



**HUMAN RESOURCES**

ENVIRONMENTAL HEALTH AND SAFETY

# **ASBESTOS MANAGEMENT PROGRAM**

Date Created: February 2007  
Date Revised: April 2019

**IMPROVE LIFE.**

## REVISION HISTORY

<b>Revision Number</b>	<b>Document Section</b>	<b>Details of Amendments</b>	<b>Date</b>
0		New Program	February 2007
1	All	Full Review	April 2019

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## **1.0 PURPOSE AND SCOPE**

### **1.1 PURPOSE**

The University will maintain a safe work and study environment for faculty, staff, students, visitors and contractors. It is the policy of the University to maintain all asbestos-containing material in a safe condition during normal building operations and have all maintenance, repair or renovation undertaken using appropriate procedures. To support this, the University has established an Asbestos Management Program.

The Asbestos Management Program establishes a comprehensive system to actively manage asbestos-containing materials in University buildings and activities which may disturb such materials. The purpose of this document to acquaint all University of Guelph workers and maintenance contractors of the presence of asbestos within University buildings and the procedures required when working with asbestos. It should be noted that the University of Guelph does not authorize its employees to engage in Type 2 or Type 3 asbestos work but instead uses qualified outside contractors for this service.

The Asbestos Management Program has been established to meet the requirements of Ontario Regulation 278/05, Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act of Ontario. Regulation 278/05 includes safe work measures, procedures and enhanced respiratory protection for workers who may encounter asbestos in the course of their work.

### **1.2 SCOPE**

The Asbestos Management Program applies to all buildings owned by the University of Guelph, to all faculty, staff and students of the University, other occupants/users of University buildings and University of Guelph workers and maintenance contractors performing work with or in close proximity to asbestos-containing material in University buildings and who might disturb it. The Asbestos Management Program does not apply to asbestos work that is under the jurisdiction of a constructor.

### **1.3 PROGRAM ELEMENTS**

The major elements of the Asbestos Management Program are:

- 1) documentation and communication of roles and responsibilities;
- 2) written record identifying all locations and types of asbestos-containing material in University buildings;
- 3) inspections of asbestos-containing material at regular intervals to determine its condition and assess the need for remedial action;
- 4) written notification to building occupants of the presence of asbestos-containing material within their premises (if any) and also, notification of the presence of asbestos-containing material to University of Guelph workers and maintenance contractors who may work with or in close proximity to asbestos-containing material and may disturb it;

- 5) provision of appropriate information to occupants of University buildings with asbestos-containing material, and instruction and training to maintenance contractors and University of Guelph workers who work with or in close proximity to asbestos-containing material and who might disturb it;
- 6) control of access to areas containing friable asbestos containing material;
- 7) classification of all asbestos-related work as Type 1, Type 2 or Type 3 according to Ontario Regulation 278/05 and the provision of standard operating procedures;
- 8) repair and maintenance of asbestos-containing materials;
- 9) the control and monitoring of maintenance contractors who perform work that may disturb asbestos-containing materials;
- 10) inspection and monitoring of asbestos work;
- 11) program audit and review

## **2.0 REGULATORY REQUIREMENTS AND UNIVERSITY POLICIES**

### **2.1 Regulatory Requirements**

There are a number of regulatory requirements regarding the handling, disposal and transportation of asbestos-containing materials. These include:

- 1) 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, under the jurisdiction of the Ontario Ministry of Labour.
- 2) R.R.O. 1990, Regulation 347 as amended, made under the Environmental Protection Act, under the jurisdiction of the Ontario Ministry of the Environment, Conservation and Parks.
- 3) 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.

### **2.2 University of Guelph Policies Related to Asbestos**

University of Guelph is committed to safeguarding the health and safety of all faculty, staff, students, maintenance contractors, and building occupants. All building operations, whether performed by University employees or maintenance contractors shall adhere to the requirements outlined in this document and Ontario Regulation 278/05, Designated Substances – Asbestos in Construction Projects and in Buildings and Repair Operations made under the Occupational Health and Safety Act and all other applicable regulations.

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

- The University of Guelph will not use any asbestos-containing materials in new construction or installations.
- Prior to any significant alteration or renovation of a building or part thereof, the University of Guelph will consider the proactive removal of all friable and non-friable asbestos-containing material within the alteration or renovation.
- University of Guelph employees will perform only Type 1 operations.
- Type 2 and Type 3 operations are restricted to qualified asbestos contractors who are contracted specifically for this purpose.

### 3.1 BACKGROUND AND GLOSSARY

#### 3.1 BACKGROUND

The term “asbestos” refers to a number of naturally occurring mineral silicates that differ in chemical composition and are characterized by long, thin fibres that can be easily separated. Asbestos is divided into two mineral groups: serpentines and amphiboles. Chrysotile (white asbestos) is the only fibrous member of the serpentine group of minerals. It is the most common type of asbestos used, accounting for approximately 90% of the world asbestos production. Amphibole asbestos fibres differ from the flexible, curly chrysotile fibres in that they are straight and needle-like, a characteristic that apparently gives amphibole asbestos a greater tendency to become airborne; this is an important consideration in controlling exposure. Two types of amphibole asbestos have been widely used: amosite (brown asbestos) and crocidolite (blue asbestos). Anthophyllite, tremolite and actinolite asbestos have been rarely used commercially but are occasionally found as contaminants in asbestos-containing materials.

Since 1973, the manufacture and uses of asbestos products have undergone a continuing decline as a result of concerns regarding the health effects of asbestos, legal and liability considerations and regulatory considerations. While some asbestos applications were prohibited by law (e.g., sprayed fireproofing and thermal insulation on pipes, etc.), others were no longer manufactured but were still available until the early 1980s.

While many new building-material installations are asbestos-free, there is a legacy of asbestos-containing materials in many University buildings, particularly those built before the early 1980s. These asbestos-containing materials may include:

- Sprayed fireproofing used to maintain the fire integrity of structural steelwork in buildings;
- Thermal insulation used as lagging for boilers, heaters, pipes and hot water tanks;
- Acoustic or decorative finishes applied to ceilings and walls;
- Vermiculite insulation (e.g., Zonolite-brand) used as loose fill insulation inside masonry block walls of buildings;
- Asbestos-cement sheets used for roofing and cladding of buildings, decorative and acoustic paneling, tops and internal sidings for fume hoods and ovens, and laboratory table;

- Asbestos-cement pipe used for electric and telephone conduits, water supply, sewage, irrigation and drainage applications;
- Asbestos floor coverings (vinyl tiles and vinyl sheet flooring);
- Acoustic ceiling tiles;
- Paper and felt products including roofing felts, gaskets, pipeline wrap, table pads, heat protective mats and appliance insulation applications;
- Asbestos textile products including gaskets, thermal and electric insulation, welding curtains and protective clothing;
- Coatings, sealants and adhesives including roofing, wall-treating compounds and “gap” and “hole” fillers.

The mere presence of asbestos-containing material is not a significant risk to building occupants, however, these materials can present a significant degree of risk to workers and building occupants when maintenance, repair or renovation work has the potential to disturb asbestos-containing material and proper asbestos-related precautions are not followed. Significant and prolonged exposures to airborne asbestos have resulted in serious and debilitating diseases such as asbestosis, mesothelioma and lung cancer.

### 3.2 GLOSSARY

Asbestos	Any of the following fibrous silicates: Chrysotile; Amosite; Crocidolite; Anthophyllite; Actinolite; Tremolite
Asbestos-Containing Material (ACM)	A material that contains 0.5% or more asbestos as measured by dry weight.
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.
Contracting Authority	On behalf of the University of Guelph, one who is authorized and has responsibility for contracting asbestos work and the performance of such 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.
Enclosure	A barrier made of polyethylene plastic or similar material and impervious to asbestos, behind which the asbestos activity takes place. If the enclosure is opaque, there must be one or more transparent window areas to allow observation of the entire work area from outside the enclosure.
Friable Material	Means any material that, when dry, can be crumbled, pulverized or powdered by hand pressure or material that 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 Operation.
Maintenance Contractor	An external supplier of services to the University of Guelph for monetary compensation and one who does not come under



the jurisdiction of a constructor.

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 of air (f/cc). 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  
 Microscope (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)

Asbestos Work  
 Classifications  
 (Type 1, 2 or 3 Work)

Regulation 278/05 defines three classifications of asbestos operations - Type 1, Type 2 and Type 3 – established according to the asbestos hazard presented by the work, both to those doing the work and to others outside the work area. They can be thought of as being associated with a low, medium, and high risk to workers. The specific operations and their classification are provided in Section 9.0 of this program.

Type 1 Work

“Type 1 operation” means an operation described in Regulation 278/05 subsection 12(2). Asbestos-containing material in Type 1 operations is non-friable, and the risk of asbestos exposure to workers is low if specific procedures are followed.

Type 2 Work

“Type 2 operation” means an operation described in Regulation 278/05 subsection 12(3). Type 2 operations generally involve small scale activities with short duration of exposure. Since Type 2 operations may generate enough airborne asbestos to require protective equipment, precautions must be taken.

Type 3 Work

“Type 3 operation” means an operation described in Regulation 278/05 subsection 12(4). With Type 3 operations, exposure to airborne asbestos is likely, and stringent controls are required to protect workers doing the work, as well as others nearby.

**4.0 RESPONSIBILITIES**

This section outlines the unique responsibilities of a number of departments under the Asbestos Management Program.

**4.1 Environmental Health and Safety (EHS)**

Environmental Health and Safety has the primary responsibility for the on-going administration of the Asbestos Management Program within the University.

#### **4.1.1 Director, Human Resources (Health, Safety and Wellness)**

The Director, Human Resources (Health, Safety and Wellness) is responsible for overseeing the administration of the Asbestos Management Program for the University of Guelph.

#### **4.1.2 Manager Occupational Hygiene and Safety**

The Manager of Occupational Hygiene and Safety has the following responsibilities:

1. Lead the implementation of the Asbestos Management Program.
2. To be responsible for the maintenance, quality and effectiveness of the Asbestos Management Program, and to ensure that it meets current regulatory requirements.
3. To act as a technical resource on the Asbestos Management Program.
4. To be responsible for periodic audits of the Asbestos Management Program by EHS.
4. To review the Asbestos Management Program on a regular basis.

#### **4.1.3 Facilities Safety Specialist - Asbestos Coordinator**

The Facilities Safety Specialist has the following responsibilities:

1. To provide technical advice regarding asbestos identification, hazard evaluation, and control measures.
2. To provide appropriate information to pertinent individuals or groups who are occupants of University buildings with asbestos-containing materials, and information and/or training to those who work with or in close proximity to asbestos-containing material and who may disturb it, their supervisors and those who contract others to do such work (Section 7.0).
3. To develop and maintain a list of employees who have participated in the asbestos training.
4. To provide standard operating procedures for asbestos work (Section 9.2).
5. To administer and maintain a comprehensive asbestos written record (inventory) of all University buildings with asbestos-containing materials and to update the inventory at least once every 12 months and whenever the University becomes aware of new information (Section 5.0).
6. To arrange for a re-inspection of materials in the record (inventory) at reasonable intervals to evaluate the condition of asbestos-containing material.
7. For buildings in which the University of Guelph is a Leaser, to forward to Real Estate division a notification letter that will notify in writing building tenants/occupants of the presence of asbestos-containing materials (if any) within their premises including any updates to the inventory (Section 6.1) (Sample Notification Letter to Tenant Representatives of Leased Space is provided in Appendix A).

