

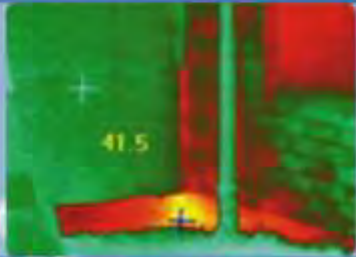
# Mold Report Writing

Florida Department of  
Business  
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Regulation

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National Association of Environmentally Responsible Mold Contractors  
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# About Course Author

- This entirely FREE online course was developed as a public service by Gary Rosen, Ph.D. President of ***Certified Mold Free Corp*** along with the ***National Association of Environmentally Responsible Mold Contractors*** ([www.Free-Mold-Training.org](http://www.Free-Mold-Training.org)).
- Dr. Rosen (Ph.D. Biochemistry UCLA) holds Florida licenses in Mold Assessment, Mold Remediation and Building Construction and has performed over 1000 mold assessments and over 1000 mold remediations.
- He is the author of 5 books on mold assessment and mold remediation all available on Amazon.com.
- Dr. Rosen has been trained in mold assessment and remediation by IAQA; IICRC; as well as ACGIH.

# For Florida Mold Contractors

- The Florida Department of Business and Professional Regulations approved the subject matter covered in this course.
- ***Mold Report Writing*** is Florida Mold Services course #152 and is approved for Two hours of Florida Mold Continuing Education Credit.
- It is also part of our Initial Mold Assessor / Remediator course of study for the State Mold Exam given by our firm.
- Contact Linda Rosen 954 614 6860 for more information and to schedule to sit for our FLA Mold Licensed Exam

# The Exam

- There are 20 questions on the Report Writing CE EXAM. A passing score is 70%.
- There is no limit to the number of times the EXAM can be taken.
- Florida students:
  - When you pass the Exam you will receive CE credit with Mold Services. There is no charge.
  - We provide the Dept your information electronically. Allow 24-48 hours for processing.
- Students outside of Florida:
  - When you pass the Exam you are eligible for a Certificate of Course completion for \$25.00

# Course Introduction



# Report Writing Course Content

- There are several possible reports involved when doing mold work.
- This course will focus on two reports:
  - *Initial Assessment*;
  - *Remediation Documentation*;
- There are an infinite number of ways to write reports. The goal of this course is to look at some recommendations as to what one may wish to include in such reports and leave it up to the reader as to exactly how the reports should be written.

# Initial Assessment

- In this course we will look at Initial Assessment recommendations/ definitions by:
  - ACGIH Bioaerosols: Assessment & Controls 1999
  - EPA/OSHA Guidelines 2001/2002
  - NYC DOH 2006
  - IICRC S520-2015
  - State of Florida Mold Licensing

# Initial Assessment

- The goals for Initial Assessment will always be at a minimum: Find the mold and determine its extent so that it can be removed in a safe manner.
- However the differences as to how to properly perform mold assessment can be substantial.
  - Some, such as EPA, focus on finding the moisture and you find the mold.
  - Others, such as IICRC, focus mostly on sampling to develop remediation procedures.
- We look at these differences and discuss approaches to Initial Assessment that are most often used by Florida Mold Contractors.



# Remediation Documentation

- We review recommendations as to how to document Mold Remediation from the following sources:
  - <http://www.bouldercounty.org/doc/publichealth/moldremediation.pdf>
  - [http://www.ct.gov/dph/lib/dph/environmental\\_health/eoha/pdf/Get\\_The\\_Mold\\_Out.pdf](http://www.ct.gov/dph/lib/dph/environmental_health/eoha/pdf/Get_The_Mold_Out.pdf)
  - IICRC S520-2015

# Remediation Documentation

- The goal of Remediation Documentation is at a minimum to prove / provide a record that the work was done properly: Mold gone; premises left clean and dry.
- As with Initial Assessment, the differences as to how to properly perform Remediation Documentation are substantial mainly due to who is doing the work (facility manager, Licensed Contractor, etc.) and their concerns about liability protection.

# Course Learning Objective

- This course is for the Professional State of Florida Licensed Mold Assessor and Mold Remediator.
- Mold remediation and assessment recommendations developed for facility managers, home owners, or IICRC members will never be completely applicable to Florida Mold Contracting.
- Nevertheless, finding mold, removing mold and making sure the work is properly done will have many essential similarities no matter who is doing the work.
- The Professional Mold Contractor must know existing mold standards.

# Course Learning Objective

- Mold Contractors should then apply their knowledge of existing mold standards and applicable Florida Mold Law to answer the question:
- What needs to be in the following reports?
  - Initial Assessment
  - Remediation Documentation

**All based on his/her particular set of circumstances (background, training, license, client needs, etc.)**

# Mold Assessor and Mold Remediator Conflicts



# Mold Assessor Protocol Limitations

- **Keep in mind ... there can be contradictions** between the Mold Assessor protocol and the Mold Remediation work or work plans. This can be a potential cause of conflict.
- However, under FLA law there is no requirement that a Mold Remediator use a Mold Assessor protocol unless required to by the owner.
- The Protocol is simply a set of recommendations by the Mold Assessor that have not necessarily been agreed upon either by the owner or the Remediator.

# Mold Assessor Protocol Limitations

- When the home owner signs the Remediation Quote, that is the legal agreement between the owner and the Remediator. A signed remediation agreement always takes precedence over recommendations in the mold assessor report.
- A Mold Remediator quotation (call it his protocol or work plan) may include some or all of the recommended Mold Assessor protocol. Only in that case are the Mold Assessor protocols/ recommendations required to be performed by the remediator.
- Or may include none. In which case nothing in the Assessor report needs to be performed.

# Mold Assessor Protocol Limitations

- If a mold assessor is asked to perform Post Remediation Verification they should ask for a copy of the Mold Remediation contract (signed quotation typically) before accepting the job.
- Because they are going to be asked to verify the work in the signed remediation contract which may have nothing at all to do with their Mold Assessment protocol.
- This is simply the way Florida law works. A signed contract for (remediation) work takes precedence over a mold assessor set of recommendations.



