

Understanding Mold in the Restoration Industry – Real Estate

39046

Understanding Mold in the Restoration Industry



*Property
Management
Professionals*

Course Rules

Attendance Policy

- Participant must attend entire course to obtain CE credits

Classroom Protocol

- Students discouraged from entering or exiting during class time
- Please refrain from utilizing cellular phones, pagers, etc.

Servpro Industries, Inc. DOES NOT Purport to Provide Expert Guidance or Direction Concerning Mold. Our Objective Is to Share Current Information and Guidelines for Mold Remediation to Help You Better Understand the Issues and Challenges Related to Mold.

"Understanding Mold in the Property Restoration Industry"

Report available at www.servpro.com

*To Access, Click:
Mold Mitigation and Remediation ↓
The Truth About Mold ↓
Understanding Mold in the Property
Restoration Industry*

Mold Has Been Around for Ages

...spread on the walls, ⁴⁰he is to order that the contaminated stones be torn out and thrown into an unclean place outside the town. ⁴¹He must have all the inside walls of the house scraped and the material that is scraped off dumped into an unclean place outside the town.

⁴²If the mildew reappears in the house, it is a destructive mildew; the house is unclean. ⁴³It must be torn down-its stones, timbers and all plaster-and taken out of the town to an unclean place.

⁴⁶Anyone who goes into the house while it is closed up will be unclean until evening. ⁴⁷Anyone who sleeps or eats in the house must wash his clothes.

*NIV Study Bible, 25th Anniversary Edition, 1995, Zondervan Corporation, p. 163

History of Mold Awareness

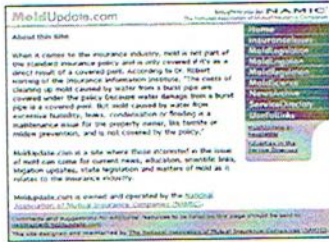
- 1993 New York Guidelines
- 1994 Saratoga Springs
- 1994 BAARN International Workshop
- 1995 Health Canada Guide
- 1996 Society of IAQ
- 1999 ACGIH Bioaerosols Committee
- 2001 EPA Guidelines for Schools and Commercial Buildings
- 2003 OSHA Safety and Health Information Bulletin
- 2003 IICRC Standard and Reference Guide for Professional Mold Remediation (S520)

History of Mold Awareness

- Litigation Prior to 1993 Was Limited:
 - Initial cases were:
 - Landlord-tenant
 - Faulty construction
 - Lawsuits are in state and federal court
 - Regulatory Organizations such as State Health Agencies, State Attorney Generals and the outcome of litigation are defining the future of how we conduct mold mitigation and remediation and how mold liability is handled.

Mold Update Website

- To keep current on mold issues you can use websites such as this one:



Participants in the Mold Issue

Participants in the Mold Issue

- Federal and State Governments
- Insurance Companies
- Attorneys
- Restoration professionals
- Industrial Hygienists and Indoor Environmental Professionals
- Realtors and Property Managers
- Buildings, Building Owners and Occupants

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The National Association of Mold Remediation Contractors

Mold Litigation

Below is a selection of past court cases involving damages due to mold. As the sampling of cases demonstrates, mold-related lawsuits may target different types of defendants, including contractors, subcontractors, construction managers, property managers, architects, construction equipment suppliers, and building owners, as well as commercial and personal lines insurers. Damages may include the cost of mold remediation, loss of property, and health-related claims.

Disclaimer

The following selection of current and past litigation relating to mold damage is based on third-party sources, including web sites and the news media. The descriptions have not been verified by an independent examination of court records and this information is provided "as is" without warranty of any kind. For other terms of use regarding the material please click on our "Terms of Use" highlight below.

Jensen v. AMGEN Inc.

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The National Association of Mold Remediation Contractors

2004 Mold Legislation

(Disclaimer: This table is updated at least once a week. It does not purport to include all the toxic mold bills that may have been introduced across the country.)

State	Bill Number	Bill Description	Bill Status
Tennessee	HB 171	Construction that fabricates, utilizes, installs, or repairs an energy conservation system or energy conservation measure in the case of any general system, energy conservation measure, or energy conservation system shall be deemed to be a construction activity if it results in mold damage resulting from mold introduced to the structure or non-damaged areas.	Sen. offers Sept. 11, 2004
Illinois	SB 1030	Owners and lessors permit this permitting both mold remediation and mold remediation services for a construction project and the contractor or subcontractor to be held liable for mold damage resulting from mold remediation or mold remediation services provided to the project or project.	Sen. offers Feb. 1, 2004

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Restoration Professionals

- Moisture is the key to mold – mitigate!
- The owner is important, but the mitigation technician on-site makes key decisions ... staff training!
- Restoration vendors are not environmental consultants nor qualified medical consultants

Realtors and Property Managers

- Earliest litigation issues were nonresponsive building owners allegedly not remediating problems
- Listing and selling agents disclosure
- General agent liabilities

Buildings, Building Owners and Occupants

- Earliest litigation issues were nonresponsive building owners (allegedly)
- Not remediating problems
- Safety is a global issue
- Public awareness is heightened
- Facilities today are more "air tight"
- Lack of air circulation and trapped moisture

Spore Mass

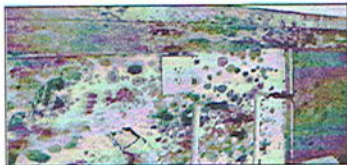
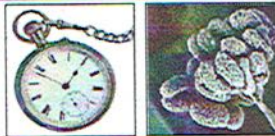


What Makes Fungi Dangerous

- Mycotoxins
 - Produced by fungi
 - Toxic
 - Attached to mold spores and fragments of mold
- Mold is an 'Invisible Enemy'
 - Growing mold colonies eventually become visible, but...
 - You cannot see mold spores
 - Disturbance of mold causes spore mass to aerosolize, releasing spores into air stream
 - You cannot visually determine if materials are contaminated with settled spores

Mold Growth Requirements

- Mold Spores
- Food Source
- Temperature
- Water
- Time



Preventing Mold Growth

- Good Ventilation
- Dry Environment
- Temperatures at Extremes
 - < 35° and
 - > 115 °
- Lack of food
- Fungicides and Biocides

Buildings



Buildings

- Building related illnesses or syndromes
- Modern construction techniques
- Improved air tightness
- Lack of maintenance and upkeep



Institute of Medicine Report

- Centers for Disease Control and Prevention (CDC) sponsors study by the Institute of Medicine (IOM).
- Does mold growing indoors cause health problems?
- Reviewed hundreds of scientific studies spanning a period of 20 years.
- Released a report on May 25, 2004 entitled *Damp Indoor Spaces and Health*.

