# Asbestos Management Program
# Hamilton-Wentworth District School Board


Prepared by:

Kevin Coveney –Facility Operations Supervisor
Hamilton Wentworth District School Board
20 Education Court
Hamilton, Ontario, L9A 0B9

November 2012

Revised- February 2018

## TABLE OF CONTENTS



## APPENDICES

## GLOSSARY

| | |
|---|---|
| Amended Water | Water with wetting agent added for purpose of reducing surface tension to allow thorough wetting of ACM. |
| Asbestos-Containing Material(s) (ACM) | A material that contains 0.5% or more asbestos as measured by U.S. Environmental Protection Agency Test Method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials, June, 1993. |
| Asbestos | Any of the following fibrous silicates: Actinolite; Amosite; Anthophyllite; Chrysotile; Crocidolite; Tremolite. |
| Asbestos Work Area | Area where work is being performed which will or may disturb ACM including overspray and fallen material or settled dust that may contain asbestos. |
| Competent Worker | In relation to specific work, means a worker who,<br>• is qualified because of knowledge, training and experience to perform the work<br>• is familiar with the Act and with the provisions of the regulations that apply to the work, and<br>• has knowledge of all potential or actual danger to health or safety in the work. |
| Encapsulation | The application of a liquid sealant to asbestos-containing materials; the sealant may penetrate and harden the material (penetrants) or cover the surface with a protective coating (bridging sealants). Also called encasement. This is generally not advisable. |
| Enclosure | Enclosure of ACM means the construction of solid enclosure (walls, ceiling, bulkhead etc.) around ACM, or<br>An Enclosure means the site isolation including hoarding walls, polyethylene sheeting and seals that isolates an Asbestos Work Area. |
| Friable Material | Material that:<br>• when dry, can be crumbled, pulverized or powdered by hand pressure or<br>• is crumbled, pulverized or powdered. |

| | |
|---|---|
| Glove Bag Removal | A method of removing friable insulation from a piping system using a prefabricated bag which isolates the section of insulation being removed. This is a Type 2 Procedure. |
| HEPA Filter | High Efficiency Particulate Aerosol filter that is at least 99.97 percent efficient in collecting a 0.3 micrometre aerosol. |
| HEPA Filtered Negative Pressure Unit: | Portable air handling unit which extracts air directly from the Asbestos Work Area and discharges the air to the exterior of the building after passing through a HEPA filter. |
| JOHSC | Joint Occupational Health and Safety Committee. |
| MOE | Ontario Ministry of the Environment. |
| MOL | Ontario Ministry of Labour. |
| Phase Contrast Microscopy (PCM) | A method which uses an optical microscope to determine airborne fibres, normally in an occupational setting. Particles are observed for shape and size. Results are presented as a number of fibres per cubic centimetre or millilitre of air (f/mL). The method of analysis in Ontario is based on the US National Institute for Occupational Safety and Health (NIOSH) Manual of Analytical Methods, Method 7400, issue 2, Asbestos and Other Fibres by PCM (August 15, 1994). |
| Transmission Electron Microscopy (TEM) | A method which uses an electron microscope to determine airborne asbestos fibres. Results are presented in fibres per cubic centimetre of air (f/cc). The method of analysis in Ontario is The U.S. National Institute of Occupational Safety and Health (NIOSH) Manual of Analytical Methods, Method 7402, Issue 2: Asbestos by TEM (Aug 15, 1994). |
| Type 1, 2 and 3 Procedures | Procedures defined under Ontario Ministry of Labour Regulation 278/05. The specific operations and their classification into these procedures are described under the Classification of Work Section. |
| US EPA | United States Environmental Protection Agency. |

## 1.0 PURPOSE AND SCOPE

The Asbestos Management Program (AMP) provides information and procedures for Asbestos Management in all Hamilton-Wentworth District School Board buildings where asbestos-containing materials have been confirmed and/or are suspected to be present. It applies to all categories of property with the exception of vacant lands. The AMP applies to all Hamilton-Wentworth District School Board (Board) staff as well as all service providers and contractors performing work in Hamilton-Wentworth District School Board facilities.

The AMP outlines the responsibilities of Board staff in their roles as the owner of buildings containing ACM, as tenants of a building with ACM and outlines requirements for Board personnel involved in acquisition of property which may contain ACM.

The AMP is a management system to control disturbance of asbestos-containing materials during demolition, renovation, alteration, maintenance, repair or other activities.

The AMP incorporates the following elements:

- Regulatory Requirements and Board Policies.
- Roles and Responsibilities.
- Notifications.
- Training Requirements.
- Emergency Reaction and Procedures.
- Work Practices (Type 1, 2, 3 and Glove Bag work).
- Record Keeping.
- Contractor Requirements.

## 2.0 REGULATORY REQUIREMENTS AND BOARD POLICIES

### 2.1 Regulatory Requirements

The Board AMP was implemented in response to the following legislation in effect as of November 1, 2007.

- Ontario Regulation 278/05, Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations as amended, made under the Occupational Health and Safety Act, 1980, under the jurisdiction of the Ontario Ministry of Labour. http://www.e-laws.gov.on.ca/DBLaws/Regs/English/050278_e.htm
- R.R.O. 1990, Reg. 347, as amended made under the Environmental Protection Act, under the jurisdiction of the Ontario Ministry of the

Environment. http://www.e-laws.gov.on.ca/DBLaws/Regs/English/900347_e.htm

- Transportation of Dangerous Goods Act, 1992 (TDGA, 1992), S.C, 1992, c. 34 including Transportation of Dangerous Goods Regulations SOR/85/77 and subsequent amendments. http://www.tc.gc.ca/acts-regulations/GENERAL/T/tdg/regulations/tdg001/part_1.htm

## 2.2 Board Policies Related to Asbestos

The Hamilton-Wentworth District School Board is committed to providing a safe and healthy environment for all people in Board-owned facilities in accordance with the Occupational Health and Safety Act. The Board is committed to the protection of staff from injury and occupational diseases in the workplace. The Board shall provide a safe and healthy environment for all people in Board-owned facilities in accordance with the Occupational Health and Safety Act. The overall management of interaction with asbestos materials falls within the responsibility of the Lead Supervisor, Infrastructure, Buildings and Plumbing Regulated reporting to the Manager of Facility Operations.

All building operations, whether performed by Board staff or service providers, shall be performed in adherence to the requirements outlined in this document and Ontario Regulation 278/05, *Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operation* made under the *Occupational Health and Safety Act* and all other applicable regulations.

Board has established certain policies which exceed the minimum requirements of O. Reg. 278/05 as follows:

- Due to future management issues and additional costs incurred over the life of the material, Board will not utilize any ACM in new construction or installations.
- When remedial action is undertaken on friable sprayed ACM, Board will generally opt for removal of the ACM.
- When remedial action is undertaken on friable mechanical insulation both removal and repair (re-jacketing or encapsulation of mechanical insulation) will be considered depending on the extent of work required.
- Prior to leasing properties, the Board will request that the Owner have asbestos assessments performed in buildings constructed prior to 1986. All required repairs and removals required by Regulation 278/05 must be performed.
- Prior to leasing properties, the Board requires that the Landlord have all ACM maintained according to Ontario Reg. 278/05 at the Landlords sole expense prior to leasing property.
- At existing leased properties when ACM is discovered during any improvement, addition, renovation, demolition, maintenance, repair of any kind, or at any other time, the Landlord shall take all steps required as per

Reg. 278/05. ACM will be removed from the premises or the building if possible within the existing lease agreement.

- Type 1, 2 and 3 work may be undertaken by either Board staff (if they have employees with appropriate training on site) or an Asbestos Abatement Contractor.

### 2.3 Regulated Substances Team

The Board has approved the Regulated Substances Team to:

- provide effective overall management of asbestos repair and removal
- improve response time whenever and wherever asbestos-related concerns arise
- co-ordinate the planned work of the Board consultants, contractors and employees involved in asbestos repair and removal
- inform the Joint Health and Safety Committee

In accordance with Section 21:

- The Board shall for each worker working in a Type 2 operation or a Type 3 operation shall complete an Ontario Ministry of Labour Asbestos Work Report for each such worker at least once in each 12 month period, and immediately upon termination of employment or employee transfer.

Medical monitoring will be performed as directed by the provincial physician. Workers are not required to participate.

## 3.0 BACKGROUND INFORMATION AND HEALTH EFFECTS

Refer to Appendix A for Background Information on Asbestos in Building Materials and Health Hazards.

## 4.0 SUMMARY OF ASBESTOS AT BOARD FACILITIES

Surveys prepared for these facilities can be reviewed by request and will be provided with all tendered work. Board's Lead Supervisor, Infrastructure, Buildings and Plumbing retains copies of all reports.

Surveys prepared for Board facilities are up to date and current with the sampling criteria outlined in Regulation 278/05.

## 5.0 ROLES AND RESPONSIBILITIES

The following Board personnel have responsibilities for establishing and maintaining the AMP.

## 5.1 Personnel involved in Acquisition or Leasing to the Board

Personnel involved in Acquisition or Leasing to the Board shall:

1. Prior to leasing or acquiring properties, Board require the Owner to have asbestos assessments performed in buildings constructed prior to 1986.

## 5.2 Lead Supervisor, Infrastructure, Buildings and Plumbing

The Lead Supervisor, Infrastructure, Buildings and Plumbing shall:

1. Ensure that an asbestos assessment has been performed for all board owned facilities constructed or occupied prior to 1986. Where such a survey has not been performed in pre-1986 facilities, arrange for a room-by-room survey of the facility.
2. Ensure the asbestos assessment report is available on site with the Caretaker and posted in the staff room on the safety bulletin board.
3. Notify in writing all existing and new Tenants of the Board (Management Representatives) at the location of asbestos, of the information in this record (modify and issue Tenant Notification Letter as appropriate – Appendix I).
4. Notify staff (including custodial, maintenance and other workers) and outside contractors or service providers who may work with or may disturb the material in the record of its presence and location (issue Contractor Notification Letter as appropriate – Appendix J).
5. Inform employees (and students, where appropriate due to access or proximity) of the presence of asbestos-containing material (through posted inventory reports). An inventory report is posted in each building on safety boards, and employees have been informed as to its location.
6. Arrange for the reassessment of asbestos-containing materials at regular intervals and ensure the asbestos assessment report is updated at least annually, or when new information is obtained as ACM is removed or it's condition changes.
7. Arrange for the remediation of deteriorated ACM reported in the asbestos assessment report, in subsequent reassessment reports or by caretakers using the appropriate procedures (Type 1, Type 2 or Type 3 procedures).
8. Ensure all Project Managers, Architects, Engineers and others arranging for or planning work in Board facilities are provided with necessary information on ACM and a copy of the Asbestos Survey or record.
9. Ensure that an intrusive pre-construction assessment for friable and non-friable ACM is performed prior to any renovation, alteration or demolition. Ensure this information is provided to Constructor in plans, drawings or specifications. Such assessments shall include destructive investigation where necessary.

10. Ensure that the Principal, head caretaker, tenant management representatives, site based JHSC and/or building occupants are informed in advance of projects which will require Type 2 procedures.

11. Ensure that the Principal, head caretaker, tenant management representatives, central JHSC, site based JHSC and/or building occupants are informed in advance of projects which will require Type 3 procedures.

12. Arrange for training for Board staff (refer to Training Section).

13. Ensure that measures are in place in the Facility to respond to emergencies involving asbestos by using Board Personnel or an Asbestos Abatement Contractor.

14. Maintain all documentation required by this program, including but not limited to: Asbestos Management Program, Asbestos Assessment Reports and Reassessments, Tenant Notification Letters, Contractor Notification Forms, Asbestos Project Work Records, Training Certificates (duplicate of forms kept by Board H&S Officer) and Respirator Protection.

15. Upon unexpected discovery of suspect ACM, or upon an uncontrolled asbestos spill or disturbance, follow the emergency procedures of Appendix C. The MOL will be notified following unforeseen discovery of asbestos. Ensure all Board personnel that may report an emergency are aware of contact names and numbers. Complete Form in Appendix K – Asbestos Discovery Report.

16. Arrange for the inspection and air monitoring of asbestos work in the facility as required by O. Reg. 278/05 and this AMP, when contracted by Project Manager.

17. At the completion of the work, to allow updating of the asbestos assessment report to reflect altered location and condition of ACM, complete the Asbestos Project Work Record in Appendix I for each project during which asbestos is removed that is managed by the Lead Supervisor, Infrastructure, Buildings and Plumbing .

18. Inform the central JHSC of any industrial hygiene testing prior to conducting it. Notices of proposed testing dates will be posted on the JHSC conference.

### 5.3 Project Manager

Project Managers (may also include Lead Supervisor, Infrastructure, Buildings and Plumbing or Foreman) who plan, arrange for or oversee work in the Board's facilities shall:

1. Ensure that an intrusive pre-construction assessment for friable and non-friable ACM is performed prior to any renovation, alteration or demolition. Ensure this information is provided to Constructor in plans, drawings or specifications. Such assessments shall include destructive investigation where necessary.

2. Based on the results of the pre-construction assessment report, provide or arrange for the provision of appropriate specifications (Type 1, 2 or 3 operations) to Constructor to remove ACM from the work area.

3. Ensure that all asbestos work in the facility is performed by consultants and/or Asbestos Abatement Contractors who specialize in asbestos work and who have appropriate experience, equipment, certificates and insurance. This includes the HWDSB regulated substances team. See below.

4. Arrange for the inspection and air monitoring of asbestos work in the facility as required by O. Reg. 278/05 and this AMP, when contracted by Lead Supervisor, Infrastructure, Buildings and Plumbing .

