



# ADMINISTRATIVE PROCEDURES

**SUBJECT:** Guide to Mould Prevention and Abatement Procedures

## **1: INTRODUCTION**

Moulds are microorganisms that produce thousands of tiny particles called spores. Mould spores will always be present in buildings, whether blown in through window or other openings, brought in by ventilation equipment, or tracked in with dust and dirt. When disturbed by air movement or contact, moulds release spores into the air. Given the right environmental conditions a source of food (usually cellulose as found in wood, paper, dust and lint), and a source of water (usually from leaking roofs and windows, or from plumbing leaks), these spores can go on to grow and form other mould colonies.

The following procedures have been developed in order to prevent unnecessary mould growth within our schools and to provide a guideline for abatement wherever mould growth is found.

## **2: SCOPE**

This program applies to all buildings and structures under the control, occupancy and administration of the Lambton Kent District School Board. This program does not distinguish between species of mould. The Lambton Kent District School Board believes that staff should not teach nor, children learn in a mouldy environment.

This guide outlines protocols, processes and procedures used to manage indoor mould contamination.

## **3: MOULD PREVENTION**

The best way to manage mould growth is to prevent it before it occurs. The elements of a prevention strategy are the control of moisture, the timely remediation of any water leakage, and adequate maintenance of heating, ventilation and air conditioning (HVAC) systems.

Water damage and clean up – water damage and clean up strategies are required within 24-48 hours to help avoid the need for remediation of mould growth by taking quick action before growth starts.

In order for mould to be a problem in the context of indoor air quality, four conditions must exist:

1. There must be a reservoir or suitable environment (e.g. carpet, acoustic liner, etc.)
2. There must be a source of nourishment (e.g. organic debris, cellulose, etc.)
3. There must be amplification or growth of this mould (through persistent or repetitive addition of water)
4. There must be dissemination or a pathway for the mould to enter the indoor air (e.g. air duct, hole in the wall cavity, etc.)

#### **4: RESPONSIBILITIES:**

##### **4.1 Site Based Health & Safety Representatives**

1. Shall routinely document on the site inspection form any signs or sources of water damage, excess moisture/leaks, or mould growth/suspected mould growth that they discover during their regular school inspection.
  - a. This includes water stained ceiling tiles, the presence of condensation, musty odours and leaky taps, etc.
  - b. If mould is found the site supervisor/principal must be immediately notified and in turn the Health and Safety Officer must be immediately notified by the site supervisor/principal.

##### **4.2 Health & Safety Officer:**

1. Shall coordinate, on an annual basis, visual inspections by an outside consultant, of the interior and exterior of all schools, including port-a-pacs and portable structures being used as classrooms, workspaces or storage. Every effort will be made to have the visual inspections occur at the same time as the annual asbestos re-assessments.
2. Shall, based on the findings of the inspections where moisture problems are suspected, initiate an intrusive inspection. An intrusive inspection involves a more intensive look at the building materials and shall be completed by properly trained Board personnel or outside consultant specializing in these types of inspections.
3. Shall generate work orders based on the findings.

**Principal and Site Supervisors**

1. Shall ensure that staff is aware of their respective responsibilities under this guide.
2. Shall ensure that water damage is reported and corrected in accordance to this guide.
3. Shall ensure that corrective action is implemented.
4. Shall ensure that the site based Health and Safety Reps are aware of any testing or remedial work to be performed on site.
5. Shall ensure that any remedial work planned has been carried out according to plan.
6. Shall ensure that the results of any remedial work or testing are communicated to the Health and Safety Site Rep and staff.

**4.3 Building Services:**

1. Shall change HVAC and Unit Ventilator filters three times per year based on building service's maintenance schedule.
2. Shall provide for a routine evaluation of the operation to the HVAC system to ensure the proper operation of the system to provide proper operation of the air supply and exhaust equipment.
3. Shall prepare a remediation schedule in conjunction with the Health and Safety Officer when water damage or mould has been identified.

**4.4 Communication:**

1. Prior to an assessment the consultant/representative of the Board will review with the Health and Safety Rep, and the school Principal or Supervisor, the intent and purpose of the assessment. The review is to include the planned assessment methods.
2. The Site Based Worker Rep and Site Supervisor/Principal will be provided the opportunity to attend while the assessment is being conducted.
3. At the conclusion of the assessment a report will be provided to the Health and Safety Officer by the consultant. The Health and Safety Officer will review with maintenance a plan for remedial steps required and attach a completion date.
4. The report will be provided to the Site Supervisor who will review it with staff at that location prior to posting on the health and safety bulletin board.
5. Prior to work commencing Plant and Maintenance will review the schedule and planned work to be completed at the worksite location with the Site Supervisor and Site Health and Safety Representative.

