NAVIGATING ENVIRONMENTAL HEALTH CONCERNS IN YOUR PROPERTIES

WHITE PAPER

Alliance Environmental Group is the leading abatement and indoor air quality company across the Western U.S.
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Introduction

Environmental hazards such as asbestos, lead-based paint, and mold can pose significant risks to public health and safety. The dangers of these environmental toxins are not always apparent, and it takes a certain level of awareness and education to properly identify and address them. In this white paper, we will provide an overview of these hazards, including their sources, health impacts, and proper management techniques. Our goal is to equip readers with the knowledge they need to identify and mitigate these environmental risks and create safer and healthier living and working environments.

Types of Environmental Hazards

Asbestos

Probably one of the most notorious, yet misunderstood, environmental dangers faced in today's residential, commercial, and industrial worlds. Despite becoming regulated and largely denounced in the mid-1970s, many property managers and homeowners are still unaware that asbestos is not actually banned from residential and industrial use in several developed nations, including the United States. The health and litigation risks associated with this deadly material cannot be overstated.

Lead-Based Paint

As lead-based paint was the preferred and widespread paint of choice for many years, a large quantity of it still remains in many older homes, offices, and residential buildings. Its presence constitutes a growing threat to the health and safety of occupants as time wears away at this relic of the past, causing it to chip away and deteriorate into a dust-like state waiting to be inhaled.

Mold

Mold, a large and diverse group of microorganisms, is a fast-growing fungus just waiting to take advantage of even the most minor cases of water damage or rot. In addition to being an imposing 'roommate,' mold has a tendency to release microscopic spores into the air, which often have high levels of mycotoxins known to cause a plethora of neurological, respiratory, and general health problems.

Asbestos: The Basics

Turn on the T.V. and odds are that sooner or later, you'll encounter a commercial regarding an asbestos-related class action lawsuit or litigation bulletin. The fact is, there's certainly no shortage of asbestos awareness or a general understanding that asbestos is bad for you. As a property manager, you are almost certain to have a higher degree of awareness than the average person, but do you know enough to successfully navigate all the intricacies, hidden dangers, and common litigation risks of asbestos that have trapped other property managers in the past?

Knowledge is power, and in this case, it is the power to keep the future of your property, and the safety of your revenue streams, under your control and away from the grasp of real estate and litigation lawyers looking for the slightest opportunity to make a quick buck.
More than just the proverbial 'wolf-in-the-forest' it is made out to be, asbestos is a unique and useful substance that is extremely durable and resistant to both fire and most chemical reactions or breakdowns, causing it to have a number of practical applications from commercial to industrial use. As a set of six naturally occurring minerals with microscopic fibers, asbestos is an abundant natural resource that is most often used in either its chrysotile or amosite forms.

Asbestos: The Basics (Cont.)

Chrysotile
This is the most widely used form of asbestos – which is still mined and exported in many areas – due to the claim that is it safer than its alternative forms since its fibers are curly instead of straight, making them much harder to inhale.

The chrysotile fibers are the most flexible and can be woven or spun into many fabric-like forms, making it good for insulation, protective clothing, rope, brake linings, ceiling tiles, joint compounds, and other items in the home like toasters and hair dryers. In fact, 95% of asbestos products in the U.S. use this form.

Additionally, the Canadian Chrysotile Institute indicates that about 90% of all chrysotile mined today is used in the manufacturing of cement products–including sheets, pipes, and shingles–and that about 60 industrialized and developing nations still use chrysotile products, primarily because of their durability and low production costs.

Amosite
Amosite, or brown asbestos, is considered the second most hazardous type of asbestos and is made up of long, thin fibers that are brittle and can easily break off and become inhaled.

Commercial production, use, and mining of this form of asbestos stopped 10 years ago. During the 20th century, amosite was only used about 5% of the time, but since it was so widely used in thermal insulation and acoustic/anti-condensation materials, it is often found in disproportionately high concentration levels in construction and building materials. Even though amosite is no longer used today, it still resides in many properties or asbestos-prone products that are more than 10 years old.