# Mold Assessor Protocol Limitations

- At the outset, the Mold Assessor should clearly explain to the owner that when the owner signs the Mold Remediation contract it should include the recommended protocol by the Assessor.
- Or better yet, that the Mold Assessor review the contract before the owner signs it or they may not agree to perform Post Remediation Verification.
- Of course the owner may not care and can always have the Mold Remediator perform PRV because under FLA law this is perfectly acceptable as there is always <10 sq of mold after remediation and FLA mold law does not apply.

# Standards & Definitions of Initial Inspection



# Initial Assessment

- In this section we will review the recommendations/ definitions for *Initial Assessment* by several organizations.
- There are substantial differences to their approaches depending on who the guidelines were written for:
  - ACGIH Bioaerosols: Assessment & Controls 1999
  - EPA/OSHA Guidelines 2001/2002
  - NYC DOH 2002
  - IICRC S520-2015
  - State of Florida Mold Licensing

# 1999 ACGIH

## *Bioaerosols: Assessment & Control*



# 1999 ACGIH Bioaerosols: Assessment & Control

- This technical book is a compendium of works from several dozen scientists & hygienists. Mold is an important part of the book but *Bioaerosols* is not exclusively about mold.
- In the chapters on mold, there is heavy emphasis on testing and defining the limitations of testing.
- For example they explain in detail why there are no numerical guidelines for mold – no guidelines as to what levels are bad and what are okay.
- **The information in this book's Chapter 15 was the basis for most of the recommendations found in the EPA/OSHA Guidelines.**

# 1999 ACGIH Bioaerosols: Building Walkthrough

- Chapter 4. Building Walkthrough.
  - Heavy emphasis on identifying HVAC contamination or malfunction.
  - Interview occupants and building operators.
  - Find the moisture that is the cause of mold growth.
  - Visual inspection. No testing involved in the walkthrough.
  - Appendix 4A. Check list.



# 1999 ACGIH Bioaerosols: Appendix 4A. Check List Sections

- Surrounding areas.
- HVAC
  - General Characteristics
  - Outdoor air intake (for HVAC)
  - Filters
  - Mixing Chamber
  - Coils
  - Humidifiers, Evaporative Coolers
  - Supply Side Air Handler Unit
- Building Space

**Note the majority of the  
emphasis is on HVAC.**

# 1999 ACGIH Bioaerosols: Sampling Plan

- Chapter 5. Sampling Plan.
  - Sampling to determine if indoor mold is elevated and a potential health hazard.
  - To determine what type of PPE may be required for building inspection.
  - Sampling to help identify location of mold problem.





# 1999 ACGIH Bioaerosols: Sampling Plan

- Chapter 5. Sampling Plan Continued.
  - Sampling based on a hypothesis.
  - For example, sample the air for mold spores with the AC on or off.
  - If there is a higher concentration of airborne spores when the AC is on this may indicate the occupant complaints may be related to fungal contamination of the AC system.
  - Focus should then be on remediation of HVAC system.



# 1999 ACGIH Bioaerosols: Prevention & Control of Mold

- Chapter 10. Prevention & Control.
  - Moisture control is the key to mold prevention.
  - Condensation control (building envelop issues.)
  - Moisture control in HVAC systems.
  - Problems with humidifiers causing mold growth.
  - Ventilation and air filters.
  - Continued heavy emphasis on HVAC.



# 1999 ACGIH Bioaerosols: Sampling & More Sampling

- Chapter 11 & 12 on Sampling
- Chapter 13 & 14 on Sampling Data Analysis.
- Most of the book is on sampling and testing as this is what Hygienists do.
- Chapters on sampling go into great detail to explain the potential **limitations of testing ... for example** why sampling indoor spore levels vs outdoor spore levels often does not result in meaningful comparisons.  
Page 14.2.3.2.



# 1999 ACGIH Bioaerosols: Extent of Mold Growth

- Chapter 15 is on Remediation of Microbial Contamination.
  - This chapter is a compendium of 3 or 4 dozen scientific articles **written in the 90's on this subject** as well as NYC Dept of Health (1993); Health Canada (1995); and ISIAQ (1996)
  - Remediation guidance is based on **assessing the extent of visible mold growth.**



# 1999 ACGIH Bioaerosols: Extent of Growth

- Extent of Visible Growth drives the remediation effort.
  - Minimal growth: Source containment.
  - Moderate growth: Local Containment. Negative air.
  - Extensive growth: Full containment. Negative air and trained personnel.
  - They caution about the use of biocides.



# 1999 ACGIH Bioaerosols: Remediation

- Biocide use should be avoided:
  - Focus should be on physical removal of contaminated porous materials. Not biocide use that kills but leaves dead mold.
  - Fix the moisture problem and biocides not needed to keep mold from returning.
  - Use mold resistant materials to keep mold from returning.



# 1999 ACGIH Bioaerosols: HVAC Source of Mold

- HVAC System is often the source of building IAQ problems.
  - References EPA guidance on air duct cleaning for home owners which they say is applicable to other types of buildings.
  - Dead mold can still make people sick. Killing the mold in the AC or ducting is not enough. It must be removed.
  - The use of chemicals to control mold in AC systems has lead to building evacuation.
  - Biocide use is to be avoided.



# ACGIH Assessment Summary

- *Bioerosols* was written by scientists for hygienists.
- Contains 26 chapters often with different emphasis and/or conclusions.
- Overall emphasis is on finding the moisture and you find the mold.
- Particular attention should be paid to HVAC.
- But there is also heavy focus in *Bioaerosols* on sampling and data analysis as this book was written for Hygienists who for the most part test.



