



Preventative Coatings and

Why They Matter to Your Customers

By Cole Stanton

It is a natural question. “Is there anything you can do to keep it from coming back?” The “it” is the mold, and the professional remediator or indoor environmental professional (IEP) is expected to have an answer that satisfies the common sense of the customer. This instinctual request is a potent pressure for preventative measures. What can be done to provide confidence that mold will not reoccupy their home or business or school? Mold

compelled your customer to seek out professional restoration services. Mold persuaded them to turn over their residence or source of income to investigation, intrusive containment, whooshing air movers and workers enveloped in suits and masks. Can you blame the customer for not wanting to go through all this again?

Restoration professionals must be able to communicate the fundamental principles of mold remediation. This enables

client understanding of what first needs to be done and why. There is comprehension of moisture as the trigger, removal as a requirement and the logical steps of mitigation. For example, the client learns why impacted sheetrock and ceiling tile are typically unsalvageable. Or, the rationale and limitations in using an antimicrobial disinfectant or sanitizer can be explored. The property owner gets to consider use and give informed consent. However,



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whatever remediation steps are proposed, there is this natural question: "Is there anything you can do to keep it from coming back?"

How Preventative Coatings Work

For the professional remediator, a clear understanding of how preventative coatings can be useful and complimentary is important. The ability to convey features, benefits and options to the customer or their IEP is vital, expected and opens opportunities to provide value-added service. The remediator who cannot discuss what preventative products are capable and incapable of providing is at a disadvantage versus competitors. One risks appearing to lack professionalism and knowledge of the industry. Worse yet, a remediator overstating performance - perhaps swayed by a manufacturer's marketing - can exaggerate expectations and unnecessarily place their business in jeopardy.



To avoid overstatements, start with knowing what preventative coatings actually provide. Fundamentally, coatings for mold remediation provide two basic services. First, coatings lock down any minute amounts of residual fungal particulate remaining after removal, cleaning and, when employed, disinfecting/sanitizing. Even small amounts of residual mold-related particulate (spores, hyphae, etc.) can be an irritant. This is especially true for occupants already sensitized from exposure while living in the building during the original infestation. While the goal of remediation is always total cleanliness, a perfect world is not the one we inhabit. Coatings in mold remediation provide a service similar to the practice of "locking down" as a final step in asbestos abatement. For more than three decades, the

standard of care with asbestos after removal has been a lockdown to ensure remaining residual asbestos fibers cannot become airborne. Whether mold or asbestos, small particulates can become airborne and possibly inhaled. The logic is simple, effective and proven. Locked down by a coating, undesirable particulates are anchored to their substrate, are not subject to being in-

haled, and thereby a potential pathway for occupant exposure is eliminated.

The second valuable service of preventative coatings is integral to the property owner's natural question of if there's anything you can do to keep it from coming back. Preventative coatings can provide a surface that inhibits future growth on or in the coating film for years to come. It



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is to be expected that some mold spores that are all around us all the time will land from the air onto the coated surface. In the absence of a preventative coating, settled spores could germinate on that surface. Without preventative measures, nutrition for the germinating spore is available since growth took place there before. Unless circumstances changed, temperature is acceptable too, so as always, moisture is the trigger. For some species, given even modest encouraging conditions, mold growth can occur. Substrate saturation is not necessary - high humidity can suffice. In many structures and regions, humidity spikes can occur occasionally or regularly. Causes might be ordinary seasonal fluctuations, proximity to water, a chronic structural deficiency that can only be partially rectified (e.g., below grade seepage, a historic structure with limited HVAC or inadequate windows) or a building function that involves or inherently generates moisture, such as the ceiling of an indoor swimming pool. Preventative coatings deliver a surface where spores which inevitably land find an environment inhospitable to growth. The dry coating film does not kill the mold spores. The preventative action is singularly focused on deterring growth at the site where the labor and resources of remediation have been painstakingly expended.

Successful prevention is delivered by coatings formulated with an active ingredient that makes the coating surface unattractive to mold growth. It makes sense to ask a manufacturer about what the active ingredient is in their product. If the manufacturer can't provide this information, or defers that their ingredient is proprietary, this should give the remediator or IEP pause, and good reason to seek an alternative product.

Further, it is important to remember

that chemicals and coatings are not intuitive. Remediators cannot pick up a container of coating and observe quality or deficiency. One cannot perceive in advance that a coating will provide the service listed on the label and promoted by the manufacturer. For example, there is a direct correlation between the amount of active ingredient and mold-resistant performance. Preventative coatings formulated for professional mold remediation should have a high load of effective active ingredients. Coatings intended for other uses typically have far less ingredient and consequently less resistance to future growth. Virtually all house paints, for example, contain preservative ingredients that will prevent microbial activity from spoiling the coating in the can.

Therefore, the second step of the remediator's due diligence process is to request documentation that demonstrates a preventative coating performs as it claims. Remediators and IEPs can and should ask for actual performance reports issued by an independent and certified testing laboratory. It should be noted that there is no regulatory requirement that coatings manufacturers conduct testing to determine resistance to mold growth. Testing is voluntary, but the prominent and prudent manufacturers have performed lab testing and can make the results readily available.

The most effective and targeted way to ask for documentation, is to request lab reports for when the preventative coating has been subjected to either ASTM G 21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*, and/or ASTM D 3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*. These are the most relevant and recognized testing methods in the coatings industry to dem-

onstrate whether a cured film surface is resistant to mold growth. If a manufacturer can promptly supply the actual lab report for either ASTM method, and the report's conclusion is that the coating supported no mold growth, now the remediator and IEP have confidence in the preventative resistance of the product. Perhaps just as importantly, now there is documentation of value to provide to the property owner.