Link vs. Association

- Mold *linked* with illness = mold *caused* the illness.
- Mold *associated* with illness = mold and the illness are present together, but the mold is not the cause of the illness.
- Mold and dampness indoors can be associated with certain health effects.
- No evidence that dampness and mold are linked with those health effects.
- Does not rule out the possibility of a link.

Associations with Health Effects for Otherwise Healthy Adults

- Upper respiratory tract symptoms
 - nasal congestion
 - runny or itchy nose
 - sore throat
 - sneezing
 - Sinusitis
 - Rhinitis
 - hay fever
- Coughing
- Wheezing

Do Not Assume “Mold Is Harmless”

- Excessive dampness in buildings creates conditions for mold to grow and multiply.
- Water damage conditions can lead to unhealthy indoor environments
- Maintain buildings to prevent intrusion of moisture and excessive dampness.

Mold Remediation and Restoration

Mold Remediation

- Safety is first priority
- Document, Document, and Document
- Contain mold during remediation
- Remove mold contamination
- Dry the structure and contents



EPA Guidelines

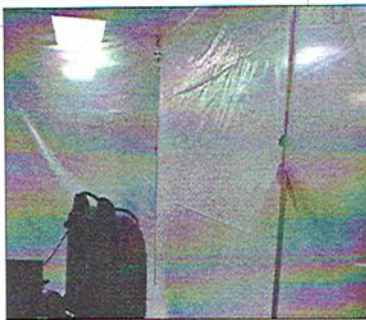
■ EPA Guidelines contribute to areas not covered by NYC Guidelines:

- Refers to locations of possible "hidden mold."
- Defines PPE requirements into minimum, limited and full
 - EPA recommends powered air purifying respirators for full protection
- Cautions against "unplanned" sampling
 - Only "trained personnel should perform sampling or else results could be misleading"

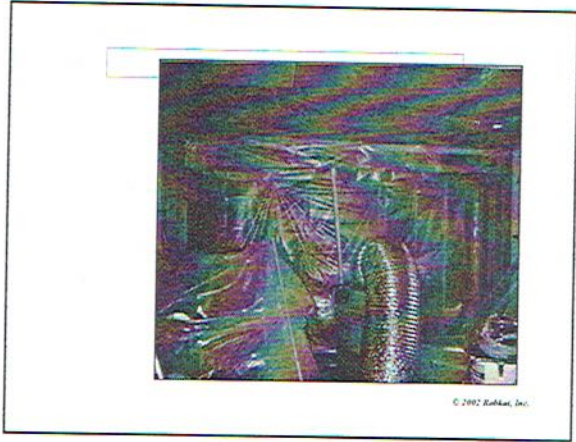
EPA Guidelines

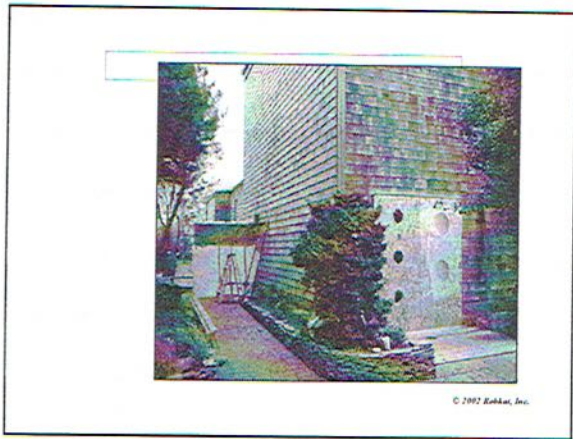
Levels of Containment: Limited and Full

- Limited-
 - Single layer polyethylene, negative air
 - Applies to Medium (10-100 SF)
- Full-
 - Double layer polyethylene, negative air
 - Applies to Large (> 100 SF)
- EPA Guidelines for containment are more aggressive than NYC Guidelines
 - Double bagging vs. Single bagging moldy debris



© 2002 Rabbit, Inc.



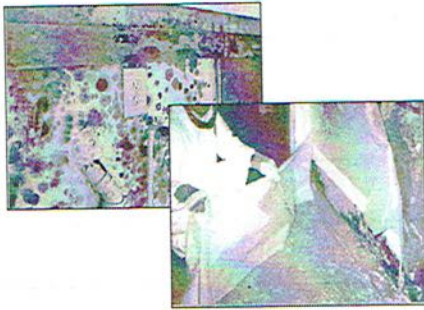




Actual Growth



Actual Growth



Actual Growth



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Principle One: Safety and Health

- Engineering controls such as controlled demolition and source containment
- PPE
- Follow OSHA standards



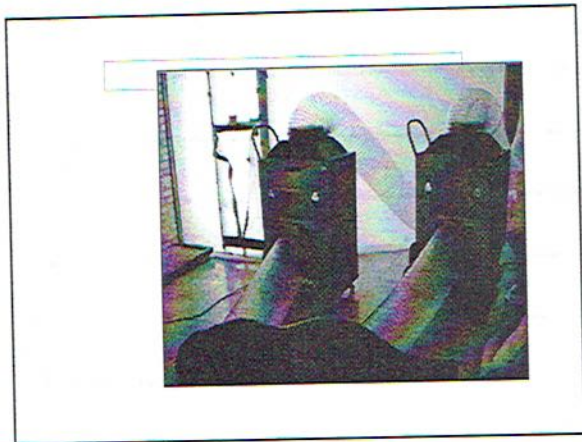
Principle Two: Documentation

- *Before* remediation begins
 - Document
- *During* remediation
 - Document
- *After* remediation is finished
 - Document

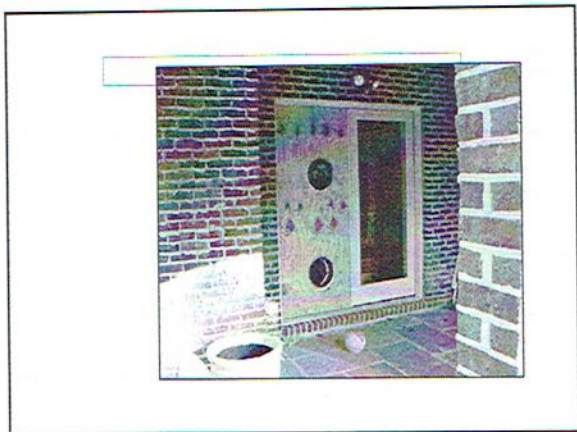
Principle Three: Control Contaminants

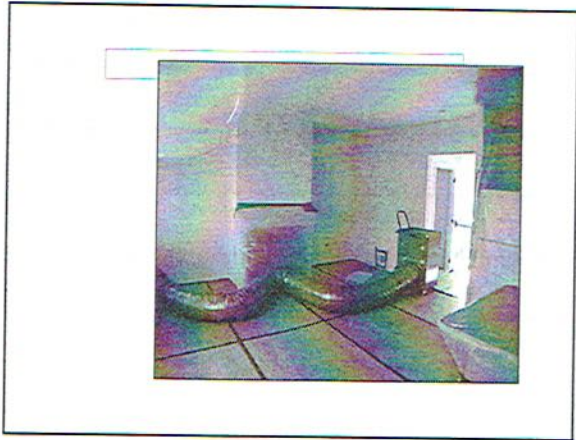
- Control Mold at its Source
- Minimize Dust During Demolition
- Use AFD (*Air Filtration Device*)