5. Notify the Lead Supervisor, Infrastructure, Buildings and Plumbing of work requiring Type 1, 2 or 3 precautions sufficiently in advance of work to allow Occupant notification.

6. Ensure all necessary notification of the Ministry of Labour for Type 1, 2 and 3 Projects have been performed by the contractor prior to start of work and that all necessary forms are posted on site.

7. At the completion of the work provide information to Lead Supervisor, Infrastructure, Buildings and Plumbing to allow updating of the asbestos assessment report to reflect altered location and condition of ACM. Complete Asbestos Project Work Record in Appendix I for each project during which asbestos is removed or disturbed and submit to Facility Manager/Principal.

### 5.4 Facility Occupants and Tenant Representatives

All persons in Board facilities who may arrange for maintenance or alteration of the Facility are to be made aware of the presence of ACM and shall:

1. Ensure all personnel who may work near the location of ACM are aware of its presence and follow the procedures outlined in this AMP.

2. Avoid unnecessary contact with or disturbance of ACM.

3. Report any disturbance, damage or deterioration of ACM to the Board Lead Supervisor, Infrastructure, Buildings and Plumbing for the work area or building.

## 6.0 ASBESTOS ASSESSMENT AND REASSESSMENT POLICIES

### 6.1 Asbestos Assessments for Management Purposes (Section 8 of O. Reg. 278/05)

Descriptions of ACM in the Board facilities that are present are available from the Lead Supervisor, Infrastructure, Buildings and Plumbing.

If assessments have not been performed for a building (and hence is not in compliance with Regulation 278/05), use the information in this section as a minimum for an asbestos assessment.

All Board Facilities constructed prior to 1986 shall have, on site, an asbestos assessment report that includes friable and non-friable ACM. The survey shall be

conducted on a room by room basis and indicate the location, condition, friability, accessibility and type of asbestos present in the Facility as outlined below.

In individual schools the asbestos assessment report are retained by the caretaker and posted in the staff room on the safety bulletin board, and the posted copy is to be determined to be the most recent copy. A colour copy of the asbestos floor plan drawings will be posted at the security panel.

As the survey will be typically performed for maintenance purposes it will not usually include destructive sampling that may destroy the material or damage the building. Typical materials that will not be part of the assessment include:

- adhesives
- caulking
- components or wiring within motor control centers, breakers, motors or lights
- concrete levelling compound (for floors)
- fire resistant metal clad finishes
- elevator and lift brakes
- exterior cladding
- soffit and fascia boards at elevated heights
- fire-door cores
- insulation on or in high voltage wiring
- mechanical packing, ropes and gaskets
- moulded plastic components (laboratory bench tops)
- paper products where inaccessible (e.g. under wood flooring or under metal or slate roofing)
- refractory materials and insulations in boilers, incinerators and stacks (possibly friable)
- roofing, roofing felt and tar
- mastics

The survey must include the information gathered on a room-by-room basis together with recommendations for asbestos management, control or removal for each material detected in each location. The location of materials suspected to contain asbestos but shown by analysis to be non-asbestos shall be reported. The original laboratory report of all analyses shall be provided as part of the report. Samples are to be collected at a rate that is in compliance with the requirements of O.Reg. 278/05, which states a minimum number of samples are to be collected

and analyzed from each area of homogeneous material for the material to be considered non-asbestos. This frequency is indicated in the table below. A homogeneous sampling area is defined by the US EPA as containing material that is uniform in texture and appearance, was installed at one time and is unlikely to consist of more than one type or formulation of material.

| Type of Material | Size of Homogeneous Material | Minimum Number of Bulk Samples |
|---|---|---|
| Surfacing material, including without limitation material that is applied to surfaces by spraying, by troweling or otherwise, such as acoustical plaster on ceilings, fireproofing materials on structural members and plaster | Less than 90 square metres | 3 |
| | 90 or more square metres, but less than 450 square metres | 5 |
| | 450 or more square metres | 7 |
| Thermal insulation, except as described below | Any size | 3 |
| Thermal insulation patch | Less than 2 linear metres or 0.5 square metres | 1 |
| Other materials | Any size | 3 |

### 6.2 Bulk Sample Collection Procedures

Bulk samples collected during the initial survey and all samples collected for future testing shall be collected following the procedures provided in Appendix B. Following these procedures, samples can be collected by Board staff, or by an Asbestos Consultant, under the direction of the Facility Manager/Principal or Project Manager.

### 6.3 Bulk Analysis

Bulk samples will be analysed for asbestos in accordance with O. Reg. 278/05 section 3(1)1. All analyses shall be performed by laboratories accredited in the US National Voluntary Laboratory Accreditation Program (NVLAP) or the

American Industrial Hygiene Association (AIHA) asbestos in bulk sample programs.

### 6.4 Reassessment of ACM and Update of Survey Record

The Lead Supervisor, Infrastructure, Buildings and Plumbing will arrange for a regular all accessible areas identified by the survey to contain ACM. Complete

reassessment will be performed every 3 years if ACM is present. If a specific area is subject to any change of use, frequent maintenance which may disturb the material, or if any report of damaged or deteriorated ACM is brought to the attention of the Lead Supervisor, Infrastructure, Buildings and Plumbing , the reassessment of materials in the specific area shall be performed on a more frequent basis. Reassessment shall always be performed of specific materials when damage or deterioration is reported.

The reassessment of ACM will be documented in writing.

### 6.5 Distribution of Assessment Record and Reassessment

The Lead Supervisor, Infrastructure, Buildings and Plumbing is responsible to maintain a copy of records, assessment reports and reassessment reports on site in the locations specified above. In addition, the Lead Supervisor, Infrastructure, Buildings and Plumbing will ensure the following are provided with access (not additional copies) to these reports:

- Sited based and central JHSC representatives.
- Tenant (in premises with ACM).
- Project Managers or Managers planning or performing work in a Board Building.

### 6.6 Pre-Construction Asbestos Survey (Section 10 of O. Reg. 278/05)

Prior to the commencement of any renovation, construction or demolition project (including buildings built up to 1986/the present time), the building or specific areas of the building which are to be affected by the work, shall be assessed for friable and non-friable ACM. The survey must be performed by a specialized asbestos consultant and include destructive or intrusive testing of enclosed areas which will be affected by the work.

Upon completion of the pre-construction survey, if asbestos is present in the area, specifications for removal shall be prepared (Type 1, 2 or 3 as appropriate) and provided to the Constructor in the work specifications.

### 6.7 Application of Proposed Testing Method to Determine Asbestos Precautions

This procedure was developed with the Ministry of Labour, HWDSB and Pinchin for testing in buildings where ACM sprayed fireproofing is present above ceiling systems.

1 This applies to areas of the building including ductwork and ceiling tiles in a part of a building when sprayed ACM is present elsewhere in the building (but not connected to the HVAC system serving the area).

Union representatives should be notified as per other agreements and regulations

2 Method

2.1 Perform a visual inspection following Type 2 procedures for delaminating, deteriorating or fallen ACM on the tiles or on any other surface above the ceiling. (Note this would likely be plaster, pipe insulation, etc.).

If any ACM present (by Polarized Light Microscopy - PLM) then Type 2 Procedures for ceiling entry will be required.

2.2 If 2.1 is not applicable then (on the first occasion only) that ceilings are entered or removed, collect dust samples using Type 1 or 2 procedures on the ceiling or surfaces above the ceiling following Table 1 of 278/05 and analyse by PLM.

If ACM present then Type 2 Procedures for ceiling entry will be required.

2.3 If 2.2 is not applicable then (on the first occasion only) that significant work is planned on HVAC units, filters, ductwork then testing outlined in 2.2 shall be followed.

If ACM present then Type 3 Procedure for Duct Work will be required.

2.4 If 2.3 is not applicable then this work (which is formally a Type 3 Operation) will proceed without any asbestos procedures, notification of the MOL, Asbestos related Personal Protective Equipment, etc. under Section 23 of O.Reg. 278/05. Personal air testing will be performed on workers undertaking this work at the start of the project. Acceptable level for representative air testing must be below 50% of the Occupational Exposure Limit.

## 7.0 NOTIFICATION

### 7.1 Notification to Tenants

Upon completion of the asbestos assessment, the Lead Supervisor Infrastructure, Buildings and Plumbing, will inform all Tenant Representative of the presence of asbestos within their leased space and provide them with access to portions of the record regarding their premises and common areas. The letter of notification to Tenants regarding asbestos (Appendix J) shall be used for this purpose. This notice will be provided to all existing and new tenants as required.

### 7.2 Contractor Notification Expectations

All contractors and Board employees who perform work at facilities where ACM is present should be notified of the presence of the ACM if their work may bring them into contact or close proximity to the ACM and they may disturb it. This notification may include janitorial, security, telephone, computer cabling suppliers, mechanical maintenance contractors, etc. This notification shall be performed by the Lead Supervisor, Infrastructure, Buildings and Plumbing or Project Manager.

The facilities service report will have a box that requires checking that the facilities asbestos inventory be checked prior to work commencing. The asbestos floor plans are posted at the schools alarm panel complete with access restrictions.

### 7.3 Notification of Asbestos Abatement

Contractors are to:

- Notify all sub contractors/trades in writing of the presence of ACM identified in the contract documents. Contractors shall provide copies of the notification to the board upon request.
- Notify orally and in writing, an inspector at the office of the Ontario Ministry of Labour nearest the project site (Notice of Project), as per Regulation 278/05, prior to commencing Type 3 abatement, Glove Bag abatement (over 1 sq. m.) or any renovation project that exceeds $50,000.00 in cost.
- Notify Sanitary Landfill site as per Ontario MOE Regulation 347 as amended.
- Inform all sub trades of the presence of ACM identified in the contract documents.
- Notify the Project Manager if suspect ACM not identified in the contract documents are discovered during the course of the work. The project manager (if not the Lead Supervisor, Infrastructure, Buildings and Plumbing or Foreman) is to notify the Lead Supervisor, Infrastructure, Buildings and Plumbing immediately. The Lead Supervisor, Infrastructure, Buildings and Plumbing or Foreman is to notify the MOL, Health and Safety Officer and the central JHSC if the friable material is asbestos containing, as required by Regulation 278/05.

The Project Manager (if not the Lead Supervisor, Infrastructure, Buildings and Plumbing or Foreman) is to notify the Lead Supervisor, Infrastructure, Buildings and Plumbing or Foreman of any testing or sampling that is proceeding. The Lead Supervisor, Infrastructure, Buildings and Plumbing or Foreman will notify the Health and Safety Officer and the central JHSC.

## 8.0 TRAINING REQUIREMENTS

Specific Board employees will undertake asbestos work for Type 1, 2 and 3 projects. Therefore training shall be limited to the following:

- Maintenance personnel and supervisors shall receive training in asbestos including identification of ACM, uses and hazards of asbestos, regulations applying to asbestos work and Type 1 work practices and safety procedures, as a minimum. Where workers will perform Type 2 asbestos work, one day training on asbestos procedures and handling is recommended. Workers performing Type 3 asbestos work require 253S (supervisor) or 253W (worker) training as outlined in Regulation 278/05.
- The Regulated Substance Team and Project Managers shall receive training in asbestos management and removal and the AMP of sufficient content to allow them to implement the policies outlined in the AMP and to enable Board to remain in compliance with O. Reg. 278/05.
- Representatives and Building Occupants (teachers, educational assistants administrative, custodial and academic support staff) shall receive Asbestos Awareness training yearly as per A.M. # P-6.

Board requires all service providers, contractors, etc. to provide appropriate training to all workers who perform Type 1, 2 or 3 work in Board Facilities. Evidence of such training will be provided to the Lead Supervisor, Infrastructure, Buildings and Plumbing upon request or on a yearly basis. The board reserve the right to audit contractor for compliance at any time. Non compliance may result in the termination of work/contract.

## 9.0 EMERGENCY PROCEDURES AND CONTACTS

### 9.1 Fallen Debris or Damaged Material

Board staff may encounter fallen material that is suspected to contain asbestos. This may occur in locations where asbestos has been documented or in areas not included in the Assessment due to limited accessibility, etc.

Facility Management shall follow the protocol "Emergency Reaction in the Event of a Suspected Asbestos Spill" (Appendix C).

In the event that Emergency Work must be undertaken, follow the procedures outlined in Appendix D – Work Practices for Emergency Work. All emergency situations shall be reported to the Facility Manager/Principal as soon as possible.

**Emergency Contacts:**

| | |
|---|---|
| Help Desk | (905) 527-5092 ext 2737 |
| Lead Supervisor, Infrastructure, Buildings and Plumbing | (905) 527-5092 ext 2732 |
| After hours, call switchboard | (905) 527-5092-press "0" |

### 9.2 Discovery of Previously Unidentified Friable Material

Previously unidentified friable materials may also be uncovered during demolition of finishes, walls etc. during construction. The Lead Supervisor, Infrastructure, Buildings and Plumbing or Project Manager shall follow the protocol "Emergency Reaction

in the Event of a Suspected Asbestos Spill" (Appendix C). Complete the Form in Appendix K – Asbestos Discovery Report.

If the material contains asbestos, the Lead Supervisor, Infrastructure, Buildings and Plumbing or Project Manager is to notify the local Ministry of Labour Office of the discovery in writing. This is a regulated requirement.

## 10.0 ASBESTOS WORK PRACTICES

The following sections briefly describe the standard operating procedures adopted for asbestos-related work. These meet or exceed the requirements of O. Reg. 278/05 and other regulatory requirements in effect on November 1, 2005.

These procedures are provided as a minimum standard for all asbestos work in Board Facilities.