However, despite the abundance of use, most experts agree that as long as asbestos is undisturbed and in good condition, the threat of inhalation is minimal. Yet many warn that with such a high concentration found in the products that most of us come into contact with daily, it is often only a matter of time before the asbestos in these products becomes an issue.

Did You Know?

Due to its durability and resistance properties, asbestos quickly became the choice material for a number of products, including:

- Blown-in attic insulation
- Vinyl floor tiles
- Glue that attaches floor tiles to concrete or wood
- Some forms of linoleum
- Window caulking and glazing
- Roofing material (usually on flat roofs but occasionally on shingles)
- HVAC duct insulation (usually found in corrugated or flat paper form)
- Siding material
- Plaster
- Fiber cement siding (usually 1/8” thick and 8’x4’ brittle)
- Corrugated heavy duty 8’x4’ panels
- Some forms of paint

Asbestos: The Threat to Health

It's one of nature's most merciless catch-22s – asbestos' microscopic fibers, which give the material its durability and protective attributes and make it so desirable to manufacturers, is also the very property that makes asbestos so hazardous to our health. These fibers are incredibly tiny (roughly the size of about 2% of the total diameter of a single human hair) and have an undesirable tendency to break apart from one other and become airborne, which allows them to easily be inhaled and embedded in the soft tissues of the respiratory system (like the lining of the lungs and inner cavity tissue).

According to the Environmental Protection Agency (EPA), asbestos exposure causes a whole host of respiratory problems and significantly increases one's chances of contracting any number of asbestos-related illnesses and health defects, including lung cancer, mesothelioma, and asbestosis.

Lung Cancer
Asbestos damages the lung tissue by cutting it up and secreting toxic particles that can lead to a number of types of lung cancers. Additionally, these wounds are greatly affected by cigarette smoke and the other chemicals that reside in it, magnifying the negative effects of both smoking and asbestos exposure.

Mesothelioma
Mesothelioma, or cancer in the lung lining, is one of the primary effects of asbestos exposure. This rare, aggressive, and extremely deadly type of cancer is, according to the National Cancer Institute, almost completely avoidable assuming the proper precautions are taken whenever one deals with asbestos. Unfortunately, a history of asbestos exposure is reported in about 70- 80% of all cases of mesothelioma, meaning improper treatment of the toxic substance is rampant.

Asbestos: The Threat to Health (Cont.)

Asbestosis
Asbestos inhalation scars lung and respiratory tissue and causes difficulty in breathing. Asbestosis is a degenerative and progressive long-term respiratory condition that is often seen as a precursor to mesothelioma and other cancers.

With such a well-documented list of side effects and resulting afflictions, it may seem surprising that asbestos exposure is still so widely prevalent in construction, renovation, and home repair projects across the U.S.

However, in 1991 the EPA's Asbestos Ban and Phase Out Rule was overturned in the case of Corrosion Proof Fittings v. EPA, 947 F.2d 1201 (5th Cir. 1991), where the appellate court ruled that the EPA failed to provide a reasonable basis for action, since their regulation resulted in a ban of products for which there was no substitute, and ordered them to come up with a better risk mitigation strategy. The resulting changes to the EPA's regulations not only allowed many consumer products to legally contain trace amounts of asbestos in them, but it also transferred the responsibility of asbestos-related issues and health problems from the manufacturers to the property manager/owners, since it was found that asbestos-laden products were not a significant health risk until they deteriorated or became older.

When in Doubt, Blame the Landlord

It's trendy, it's been proven lucrative, and it's a seemingly simple solution to this rather complex and nuanced asbestos problem; just blame the landlord and sue. Whether it's right or not, the fact remains that the issues and risks associated with asbestos use in products largely lie with property managers.

Litigation related to asbestos injuries and property damages has been claimed to be the longest-running mass tort in U.S. history. Since Asbestos-related disease was first identified by the U.S. medical profession in the late 1920s (when workers' compensation cases were filed and resolved in secrecy), there has been a flood of litigation starting in the 1970s and culminating in the 1980s and 1990s.