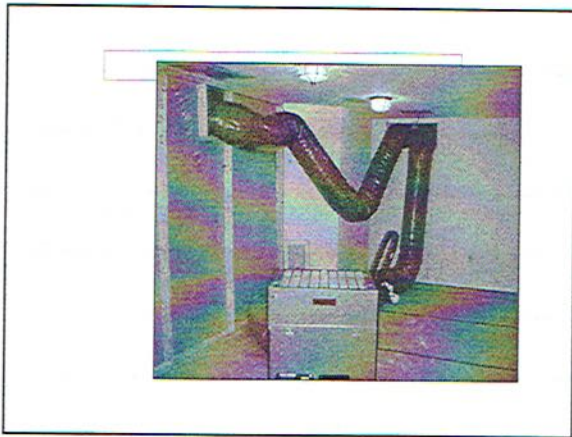




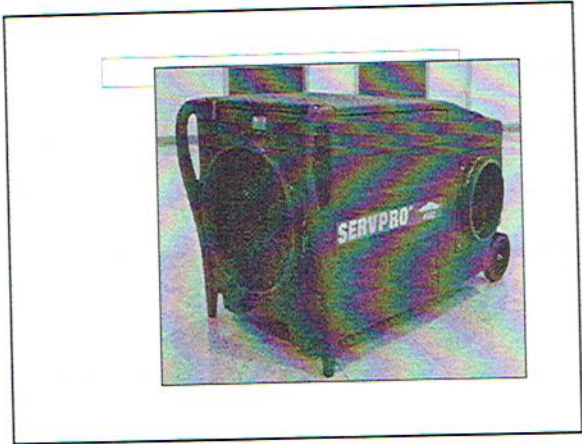


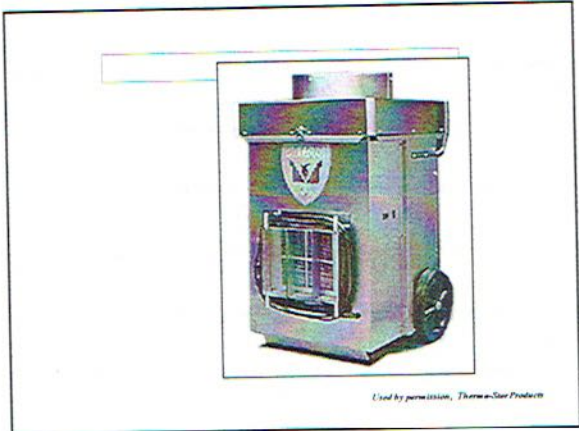




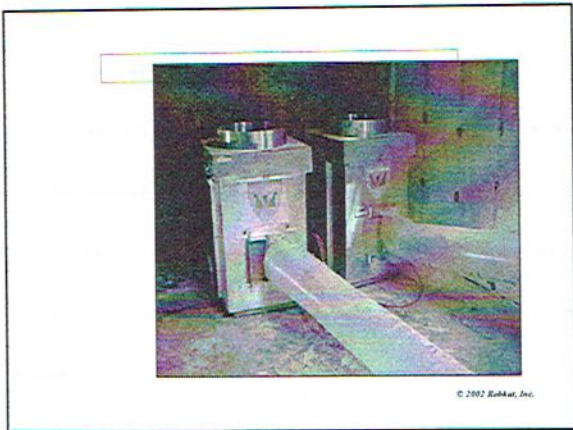




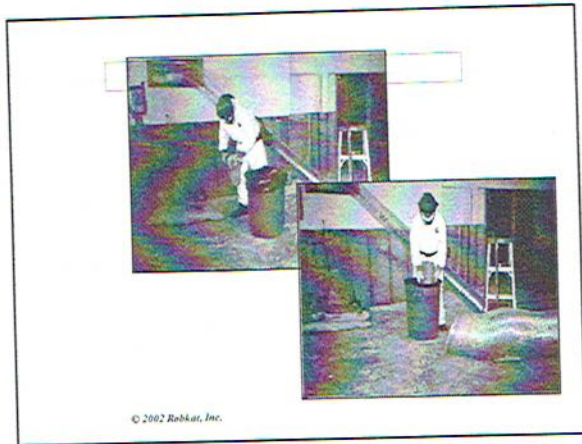




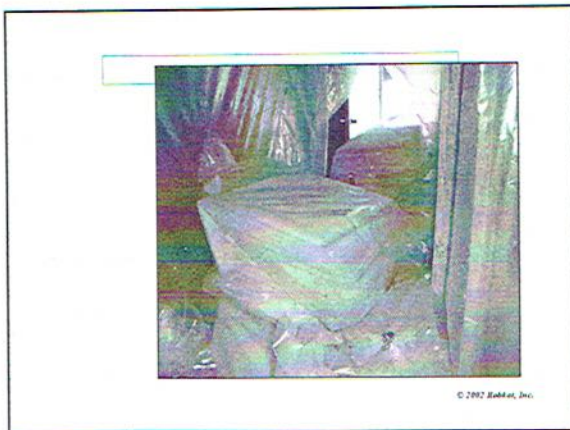
Used by permission, Thermo-Star Products



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Final Clearance Testing

- Area cleared for adjuster and contractor to write final scopes and start rebuild



Mold Testing Methods

- American Conference of Governmental Industrial Hygienists (ACGIH) document:
 - *Bioaerosols: Assessment and Control*
- New York City Department of Health Guidelines

Mold Testing Sampling Methods

or

- Visual Inspection
- Source Sampling
 - Bulk Sampling
 - Surface Sampling
- Air Sampling



