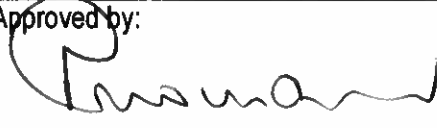



Complete Program Title: Asbestos Management Control Program	Risk Management Manual (RMM) Number: 401
Approved by:  Vice-President, Administration  President and Vice-Chancellor	Date of Most Recent Approval: September 2018
Date of Original Approval: December 2002	Supersedes/Amends Program dated: July 2013
Responsible Executive: Vice-President, Administration	Enquiries: Environmental and Occupational Health Support Services (EOHSS) eohtss@mcmaster.ca
DISCLAIMER: <i>If there is a discrepancy between this electronic program and the written copy held by the program owner, the written copy prevails.</i>	

1 PURPOSE

- 1.1 To provide for the health and safety of faculty, staff, students, visitors and contractors by implementing and maintaining a comprehensive Asbestos Management Control Program for all locations with asbestos-containing materials, and for all work involving contact with asbestos-containing materials.
- 1.2 To ensure compliance with the Occupational Health and Safety Act, Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, and the Environmental Protection Act.

2 SCOPE

- 2.1 All faculty, staff, students, visitors and contractors.

3 RELATED DOCUMENTS

- 3.1 Environmental Protection Act R.S.O., Amended to 461/05
- 3.2 Occupational Health and Safety Act R.S.O. 1990
- 3.3 O. Reg. 278/05, November, 2005, Designated Substance – Asbestos On Construction Projects and in Buildings and Repair Operations

(Appendix A)

- 3.4 McMaster University Risk Management Manual #100 Workplace and Environmental Health and Safety Policy
- 3.5 McMaster University Risk Management Manual #111 Contracting Work Safety -Due Diligence Program
- 3.6 McMaster University Risk Management Manual #301 Standard Operating Procedures (SOP) Policy
- 3.7 McMaster University Risk Management Manual #300 Safety Training and Orientation Program
- 3.8 McMaster University Risk Management Manual #311 Respiratory Protection Program
- 3.9 Risk Management Manual #404 Hamilton Health Sciences Asbestos Control Program
- 3.10

4 DEFINITIONS

- 4.1 **Asbestos** – Fibrous silicates are: Actinolite, Amosite, Anthophyllite, Chrysotile, Crocidolite and Tremolite.
- 4.2 **Asbestos Co-ordinator** – a person appointed by the University to implement and co-ordinate the Asbestos Management Control Plan.
- 4.3 **Contractor** - a person or company that undertakes a contract to provide materials or labor to perform a service or do a job in University facilities.
- 4.4 **Asbestos Inventory** - the Asbestos Inventory is a record of the location of all friable and non-friable asbestos-containing materials present within a building, or those suspected of containing asbestos. The Inventory is available to any employee whose work may result in the disturbance of such materials. The details of the Inventory will be made available to University employees upon request.
- 4.5 **Asbestosis** – a degenerative disease of the lungs caused by breathing asbestos fibres.
- 4.6 **Designated Substance** – a biological, chemical or physical agent or combination thereof prescribed as a designated substance to which the exposure of a worker is prohibited, regulated, restricted, limited or controlled, i.e. asbestos is one of eleven Designated Substances regulated by the Ministry of Labour.
- 4.7 **Employer** – a person who employs one or more workers or contracts for the services of one or more workers and includes a contractor or subcontractor who performs work or supplies services, and a contractor or subcontractor who undertakes with the owner, constructor, contractor or subcontractor, to perform work or supply services.
- 4.8 **Friable Material** – means material that,
 - (a) when dry, can be crumbled, pulverized or powdered by hand pressure, or
 - (b) is crumbled, pulverized or powdered;