**5: DEFINITIONS**

- Mould – A large group of microorganisms which, together with mushrooms and yeast, form the Fungi Kingdom of living matter. Over 100,000 species of mould have been identified. The most common species include Cladosporium, Penicillium and Aspergillus. Mould growth is typically found in areas of high humidity.
- Mould Identification and Assessment – The process of determining if mould is present and the extent of mould growth to determine if it falls into the category of Level I (small), Level II (medium) or Level III (large). Mould assessment can take the form of visual inspections, intrusive inspections, surface testing (bulk, tape-lift or swab) and air sampling.
- Mould Remediation – Corrective action taken to minimize or eliminate the hazards associated with mould, usually involving removal and replacement of building materials (e.g.: drywall, ceiling tile, carpet, etc.) showing visible signs of mould growth, surface cleaning and correction of conditions that caused mould growth.
- Level I Mould Remediation – Small scale remediation of building finishes and components with an area of mould growth less than 1 square metre (10 square feet).
- Level II Mould Remediation – Medium scale remediation of building finishes and components with an area of mould growth between 1 and 10 square metres (10 to 100 square feet).
- Level III Mould Remediation – Large scale remediation of building finishes and components with an area of mould growth greater than 10 square metres (greater than 100 square feet).
- Cross Contamination: Steps are to be taken to avoid cross contamination of other building areas should assessments indicate a risk of cross contamination.
- Clearance Air Testing – Air testing that may be undertaken by the Environmental Consultant following a Level III mould remediation. Such air testing is not a legal requirement and is at the discretion of the Environmental Consultant.
- HEPA – High Efficiency Particulate Air filter. A type of filter used in mould remediation, usually as part of a vacuum.
- Substrate – A material that is susceptible to mould growth, including drywall, wood and wood products, ceiling tiles, fabrics, plants and soil.

## **6. REGULATORY REFERENCES**

This program is based upon the following regulatory references:

- Ontario Education Act and regulations
- Occupational Health and Safety Act and regulations
- Directive of the Medical Officer of Health, March 1999
- Canadian Construction Association's *Mould Guidelines for the Canadian Construction Industry (CCA 82-2004)*

## **7. PROCEDURES**

*The following procedures are summarized in the flowchart located in Appendix 9.4*

## **8. MOULD PRESENCE IS SUSPECTED**

### **8.1 All Staff members**

1. Are responsible for reporting all water leaks, including minor leaks, water damage, visible mould growth or suspected mould growth to the school principal. For buildings other than schools, report findings to building services.
2. Are responsible for cleaning or reporting all spills and wet spots in their work areas to the school custodian. Water should not be allowed to sit on any surface.
3. Shall report all signs of condensation to their immediate supervisor. This includes windows, surface condensation, etc

### **8.2 Site Based Health & Safety Representatives**

1. Shall routinely document on the site inspection form any signs or sources of water damage, excess moisture/leaks, or mould growth/suspected mould growth that they discover during their regular school inspection.
  - a. This includes water stained ceiling tiles, the presence of condensation, musty odours and leaky taps, presence of condensation, etc.

### **8.3 Mould Identification and Assessment**

When mould is suspected, the C1 Custodian should conduct an investigation first. The possibility of mould could indicate a serious building issue such as a water leak. The C1 Custodian should then submit a maintenance work order relative to the situation and indicate suspected mould on the work order with sufficient details to assist in location of the water leak.

Maintenance work orders are responded to by the Maintenance Services Department. The Maintenance staff person will identify if mould is present, the extent of the mould growth, and consult with the Health and Safety Officer. The Health and Safety Officer will determine the need to involve an external environmental consultant.

#### **8.4 Mould Remediation**

When the presence of mould is confirmed, Maintenance Services will undertake remediation according to the following.

Level I mould will be remediated by Maintenance Services staff, following the procedures outlined in Appendix 9.1.

Level II and III mould will be remediated by a qualified mould remediation contractor, secured by Lambton Kent District School Boards Health and Safety Department. The consultant will supervise the remediation, conduct air clearance testing (Level III only) and will provide written verification that mould remediation has been completed in accordance with accepted practices.

#### **8.5 Summer Portable Inspection Program (in addition to the annual inspection)**

Every summer the Lambton Kent DSB undertakes an inspection of a representative number of portable classrooms to proactively identify portables that may have sustained water damage. These inspections will be conducted by an external environmental consultant engaged by the Health and Safety Officer. Reports of these inspections are kept on record. For more information contact the Health and Safety Officer.

### **9 APPENDICES**

#### **9.1 Level I Mould Remediation Procedures**

Level I mould remediation must be done while the affected room is unoccupied. This may be arranged by consulting with the school administration prior to the work being done.