Air Sampling

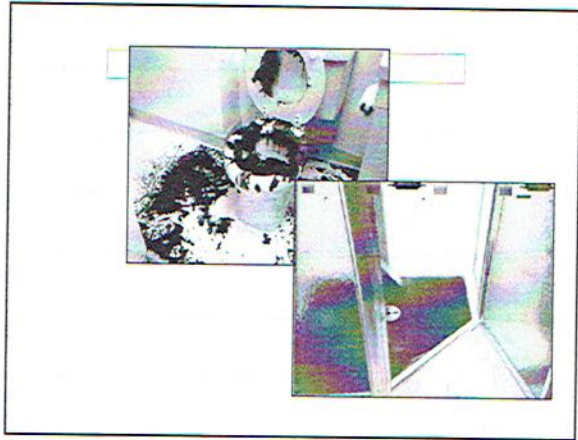
- Air Collection

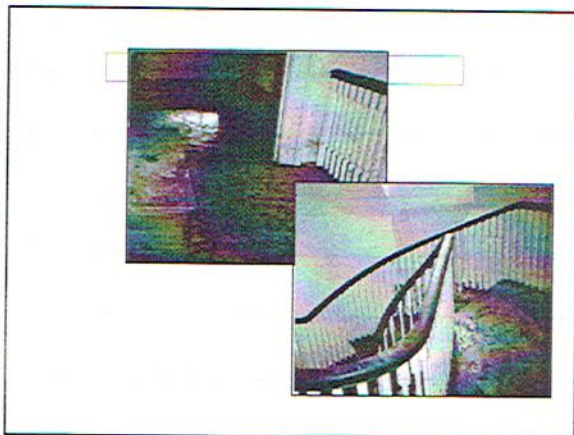


Moisture Problems in Homes and Buildings

Remediation Considerations

- Type of loss
 - Type 1 - Clean Water
 - Type 2 - Gray Water
 - Type 3 - Black Water

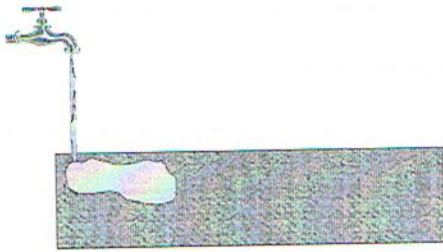




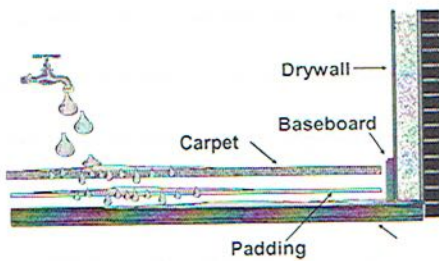
Remediation Considerations

- Timing of loss
 - Less than 24 hours
 - Greater than 24 hours
- Building Material Types
 - Porous
 - Sheetrock, gypsum, carpet, acoustical tiles, insulation, laminate furniture, paper/files
 - Semi-porous
 - Wood construction, hardwood furniture, concrete, concrete block
 - Non-porous
 - Metal, countertops

What You See



What You Don't See



**How Mold Is Effecting
Property Management
Professionals**

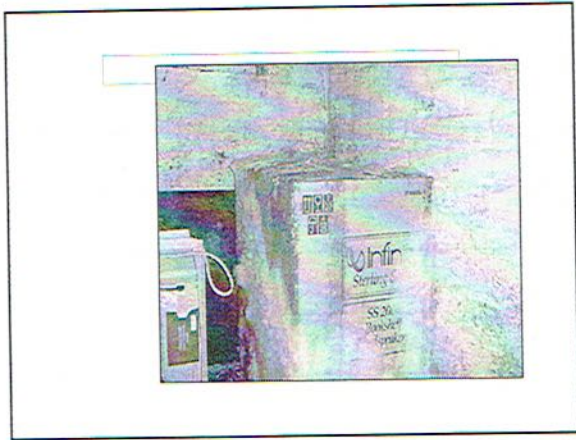
Gross Negligence

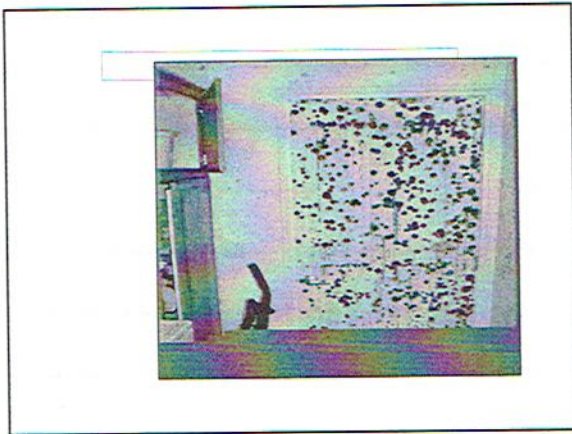
- The intentional failure to perform a manifest duty in reckless disregard of consequences as affecting the life or property of another, and also implies a thoughtless disregard of consequences without the exertion of any effort to avoid them

Mold Risk Management for Property Management Professionals

- Home Inspector trained in mold recognition and disclosure
- Good inspection
- "Red Flag" identification
- Disclosure
- Recommend mold testing
- Documentation

Assessing the Environment



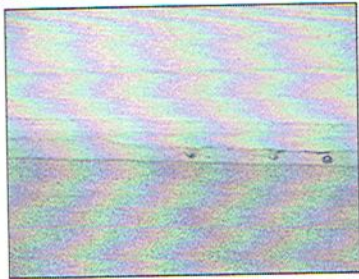


Red Flags

- Visible mold
- Smell
- Evidence of water penetration
- Evidence of conditions that could allow water penetration
- Construction defects
- Dirty / poorly maintained HVAC
- Improperly vented appliances

Inspecting for Red Flags

- Interior Water Stains



Carefully Look at All Surfaces

- | | |
|--|---|
| <ul style="list-style-type: none">■ Behind refrigerator■ Under the sinks■ Around toilets■ Laundry room■ Crawl space and Attic■ Baseboards | <ul style="list-style-type: none">■ Window frames■ Door frames■ Ceiling tiles■ HVAC<ul style="list-style-type: none">• Condensation Pan• Vents• Filter |
|--|---|

When to Consider Recommending Testing

- When you see visible mold
- When you see signs of water intrusion
- When you have knowledge of a previous problem
- When an inspector is used, consider their findings
- When you smell musty odors
- When you suspect secondary damage

Remediation Cost Parameters

- Scope of Work
- Containment Requirements
- Egress
- Demolition vs. Cleaning
 - Gross Cleaning
 - Fine Cleaning
- Post-Abatement Treatment
- Clearance Testing
- Reconstruction

Cost Estimates per Work Area

- Minor Remediation
 - Less than 10 square feet, no containment
 - Under \$2,500
- Moderate Remediation
 - Over ten square feet, limited containment, cleaning, clearance sampling
 - \$5,000 to \$10,000

Cost Estimates per Work Area

- Major Remediation
 - Over ten square feet, full containment, occupant relocation, demolition, cleaning, clearance sampling, anti-microbial encapsulation
 - \$10,000 per work area and up
- Reconstruction
 - Variable

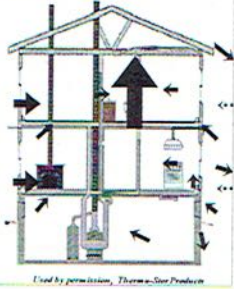
Why Containment?