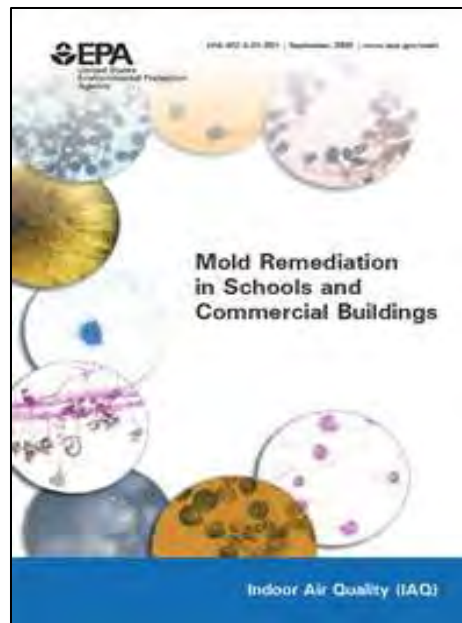
# ACGIH Assessment Summary

- Control the moisture and you keep the mold from coming back. Avoid biocide use. Not necessary.
- Determine the size of the visible mold problem and for the purpose of remediation, apply environmental controls suitable for the size of problem.
- Again, heavy emphasis on assessing mold related problems with AC and ducting because mold problems in the AC/ducting are the most common source of occupant complaints.

# EPA/OSHA

# Mold & Moisture

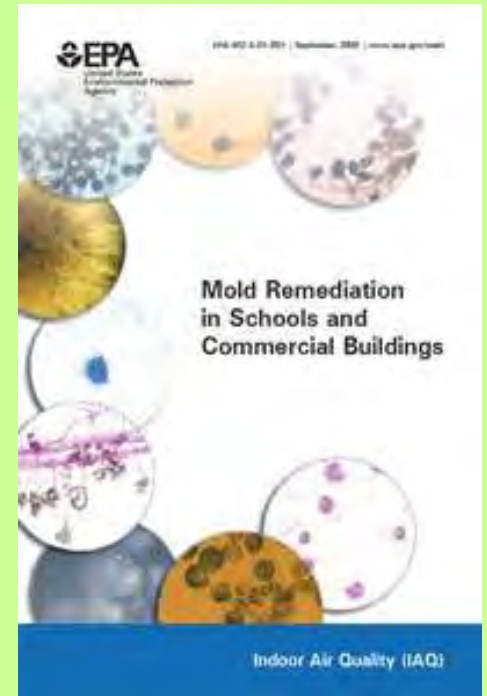
# Assessment



# EPA/OSHA 2001/2002

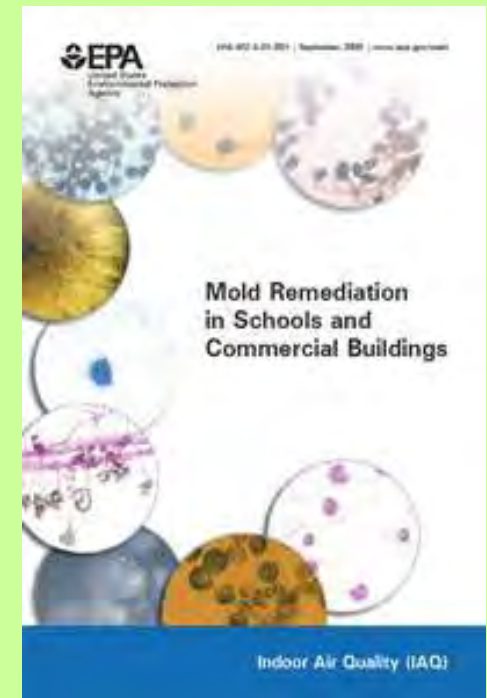
- Based in large part on:
  - ACGIH Bioaerosols: Assessment & Control. Chapter 15.
  - NYC Dept of Health 1993.

**EPA/OSHA guidelines widely used today.**



# EPA/OSHA 2001/2002

- Mold & Moisture Assessment:
  - Determine extent of damaged materials and source of damage (water)
  - The extent of the problem drives the remediation procedure. Small problems require simple solutions. Large problems more complex solutions (complex containments.)
  - Consider possibility of hidden mold.
  - Protect workers and occupants.
  - If mold is visible, sampling not generally necessary.



# EPA/OSHA 2001, 2002

## ■ Excerpt from *Mold Assessment & Sampling*. P 25

*Is sampling for mold needed? In most cases, if visible mold growth is present, sampling is unnecessary. In specific instances, such as cases where litigation is involved, the source(s) of the mold contamination is unclear, or health concerns are a problem, you may consider sampling as part of your site evaluation. Surface sampling may also be useful in order to determine if an area has been adequately cleaned or remediated. Sampling should be done only after developing a sampling plan that includes a confirmable theory regarding suspected mold sources and routes of exposure. Figure out what you think is happening and how to prove or disprove it before you sample!.*

# EPA/OSHA 2001, 2002

## ■ Mold & Moisture Assessment

- EPA guidelines developed for consumers and facility managers. Not professional testers (Hygienists). As a result focus is NOT on testing.
- Mold & Moisture assessment closely linked.
- Find the moisture problem and you find the mold.
- Focus is on identifying the problem and then applying easy to follow rules to fix the problem.
- EPA has rules for remediating books, hard surfaces, drywall, ceiling tile, etc.

# EPA/OSHA 2001, 2002

## ■ Mold & Moisture Assessment

- The rules for remediation depend on the time frame of the moisture problem.
- Was the problem caught early before mold has a chance to grow? Then simply dry. No mold remediation needed.
- Mold can start to growth in 48-72 hours. If mold has started to growth then mold remediation is required.

# EPA Assessment Check List

- **Investigate and evaluate moisture and mold problems**
- Assess size of moldy area (square feet) .
- Consider the possibility of hidden mold
- Clean up small mold problems and fix moisture problems before they become large problems
- Select remediation manager for medium or large size mold problem.
- Investigate areas associated with occupant complaints .
- Identify source(s) or cause of water or moisture problem(s) .
- Note type of water-damaged materials (wallboard, carpet, etc.)
- Check inside air ducts and air handling unit .
- Throughout process, consult qualified professional if necessary .or desired



# EPA/OSHA Hidden Mold

- Possible locations of hidden mold can include:
  - Pipe chases and utility tunnels (with leaking or condensing pipes),
  - Walls behind furniture (where condensation forms),
  - Roof materials above ceiling tiles (due to roof leaks or insufficient insulation).
  - **Condensate drain pans inside air handling units,**
  - **Porous thermal or acoustic liners inside ductwork.**

# EPA/OSHA HVAC System

- Do not run the HVAC system if you know or suspect that it is contaminated with mold.
- If you suspect that it may be contaminated (it is part of an identified moisture problem, for instance, or there is mold growth near the intake to the system), consult EPA's guide *Should You Have the Air Ducts in Your Home Cleaned before taking further action (see Resources List)*.

