

- Construction Solutions Calgary –

Investigative Tools For Diagnosing Mould Issues

May 29, 2007

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GUIDELINES

Guidelines

- WorksafeBC Guideline 4.79
- Alberta Government guidelines
- NYC Department of Health Guidelines
- Health Canada
- Canadian Construction Association

Canadian Guidelines and Standards

- Basically, these guidelines all suggest that mould be assessed visually.
- Visible mould growth should then be abated following specialized procedures after correcting moisture source.
- Bulk, air and surface sampling not usually necessary but tools that may be used.

DIAGNOSTIC TECHNIQUES FOR MOULD INVESTIGATIONS

Diagnostic Techniques



- Visual Inspections
- Air Sampling
- Bulk and surface sampling

Diagnostic Techniques

Visual Inspections:

- **Primary** tool for assessing mould in buildings
- Should be first step in any mould investigation
- Cut inspection holes in wall for thorough inspection
- Use boroscope, use moisture meter, pull back baseboards, inspect ceiling spaces, etc.
- Samples not always collected



What to look for?

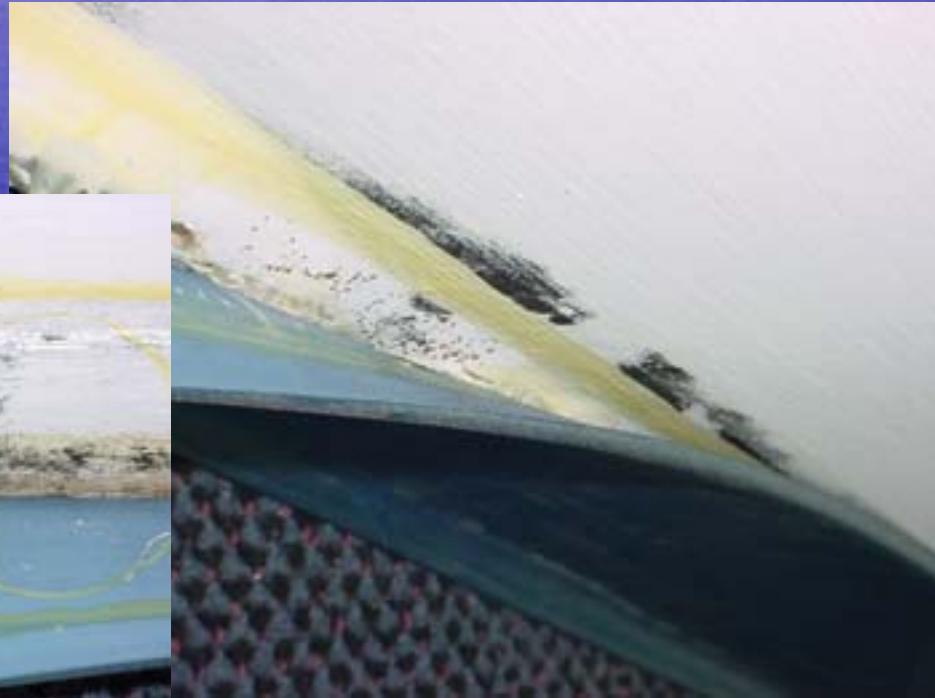
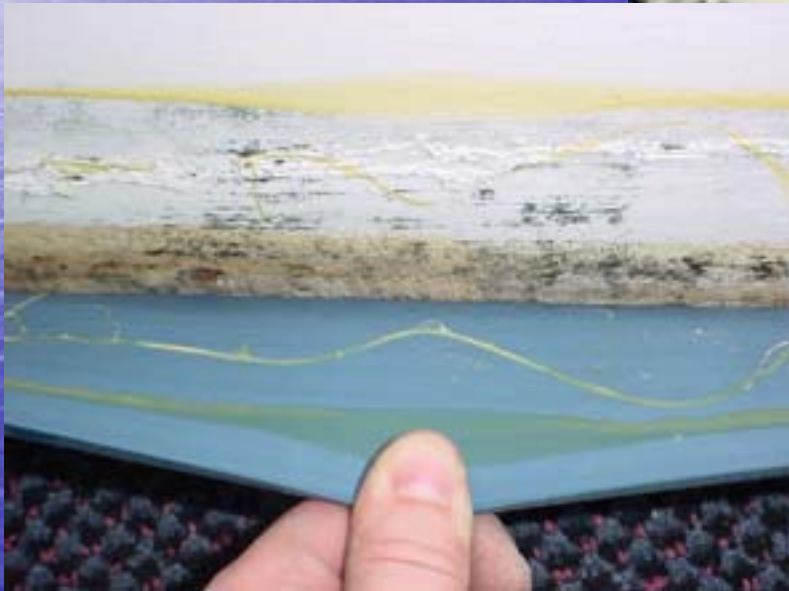


