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PRO SPEX MOLD TESTING COPY

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JULY 10, 2018



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PRO SPEX MOLD TEST REPORT

Scope of Work & Methods

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Pro Spex Inc. conducted a preliminary non-intrusive mold inspection of the accessible interior living spaces and have prepared this report summarizing our inspection findings and laboratory results. The purpose of this assessment was to identify the presence or absence of mold growth, conditions conducive to mold growth and to determine the indoor air quality as it relates to mold. Information obtained through visual inspection and microscopic analysis of air sampling was used to determine the home's interior conditions. We follow the Indoor Environmental Standards Organization (IESO) sampling protocols.

Non-Intrusive Visual Inspection: A visual inspection with the use of infrared thermal imaging and moisture meter detection was performed to identify suspect conditions and potential moisture source locations. Digital and infrared photographs are taken to support inspection findings.

Air Sampling and Analysis: The air sampling methodology utilized for this project was designed to quantify the respective airborne presence of fungal spores in the interior living spaces in relationship to what is naturally occurring outdoors, commonly referred to as normal fungal ecology. Air samples are collected by utilizing a high volume-sampling pump calibrated to a flow rate of 15 liters per minute. The pump then impacts the drawn air into an "Air-O-Cell" cassette. The cassette is a fully contained microscopic slide and media that collects any airborne fungal spores and hyphae particles by impaction on the media.

A control/baseline air sample was collected outdoors for comparison purposes; an indoor air sample was collected near the HVAC main return area. After sample collection the cassettes are re-sealed and placed into individual plastic bags and shipped via overnight courier to AEML Inc. Microbiology Laboratories for direct microscopic examination. There, a microbiologist will examine the slides to identify the type, and determine the airborne concentration of, fungal spores present. Spore identification is to genus level unless otherwise specified.

SUMMARY

 2.1.1 Summary of Findings - Summary of Findings: FUNGUS VISIBLE ON WALLS/CEILINGS

 3.1.1 Summary Of Lab Analysis - Summary Of Lab Analysis: Abnormal Fungal Ecology (Air & Swab Testing)

1: SITE CONDITIONS

Information

Inspection Report ID: 15231	Style Of Building Apartment	Year Built 1960
Test Date: 10/01/2018	Test Start/End Time: 0930- 1035	In Attendance Client
Indoor Temp. 75 F	Occupancy Tenant Occupied	Weather Conditions Sunny, Mild Winds

Location of Mold Test Sampling

These photos show where sample were taken.



2: SUMMARY OF FINDINGS

Information

Summary of Findings

Assessment activities performed by Pro Spex Inc. indicate that conditions within the residence, as existing at the time of the sample collections and observations, to have the following:

Limited Area of Study

At the customers request, the area of study was limited to the areas described in this report. Areas outside of those indicated may contain fungal spores that affect the study area.

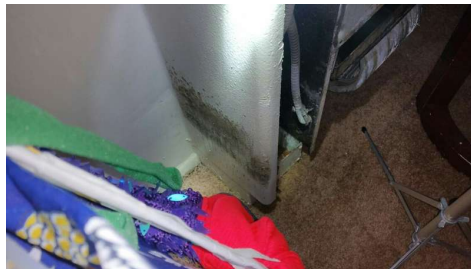
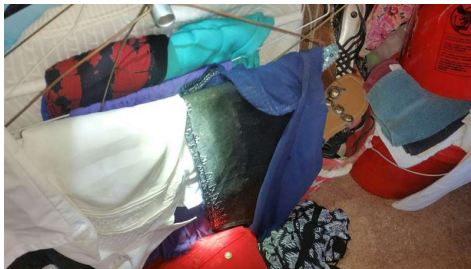
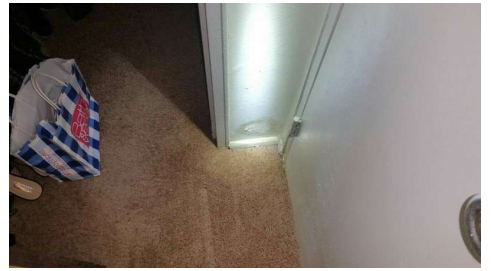


Observations

2.1.1 Summary of Findings

FUNGUS VISIBLE ON WALLS/CEILINGS**Immediate, Costly or Safety Concern**

Signs of fungi growth are present in several areas. The underlying cause is moisture. The moisture should be identified and corrected to prevent further damage.