# EPA/OSHA Check List: Plan Remediation

- ❑ Adapt or modify remediation guidelines to fit your situation; use professional judgment.
- ❑ Plan to dry wet, non-moldy materials within 48 hours to prevent mold growth (see Table 1 and text)
- ❑ Select cleanup methods for moldy items (see Table 2 and text).
- ❑ Select Personal Protection Equipment – protect remediators (see Table 2 and text)
- ❑ Select containment equipment – protect building occupants (see Table 2 and text)
- ❑ Select remediation personnel who have the experience and training needed to implement the remediation plan and use Personal Protection Equipment and containment as appropriate

# EPA/OSHA Assessment Summary

- EPA/OSHA remediation guidelines were designed for consumers and facility managers.
- Emphasis on finding the moisture and you find the mold. Focus is not on sampling.
- Control the moisture and you keep the mold from coming back.
- Depending on the duration of moisture problem either dry materials or remediate for mold.
- Determine the size of the visible mold problem and for the purpose of remediation, apply environmental controls suitable for size of problem.
- **Don't forget to check the AC and ducting for mold.**
- Hidden mold found during remediation may require that remediation plans be revised.

# NYC DOH 2008

# NYC DOH 2008

- Guidelines on Assessment and Remediation of Fungi in Indoor Environments

<http://www.nyc.gov/html/doh/downloads/pdf/epi/epi-mold-guidelines.pdf>

# NYC DOH 2008

- Mold Assessment Considerations:
  - Similar to EPA/OSHA recommendations.
  - Developed for facility managers.
  - Categorizes the mold problem into 5 levels of severity including the important special case of **HVAC contamination**.
  - Find the moisture problem and find the mold.
  - The more mold, the more sophisticated the removal procedures. Simple jobs require simple solutions.
  - Air sampling not routine.

**NYC Mold Guidelines are widely used today.**

# NYC DOH 2008 Mold Remediation of HVAC

- Mold growth in heating, ventilation, and air-conditioning (HVAC) systems can pose building wide problems.
- Obtaining professional help should always be considered in addressing **even small amounts of mold growth or moisture problems within an HVAC system.**
- Recurring problems, regardless of size, may indicate a systemic problem and appropriate professional help should be sought.
- Detailed HVAC remediation guidelines included.



# NYC DOH 2008: Environment Assessment

- “The presence of mold growth, water damage, or musty odors should be addressed quickly.
- “In all instances, any sources of water must be identified and corrected and the extent of water damage and any mold growth determined.
- “**Water**-damaged materials should be removed or cleaned and dried.
- “**For** additional information on cleaning water-damaged materials and personal belongings, NYC guidelines refer to the EPA document “Mold Remediation in Schools and Commercial Buildings.”

# NYC DOH 2008: Environment Assessment

- “A trained building or environmental health professional may be helpful in assessing the extent of the moisture problem and mold growth and developing a site-specific work plan.
- “**The** presence of a trained professional to provide oversight during remediation can also be helpful to ensure quality work and compliance with the work plan.”

# NYC DOH 2008: Visual Inspection

- **“A visual inspection is the most important initial step in identifying a possible mold problem and in determining remedial strategies. The extent of any water damage and mold growth should be visually assessed and the affected building materials identified.**
- **A visual inspection should also include observations of hidden areas where damages may be present, such as crawl spaces, attics, and behind wallboard. Carpet backing and padding, wallpaper, moldings (e.g. baseboards), insulation and other materials that are suspected of hiding mold growth should also be assessed.” Cont’**

# NYC DOH 2008: Visual Inspection

- **“Ceiling tiles, paper-covered gypsum wallboard (drywall), structural wood, and other cellulose-containing surfaces should be given careful attention during a visual inspection.**
- **“Ventilation** systems should be visually checked for damp conditions and/or mold growth on system components such as filters, insulation, and coils/fins, **as well as for overall cleanliness.”**
- **“Equipment** such as a moisture meter or infrared camera (to detect moisture in building materials) or a borescope (to view spaces in ductwork or behind walls) may be helpful in identifying hidden sources of mold growth, the extent of water damage, and in determining if the water source is active.”

# NYC DOH 2008: Environmental Sampling

- “Environmental sampling is not usually necessary to proceed with remediation of visually identified mold growth or water-damaged materials. Decisions about appropriate remediation strategies can generally be made on the basis of a thorough visual inspection. Environmental sampling may be helpful in some cases, such as, to confirm the presence of visually identified mold or if the source of perceived indoor mold growth cannot be visually identified.
- If environmental samples will be collected, a sampling plan should be developed that includes a clear purpose, sampling strategy, and addresses the **interpretation of results.**”

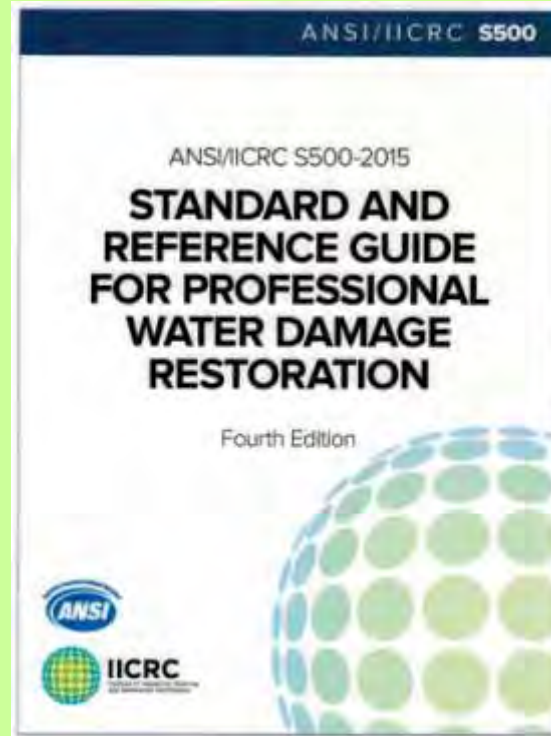
# NYC DOH 2008: Environmental Sampling

- “Many types of sampling can be performed (e.g. air, surface, dust, and bulk materials) on a variety of fungal components and metabolites, using diverse sampling methodologies.
- **“Sampling** methods for fungi are not well standardized, however, and may yield highly variable results that can be difficult to interpret.
- **“Currently,** there are no standards, or clear and widely accepted guidelines with which to compare **results for health or environmental assessments.”**

