

Asbestos vs Mold? Innovative Solution

Certainly there is no redeeming value to being exposed to airborne asbestos, none whatsoever.

Recently, when I went for a stem cell transplant at Emory University Hospital in Midtown Atlanta, my wife met a couple who told her how the husband was being treated for a debilitating cancer. He had been part of a team of eleven first responders at the Twin Towers after the 9/11 attacks. Each had since been diagnosed with cancer after inhaling some of the air that was saturated with the estimated 300-400 tons of asbestos fibers used in construction of the skyscrapers. Sadly, he is the sole survivor of his team, for each of his ten colleagues have already died of resultant asbestos related cancers.

The massive exposure to asbestos from those catastrophic attacks is not the norm for most remediation and restoration workers. Yet, over time, exposure to Asbestos Containing Materials (ACMs) can add up unless proper effective protocols are practiced by those who work in this arena. In the United States (US), the Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA) in concert with the National Institute for Occupational Safety and Health (NIOSH) define and provide safety standards. In other countries similar agencies and regulations prevail, such as the United Kingdom (UK) which has the Health and Safety Executive (HSE), and the Control of Asbestos Regulations 2012 (CAR2012) with its Approved Code of Practice (ACOP).

All this is to say that asbestos is serious business. It would be difficult to find a remediation and restoration business that doesn't commit a significant amount of resources to training to industry standards, particularly for asbestos and mold situations.



Occasionally, restoration professionals find themselves at an intersection of competing interests. More frequently, one particular global property damage firm came to that crossroad. From one direction, asbestos regulations firmly put up a “Stop” sign. From the other direction, water damage and mold growth were begging to get on with the jobs of water mitigation and mold prevention/mediation. Those current government regulations required that before disturbing any property, the site must first be tested for presence of ACMs. Hence, water mitigation takes a back seat and mold can grow while that process plays out.

It is an interesting dilemma. Independently, the protocols for asbestos and the protocols for water and mold are quite valid. Yet, when a company is called to do a job but must delay their work until later, both the problem and the cost to remedy will likely rise. The Institute of Inspection Cleaning and Restoration Certification (IICRC) astutely states, “Without rapid response, both the scope and cost of a loss increases dramatically.”

Restating the problem: The site has a water problem and mold growth is likely. The site has Presumed Asbestos Containing Materials (PACMs). Do you choose Asbestos or Mold? First choice, “Test for the presence of asbestos, allow mold to grow.”

Second choice, “Violate the regulation; dry the site to prevent or mitigate mold; risk disturbing asbestos and authorities.”



Innovative Solution

Surely, there must be another way

Our client proposed an ***Innovative Solution***. Using our “pretreated source containment system” they ***contain asbestos (PACMs)*** - expecting to prevent asbestos fibers from getting in the air; ***dry the site*** to prevent new mold from growing; ***mitigate any mold***; then ***test for asbestos***; and if present -***abate it***. Will this work?

MH Containment was commissioned by these global property damage experts to study the viability of utilizing its pretreated source containment system as an effective first response for asbestos - particularly as an adjunct to the client’s water mitigation services being provided - if the work site has PACMs.

Important questions. Significant testing required.

1. Will the source containment system hold the asbestos in place statically?
2. Will the dynamics of motion and air injected during drying and mold mitigation processes release asbestos fibers into the air?
3. How do you quantify the amount of fibers (if any) released into the air?
4. Will those quantities be above, within or below acceptable standards?

Independent scientific testing secured

MH Containment secured the services of respected, well-known industrial hygienist, Walter Carter, founder of Environmental Air Quality Professionals, Inc. (EAQP) and EAQP’s team that included Mrs. Christine A. Harrier, CIAET and Mr. Joshua C. Miller, CIE. EAQP was charged with independently and scientifically testing to see if the pretreated source containment system [MoldHold/AsbestosShield (MH/AS)] would be effective in preventing asbestos fibers from becoming airborne if disturbed during standard mold remediation protocols (i.e. IICRC S-520). They worked with MH Containment to secure a suitable location for the tests.

Not a quick process to secure a viable location

Over the next fifteen months, numerous test sites were identified, considered, and if deemed appropriate for use, then tested for ACMs. Initially, *we considered building a controlled site* where ACMs would be placed. It turns out that **finding ACMs in the marketplace was not possible**. Laws and regulations have been very effective in removing ACMs from the shelves.

The next direction we considered was equally unsatisfying. We attempted to enlist the help of commercial asbestos remediation companies. Our calls were met with skepticism and puzzlement. These experts had not considered effective source containment a possibility when it came to asbestos. Others were just suspicious of our “real” motives.

Exasperated, we took our appeal to Facebook. Finally, we found some success finding ACMs but other considerations rose up. One fellow called to say his family owned some land where ACMs from a demolished school had been buried. We politely declined.