-
- 4.9 **Mesothelioma** – an asbestos related cancer of the chest and/or abdomen with diagnostic signs and symptoms similar to pleurisy.
- 4.10 **Owner** – includes a trustee, receiver, mortgagee in possession, tenant, lessee or occupier of any lands or premises used or to be used as a workplace, and a person who acts for or on behalf of an owner or as an agent or delegate.
- 4.11 **Record** – asbestos containing material inventory including location, type of asbestos containing material (friable or non-friable) and condition of material.
- 4.12 **Supervisor** – person who has charge of a workplace or authority over a worker.
- 4.13 **Worker** – means any of the following, but does not include an inmate of a correctional institution or like institution or facility who participates inside the institution or facility in a work project or rehabilitation program:
1. A person who performs work or supplies services for monetary compensation.
 2. A secondary school student who performs work or supplies services for no monetary compensation under a work experience program authorized by the school board that operates the school in which the student is enrolled.
 3. A person who performs work or supplies services for no monetary compensation under a program approved by a college of applied arts and technology, university or other post-secondary institution.
 4. A person who receives training from an employer, but who, under the *Employment Standards Act, 2000*, is not an employee for the purposes of that Act because the conditions set out in subsection 1 (2) of that Act have been met.
 5. Such other persons as may be prescribed who perform work or supply services to an employer for no monetary compensation; (“travailleur”)
- 4.14 **Project Manager** – a person designated by the University to manage specific maintenance and/or construction projects.
- 4.15 **TLV** – Threshold Limit Values is a guideline that refers to airborne concentrations of chemical substances and represents conditions under which it is believed that nearly all workers may be repeatedly exposed, day after day, over a working lifetime without adverse health effects.

Acronyms

ACM – Asbestos-Containing Material

AMCP - Asbestos Management Control Program

CJHSC – Central Joint Health and Safety Committee

EOHSS – Environmental and Occupational Health Support Services

FHS Safety Office– Faculty of Health Sciences Safety Office

JHSC – Joint Health and Safety Committee

MOECC – Ministry of the Environment and Climate Change

MOL – Ministry of Labour

OHSA – Occupational Health and Safety Act

SOP – Standard Operating Procedure

TLV – Threshold Limit Value

5 RESPONSIBILITIES

5.1 Role of Senior Managers (Directors/Deans/Chairs/Department Managers):

Senior Managers shall:

- provide the resources and direction necessary to support and maintain an effective Asbestos Management Control Program;
- ensure Asbestos Management Control Program is enforced;
- ensure occupants of the building are notified of the Asbestos Management Control Program.

5.2 Role of the Facility Services Department:

The Facility Services Department is responsible for the implementation and management of the Asbestos Management Control Program (AMCP) that shall include but not be limited to the following elements:

- assign an Asbestos Co-ordinator to manage and assist with the AMCP;
- ensure that McMaster workers are not performing Type 1, 2 and Type 3 operations;
- give a worker or contractor written notice of the information in the record if the work may involve material mentioned in the record or may be carried out in close proximity to the material that it may be disturbed;
- ensure contractors performing work have completed all required asbestos training as approved by the Ministry of Training, Colleges and Universities;
-contractor supervisors of workers in a Type 3 operation shall successfully complete the Asbestos Abatement Supervisor Training Program; and shall complete prior to performing or supervising the work (Appendix G);

-
- a system to record the names of all persons including contractors trained and the training dates, including respirator fit testing as described in RMM Policy #311 Respiratory Protection Program;
 - a process for Facility Services workers and contractors who may disturb asbestos containing materials and the procedures required to conduct such work safely (Appendix A);
 - periodic inspections of friable materials to assess conditions and the need for remedial action and environmental sampling;
 - update the record at least annually, and when aware of new information related to the matters the record deals with;
 - coordinate the repairs and/or removal of ACM identified to be in poor condition;
 - material sampling and testing procedures; (Appendix C & F)
 - building air monitoring requirements on projects administered by Facility Services (see Appendix B);
 - workplace safety procedures, hygiene procedures and personal protective equipment (i.e. respirators, disposable coveralls) (Appendix F);
 - asbestos waste containment and disposal procedures;
 - notice of asbestos construction projects to EOHSS prior to start date;
 - shall ensure MOL is advised of all projects in writing involving certain Type 2 and Type 3 operations and forwarding to EOHSS prior to reporting to the MOL, (Appendix D) and;
 - arrange Asbestos Awareness training for project managers.