# NYC Assessment Summary

- NYC remediation guidelines were developed for facility managers as was EPA/OSHA guidelines.
- Emphasis on finding the moisture and you find the mold. Focus is not on sampling. Very similar to EPA.
- Control the moisture and you keep the mold from coming back. Very similar to EPA.
- Determine the size of the visible mold problem and for the purpose of remediation, apply environmental controls suitable for size of problem. Very similar to EPA.
- **Don't forget to check the AC and ducting for mold.** Very similar to EPA.

# ANSI/IICRC S520-2015

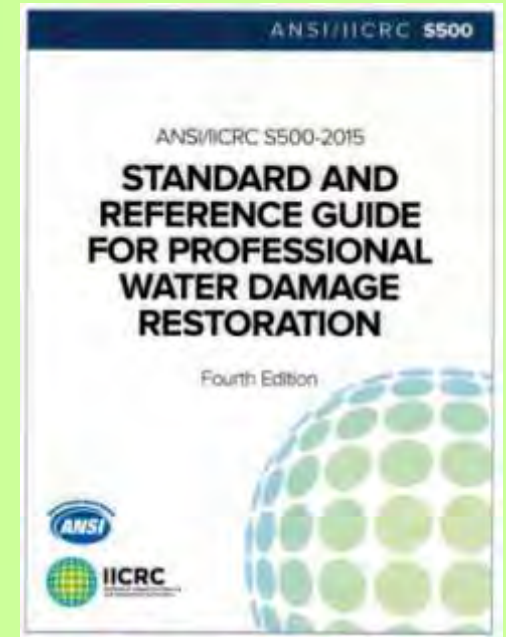




# IICRC S520-2015

- Mold Assessment Definition:  
“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, description, location and extent of **Condition 2 or 3.**”

\* IEP is called a Mold Assessor in Florida



# IICRC S520-2015

## ■ Mold Assessment:

- IICRC rejects the EPA and NYC approaches to assessing mold based on establishing the size of the problem and then using remediation procedures appropriate.
- They base the assessment on determining “**conditions**” (elevated mold, active mold or normal fungal ecology).
- Once the condition is determined (by an IEP) a custom protocol is developed to perform remediation to return the remediated area to Normal Fungal Ecology.

# IICRC S520-2015

## ■ Mold Assessment:

– Page 6 of IICRC S520

**“Thus, ANSI/S520** represents a philosophical shift away from using **“size” of visible mold growth** to determine the remediation response. Instead, it established mold contamination definitions (Conditions 1, 2 and 3) and guidance, which, when properly applied, can assist remediators and others in determining remediation response or **confirm remediation success.”**

# IICRC S520-2015 HVAC

- ***Section 13.1 HVAC Operational and Maintenance Issues.*** Special attention should be given to remediating the AC and ducting. Finding these problems is the job of the AC service contractor.
- ***Section 13.3.2 Fungal Contamination.*** "Testing for Conditions should be performed by IEPs with specific training in identifying mold issues within HVAC systems."
- ***But there is no training or specifications or guidance provided by IICRC on how this is to be done or how to interpret results.***

# IICRC S520-2015

- IICRC S520 was written for Mold Remediation and not Assessment so there are few if any detailed recommendations or procedures in S520 as to how to properly perform a mold assessment or how to document a mold assessment.
- In our experience even though S520 is widely referenced, rarely if ever are the actual procedures found in S520 properly applied perhaps that is because very few Florida mold contractors have undergone IICRC S520 training.
- Most often mold assessment or mold remediation boilerplate will say that one should follow S520, NYC and EPA guidelines even though S520 contradicts EPA and NYC.

# **State of Florida Mold Assessment**

# State of Florida

## ■ Mold Assessment Definition

“Mold assessment” means a process performed by a mold assessor that **includes the physical sampling** and detailed 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 growth of greater than 10 square feet.”



# State of Florida

- Mold Assessment Definition requires:
  - Determination of origin (source of water)
  - Determination of identity (is it mold or not)
  - Determination of precise location (including hidden) mold.
  - Detailed evaluation of building history.
  - Determination of extent of (hidden along with visible) mold in sq ft.
  - And explicitly includes **“sampling” to be part of an assessment**. If there is no sampling there is not an assessment by FLA Mold Law.



# State of Florida

- If there is no sampling there is not an assessment by FLA Mold Law.
- Therefore anyone can perform an initial mold assessment including a mold remediator (even if there is more than 10 sq ft of mold) if there is no sampling.

# State of Florida

- If there is less than 10 sq ft of mold FLA Mold Law does not apply.
- Therefore anyone can perform an initial mold assessment including a mold remediator if there is less than 10 sq ft of mold.

# State of Florida Non-Compliance

- There are many reasons why Mold Assessor reports often do not comply with the full scope of Florida Definition of a Mold Assessment. These can include:
  - May require destructive testing to accurately determine **origin, extent** and **location** of all mold.
  - Limitations as to what people will pay for an Assessment.
  - Assessments performed as part of real estate transactions may not have access to **building history**.
  - Client expectation that sampling is **the essential** component of a mold assessment.