8. To establish requirements for identifying and labelling asbestos-containing materials in buildings.
9. To assist Physical Resources and other departments in the classification of asbestos work, as required (Section 9.1).
10. To assist Physical Resources and other departments with the evaluation of any maintenance, renovation or construction activities that will or may result in the disturbance of any asbestos-containing material, as required.
11. To assist Physical Resources and other departments in evaluating the qualifications of Asbestos Abatement Contractors and Asbestos Consultants, on the basis of proven service and performance, and documentation of adequate training and experience, as required.
12. To assist Physical Resources and other departments in responding to reports of damaged or fallen asbestos-containing material/unexpected asbestos disturbance, and to ensure that appropriate cleanup and abatement are completed in a timely manner, as required (Sections 9.0 and 10.0).
13. To conduct random site inspections of Type 1, Type 2 and Type 3 asbestos work to determine compliance with the Asbestos Management Program.
14. To assist Physical Resources and other departments in properly investigating asbestos-related incidents and maintain records of incidents.

## **4.2 Physical Resources (PR)**

Departments within Physical Resources may perform only Type 1 asbestos work or contract asbestos work, and have the primary responsibility for controlling access to and authorizing work which may disturb asbestos-containing material.

### **4.2.1 Associate Vice-President, Physical Resources**

The Associate Vice-President, Physical Resources has the following responsibilities:

1. To ensure that Physical Resources employees are familiar with and comply with their responsibilities in accordance with the University's Asbestos Management Program.
2. To ensure that the Asbestos Management Program is fully implemented in Physical Resources.
3. To fully support the provision of asbestos work procedures and appropriate training of Physical Resources employees involved in asbestos activities.

### **4.2.2 Director, Maintenance and Energy Services**

The Director, through Managers, Supervisors, Lead Hands and, other employees as appropriate, has the following responsibilities:

1. As appropriate, to review all maintenance and renovation work under his/her jurisdiction to determine whether asbestos-containing materials are present and might be disturbed by such activities.
2. To notify prospective internal divisions or maintenance contractors who may be contracted to perform such work with information on the presence and location of asbestos-containing material that has the potential for being disturbed (Section 10).
3. To classify all asbestos work under his/her jurisdiction as Type 1, Type 2 or Type 3. As appropriate, classification may be done in consultation with the Facilities Safety Specialist (Section 9.1).
4. To ensure that the Ministry of Labour is provided with advance notice of all Type 3 operations and Type 2 operations in which one square metre or more of insulation is removed using a glove bag that are not under the jurisdiction of a constructor (Section 6.5).
5. To ensure that all employees under his/her jurisdiction who will be responsible for assigning work that may disturb asbestos-containing material have been provided with appropriate training (Section 7.0). Supervisors who assign work must be aware of the presence of asbestos-containing material and the implications of these materials on the scope of the work.
6. To ensure that employees under his/her jurisdiction who are permitted access to areas with asbestos-containing material and who may disturb these materials have been provided with appropriate training (Section 7.0).
7. To ensure that maintenance contractors under his/her jurisdiction who are permitted access to areas containing asbestos-containing material and who may disturb this material have received appropriate training (Sections 7.0 and 10.0).
8. To ensure that asbestos work performed by his/her employees or by maintenance contractors under his/her jurisdiction is conducted in accordance with the University's asbestos standard operating procedures (Section 9.2) and subject to site reviews and air monitoring as per Section 12.0 of this program.
9. To provide a notification and description of all projects involving all significant Type 2 and Type 3 asbestos work that are under his/her jurisdiction, reasonably in advance of the commencement of the work, to the Facilities Safety Specialist.
10. To be responsible for notifying and liaising with building occupants and local joint health and safety committees of scheduled significant Type 2 and all Type 3 asbestos work within their workplace.
11. To maintain records of all Type 2 or Type 3 asbestos work for which he/she is responsible. As appropriate, the Asbestos Abatement Notice Form and/or Asbestos Sampling Notice Form must be completed with a copy to the Facilities Safety Specialist (Asbestos Abatement Notice Form is provided in Appendix C; Asbestos Sampling Notice Form is provided in Appendix B).
12. As appropriate, to respond to reports of damaged or fallen asbestos-containing material/unexpected asbestos disturbance and to ensure that appropriate cleanup and abatement are completed in a timely manner and in accordance with the University's asbestos standard operating procedures (Sections 9.0 and 10.0).

13. For work that is under his/her jurisdiction, to ensure that asbestos-containing materials are removed prior to or as part of any demolition work that may result in it being disturbed.
14. To consider the proactive removal of asbestos-containing material within an area of alteration or renovation, prior to any significant alteration or renovation of a building or part thereof that is under his/her jurisdiction.
15. To restrict access to all utility areas which contain asbestos-containing material.
16. To ensure that asbestos-containing building materials are labelled according to established requirements.

#### **4.2.3 Director, Design, Engineering and Construction**

The Director, through Managers, Supervisors, and other employees as appropriate, has the following responsibilities:

1. As appropriate, to review all maintenance and renovation work under his/her jurisdiction to determine whether asbestos-containing materials are present and might be disturbed by such activities.
2. To notify prospective internal divisions or maintenance contractors who may be contracted to perform such work with information on the presence and location of asbestos-containing materials that have the potential for being disturbed (Section 11.0).
3. To classify all asbestos work under his/her jurisdiction as Type 1, Type 2 or Type 3. As appropriate, classification may be done in consultation with the Facilities Safety Specialist (Section 9.0).
4. To ensure that the Ministry of Labour is provided with advance notice of all Type 3 operations and Type 2 operations in which one square meter or more of insulation is removed using a glove bag that are not under the jurisdiction of a constructor (Section 6.5).
5. To ensure that all employees under his/her jurisdiction who will be responsible for assigning work that may disturb asbestos-containing material have been provided with appropriate training (Section 7.0). Supervisors who assign work must be aware of the presence of asbestos and the implications of the asbestos-containing material on the scope of the work.
6. To ensure that employees under his/her jurisdiction who are permitted access to areas with asbestos-containing materials and who may disturb these materials have been provided with appropriate training (Section 7.0).
7. To ensure that maintenance contractors under his/her jurisdiction who are permitted access to areas containing asbestos-containing material and who may disturb this material have received appropriate training (Sections 7.0 and 11.0).
8. To ensure that asbestos work performed by his/her employees or by maintenance contractors under his/her jurisdiction is conducted in accordance with the University's

- asbestos standard operating procedures (Section 9.2) and subject to site reviews and air monitoring as per section 12.0 of this program.
9. To provide a notification and description of all projects involving all significant Type 2 and Type 3 asbestos work that are under his/her jurisdiction, reasonably in advance of the commencement of the work, to the Facilities Safety Specialist.
  10. To be responsible for notifying and liaising with building occupants and local joint health and safety committees of scheduled significant Type 2 and all Type 3 asbestos work within their workplace.
  11. To maintain records of all Type 2 or Type 3 asbestos work for which he/she is responsible. As appropriate, the Asbestos Abatement Notice Form and/or Asbestos Sampling Notice Form must be completed with a copy to the Facilities Safety Specialist (Asbestos Abatement Notice Form is provided in Appendix C; Asbestos Sampling Notice Form is provided in Appendix B).
  12. As appropriate, to respond to reports of damaged asbestos-containing material/unexpected asbestos disturbance, and to ensure that appropriate cleanup and abatement are completed in a timely manner and in accordance with the University's asbestos standard operating procedures.
  13. For work that is under his/her jurisdiction, to ensure that asbestos-containing materials are removed prior to or as part of any demolition work that may result in it being disturbed.
  15. To consider the proactive removal of asbestos-containing materials within an area of alteration or renovation, prior to any significant alteration or renovation of a building or part thereof that is under his/her jurisdiction.
  16. For newly constructed University buildings the Facilities Safety Specialist will receive from Physical Resources written confirmation from the designer (architect or otherwise) confirming that materials containing asbestos were not used in the construction of the building. A record of the formal communication will be included in the Asbestos Management Program files as a record of the asbestos inventory (if any). If a record of the formal communication does not exist, Physical Resources will conduct an asbestos sampling campaign for the building(s) in question.

#### **4.2.4 Director, Environmental Services**

The Director, through Managers, Supervisors, Lead Hands and other employees, has the following responsibilities:

1. As appropriate, to review all custodial activities under his/her jurisdiction to determine whether asbestos-containing materials are present and might be disturbed by such activities. Supervisors who assign work must be aware of the presence of asbestos and the implications of the asbestos-containing material on the scope of the work.
2. To ensure that employees under his/her jurisdiction report any damage or deterioration of asbestos-containing material in the work or study environment. Clean up of potential asbestos-containing material will not be carried out by custodial staff.



## 4.3 Student Housing Services

### 4.3.1 Associate Director, Facilities and Desk Services

The Associate Director, through the Facilities Manager and other employees, as appropriate, has the following responsibilities:

1. As appropriate, to review all maintenance and renovation work under his/her jurisdiction to determine whether asbestos-containing materials are present and might be disturbed by such activities.
2. To notify prospective internal divisions or maintenance contractors who may be contracted to perform such work with information on the presence and location of asbestos-containing materials that have the potential for being disturbed (Section 11.0).
3. To classify all asbestos work under his/her jurisdiction as Type 1, Type 2 or Type 3. As appropriate, classification may be done in consultation with the Facilities Safety Specialist (Section 9.1).
4. To ensure that the Ministry of Labour is provided with advance notice of all Type 3 operations and Type 2 operations in which one square metre or more of insulation is removed using a glove bag that are not under the jurisdiction of a constructor (Section 6.5).
5. To ensure that all employees under his/her jurisdiction who will be responsible for assigning work that may disturb asbestos-containing materials, have been provided with appropriate training (Section 7.0). Supervisors who assign work must be aware of the presence of asbestos and the implications of the asbestos-containing material on the scope of the work.
6. To ensure that employees under his/her jurisdiction who are permitted access to areas with asbestos-containing materials and who may disturb these materials have been provided with appropriate training (Section 7.0).
7. To ensure that maintenance contractors under his/her jurisdiction who are permitted access to areas containing asbestos-containing material and who may disturb this material have received appropriate training (Sections 7.0 and 11.0).
8. To ensure that Type 2 or 3 asbestos work performed by his/her employees or by maintenance contractors under his/her jurisdiction is conducted in accordance with the University's asbestos standard operating procedures (Section 9.2) and subject to site reviews and air monitoring as per Section 12.0 of this program.
9. To provide a notification and description of all projects involving all significant Type 2 and Type 3 asbestos work that are under his/her jurisdiction, reasonably in advance of the commencement of the work, to the Facilities Safety Specialist.
10. To be responsible for notifying and liaising with building occupants and local joint health and safety committees of scheduled significant Type 2 and all Type 3 asbestos work within their workplace.

11. To maintain records of all Type 2 and Type 3 asbestos work for which he/she is responsible. As appropriate, the Asbestos Abatement Notice Form and/or Asbestos Sampling Notice Form must be completed with a copy to the Facilities Safety Specialist (Sample Asbestos Abatement Notice Form is provided in Appendix C; Asbestos Sampling Notice Form is provided in Appendix B).
12. As appropriate, to respond to reports of damaged or fallen asbestos-containing material/unexpected asbestos disturbance and to ensure that appropriate cleanup and abatement are completed in a timely manner and in accordance with the Universities asbestos standard operating procedures (Sections 9.0 and 10.0).
13. For work that is under his/her jurisdiction, to ensure that asbestos-containing materials are removed prior to or as part of any demolition work that may result in it being disturbed.
14. To consider the proactive removal of asbestos-containing materials within an area of alteration or renovation, prior to any significant alteration or renovation of a building or part thereof that is under his/her jurisdiction.
15. To ensure that asbestos-containing building materials are labelled according to established requirements.