Maintenance staff performing Level I mould remediation must be trained in the hazards of mould remediation, personal protective equipment (PPE) requirements and proper mould remediation procedures. Contact the Health and Safety Officer for more information.

PPE required for Level I mould remediation includes:

- Eye protection
- Disposable gloves
- N 95 respirator

Steps to Remediate Level I Mould:

1. If the remediation involves the removal of ceiling tiles, first check the facilities asbestos survey information to determine whether or not the ceiling tiles contain asbestos. This information may be obtained by consulting the Lambton Kent DSB asbestos survey posted at the school or the database at [www.basebridge.com](http://www.basebridge.com)
2. If the ceiling tiles to be remediated are confirmed to contain asbestos, refer to Board's maintenance procedures for instruction section 9.3.
3. Turn off HVAC systems in the area of remediation. Seal any system openings (e.g.: diffusers or return-air openings) that are immediately adjacent to the work area.
4. Don personal protective equipment.
5. Wipe any non-porous items (e.g.: desks, chairs) within the work area with a cleaning solution such as Virox and remove it from the work area. Please note that bleach is prohibited from all Lambton Kent DSB facilities.
6. Place plastic drop sheets below work areas to ensure containment of mouldy materials.
7. Prior to disturbing the mouldy materials, use a dust suppression method such as lightly spraying the mould with water, or covering it with plastic sheeting secured in place. Never dry-sweep mould.
8. Remove any porous substrate materials well beyond the immediate areas of visible mould contamination. The minimum recommended distance is 30 cm in all directions.
9. After bulk removal, wipe all exposed surfaces with the cleaning solution.
10. Remove all waste created by the remediation work, including building debris, plastic sheeting, coveralls and N95 respirator. Seal all waste into plastic bags and dispose of in regular garbage.
11. Clean all equipment used in the remediation (e.g.: knives, saws, tools) with the cleaning solution.
12. Wash face, hands and arms with soap and water.
13. Leave all areas dry and visibly free from mould contamination. Ensure that areas are dry prior to installation of new materials.

**Appendix 9.3 – Removal of Ceiling Tiles****Maintenance Procedure Ceiling Tile - Acoustic**

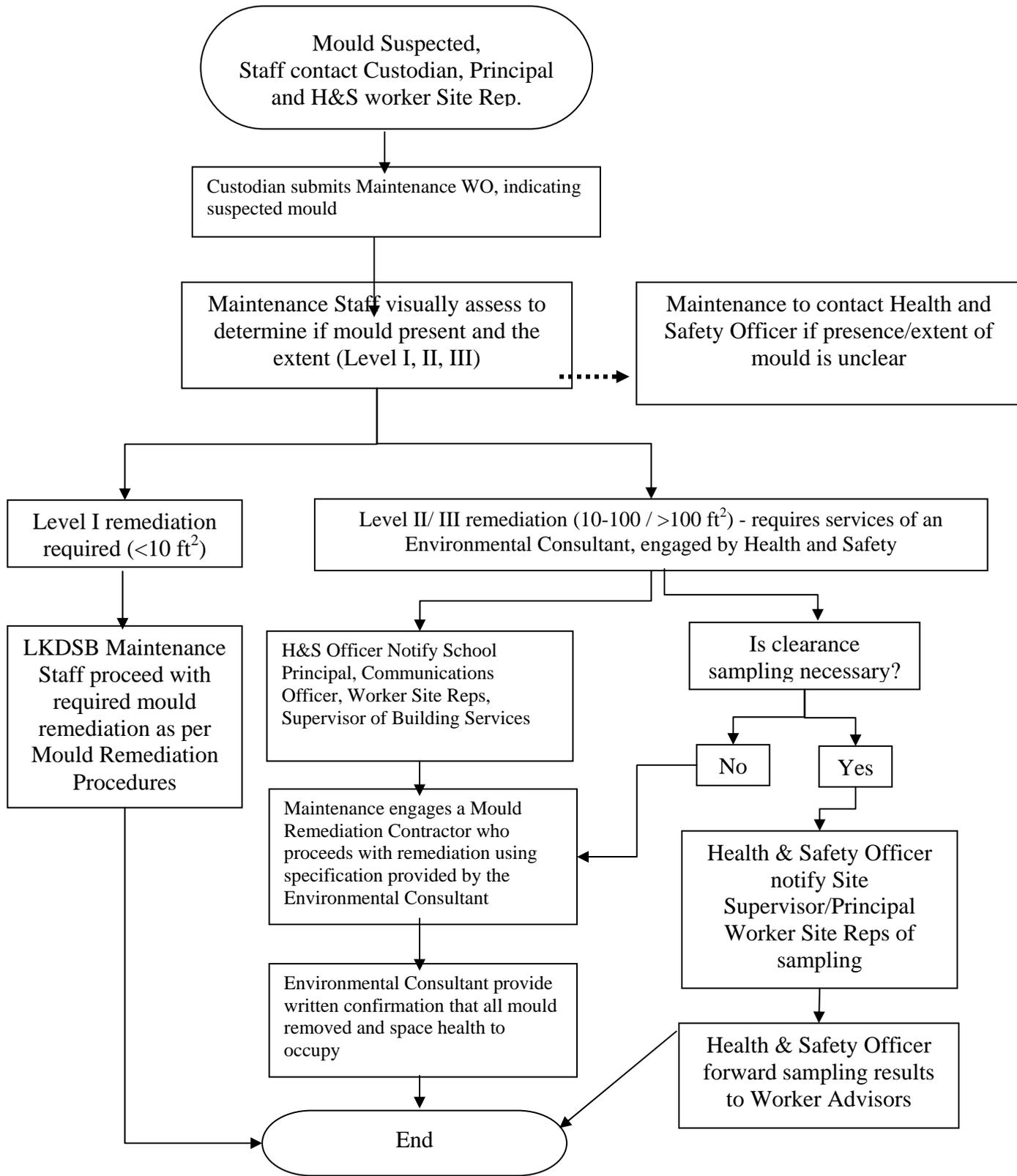
The following procedure should be followed for replacing or removal of damaged or stained 2ft x 2ft and 2ft x 4ft suspended ceiling tiles.