# **Standards & Definitions of Initial Inspection Section Summary**

# Summary of Initial Assessment Definitions

- We've looked at how various frequently cited standards define Mold Assessment.
- There are substantial differences to their approaches depending on who the guidelines were written for:
  - ACGIH Bioaerosols: Assessment & Controls 1999 (Hygienists)
  - EPA/OSHA Guidelines 2001/2002 (Consumers/Facility Managers)
  - NYC DOH 2006 (Facility Managers)
  - IICRC S520-2015 (IICRC Members)
  - State of Florida Mold Licensing (FLA Mold Contractors)

# Summary of Initial Assessment Definitions

- With the various Definitions of Mold Assessment in mind along with our experience as a mold remediator who has seen many Mold **Assessment reports ...**
- In the next section we look at what an Initial Mold Assessment report:
  - *Typically includes*
  - *What it sometimes includes, and*
  - *What it usually does not include.*

# Initial Assessment Report Writing



# Mold Assessment Report

## *Mold Assessor*

- What's in the Initial Mold Assessment report depends on who is doing the report and for what purpose the report is being written.
  - The initial assessment **report by a Mold Assessor** is typically heavy on testing because they get paid to test and clients expect testing.
  - Their report typically includes a recommended mold remediation protocol because that is generally expected of the Mold Assessor.



# Mold Assessment Report

## *Mold Remediator*

- On the other hand, the **initial assessment report by a Mold Remediator** for the purpose of providing a quotation may have no testing as FLA mold law prohibits initial testing if you will do the remediation (only prohibited if there is >10 sq ft of mold.)
- Find the moisture, find the mold. Provide a quotation to remove the mold. Testing not required.

# Mold Assessment Report

## *Mold Remediator*

- However many mold remediators legally and reasonably perform their own indoor air testing prior to their quote (if there is <10 sq ft of mold) when there are potential pre-existing issues outside of the scope of the mold removal work at hand.
  - For example, to attempt to determine if there are mold problems with the AC and/or ducting for the purpose of notifying the home owner to call in an AC contractor to clean the AC and ducting after the mold remediation contractor has performed his (unrelated mold) remediation work.

# Mold Assessment Report

## *Mold Remediator*

- Or if a plumber has cut open a moldy wall to fix a pipe and potentially cross contaminated the indoor environment, the mold remediator may desire to test the indoor air for the purpose of quoting additional cleaning outside of the containment area.
- So long as there is less than 10 sq ft of mold the mold remediator or anyone in his company can perform initial testing without having a problem with FLA Mold Law.

# Mold Assessor Report

- In *Mold Report Writing* when we discuss Initial Assessment Report Writing we are focusing on the Mold Assessor report and not a Mold Remediator report for the purpose of providing a quotation for mold remediation.

# Mold Assessor Report

## *Typically Includes*

- Mold Assessor Initial Assessment report typically focus on **location** and **identity** of mold.
- Determining the **extent** (of hidden mold) and **origin** (cause) of mold is often left to the remediator as the extent and origin are often times best determined when walls are opened or baseboards removed which is rarely done for an Assessment by these may be included in the Mold Assessor report.
  - Continued ....

# Mold Assessor Report

## *Typically Includes*

- Lab Test results (**Identity** of mold or simply that what appears to be mold is actually mold) and interpretations.
- Results of visual inspection for mold or water stains.
- Moisture or humidity measurements attempting to determine if any leaks found are still active.
- As a result of testing and visual inspection, recommendations as to where mold remediation should be performed (**Location** of mold), and;
- The **Extent** of remediation required (sq ft).
- Recommendation that the Assessor be called for Post Remediation Verification.

# Mold Assessor Report

## *Typically Includes*

- Recommendation that water source be fixed before mold remediation begins.
- Disclaimers that hidden mold may be undetected in inaccessible areas such as behind baseboards, wall paper, inside walls etc.
- Instructions that mold remediator should remove all mold in indicated problems areas as determined when walls are opened and not simply at test points.
- Instructions that mold remediators may need to determine the precise **Origin** of the mold when walls or ceilings are opened.

# Mold Assessor Report

## *Typically Includes*

- Boilerplate filler about types and properties of molds and mold toxins, mold assessment standards and such.
- In our opinion, much of this boilerplate could be put in an Appendix. Many homeowners find this boilerplate confusing.



# Mold Assessor Report

## *Sometimes Includes*

- IICRC S520 Conditions 1 2 or 3.
- Specifics about how the remediation work should be done (detailed Protocol) or,
- A statement that remediation work be performed by a State Licensed Contractor following NYC, IICRC, EPA etc guidelines.
- Historical information on moisture occurrences (age of roof, earlier water damage claims, etc.)
- Home owner complaints about water intrusion.
- Disclaimers about limitations of air sampling measurements and that there are no state or federal **guidelines defining what a “problem” is.**

# Mold Assessor Report

## *Sometimes Includes*

- A history of occupant health issues and mold sensitivities.
- Pictures of the problems / problem areas.
- Determination of Hidden Mold in Walls.
- Some Mold Assessors attempt to determine the **extent** and **location** of hidden mold in walls by taking wall cavity samples.
- Others will attempt to make such determinations by peeking behind baseboards, removing stoves, refrigerators, etc.

# Mold Assessor Report

## *Sometimes Includes*

- Some Mold Assessors attempt to determine the **extent** and **location** of mold in the AC and ducting by inspecting cooling coils and removing supply vents.
- In our experience the fiberglass lining of the supply plenum and the interior of the return air box (if present) are the principle locations where hidden mold accumulates in the AC system but these areas are rarely if ever checked by mold assessors or remediators.

# Mold Assessor Report

## *Does NOT Usually Include*

- Information on the presence of Mold Odor.
- Inspection results for hidden mold in AC or ducting beyond mold on coils.
- Reports do not typically include age of AC units and age and type of ducting (fiberglass or flex.)
- Cautions about the use of Biocides.
- Recommendations on the type of documentation to be provided by Mold Remediator.
- Recommendations as to which identified problems can be handled by routine maintenance and which require the attention of a mold professional.
- Detailed evaluation of building history (as required by FLA Mold Assessment Definition).

# Mold Assessor Report

## *Does NOT Usually Include*

- Recommendations as to how to remediate home owner content if moldy.
- Whether visible mold is surface mold from condensation and can simply be cleaned or the walls must be removed.
- That elevated indoor spore counts may be the result of:
  - Poor quality or missing air filters.
  - Poor interior hygiene or housekeeping.
  - Old carpets.