#### **4.4 Computing and Communications Services**

##### **4.4.1 Manager, Network Infrastructure**

The Manager, Network Infrastructure has the following responsibilities:

1. As appropriate, to review all maintenance activities under his/her jurisdiction to determine whether asbestos-containing materials are present and might be disturbed by such activities.
2. To ensure that all employees under his/her jurisdiction who will be responsible for assigning work that may disturb asbestos-containing material have been provided with appropriate training (Section 7.0). Supervisors who assign work must be aware of the presence of asbestos and the implications of the asbestos-containing material on the scope of the work.
3. To ensure that employees under his/her jurisdiction who are permitted access to areas with asbestos-containing material and who may disturb these materials have been provided with appropriate training (Section 7.0).
4. To ensure that maintenance contractors under his/her jurisdiction who are permitted access to areas with asbestos-containing material and who may disturb this material have received appropriate training (Sections 7.0 and 11.0).
5. To ensure that asbestos work performed by his/her employees or by maintenance contractors under his/her jurisdiction is conducted in accordance with the University's asbestos standard operating procedures (Section 9.2) and subject to site reviews and air monitoring as per section 12.0 of this program.

#### **4.5 Open Learning and Educational Support**



#### 4.5.1 Manager, Classroom Technical Infrastructure

The **Manager, Classroom Technical Infrastructure** has the following responsibilities:

1. As appropriate, to review all maintenance activities under his/her jurisdiction to determine whether asbestos-containing materials are present and might be disturbed by such activities.
2. To ensure that all employees under his/her jurisdiction who will be responsible for assigning work that may disturb asbestos-containing material have been provided with appropriate training (Section 7.0). Supervisors who assign work must be aware of the presence of asbestos and the implications of the asbestos-containing material on the scope of the work.
3. To ensure that employees under his/her jurisdiction who are permitted access to areas with asbestos-containing material and who may disturb these materials have been provided with appropriate training (Section 7.0).
4. To ensure that maintenance contractors under his/her jurisdiction who are permitted access to areas with asbestos-containing material and who may disturb this material have received appropriate training (Sections 7.0 and 11.0).
5. To ensure that asbestos work performed by his/her employees or by maintenance contractors under his/her jurisdiction is conducted in accordance with the University's asbestos standard operating procedures (Section 9.2) and subject to site reviews and air monitoring as per section 12.0 of this program.

#### 4.6 All Department Heads

Department Heads have the following responsibilities:

1. To ensure that all employees in the department are familiar with and comply with their responsibilities in accordance with the University's Asbestos Management Program.
2. To ensure that all employees in the department are aware of the Asbestos Inventory for their workplace and have ready access to it.
3. To ensure that employees in the department and other building occupants, as appropriate, are notified of scheduled asbestos work within their workplace.
4. Before authorizing work involving the building fabric, to contact Facilities Safety Specialist who will determine if asbestos-containing materials are present and might be disturbed by the work.

#### 4.7 University Employees/Students/Tenant Representatives of Leased Space

University Employees/Students/Tenant Representatives of Leased Space have the following responsibilities:

1. To be familiar with the information that has been provided by the University regarding the presence of asbestos in buildings with asbestos-containing materials.
2. To abide by all access restrictions posted on areas containing asbestos-containing material.
3. To immediately report to a supervisor or other person in authority, any damage or deterioration of asbestos-containing material in the work or study environment.

#### **4.8 Maintenance Contractors**

Maintenance contractors have the following responsibilities:

1. To provide written acknowledgement that they have read and will comply with the requirements of Regulation 278/05 and Appendix G of the University's Asbestos Management Program, and that failure to comply may result in immediate termination of the work.
2. To ensure that all their employees are informed about the location of asbestos-containing material that may be disturbed by the work (Section 11.0).
3. To ensure that all their employees have appropriate training in asbestos hazards and work procedures prior to conducting any work that may disturb asbestos and to provide evidence of this to the Contracting Authority (Section 11.0).
4. To avoid the disturbance of asbestos-containing material other than asbestos work that they have been contracted to carry out.
5. To ensure that all their employees follow the appropriate procedures for asbestos work (Section 9.2)
6. To ensure that if previously unidentified asbestos-containing material are discovered in the course of work that their employees stop all work immediately and notify the Contracting Authority (Sections 11.0).

### **5.0 ASBESTOS SURVEYS/ RE-INSPECTION/ UPDATING SURVEYS**

#### **5.1 Asbestos Surveys/ Inventories**

5.1.1 All University of Guelph buildings constructed prior to 1986 will be surveyed for friable and principal forms of non-friable asbestos-containing materials. This survey, subsequent records of asbestos abatement work and asbestos re-inspections provide the data for the building inventory which is a record of the known and suspected asbestos-containing material present in the building.

5.1.1.1 The surveys shall include:

1. a room-by-room report on the location, condition and accessibility of:
  - sprayed asbestos applied for purposes of fireproofing, thermal, acoustic or decorative purposes

- insulation on all mechanical systems (heating, cooling, tanks, vessels, piping, etc.)
  - specific non-friable asbestos installation including: plaster, asbestos-cement boards/pipes/etc., sheet flooring and vinyl tiles
2. recommendations for asbestos management, control or removal for each material detected in each location
  3. an indication as to whether the material has been sampled to determine if it contains asbestos, or whether it is being treated as if it were asbestos-containing material
  4. if known to be asbestos, the type of asbestos
  5. the location of materials suspected to contain asbestos but shown by analysis to be asbestos-free shall be reported. The original laboratory report of all analyses shall be provided as part of the report

**Note:** In order to be proven to be asbestos-free, the sampling frequency tabulated in Appendix D must be followed.

5.1.1.2 The surveys may not include:

1. destructive or intrusive testing. Materials enclosed by walls or solid finishes will require testing when such areas are affected by maintenance or renovation.
2. testing of exterior building elements (soffit, fascia, roofing membrane, buried services, etc.)

5.1.2 For buildings in which the University of Guelph is the lessee and in which the University of Guelph is not responsible for maintenance, renovation or alteration, the initial surveys are the responsibility of the leased building's owner. Copies of the initial survey shall be provided by the leased building's owner to the University (Section 6.2).

5.1.3 New buildings owned by University of Guelph will be added to the Asbestos Inventory in the following manner:

1. For newly constructed buildings on the University's main campus, Physical Resources will forward to the Facilities Safety Specialist written confirmation from the designer (architect or otherwise) confirming that materials containing asbestos were not used in the construction of the building. A record of the formal communication will be included in the Asbestos Management Program files as a record of the asbestos inventory (if any).
2. If a record of the formal communication does not exist, Physical Resources will conduct an asbestos sampling campaign for the building(s) in question.

5.1.4 The Asbestos Inventory will be made readily available for inspection by the local joint health and safety committee and any building occupant who so requests.

## 5.2 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 E.

## 5.3 Bulk Analysis

Bulk samples will be analysed for asbestos in accordance with Regulation 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.

## 5.4 Re-inspection of Asbestos-Containing Material

In order to determine the condition of asbestos-containing material and the need for cleanup, repair or abatement measures, inspections of asbestos-containing material mentioned in the inventory must be conducted at reasonable intervals.

5.4.1 The Facilities Safety Specialist will arrange for a re-inspection of all accessible areas identified by the survey to contain asbestos-containing material. The re-inspection will be performed at least annually if asbestos-containing material is present. If the area is subject to any change of use, frequent maintenance which may disturb the material or if damaged or deteriorated asbestos-containing material is reported, the re-inspection shall be performed on a more frequent basis and as a minimum when such damage or deterioration is noted.

5.4.2 The re-inspection of asbestos-containing material will be documented in writing using the form provided in Appendix F.

5.4.3 For buildings in which the University of Guelph is the leasee and in which the University of Guelph is not responsible for maintenance, renovation or alteration, the re-inspections of asbestos-containing materials are the responsibility of the leased building's owner. Copies of the initial survey and re-inspection shall be provided by the leased building's owner to the University (Section 6.2).

## 5.5 Updating Surveys

5.5.1 The initial survey (inventory) of buildings with asbestos-containing material will be updated as a result of:

- recent sampling of material being treated as if it were asbestos-containing material
- the form "Asbestos Sampling Notice" provided in Appendix B will be used to document sampling work for subsequent updating of survey data
- recent asbestos abatement work
- the form "Asbestos Abatement Notice" provided in Appendix C will be used to document abatement work for subsequent updating of survey data
- discovery of previously unknown asbestos-containing material

- regular re-inspection of asbestos-containing material to determine its condition
- the form “Re-Inspection of ACM”, provided in Appendix F, will be used to document re-inspected asbestos-containing material for subsequent updating of survey data

## **6.0 NOTIFICATIONS/ REPORTS**

### **6.1 To Building Occupants (including Tenant Representatives of Leased Space)**

The University will provide building occupants (including tenant representatives of leased space and joint health and safety committees) with written information of the presence of asbestos-containing materials (if any) within their premises as well as a copy of, or access to the asbestos inventory (including updates) for their premises, the asbestos management program and scheduled major Type 2 and all Type 3 asbestos work within or adjacent to their workplace.

A sample letter of notification of the presence of asbestos-containing material to tenant representatives of leased space is provided in Appendix A.

### **6.2 To University of Guelph (Report from Landlord)**

For buildings in which the University of Guelph is the lessee and in which the University of Guelph is not responsible for maintenance, renovation or alteration, the initial asbestos surveys, subsequent records of asbestos abatement work and re-inspections of asbestos-containing material are the responsibility of the landlord.

### **6.3 To University of Guelph Workers**

University of Guelph workers who may perform work with asbestos-containing material or work in close proximity to asbestos-containing material and who may disturb it, shall be notified of the:

- a) location of the asbestos-containing material
- b) a description of the condition of the material and whether the material is friable or non-friable
- c) whether the material is asbestos-containing material or the work will be done in accordance with Regulation 278/05 as though the material is asbestos-containing material, and in the case of sprayed-on friable material that it will be done as though the asbestos is of the type other than chrysotile.
- d) if the material contains asbestos, the work specifications and work procedures indicating the type of asbestos work (University workers will only conduct Type 1 asbestos operations).

### **6.4 To Maintenance Contractors and Constructors (Pre Tenders/ Pre Arranging or Contracting for Alteration/Repair/Demolition Work)**

Prior to asking for tenders or arranging or contracting for any alteration, repair or demolition work and where material that may be disturbed or removed may contain asbestos-containing material, the University (Contracting Authority) shall provide a report to any prospective maintenance contractor or constructor as part of the work specification. The building inventory may form the basis of this report.

The report shall state the following:

- (a) whether the material is asbestos-containing material or the work will be done in accordance with Regulation 278/05 as though the material is asbestos-containing material, and in the case of sprayed-on friable material that it will be done as though the asbestos is of the type other than chrysotile. If the material has not previously been sampled then sampling and analysis will be required at this time. If the material is shown not to contain asbestos then the report shall state this.
- (b) if the material contains asbestos, its condition and whether it is friable or non-friable.
- (c) if the material contains asbestos, the specifications and work procedures indicating the type of operation (Type 1, 2 or 3) or specifications for removal.
- (d) contain drawings, plans and specifications, as appropriate, showing the location of the asbestos-containing material that will be handled, dealt with, disturbed or removed.

The notification may include maintenance contractors such as security, telephone, computer cabling suppliers, mechanical and electrical maintenance contractors, etc. A sample letter of notification to maintenance contractors is provided in Appendix G.

## **6.5 To the Ministry of Labour (Notice of Asbestos Work)**

Before beginning any Type 3 operation and before beginning a Type 2 glove bag operation in which one square meter or more of insulation is to be removed that are not under the jurisdiction of a constructor, the University (Contracting Authority) shall ensure that the Ministry of Labour is provided with advance notice of such operations (orally and in writing).

The written notice shall contain the following information:

- 1) the name and address of the person giving the notice;
- 2) the name and address of the owner of the place where the work will be carried out;
- 3) a description of the work that will be carried out;
- 4) the starting date and expected duration of the work;
- 5) the name and address of the contractor in charge of the work;
- 6) the name and address of the contact responsible for overseeing the work.

## 6.6 To the Ministry of Labour (Notice of Discovery of Asbestos-Containing Material)

If during the course of alteration, repair or demolition work material is discovered that was not referred to in the report as described in Section 6.4 above and that may be asbestos-containing material, the maintenance contractor or constructor shall immediately stop work which may disturb that material.