### 10.1 Classification of Scheduled Work

The Ministry of Labour Regulation classifies asbestos work into Types 1, 2, and 3 procedures, depending on the type of disturbance, the material being disturbed, and the extent of work. The Ministry of Labour also allows the use of Glove Bags for removal of asbestos-containing pipe insulation as a Type 2 operation.

The following is the classification of work for materials known to exist in Board Facilities.

#### *10.1.1 Type 1 work*

Installing or removing ceiling tiles which are an asbestos-containing material, if the tiles cover an area less than 7.5 square metres and are installed or removed without being broken, cut, drilled abraded, ground, sanded or vibrated.

Installing or removing non-friable asbestos-containing material, other than ceiling tiles, if the material is installed or removed without being broken, cut drilled, abraded, ground, sanded or vibrated.

Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if,

a. The material is wetted to control the spread of dust or fibres, and
b. The work is done only by means of non-powered hand-held tools.

Removing less than one square metre of drywall in which joint-filling compounds that are asbestos-containing material have been used.

The procedures for Type 1 work are provided in Appendix E.

### *10.1.2 Type 2 Work*

Removing all or part of a false ceiling to obtain access to a work area, if asbestos-containing materials are likely to be lying on the surface of the false ceiling.

The removal or disturbance of one square metre or less of friable asbestos-containing material during the repair, alteration, maintenance or demolition of all or part of machinery or equipment or a building.

Enclosing friable asbestos-containing material.

Applying tape or a sealant or other covering to pipe or boiler insulation that is asbestos-containing material.

Installing or removing ceiling tiles that are asbestos-containing material, if the tiles cover an area of 7.5 square metres or more and are installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.

Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if,

a. The material is not wetted to control the spread of dust or fibres, and
b. The work is done only by means of non-powered hand-held tools.

Removing one square metre or more of drywall in which joint filling compounds that are asbestos-containing material have been used.

Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if the work is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filters.

Cleaning or removing filters used in air handling equipment in a building that has sprayed fireproofing that is asbestos-containing material.

An operation that,

a. Is not classified as a Type 2 operation (above)
b. May expose a worker to asbestos, and
c. is not classified as a Type 1 or Type 3 operation.

The procedures for Type 2 work are provided in Appendix F.

### *10.1.3 Glove Bag Work*

The use of glove bags to remove insulation from a pipe duct or similar structure is classed as Type 2 work but it requires notification of the MOL if more than 1 square metre of ACM is removed.

The procedures for Glove Bag work are provided in Appendix G.

*10.1.4 Type 3 Work*

The removal or disturbance of more than one square metre of friable asbestos-containing material during the repair, alteration, maintenance or demolition of all or part of a building, or any machinery or equipment

The spray application of a sealant to friable asbestos-containing material

Cleaning or removing air handling equipment, including rigid ducting but not including filters, in a building that has sprayed fireproofing that is asbestos-containing material.

Repairing, altering or demolishing all or part of a kiln, metallurgical furnace or similar structure that is made in part of refectory materials that are asbestos-containing materials

Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material, if the work is done by means of power tools that are not attached to dust collecting devices equipped with HEPA filters.

*10.1.5 Varied Work Procedures, per Section 23 of Regulation 278/05*

Contact Lead Supervisor, Infrastructure, Buildings and Plumbing for any specific Varied Work Procedures prepared in specific buildings. Varied work procedures prepared to date of issue of this AMP include: ceiling access into air plenums, and HVAC filter changes in buildings with AC sprayed fireproofing, at a limited number of schools.

## 11.0 INSPECTION AND AIR MONITORING OF ASBESTOS WORK

### 11.1 Visual Inspection

The procedures provided in Appendices E, F, and G are suitable for the performance of most work on non-friable and friable ACM. The Lead Supervisor, Infrastructure, Buildings and Plumbing or Project Manager or an assigned representative will be responsible for ensuring these procedures are followed. The primary method of ensuring compliance for Type 1, Type 2, Type 3 and Glove Bag use is visual inspection of the site and work practices by a Competent Worker or Asbestos Consultant. The procedures outlined in the Appendices are to be enforced by those supervising the work.

### 11.2 Air Monitoring During Asbestos Work

O. Reg. 278/05 requires clearance monitoring only for Type 3 projects in buildings that will be occupied subsequent to the asbestos work. In Type 2 and Type 3 projects air monitoring is useful to provide proof of compliance with the specified work practices and, if performed, will be performed as outlined below on Board projects. At the Boards discretion air monitoring may be performed during large Type 2 and Glove Bag abatement projects.

Air monitoring and analysis during active asbestos removal will be performed using the NIOSH 7400 method using Phase Contrast Microscopy (PCM). PCM

air samples may or may not be analyzed by the consultant performing the sample collection. PCM air samples must be submitted for analysis to a laboratory participating in a recognized quality control program such as the AIHA AAR. Program or the Quality Control Program of the IRSST (Institute de Recherché en Santé et en Sécurité du Travail du Quebec).

The acceptable limit for samples collected outside the asbestos work area will be 0.05 fibres/mL (f/mL). This level has been established as 50% of the current Occupational Exposure Limit (OEL) established by the MOL for industrial exposure to asbestos. In addition, the NIOSH REL (Recommended Exposure Limit), the US OSHA PEL (Permissible Exposure Limit) and the ACGIH TLV (Threshold Limit Values) for asbestos are 0.1 fibres/cc (or mL), including aspect ratio and length requirements. Other Canadian Provinces have similar OELs of 0.1.

Accurate determination of a lower concentration may be affected by the presence of low levels of non-asbestos fibrous dust in office or building environments.

## 11.3 Type 1 – Inspection and Air Monitoring

### *11.3.1 Inspection*

The Lead Supervisor, Infrastructure, Buildings and Plumbing or Project Manager or an assigned Competent Worker, will inspect Type 1 work upon completion of work to ensure all ACM has been removed and the area adequate cleaned of dust and debris.

### *11.3.2 Air Monitoring*

Air monitoring is not required during or after Type 1 work.

## 11.4 Type 2 and Glove Bag – Inspection and Air Monitoring

### *11.4.1 Inspection*

An outside Asbestos Consultant may inspect Type 2 and Glove Bag work. Upon completion of inspection and air monitoring by the Consultant, the Type 2 enclosure will be dismantled. The Lead Supervisor, Infrastructure, Buildings and Plumbing or Project Manager or an assigned Competent Worker may inspect for final cleanliness after the enclosure has been dismantled. Daily part-time inspection and air monitoring are required during Type 2 and Glove Bag work.

### *11.4.2 Air Monitoring*

PCM air monitoring will be conducted daily during Type 2 and Glove Bag work. Air monitoring will be conducted in occupied areas adjacent to the Type 2 Asbestos Work Area or Glove Bag Work Area during contaminated work.

PCM air monitoring will be used for air clearance within Type 2 Asbestos Work Areas. A clearance level of less than 0.05 f/ml must be achieved prior to dismantling the enclosure.

## 11.5 Type 3 – Inspection and Air Monitoring

### *11.5.1 Inspection*

The Lead Supervisor, Infrastructure, Buildings and Plumbing or competent worker will inspect Type 3 work. It is Board practice to ensure part-time daily on-site inspection is performed.

Upon completion of inspection and air monitoring by the consultant, the Type 3 enclosure will remain in place. The Lead Supervisor, Infrastructure, Buildings and Plumbing or Project Manager will inspect the Type 3 work area for final cleanliness prior to the enclosure being dismantled.

### *11.5.2 Air Monitoring*

PCM air monitoring will be conducted on a daily basis during Type 3 work. Air monitoring will be conducted at the perimeter of the Asbestos Work Area (in occupied areas adjacent to the Type 3 Work Area) to ensure no leakage from the enclosure. Air monitoring will be performed within the enclosure to ensure that respirator protection factors are not exceeded.

Clearance air monitoring must be performed within Type 3 Asbestos Work Areas. The air sample will be relied upon to allow clean access to the site for the Teardown Inspection. Clearance levels of 0.01 f/ml must be achieved prior to dismantling the enclosure, as required by O. Reg. 278/05. Only if clearance using PCM is not possible, will the TEM method be utilized.

Once the clearance air testing is satisfactory and within 24 hours after the clearance air testing results are received,

a. The owner and the employer shall post a copy of the results in a conspicuous place or places,

   i. At the workplace, and

   ii. If the building contains other workplaces, in a common area of the building; and

b. A copy shall be provided to the Joint Occupational Health and Safety Committee or the health and safety representative, if any, for the workplace and for the building.

The owner of the building shall keep a copy of the clearance air testing results for at least one year after receiving them.

## 12.0 RECORD KEEPING AND DOCUMENTATION OF AMP

The following records are to be kept by the Lead Supervisor, Infrastructure, Buildings and Plumbing for all sites with ACM:

- Asbestos Assessment Reports.

- Reassessment Reports.
- Tenant Notification Letters.
- Contractor Notification and Acknowledgement Forms, including tender documents.
- Asbestos Project Work Records.
- Inspection reports during abatement from Hazardous Materials Consultants.
- Bulk sample analytical results from any sampling.
- Abatement or emergency response project records.
- Air monitoring reports. Note clearance air monitoring reports must be retained for a minimum of one year.
- Asbestos Training Records for the regulated substances staff.
- All upon discovery of asbestos materials not mentioned in the inventories.

This AMP is to be re-evaluated each time there is a substantial change to the Asbestos Regulation (O.Reg. 278/05).

## 13.0 CONTRACTOR REQUIREMENTS

Contractors hired by Board are to meet the following minimum requirements:

- Must maintain a Comprehensive General Liability Policy, provided on an "occurrence" basis, for a minimum of $5,000,000 in coverage.
- Must maintain an Asbestos Liability or Pollution Liability Policy, provided on an "occurrence" basis, for a minimum of $5,000,000 in coverage.
- Must maintain an Automobile or Fleet Policy, and Non-owned Automobile Policy p for a minimum of $2,000,000 in coverage.
- Maintain a valid Workplace Safety and Insurance Board Clearance Certificate.
- All supervisors and workers performing Type 3 work are to have attended 3 day courses regarding asbestos and 253W and/or 253S training, as of November 1, 2007. List to be provided to Lead Supervisor, Infrastructure, Buildings and Plumbing and will be kept by the Regulated Substances Department.
- All workers are to be fit tested for respirators and trained in respirator care.
- For large projects, the Project Manager may wish to ask for references for five previous projects of similar scope and cost.

## 14.0 CUSTODIAL WORK

Where exposed asbestos-containing sprayed fireproofing is present, or exposed and badly damaged asbestos-containing materials are present, custodians are not to clean the area by dry sweeping. Instead, custodians are to notify the Lead Supervisor, Infrastructure, Buildings and Plumbing immediately.

# APPENDIX A

# BACKGROUND INFORMATION ON ASBESTOS IN BUILDING MATERIALS AND HEALTH HAZARDS

# BACKGROUND INFORMATION ON ASBESTOS IN BUILDING MATERIALS AND HEALTH HAZARDS BACKGROUND ON ASBESTOS

## Uses of Asbestos in Building Materials

Asbestos has been widely used in buildings and several uses continue today. The uses of asbestos are generally classed into two groups for purposes of hazard assessment; friable and non-friable products. A friable material is a material that when dry can be crumbled, pulverized or powdered by hand pressure. The use of friable materials in construction is banned today but due to the widespread use of friable materials in the past, these materials still are present in many buildings. In order to establish an asbestos management program, the possible uses of asbestos must be known. These are discussed below in the categories of non-friable, potentially friable and friable products.

## Non-Friable Asbestos Materials

*Asbestos-cement Products (Transite)*

The largest use of asbestos, in terms of the tonnage of fibres employed, is as a reinforcing agent in cement products. Asbestos-reinforced cement is strong, durable, rigid and resistant to both fire and weather. Portland cement, water and asbestos are mixed to form a slurry from which end-products can be fabricated by a process similar to that used in paper making. Products include sheets, pipes and a wide variety of other shapes. The asbestos fibre content of asbestos cement products is usually about 15 percent.

Asbestos-cement sheet is produced in four basis forms: flat sheet, corrugated sheet, siding shingles and roofing shingles. The main use of asbestos cement sheet is for the roofing and cladding of buildings. Other uses are ceiling tiles, decorative panelling, electrical insulation, fume hood liners and laboratory tabletops. Asbestos-cement pipe is used for water supply, sewage, irrigation, drainage applications, the transport of corrosive chemical fluids, and electric and telephone conduits. Asbestos cement products are still in production. Non-asbestos substitute cement products are available for some though not all asbestos products.


Transite Drain Pipe

Corrugated Transite Siding/Roofing

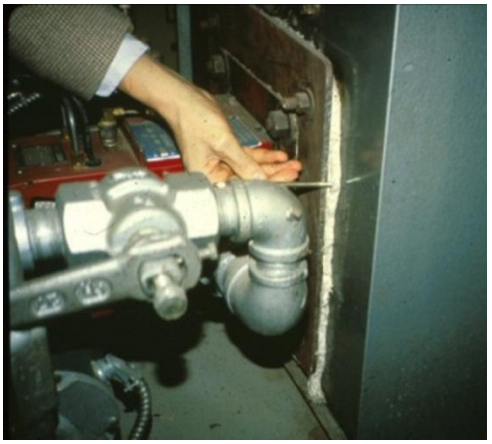
Laboratory Bench Countertop

Transite Blocks in Elevator Switchgear

*Gaskets and Packings*

The combination of long asbestos fibres and high temperature rubbers has provided some of the best gasket materials. The asbestos, in bulk fibre, woven, or plaited form, provides strength and temperature resistance, while the rubber or synthetic compound acts as binder and sealing material. Asbestos yarns have been commonly used in the manufacture of braided and woven packing materials. Many of these uses, particularly in sheet forms are still in production and use.