1. This stage is limited to 10 sq meters.
2. Equipment Required Personal Protection Equipment appropriate gloves, safety glasses, A N95 Respirator, Ladder, Dustpan, Broom, utility knife, garbage bag, and new acoustic tile.
3. Removal Process: Check the current asbestos plan prior to commencing work to make sure the area is clear to proceed. If checking the asbestos plan the ceiling tiles are identified to contain asbestos, STOP WORK. Contact your Supervisor. Instructions will be given on how to proceed.
4. Determine the number of tiles to be removed, check your supply of tile to make sure there is sufficient replacement tile.
5. Put on your personal protective equipment before proceeding.
6. Clear your work site and if needed setup ladder beneath damaged tile.
7. Remove damaged tile using the safe ladder guidelines.
8. Put damaged tile in a garbage bag and seal bag. Place the bag into your normal garbage removal bin or area for disposal.
9. Clean tracking.
10. Replace the ceiling tile. If tile needs to be trimmed use the utility knife. Do not use power tools for trimming tile.
11. Remove the ladder from the work area.
12. Using broom and dustpan sweep area of any debris.
13. Record on log sheet Date, Area of work, Number of tile replaced, reason for replacing, Work Order number if further action required. Keep the log sheet in the custodial office.
14. If you cannot replace stained tiles due to circumstances such as electrical fixtures mounted on tile, smoke & heat detectors, etc., complete a work order for maintenance to complete.

Implementation Date: June 2007

Reference:

**9.4 - Mould Identification and Assessment Flowchart**



### **9.5 - Further Information**

Ontario Ministry of Labour Hazard Alert *Mould in Workplace Buildings*

- <http://www.labor.gov.on.ca/english/hs/alerts/a20.html>
- Education Safety Association of Ontario *Mould Growth Prevention and Remediation* at:  
[http://www.esao.on.ca/downloads/policies\\_pdfs/mould\\_procedure.pdf](http://www.esao.on.ca/downloads/policies_pdfs/mould_procedure.pdf)
- United States Environmental Protection Agency *Mold in Schools Fact Sheet* at: <http://www.epa.gov/iaq/schools/images/moldfactsheet.pdf>
- Health Canada *Fungal Contamination in Public Buildings* at:  
[http://www.hc-sc.gc.ca/ewh-semt/pubs/air/fungal-fongique/index\\_e.html](http://www.hc-sc.gc.ca/ewh-semt/pubs/air/fungal-fongique/index_e.html)
- Canadian Construction Association *Mould Guidelines for the Canadian Construction Industry* at: <http://www.cca-acc.com/documents/electronic/cca82/cca82.pdf>
- Fighting Mould. Canadian Mortgage and Housing Corporation (CMHC)  
<http://www.cmhc-schl.gc.ca/cgi>
- Health Canada Indoor Air Quality – tools for school Action Kits  
[http://www.hc-sc.gc.ca/ewh-semt/pubs/air/tools\\_school-outils\\_ecoles/index\\_e.html](http://www.hc-sc.gc.ca/ewh-semt/pubs/air/tools_school-outils_ecoles/index_e.html)