Since 2002, asbestos lawsuits in the U.S. have included property managers and owners of premises at which asbestos-containing products were installed or improperly dealt with. This includes virtually anyone who owned a building prior to 1980. And while the EPA has no formal ban on the substance, asbestos was one of the first hazardous air pollutants regulated by the 1970 Clean Air Act, leading to strict removal and disposal laws as a way of mitigating the threat asbestos poses to the public.

Court cases have held people and companies liable who have knowingly exposed others to the threat of asbestos, either through inaction or improper precautions. The responsibility falls on the property manager or property owner whether they are aware of its presence.

Dealing with Asbestos

Depending on when, how, and where asbestos was applied, it may or may not pose a significant risk to construction workers or tenants in the building. Basically, if the fibers cannot easily become dislodged or disturbed, then it is unlikely they will become inhaled and lead to significant health, safety, and litigation risks.

However, many methods of applying asbestos, such as flocking, allow asbestos fibers to gradually fall apart and become airborne. In these cases, asbestos poses many hazards to maintenance personnel, tenants, and construction workers who may drill, nail, or otherwise puncture walls or ceilings that have asbestos on the other side. The risks associated with asbestos can successfully be navigated by following a three-step process: detection, containment, and remediation.

Detection

Asbestos is not part of an ASTM (American Society for Testing and Materials) E 1527- 05 Phase I Environmental Site Assessment (ESA), and a building survey for asbestos is considered an out-of-scope consideration according to the industry standard, leaving the property manager responsible for any additional testing and ensuring that the necessary precautionary measures are taken when dealing with asbestos.

If you suspect a part of your property may contain asbestos, as most pre-1990s properties do, it is important to check periodically for tears, abrasions, or water damage on and surrounding asbestos products. Typically, so long as these products are in good condition, no action is necessary. However, if you discover slightly damaged material, limit access to the area and do not touch or disturb it. If asbestos material is more than slightly damaged, or if you are going to make changes in your home that might disturb it, professional repair or removal is needed.

In this case, it is important to seek out professional assistance from an asbestos abatement company that is properly licensed and has extensive experience in containment, decontamination, and lawful environmentally-friendly disposal.

Dealing with Asbestos (Cont.)

Containment
If removal is necessary, you will need a plan to prevent the inevitable asbestos-laden dust from spreading and contaminating other environments or sites. If tenants are still present in the building, temporary relocation may be necessary. Typically, the part of the building from which asbestos is being removed must be contained, usually with a polyethylene film seal, duct tape, and negative air pressure provided by machines that are fitted with HEPA filters.

This way, when construction or remediation services are performed, the disturbed asbestos does not spread throughout the building or get spewed into the outside air. Additionally, many of the afflictions associated with asbestos occur sometime after exposure to the deadly material, making it hard to determine its point of origin. By relocating or separating tenants from any potential exposure zones, you mitigate the risk of even being accused of asbestos exposure in the future, since you can always show a court that you took all the necessary precautions to prevent such an occurrence from happening.

Remediation
Once an area is contained, it is imperative to remove the asbestos quickly and efficiently, since the more you minimize your exposure timetable, the more you minimize any risk of exposure. Since asbestos fibers are so small and brittle, only a specialized vacuum cleaner can be used during the remediation and removal stage.

As a property manager, it is your responsibility to ensure that whatever construction or removal company you hire uses a class-H cleaner designed specifically for asbestos removal, since any other vacuum cleaner, even those with a HEPA filter attached, will violently expel asbestos particles in the air making the situation worse than if had you simply used a rake and trash bag to handle clean up.

If the condition of asbestos products is not too severe, then removal may not even be necessary. In cases of minor damage, asbestos, and asbestos-bearing materials may be enclosed or encapsulated to prevent building occupants from being exposed to the fibers, especially if these materials or products are tucked away in a place where they will rarely come into contact with people, pets, or any type of friction.