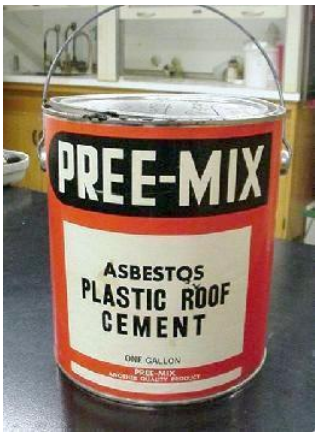
Rope gasket



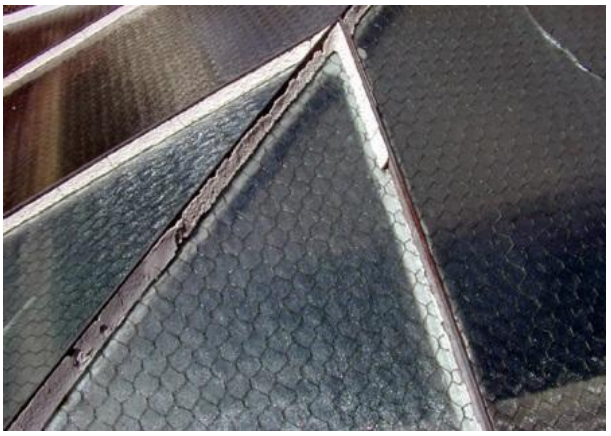
Rope gasket at boiler plate

*Coatings and Sealants*

Asbestos has been used in roof coatings and cement and, to a lesser extent, in sealants and caulks. Roof coatings consist of asphalt liquefied with solvents and asbestos fibre filler. Roof cements are similar, but are formulated to a thicker consistency so that they can be used to seal openings through which a liquid coating would flow. Some of these are still in production.




Asbestos Roof Cement



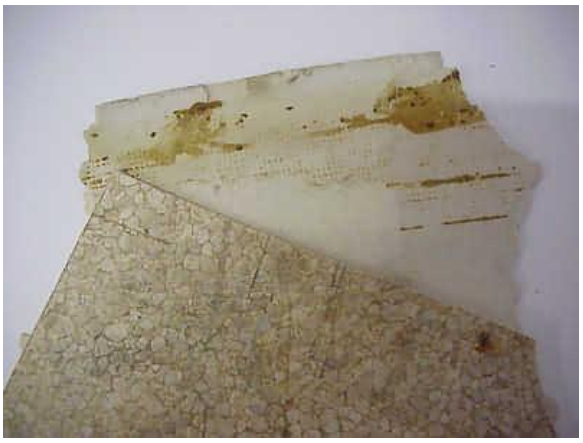
Caulking at Glazing

*Paper Products*

Asbestos paper products have been used in a wide variety of applications. Among the most important in construction are roofing felt, gaskets, pipe wrap, as building paper under roof tiles and wood flooring, tape at joints on ducts and duct insulation, as a finishing layer over fibreglass pipe insulation, as heat shields in incandescent light fixtures, as an underpad beneath vinyl sheet flooring, millboard and electrical insulation. Some of these applications are discussed under the headings "Insulation" and "Gaskets and Packings".

Paper heat shield on incandescent fixture

Paper on seams of duct

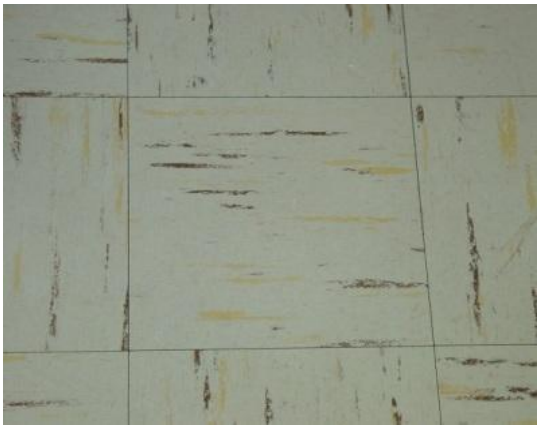


Vinyl sheet flooring with paper underpad

Building paper under roof tiles

*Plastics*

Asbestos has been used as a reinforcing agent in a wide range of asbestos/polymer composites. Applications include, floor tiles, engine housings, bins and containers, furniture, and a variety of coatings, adhesives, caulks, sealants, and patching compounds. Two areas dominated asbestos use in plastics: phenolic moulding compounds and vinyl-asbestos tile. Few of these products remain in production.



Vinyl asbestos tile

*Asbestos Textiles*

Asbestos textile materials are manufactured from chrysotile fibres. Two types of yarn are produced: plain, possibly braced with organic fibres, and reinforced, which incorporates either wire or another yarn such as nylon, cotton or polyester. Major uses for asbestos textiles are gaskets, packings, vibration damper/duct connectors, friction materials, thermal and electrical insulation, and fire resistant applications, e.g. welding curtains, protective clothing, theatre curtains, hot conveyor belts and ironing board covers. These

products may be considered or become friable in use. Asbestos textiles are no longer in widespread production.

Textile Vibration Damper/Duct Connector

High Voltage cable insulation

*Friction Materials*

Asbestos has been used in the manufacture of brake and clutch linings and pads. The asbestos fibres may be embedded in a phenolic resin with various mixtures of fillers or a woven asbestos cloth may be impregnated with the resin. Friction products are primarily used in vehicles but may be used in any rotating machinery, for example elevators or printing presses. They are still produced and used although not widely.

*Drywall Joint Compound*

Drywall joint compound also contained asbestos until the early 1980's. The concentration is quite low (near or less than 5%; always chrysotile). The product in place is quite hard and is normally treated as non-friable.

Drywall joint compound on drywall


Drywall joint compound 1963-1965

## Potentially Friable Asbestos Materials

*Acoustic Ceiling Tiles*

Some types of mineral wool type acoustic ceiling tiles were formulated with asbestos from the early 1960's. The use of asbestos in ceiling tiles was discontinued in the early 1980's. Analytical testing is required to distinguish the asbestos and non-asbestos ceiling tiles. From field experience at Pinchin Environmental Ltd., the fire-rated tiles are more likely to contain asbestos. Amosite was the predominant fibre type used. Acoustic tile, particularly if splined or glued on, can become friable or release dust when removed. They are usually considered non-friable as they are normally handled intact.

Glued on (laminated) ceiling tiles

Lay-in ceiling tile

*Plaster*

Asbestos was used in random fashion in the brown coat and surface coat of smooth plaster finishes. This has been used at a low level (less than 5% in most cases). In many instances the asbestos content is less than 1% or even less than 0.5%. This is often due to the presence of vermiculite in plaster. Vermiculite frequently contains actinolite or chrysotile as an impurity which contributes to the asbestos content. Only Chrysotile was ever intentionally added to plaster.

Plaster is non-friable in place but removal is impossible without causing it to become friable. This is significantly different than lay-in acoustic tiles or transite boards which can be removed intact.

Plaster on wood lath

Plaster on speed tile

**Friable Asbestos Materials**

Friable asbestos products are the main concern of the public and the asbestos management program due to the ease of fibre release. None of the products are still in production in North America or Europe.

*Fireproofing or Sprayed Insulation*

Several types of fireproofing or insulation were applied by spraying or trowel application in the period from the mid 1930's to 1974. Fibrous products were spray applied after being blown as a dry mix through an application gun. These products may contain up to 90% asbestos and any of the three major types (chrysotile, amosite or crocidolite). Cementitious products were trowelled or sprayed as a wet slurry. These were harder products that did not contain more than 25% asbestos. Only chrysotile asbestos was used in the cementitious type materials.

Cementitious sprayed fireproofing

Debris from fireproofing on top of ceiling

Fibrous sprayed fireproofing

Fibrous sprayed fireproofing (beam only)

*Texture or Acoustic Plasters*

The use of asbestos was widespread in trowelled or sprayed texture coats, stipple coats and acoustic plasters from the 1950's to the late 1970's (at least as late as 1980). These products always contain less than 25% Chrysotile. Some of the harder stipple coats may be considered non-friable in place and only become friable when disturbed by construction or demolition. Other products in this group can be very soft and extremely friable.

Sprayed limpet texture ceiling on lath

Texture coat ceiling

*Mechanical Insulation*

This is the most widespread use of friable asbestos in buildings. The use dates from the late 1800's to the late 1970's. The material can have a number of appearances and asbestos contents. The more prevalent types of asbestos mechanical insulations are:

- white, brown, pink or grey block (Magnesia block, Caposite)
- white or grey corrugated paper (Aircell)
- white, grey or brown layered paper (sweatwrap)
- grey trowelled or hand applied material (with the appearance of hard or granular, grey, dry mud) (Parging cement)

It is possible to find all asbestos types in mechanical insulation although chrysotile is predominant and amosite the next most common.

Aircell insulation (corrugated paper)

Caposite block insulation

Parging cement on pipe fitting

Parging cement on sweatwrap and Aircell

*Vermiculite*

Vermiculite, a mineral mined around the world, is used in a variety of commercial and consumer products. After crushing and processing, the raw ore was shipped to many plants in Canada for exfoliation or expanding. At these plants, the ore was heated to about 1000°C causing it to expand like popcorn into a lightweight granular material that is fire-resistant, absorbent, light weight and a good insulator. Vermiculite has been and continues to be used in a variety of building materials. It was made into a variety of insulation products, was used as a loose fill insulation inside masonry block walls (the largest volume use), stove pipe and stack insulation, fire separations, cold rooms and in walls and attics of buildings, mostly homes. It is important to understand not all vermiculite contains asbestos.

Vermiculite attic insulation

Libby vermiculite

**Hazards of Asbestos Materials in Buildings**

Beginning in the late 1970's, public health authorities, the media, and the public in general, became concerned about the health effect of these asbestos materials on building occupants. It was known that asbestos miners and factory workers and installers who handled asbestos materials suffered a higher incidence of several respiratory diseases. These groups had been exposed to very high levels of asbestos dust for prolonged periods. In order to assess whether the public anxiety over the current situation of asbestos materials and the hazard of in-place materials was justified, the Ontario Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario was established in 1981. This 3 year study considered all aspects of the asbestos problem, from production, through installation and use in-place, to maintenance and demolition. After considering all available data and commissioning several research studies, the Commission concluded in its final report (Chapter 9, Page 585):

> "....The risk to occupants from asbestos in buildings is a small fraction of the risks faced by workers exposed to asbestos under the 1 f/cc control limit for chrysotile (which was the current exposure limit for industrial asbestos use in Ontario at that time). It is less than 1/50 as great as the risk of commuting by car to and from those buildings. In concluding that this risk is insignificant, we conclude that the risk does not present a public health problem. While asbestos has caused serious health problems for workers and may present a problem for building maintenance, renovation, construction, and demolition workers, we conclude that it does not pose a significant problem for the general occupants of a building, except in the three situations outlined in Section D of this chapter, namely: (i) the occupant is in the immediate vicinity of work that disturbs friable asbestos-containing insulation; (ii) the occupant is within the range of air circulation of work that disturbs friable asbestos-containing insulation; or (iii) significant quantities of friable asbestos-containing insulation have fallen onto building surfaces and are being disturbed."

and in the overview to this section (Chapter 9, page 548):

> "We will conclude that it is rarely necessary to take corrective action in buildings containing asbestos insulation in order to protect the general occupants of those buildings. On the other hand, construction, demolition, renovation, maintenance, and custodial workers in asbestos-containing buildings may be exposed to significant fibre levels and may, during their work, cause elevated fibre levels for nearby occupants."

The general conclusions of the Royal Commission have been supported by independent testing by independent researchers, the Ontario Ministry of Labour, and authorities in other jurisdictions. Air sampling has shown that the airborne asbestos levels in buildings with sprayed asbestos are no higher than outdoor levels, unless the friable asbestos or asbestos debris is being disturbed at the time. Airborne levels in buildings are not elevated even when the ceiling space containing the sprayed asbestos or asbestos mechanical insulation functions as an air plenum.

The Ministry of Labour Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations was modelled on the Commission findings. Several other provinces have since issue regulations or guidelines similar to the Ministry of Labour Regulation. The Asbestos Management Program was prepared to be consistent with the recommendations of the Commission and to meet all requirements of the Regulation.

# APPENDIX B
# BULK SAMPLE COLLECTION PROCEDURES

# BULK SAMPLE COLLECTION PROCEDURES

## 1. OBJECTIVES

To obtain a sample for analysis to determine if asbestos is present within a material.

To determine the type of asbestos and the quantity of asbestos of each type.

Sampling of vermiculite is specifically excluded from these procedures.

## 2. EQUIPMENT AND SUPPLIES

- Pen and Sharpie marker.
- Retractable knife (with extra blades).
- Hook knife.
- Flashlight and batteries.
- Screwdriver(s) with multiple bits.
- Small hammer.
- Sample bags.
- Insulation tape or duct tape.
- Spray bottle.
- Wipes for cleaning tools so as to not contaminate subsequent samples.
- NIOSH approved half-face respirator with P100 filters.

## 3. SAMPLE COLLECTION

Sampling shall be conducted by staff or contractors who have received appropriate training for the type of sampling required. Sampling shall only be conducted when the immediate area has been cleared of any persons not needed during the sampling.

Where necessary, provide a drop sheet below sample location if debris or dust may be generated by sampling operation (e.g. below a ceiling tile if sprayed fireproofing is above).

Use cleaned/new tools, or clean the tool to be used with a sanitizing wipe prior to sample collection. Wipe or wash again prior to each subsequent sample.