The maintenance contractor shall immediately notify, orally and in writing, the University (Contracting Authority). The constructor or the University (Contracting Authority) for work that is not under the jurisdiction of a constructor shall immediately notify, orally and in writing, the following:

- a) an inspector at the Office of the Ministry of Labour nearest the workplace;
- b) the contractor;
- c) the Facilities Safety Specialist;
- d) the pertinent Joint Health and Safety Committee.

The written notice shall contain the following information:

- 1) the name and address of the person giving the notice;
- 2) the name and address of the owner of the place where the work will be carried out;
- 3) a description of the work that will be carried out;
- 4) the starting date and expected duration of the work;
- 5) the name and address of the contractor in charge of the work;
- 6) the name and address of the contact responsible for overseeing the work

## 7.0 INFORMATION AND TRAINING

The University will provide appropriate information to pertinent individuals or groups who are occupants of University buildings with asbestos-containing materials, and instruction and training to those who work with or in close proximity to asbestos-containing material and who may disturb it, their supervisors and those who contract others to do such work.

As a requirement of Regulation 278/05, all workers who may work with or may disturb asbestos-containing material must be informed of its presence and appropriately trained in methods of asbestos dust control. It is essential that everyone involved in doing the work, both workers and supervisors, be properly trained. Therefore two separate asbestos training courses are recommended.

### Asbestos Worker Type 1 and 2 Training

If the control of asbestos exposure is to be achieved, it is essential that everyone involved in conducting asbestos work, both workers and supervisors, be properly trained. As noted, University of Guelph employees will only conduct Type 1 asbestos work.

The University of Guelph will maintain a training program for those workers who are likely to disturb asbestos-containing material in the course of their work. The training will cover the following areas:

1. hazards of asbestos exposure;
2. use, cleaning, and disposal of respirators and protective clothing;



3. personal hygiene; and
4. the measures and procedures required by Regulation 278/05.

### Asbestos Awareness Training

In addition to workers performing Type 1 asbestos work and their supervisors, anyone who performs work in areas where an asbestos-containing material is present and may do work that is to be conducted in close proximity to such material and may disturb it is required to complete asbestos hazard awareness training. This training is awareness level only, and does not provide sufficient training to perform any types of asbestos work.

Maintenance contractors hired by the University are also required to have been trained, and if performing or supervising a Type 3 operation, be certified under section 20 of Regulation 278/05. Note – additional requirements may apply under the University’s Contractor Safety Management Program. Maintenance contractors who may disturb or remove asbestos-containing materials must provide written evidence that all workers have received appropriate instruction and training regarding asbestos work, as outlined in Section 11 of this Asbestos Management Program.

## **8.0 RESTRICTIONS IN AREAS WITH ASBESTOS-CONTAINING MATERIALS**

### **8.1 Restricted Access**

Some areas with asbestos-containing materials are restricted to those who are specifically trained to work with or in close proximity to such materials and may disturb them.

Under the following circumstances, access restrictions to asbestos-containing materials apply:

#### **8.1.1 Thermal Insulation in Utility Rooms**

Access to mechanical and electrical rooms, service shafts and tunnels with friable asbestos-containing materials shall be limited or restricted. Where appropriate, such areas shall be locked and accessible to authorized personnel only with signs posted in prominent locations warning of the asbestos hazard.

#### **8.1.2 Sprayed Fire Proofing in Ceiling Spaces**

Access to ceiling spaces with sprayed asbestos-containing fireproofing shall be restricted. Where appropriate and through the use of signage, building occupants shall be advised of this asbestos and that access is prohibited.

### **8.2 Other Restrictions**

Some areas with asbestos-containing materials are such that it is necessary to advise area occupants of the presence of these materials, thereby limiting the probability of their disturbance.



### 8.2.1 Vermiculite Insulation in Masonry Block Walls

In some areas vermiculite insulation (containing asbestos) has been used as loose fill insulation inside masonry block walls of a building. Where appropriate and through the use of signage, building occupants shall be advised of the presence of this asbestos-containing material so that disturbance may be avoided.

### 8.2.2 Acoustic/Decorative Finishes to Walls and Ceilings

Where acoustic/decorative, asbestos-containing finishes have been applied to ceilings and walls, signs warning of the presence of the asbestos material shall be posted in prominent locations.

## 8.3 **Buildings with Restrictions**

The lists below indicate those University buildings with the following asbestos-containing materials: sprayed fireproofing, vermiculite insulation and acoustic/decorative finishes applied to ceilings and walls:

### List A                      **Buildings with Sprayed Asbestos-Containing Fireproofing**

Immunology (# 46)  
Landscape Architecture (# 51)  
Animal Science/Nutrition (# 70)  
East Residence – Dundas (#180a)  
East Residence – Lanark (#180b)  
East Residence – Glengarry (#180c)

### List B                      **Buildings with Asbestos-Containing Vermiculite Insulation**

South Residence – Mountain Hall (# 72a)  
South Residence – Prairie Hall (# 72a)  
South Residence – Maritime Hall (# 72a)  
Lennox/Addington Hall (# 172)

### List C                      **Buildings with Asbestos-Containing Wall/Ceiling Plaster**

University Centre (#158)  
Axelrod Building (#31)

## 9.0 CLASSIFICATION OF ASBESTOS WORK AND ASBESTOS SOPs

### 9.1 Classification of Asbestos Work

Ontario Regulation 278/05 establishes asbestos work into three classifications of operations (Type 1, Type 2 and Type 3) according to the asbestos hazard presented by the work, both to those doing the work and to others outside the work area. They can be thought of as being associated with a low, medium, and high risk of exposure.

#### **Type 1 Asbestos Operations**

The following are Type 1 operations (low risk of asbestos exposure):

- Installing or removing ceiling tiles that are 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.

#### **Type 2 Asbestos Operations**

The following are Type 2 operations (medium risk of asbestos exposure):

- Removing all or part of a false ceiling to obtain access to a work area, if asbestos-containing material is 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 party of machinery or equipment or a building, aircraft, locomotive, railway car, vehicle or ship.
- 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.
  - Removing insulation that is asbestos-containing material from a pipe, duct or similar structure using a glove bag.
  - 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

### **Type 3 Asbestos Operations**

The following are Types 3 operations (high risk of asbestos exposure):

- 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, aircraft, ship, locomotive, railway car or vehicle 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 refractory 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
- Repairing, altering or demolishing all or part of any building in which asbestos is or was used in the manufacture of products, unless the asbestos was cleaned up and removed before March 16, 1986.

## 9.2 Standard Operating Procedures (SOPs)

Work practices which may be undertaken as part of normal building repair or maintenance work are covered by Regulation 278/05. These activities are most likely to fall under Type 1 or Type 2 work. The employees of the University of Guelph will perform only Type 1 work. Type 2 and 3 work is restricted to specialized contractors who are contracted specifically for this purpose.

Standard operating procedures for performing Type 1 work can be accessed in Appendix H.

## 10.0 REPAIR AND MAINTENANCE

1. Where it is determined by an inspection or other reports that material that may contain asbestos is in a condition such that exposure to the material is likely to occur, immediate steps shall be taken to limit access to the area and abate/repair the material. The material shall be assumed to contain asbestos unless identified as otherwise in the Asbestos Inventory or until an examination shows that the material does not contain asbestos.
2. It shall be determined whether the material contains asbestos and, if so, in the case of sprayed-on friable material the type of asbestos.
3. Where it is readily apparent that friable asbestos-containing material used as fireproofing or acoustical or thermal insulation has fallen and is being disturbed so that exposure to the material is likely to occur, the fallen material shall be cleaned up and removed. If it is readily apparent that the material will continue to fall because of its deterioration, the fireproofing or the insulation shall be repaired, sealed, removed, or permanently enclosed.
4. When any work, cleanup or repair is to be carried out by University of Guelph workers in an area where material that may contain asbestos may be disturbed, the work order shall include whether or not the material contains asbestos. If the material contains asbestos, the worker(s) must be informed of its presence and the work order shall contain the following additional information:
  - the work classification;
  - the condition of the asbestos-containing material and whether it is friable or non-friable;
  - in the case of sprayed-on friable material the type of asbestos;
  - drawings, if appropriate, showing the location of the material.
5. Cleanup/repair/abatement of the asbestos-containing material that is not under the jurisdiction of a constructor, shall be performed in accordance with the classification of asbestos work and the University's standard operating procedures (Sections 9.1 and 9.2) and as appropriate, maintenance contract work (Section 10.0). The packaging and disposal of asbestos waste shall be in accordance with the requirements of the Ministry of the Environment, Conservation, and Parks.
6. For all Type 3 and Type 2 work in which one square meter or more of insulation is removed using a glove bag that are not under the jurisdiction of a constructor, the Ministry of Labour shall be provided with advance notice of such operations as required in Section 11 of this program.

7. Asbestos-containing material shall be removed prior to any demolition work that may result in its disturbance.
8. Prior to any significant alteration or renovation of a building or part thereof that is not under the jurisdiction of a constructor, the appropriate University authority shall consider the proactive removal of asbestos-containing materials within the area of alteration or renovation.
9. Where work is done which significantly changes the building inventory (e.g., a major removal of asbestos), an Asbestos Abatement Notification Form (see Appendix C) shall be completed and a copy sent to the Facilities Safety Specialist.

## 11.0 MAINTENANCE CONTRACT WORK

Maintenance contractors and consultants shall demonstrate compliance with the requirements of this Asbestos Management Program.

1. Prior to the commencement of any alteration, repair or demolition work that is not under the jurisdiction of a constructor, and where material that may be disturbed or removed may contain asbestos, the University (Contracting Authority) shall provide a report to any prospective maintenance contractor as part of the work specification. The building inventory may form the basis of this report.

The report shall state the following:

- (a) whether the material is asbestos-containing material or whether the work will be done in accordance with Regulation 278/05 as though the material is asbestos-containing material, and, in the case of sprayed-on friable material, that it will be done as though the asbestos is of a type other than chrysotile. If the material has not previously been sampled then sampling and analysis will be required at this time. If the material is shown not to contain asbestos then the report shall state this.
- (b) a description of the condition of the material and whether it is friable or non-friable.
- (c) if the material contains asbestos, the work specifications and work procedures indicating the type of operation (Type 1, 2 or 3) or specifications for removal.
- (d) drawings, plans and specifications, as appropriate, showing the location of the asbestos-containing material that will be handled, dealt with, disturbed or removed.

It is the responsibility of maintenance contractors to make the contents of the report available to their employees.

2. The classification of asbestos work as Type 1, 2, or 3 is the responsibility of the University (Contracting Authority). Where there is some uncertainty about the classification of any asbestos work, the Contracting Authority shall consult the Facilities Safety Specialist (Section 9.1).

3. For all Type 3 and Type 2 work in which one square meter or more of insulation is removed using a glove bag that are not under the jurisdiction of a constructor, the University (Contracting Authority) shall ensure that the Ministry of Labour is provided with advance notice of such operations (orally and in writing).

The written notice shall contain the following information:

- 1) the name and address of the person giving the notice;
  - 2) the name and address of the owner of the place where the work will be carried out;
  - 3) a description of the work that will be carried out;
  - 4) the starting date and expected duration of the work;
  - 5) the name and address of the contractor in charge of the work;
  - 6) the name and address of the contact responsible for overseeing the work.
4. Maintenance contractors shall provide written acknowledgement (Appendix G) that:
    - they have read and will comply with the requirements of Regulation 278/05;
    - they have read and will comply with the University's Asbestos Management Program;
    - failure to comply with the above can result in termination of the work.
  5. Maintenance contractors shall provide written evidence that all workers have received appropriate instruction and training in the following:
    - hazards of asbestos,
    - use, cleaning and disposal of respirators and protective clothing,
    - entry and exit from work areas,
    - all aspects of Type 2 and Type 3 work and protective measures.
  6. Maintenance contractors shall ensure that their employees avoid the disturbance of asbestos-containing materials, other than asbestos work that they have been contracted to carry out.
  7. The Contracting Authority shall ensure that maintenance contractors follow the appropriate asbestos work procedure (Section 9.2).
  8. The packaging and disposal of asbestos waste shall be in accordance with the requirements of the Ministry of the Environment, Conservation, and Parks.
  9. During the course of alteration, repair or demolition work, that is not under the jurisdiction of a constructor, where material is discovered that was not referred to in the report to the maintenance contractor and that may be asbestos-containing material, the maintenance contractor shall immediately stop work which may disturb that material.