The next lead came from a lady whose family had sold an unoccupied commercial building that she suspected had mold and asbestos. We contacted the current owners



Test Site 1 (TS1) - Water/Mold

who agreed to let us use this facility. Upon inspection, we deemed this a potentially useful location. We called the building Test Site 1 (TS1) - see above photo. The original owner was correct about the presence of mold as the basement was flooded and every room was infested with mold. Based on the age of the building, it seemed likely the wallboards and textured ceiling tiles would contain asbestos. EAQP focused on the ceiling tiles because

they were similar to the type of ceilings with Artex surfacing familiar to our client. EAQP sampled several areas. Test results came back negative.

**Test Site 2 (TS2) - Asbestos Ceiling**

We moved on to what we called Test Site 2 (TS2), a residence that was being gutted and renovated - recommended to us by a general contractor. EAQP tested one bedroom ceiling for asbestos. It came back positive. Because this TS2 ceiling had been painted several times over the years, asbestos structures were sealed to the ceiling and would not come loose when abraded. No airborne particulate, then TS2 had to be abandoned. Not all was lost though as EAQP noted

refinements that should be made for the next test site including A) no painted ceilings, B) use smaller crack-n-peel sheets for easier application on ceilings, and C) avoid testing when temperatures exceed 100 degree Fahrenheit as hazmat type equipment is significantly hot.

Returning to Facebook, someone offered what would be Test Site3 (TS3). This unoccupied family residence had been built around or before 1970. As such, then it

**Test Site 3 (TS3) - Inside Containment (L)**

would be likely that ACMs were in construction materials that were used. While the downstairs ceilings had been painted, an upstairs bedroom was not compromised by paint. Even better, the bedroom had separate entrances on opposite sides of the room making it perfect to prevent cross contamination.

The EAQP team initiated work at TS3 on November 4th, 2019; returned on November 7th; and once again on November 14th.

The final report “Mold Hold/Asbestos Shield (MH/AS) EAQP Testing Report” was completed on December 20, 2019. Proofing, edits, conclusions and summaries were finalized January 24, 2020. See attached report.*

Questions 1-4 ... Answered

1. “Will the source containment system hold the asbestos in place statically? **Yes, it will stay in place! In Containment (L), Sample #003 (no air flow) had NO detectable amount of asbestos in the air.** -Asbestos Air TEM NIOSH 7402 and additional analytical test (TEM AHERA Indirect Prep).
2. “Will the dynamics of motion and air injected during drying and mold mitigation processes release asbestos fibers into the air?” **No, it will not release! In Containment (L), Sample #005 (with air flow) had NO detectable amount of asbestos in the air** -Asbestos Air TEM NIOSH 7402 and additional analytical test (TEM AHERA Indirect Prep).
3. “How do you quantify the amount of fibers released into the air, if any?” **The collection process used by EAQP involved collecting both air samples and physical particulate (too heavy to be suspended in the air). The methods included both Asbestos Air TEM NIOSH 7402 and TEM AHERA Indirect Prep.**
4. “Will those quantities be above, within, or below acceptable standards?” **Based on the results of the study, the air Samples# 003 & 005 collected In Containment (L) did not have any PCM fibers greater than 0.01 f/cc by PCM and had no Asbestos % by TEM.**

Name: EAQP, Inc.
 Address: PO Box 889
 Dalton, GA 30722

Collected Date: 11/4/2019
 Received Date: 11/21/2019 8:00:00 AM
 Report Date: 12/2/2019
 Analyst: J. Tallert

TEM AHERA Indirect Prep

	Sample	Area Analyzed	Volume	Non Asb	# Structures		Analytical Sensitivity	s/mm ²	s/cc
					> 0.5u	<5u >5u			
#003 in containment	3A50C72 19060185-001	0.080 mm ²	1800	0	None Detected		0.035 s/cc	<162.3	<0.035
#005 in containment	3A50C85 19060185-003	0.080 mm ²	1800	0	None Detected		0.035 s/cc	<162.3	<0.035

Asbestos Test Results

NO detectable amounts of asbestos were found in the air when a pretreated source containment system was used regardless if there was air flow or not

Putting the Answers to Good Use

“Asbestos vs Mold? Innovative Solution” recognizes the value of addressing airborne toxins in a serious manner using established standards. Also, it acknowledges that there are times when competing standards can get in the way of protecting health and property in a timely fashion.

Our client recognized the issue of conflicting protocols; chose to use MH Containment’s source containment sheets (MoldHold/AsbestosShield) as part of an innovative solution to effecting water and mold mitigation sooner. By containing PACMs at the front end with our source containment system; deferring asbestos testing to the backend of the water/mold mitigation, they expedited cleanup and prevented unwanted mold growth.