5.3 Role of Asbestos Co-ordinator

The Asbestos Co-ordinator shall manage and co-ordinate the following components of the AMCP:

- a survey which identifies all locations of ACM and asbestos type(s);
an up-to-date inventory identifying where asbestos containing material (ACM) exists, including floor plans indicating locations of ACM;
N.B. This inventory shall be updated on all occasions when asbestos-containing material is repaired and/or removed;

- update asbestos inventory on an on-going basis and review accuracy and document at a minimum annually;
- co-ordinate periodic inspections of ACM locations to assess condition;
- results of sampling(s) shall be updated into the inventory;
- control of emergency and scheduled work, and emergency procedures (Appendix K);
 - respond to reports of asbestos debris, or deteriorated or damaged materials on an emergency basis;
 - arrange for pre-renovation/demolition surveys to check for asbestos-containing materials in concealed locations such as wall cavities and pipe chases prior to start of work;
 - arrange for Type 2/Type 3 maintenance/emergency work;
 - when required on a construction or building maintenance contract for certain Type 2 and or Type 3 removal, arrange for removal or abatement project; and tenderers must be provided with written notice of locations of friable materials and other information prescribed by O. Reg. 278/05; and
- should there be an equivalent measure or procedure which may vary from the O.Reg. 278/05, the Asbestos Co-ordinator shall ensure written procedure are provided to EOHSS and a JHSC worker representative (Section 23 (2)); and (Appendix I);
- SOPs' for the implementation of Type 1, Type 2, Glove Bag or Type 3 procedures as appropriate for maintenance, restoration and renovation work by contractors (Appendix A);
- shall ensure MOL is advised of all projects in writing involving certain Type 2 and Type 3 operations, and (Appendix D);
- shall ensure that air sampling for asbestos fibres follows the procedure outlined in Reg 278/05 for Type 3 Clearance Air Testing (Section 18 (6) 1. through to 5.), Appendix E. If required, all other air sampling for airborne asbestos shall follow NIOSH 7400, see Appendix B.

5.4 Role of a Project Managers:

A Project Managers shall ensure that:

- the Asbestos Co-ordinator is contacted for all projects that involve direct and/or potential contact with ACM; contractors and their employees are aware of the

AMCP and the location and type of asbestos-containing material and provided a written report;

- contractors' employees have been trained and certified in AMCP procedures appropriate for the project, i.e. Type 1, Type 2, Glove Bag, Type 3, asbestos procedures;
(Workers involved in Type 3 shall successfully complete the Asbestos Abatement Worker Training Program approved by the Ministry of Training, Colleges and Universities; Supervisor of a worker in a Type 3 operation shall successfully complete the Asbestos Abatement Supervisor Training Program; and shall complete prior to performing or supervising the work.) (Appendix G);
- required training certificates for contractors are obtained and filed on-site by the contract Administrator prior to the start of any work;
- plans and specifications for all Type 2 or Type 3 are drafted and implemented as required by Regulation 278/05;
- EOHSS is notified prior to upcoming work involving Type 2, or Type 3 asbestos abatement as per the Communication Protocol (Appendix M);
- building air monitoring procedures are considered and implemented when required, and EOHSS consulted;
- building occupants as well as all related Faculty (i.e. the Office of the Dean) impacted by work shall be contacted prior to the start of asbestos abatement by way of a Building Occupants Meeting to provide details of the work (Appendix M);
- notice of project signs are posted in locations that cover all access to the area and that would include emergency remediation communicated to the occupants and JHSC worker representative through the Directors/Deans/Chairs/Department Managers;
- inform EOHSS and JHSC of any air sampling conducted throughout the project prior to the start of sampling;
- all persons in the area, EOHSS and JHSC are informed that any disturbance of the possible asbestos containing material should be reported immediately to the project manager;
- all persons in the area, EOHSS and JHSC are informed when the work has been completed;
- should there be an equivalent measure or procedure which may vary from the O.Reg. 278/05, the Project Manager shall ensure a written procedure is submitted to EOHSS and to the JHSC worker representative (Section 23 (2)) and (Appendix I);

- shall ensure MOL is advised of all projects in writing involving certain Type 2 and Type 3 operations and forwarding to EOHSS prior to reporting to the MOL, and copy to Facility Services Asbestos Co-ordinator (Appendix D);
- complete Inventory Feedback form and provide to Asbestos Co-ordinator of completed work to update the asbestos inventory accordingly; and
- assist the Asbestos Coordinator to complete the annual inventory update by providing a summary of all ACM related work completed in that year.