The maintenance contractor shall immediately notify, orally and in writing, the University (Contracting Authority).

In turn, the University (Contracting Authority) shall immediately notify, orally and in writing, the following:

- a) an inspector at the Office of the Ministry of Labour nearest the workplace;
- b) the contractor;
- c) the Facilities Safety Specialist ;
- d) the pertinent Joint Health and Safety Committee.

The written notice shall contain the following information:

- 1) the name and address of the person giving the notice;
  - 2) the name and address of the owner of the place where the work will be carried out;
  - 3) a description of the work that will be carried out;
  - 4) the starting date and expected duration of the work;
  - 5) the name and address of the contractor in charge of the work;
  - 6) the name and address of the contact responsible for overseeing the work
10. Where material has been discovered that was not referred to in the report to the maintenance contractor, work shall not resume until it has been determined whether or not the material contains asbestos and in the case of sprayed-on material the type of asbestos. If the material is found to contain asbestos, work shall not resume until the appropriate procedures (Type 1, 2 or 3) have been put in place.

## **12.0 INSPECTION AND MONITORING OF ASBESTOS WORK**

### **12.1 Visual Inspection**

Standard operating procedures for Type 1, 2 and 3 asbestos work are suitable for work on friable and non-friable asbestos-containing material. Visual inspection of the site and asbestos work practices by an appropriately qualified person is the primary method of assessing compliance with Type 1, Type 2 or Type 3 asbestos work procedures.

### **12.2 Air Monitoring During and After Asbestos Work**

Air monitoring is useful to provide proof of compliance with the specified work practices.

Air monitoring and analysis during active asbestos removal or for "Clearance" may be performed by Phase Contrast Microscopy (PCM). If PCM clearance is not possible, then Transmission Electron Microscopy (TEM) method will be utilized. These air samples must be submitted for analysis to an American Industrial Hygiene Association (AIHA) accredited laboratory participating in a recognized quality control program.

### **12.3 Type 1 – Site Reviews and Air Monitoring**

#### **1. Site Reviews**

Site Reviews are not required during Type 1 work, however, from time to time, site reviews may be conducted by appropriately qualified personnel.

#### **2. Air Monitoring**

No air monitoring is required during Type 1 asbestos work.

### **12.4 Type 2 – Site Reviews and Air Monitoring**

#### **1. Site Reviews**

During and after Type 2 asbestos work, site reviews shall be conducted by appropriately qualified personnel at the discretion of the University (Contracting Authority).

2. Air Monitoring

During and after Type 2 asbestos work, air monitoring shall be conducted by appropriately qualified personnel at the discretion of the University (Contracting Authority).

When required, air monitoring will be conducted in occupied areas adjacent to the Type 2 enclosure or Glove Bag work area during contaminated work. On these occasions air monitoring will also be used for air clearance on Type 2 enclosures; testing shall be based on samples taken inside the enclosure. The number of samples to be collected for the PCM method is tabulated on the table below. Where air monitoring is undertaken, a PCM clearance level of 0.01 fibres per cubic centimetres of air must be achieved prior to teardown of the enclosure.

**12.5 Type 3 – Site Reviews and Air Monitoring**

1. Site reviews

All Type 3 asbestos work shall be subject to site reviews by appropriately qualified personnel on a determined frequency.

2. Air Monitoring

- During Type 3 asbestos work, air monitoring shall be conducted (on a frequency appropriate to the work) in occupied areas adjacent to the Type 3 work area to ensure no leakage from the enclosure.
- Also, air monitoring shall be used for Clearance of Type 3 Work Areas in accordance with Regulation 278/05.

PCM clearance air testing shall be based on samples taken inside the enclosure; these air samples will allow clean access to the site for the Teardown Inspection.

The number of samples to be collected for the PCM method is tabulated below and PCM clearance levels of 0.01 fibres per cubic centimeter of air must be achieved prior to teardown of the enclosure.

Only if PCM clearance is not possible will the TEM method be utilized.

**Number of Air Samples as per Regulation 278/05**

Area of Enclosure	Minimum Number of Air Samples to be Taken from Each Enclosure
10 m <sup>2</sup> or less	2
More than 10 m <sup>2</sup> but less than 500 m <sup>2</sup>	3
500 m <sup>2</sup> or more	5



## **13.0 PROGRAM AUDIT AND REVIEW**

### **13.1 Program Review and Audit**

On a regular basis the University will review and audit the Asbestos Management Program

Appendix A



Name  
Title  
Tenant of Leased Space  
Address

Date

Re: Asbestos-Containing Materials in (Building Name)

Dear (Name)

The University of Guelph, as owner, is required by Ontario Regulation 278/05, Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act, to notify you about the presence of asbestos-containing materials in the area occupied by (tenant of leased space) in the (building name).

Following are the asbestos-containing materials that may be present in the area occupied by (tenant of leased space):

- 
- 
- 

The University maintains asbestos inventories of University facilities with asbestos-containing materials. These inventories provide greater detail about the types and location of asbestos-containing materials within a building than the information provided above. If you or your employees wish to see an inventory for your premises, it is accessible through the Environmental Health and Safety (EHS) website or through the EHS office. The University will update these inventories on a regular basis.

The University has in place an Asbestos Management Program (AMP) to properly manage the asbestos-containing materials in its buildings. In keeping with this AMP, please ensure that the following measures are taken:

- 1) Inform your employees of the presence of asbestos-containing materials in their premises.
- 2) All activities that involve or in the proximity of asbestos-containing materials must be conducted in a manner so as not to disturb or damage such materials.
- 3) Any asbestos-containing materials or suspected asbestos-containing materials which are found to be damaged or deteriorated (e.g., broken pipe insulation, damaged ceiling tiles) must be immediately reported to (Physical Resources Contact -- ?) for prompt inspection and repair.
- 4) Any building work which may involve the disturbance of asbestos-containing materials (renovations, installations, etc) must only be done through the appropriate University authority who will ensure that all procedures comply with the University's Asbestos Management Program.

Thank you for your cooperation. If you have any questions or concerns regarding asbestos in your premises, please contact (Real Estate Division -- ?) or the Facilities Safety Officer (EHS) at (519) 824-4120 Ext 52524 or [idafoe@uoguelph.ca](mailto:idafoe@uoguelph.ca).

Jeff Dafoe  
Facilities Safety Specialist

Environmental Health and Safety



**ASBESTOS SAMPLING NOTICE**

**Date(s) of Sampling Work:** \_\_\_\_\_

**Sampling Contractor/PR Trade:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**University of Guelph Contact (Contract Authority/Manager):** \_\_\_\_\_

**University of Guelph Project Number or Work Order Number:** \_\_\_\_\_

**Building** \_\_\_\_\_ **Building #** \_\_\_\_\_

Notice to be completed by Sampling Contractor or PR Trade and forwarded to Contract Authority/Manager who shall subsequently forward the completed Notice to the EHS Facilities Safety Specialist.

**Attach Lab Certificate of Analysis Report to Notice**

Sample ID	Location or Room #	Sample Material Description	EHS Use

January 2018



**ASBESTOS ABATEMENT NOTICE**

DATE(S) OF ABATEMENT WORK: \_\_\_\_\_

Abatement Company: \_\_\_\_\_ Contact: \_\_\_\_\_

University of Guelph Contact (Contract Authority/Manager):  
\_\_\_\_\_

University of Guelph Project Number of Work Order Number:  
\_\_\_\_\_

Building \_\_\_\_\_ Building # \_\_\_\_\_ Room # \_\_\_\_\_ Location # \_\_\_\_\_

Classification of Asbestos Work (e.g. Type 1, Type 2 or Type 3): \_\_\_\_\_

**Description of Abated Material**

Suspect ACM \_\_\_\_ Confirmed ACM \_\_\_\_ Friable \_\_\_\_ Non-Friable \_\_\_\_

Abated Material (e.g. sprayed fireproofing, thermal insulation, VAT, asbestos-containing debris):  
\_\_\_\_\_  
\_\_\_\_\_

**Estimated Quantity of Abated Material**

(e.g. 1 m<sup>2</sup>, 5 elbows -- include whether or not material has been removed or repaired):  
\_\_\_\_\_  
\_\_\_\_\_

**Location of Abated Material** (provide information on a copy of existing inventory):  
\_\_\_\_\_  
\_\_\_\_\_

Reported by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
\_\_\_\_\_

Notice to be completed by Abatement Contractor or Manager and forwarded to the Physical Resources Environmental Health and Safety Facilities Safety Specialist Officer in EHS.

**Appendix D**

**COLLECTION OF BULK MATERIAL SAMPLES**

<b>Type of Material</b>	<b>Size of area of homogeneous material</b>	<b>Minimum number of bulk material samples to be collected</b>
Surface material, including without limitation material that is applied to surfaces by spraying, by troweling or otherwise, such as acoustical plaster on ceiling and fireproofing materials on structural members	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 in item 3	Any size	3
Thermal insulation patch	Less than 2 linear metres or 0.5 square metres	1
Other material	Any size	3

## Appendix E

### BULK SAMPLE COLLECTION PROCEDURE

1. If possible, sample the material when the area is not in use. Only those persons needed for sampling should be present in the immediate area.
2. Provide a drop sheet below sample location if debris or dust may be generated by sampling operation.
3. 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.
4. Materials of different appearance should be sampled separately. Mechanical insulation must be sampled separately on all systems, tanks, vessels, etc. Sample both the straight sections of pre-formed insulation and the insulating cement typically present at elbows, fittings, etc. (unless visually identified as fibreglass). Number of samples required is specified in Appendix D.
5. Collect the sample by penetrating the entire depth of the material (since it may have been applied in more than one layer or covered with paint or other protective coating).
6. The use of a respirator is recommended for all sampling but will depend on care used and material being sampled.
7. If pieces of material break off during sampling, the drop sheet and any other contaminated surface must be cleaned up with a HEPA vacuum cleaner or by wet cleaning. Any debris generated must be placed in plastic bags, labelled, sealed and disposed of as asbestos waste.
8. Place samples in labelled plastic bags with a zip-lock closure or in sealed plastic vials. Samples shall be identified with the following information:
  - Sample Number
  - Building
  - Room Number
  - Date of Sampling
  - Name of Sampler
  - Source of sample e.g. Cold Water Pipe, Cold Water Fitting, Debris on Floor, etc.

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

9. Complete the Asbestos Sampling Notice Form provided in Appendix B.



## RE-INSPECTION OF ASBESTOS CONTAINING MATERIAL

Upon completion of Asbestos Re-Inspection, fill out the following form in its entirety and file in the University's Asbestos Management Program and survey.

Location of Survey: \_\_\_\_\_

Date of Re-Inspection: \_\_\_\_\_

Organization completing Asbestos Re-Inspection: \_\_\_\_\_

**Names of all in attendance:** \_\_\_\_\_ **Representing:** \_\_\_\_\_

Surveyor \_\_\_\_\_

Other: \_\_\_\_\_

Summary of findings: Asbestos-containing material and material being treated as asbestos-containing was visually found to be in good to fair condition as indicated in the HMIS report for the building, unless noted below.