■ HVAC (mechanical) Systems

- Furnace and A/C:
850-1400 cfm
Supply and Return
- Exhaust Fans:
50-300 cfm

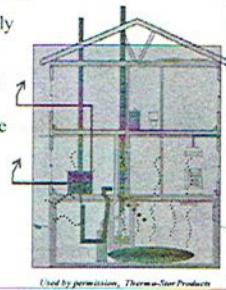
■ Natural Ventilation

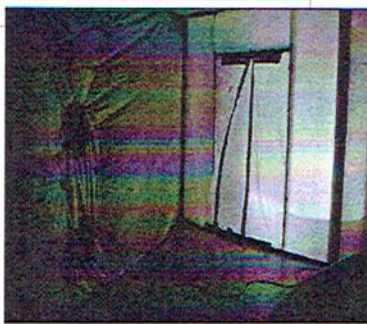
- Infiltration:
<150 cfm
- Wind:
300 cfm
- Stack Effect:
<100 cfm



Use Containment When...

- Mold contamination occurs
- Damage site immediately becomes contaminated
- Unless aggressive steps are taken to contain the contamination, the entire structure will become contaminated





Actual Growth



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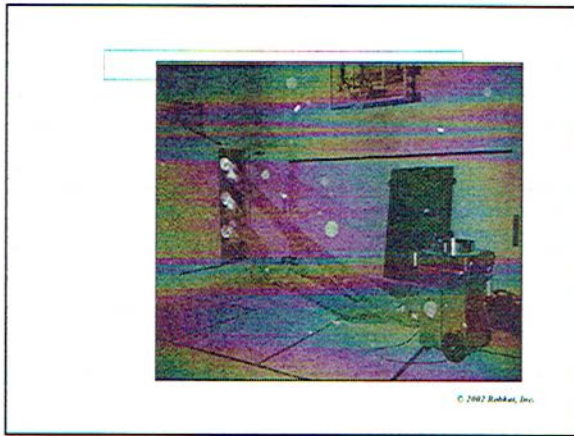
Actual Growth



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5 Principles of Mold Remediation

- Safety and health
- Project documentation
- Control contaminant at its source
- Removal of contaminant
- Prevent further contamination by correcting moisture problem



IICRC S520

- Standard and Reference Guide for Professional Mold Remediation

The image shows the front cover of the book 'IICRC S520 Standard and Reference Guide for Professional Mold Remediation'. The cover is white with a green and blue border. It features the title in bold black text, a small circular logo in the center, and the names of the authors at the bottom.

Condition Levels

Condition 1:

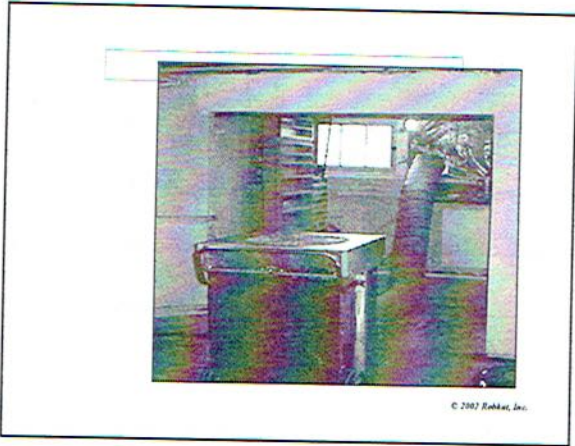
- Normal Fungal Ecology

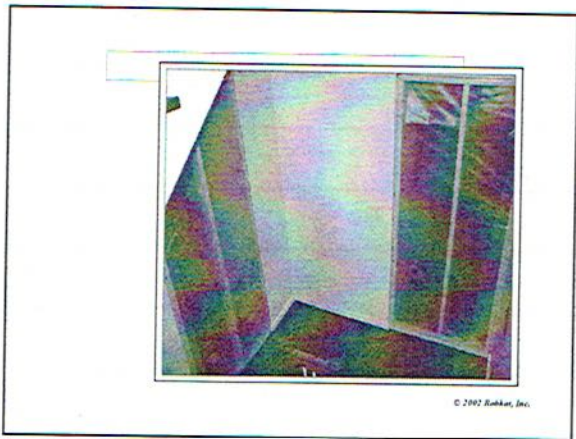
Condition 2:

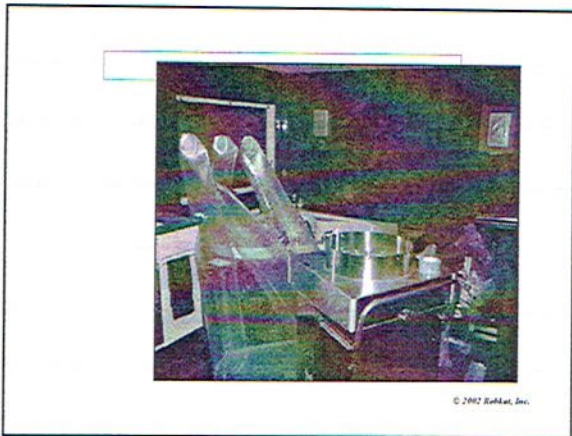
- Settled Spores

Condition 3:

- Actual Growth







New York City Department of Health Guidelines

Guidelines on Assessment and Remediation of Fungi in Indoor Environments (Updated 2000)

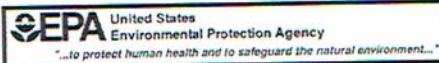
■ 5 Levels of Removal Procedures

- I. Small isolated areas:
Ceiling tiles, Small areas on walls
- II. Mid-sized isolated areas (10-30 SF)
- III. Large isolated areas (30-100 SF)
- IV. Extensive contamination
(> 100 Contiguous SF in an Area)
- V. Remediation of HVAC systems



Recommends IEP oversight for Levels III, IV, V

EPA Guidelines



- EPA input and guidance very positive for process and protocol decision-making efforts
- April 2001 – EPA issued recommendations rather than regulations ...
 - “EPA does not regulate mold or mold spores in indoor air”
- Reinforces on-site technician training
 - “Adapt guidelines to meet the circumstances of each particular job site”

EPA Guidelines

3 Levels of Contamination

- Small (< 10 SF) NYC level 1
- Medium (10 – 100 SF) NYC level 2, 3
- Large (> 100 SF) NYC level 4
- EPA Emphasizes:
 - “... Adapt as needed” using
 - ” Professional judgment and experience”
- EPA says:
 - “The remediation manager must determine the appropriate procedures for a particular job, using the EPA guidelines only as recommendations.”