Lead-Based Paint: The Basics

Unlike more conventional paint types, lead-based paint relies on lead compounds, like lead (II) chromate ($PbCrO_4$) or lead (II) carbonate ($PbCO_3$), as pigment bases since they speed up the drying process, increasing the durability of the paint, maintain a fresh appearance, and increase the resistance to moisture and corrosion. Because of these superior aesthetic and functional properties, lead-based paint was extensively used on the interiors and exteriors of many residential and commercial properties, toys, products, and furniture up until 1978, when it was banned because of its high levels of toxicity and related negative health effects.

As a result, approximately 75% of homes built before 1978 contain lead-based paint in some form, and while it may be found on almost any surface, it was most commonly used on exterior painted surfaces, interior woodwork, doors, and windows.

Much like asbestos, the threat posed by lead-based paint relies, in large part, on its current state and quality of preservation. In other words, as long as the paint is not chipping or falling off the walls, or people aren't picking at it and putting it in their mouths or experiencing prolonged contact with the skin, then lead-based paint poses little to no threat to tenants.

So, what's the point of worrying about lead-based paint then? Assuming your property is in good condition and people aren't actively sabotaging your efforts to keep it that way, what risk does lead-based paint actually pose, and to whom, you might ask? Well, the answer is simple: children, especially younger infants, are most at risk for lead poisoning and exposure, albeit accidentally.

Lead-Based Paint: The Threat to Health

In general, people are often exposed to lead in many forms, not only as lead chips caused by flaking, but also as lead-laden dust stirred up by daily wear-and-tear, which is known to get on carpets, floors, furniture, toys, and other objects, as well as on the hands of children and adults in the home.

Some of the most common ways people, especially young children, are exposed to lead include:

Ingestion
The primary way the general population is exposed to lead. As lead paint deteriorates, peels, chips, or is removed via renovation, it often becomes pulverized by friction or general wear-and-tear and turns into fine particles that cause house dust, carpets, textiles, and surrounding soil to become contaminated. Lead then enters the body through normal hand-to-mouth activity.

Inhalation
This is the second most common way lead gets into the average person's body. However, while ingestion may be a more common pathway for exposure, only 20-70% of ingested lead becomes absorbed by the body, whereas in cases where lead is inhaled, 95% or more is then absorbed by the body. Children are often at a higher risk of inhalation than adults, except during renovation projects where a much higher concentration of lead dust enters the surrounding atmosphere, affecting adults, children, and pets equally.

Lead-Based Paint: The Threat to Health (Cont.)

Endogenous Exposure
Endogenous, or internal, exposure to lead occurs once lead particles have in some way entered the body. From there, they are often transferred into bone marrow and can contribute significantly to an individual's current lead level in the bloodstream. This type of exposure quickly spreads lead poisoning throughout the body and is particularly risky to a developing fetus or baby.

According to the EPA, even minute exposure to lead can cause lead poisoning, which disrupts crucial bodily functions and has a wide variety of symptoms, from vomiting and temporary insanity to death. Additionally, lead is known to be a potent neurotransmitter blocker of glutamate, which is critical for learning, and prevents and displaces other metals like calcium, iron, and zinc from doing their jobs.

Some of the many consequences of lead exposure include nervous system and kidney damage; poor muscle coordination; learning disabilities; attention deficit disorder; and speech, language, and behavioral problems. It is important to note that, while many of these negative side effects disproportionally affect people under 21 years of age, both children and adults are susceptible to the negative health effects of lead-based paint, even if the typical exposure pathways are different for each group.

Risks of Litigation and Increased Costs

Lead-based paint, similar to asbestos, is a relic of times past – a material whose abundant use benefited earlier generations only to burden the next. However, unlike asbestos which has had a long history and lineage of known health concerns and problems, the risks associated with using lead-based paint have historically been unclear, making it difficult to determine when acceptable ignorance ends, and malicious disregard begins.

Because of this, U.S. courts have been hesitant to prescribe liability to the manufacturers and vendors of lead-based paint. In litigation cases brought against these companies, federal judges have consistently ruled in favor of the defendants, citing difficulties in determining which companies made or used the actual lead pigment in question, a hesitancy to assign liability based on defendants' market share, and most importantly, an unwillingness to treat lead paint as an industrial pollutant or public nuisance.

