

Construction Solutions Conference

Why does mold grow in building envelopes, how
do you deal with it, and how do you design to
avoid it?

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Topics

1. Diagnostic Techniques for Mould Evaluation
2. Guidelines
3. Remediation



DIAGNOSTIC TECHNIQUES FOR MOULD INVESTIGATIONS



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Diagnostic Techniques

- Visual Inspections
- Bulk Sampling
- Surface Sampling
- Air Sampling

Diagnostic Techniques

Visual Inspections:

- **Primary** tool for assessing mould in buildings
- Should be first step in any mould investigation
- Use boroscope, moisture meter, pull back baseboards, inspect ceiling spaces, look behind furniture, etc.



Diagnostic Techniques

Visual Inspections:

- Where to look?
 - Behind baseboards
 - Inside wall cavities
 - Under carpet
 - Inside HVAC units
 - Behind/under Furniture



Diagnostic Techniques

Bulk Sampling:

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

Diagnostic Techniques

Surface Sampling:

- Useful for determination of surface contamination of building components, finishing materials and furniture
- Results tend to be Qualitative rather than Quantitative



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
- Must sample outdoors for comparison

GUIDELINES

Guidelines

- Washington State Department of Health
- NYC Guidelines

REMEDIATION



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Remediation

- Small area? Or large area?
- Not defined in WA State DOH Guideline
- NYC Guideline is more specific
 - Level I – 10 ft² or less
 - Level II – 10-30 ft²
 - Level III – 30-100 ft²
 - Level IV - > 100 ft²



Remediation

- No real consensus as to which guideline must be followed
- However, following more stringent guideline ensures compliance
- Therefore, use of NYC Guideline is recommended
 - Porous materials – remove
 - Non or semi-porous materials should be able to clean

Remediation – Level I

- Regular building maintenance personnel (trained) should be able to conduct
- N95 respirator, disposable coveralls, gloves, eye protection
- Vacate space, wet surface, remove mouldy porous materials (drywall, insulation, etc.)
- Remaining materials cleaned with water and detergent (steel studs, concrete, etc.)



Remediation – Level II

- Regular building maintenance personnel (trained) should be able to conduct
- N95 respirator, disposal coveralls, gloves, eye protection
- Build mini-containment, vacate space, wet surface, remove mouldy porous materials (drywall, insulation, etc.)
- Remaining materials cleaned with water and detergent (steel studs, concrete, etc.)
- Use HEPA vacuum for final clean



Remediation – Level III

- Specialized contractor and H&S Professional required
- N95 respirator, disposable coveralls, gloves, eye protection
- Build mini-containment, vacate space, seal ventilation openings, wet surface, remove mouldy porous materials (drywall, insulation, etc.)
- Remaining materials cleaned with water and detergent (steel studs, concrete, etc.)
- Use HEPA vacuum for final clean



Remediation – Level IV

- Specialized contractor and H&S Professional required
- Full-faced HEPA filtered respirator, disposal coveralls, gloves, eye protection
- Complete containment, sealed, with HEPA filtered –ve air, airlocks and decon room
- Vacate space, seal ventilation openings, wet surface, remove mouldy porous materials (drywall, insulation, etc.)



Remediation – Level IV

- Bags of waste should be cleaned with damp cloth and detergent prior to removal from containment.
- Remaining materials cleaned with water and detergent (steel studs, concrete, etc.)
- Use HEPA vacuum for final clean of whole containment including decon room
- Air clearance testing required before tear down