**Associations with Health Effects
for Prior Health Conditions**

- Asthma symptoms
- Hypersensitivity Pneumonitis
- Severe respiratory infections
- Fungus-related illnesses
- Lung infection
- Respiratory illness


Do Not Assume “Killer Mold”

- Health outcomes for otherwise healthy people
 - Upper respiratory tract symptoms
 - Coughing
 - Wheezing
- More severe health outcomes for people with prior health conditions
 - Already sensitized to asthma
 - Compromized immune systems (at-risk persons)

Do Not Assume “Mold Causes Illness”

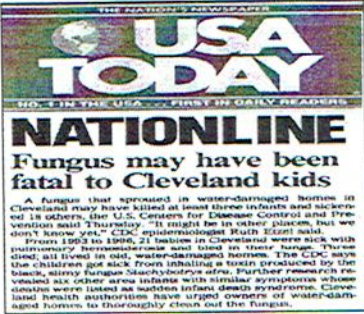
- Scientific evidence not available to link mold and damp buildings to health effects
- Separate health effects resulting from
 - Exposure to mold
 - Other factors present in the indoor environment

Health Effects of Mold



Health Effects of Indoor Mold Exposure

Symptoms of indoor mold exposure are commonly mistaken for the flu or allergies, such as nasal congestion, cough, and asthma.



USA TODAY

NATIONLINE

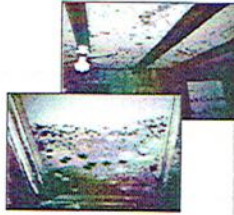
Fungus may have been fatal to Cleveland kids

A fungus that appeared in water-damaged homes in Cleveland may have killed at least three infants and sickened 15 others, the U.S. Centers for Disease Control and Prevention said Thursday. "It might be in other places, but we don't know yet," CDC epidemiologist Ruth Ezzell said.

From 2003 to 2006, 21 babies in Cleveland were sick with pulmonary hemorrhage and died in their homes. From the children got sick from inhaling a toxin produced by the black, slimy fungus *Stachybotrys atra*, further research revealed six other areas infested with similar symptoms. These children were listed as sudden infant death syndrome. Cleveland health authorities have urged owners of water-damaged homes to thoroughly clean out the fungus.

Mold Feeds on Organic Material

- Wood
- Paper
- Drywall
- Insulation
- Natural Fibers
- Plants, Potting Soil
- Paints
- Starch in Wallpaper Paste
- Caulk



Preventing Mold Growth

Mold is categorized based on its need for moisture

- Hydrophilic: meaning "Water Loving"
 - Close to saturation
 - Damp conditions
- Xerophilic: meaning "Dry Loving"
 - Ability to grow in drier conditions


Preventing Mold Growth

- Moisture is the most easily controlled factor
 - Fast response to water damages is critical to preventing mold growth
 - All water damaged structures have potential for mold contamination
 - Better to mitigate than to remediate

The Biology of Mold

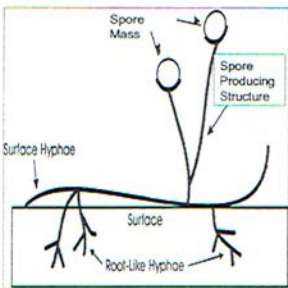
The Biology of Mold

- Mold is a fungus
- Thousands of species of mold exist
- Mold can be classified as a saprophyte
 - Most molds derive nutrients from decomposing organic matter
- Mold begins its life as a tiny spore
 - Spores are microscopic
 - Spore mass contains thousands and thousands of spores
 - Airflow carries the spores off and disburse them



Mold Grows by Sending Out Branches

- Hyphae (*High Fee*)
- Root-like Hyphae
- Surface Hyphae
- Spore Producing Structure



Industrial Hygienists (IH) and Indoor Environmental Professionals (IEP)

- The IH, or Indoor Environmental Professionals, are used to assess fungal ecology, sample the indoor environment, determine the condition of mold, and establish the scope of work.

Industrial Hygienists (IH) and Indoor Environmental Professionals (IEP)

Typical Job Process:

- Perform an Assessment of the Fungal Ecology of Property, Systems, and Contents
- Create a Sampling Strategy
- Sample the Indoor Environment
- Interpret Laboratory Data
- Determine Condition 1, 2, and 3 to Establish a Scope of Work
- Verify the Return of the Fungal Ecology to a Condition 1 Status

P & S Microbiology Services, Inc.
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1400 Industrial Microbiology Services

Sample ID	Location	Media	Incubation	Result	Notes
101	Room 101	1/8" x 1/8" x 1/8" (3)	24-48 hrs	0 CFU	
102	Room 102	1/8" x 1/8" x 1/8" (3)	24-48 hrs	0 CFU	
103	Room 103	1/8" x 1/8" x 1/8" (3)	24-48 hrs	0 CFU	
104	Room 104	1/8" x 1/8" x 1/8" (3)	24-48 hrs	0 CFU	
105	Room 105	1/8" x 1/8" x 1/8" (3)	24-48 hrs	0 CFU	
106	Room 106	1/8" x 1/8" x 1/8" (3)	24-48 hrs	0 CFU	
107	Room 107	1/8" x 1/8" x 1/8" (3)	24-48 hrs	0 CFU	
108	Room 108	1/8" x 1/8" x 1/8" (3)	24-48 hrs	0 CFU	
109	Room 109	1/8" x 1/8" x 1/8" (3)	24-48 hrs	0 CFU	
110	Room 110	1/8" x 1/8" x 1/8" (3)	24-48 hrs	0 CFU	

Federal and State Governments

- New York City Guidelines
 - Only government source of mold guidelines prior to April 2, 2001.
 - In 2001, States began adopting the NYC Guidelines
- United States Environmental Protection Agency Issues April 2, 2001 Guidelines:
 - "Mold Remediation in Schools and Commercial Buildings"
 - First federal specifics

Insurance Companies

- Coverage, exclusions and prevention
- Employee, customer and vendor safety
- No Government regulation
- Vendor mitigation vs. remediation
- Coverage for restoration companies
 - Underwriting:
 - Who is covered?
 - What is covered?