Room or Location #	Material (boiler insulation etc)	Comments re condition – Disturbed/Undisturbed (if other, explain)	Action Required

**Signature of Surveyor:** \_\_\_\_\_

Appendix G



Name
Title
Employer (Contractor)
Address

Date

Re: Notification of Work That May Involve Disturbance of Asbestos-Containing Materials

The University of Guelph is required by Ontario Regulation 278/05, Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act, to notify those who may perform work with or in close proximity to asbestos-containing materials...

- removal or repair of asbestos-containing mechanical insulation or sprayed fireproofing
- ceiling entry which may disturb intact or fallen pipe insulation or sprayed fireproofing
- any other operation which may generate airborne asbestos from friable asbestos
- any removal, cutting or other disturbance of non-friable asbestos-containing material

More specifically your work will involve:

(if appropriate, give brief specifics of the possible involvement of asbestos-containing materials in the performance of the proposed work)

\_\_\_\_\_ (Name and Department of Contracting Authority)

\_\_\_\_\_ (Date and Signature of Contracting Authority)

CONTRACTOR ACKNOWLEDGEMENT

(Maintenance Contractor Company Name) has received notification of work that may involve the disturbance of asbestos-containing materials.

(Maintenance Contractor Company Name) will follow the general instructions and job-specific work specifications as required by University of Guelph's Asbestos Management Program.

Unless within the scope of the proposed work, (Maintenance Contractor Company Name) agrees that its workers will not disturb or remove asbestos-containing materials without prior notification to the contracting authority

\_\_\_\_\_ (Maintenance Contractor Company Name)

\_\_\_\_\_ (Name and Title of Maintenance Contractor Representative)

\_\_\_\_\_ (Date and Signature of Maintenance Contractor Representative)





**STANDARD OPERATING PROCEDURES  
FOR THE CONTROL OF ASBESTOS FIBRES  
DURING TYPE 1 OPERATIONS**

**The Removal of Less Than 7.5 Square Metres  
of Asbestos-Containing Ceiling Tiles (Intact)**

**ID# 1.10**

**Application:** These procedures apply to the removal of less than 7.5 m<sup>2</sup> of asbestos-containing ceiling tiles without being broken, cut, drilled, abraded, ground, sanded or vibrated; classification is based according to total area on which work is done consecutively in a room or enclosed area, even if the work is divided into smaller jobs. This activity may generate enough airborne asbestos to be classified as a Type 1 operation. **Note: more stringent procedures will apply if asbestos-containing, sprayed fireproofing is likely to be lying on the surface of the ceiling tiles.**

**References:** The procedures are in full compliance with the following:

- 1) Ontario Regulation 278/05, Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act of Ontario.
- 2) Ministry of Environment Regulations for the disposal of asbestos waste, including R.R.O. 1990, Regulation 347, and subsequent amendments.
- 3) Ministry of Transportation Regulation for the transport of asbestos waste.

**Definitions:** **Work Areas:** Where actual work activity involving asbestos takes place.

**Damp-Wiping:** A cleaning process for removing residual asbestos contamination using damp-cloths, sponges or mops.

**HEPA Filter:** A high efficiency particulate aerosol filter that is at least 99.97 % efficient in collecting a 0.3 micrometre aerosol.

**Personal Protection** **Protective Clothing (not mandatory, but a worker may request it):** Full body disposable clothing including suitable footwear and head covering. The covering must fit snugly at the ankles, wrists and neck in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing and made of material that does not readily retain nor permit penetration of asbestos fibres.

**Personal Protection** **Respiratory Protection (not mandatory, but a worker may request it):** Air purifying half-mask respirator equipped with N-100, R-100 or P-

100 particulate filter. The following shall apply to respiratory protection:

- Respirators shall be approved and labelled for protection against asbestos fibres, and shall be National Institute for Occupational Safety & Health (NIOSH) approved in accordance with Table 2 of Ontario Regulation 278/05.
- All respiratory equipment shall be individually assigned and identified.
- Prior to the use of a respirator, a worker must receive appropriate instruction in its selection, use and care.
- Respirators shall be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet.
- Respirators shall be used and maintained in accordance with written procedures that are consistent with the manufacturer's specifications.
- Respirators shall be cleaned, disinfected and inspected after use on each shift, or more often if necessary.
- Respirators shall have damaged or deteriorated parts replaced prior to being used by a worker.
- When not in use, respirators shall be stored in a convenient, clean and sanitary location.
- No supervisor or worker shall have facial hair which affects the respirator-to-face seal.

## Materials and Equipment

**HEPA Vacuum:** Vacuum cleaner equipped with a high efficiency particulate aerosol filter, fitted with appropriate tools. The vacuum equipment shall have a filtering system that is at least 99.97 % efficient in collecting a 0.3 micrometre aerosol.

**Polyethylene Sheeting:** 6 mil. thickness, in largest sheet size available to minimize seams.

**Sprayer:** Garden reservoir type, low velocity, capable of producing mist or fine spray.

**Small Tools:** Sponge(s), cloth(s), bucket(s), adjustable knife, scraper, etc.

**Adhesive Tape:** Reinforced duct tape or double-sided tape suitable for sealing polyethylene bags and/or sealing polyethylene to all surfaces to be covered. As appropriate, other adhesive tapes or spray adhesives may also be used.

**Asbestos Waste Containers/Bags:** Containers that are dust-tight, impervious to asbestos fibres and identified as containing asbestos. Normally, the containers consist of 6 mil., yellow, polyethylene bags, identified as containing asbestos and sealable with adhesive tape.

**Signage:** Caution/Warning of hazard at the entrance to the work area and that entry into the area is restricted to authorized personnel only.

**Note:** it is **not mandatory to post signs**, but it is good practice to prevent others from entering the immediate vicinity of the work area.

## Safe Work Practices

### General

- Workers shall not eat, drink, smoke or chew while in contaminated work areas.
- Compressed air shall not be used to clean up and remove dust from any surface.

### Facilities

Facilities for washing hands and face (washroom) shall be available to all workers and shall be used by every worker after leaving asbestos work areas.

### Work Area Exit

- If used, respirators/protective clothing must be decontaminated by HEPA vacuuming and/or damp wiping and removed prior to leaving the work area.
- Leave the work area in street clothes and proceed to the nearest washroom to wash exposed skin and respirator (if used) with soap and water.

## Procedure

### 1. Preparation of Work Area

- 1 While it is not mandatory to post signs for a Type 1 operation, it is a good practice to prevent others from entering the immediate vicinity of the work area
- 2 Before beginning work, remove any visible dust from the work area or the surfaces of non-friable asbestos-containing materials by HEPA vacuuming or damp wiping.
- 3 Clear immediate work areas of all moveable furnishings or equipment. Any furnishings or equipment not removed shall be adequately covered using 6 mil. polyethylene and tape.
- 4 Where practical, a drop-sheet below the work is required; if possible, extend the drop-sheet at least 3 feet beyond line of work.

### 2. Execution

- 1 Carefully remove the ceiling tile(s) and place them directly into asbestos waste containers. Double bag all waste as described in 3.1 and HEPA vacuum and/or damp-wipe the second container immediately prior to passing it out of the work area.
- 2 Remove any visible dust from the T-bar frame, with minimum disturbance of the ceiling structure, by HEPA vacuuming.
- 3 At completion of work, HEPA vacuum and/or damp wipe the drop-sheet and reusable tools/equipment. If used, protective clothing/respirators must be decontaminated as described in Safe Work Practices -- "Work Area Exit".
- 6 Dispose of drop-sheets, adhesive tape, protective clothing, cleaning cloths, etc. as asbestos waste.
- 7 Leave the work area in street clothes and proceed to the nearest washroom to wash exposed skin and respirator with

soap and water.

### 3. Waste Transport and Disposal

- 1 Place waste into asbestos waste receptors: Two separate containers (identified as containing asbestos) --- the first container consists of a 6 mil. (minimum thickness) polyethylene bag, sealable with adhesive tape. The second (outer) container may be a second 6 mil. sealable polyethylene bag; the container shall be selected to prevent any perforating rips or tears in the container during filling, transport and disposal. As appropriate, seal the outer container with adhesive tape. HEPA vacuum or damp wipe the outer container to remove any surface contamination.
- 2 \*Transport the sealed container(s) to the storage site at -----  
----- for subsequent disposal in accordance with University of Guelph asbestos waste disposal procedures.

**\* Note: External contractors/consultants must arrange their own transport and disposal; these must be done in accordance with applicable municipal and provincial by-laws and/or regulations.**

## STANDARD OPERATING PROCEDURES FOR THE CONTROL OF ASBESTOS FIBRES DURING TYPE 1 OPERATIONS

### *The Removal of Non-Friable, Asbestos-Containing Material, Other than Ceiling Tiles (Intact)*

**ID# 1.11**

- Application:** These procedures apply to work involving the removal of non-friable, asbestos-containing material, other than ceiling tiles, if the material is removed without being broken, cut, drilled, abraded, ground, sanded, or vibrated (intact). This activity may generate enough airborne asbestos to be classified as a Type 1 operation.
- References:** The procedures are in full compliance with the following:
- 4) Ontario Regulation 278/05, Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act of Ontario.
  - 5) Ministry of Environment Regulations for the disposal of asbestos waste, including R.R.O. 1990, Regulation 347, and subsequent amendments.
  - 6) Ministry of Transportation Regulation for the transport of asbestos waste.
- Definitions:**
- Work Areas:** Where actual work activity involving asbestos takes place.
- Damp-Wiping:** A cleaning process for removing residual asbestos contamination using damp-cloths, sponges or mops.
- HEPA Filter:** A high efficiency particulate aerosol filter that is at least 99.97 % efficient in collecting a 0.3 micrometre aerosol.
- Personal Protection**
- Protective Clothing (not mandatory, but a worker may request it):** Full body disposable clothing including suitable footwear and head covering. The covering must fit snugly at the ankles, wrists and neck in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing and made of material that does not readily retain nor permit penetration of asbestos fibres.
- Personal Protection**
- Respiratory Protection (not mandatory, but a worker may request it):** Air purifying half-mask respirator equipped with N-100, R-100 or P-100 particulate filter. The following shall apply to respiratory protection:
- Respirators shall be approved and labelled for protection against asbestos fibres, and shall be National Institute for Occupational Safety & Health (NIOSH) approved in accordance with Table 2 of Ontario Regulation 278/05.
  - All respiratory equipment shall be individually assigned and

identified.

- Prior to the use of a respirator, a worker must receive appropriate instruction in its selection, use and care.
- Respirators shall be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet.
- Respirators shall be used and maintained in accordance with written procedures that are consistent with the manufacturer's specifications.
- Respirators shall be cleaned, disinfected and inspected after use on each shift, or more often if necessary.
- Respirators shall have damaged or deteriorated parts replaced prior to being used by a worker.
- When not in use, respirators shall be stored in a convenient, clean and sanitary location.
- No supervisor or worker shall have facial hair which affects the respirator-to-face seal.

## Materials and Equipment

**HEPA Vacuum:** Vacuum cleaner equipped with a high efficiency particulate aerosol filter, fitted with appropriate tools. The vacuum equipment shall have a filtering system that is at least 99.97 % efficient in collecting a 0.3 micrometre aerosol.

**Polyethylene Sheeting:** 6 mil. thickness, in largest sheet size available to minimize seams.

**Sprayer:** Garden reservoir type, low velocity, capable of producing mist or fine spray.

**Small Tools:** Sponge(s), cloth(s), bucket(s), adjustable knife, scraper, etc.

**Adhesive Tape:** Reinforced duct tape or double-sided tape suitable for sealing polyethylene bags and/or sealing polyethylene to all surfaces to be covered. As appropriate, other adhesive tapes or spray adhesives may also be used.

**Asbestos Waste Containers/Bags:** Containers that are dust-tight, impervious to asbestos fibres and identified as containing asbestos. Normally, the containers consist of 6 mil., yellow, polyethylene bags, identified as containing asbestos and sealable with adhesive tape.

**Signage:** Caution/Warning of hazard at the entrance to the work area and that entry into the area is restricted to authorized personnel only.