5.5 Role of Supervisors/Managers (Administrative and Faculty)
Supervisors shall ensure that:

- all people who may be affected by the work are notified;
- the requirements of the AMCP are strictly enforced;
- Facility Services and EOHSS are notified of any activity that may result in persons coming into contact with building structures, equipment or materials that are known or suspected of containing asbestos; and
- engage Facility Services for all work that will involve building structure or components.

5.6 Role of Contractor:
Contractors shall:

- acknowledge requirements as described in RMM Policy #111, Contracting Work Safety/Due Diligence Program;
- work in compliance with the procedures issued under the AMCP;
- ensure McMaster University approved project specific asbestos procedures are implemented for all work in McMaster University facilities;
- ensure that only workers trained and authorized in Type 1, Type 2, Glove Bag or Type 3 asbestos work procedures are assigned to work involving contact with material containing asbestos;
- ensure that all asbestos contained waste material is disposed of in a manner approved by MOECC and local authorities;

-
- shall ensure MOL is advised of all projects in writing involving certain Type 2 and Type 3 operations and forwarding a copy to EOHSS prior to filing with MOL, and a copy to the Project Manager/Supervisor (Appendix D) and;
 - ensure that should there be an equivalent measure or procedure, which may vary from the O. Reg. 278/05, develop a written procedure and forward a copy to EOHSS, JHSC worker representative (Section 23 (2)) (Appendix I).

5.7 Role of Authorized Person:

Authorized Person shall:

- have received training and work in compliance with the procedures issued under the AMCP;
- use protective equipment as required by the procedures issued under the AMCP;
- participate in require medical surveillance programs as required by the AMCP; and
- dispose of friable asbestos material in the prescribed manner by MOE and local authorities.

5.8 Role of Environmental and Occupational Health Support Services/Faculty of Health Sciences Safety Office:

EOHSS/FHS Safety Office shall:

- develop, implement and update this program, and monitor the Hamilton Health Sciences Corporation's Asbestos Management Plan for the McMaster University site;
- provide advice and assistance in developing AMCP training programs;
- assess and provide comment on major asbestos abatement projects;
- consult on asbestos related issues and investigate all reported asbestos related incidents; Type 2 and Type 3, in consultation with the JHSC worker representative;
- notify JHSC of the project (Type 2 or Type 3) and expected timelines, including notification of testing/sampling to permit attendance by a JHSC worker representative and/or Central JHSC worker co-chair. EOHSS shall notify JHSC worker representative of any testing and request attendance. Results of the testing/sampling to be communicated to the JHSC;

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- audit and provide comment on the AMCP on a scheduled basis, and submit to CJHSC for review;
 - provide for an annual asbestos awareness notice to be communicated to building occupants;
 - develop and conduct asbestos training sessions for all University employees;
 - provide general asbestos related information and training awareness for building occupants on an ongoing basis and prior to all major asbestos abatement projects;
 - review and monitor should there be an equivalent measure or procedure which may vary from the O.Reg. 278/05; (Appendix I) and
 - review comments in JHSC minutes related to specific AMCP's in University owned buildings.
 - along with Employee Health Services (EHS) assist with the management of the medical surveillance program for workers who may have performed Type 2 or Type 3 work or performed work with asbestos materials prior to the implementation of the AMCP (Appendix H);

5.9 **Role of Central Joint Health & Safety Committee (CJHSC)**

The CJHSC shall:

- Review the Asbestos Management Control Program on a scheduled basis

5.10 **Role of JHSC'S**

The JHSC shall:

- where applicable conduct an assessment of asbestos related work procedures;
- assign a JHSC worker representative who has the right to be present at the start of testing;
- have the right to attend Industrial Hygiene testing as per OHSAA for all projects when notified by the project manager where asbestos is likely to be disturbed;
- review the results of testing, and follow up with EOHSS and/or the Project Manager to address concerns;
- share the submission should there be an equivalent measure or procedure which may vary from the O.Reg. 278/05, which the Project Manager shall develop a

written procedure and forward a copy to EOHSS and to the JHSC; (Appendix I) and;

- be consulted on the strategy of air testing prior to the project.