# Mold Assessor Report

## *Does NOT Usually Include*

- Guidelines for PRA/V. While Post Remediation Assessment/Verification (by the Mold Assessor) is recommended, there is typically nothing in the Assessor Initial Report or Protocol about the guidelines or criteria for such assessment given. (There should be since there are no federal or state guidelines as to what is acceptable or not.)
- There is typically nothing in the Initial Assessment or Protocol explaining the limits of PRA/V for instance, that homes with old carpeting, clutter, old AC and ducting, etc may fail PRA/V testing even though mold remediation work is properly performed.

# Mold Assessor Report

## *Does NOT Usually Include*

- When a Home Inspector does their home inspection, most of the findings include an estimated cost to repair.
- A mold assessor report does not typically include an estimate of the cost to repair.

# **Initial Assessment Report Writing Conclusions**



# ASSESSMENT REPORT WRITING CONCLUSIONS

- Mold Assessment recommendations by EPA/OSHA, NYC, and ACGIH were not written for Florida Mold Assessors and are not specifically applicable to FLA Mold Assessment but do contain useful concepts and procedures.
- To a significant degree, the FLA Mold Assessment Definition brings together the most important aspects for what you would ideally like to see in an Initial Mold Assessment Report.

# ASSESSMENT REPORT WRITING CONCLUSIONS

- But Mold Assessment reports almost never completely comply with ALL aspects of Florida Mold Assessment Definition (which is a pretty good definition).
- FLA defines an initial mold assessment to include:

*... detailed 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 growth ...*

# ASSESSMENT REPORT WRITING CONCLUSIONS

- There are many reasons why Mold Assessor reports do not always comply with the full scope of Florida Definition of a Mold Assessment. As mentioned earlier, these can include:
  - Requires destructive testing to accurately determine **origin, extent** and **location** of all mold.
  - **A detailed evaluation of data obtained from a building history ...** may not be possible for example when doing an assessment for a real estate transaction.
  - Limitations as to what people will pay for in an Assessment.
  - Client thinks sampling alone is all that is needed.

# ASSESSMENT REPORT WRITING CONCLUSIONS

- Nevertheless, Mold Assessment reports can include significantly more useful information than they now typically do.
- We recommend that upon completion of this course, Mold Assessors review their Reports and compare them to our lists of *What Is*, *What Sometimes Is* and *What Usually Is Not* in Mold Reports.
- Consider applicable changes, tweaks, or improvements that may allow the Assessor to more closely comply with FLA Assessment Definition which will result in a better report.

# PLEASE CONSIDER

**When wall cavity or swab tests result in very high spore counts the Assessment report should clearly indicate that results do not represent the quality of the indoor air.**

# PLEASE CONSIDER

**If the home to be inspected as part of a real estate transaction is completely clean and spotless and recently painted, most likely the seller has done so to cover up mold and water damage.**

**Either walk away and say you cannot do the inspection or have the Realtor® ask to see if you can peek behind baseboards if you agree to reattach and do no damage.**

# When NO Assessor, Remediator Must Do Mold Assessment

- Florida Law does not require an Assessor to write a protocol for a Mold job.
- Mold work can be performed solely by a Mold Remediator.
- Clearly in this situation the Mold Remediator must perform some sort of Initial Assessment. They must be able determine the **extent** and **location** of mold without testing for mold **identity** in order to provide a quotation.
- Typically there is no formal Mold Assessment write up when a Mold Remediation does the assessment only the quote.

# Mold Remediator & Testing

- The last slide is not 100% correct when it says that a mold remediator cannot test during an initial assessment.
- If there is **less than 10 sq ft** of mold, Florida Mold Law does not apply. Under such circumstances a mold remediator may certainly do initial testing based on Florida law.
- If there is **more than 10 sq ft** of visible mold the mold remediator may not test. While EPA/OSHA and NYC state that testing in such a situation is not needed, home owners and insurance carriers often want to know the type of mold and there will always be work for mold assessors.



# Mold Remediators and PRV

- It is interesting to point out that Florida Mold Law does not in any way prohibit a mold remediation contractor from performing Post Remediation Assessment/ Verification including **testing** as:
  - Mold Assessment laws apply on to an **Initial** assessment only.
  - There is never greater than 10 sq ft of mold after remediation.

# Insurance Considerations

- Florida mold law does not prohibit Mold Remediators from performing mold sampling under conditions discussed.
- However, due to Insurance Coverage issues a mold remediator **may not** perform their own testing as mold remediation insurance does NOT cover testing unless they are also a licensed (and insured) mold assessor.

# Insurance Considerations

- Mold Remediators that are also Mold Assessors (many are) have Insurance coverage for both Testing & Remediation.
- Based on Florida Mold Law they may not test their own mold remediation jobs (nor can anyone else in their company) if there is more than 10 sq ft of mold.
- A Florida Mold Contractor with both Remediation and Testing licenses and applicable insurance may test for mold when less than 10 sq ft of mold.

# Mold Assessments by Florida Building Contractors

- A Building or General Contractor who is also a Licensed Mold Assessor and Licensed Mold Remediator is exempt from the restriction of performing an initial assessment that includes **testing when more than 10 sq ft....**
- So long as they are performing more than Mold Assessment and Mold Remediation.
- So long as there is build back as part of the job which means they are doing building contracting work that includes dealing with mold.

# Mold Assessments by Florida Home Inspectors

- Florida Home Inspectors may perform mold inspections including sampling as part of their building inspection.
- They do not need Mold Assessor licenses.
- They may not perform post remediation testing.
- They may not advertise their mold assessor services unless they also have a mold assessor license.

# Remediation Documentation Report Writing



# Remediation Documentation

- The goal of Remediation Documentation ( by Mold Remediation contractor) is to prove / provide a record that the work was done properly: Mold gone; premises left clean and dry.
- Guidelines to document mold remediation work are sparse to say the least.
- We review recommendations as to how to document Mold Remediation work from:
  - <http://www.bouldercounty.org/doc/publichealth/moldremediation.pdf>
  - [http://www.ct.gov/dph/lib/dph/environmental\\_health/eoha/pdf/Get\\_The\\_Mold\\_Out.pdf](http://www.ct.gov/dph/lib/dph/environmental_health/eoha/pdf/Get_The_Mold_Out.pdf)
  - IICRC S520-2015: Pages 33/35.