Attorneys

- Prosecution and defense preparation
- Little case precedence, growing quickly
- Public awareness of issue increasing
- Legal discussion forum:
 - www.moldupdate.com
 - www.toxicmoldnetwork.org
 - www.tortlaw.com

National Awareness



Title:
Invisible Killers
48 Hours Original Air Date:
September 28, 2000

National Awareness



National Awareness



Course Objectives

- Awareness of mold
- Acknowledge mold as part of our environment
- Remediation of mold
- Effect of mold on buildings
- How mold is effecting Property Management Professionals

History of Mold in Property Restoration

Mold Has Been Around for Ages

Leviticus 14:33-53 -- Cleansing From Mildew*

³³The Lord said to Moses and Aaron, ³⁴"When you enter the land of Canaan, and I put a spreading mildew in a house in that land, ³⁵the owner of the house must go and tell the priest, "I have seen something that looks like mildew in my house." ³⁶The priest is to order the house to be emptied before he goes in to examine the mildew, so that nothing in the house will be pronounced unclean. The priest is to examine the mildew on the walls, and if it has a greenish or reddish depressions that appear to be deeper than the surface of the wall, ³⁸the priest shall go out of the doorway of the house and close it up for seven days. ³⁹On the seventh day the priest shall return to inspect the house. If the mildew has...

Responses to the Mold Issue

We Are Not Mold Experts

- Property owners should engage an Indoor Environmental Professional (IEP)
 - Develops a protocol and technical specifications
 - Details how remediation will be conducted during the project.

If an IEP is not engaged,

- the SERVPRO Franchise may develop a work specification for the project
 - based on the principals of the S520 Mold Remediation Standard

Stay Tuned!

- The mold issue is still evolving
- Guidelines and Protocols may change
- Coverage issues and limitations are being addressed by insurance companies and state legislation
- The medical community is still researching the health affects of mold

Any Questions?

Thank You

Why Test for Mold?

- To determine concentration levels Indoors vs. Outdoors
- To determine types of molds Indoors vs. Outdoors
- To establish the need and protocol for remediation
- To decrease agent liability
- To determine remediation is effective and complete
- To feel confident transferred property is free of mold

Who Tests?

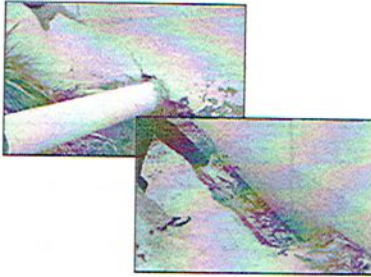
- Indoor Environmental Professionals (IEP)
- Certified Industrial Hygienists (IH)
- Home Inspectors with Certification and Training

Process of Inspecting for Mold

- Training and Certification in Mold Sampling
- Act as Independent 3rd Party
- Collect samples of mold contamination.
- Provide a written report of observation
- Forward samples to a Certified, Licensed Lab for evaluation - OVERNIGHT

Inspecting for Red Flags

- Foundation



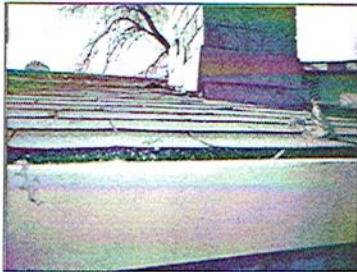
Inspecting for Red Flags

- Window Systems and Flashing



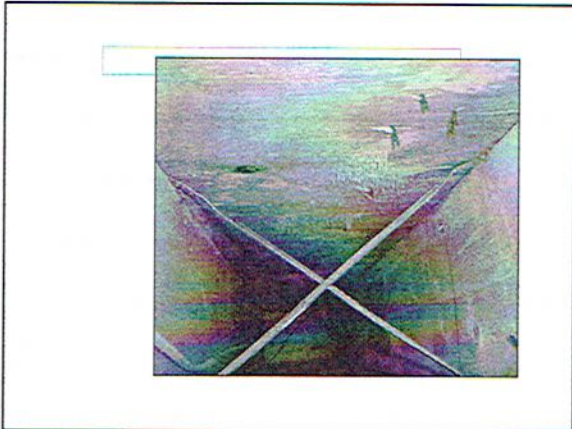
Inspecting for Red Flags

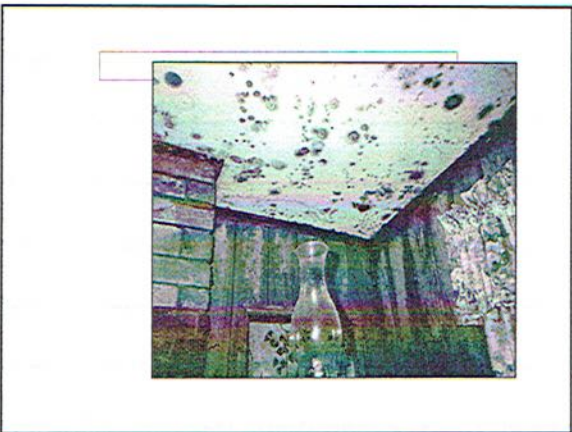
- Roof Systems and Flashing



Assessing the Environment

- Do you see areas of mold contamination?
- Do you smell musty odors of mold?
- Does customer know if mold is present?
- When did the water damage occur?
- Has there been a previous water damage?
- Do you see evidence of mold in the HVAC?





**How Mold Is Affecting
Property Management Professionals**

- Attorneys and courts are making mold an issue for Home Inspectors and Realtors
 - New buyer experiences symptoms
 - Home testing occurs / mold discovered
 - Doctor orders buyer to move out
 - Expert says water problem was apparent and should have been disclosed by home inspector and the realtor
 - Buyer sues home inspector and the realtor

**January 2002:
New Massachusetts Law**

- An act to enhance the effects of regulations and laws for the protection of the public health and safety in regards to toxic mold
 - Act 5D2243-HD4870:
 - *"A seller or transferor of residential, commercial or industrial real property shall provide written disclosure to prospective buyers as soon as practicable before the transfer of title when the seller or transferor knows of, or has suspicion of the presence of mold, both visible and invisible or hidden."*

**January 2002:
New Massachusetts Law**

- 12669.31:
 - *"The transferor and/or any listing or selling agent shall be held legally and financially liable for any error, inaccuracy, or omission of any information delivered."*
- 12669.32:
 - *"Enforcement guidelines shall impose a fine of one thousand dollars per each incident and one thousand dollars per unit for each failure to disclose in compliance with this article"*