Spray the material with a light mist of water if necessary to prevent fibre release during sampling. Do not disturb the material any more than necessary. Note that using water may delay the receipt of sample results as samples cannot be analyzed if wet.

Each homogeneous material should be sampled separately. A homogeneous sampling area is defined by the USEPA as containing material that is uniform in texture and appearance, was installed at one time and is unlikely to consist of

more than one type or formulation of material. The surveyor is to use information obtained by visual examination, available information on the phases of the construction and information on renovations obtained from the client to determine the extent of each homogeneous area and the number of samples required.

Number of samples required is in Table 1 of O. Reg. 278/05 and is as follows:

| Type of Material | Size of Homogeneous Material | Minimum Number of Bulk Samples |
|---|---|---|
| Surfacing material, including without limitation material that is applied to surfaces by spraying, by troweling or otherwise, such as acoustical plaster on ceilings, fireproofing materials on structural members and plaster | Less than 90 square metres | 3 |
| | 90 or more square metres, but less than 450 square metres | 5 |
| | 450 or more square metres | 7 |
| Thermal insulation, except as described below | Any size | 3 |
| Thermal insulation patch | Less than 2 linear metres or 0.5 square metres | 1 |
| Other material | Any size | 3 |

Collect the sample by penetrating the entire depth of the material to the underlying substrate since it may have more than one layer. Examples of materials with more than one layer include plaster, sweatwrap with tar paper, and parging cement over other insulations, etc. The following points are exceptions to this rule.

- When collecting drywall joint compound samples, do not sample the paper on the drywall or the drywall itself. To ensure that the drywall joint

compound itself is sampled, collect the sample at previously damaged outside corners or above ceiling where unpainted.

- When sampling texture coat that is applied in a thin layer to drywall, try to ensure that you only collect a sample of the texture coat and not any drywall compound beneath that may skew the sample result. Try to sample at an area that is 1 ‘ x 1’ away from a corner (and likely away from drywall joint compound), or sample overspray above ceiling. Do not sample too deep, trying only to remove the texture coat itself.
- When collecting samples try to minimize damage to finishes. Sample flooring at door jambs or in corners, sample plaster above ceilings or where damaged, break ceiling tiles off at corners so that the damage cannot be seen when placed back in grid, etc. A piece a big as your thumbnail is all that is required.
- When sampling VAT, try to obtain a sample of the mastic whenever possible. If the survey is for pre-construction, the mastic must be analyzed. Add this note to the transmittal.
- On pipes insulated with fibreglass and sweatwrap, check the lap joints, butt joints, staples, and hangers for asbestos parging cement.

If pieces of material break off and fall during sampling, remove the debris by wet wiping and place wipe in sample bag for disposal.

Scrape directly into, or place sample into a Ziploc bag and seal closure strip. Write the following information on the sample bag:

- Sample Number. Ensure that samples of the same homogenous material are numbered the same number but with a different letter to signify it is a different sample of the same homogeneous material (e.g. 001A, 001B, and 001C for three samples of the same type of ceiling tile).
- Date (year/month/day).
- Collected by.
- Company name.
- Material.
- Location. Include building name, room name, location number, type of system etc.

Temporarily seal any openings created to collect the sample, for example, with metal foil tape or duct tape wrapped completely around pipe insulation where the jacket was cut.

## 4. PERSONAL SAFETY

The use of a respirator is recommended for all sampling of materials. However, sampling can be performed without a need for one but depends on care used and the friability of the material being sampled.

Wash your hands after sampling, and you must wash your hands prior to eating drinking or smoking.

## 5. SAMPLE SUBMISSION

Samples must be analyzed at only NVLAP or AIHA certified laboratories.

Acceptable labs include:

Pinchin Environmental Ltd. Mississauga Laboratory, 2470 Milltower Court, Mississauga ON, L5N 7W5, Contact: Karen Slayer, (905) 363-1385 (Direct line).

Pinchin Environmental Ltd. Ottawa Laboratory, 515 Leggett Drive, Suite 200, Kanata ON, K2K 3G4, Contact: Kendra Bertuzzi, (613) 592-3387.

Complete the Bulk Sample Transmittal. On the transmittal ensure that you instruct the lab to use the Stop Positive approach.

Submit samples using separate transmittals if separate reports are to be written (for separate sites/buildings).

## 6. SAMPLE HANDLING AND SHIPPING

Include the Bulk Sample Transmittal.

Bulk samples do not require special handling (temperature, pressure etc.).

## 7. ANALYSIS

The analytical method follows the Ontario Ministry of Labour Code for the Determination of Asbestos from Bulk Samples, August 1985 and U.S. EPA Method 600/R-93/116 dated July 1993.

Analysis is to be completed using a stop positive approach. Only one result of greater than 0.5% asbestos content is required to determine that a material is asbestos-containing, but all samples must be analyzed to conclusively determine that a material is non-asbestos (O. Reg. 278/05). The laboratory will stop analyzing samples from a homogeneous material once greater than 0.5% asbestos is detected in any of the samples of that material. All samples are analyzed if no asbestos was detected.

## 8. INTERPRETATION OF BULK SAMPLE RESULTS

Any material containing more than 0.5% asbestos is considered an asbestos-containing material in Ontario.

# BULK SAMPLE TRANSMITTAL FORM

Pinchin Environmental Ltd.
Asbestos Laboratory
2470 Milltower Court
L5N 7W5
Attention: Karen Slayer
Phone: (905) 363-1385

| **Building Name:** | | **Results/Invoice To:** | |
|---|---|---|---|
| | | Name:<br>Company:<br>Address:<br><br>Fax:<br>Email: | |
| Project No.: | | | |
| Submitted By: | | | |
| Date: | P.O.: | | |
| # of Samples: | Date Required: | Priority: ☐Reg (5 day) | ☐Rush (24 hr) |

| SAMPLE NUMBER | MATERIAL/SYSTEM/LOCATION | RESULT |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

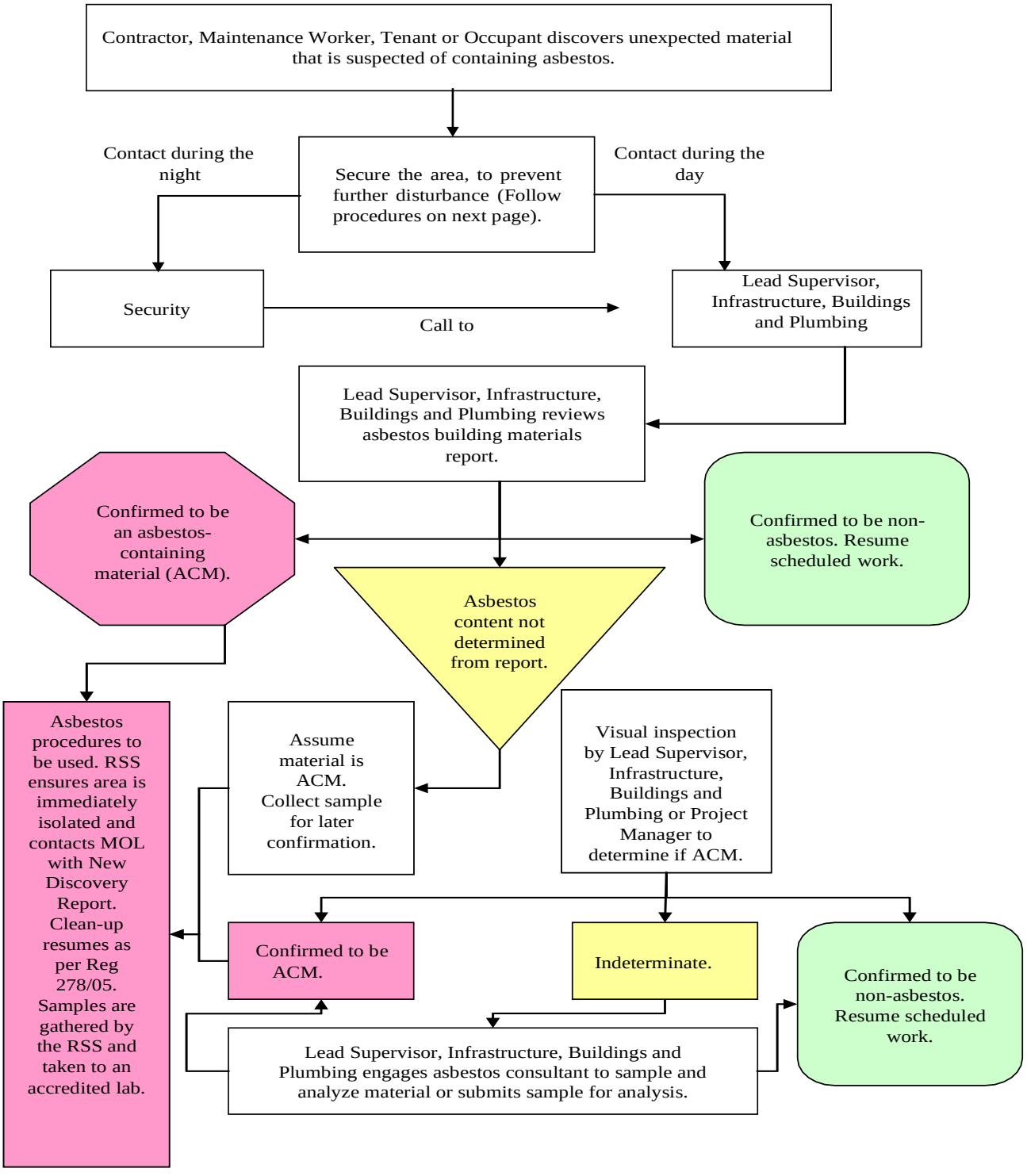
E.g. Vinyl floor tile, beige and white, Managers Office, 2nd Floor, Room 123, Location 22.
E.g. Parging cement insulation on pipe fitting, domestic hot water system, Basement, Boiler Room, Room B1, Location 1.

| **TO BE COMPLETED BY LAB PERSONNEL ONLY** | **LAB REF. #:** |
|---|---|
| **Analyzed By:** | **Date:** |

**APPENDIX C**

**EMERGENCY REACTION IN THE EVENT OF SUSPECTED ASBESTOS SPILL**

# EMERGENCY RESPONSES AND NOTIFICATION IN THE EVENT OF ASBESTOS-SUSPECT MATERIAL DISCOVERED DURING MAINTENANCE OR CONTRACTED WORK OR REPORTED BY OCCUPANT/TENANT



## EMERGENCY REACTION IN THE EVENT OF SUSPECTED ASBESTOS SPILL

If asbestos-containing materials or suspect materials have been disturbed improperly, follow these directions:

Do not clean up, cover, move or contact asbestos-containing or suspect material. Cease work in the area and do not resume work that risks disturbing the suspect material. Workers are to leave the area and the Board Lead Supervisor, Infrastructure, Buildings and Plumbing and Board Project Manager is to be notified immediately.

Isolate the area by locking doors if this can be done without blocking emergency or fire routes.

If it is not possible to safely isolate the area, the Lead Supervisor, Infrastructure, Buildings and Plumbing will notify appropriate persons not to enter the area. If possible, post security to prevent unnecessary access.

The Lead Supervisor, Infrastructure, Buildings and Plumbing will arrange to shut down ventilation systems to the affected area including supply, return and exhaust.

The Lead Supervisor, Infrastructure, Buildings and Plumbing will determine if asbestos is contained in the debris. If material cannot be confirmed asbestos-free by records or appearance, follow procedures below.

At their option, the Lead Supervisor, Infrastructure, Buildings and Plumbing may decide to employ an Asbestos Consultant to perform air monitoring and consulting, prior to and/or after clean-up to determine if building personnel were exposed to airborne asbestos and to ensure airborne fibre levels are within acceptable limits to re-occupy the space. The Lead Supervisor, Infrastructure, Buildings and Plumbing shall notify the central JHSC of the results of air monitoring or testing.

If the material is confirmed or assumed to contain asbestos, the Lead Supervisor, Infrastructure, Buildings and Plumbing is to contract an Asbestos Abatement Contractor or trained Board staff to clean-up contaminated area using Type 2 Emergency Procedures in Appendix D of this document.

Enable ventilation systems after air monitoring or clean up of ACM.

**APPENDIX D**
**WORK PRACTICES – EMERGENCY WORK**

# WORK PRACTICES – TYPE 2 EMERGENCY CLEAN UP

Emergency asbestos procedures shall be implemented, when required, in order to protect those undertaking the work, as well as to protect all others from, or limit exposure to, airborne asbestos. Procedures indicated shall be followed as closely as possible, in the event of an emergency situation.

Procedures for asbestos work, required as an immediate response to floods through asbestos fireproofing, accidental disturbance of ACM, ceiling collapses at asbestos-containing ceiling tiles, or other emergencies that affect asbestos materials, are as follows:

- Clear area of all occupants. In critical situations clear area of only non-essential personnel only, and provide essential personnel with proper respiratory protection.
- Shut down ventilation systems serving area including supply, return and exhaust.
- Isolate the area by locking doors, if this can be done without blocking emergency or fire routes.
- If it is not possible to safely isolate the area, the Lead Supervisor, Infrastructure, Buildings and Plumbing will notify personnel not to enter the area. If possible, post security to prevent unnecessary access.
- Close access doors to area or construct enclosure around area if time permits. Do not obstruct emergency exits under any circumstances.
- Only trained workers or Abatement Contractors will perform the emergency clean up.
- Entrance to the area will now be limited to those wearing applicable respiratory protection and disposable Tyvek coveralls. Half face NIOSH approved respirators with P100 (HEPA) filters are adequate.
- No eating, smoking or chewing in the Asbestos Work Area.
- Remove all debris within the area of the accidental disturbance of ACM using HEPA vacuums.
- Place polyethylene drop sheets under area of repair.
- Repair ACM pipe insulation, replace ceiling tiles or stabilize ACM as required with minimum disturbance to ACM.
- Remove dust using HEPA vacuums or wet wiping from all surfaces within area of disturbance.
- Dispose of items that cannot be cleaned as asbestos waste.
- Dispose of all cleaning supplies and drop sheets as asbestos waste.
- Remove coveralls and dispose of as asbestos waste.

