maryland went to great expense to successfully remove the mold caused by the flooding from that storm. Maryland continued to support the building until about 2008 when the caretaker retired and was not replaced. It is alleged that Maryland turned off the power to the building, which rendered the HVAC and sump pumps inoperable. My point is that from 1931 to the time of Hurricane Isabel, there were no reports of mold in the building. The mold only occurred after the hurricane and when there was no mechanical support to the building – instances of excessive, uncontrolled moisture in the building.

Please reach out to me if you have any questions about this.

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