Instead, despite whether it is fair or not, court precedent overwhelmingly affirms that the liability associated with lead-based paint lies with the landlord or property manager, since if kept in good condition, lead-based paint poses little to no risk to inhabitants.

Risks of Litigation and Increased Costs (Cont.)

In addition to court precedent, the EPA has issued rules and regulations that further demonstrate the property manager's liability in lead-based paint disasters and cases of lead poisoning. Most notably, the 2008 Renovation, Repair, and Painting Rule (RRP) adds additional requirements and penalties for dealing with lead-based paint and expands the scope of the 1978 Toxic Substance Control Act (TSCA) to include any housing, residential property, or facility that is routinely occupied by children as 'targeted housing,' and therefore subject to more scrutiny.

In short, RRP requires that property and construction managers ensure that all repair, construction, and renovation services that deal with lead-based paint at any level be done by trained and certified renovators employed by EPA-certified renovation companies, and that a post-renovation test be administrated.

In the case of non-compliance or negligence, the rule also increases the maximum penalty from $32,500 to $37,500, effective as of January 2021. Many national law firms believe that because of these updated regulations, future litigation regarding lead-based paint issues will place even more emphasis on the type of work done before and after any alleged exposure or violations occurred. This means that it is even more critical to ensure that lead-based paint issues are addressed promptly and thoroughly to avoid any potential non-compliance or negligence issues.

Dealing with Lead-Based Paint

Clearly, the presence of lead-based paint represents a significant risk of liability and loss to property managers, as even the allegation of negligence regarding lead-based paint will end up costing thousands of dollars in court costs and attorney fees.

However, while the EPA's rules do not specifically apply to abatement services, they certainly seem to be determined to incentivize their use. Since these regulations essentially accept that lead-based paint is a reality in many properties across the U.S., and address the property manager's reaction to this threat instead, the regulations provide a clear-cut path toward mitigating liability, proactive prevention, and remediation.

By taking these precautions and addressing any developing threats of lead poisoning posed by lead-based paint, property managers can go a long way towards ensuring that the lead-based paint on their properties never becomes an issue and as a result, protect themselves from costly litigation.

Mold: The Basics

When we think of asbestos and lead-based paint, it might seem like a stretch to put them in the same ballpark as mold. Asbestos takes a cheese grater to your lungs and leads to cancer, while lead-based paint turns your body into a heavy metal waste site and severely stunts neurological development.

But mold is just something we throw out when it gets on our leftovers in the fridge or the stuff we pick off of our loaves of bread before we make a sandwich often considered a minor nuisance.

Because of these beliefs, many people underestimate the threat posed by mold contamination in the home or office, and the effects it has on indoor air quality. To put it simply, mold is to indoor air quality what the BP oil spill was to the Gulf of Mexico; a source of consistent pollution that leads to environmental degradation, albeit to a lesser degree perhaps.

Molds are eukaryotic micro-organisms that decompose dead organic material, such as leaves, wood, and plants, and grow best in warm, damp, humid conditions. They spread and reproduce by making and then releasing spores into the air. When these microscopic spores, which can survive conditions too hot or sunny for mold to grow, land on a surface that has food and oxygen available, they can remain dormant until some sort of water damage occurs, which then allows them to grow and reproduce, releasing thousands or more spores into the air and repeating the cycle all over again.

Mold: The Basics (Cont.)

The biggest causes of mold in residential and commercial properties are:

Humidity
If the weather has been rather humid for a few days, or even if it has been raining, it is common for mold to begin growing on walls, window seals, and other surfaces due to the wet air. Also, evaporating air in your house can increase indoor levels of humidity and, by extension, lead to more mold growth indoors.

Leaky Pipes
Water leaks from pipes are a common cause of mold growth. The worst leaks are the ones that go undetected because they are hidden out of view, like the ones that happen inside a wall. By the time you discover these leaks, mold has usually started to grow already.