3: SUMMARY OF LAB ANALYSIS

Observations

3.1.1 Summary Of Lab Analysis

ABNORMAL FUNGAL ECOLOGY (AIR & SWAB TESTING)



Immediate, Costly or Safety Concern

The laboratory analysis from the collected indoor air and swab sample showed abnormal fungal ecology. Result showed elevated presence of mold spore concentrations existing at time of testing.

These laboratory results are reflective of the indoor air quality conditions as they specifically relate to airborne fungal spores in the home at the time of sample collection. Air sample collection provides a snapshot in time as to what is occurring in the air at the time of sample collection. Any condition which allows for the loss of moisture control, including but not limited to: water intrusion; water vapor condensation or prolonged elevated indoor humidity (>55%) may result in microbial growth.

Recommendation

Contact a qualified professional.

4: RECOMMENDATIONS

Information

Recommendations

This report only provides an evaluation of the interior substrate conditions and indoor air quality as they relate to mold and moisture. The following recommendations are meant to provide general remediation procedures based on the information obtained by our investigation and nationally accepted standards. These recommendations should not be construed as the only effective methodology for remediation and no warranty is expressed or implied with these recommendations. Pro Spex Inc. is independent of any remediation process and we defer to the qualified remediator for specific repair protocols since the actual remediation process may expose additional areas requiring treatment.

The goal of the remediation process is to correct all existing moisture conditions that promote mold growth and to physically remove all mold contaminated/non-restorable materials in accordance with the IICRC S520 mold remediation standard.

We recommend state licensed mold remediators with ACAC and/or IICRC certified personnel who are experienced with water damage and microbial remediation solutions perform all remedial intervention including intrusive investigation. The remediation company should show proof of certifications, carry mold specific Errors & Omissions Insurance, General Liability Insurance and Workers Compensation.

The water damage/mold impacted area should be in containment, under a negative pressure with the use of negative air machines (NAMs) equipped with high-efficiency particulate air (HEPA) filtration during remedial efforts to prevent potential cross-contamination between the affected and unaffected areas.

The HVAC system should be isolated from the work area to minimize the risk of cross contamination. Portable dehumidification may be necessary during the remediation process to maintain conditions that will not support additional mold growth.

Intrusive investigation should be performed in areas with water damage and/or elevated moisture content to identify the full extent of areas requiring remedial treatment.

The areas of water damaged and/or stained carpeting should be discarded. Areas of carpet pads that have been wet should always be discarded.

Porous building materials (sheetrock, baseboards, tack strips, etc.) that have been water damaged to the point that drying and cleaning will not restore them to their pre-water exposure condition or have sustained loss of integrity should be removed and discarded, whether or not there is visible evidence of fungal growth.

All visible fungi must be physically removed. Areas that have developed fungal growth should be HEPA vacuumed and cleaned thoroughly with an EPA registered product. However, if the mold growth is imbedded within the material and cannot be cleaned; removal of the contaminated materials plus an additional one (1) foot of material beyond the affected area(s) should also be removed. Substrates that cannot be cleaned must be disposed.

Contaminated building materials should be removed carefully in as large a section as possible for bagging or wrapping with 6-mil disposal bags or securely wrapped in 6-mil poly sheeting. Bagged materials should be sealed inside a second bag before moving them outside the containment area (double bagging), if they are going to pass through Condition 1 areas.

All surfaces within the containment should be HEPA vacuumed and/or damp-wiped with an appropriate EPA registered product.

Post Remediation Verification should be performed by a CIE or CIH prior to any build-back of finish materials

5: MOLD CLEAN UP IN HOMES

Information

Mold Cleanup In Your Home (Taken from EPA.gov)

Mold Cleanup

If you already have a mold problem - **ACT QUICKLY**. Mold damages what it grows on. The longer it grows, the more damage it can cause.

Leaky window - mold is beginning to rot the wooden frame and windowsill.