Note: it is **not mandatory to post signs**, but it is good practice to prevent others from entering the immediate vicinity of the work area.

## Safe Work Practices

### General

- Workers shall not eat, drink, smoke or chew while in contaminated work areas.

- Compressed air shall not be used to clean up and remove dust from any surface.

### **Facilities**

Facilities for washing hands and face (washroom) shall be available to all workers and shall be used by every worker after leaving asbestos work areas.

### **Work Area Exit**

- When removing asbestos-containing floor products, workers must clean shoes by HEPA vacuuming or damp wiping prior to leaving the work area.
- If used, respirators/protective clothing must be decontaminated by HEPA vacuuming and/or damp wiping and removed prior to leaving the work area.
- Leave the work area in street clothes and proceed to the nearest washroom to wash exposed skin and respirator (if used) with soap and water.

## **Procedure**

### **1. Preparation of Work Area**

- 1 While it is not mandatory to post signs for a Type 1 operation, it is a good practice to prevent others from entering the immediate vicinity of the work area
- 2 Before beginning work, remove any visible dust from the work area or the surfaces of non-friable asbestos-containing materials by HEPA vacuuming or damp wiping.
- 3 Where practical, cover floor and anything below the work with polyethylene drop-sheets to catch debris.

### **2. Execution**

- 1 Carefully begin removal of the non-friable, asbestos-containing material (**intact**) using hand-powered, hand-held tools (if appropriate).
- 2 Continue removal; as non-friable waste is generated, place it directly into the asbestos waste containers. Double-bag all waste as described in 3.1 and HEPA vacuum and damp-wipe the second container immediately prior to passing it from the work area.
- 4 Frequently and at regular intervals during the doing of work and immediately upon completion of the work, remove dust and waste from the workplace by HEPA vacuuming and/or damp-wiping.
- 5 At completion of work, HEPA vacuum and/or damp wipe the drop-sheet (if used) and reusable tools/equipment. If used, protective clothing/respirators must be decontaminated as described in Safe Work Practices -- "Work Area Exit".
- 6 Dispose of drop-sheets (if used), adhesive tape, protective clothing, cleaning cloths, etc. as asbestos waste.
- 7 Leave the work area in street clothes and proceed to the

nearest washroom to wash exposed skin and respirator with soap and water.

### 3. Waste Transport and Disposal

- 3 Place waste into asbestos waste receptors: Two separate containers (identified as containing asbestos) --- the first container consists of a 6 mil. (minimum thickness) polyethylene bag, sealable with adhesive tape. The second (outer) container may be a second 6 mil. sealable polyethylene bag; the container shall be selected to prevent any perforating rips or tears in the container during filling, transport and disposal. As appropriate, seal the outer container with adhesive tape. HEPA vacuum or damp wipe the outer container to remove any surface contamination.
- 4 \*Transport the sealed container(s) to the storage site at -----  
----- for subsequent disposal in accordance with University of Guelph asbestos waste disposal procedures.

**\* Note: External contractors/consultants must arrange their own transport and disposal; these must be done in accordance with applicable municipal and provincial by-laws and/or regulations.**



## STANDARD OPERATING PROCEDURES FOR THE CONTROL OF ASBESTOS FIBRES DURING TYPE 1 OPERATIONS

### Breaking, Cutting, Drilling, Abrading, Grinding, Sanding or Vibrating Non-Friable Asbestos-Containing Material

ID# 1.12

(Includes Wetting and Only Non-Powered, Hand-Held Tools)

**Application:** These procedures apply to the breaking, cutting, drilling, abrading, grinding, sanding or vibrating of non-friable, asbestos-containing materials that are wetted and involve only the use of non-powered, hand-held tools. This activity may generate enough airborne asbestos to be classified as a Type 1 operation.

**References:** The procedures are in full compliance with the following:

- 7) Ontario Regulation 278/05, Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act of Ontario.
- 8) Ministry of Environment Regulations for the disposal of asbestos waste, including R.R.O. 1990, Regulation 347, and subsequent amendments.
- 9) Ministry of Transportation Regulation for the transport of asbestos waste.

**Definitions:** **Work Areas:** Where actual work activity involving asbestos takes place.

**Damp-Wiping:** A cleaning process for removing residual asbestos contamination using damp-cloths, sponges or mops.

**HEPA Filter:** A high efficiency particulate aerosol filter that is at least 99.97 % efficient in collecting a 0.3 micrometre aerosol.

**Personal Protection** **Protective Clothing (not mandatory, but a worker may request it):** Full body disposable clothing including suitable footwear and head covering. The covering must fit snugly at the ankles, wrists and neck in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing and made of material that does not readily retain nor permit penetration of asbestos fibres.

**Personal Protection** **Respiratory Protection (not mandatory, but a worker may request it):** Air purifying half-mask respirator equipped with N-100, R-100 or P-100 particulate filter. The following shall apply to respiratory protection:

- Respirators shall be approved and labelled for protection against asbestos fibres, and shall be National Institute for Occupational Safety & Health (NIOSH) approved in accordance with Table 2 of Ontario Regulation 278/05.
- All respiratory equipment shall be individually assigned and

identified.

- Prior to the use of a respirator, a worker must receive appropriate instruction in its selection, use and care.
- Respirators shall be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet.
- Respirators shall be used and maintained in accordance with written procedures that are consistent with the manufacturer's specifications.
- Respirators shall be cleaned, disinfected and inspected after use on each shift, or more often if necessary.
- Respirators shall have damaged or deteriorated parts replaced prior to being used by a worker.
- When not in use, respirators shall be stored in a convenient, clean and sanitary location.
- No supervisor or worker shall have facial hair which affects the respirator-to-face seal.

## Materials and Equipment

**HEPA Vacuum:** Vacuum cleaner equipped with a high efficiency particulate aerosol filter, fitted with appropriate tools. The vacuum equipment shall have a filtering system that is at least 99.97 % efficient in collecting a 0.3 micrometre aerosol.

**Polyethylene Sheeting:** 6 mil. thickness, in largest sheet size available to minimize seams.

**Amended Water:** Water with wetting agent added for the purpose of reducing surface tension to allow thorough wetting of the asbestos-containing material.

**Sprayer:** Garden reservoir type, low velocity, capable of producing mist or fine spray.

**Small Tools:** Sponge(s), cloth(s), bucket(s), adjustable knife, scraper.

**Adhesive Tape:** Reinforced duct tape or double-sided tape suitable for sealing polyethylene bags and/or sealing polyethylene to all surfaces to be covered. As appropriate, other adhesive tapes or spray adhesives may also be used.

**Asbestos Waste Containers/Bags:** Containers that are dust-tight, impervious to asbestos fibres and identified as containing asbestos. Normally, the containers consist of 6 mil., yellow, polyethylene bags, identified as containing asbestos and sealable with adhesive tape.

**Signage:** Caution/Warning of hazard at the entrance to the work area and that entry into the area is restricted to authorized personnel only.

**Note:** it is **not mandatory to post signs**, but it is good practice to prevent others from entering the immediate vicinity of the work area.

## Safe Work Practices

### General

- Workers shall not eat, drink, smoke or chew while in contaminated work areas.

- Compressed air shall not be used to clean up and remove dust from any surface.

### **Facilities**

Facilities for washing hands and face (washroom) shall be available to all workers and shall be used by every worker after leaving asbestos work areas.

### **Work Area Exit**

- When removing asbestos-containing floor products, workers must clean shoes by HEPA vacuuming or damp wiping prior to leaving the work area.
- If used, respirators/protective clothing must be decontaminated by HEPA vacuuming and/or damp wiping and removed prior to leaving the work area.
- Leave the work area in street clothes and proceed to the nearest washroom to wash exposed skin and respirator (if used) with soap and water.

## **Procedure**

### **1. Preparation of Work Area**

- 1 While it is not mandatory to post signs for a Type 1 operation, it is a good practice to prevent others from entering the immediate vicinity of the work area
- 2 Before beginning work, remove any visible dust from the work area or the surfaces of non-friable asbestos-containing materials by HEPA vacuuming or damp wiping.
- 3 Where practical, cover floor and anything below the work with polyethylene drop-sheets to catch debris.

### **2. Execution**

- 1 Use amended water to thoroughly wet the non-friable, asbestos-containing materials to be removed.
- 2 Start the operation by using appropriate non-powered, hand-held tools (heavy-duty scraper, screwdriver, etc.) to wedge/unscrew/break/cut/drill/grind/etc. the non-friable, asbestos-containing material.
- 3 Continue removal of panels/tiles or other activity using hand tools and amended water; as non-friable waste is generated, place it directly into the asbestos waste containers. Do not use powered electric scrapers or other power tools. Double-bag all waste as described in 3.1 and HEPA vacuum and/or damp-wipe the second container immediately prior to passing it from the work area.
- 4 Frequently and at regular intervals during the doing of work and immediately upon completion of the work, remove dust and waste from the workplace by HEPA vacuuming or damp-wiping.
- 5 At completion of work, HEPA vacuum and/or damp wipe the drop-sheet (if used) and reusable tools/equipment. If used, protective clothing/respirators must be decontaminated as

described in Safe Work Practices -- "Work Area Exit".

- 6 Dispose of drop-sheets (if used), adhesive tape, protective clothing, cleaning cloths, etc. as asbestos waste.
- 7 Leave the work area in street clothes and proceed to the nearest washroom to wash exposed skin and respirator with soap and water.

### 3. Waste Transport and Disposal

- 5 Place waste into asbestos waste receptors: Two separate containers (identified as containing asbestos) --- the first container consists of a 6 mil. (minimum thickness) polyethylene bag, sealable with adhesive tape. The second (outer) container may be a second 6 mil. sealable polyethylene bag; the container shall be selected to prevent any perforating rips or tears in the container during filling, transport and disposal. As appropriate, seal the outer container with adhesive tape. HEPA vacuum or damp wipe the outer container to remove any surface contamination.
- 6 \*Transport the sealed container(s) to the storage site at -----  
----- for subsequent disposal in accordance with University of Guelph asbestos waste disposal procedures.

**\* Note: External contractors/consultants must arrange their own transport and disposal; these must be done in accordance with applicable municipal and provincial by-laws and/or regulations.**

## STANDARD OPERATING PROCEDURES FOR THE CONTROL OF ASBESTOS FIBRES DURING TYPE 1 OPERATIONS

### *The Removal of Vinyl Asbestos Floor Tiles (Involves Breaking)*

**ID# 1.13**

*(Includes Wetting and Only Non-Powered, Hand-Held Tools)*

**Application:** These procedures apply to work involving the removal of vinyl-asbestos floor tiles where many tiles cannot be removed intact (without breaking into smaller pieces), if the material is wetted and involves only the use of non-powered, hand-held tools. This activity may generate enough airborne asbestos to be classified as a Type 1 operation.

**References:** The procedures are in full compliance with the following:

- 10) Ontario Regulation 278/05, Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act of Ontario.
- 11) Ministry of Environment Regulations for the disposal of asbestos waste, including R.R.O. 1990, Regulation 347, and subsequent amendments.
- 12) Ministry of Transportation Regulation for the transport of asbestos waste.

**Definitions:** **Work Areas:** Where actual work activity involving asbestos takes place.

**Damp-Wiping:** A cleaning process for removing residual asbestos contamination using damp-cloths, sponges or mops.

**HEPA Filter:** A high efficiency particulate aerosol filter that is at least 99.97 % efficient in collecting a 0.3 micrometre aerosol.

**Personal Protection** **Protective Clothing (not mandatory, but a worker may request it):** Full body disposable clothing including suitable footwear and head covering. The covering must fit snugly at the ankles, wrists and neck in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing and made of material that does not readily retain nor permit penetration of asbestos fibres.