Leaky Roofs
Similar to pipes, a leak in the roof can result in unnoticed moisture in the ceilings and walls, allowing mold to grow largely undetected.

Condensation
Differences in external and internal temperature, like with pipes or concrete floors with carpet on top, can cause condensation to form, which leads to mold growth.

Poor Ventilation
Poorly ventilated areas increase both indoor humidity and the time it takes for moist areas to dry, thus giving more time for mold spores to take root and spread.

Wet Clothes Or Fabrics
Wet clothes left in washers, on the floor, or in closets can help spread mold and moisture.

Flooding Or Other Types Of Water Damage
If your property has undergone water damage, even if it was minor, it's almost inevitable that some mold formed due to the incident – the question is where? Water damage left unattended or untreated for even a few hours drastically increases the overall risk of mold.

While most people encounter mold directly via old food that's been left out, mold can actually form on many surfaces we wouldn't otherwise suspect. Since the only ingredients mold needs to grow are water, oxygen, and an organic food source, it can also grow on wood, paper, drywall, and certain synthetic materials such as adhesives, pastes, and paints.

Mold: The Threat to Health

Due to their microscopic nature and the way they reproduce and spread, mold spores are present in almost every environment found on earth, save for extreme heat or cold. And while a normal level of exposure to these airborne pollutants is harmless, and relatively unavoidable, mold growth and contamination cause an exponential spike in the concentration of mold spores in the atmosphere, leading to a host of pulmonary and toxicity-related health effects.

The worst-case scenario for homeowners regarding mold contamination and damage is produced by consecutive episodes of water damage, which promote fungal growth (and in some cases, mycotoxin synthesis), followed by drier conditions that, in turn, facilitate the liberation of their spores into the surrounding atmosphere. In addition to the above health effects, there are several known species of mold that are considerably more harmful to humans and animals, defined by their tendency to develop and release mycotoxins into the air, which cause toxic symptoms that are much worse than the simple allergy-like symptoms caused by ordinary molds.

These mycotoxins, when inhaled or ingested, can lead to serious symptoms and health problems such as mental impairment, breathing problems, damage to internal organs, and in some cases, even death. Unfortunately, not much is known about these mycotoxins, aside from the aforementioned documented effects, and governmental agencies have yet to release official statements regarding their exposure to humans, excluding the EPA's one-time acknowledgment that "...mold growing in homes is harmful to humans and that it should be removed."

Why and How You Should Deal With Mold

In addition to asset devaluation, many courts have begun to recognize the human cost of mold contamination in residential properties, leading to a wave of litigation and liability lawsuits against property managers, and increasing recognition of the problem at hand. Similar to lead-based paint, the best way to deal with what some consider to be the newest development in tort litigation – mold litigation – is relying on prevention as opposed to forgiveness.

While it may be next to impossible to keep an area completely free of mold, what you can do is control the amount of moisture, and by extension the amount of mold, in the indoor environments you're responsible for maintaining. Most molds need about 24 hours or more to start growing, which gives you a decent window of opportunity to prevent such growth from ever taking place after a possible mold-inducing incident.

By maintaining and insulating pipes, and fixing leaks as soon as they occur, you can take care of the most common source of mold damage in commercial and residential properties. Likewise, removing all wet materials from potential contamination sites and providing the necessary air circulation to deter dampness before bacteria can multiply will decrease the chance mold has to take root and grow.

In more dire situations where water damage has developed over time, you may need to conduct a visual examination of the building and HVAC system, followed by a collection of surface and air samplings for analysis by a microbial laboratory to determine what type of mold may have developed, and ultimately, removal and decontamination by a properly licensed remediation company.

Conclusion

In conclusion, environmental hazards such as asbestos, lead-based paint, and mold are serious threats to public health and safety. It is important to be aware of their sources and potential impacts, as well as how to properly manage and mitigate these risks. With the right knowledge and management techniques, property managers, building owners, and individuals can help create safer and healthier living and working environments for everyone. By taking proactive measures to address these environmental hazards, we can reduce the risk of harm and protect our communities from the negative impacts of these toxic substances.

Contact Us

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