Who should do the cleanup depends on a number of factors. One consideration is the size of the mold problem. If the moldy area is less than about 10 square feet (less than roughly a 3 ft. by 3 ft. patch), in most cases, you can handle the job yourself, follow the Mold Cleanup Tips and Techniques. However:

- If there has been a lot of water damage, and/or mold growth covers more than 10 square feet, consult EPA guide Mold Remediation in Schools and Commercial Buildings. Although focused on schools and commercial buildings, this document is applicable to other building types.
- If you choose to hire a contractor (or other professional service provider) to do the cleanup, make sure the contractor has experience cleaning up mold. Check references and ask the contractor to follow the recommendations in EPA guide Mold Remediation in Schools and Commercial Buildings, the guidelines of the American Conference of Governmental Industrial Hygienists (ACGIH), or other guidelines from professional or government organizations.
- If you suspect that the heating/ventilation/air conditioning (HVAC) system may be contaminated with mold (it is part of an identified moisture problem, for instance, or there is mold near the intake to the system), consult EPA guide Should You Have the Air Ducts in Your Home Cleaned? before taking further action. Do not run the HVAC system if you know or suspect that it is contaminated with mold - it could spread mold throughout the building.
- If the water and/or mold damage was caused by sewage or other contaminated water, then call in a professional who has experience cleaning and fixing buildings damaged by contaminated water.
- If you have health concerns, consult a health professional before starting cleanup.*

Tips & Techniques (Taken from, EPA.gov)

Tips and Techniques

The tips and techniques presented in this section will help you clean up your mold problem. Professional cleaners or remediators may use methods not covered in this publication. Please note that mold may cause staining and cosmetic damage. It may not be possible to clean an item so that its original appearance is restored.

- Fix plumbing leaks and other water problems as soon as possible. Dry all items completely.
- Scrub mold off hard surfaces with detergent and water, and dry completely.
- Absorbent or porous materials, such as ceiling tiles and carpet, may have to be thrown away if they become moldy. Mold can grow on or fill in the empty spaces and crevices of porous materials, so the mold may be difficult or impossible to remove completely.
- Avoid exposing yourself or others to mold. See discussions:
 - What to Wear When Cleaning Moldy Areas
 - Hidden Mold
- Do not paint or caulk moldy surfaces. Clean up the mold and dry the surfaces before painting. Paint applied over moldy surfaces is likely to peel.
- If you are unsure about how to clean an item, or if the item is expensive or of sentimental value, you may wish to consult a specialist. Specialists in furniture repair, restoration, painting, art restoration and conservation, carpet and rug cleaning, water damage, and fire or water restoration are commonly listed in phone books. Be sure to ask for and check references. Look for specialists who are affiliated with professional organizations.*

Bathroom Tip

Places that are often or always damp can be hard to maintain completely free of mold. If there's some mold in the shower or elsewhere in the bathroom that seems to reappear, increasing ventilation (running a fan or opening a window) and cleaning more frequently will usually prevent mold from recurring, or at least keep the mold to a minimum.