Preventative Coatings and EPA Registration

Experienced remediators in the U.S. handling water-damage restoration and mold remediation are already familiar with the intersection of our industry and the U.S. Environmental Protection Agency (EPA). There remains, however, ongoing confusion for some remediators and IEPs concerning preventative coatings and registration with the EPA. Responsible under the auspices of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the EPA regulates safe and effective use of pesticides. Regarding remediation, this includes antimicrobial products used to kill bacteria, viruses and mold (all considered microbial pests) such as disinfectants and sanitizers.

Similar to the antimicrobial disinfectants/sanitizers, the active ingredients used in the manufacture of a preventative coating are also typically EPA-registered and have an EPA-registration number. In other words, registration by EPA is mandatory both for end-use products formulated as fungicides (killing mold such as disinfectants or sanitizers), and for manufacturing-use active ingredients (which make another product resistant, i.e., the finished products are fungistats). Preventative coatings used in mold remediation should contain EPA-registered manufacturing-use pesticide ingredients to deliver performance in resisting mold growth. Manufacturers should be willingly transparent concerning what active ingredient(s) is (are) used, and how that/those ingredient(s) resist regrowth.

For preventatives, there is ongoing confusion for some that a product may contain ingredients registered with the EPA, most are not EPA-registered. Why are the majority of mold preventative coatings for remediation not EPA-registered, and do



not have an EPA-registration number? In the FIFRA regulatory framework is a section that encompasses most coatings and innumerable other products that prevent mold. For products that make no claim to kill pest organisms, and which are formulated with an ingredient only to protect the product itself from degradation, FIFRA has a category designated by EPA as the Treated Articles Exemption. It states:

“(A) Treated articles or substances. An article or substance treated with, or containing, a pesticide to protect the treated article or substance itself (for example, paint treated with a pesticide to protect the paint coating...)”

The Treated Article Exemption provides a distinction between products that kill and those which inhibit. There is a logic and practicality behind this distinction. EPA's primary responsibility is protecting public health. Registration of everything made with microbial resistance (every mildew resistant shower curtain, every antibacterial cutting board, and so on) would be an onerous task, and the development of potentially beneficial products might be substantially slowed.

There are situations where a preventative coating that only makes a claim of inhibition on or in the coating film might yet still be registered with EPA. Claims against specific microorganisms harmful to human health may require the product be registered. Products specifically used in highly sensitive environments might require registration. The most recent major advance in preventative coatings introduced a new remediation coating requiring EPA registration.

Fungicidal Coatings

Paints with expressed or implied claims made for protection of the surface beneath the paint film or for preventing or destroy-

ing mold or mildew on the surface of the paint or beneath the paint are not within the treated articles exemption and, therefore, will require registration under FIFRA.

That statement from the EPA's Label Review Manual concurs with our exploration of EPA registration and preventative coatings. A coating which claims to kill must be EPA-registered. But until recently, no such coatings existed specifically for mold remediation. Since the first was introduced in 2009, a small number of manufacturers have introduced fungicidal coatings. These products have a mold-related kill claim, and have an EPA-registration number. But this development raises new questions. How do these products differ from the preventative coatings that came before? What value do fungicidal coatings offer that other coatings do not? Is there now any reason to clean? If these coatings kill mold, is the use of a disinfectant or sanitizer now unnecessary? Can we now just seal right over mold?



Understanding the innovation in fungicidal coatings reveals the answers. In the wet state, right after application, the fungicidal coating has been engineered so the active ingredient is available and can come in contact with mold. Like disinfectants and sanitizers, the active ingredient cannot perform its killing function if it cannot come in contact with the targeted microorganism. With fungicidal coatings, the active ingredient is dispersed throughout the wet coating. Because the active ingredient is not yet bonded to the resins that form the cured coating, when the active ingredient and mold come into contact at application, that ingredient can perform its killing (fungicidal) function.

As the coating dries, the water and other components evaporate, and the resins and active ingredients solidify into the final cured coating film. This is coalescence,

and during this process the active ingredient is bonded into the coating. Completed, the fungicidal coating now provides the same service as earlier generations of preventative coatings. The active ingredient is ready for years to come to deter future mold growth on or in the coating. So, to answer the first question, because there is an added dimension of performance, fungicidal coatings differ from the preventative coatings that came before. Fungicidal coatings kill any mold contacted, and then dry to perform as a preventative against future growth. This is the additional level of performance fungicidal coatings offer above and beyond products that are only preventative.

For the other questions raised above, the answers are “no,” “yes” and “no.” Source removal is still required. In situations where a disinfectant or sanitizer would be helpful, those products are still deployed. Finally, no – the development of fungicidal coatings does not mean the start of encapsulating mold instead of removing it. Fungicidal coatings are EPA-registered to kill residual mold on pre-cleaned surfaces. These products are not formulated or registered to be applied directly to mold. Removal remains a fundamental principle of mold remediation. However, the value of the innovation in fungicidal coatings is the additional kill of any mold that evaded cleaning and disinfecting/ sanitizing.

So, is there anything you can do to keep it from coming back? Prudent remediators and IEPs know there are answers to these natural questions from customers. Mold remediation must involve identifying the source of the moisture intrusion and fixing it, taking out what cannot be saved and removing the mold from what can be cleaned. Preventative coatings are tools for the remediator to achieve the customer's ultimate goals and expectations. Among those tools, however, only preventative or fungicidal coatings remain in place for years after remediation to protect the labor and resources expended in restoring a healthy indoor environment. Knowing what preventative and fungicidal coatings are capable of providing is crucial. Understanding what preventative and fungicidal coatings offer provides completion for the remediator to customer expectations. **R•R**