- Proceed to washroom and wash face and hands.
- At their option, the Lead Supervisor, Infrastructure, Buildings and Plumbing may decide to employ an Asbestos Consultant to perform air monitoring and consulting, after clean-up to ensure airborne fibre levels are within acceptable limits to re-occupy the space.
- The Lead Supervisor, Infrastructure, Buildings and Plumbing will notify the central JHSC of the results of air monitoring or testing.

**APPENDIX E**
**TYPE 1 ASBESTOS WORK PROCEDURES**

# TYPE 1 ASBESTOS WORK PROCEDURES

The following procedures are only to be performed by workers and contractors trained in Type 1 asbestos work practices.

- Installing or removing ceiling tiles which are an asbestos-containing material, if the tiles cover an area less than 7.5 square metres and are installed or removed without being broken, cut, drilled abraded, ground, sanded or vibrated.
- Installing or removing non-friable asbestos-containing material, other than ceiling tiles, if the material is installed or removed without being broken, cut drilled, abraded, ground, sanded or vibrated.
- Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if,
    - The material is wetted to control the spread of dust or fibres, and
    - The work is done only by means of non-powered hand-held tools.
- Removing less than one square metre of drywall in which joint-filling compounds that are asbestos-containing material have been used.

These Type 1 Asbestos Procedures assume the non-friable material can be removed with relatively little loose dry dust released. Generation of debris is permissible as long as the debris can be well wetted before being removed. If the work will release more than a trivial amount of dry loose dust, do not proceed further with work. The Facility Manager/Principal or an assigned representative will determine which of Type 1, 2 or 3 procedures are appropriate.

## 1. EQUIPMENT

All equipment must be on site before proceeding.

### 1.1 HEPA Vacuum

Use of a vacuum is optional. Wet cleaning methods may be used in place of a HEPA vacuum. If a vacuum is used, it must be equipped with a high efficiency particulate aerosol (HEPA) filter. The vacuum must only be opened to be cleaned or dislodging of blocked objects in an enclosure following Type 2 procedures. The vacuum exterior should be carefully wet cleaned after each use or after each emptying.

### 1.2 Respirators

Use of a respirator is optional. However, a respirator is recommended for all Type 1 work. The employer will supply at the workers' request a half face respirator with P100 (HEPA) filters, with training on use and qualitative fit testing. Respirator must be used according to written use procedures provided to worker as per training procedures. Filters must be changed after 16 hours of wear or sooner if breathing resistance increases as filters become damp. No person using a respirator shall have facial hair that affects the seal between respirator and face.

### 1.3 Protective Clothing

Disposable protective clothing is optional. The employer will supply at the workers request. Non-disposable clothing with visible asbestos contamination shall be cleaned with a HEPA vacuum and laundered as asbestos contaminated. Disposable clothing and respirator filters are to be disposed of as asbestos waste.

### 1.4 Other Equipment

The following equipment will also be required to perform the work.

- 6 mil polyethylene to serve as a drop sheet.
- Pump sprayer with misting nozzle or alternative method to wet material.

Labelled yellow asbestos waste bags (6 mil) - for all asbestos waste, disposable equipment, plastic, etc.

- Small tools and cleaning supplies - e.g. scouring pads, sponges, brushes, buckets, etc.

## 2. OTHER PROTECTIVE MEASURES

Do not eat, drink or smoke in the work area.

Upon leaving the work area, proceed to the washroom and wash all exposed skin on hands and face.

## 3. SCHEDULING OF WORK

Schedule work when occupants are away from immediate area. If persons are present in the immediate area, do not start work.

If work is required on an emergency basis and the area is occupied, the Facility Manager/Principal or an assigned representative is to advise occupants to vacate area until work is complete and clearance is given to return.

## 4. PREPARATION

Before disturbing non-friable asbestos materials, cover floor (vinyl tile excepted) and surfaces below work with polyethylene sheeting as appropriate to catch debris.

Wherever dust on a surface is likely to be disturbed, pre-clean and remove using a HEPA vacuum or damp cloth.

## 5. EXECUTION

### 5.1 Removal of Vinyl Asbestos Floor Tile

Do not use electric powered scrapers.

Wet material with amended water.

Start removal by wedging a heavy-duty scraper in seam of two adjoining tiles and gradually force edge of one tile up and away from floor. Do not break off pieces of tile, but continue to force balance of tile up.

Continue removal of tiles using hand tools, removing tiles intact wherever possible. When adhesive is spread heavily or is quite hard, it may prove easier to force scraper through tightly adhered areas by striking scraper handle with a hammer using blows of moderate force while maintaining scraper at 25˚ to 30˚ angle to floor. When even this technique cannot loosen tile, removal can be simplified by heating tile thoroughly with a hot air gun until heat penetrates through tile and softens the adhesive.

When tiles are removed, place into asbestos waste receptor. Do not break into smaller pieces.

After removal, scrape up adhesive remaining on floor with a hand scraper until only a thin smooth film remains. Where deposits are heavy or difficult to scrape, a hot air gun may be used. Deposit scrapings in the asbestos waste disposal bag. Do not dry scrape surface of adhering pieces of tile. Do not use powered electric scrapers.

On completion of removal, vacuum clean floor with HEPA vacuum or wet mop.

Dispose of the mop head as contaminated waste. Alternatively, store this and other materials that cannot be cleaned in asbestos waste bags until next use (open only inside work area.)

## 5.2 Installing, Cutting, or Drilling Non-Friable Asbestos Materials

Work using power tools or power equipment must not be performed as Type 1 work.

Where possible wet all materials to be disturbed. If wetting is not possible use Type 2 procedures.

Immediately place waste in asbestos waste container. Clean area frequently during work with HEPA vacuum or by wet methods.

At completion of work, clean drop sheets and dispose of as asbestos waste.

## 5.3 Removal of Other Non-Friable Asbestos Materials

The Type 1 procedures apply only to materials that can be removed intact, or in sections, without producing a pulverized or powdered waste. This may include asbestos containing furniture, transite and small quantities of lay-in ceiling tiles. Asbestos containing furniture should not be modified or moved for use at another building.

The following method is most applicable to transite, small quantities of lay-in ceiling tiles and furniture during disassembly.

Wet all material to be disturbed with amended water.

Undo fasteners necessary to remove material. Whenever possible remove asbestos cement panels intact. Break only if unavoidable. If broken, wet freshly exposed edges.

Where sections are adhered to the substrate, wet material and use hand scraping to remove adhering material.

Place removed material into asbestos waste receptor. Clean surrounding surfaces and asbestos work area frequently with HEPA vacuum or with wet methods (i.e. damp cloth disposed of as asbestos waste after cleaning).

Drop sheets shall be cleaned and disposed of as asbestos waste.

## 5.4 Waste Transport and Disposal

Place waste into asbestos labelled disposal bag, seal with tape, clean the exterior of the bag with a clean cloth, and place into a second clean bag, also to be sealed with tape.

Provide storage area for holding minor amounts of asbestos waste in sealed containers. Garbage containers shall be labelled and assigned exclusively for asbestos waste.

When waste is removed from site, collect the completed waste waybills from the disposal firm. For work performed by a contractor, the contractor will complete and provide to the Facility Manager/Principal copies of the bill of lading. Waste generated by staff will be stored at a secure location until sufficient accumulates for a waste pick-up.

**APPENDIX F**
**TYPE 2 ASBESTOS WORK PROCEDURES**

# TYPE 2 WORK PROCEDURES

Only maintenance personnel and contractors who have received Type 2 training on asbestos procedures and handling may perform the following work at Board Buildings:

Entry into any ceiling space, wall chase or other area in which friable asbestos-containing debris is present.

- Removal of any part of a false ceiling if asbestos-containing debris is likely to be lying on the surface of the false ceiling.
- Removal of glued-on compressed mineral fibre tiles containing asbestos or removal of more than 7.5 square metres of lay-in tiles of this type at one time.
- Cleanup of asbestos-containing debris from mechanical insulations or sprayed fireproofing.
- Enclosure of friable material containing asbestos.
- Repair (such as application of tape or sealant or other covering) of any extent of asbestos mechanical insulation.
- Removal of non-friable materials with hand-tools where the material has not been wetted.
- Removal of more than 1 square metre of drywall to which asbestos-containing compound has been applied.
- Removing asbestos-containing pipe insulation from a pipe, duct or similar structure using a glove bag. (See Appendix G)
- Cleaning or removing filters used in air handling equipment in a building that has asbestos-containing sprayed fireproofing.
- Removal of any extent of asbestos-containing vinyl sheet flooring. Note: If power tools such as grinders are required to remove all paper backing from the substrate Type 3 procedures must be utilized.
- Removal of minor amounts of friable asbestos-containing materials including, texture coat, sprayed fireproofing and mechanical insulation. (Minor removal is defined by most provincial regulations – in Ontario this is limited to wet removal of 1 square metre or less, or an equivalent amount of pipe insulation).

## 1. EQUIPMENT

Equipment required for the work must be on site before proceeding.

### 1.1 HEPA Vacuum

An asbestos-approved vacuum (HEPA filtered) equipped with brushes, fittings, etc. A vacuum can be opened to empty only by a fully protected worker within a Type 2 enclosure.

## 1.2 Respirators

Workers within the work area must wear an approved respirator. Respirators and filters will be provided by the employer, and individually assigned to workers. Respirator shall be a half-facepiece respirator with high efficiency (P100) filters, for all classifications of Type 2 work, except as follows: Full face piece air purifying respiratory or powered air purifying respirator with high efficiency (P100 or HEPA filters) shall be used for ceiling access with ACM debris on ceiling or for use of power tools equipped with HEPA filtered dust collector to cut, grind or abrade non-friable ACM. Respirators must be kept in position on the face during the entire time the worker is in the Type 2 Work Area. This is the period from the first removal of the ceiling tile, opening of hatches or the first disturbance of the asbestos material until the final cleaning of the area and the bagging of waste is completed. Change filters after 24 hours of wear or sooner if breathing resistance increases as filters become damp. No person wearing a respirator shall wear facial hair which affects seal between respirator and face.

## 1.3 Protective Clothing

All workers shall wear disposable Tyvek coveralls (or equivalent) with attached elasticized hood. Coveralls should be worn with the hood in place at all times. Coveralls may be vacuumed or wet wiped clean for re-use, for a maximum of 8 hours cumulative wear. Suit and head cover shall remain in place until worker leaves the Type 2 enclosure or work area. Boot covers are required if wet wiping or HEPA vacuuming cannot effectively clean footwear.

## 1.4 Other Equipment

Polyethylene (6 mil polyethylene) - to erect a total enclosure or to serve as drop sheet;

Wood framing or clips to support polyethylene sheeting, as appropriate to work area

Duct tape to fasten plastic enclosure to ceiling, walls, or to tape drop sheet to floor; 3/4" double-sided tape recommended for attaching polyethylene to T-bar ceiling

Labelled asbestos waste bag (6 mil) - for all asbestos waste, disposable suit, plastic for disposal, etc;

Pump sprayer containing water with wetting agent to wet asbestos as necessary; dilute wetting agent 2 oz per gallon of water.

Asbestos warning signs

Cleaning supplies - e.g. scouring pads, sponges, brushes, buckets, etc.

Insulation repair supplies (lagging compound, cloth, PVC covers)

Encapsulating sealer, for brush or airless spray application

## 2. OTHER PROTECTIVE MEASURES

Do not eat, drink or smoke in the work area.

On completing clean up of work area, use vacuum or wet cloth to clean hands, face, respirator and boots. Remove protective equipment and proceed to nearest washroom to wash exposed skin on hands and face.

## 3. SCHEDULING OF WORK

Schedule work when occupants are away from immediate area. If persons are present in the immediate area, do not start work.

If work is required on an emergency basis and the area is occupied, the Facility Manager/Principal or an assigned representative is to advise occupants to vacate area until work is complete and clearance is given to return.

## 4. PREPARATION

Shut down ventilation systems to and from the work area. Seal over all ventilation openings, diffusers, grilles, etc. with plastic and tape.

Where practical, clear areas of movable furnishings or equipment. This should include anything which occupants may wish to use during work period. Any furnishings or equipment not removed shall be adequately covered and sealed using 6-mil polyethylene and tape.

Post signs or barrier tape to indicate asbestos hazard and requirement for protective clothing for anyone entering the space.

Note that a full enclosure is only required for ceiling entry and for removal of friable materials. All other operations may have dust protection appropriate for the work.

For small rooms, cover walls with plastic such that the complete room becomes the work area. For larger rooms, erect enclosure of 6-mil polyethylene of suitable dimensions to enclose the work area. If a suspended ceiling is present, the enclosure shall extend to the ceiling line. The enclosure shall be as airtight as conditions permit including the provision of a double overlapping flap at the entrance. The floor of the work area shall be a layer of minimum 6-mil polyethylene sealed to the plastic walls of the enclosure.

Use a HEPA vacuum or appropriately sized air unit equipped with HEPA filter to induce negative pressure inside work area. Vacuum should be outside the enclosure with hose inserted inside enclosure to extract air from enclosure.