What Causes Mold to Grow in Homes

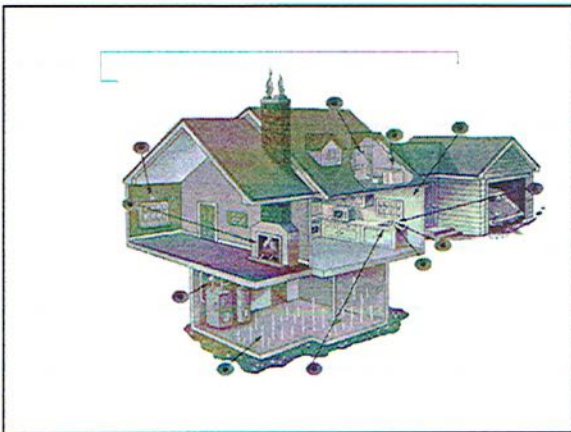
- Poor Construction
 - Sometimes decks added to homes cause water intrusion



What Causes Mold to Grow in Homes

- Water Intrusion





Sources of Water Damage

Clean:

- Broken Pipe, Icemaker, Sink Overflow
 - Does not contain waste or contaminants

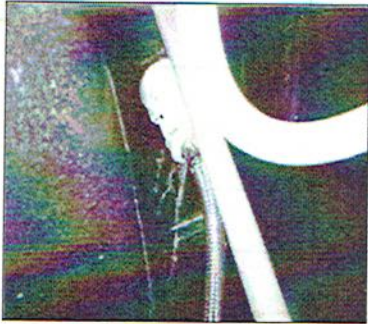
Gray:

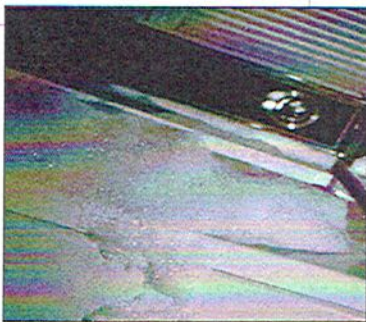
- Washing Machine, Dishwasher, Roof Leak
 - Has some soils and contaminants

Black:

- Raw Sewage, Floods
 - High degree of waste and contaminants





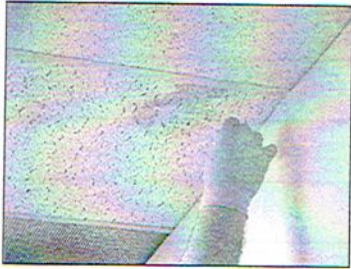


Facts About Testing

- Status of mold
 - Non-viable
 - Viable
 - Culture plates
- Have a plan to prove what is happening

Source Sampling

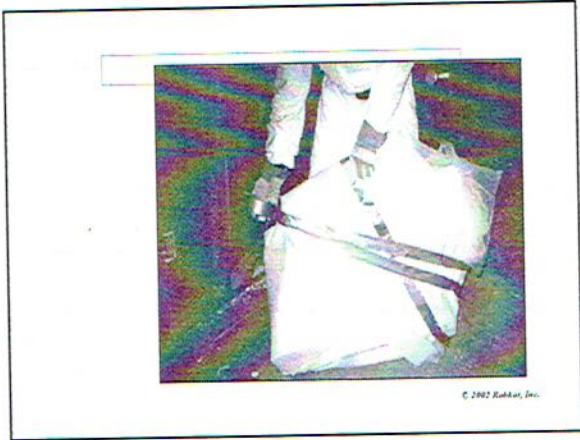
- Surface sample

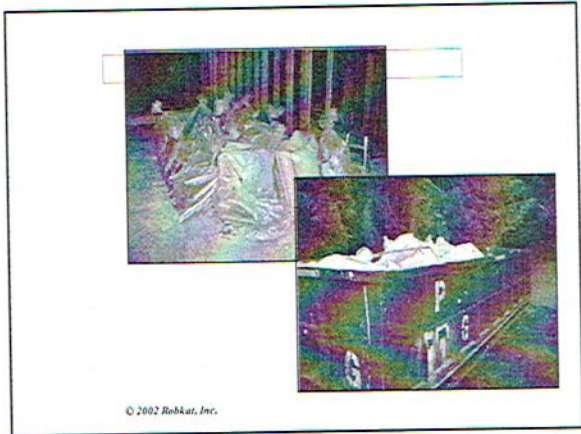


Source Sampling

- Bulk Sample





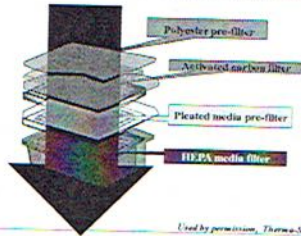


Principle Five:
Correct the Moisture Problem

- Identify and correct moisture problems contributing to mold
- Once all moisture problems have been corrected and the contamination has been removed, Final Clearance Testing should be conducted (as recommended by the S520 Mold Remediation Standard).

Air Scrubbers and Negative Air Machines

- Airborne particles are removed with a series of media filters
- Gases are removed with an activated Carbon Filter



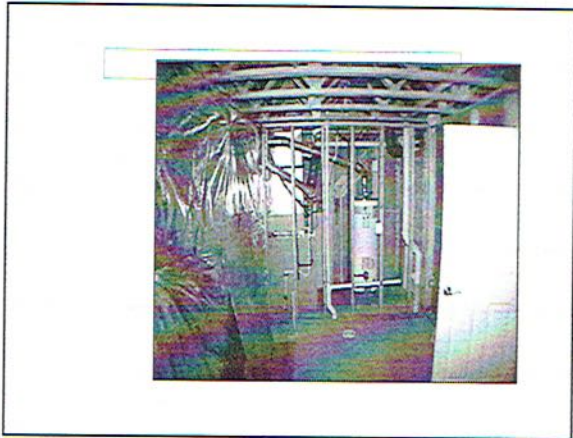
Used by permission, Thermo-Save Products

Principle Four: Remove the Contamination

- Physically remove the mold from the structure
- Remove porous materials contaminated extensively with mold
- Clean mold from nonporous materials
- All surfaces are HEPA vacuumed
- Dispose of moldy debris



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Clean-Up Procedures

- Drying with Negative Pressure
 - Negative air pressure
 - Dehumidification
- HEPA Vacuuming
- HEPA Vacuuming and Washing

Air Scrubbers and Negative Air Machines

- Large fans used to circulate air through a four-filter system when performing Mold Remediation
- Air Scrubbers and Negative Air Machines are actually the same piece of equipment, with different names used to describe their various uses:
 - Air Scrubber:
 - Name used when the device is *NOT DUCTED* outside, but instead cleans, "scrubs" or recirculates the air, with the goal being to remove airborne contaminants found within the work area
 - Negative Air Machine:
 - Name used when the device is *DUCTED* to the outside in order to create low, or negative, pressure within a containment area