# Remediation Documentation

- As with Initial Assessment, the differences as to how to perform Remediation Documentation are substantial mainly driven by who the guidelines were written for as well as liability concerns:
  - Government workers
  - Consumers
  - Facility managers
  - IICRC certified professionals
  - State Licensed Remediators/Licensed Assessors
- We look at these differences and discuss approaches that are most often used by Florida Mold Contractors.



# Boulder DOH



# Remediation Documentation

- ***Remediation documentation should include:***
- *The underlying moisture problem was identified and eliminated.*
- *The work area was isolated appropriately and effectively contained during remediation.*
- *Mold removal and worksite cleanup was performed according to the site-specific plan that included:*
  - *Removal of all affected drywall at least one foot above the water line.*
  - *Removal of all affected flooring materials.*
  - *Removal of all other saturated porous materials, including furniture, office partitions, some wood products, etc.*

# Remediation Documentation

- This is pretty good advice.
- Basically they want to document that the mold is gone and the source of the mold (water intrusion) is gone and the place left clean.
- But a Mold Professional (either Assessor or Remediator) should provide more remediation documentation keeping in mind that one of the goals of such documentation for the Mold Professional is in regard to liability protection.

# State of CT DOH



# Remediation Documentation

- *CT DPH does not generally advise relying upon air testing to assess whether a mold abatement project is completed.*
- *Remember, air testing results do not correlate well with health outcomes.*
- *However, if documentation for insurance or litigation purposes is needed, surface testing to verify contractor performance may be more useful than air sampling. It is desirable to do this inside of the containment structure before it is removed.*

# Remediation Documentation

- *At the end of a mold abatement project:*
  - *There should be no visible dust, dirt, or debris in the area abated.*
  - *You should not see or smell any mold after the abatement is complete. If you do, consider hidden mold.*
  - *Make sure all porous moldy materials have been removed, discarded, and replaced with clean and dry materials.*
  - *Make sure all non-porous, previously contaminated materials have been cleaned thoroughly.*
  - *Make sure all water leaks and moisture problems have been fixed and water can no longer collect where it's not supposed to collect.*

# Remediation Documentation

- This is pretty limited advice perhaps more suitable for a maintenance man.
- Basically they want you to document that the mold is gone and the source of the mold (water intrusion) is gone and the place left clean.
- A Mold Professional (either Assessor or Remediator) should provide more extensive remediation documentation than this.

# IICRC S520 Remediation Documentation





# Remediation Documentation

- **S520-2015 Documentation Requirements (pages 33/35) include:**
  - Remediator's remediation contract; scope of work & remediation plan.
  - IEP or Hygienist remediation recommendations/protocol.
  - Customer approval for any biocides used along with data sheets, how applied, length of time used, and other relevant information.
  - Building history, how problem was discovered, leak detection and description of previous remediation efforts.

# Remediation Documentation

- **S520 Documentation Requirements includes:**
  - Observations upon inspection (photographs, water stains or damage, areas of visible or suspected mold.)
  - Findings upon inspection of: Odors, health complains, humidity readings, moisture content of materials.
  - Certificate of completion.
  - (For complete list buy the Guidelines.)

**This is certainly a good start, but the S520 Documentation Requirements is not complete.**

# S520 Remediation Documentation Missing

- **S520 Documentation Requirement Misses Some Important Items.**
  - No mention of the need to document cleanliness of work site after remediation.
  - No mention of the need to document (pictures are good) that the work was done under containment to avoid cross contamination.
  - No mention of the need to document (pictures good) that the remediation was done by removal and/or cleaning and not by the application of biocides (chemicals that keep on killing.)

# S520 Remediation Documentation

- **S520 Documentation Requirement Misses Some Important Items.**
  - No mention of the need to document (pictures good) that when walls were opened, the origin of mold (water source) and extent and location of hidden mold were determined and mold completely removed regardless of original Work Plan/Protocol.
  - Documentation that the water source/ problem that caused the mold has been fixed.
  - No mention that any earlier odor problem is now gone.

# S520 Remediation Documentation

- **S520 Documentation Requirement Misses Some Important Items.**
  - No mention of potential problems when a Post Remediation Assessment/Verification. For example:
    - Old or dirty carpeting.
    - Clutter.
    - Evidence of earlier moisture problems not addressed in the scope of work.
    - Old or dirty AC.
    - Old fiberglass ducting.

# **Remediation Report Writing Conclusions**

# REMEDICATION REPORT WRITING CONCLUSIONS

- We recommend that upon completion of this course, both remediators and assessors review their Remediation Documentation Reports and compare them to what is in the references presented.
- Pay attention to S520 and what it says should be included in Remediation Documentation as well as what it misses.
- Consider applicable changes, tweaks, or improvements that may both provide a higher level of quality for your service as well as help protect you from potential liability.

# EXAM Information





# The Exam

- There are 20 questions on the EXAM. A passing score is 70%.
- There is no limit to the number of times the EXAM can be taken.
- Florida students:
  - When you pass the Exam you will receive CE credit with Mold Services. No charge for CE credits.
  - We provide the Dept your information electronically. Allow 24-48 hours for processing.
- Students outside of Florida:
  - When you pass the Exam you are eligible for a Certificate of Course completion for \$25.00

# The Exam Registration

**Important Note: The end of course Exam is given online. To take the Exam you will need to Register with the online Exam software site.**


**Follow directions exactly, in order to receive credit for the course.**


**The Exam software does not notify DBPR. You must email us that you have completed the courses and you want CE credit.**


# Exam Registration for Florida CE

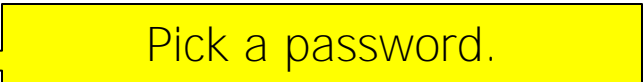
**Register**

Don't have an account? Sign-up in one easy step and start the quiz

First Name:  
 License Number 

Last Name:  
 Email Address 

Desired Username:  
 Your Name Here 

Password:  
 

Confirm Password:

- The link to the Report Writing EXAM is:  
<http://quizegg.com/q/80353>