Don protective clothing and respirator prior to disturbing any asbestos-containing materials in Type 2 enclosure.

## 5. EXECUTION

To remove sprayed fireproofing perform the following:

- Erect site isolation and don protective clothing as per Preparation Section 4.0.
- Saturate the ACM with amended water. Scrape wetted ACM directly into waste containers.
- Do not allow ACM to fall to the floor of the enclosure.
- Clean all surfaces from which ACM has been removed with scouring pads, vacuuming or wet-sponging to remove all visible material after completion of removal of ACM.
- Maximum removal is 1 square metre of material.

To provide access into ceiling spaces where sprayed fireproofing or asbestos-containing debris is present perform the following:

- Erect site isolation and don protective clothing as per Preparation Section 4.0.
- Carefully remove one tile or small portion of ceiling and clean top of removed section with HEPA vacuum.
- Vacuum top of remaining ceiling while still in place.
- Do not break tile or allow tiles to drop to floor.
- Perform all work above ceiling inside Type 2 enclosure.

To remove pipe insulation perform the following:

- Erect site isolation and don protective clothing as per Preparation Section 4.0.
- Wet any area of damage, then carefully cut jacket. Keep insulation surface wetted by mist of water with wetting agent.
- Remove insulation in large sections and place immediately in disposal bag.
- After all large pieces have been removed, saturate debris and clean all exposed surfaces with abrasive pads, sponges, cloths, etc.
- Maximum removal is 1 square metre of material.

To repair pipe insulation, perform the following:

- Don protective equipment as per Preparation Section 4.0.
- Use drop sheet under area of work to aid clean up of any dislodged material. Plastic enclosure is not required.
- Mist any exposed insulation to wet surface and apply lagging paint and canvas or PVC jacketing as required.

To remove ceiling tiles and drywall perform the following:

- Erect site isolation and don protective clothing as per Preparation Section 4.0.
- Wet tiles or drywall and remove intact as much as possible and place immediately in disposal bag.
- After all large pieces have been removed, saturate debris and clean all exposed surfaces and support structure with abrasive pads, sponges, cloths, etc.

To remove vinyl asbestos sheet flooring perform the following:

- Remove binding strips or other restrictive mouldings.
- Make series of cuts 100 to 200 mm (4" to 8") apart through top layers and about halfway through felt backing, parallel to wall.
- Pry up corner of a strip at end of room furthest from access to work area. Pull sheet back upon itself slowly and evenly along with any adhering paper backing which remains attached to top layers.
- Roll up strip (finished side out) into tight roll, tape or tie securely, and place into Asbestos Waste Container.
- Remove maximum of three strips before wet scraping residual exposed paper underpad.
- Remove remaining adhered underpad by wet scraping as follows:
    - Soak area with amended water applied by sprayer; Scrape off all remaining material; Place scrapings in asbestos waste container. Allow floor to dry and clean with HEPA vacuum.
    - Removed asbestos-containing materials should be placed directly into 6 mil polyethylene bags as they are removed. Avoid dropping material to floor wherever possible. After bulk removal is complete, brush clean completely, and wet wash the exposed surface.

Frequently, and at regular intervals during the work, clean up dust and waste in the work area by wet mopping, placing in disposal bags, or by HEPA vacuuming.

After completion of removal, seal exposed ends of mechanical insulation with heavy layer of encapsulating sealer.

Apply post removal sealer and coat surfaces from which asbestos material was removed.

At completion of work, decontaminate equipment, tools and materials used in the work area by wet cleaning or HEPA vacuum.

Dispose of drop sheets and enclosures by wetting the polyethylene, then folding into disposal bags. Do not reuse drop sheets or enclosures.

Before leaving work area, decontaminate shoes and protective clothing by using HEPA vacuum or damp wiping. When protective clothing is to be disposed of, it shall be decontaminated as above and placed in labelled disposal bags. Workers shall vacuum all exposed skin, suit and respirator, and proceed to nearest washroom to wash hands and face.

## 6. WASTE TRANSPORT AND DISPOSAL

Place waste into asbestos labelled yellow disposal bag, seal with tape, clean the bag, and place into a second clean bag. Seal outer bag with tape.

Provide storage area for holding minor amounts of asbestos waste in sealed containers. Containers shall be labelled and assigned exclusively for asbestos waste.

When waste is removed from site, collect copies of the waste waybills from the disposal firm. For work performed by a contractor, the contractor will complete and provide to the Facility Manager/Principal copies of a waste manifest. Waste generated by personnel will be stored in a secure location until sufficient accumulates for a waste pick-up.

**APPENDIX G**
**GLOVE BAG WORK PROCEDURES**

# GLOVE BAG WORK PROCEDURES

These procedures are to be followed by maintenance staff and contract persons performing the removal of asbestos-containing pipe insulation using glove bag work procedures at Board buildings. These procedures are only to be conducted by persons trained in Type 2 asbestos procedures and handling.

NOTE: If more than a minor amount of insulation (more than 1 square metre) is to be removed a notification to the Ministry of Labour will be required.

## 1. EQUIPMENT

All equipment must be on site before proceeding with the work.

### 1.1 Single Use Glove Bag

A pre-fabricated plastic bag with air-tight sleeves and gloves permanently sealed to the bag to allow access to pipe insulation. Bag shall be equipped with valves or openings for vacuum hose and nozzle of water sprayer, a tool pound with a drain, a seamless bottom and a means of sealing off the lower portion of the bag.

### 1.2 Moveable Glove Bag

A Glove Bag as defined in 1.1 but equipped with a high strength double throw zipper and removable straps. Required if the bag is to be moved during the removal operation.

### 1.3 HEPA Vacuum

An asbestos-approved vacuum (HEPA filtered) equipped with brushes, fittings, etc. A vacuum can be opened to empty only by fully protected worker within a Type 2 enclosure.

### 1.4 Respirators

Workers using glove bag must wear approved respiratory protection. Respirators and filters must be provided by the employer, and individually assigned to workers. Respiratory protection shall be a half-face piece respirator with high efficiency (P100) filters. Respirators must be kept in position from the time the worker attaches bag to pipe until final cleaning of the pipe and bagging of waste is completed. Filters shall be changed after 24 hours of wear or sooner if breathing resistance increases. No person using respirator shall wear facial hair which affects the seal between respirator and face.

### 1.5 Protective Clothing

Workers shall wear disposable Tyvek coveralls (or equivalent) with attached elasticized hood. Coveralls and hood shall remain in place until worker completes cleaning of pipe. Overalls may be cleaned for re-use, for a maximum of 8 hours cumulative wear or disposed of as asbestos waste.

### 1.6 Other Equipment

Labelled asbestos waste bags (6 mil) - for all asbestos waste in glove bag, disposable suit, cleaning materials, etc.

Asbestos warning signs.

Wire saw - saw with flexible serrated wire blade and handles to allow use inside glove bag.

Knife with fully retractable blade or carpet (hook) knife for use inside glove bag.

Securing Straps - Reusable nylon straps at least 1" wide with metal buckle for sealing ends of Moveable Glove Bag around pipe and/or insulation.

Water Sprayer -Garden reservoir type, low velocity, capable of producing mist or fine spray with water containing wetting agent. Wetting agent shall be diluted 2 oz. per gallon of water.

Plastic sheet (2 mil polyethylene) to cover exposed or damaged sections of pipe prior to attaching glove bag.

Plastic drop sheet (6 mil polyethylene) to protect furnishings, flooring or equipment in the event of a spill.

Sealer or encapsulant suitable for service temperature of pipe applied by brush, cloth or hand sprayer.

Miscellaneous tools and cleaning supplies, wire cutters, snips, scouring pads, sponges, brushes, buckets, tape etc.

## 2. OTHER PROTECTIVE MEASURES

Do not eat, drink or smoke in the work area.

On completing clean up of work area, use HEPA vacuum or wet cloth to clean hands, face, respirator and boots. Remove protective equipment and proceed to nearest washroom to wash all exposed skin on hands and face.

## 3. SCHEDULING OF WORK

Schedule work when occupants are absent. If persons are present, do not start work.

If work is required on an emergency basis and the area is occupied, the Facility Manager/Principal or an assigned representative is to advise occupants to vacate area until work is complete and clearance is given to return.

## 4. PREPARATION

Where practical, clear area below pipe of moveable furnishing or equipment. Provide scaffold as required to reach pipe.

Install plastic drop sheet over furnishings, flooring or equipment for protection in the event of a spill. Drop sheet shall be sufficient size to capture any material dislodged from the pipe.

Post an asbestos warning sign at all entrances to room in which the procedure is being used. If necessary use rope or tape barriers to separate work area.

Disable ventilation system in area of Glove Bag operation. Seal voids and openings in the proximity of the Glove Bag operation, including ventilation ducts.

Don protective clothing and respirator prior to disturbing any asbestos-containing material by any work.

Pre-clean with HEPA vacuum or wet methods any loose material on surface of pipe or any material on the floor. If asbestos-containing material is on floor, Type 2 procedures may be required for clean up. (See Type 2 Procedures.)

Check condition of pipe insulation where removal will be performed. If the insulation has minor damage, mist surface and patch with tape. If damage is more extensive, wrap pipe with 2 mil plastic and "candy stripe" with duct tape first. If pipe insulation is severely damaged and cannot be simply repaired, glove bag is not appropriate. (Use Type 2 or Type 3 Procedures.)

## 5. EXECUTION

Follow manufacturer's instructions for Glove Bag being used.

Place tools necessary to remove insulation in tool pouch. Fasten bag onto pipe and seal all openings to pipe with cloth securing straps or tape.

Place hands into gloves and use necessary tools to remove insulation. Arrange insulation in bag to obtain full capacity of bag. Do not use glove bag method on insulation jacketing made of aluminum of thickness greater than 0.51 mm (24 gauge) or steel.

Insert nozzle of spray pump into bag through valve and wash down pipe and interior of bag thoroughly. Use one hand to aid washing process. Wet surface of insulation in lower section of bag and exposed end of asbestos insulation remaining on pipe by spraying with water prior to moving bag.

If Glove Bag is to be moved along pipe, adjust strap tension, move bag and re-seal to pipe using double-pull zipper to pass hangers. Repeat stripping operation.

If Glove Bag is removed from pipe for use on new section of pipe, extract the air from the Glove Bag with a HEPA vacuum and seal interior zip lock. Re-install in new location before opening zip lock.

If Glove Bag is ripped, cut or opened in any way, cease work and repair with tape before continuing work. If damage is not readily repaired, discontinue use of Glove Bag, thoroughly wet contents, extract the air from the Glove Bag with a HEPA Vacuum and place Glove Bag in an asbestos waste container.

To remove bag once filled, wash top section and tools thoroughly. Place tools in 1 hand (glove), pull hand out inverted, twist to create separate pouch, double tape to seal. Cut between tape and place pouch with tools in next glove bag; or into water bucket, open pouch underwater, clean tools and allow to dry.

Extract air from the Glove Bag with a HEPA vacuum and pull asbestos waste container over Glove Bag before removing the pipe. Remove securing straps or tape. Remove Bag from pipe directly into asbestos waste container.

After removal of bag ensure pipe is clean of residue and clean surfaces of pipe or wipe with wet cloth.

Before completion of shift, apply sealer to all surfaces of freshly-exposed pipe. Apply heavy coat of sealer or end cap to exposed ends of asbestos insulation to remain.

Once Glove Bag is filled dispose of as contaminated waste. Do not reuse bag.

Clean work area with HEPA vacuum or by damp wiping.

## 6. WASTE TRANSPORT AND DISPOSAL

Provide storage area for holding minor amounts of asbestos waste in sealed containers. Containers shall be labelled and assigned exclusively for asbestos waste.

When waste is removed from site, collect the completed waste waybills from the disposal firm. For work performed by a contractor, the contractor will complete and transfer copies of the waste manifest, on behalf of the owner. Waste generated by Maintenance staff will be stored at a secure location until sufficient accumulates for a waste pick-up.

## 7. NOTICE OF PROJECT

If a contractor or Maintenance staff will use glove bags for major amounts of removal (more than one square meter of pipe insulation measured on the outside diameter of the insulation), they must submit a written **Notice of Project** to the Ministry of Labour as required by Regulation 278/05.

# APPENDIX H
# TYPE 3 ASBESTOS WORK PROCEDURES

# TYPE 3 ASBESTOS WORK PROCEDURES

These procedures are to be followed by all maintenance personnel and contractors performing the following work at Board buildings. Every worker performing a Type 3 operation has successfully completed "The Asbestos abatement Working Training Program" approved by the Ministry of Training, Colleges and Universities.

- Removal or disturbance of more than one square metre of friable asbestos-containing material during repair, alteration, maintenance or demolition of all or part of a building, or any machinery or equipment.
- The spray application of a sealant to friable asbestos-containing material.
- Installation or removal of less than 7.5 square metres of asbestos-containing ceiling tiles or removal of drywall where joint filling compound contains asbestos, if work is done by means of power tools that are not attached to dust collecting devices equipped with HEPA filters.
- Cleaning or removal of air handling equipment, including rigid ducting but not including filters, in a building that has sprayed fireproofing that is asbestos-containing material.
- Repairing, altering or demolishing all or part of a kiln, metallurgical furnace or similar structure that is made in part of refractory materials that are asbestos-containing materials.
- Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material, if work is done by means of power tools that are not attached to dust collecting devices equipped with HEPA filters.
- Working on or demolishing a structure that contains asbestos-containing refractory.

## 1. EQUIPMENT

Equipment required for the work must be on site before proceeding.

### 1.1 HEPA Vacuum

An asbestos-approved vacuum (HEPA filtered) equipped with brushes, fittings, etc. A vacuum can be opened to empty only by a fully protected worker within a Type 2 or Type 3 enclosure.