They suspected our product was effective but guessing just isn’t good enough especially when health and safety are at stake. They commissioned us to develop tests that could answer the key questions above. It took much longer than we hoped. A question remains, “Why did we wait so long?”

What might change now that the facts are in?

- A. First and foremost, our client can make a case for their novel approach.
- B. Those in the remediation and restoration industry may re-evaluate what “first response” could look like in light of effective source containment materials being available.
- C. Simple, easy to apply containment could help households with serious asbestos, lead, and mold issues breathe easier when landlords drag out fixing the problems. See Safe Military Housing Initiative (<https://safemilhousing.com>).
- D. Maybe OSHA and the EPA could review how containment might become a useful part of their approach to safety.
- E. One unexpected result of the testing was realizing how asbestos source containment might be used in some instances to make removal simpler and safer. Contain, cut, bag.
- F. Could a pipe with asbestos insulation be wrapped, nipped off, and neatly be cut out for disposal?

EAQP Summarizes Testing Results

EAQP's five test steps:

Step 1: Restatement of objective - "determine if a MH/AS pretreated source containment system for Asbestos Containing Material (ACM) such as "Pop Corn" or Artex ceiling treatment, would prevent air born Asbestos fibers (<0.01 f/cc) from being emitted into the area while performing an asbestos abatement within the area (wallboard, mud, floor tile, etc.)

Step 2: "Test the air using a Modified Asbestos Air TEM NIOSH 7402" on a control area (living room downstairs) and in a bedroom area that was divided into two equal, sealed areas separated by a 6 mil polyethylene plastic sheeting.

Step 3: "Analyzed Samples" from Step Two "using the TEM AHERA Indirect Prep Asbestos analysis method."

Step 4: "Use the Modified Asbestos Air TEM NIOSH 7402 analytical test" ... "to evaluate different sampling" flow rates with and without continuous air circulation " how will affect the data.

Step 5: With visual observation and using the analytical method (modified Asbestos Dust MicroVac ASTM D-5755), determine the Presences and/or Absences of Asbestos on the floor from the asbestos abatement project.

EAQP Summary of Test Results

A. The four out of the five modified **Asbestos Air TEM NIOSH 7402** performed on November 4, 2019 did not have any PCM fibers greater than 0.01 f/cc by PCM and had **no** Asbestos % by TEM via the control (Sample#1), Samples#002,003,005. Sample#004 (Outside Containment [R]) was over loaded and could not be determined.

EAQP Summary of Test Results - cont.

B. Three additional analytical test (**TEM AHERA Indirect Prep**) were analyzed in the laboratory on **Sample#003 (Inside containment[L side])**-had a MH/AS treatment covering the ACM Textured ceiling & **before the abatement** process), **Sample#004 (Outside the containment [R side])** during the abatement while a box fan on high (3 speed) was continuously blowing the air within the space while a stiff brush was used to remove portions of the textured popcorn ceiling) and **Sample#005 (In containment[L side])** had a MH/AS treatment covering the ACM Textured ceiling while the same abatement process was being performed within the Containment.

C. In Containment (L) with a MH/AS treatment covering the ACM textured ceiling, Sample #003 (no air flow) and Sample #005 (with air flow) were taken. Neither sample had ANY detectable amount of Asbestos in the air [<0.035 s/mm²(structures per square millimeter)]; whereas, Outside Containment (R) Sample#004 (with air flow) did contain Asbestos= 162.3 s/mm².

D. There was only a small analytical difference noted on the air born collection devices between flow rates of 16 Vs 5 l/m - without and with forced air circulation.

E. A black plastic can be used as a quick qualitative determination if gross amounts of Chrysotile Asbestos contamination are present during the abatement. Different types of Asbestos and colors (other than white) can vary in visual detectability depending on the optical contrast of the Asbestos color itself and the collection surfaces.

F. If MH/AS is used on surfaces containing ACM, dispose the MH/AS containing Asbestos by folding it in with itself and placing this in an appropriately labeled container.

G. Do not recommend application of MH/AS on any surfaces (ACM or otherwise) that will not be properly deposited of during remediation

EAQP CONCLUSIONS

#1. The MH/AS pretreated source containment system used on ACM textured ceilings prevented Asbestos from becoming air born or becoming dislodged thus being detectable in air or on surfaces.

#2. Abating ACM painted texture ceiling by scraping mainly results in the production of larger ACM particulates rather than the production of microscopic fibers.

* Some information in the Lab Reports contained confidential information that could not be changed due to Chain of Custody (CoCs) issues. Those Lab Reports are available only upon written request and with receipt of a signed, dated Non-Disclosure Agreement (NDA).