**Personal Protection** **Respiratory Protection (not mandatory, but a worker may request it):** Air purifying half-mask respirator equipped with N-100, R-100 or P-100 particulate filter. The following shall apply to respiratory protection:

- Respirators shall be approved and labelled for protection against asbestos fibres, and shall be National Institute for Occupational Safety & Health (NIOSH) approved in accordance with Table 2 of Ontario Regulation 278/05.

- All respiratory equipment shall be individually assigned and identified.
- Prior to the use of a respirator, a worker must receive appropriate instruction in its selection, use and care.
- Respirators shall be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet.
- Respirators shall be used and maintained in accordance with written procedures that are consistent with the manufacturer's specifications.
- Respirators shall be cleaned, disinfected and inspected after use on each shift, or more often if necessary.
- Respirators shall have damaged or deteriorated parts replaced prior to being used by a worker.
- When not in use, respirators shall be stored in a convenient, clean and sanitary location.
- No supervisor or worker shall have facial hair which affects the respirator-to-face seal.

## Materials and Equipment

**HEPA Vacuum:** Vacuum cleaner equipped with a high efficiency particulate aerosol filter, fitted with appropriate tools. The vacuum equipment shall have a filtering system that is at least 99.97 % efficient in collecting a 0.3 micrometre aerosol.

**Amended Water:** Water with wetting agent added for the purpose of reducing surface tension to allow thorough wetting of the asbestos-containing material.

**Sprayer:** Garden reservoir type, low velocity, capable of producing mist or fine spray.

**Small Tools:** Sponge(s), cloth(s), bucket(s), adjustable knife, scraper, etc.

**Adhesive Tape:** Reinforced duct tape or double-sided tape suitable for sealing polyethylene bags and/or sealing polyethylene to all surfaces to be covered. As appropriate, other adhesive tapes or spray adhesives may also be used.

**Asbestos Waste Containers/Bags:** Containers that are dust-tight, impervious to asbestos fibres and identified as containing asbestos. Normally, the containers consist of 6 mil., yellow, polyethylene bags, identified as containing asbestos and sealable with adhesive tape.

**Signage:** Caution/Warning of hazard at the entrance to the work area and that entry into the area is restricted to authorized personnel only.

Note: it is **not mandatory to post signs**, but it is good practice to prevent others from entering the immediate vicinity of the work area.

## Safe Work Practices

### General

- Workers shall not eat, drink, smoke or chew while in contaminated

work areas.

- Compressed air shall not be used to clean up and remove dust from any surface.

### **Facilities**

Facilities for washing hands and face (washroom) shall be available to all workers and shall be used by every worker after leaving asbestos work areas.

### **Work Area Exit**

- Workers must clean shoes by HEPA vacuuming or damp wiping prior to leaving the work area.
- If used, respirators/protective clothing must be decontaminated by HEPA vacuuming and/or damp wiping and removed prior to leaving the work area.
- Leave the work area in street clothes and proceed to the nearest washroom to wash exposed skin and respirator (if used) with soap and water.

## **Procedure**

### **1. Preparation of Work Area**

- 1 While it is not mandatory to post signs for a Type 1 operation, it is a good practice to prevent others from entering the immediate vicinity of the work area
- 2 Before beginning work, remove any visible dust from the work area or the surfaces of non-friable asbestos-containing materials by HEPA vacuuming or damp wiping.

### **2. Execution**

- 1 Use amended water to thoroughly wet the vinyl asbestos-containing tiles to be removed.
- 2 Start removal by wedging a heavy duty scraper in the seam of two adjoining tiles and gradually forcing the edge of one tile up and away from floor.
- 3 Continue removal of tiles using hand tools and amended water, and placing whole and broken tiles directly into the asbestos waste containers. When the adhesive is spread heavily or is quite hard, force the scraper through these areas by striking its handle with a hammer and using blows of moderate force. Adhesive scrapings must also be deposited into the asbestos waste containers. Double-bag all waste as described in 3.1 and HEPA vacuum and/or damp-wipe the second container immediately prior to passing it from the work area.
- 4 Frequently and at regular intervals during the doing of work and immediately upon completion of the work, remove dust and waste from the workplace by HEPA vacuuming or damp-wiping.
- 5 Clean all reusable tools/equipment by HEPA vacuuming or damp-wiping. If used, protective clothing/respirators must be decontaminated as described in Safe Work Practices -- "Work Area Exit". Dispose of protective clothing as asbestos waste.

- 6 Leave the work area in street clothes and proceed to the nearest washroom to wash exposed skin and respirator with soap and water.

### 3. Waste Transport and Disposal

- 7 Place waste into asbestos waste receptors: Two separate containers (identified as containing asbestos) --- the first container consists of a 6 mil. (minimum thickness) polyethylene bag, sealable with adhesive tape. The second (outer) container may be a second 6 mil. sealable polyethylene bag; the container shall be selected to prevent any perforating rips or tears in the container during filling, transport and disposal. As appropriate, seal the outer container with adhesive tape. HEPA vacuum or damp wipe the outer container to remove any surface contamination.
- 8 \*Transport the sealed container(s) to the storage site at -----  
----- for subsequent disposal in accordance with University of Guelph asbestos waste disposal procedures.

**\* Note: External contractors/consultants must arrange their own transport and disposal; these must be done in accordance with applicable municipal and provincial by-laws and/or regulations.**



## STANDARD OPERATING PROCEDURES FOR THE CONTROL OF ASBESTOS FIBRES DURING TYPE 1 OPERATIONS

### *The Removal of Less Than One Square Metre of Drywall in which Asbestos-Containing, Joint-Filling compounds have been used*

ID# 1.20

- Application:** These procedures apply to the removal of less than 1 m<sup>2</sup> of drywall in which asbestos-containing, joint-filling compounds have been used; classification is based according to total area on which work is done consecutively in a room or enclosed area, even if the work is divided into smaller jobs. This activity may generate enough airborne asbestos to be classified as a Type 1 operation.
- References:** The procedures are in full compliance with the following:
- 13) Ontario Regulation 278/05, Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act of Ontario.
  - 14) Ministry of Environment Regulations for the disposal of asbestos waste, including R.R.O. 1990, Regulation 347, and subsequent amendments.
  - 15) Ministry of Transportation Regulation for the transport of asbestos waste.
- Definitions:**
- Work Areas:** Where actual work activity involving asbestos takes place.
- Damp-Wiping:** A cleaning process for removing residual asbestos contamination using damp-cloths, sponges or mops.
- HEPA Filter:** A high efficiency particulate aerosol filter that is at least 99.97 % efficient in collecting a 0.3 micrometre aerosol.
- Personal Protection**
- Protective Clothing (not mandatory, but a worker may request it):** Full body disposable clothing including suitable footwear and head covering. The covering must fit snugly at the ankles, wrists and neck in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing and made of material that does not readily retain nor permit penetration of asbestos fibres.
- Personal Protection**
- Respiratory Protection (not mandatory, but a worker may request it):** Air purifying half-mask respirator equipped with N-100, R-100 or P-100 particulate filter. The following shall apply to respiratory protection:
- Respirators shall be approved and labelled for protection against asbestos fibres, and shall be National Institute for Occupational Safety & Health (NIOSH) approved in accordance with Table 2 of

Ontario Regulation 278/05.

- All respiratory equipment shall be individually assigned and identified.
- Prior to the use of a respirator, a worker must receive appropriate instruction in its selection, use and care.
- Respirators shall be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet.
- Respirators shall be used and maintained in accordance with written procedures that are consistent with the manufacturer's specifications.
- Respirators shall be cleaned, disinfected and inspected after use on each shift, or more often if necessary.
- Respirators shall have damaged or deteriorated parts replaced prior to being used by a worker.
- When not in use, respirators shall be stored in a convenient, clean and sanitary location.
- No supervisor or worker shall have facial hair which affects the respirator-to-face seal.

## Materials and Equipment

**HEPA Vacuum:** Vacuum cleaner equipped with a high efficiency particulate aerosol filter, fitted with appropriate tools. The vacuum equipment shall have a filtering system that is at least 99.97 % efficient in collecting a 0.3 micrometre aerosol.

**Polyethylene Sheeting:** 6 mil. thickness, in largest sheet size available to minimize seams.

**Amended Water:** Water with wetting agent added for the purpose of reducing surface tension to allow thorough wetting of the asbestos-containing material.

**Sprayer:** Garden reservoir type, low velocity, capable of producing mist or fine spray.

**Small Tools:** Sponge(s), cloth(s), bucket(s), adjustable knife, ladder, etc.

**Adhesive Tape:** Reinforced duct tape or double-sided tape suitable for sealing polyethylene bags and/or sealing polyethylene to all surfaces to be covered. As appropriate, other adhesive tapes or spray adhesives may also be used.

**Asbestos Waste Containers/Bags:** Containers that are dust-tight, impervious to asbestos fibres and identified as containing asbestos. Normally, the containers consist of 6 mil., yellow, polyethylene bags, identified as containing asbestos and sealable with adhesive tape.

**Signage:** Caution/Warning of hazard at the entrance to the work area and that entry into the area is restricted to authorized personnel only.

Note: it is **not mandatory to post signs**, but it is good practice to prevent others from entering the immediate vicinity of the work area.

## Safe Work Practices

### General

- Workers shall not eat, drink, smoke or chew while in contaminated work areas.
- Compressed air shall not be used to clean up and remove dust from any surface.

### Facilities

Facilities for washing hands and face (washroom) shall be available to all workers and shall be used by every worker after leaving asbestos work areas.

### Work Area Exit

- Workers must clean shoes by HEPA vacuuming or damp wiping prior to leaving the work area.
- If used, respirators/protective clothing must be decontaminated by HEPA vacuuming and/or damp wiping and removed prior to leaving the work area.
- Leave the work area in street clothes and proceed to the nearest washroom to wash exposed skin and respirator (if used) with soap and water.

## Procedure

### 1. Preparation of Work Area

- 1 While it is not mandatory to post signs for a Type 1 operation, it is a good practice to prevent others from entering the immediate vicinity of the work area
- 2 Before beginning work, remove any visible dust from the work area or the surfaces of non-friable asbestos-containing materials by HEPA vacuuming or damp wiping.
- 3 Clear immediate work areas of all moveable furnishings or equipment. Any furnishings or equipment not removed shall be adequately covered using 6 mil. polyethylene and tape.
- 4 Where practical, a drop-sheet below the work is required; if possible, extend the drop-sheet at least 3 feet beyond line of work.

### 2. Execution

- 1 Use amended water to thoroughly wet the section(s) of drywall to be removed.
- 2 Continue to wet the material while cutting the required section(s) of drywall. Carefully remove the section(s) and place them directly into asbestos waste/sample containers. Double bag all waste as described in 3.1 and HEPA vacuum and/or damp-wipe the second container immediately prior to passing it out of the work area.
- 3 At completion of work, HEPA vacuum and/or damp wipe the drop-sheet and reusable tools/equipment. If used, protective clothing/respirators must be decontaminated as described in Safe Work Practices -- "Work Area Exit".

- 6 Dispose of drop-sheets, adhesive tape, protective clothing, cleaning cloths, etc. as asbestos waste.
- 7 Leave the work area in street clothes and proceed to the nearest washroom to wash exposed skin and respirator with soap and water.

### 3. Waste Transport and Disposal

- 9 Place waste into asbestos waste receptors: Two separate containers (identified as containing asbestos) --- the first container consists of a 6 mil. (minimum thickness) polyethylene bag, sealable with adhesive tape. The second (outer) container may be a second 6 mil. sealable polyethylene bag; the container shall be selected to prevent any perforating rips or tears in the container during filling, transport and disposal. As appropriate, seal the outer container with adhesive tape. HEPA vacuum or damp wipe the outer container to remove any surface contamination.
- 10 \*Transport the sealed container(s) to the storage site at -----  
----- for subsequent disposal in accordance with University of Guelph asbestos waste disposal procedures.

**\* Note: External contractors/consultants must arrange their own transport and disposal; these must be done in accordance with applicable municipal and provincial by-laws and/or regulations.**