6: DEFINITIONS

Information

Definitions

- **Airborne:** supported especially by aerodynamic forces or propelled through the air by force
- **Air filtration device (AFD):** depending on the mode of use, an AFD that filters (usually HEPA) and recirculates air is referred to as an air scrubber. One that filters air and creates negative pressure is referred to as a negative air machine (NAM).
- **Allergens:** substances that act as antigens producing an allergy
- **Assessment:** a process performed by an indoor environmental professional (IEP) that includes the evaluation of data obtained from a building history and inspection to formulate an initial hypothesis about the origin, identity, location and extent of amplification of mold contamination. If necessary, a sampling plan is developed, and samples are collected and sent to a qualified laboratory for analysis. The subsequent data is interpreted by the IEP. Then, the IEP, or other qualified individual, may develop a remediation plan.
- **Condition 1 (normal fungal ecology):** an indoor environment that may have settled spores, fungal fragments or traces of actual growth whose identity, location and quantity are reflective of a normal fungal ecology for a similar indoor environment.
- **Condition 2 (settled spores):** an indoor environment which is primarily contaminated with settled spores that were dispersed directly or indirectly from a Condition 3 area, and which may have traces of actual growth.
- **Condition 3 (actual growth):** an indoor environment contaminated with the presence of actual mold growth and associated spores. Actual growth includes growth that is active or dormant, visible or hidden.
- **Containment:** a precaution used to minimize cross-contamination from affected to unaffected areas by traffic or material handling. Containment normally consists of 6-mil polyethylene sheeting, often in combination with negative air pressure, to prevent cross-contamination.
- **Contaminated (contamination):** the presence of indoor mold growth or mold spores, whose identity, location and quantity are not reflective of a normal fungal ecology for similar indoor environments, and which may produce adverse health effects, cause damage to materials or adversely affect the operation or function of building systems.
- **Cross-contamination:** the spread of a source or sources of contamination from an affected area to an unaffected area.
- **Dew Point Temperature:** the temperature at which water vapor begins, or would begin, to condense.
- **Fungus (plural fungi):** one of the kingdoms into which living things are categorized. Fungi have distinct nuclei and include a variety of types, such as molds, yeasts, and mushrooms
- **Genus:** a taxonomic category ranking below a family and above a species
- **HEPA:** an acronym for high efficiency particulate air/arrestance, which describes an air filter that removes 99.97% of particles at 0.3 microns in diameter.
- **HVAC:** an acronym for Heating, Ventilation, and Air Conditioning.
- **Indoor Environmental Professional (IEP):** an individual who is qualified by knowledge, skill, education, training, certification and experience to perform an assessment of the fungal ecology of structures, systems and contents at a job site, create a sampling strategy, sample the indoor environment and submit to an appropriate laboratory, interpret laboratory data and determine Condition 1, 2, or 3 for the purpose of establishing a scope of work and verifying the return of the job site to Condition 1.
- **Inspection:** the gathering of information regarding the mold and moisture status of the building, system, contents or area in question.
- **Materially interested parties:** an individual or entity substantially and directly affected by a mold remediation project.
- **MERV:** MERV is an acronym for Minimum Efficiency Reporting Value. The MERV rating is a measure of the minimum efficiency of an air filter when dealing with particulate sizes between 0.3 to 10 microns.
- **Micron:** one-millionth of a meter - also known as a micrometer
- **Mold:** a group of microscopic organisms that are part of the Fungi Kingdom. They generally reproduce by means of spores and are ubiquitous. Often, the terms mold and fungi are used interchangeably.
- **MVOCs:** Microbial Volatile Organic Compounds - Some compounds produced by molds are volatile and are released directly into the air.
- **Mycelium:** the vegetative part of a fungus consisting of a mass of branching threadlike structures
- **Mycotoxin:** Toxic compounds produced by certain fungi. Some mycotoxins cling to the surface of mold spores; others may be found within spores. More than 200 mycotoxins have been identified from common molds, and many more remain to be identified.
- **Normal fungal ecology (Condition 1):** an indoor environment that may have settled spores, fungal fragments or traces of actual growth whose identity, location and quantity are reflective of a normal fungal ecology for a similar indoor environment.
- **Pathogenic:** causing or capable of causing disease
- **Personal protective equipment (PPE):** safety items designed to prevent exposure to potential hazards. Examples include: respirators, gloves, goggles, protective clothing and tools.
- **Plenum:** an air-filled space in a structure that receives air from a blower for distribution (as in a ventilation system)

- **Post-remediation verification:** an inspection and assessment performed by an IEP after a remediation project, which can include visual inspection, odor detection, analytical testing or environmental sampling methodologies to verify that structure, system or contents have been returned to Condition 1.
- **Preliminary determination:** a conclusion drawn from the collection, analysis and summary of information obtained during an initial inspection and evaluation to identify areas of moisture and actual or potential mold growth.
- **Quality control:** activities performed by a remediator that are designed to assure the effectiveness of the advised or suggested.
- **Relative Humidity:** The ratio of the amount of water in the air at a given temperature to the maximum amount it could hold at that temperature; expressed as a percentage
- **Remediate:** the process of restoring, repairing; regarding mold damage in buildings. The process includes removing damaged materials, replacing them with new materials and correcting the problem(s) that caused the damage
- **Spores:** the reproductive elements of lower organisms, such as fungi
- **Threshold Exposure Limits:** Threshold exposure limits for fungal air contaminants for individual occupants have not been established, and because of other factors that affect the exposure levels independent of area (proximity, duration), it is impossible to say with certainty how small an area of visible mold growth is small enough to ignore. It is recommended, therefore, that all visible growth be remediated regardless of area.
- **Toxicity:** the degree to which something is poisonous
- **Toxinogenic:** toxin-producing fungi or bacteria
- **Viable:** capable of germination and growth
- **Volatile Organic Compounds (VOCs):** chemicals which vaporize at room temperature