### 1.2 Respirators

Workers within the work area must wear an approved respirator. Respirators and filters will be provided by the employer, and individually assigned to workers. Respirator shall be a Powered Air Purifier Respirator (PAPR) with high efficiency (P100) filters, for all classifications of Type 3 work. Respirators must be kept in position on the face during the entire time the worker is in the Type 3 Work Area. This is the period from the first removal of the ceiling tile, opening of hatches or the first disturbance of the asbestos material until the final cleaning of the area and the bagging of waste is completed. Change filters after 24 hours of wear or sooner if breathing resistance increases as filters become damp. No person

wearing a respirator shall wear facial hair which affects seal between respirator and face.

### 1.3 Protective Clothing

All workers shall wear disposable Tyvek coveralls (or equivalent) with attached elasticized hood and booties. Coveralls should be worn with the hood and booties in place at all times. Suit and head cover shall remain in place until worker leaves the Type 3 enclosure or work area.

Other Equipment

Polyethylene sheeting or other suitable material that is impervious to asbestos (as per 278/05) - to construct 3 stage decontamination enclosure (1 - clean room, 2 – shower room, 3 – Equipment (dirty) room);

Wood framing or clips to support polyethylene sheeting, as appropriate to work area;

Duct tape to fasten plastic enclosure to ceiling, walls, or to tape drop sheet to floor; 3/4" double-sided tape recommended for attaching polyethylene to T-bar ceiling;

Asbestos waste containers (shall be (i) dust tight (ii) suitable for the type of waste (iii) impervious to asbestos (iv) identified as asbestos waste (v) cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before being removed from the work area and (vi) removed from the workplace frequently and at regular intervals - for all asbestos waste, disposable suit, plastic for disposal, etc;

Device for spraying, containing water with wetting agent to wet asbestos as necessary; dilute wetting agent 2 oz per gallon of water;

Manometer to maintain pressure of 0.02 inches of water column;

Post Notice of Project (MOL)

Post signs – warning of asbestos dust hazard and indicating that access to the work area is restricted to persons wearing protective clothing and equipment.

HEPA vac, tools, hoses, negative air unit, washing and shower equipment.

Cleaning supplies - e.g. scouring pads, sponges, brushes, buckets, etc.

Insulation repair supplies (lagging compound, cloth, PVC covers)

Encapsulating sealer, for brush or airless spray application

## 2 OTHER PROTECTIVE MEASURES

Do not eat, drink or smoke in the work area.

All protective clothing (coveralls, boots and head covering) and all protective equipment (hardhat, safety goggles) except the respirator is removed in the equipment room. The worker then enters the shower. For PAPR respirators, steps must be taken to keep the filters dry and the filter unit and power pack should be

wet wiped rather than placed under the shower. The worker then exits the shower from the clean side, with the respirator, and dons street clothes or a new set of coveralls that are stored in the clean room.

## 3. SCHEDULING OF WORK

Schedule work when occupants are away from the immediate area. If persons are present in the immediate area, do not start work.

If work is required on an emergency basis and the area is occupied, the Facility Manager/Principal or an assigned representative is to advise occupants to vacate area until work is complete and clearance is given to return.

## 4. PREPARATION

Shut down ventilation systems to and from the work area. Seal over all ventilation openings, diffusers, grilles, etc. with plastic and tape.

Signs must be posted to indicate asbestos hazard and requirement for protective clothing and equipment for anyone entering the area.

Post Notice of Project.

Existing electrical power distribution systems that are not watertight must be de-energized and locked out before starting work. Temporary power system has to be set up to operate tools and equipment, it must be equipped with ground fault circuit interrupter (GFCI) meeting the requirements of Electrical Safety Authority (ESA).

Where practical, clear areas of movable furnishings or equipment. This should include anything which occupants may wish to use during work period. Any furnishings or equipment not removed shall be adequately covered and sealed using 6-mil polyethylene sheeting or other suitable material (impervious to asbestos) and tape.

The enclosure shall be constructed of polyethylene sheeting of suitable dimensions to enclose the work area and should be as airtight as conditions permit including the provision of a double overlapping flap at the entrance. The floor of the work area shall be a layer of minimum 6-mil polyethylene sealed to the plastic walls of the enclosure.

If the enclosure material is opaque the enclosure must be equipped with one or more transparent windows to allow observation of the entire enclosure.

A Decontamination facility must be located as close as practicable to work area and should consist of at least 3 interconnecting rooms: 1) clean room 2) a shower room 3) an equipment (dirty) room. These 3 rooms must be arranged in sequence and constructed so that any person entering or leaving the work area must pass through each room. Doorways between rooms must be fitted with curtains of polyethylene or suitable material on each side so that they will close behind workers as they pass through the doorways.

A ventilation system (Negative air unit) equipped with HEPA filtered exhaust unit must be installed inside the enclosure. This system must create and maintain a

negative air pressure of 0.02 inches of water column relative to the area outside the enclosure.

Don protective clothing and respirator prior to disturbing any asbestos-containing materials in Type 3 enclosure.

## 5. EXECUTION

Erect site isolation and don protective clothing as per Preparation section 4.0

Saturate the ACM with amended water. Scrape wetted ACM directly into waste containers.

Clean all surfaces from which ACM has been removed with scouring pads, vacuuming or wet-sponging to remove all visible material after completion of removal of ACM.

Frequently, and at regular intervals during the work, clean up dust and waste in the work area by damp mopping, placing in asbestos disposal bags, or by HEPA vacuuming.

After completion of work, seal exposed ends of mechanical insulation with heavy layer of encapsulating sealer.

Apply post removal sealer and coat surfaces from which asbestos material was removed.

At completion of work, decontaminate equipment, tools and materials used in the work area by wet cleaning or HEPA vacuum.

Dispose protective clothing. Workers shall shower and change into street clothes or new coveralls.

When inside work area is dry, clearance air testing must be conducted (number of samples as per Regulation) by a competent worker.

Air testing results must be posted in a conspicuous place within 24 hours and also posted electronically on Health and Safety bulletin board.

## 6. WASTE TRANSPORT AND DISPOSAL

Place waste into asbestos labelled yellow disposal bag, seal with tape, clean the bag, and place into a second clean bag. Seal outer bag with tape.

Provide area for holding asbestos waste in sealed containers. Containers shall be labelled and assigned exclusively for asbestos waste.

Containers of asbestos waste must be cleaned with a damp cloth or by HEPA vacuuming before removing from the work area. Waste must be removed frequently and at regular intervals. After completion of removal, dispose of drop sheets and enclosures by wetting the polyethylene, then folding into disposal bags. Do not reuse drop sheets or enclosures. After completion of removal, dispose of drop sheets and enclosures by wetting the polyethylene, then folding into disposal bags. Do not reuse drop sheets or enclosures.

When waste is removed from site, collect copies of the waste waybills from the disposal firm. For work performed by a contractor, the contractor will complete and provide to the Facility Manager/Principal copies of a waste manifest. Waste generated by personnel will be stored in a secure location until sufficient accumulates for a waste pick-up.

## 7. NOTICE OF PROJECT

Before a contractor or Maintenance staff perform a Type 3 asbestos procedure , they must submit a verbal and written **Notice of Project** to the Ministry of Labour as required by Regulation 278/05.

## APPENDIX I

## LETTER OF NOTIFICATION TO TENANTS REGARDING ASBESTOS IN PREMISIES

# LETTER OF NOTIFICATION TO TENANTS REGARDING ASBESTOS IN PREMISES

The following wording should be utilized in communicating the presence of asbestos to a tenant or lessee.

To Tenant Management Representative

This letter is being provided as notification of the presence of asbestos within the building at [address], Ontario. Board has recently had an asbestos survey performed of the entire building and have established a program to manage all asbestos in a safe and prudent fashion. O.Reg. 278/05 requires notification of the building's tenants of the location of such material, as well as, notification of workers who may work in close proximity to the material and who may disturb it.

Our consultant inspected all areas of the building and made recommendations, where necessary, for removal or repair of asbestos. All such work [has been completed/will be completed shortly] with appropriate inspection and supervision. All asbestos remaining is subject to the Asbestos Management Program as required by Provincial Regulations and our own due diligence. A copy of the survey and Asbestos Management Program are available for review at the [Office].

The continuing presence of the remaining asbestos does not pose a risk of exposure to your employees as long as it remains under this management program. Staff that may disturb these materials has been given appropriate training and are aware of its presence. If you are planning maintenance or renovation work please notify the Lead Supervisor, Infrastructure, Buildings and Plumbing who will determine if the planned work will affect the asbestos in any way and provide information regarding necessary work practices and obligations to maintain a safe and healthy environment for your staff and contractors.

Please ensure that your staff and sub-contractors are aware of the above information. If you have any concerns please contact the facility management help desk at 905-527-5092 ext 2737.

**APPENDIX J**

**CONTRACTOR NOTIFICATION AND ACKNOWLEDGEMENT FORM**

# CONTRACTOR NOTIFICATION AND ACKNOWLEDGEMENT FORM

Board has identified the presence of various friable and non-friable asbestos-containing materials in the Building. An asbestos inventory report showing the locations and amounts of these materials is available for viewing from the Lead Supervisor, Infrastructure, Buildings and Plumbing .

Ontario Regulation 278/05 (Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations) applies to workers that may disturb asbestos materials. The disturbance of asbestos building materials are only to be undertaken by Asbestos Abatement Contractors that maintain the appropriate insurance coverage and meet the requirements set out in the Asbestos Management Plan AMP. The following activities may disturb asbestos materials. The Facility Manager/Principal must be notified prior to performing the following:

- Removal or repair of asbestos mechanical insulation or sprayed asbestos.
- Ceiling entry which may disturb sprayed fireproofing or pipe insulation.
- Any other operation which may generate airborne asbestos from friable asbestos.
- Any removal, cutting or other disturbance of non-friable asbestos material.
- Do not disturb any material excluded from the survey.

## Declaration by Contractor

The Contractor and their sub-contractors shall follow the work procedures as specified by Board's Asbestos Management Program (AMP) and shall not disturb ACM without using proper procedures in accordance with Regulation 278/05 and this AMP.

We agree that our staff will not disturb asbestos-containing materials without prior notification to the Lead Supervisor, Infrastructure, Buildings and Plumbing . This firm and our staff will follow all procedures specified by the Board Asbestos Management Program and/or O. Reg. 278/05. All asbestos waste will be packaged and disposed of in accordance with Ministry of the Environment requirements.

## Notification of Asbestos Abatement

All contractors and Board employees who perform work at facilities where ACM is present should be notified of the presence of the ACM if their work may bring them into contact or close proximity to the ACM and they may disturb it. This notification may include janitorial, security, telephone, computer cabling suppliers, mechanical maintenance contractors, etc. This notification shall be performed by the Lead Supervisor, Infrastructure, Buildings and Plumbing or Project Manager.

In addition, all contractors and Board employees who perform work at Board facilities, where asbestos-containing sprayed fireproofing is present above ceilings, including telephone, computer cabling suppliers, electrical and mechanical contractors, etc., are to be notified that Type 2 Procedures are required for any entry to, or work within the ceiling space (visual inspection excepted, Type 1 Work). This notification shall be performed by the Lead Supervisor, Infrastructure, Buildings and Plumbing or Project Manager.

Contractors are to:

- Notify all sub contractors/trades in writing of the presence of ACM identified in the contract documents. Contractors shall provide copies of the notification to the board upon request.
- Notify orally and in writing, an inspector at the office of the Ontario Ministry of Labour nearest the project site (Notice of Project), as per Regulation 278/05, prior to commencing Type 3 abatement, Glove Bag abatement (over 1 sq. m.) or any construction project that exceeds $50,000.00 in cost.
- Notify Sanitary Landfill site as per Ontario MOE Regulation 347 as amended.
- Inform all sub trades of the presence of ACM identified in the contract documents.
- Notify the Lead Supervisor, Infrastructure, Buildings and Plumbing or Project Manager if friable materials not identified in the contract documents are discovered during the course of the work. The contractor is to notify the MOL and the Joint Health and Safety Committee if the friable material is asbestos containing, as required by Regulation 278/05.

Building (Address):_____

Project:_____

Contractor:_____

Name and Title:_____

Signature:_____

Date:_____

**APPENDIX K**
**ASBESTOS DISCOVERY REPORT**

# Hamilton-Wentworth District School Board
# Asbestos Discovery Report

This Report is issued in fulfillment of the requirements of Sections 10 (7, 8, 9, 11 3a-f) of Regulation 278/05:

**A) NAME AND ADDRESS OF PERSON GIVING THE NOTICE**

**B) THE NAME AND ADDRESS OF THE OWNER OF THE PLACE WHERE THE WORK WILL BE CARRIED OUT;**

Hamilton Wentworth District School Board
100 Main Street West
Hamilton Ontario
L8P 1H6

**C) THE MUNICIPAL ADDRESS OR OTHER DESCRIPTION OF THE PLACE WHERE THE WORK WILL BE CARRIED OUT SUFFICIENT TO PERMIT THE INSPECTOR TO LOCATE THE PLACE, INCLUDING THE LOCATION WITH RESPECT TO THE NEAREST PUBLIC HIGHWAY**

Principal:
Caretaking Contact:

**Location:**

**Nearest Public Highway-**

**D) A DESCRIPTION OF THE WORK THAT WILL BE CARRIED OUT**

**E) THE STARTING DATE AND EXPECTED DURATION OF THE WORK; AND**

**F) THE NAME AND ADDRESS OF THE SUPERVISOR IN CHARGE OF THE WORK.**