Visual Inspections:

- Behind baseboards
- Inside wall cavities
- Behind furniture
- Under carpet
- Ceiling spaces
- HVAC units

Visual Inspections

What to look for:



Visual Inspections

What to look for:



Diagnostic Techniques

Air Sampling:

- If mould is visible, air sampling not generally necessary
- This method involves collection of air samples in the occupied space of a room or in the building envelope, to evaluate type and extent of biological contamination
- Should collect before intrusive inspection
- Must sample outdoors

Diagnostic Techniques

Air Sampling:

- Viable versus spore trap?
 - Some prefer viable
 - Some prefer spore trap
 - Advantages and disadvantages to both
- Indoor results generally compared to outdoors
 - Total mould spores
 - Taxa of mould present

Diagnostic Techniques

Bulk and surface sampling:

- Used to determine contamination of materials such as wallboard, insulation, carpet, and wood
- Samples sent to qualified laboratory
- Results are Qualitative rather than Quantitative
- Not always required



CASE STUDY

Case Study

Very large hotel – built in early 80's

- Teamed with building envelope consultant
- Building had known envelope issues
- Air sampling in representative # of rooms (19)
- Conducted intrusive inspections – cut holes, used boroscope, etc. – after air samples collected.

Case Study

- Only 1 of 19 rooms visually observed to harbour moderate to heavy mould growth on interior drywall (behind baseboard).
- This 1 room was only indoor air sample with 'elevated' levels compared to outdoors.
- Three other rooms found to support mould growth of back side of exterior drywall sheathing but air samples determined to be acceptable.

REMEDIATION

Remediation

- Correct moisture issue first!!!
- Small area? Or large area?
- NYC Guidelines are specific
 - Level I – 10 ft² or less
 - Level II – 10-30 ft²
 - Level III – 30-100 ft²
 - Level IV - > 100 ft²

Remediation

- Canadian Construction Association defines three scales of abatement
 - Level I – Small 10 ft² or less
 - Level II – Medium 10-100 ft²
 - Level III – Large >100 ft²

Remediation

- No real consensus as to which guideline must be followed
- Quite simply, the guideline recommends
 - Porous materials – remove
 - Non or semi-porous materials should be able to be cleaned
 - Use detergent NOT bleach

Remediation

- As size of mould affected area increases, level of containment and PPE increases
- General rule of thumb ... if less than one 4x8 sheet of drywall is affected, regular building maintenance personnel could conduct if trained properly.

Some Pro-Active Steps

Pro-active Steps

- Train building maintenance personnel to identify potential moisture/mould issues
- Conduct regular inspections of building – documenting results
- Use moisture meter during regular inspections - example

Pro-active Steps

- Handle moisture incidents quickly (24-48 hours)
- Get wet building materials dry right away
 - Remove carpet
 - Move furniture
 - Cut out bottom 1 foot of drywall
 - Remove other porous materials

In Conclusion

- Visual inspections most useful for mould assessment
- Air sampling is a tool but should not be relied upon solely.
- Extent of remediation is dependent upon amount of mould growth found
- Several proactive steps can be taken

Thank you!

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