6. RECORDS

- Training/Certification records for contractor asbestos workers including the name, company, date and type of training/certification;
- All records of safety orientation and training shall be documented by supervisors and retained by the individual's department;
- Records will be updated and retained for the duration that the individual is acting in the same capacity;
- The asbestos inventory shall be updated on an ongoing basis and EOHSS be notified when this update occurs; and
- Project specific asbestos work procedures for certain Type 2 and Type 3 work shall be retained for a period of three years.

APPENDICES:

- APPENDIX A - Designated Substance – Asbestos On Construction Projects and In Building and Repair Operations (O. Reg. 278/05)

- APPENDIX B - Air Test

- APPENDIX C - Bulk Material Samples (Subsection 3 (3))

- APPENDIX D - Advance Notice reference to Type 3 Operation and certain Type 2 Operations (Section 11.)

- APPENDIX E - Clearance Air Testing (Section 18 (5) – Type 3)

- APPENDIX F - Respirators (section 13)

- APPENDIX G - Instruction and Training (Section 19)

- APPENDIX H - Asbestos Work Report (Section 21) and Asbestos Workers Register (Section 22)

- APPENDIX I - Use of Equivalent Measure or Procedures (Section 23)

- APPENDIX J - Notice to Inspector (Section 24)

- APPENDIX K - Work Practices – Emergency Work, and Emergency Reaction In The Event Of Suspected Asbestos Spill

- Appendix M – Communication Protocol

APPENDIX A

O. Reg. 278/05, Designated Substance – Asbestos On Construction Projects and in Buildings And Repair Operations

<https://www.ontario.ca/laws/regulation/050278>

APPENDIX B

Air Testing for Airborne Asbestos Fibres Other than Type 3 Clearance Sampling

1. Testing shall use the phase contrast microscopy method in accordance with U.S. National Institute of Occupational Safety and Health (NIOSH) Manual of Analytical Methods, method 7400, Issue 2: Asbestos and other fibres by PCM (August 15, 1994), using the asbestos fibre counting rules.
2. All analytical reports shall at a minimum state the method used, detection limit and analytical precision for the method, the blank analysis value and whether or not it has been subtracted from the reported results in addition to the reported results.
3. The TLV current asbestos value is the level considered acceptable for air sampling.

Appendix C

**TABLE 1
BULK MATERIAL SAMPLES**

Subsection 3 (3)

Item	Type of material	Size of area of homogeneous material	Minimum number of bulk material samples to be collected
1.	Surfacing material, including without limitation material that is applied to surfaces by spraying, by troweling or otherwise, such as acoustical plaster on ceilings 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
2.	Thermal insulation, except as described in item 3	Any size	3
3.	Thermal insulation patch	Less than 2 linear metres or 0.5 square metres	1
4.	Other material	Any size	3

O. Reg. 278/05, Table 1.

APPENDIX D

ADVANCE NOTICE RE TYPE 3 OPERATION AND CERTAIN TYPE 2 OPERATIONS (Section 11.)

11. (1) Before commencing a type 3 operation, the constructor, in the case of a project, and the employer, in any other case, shall notify, orally and in writing, an inspector at the office of the Ministry of Labour nearest the workplace of the operation. O. Reg. 278/05, s. 11 (1).
- (2) Subsection (1) also applies with respect to a Type 2 operation described in paragraph 9 of subsection 12 (3) in which one square metre or more of insulation is to be removed. O. Reg. 278/05, s. 11 (2).
- (3) The written notice required by subsection (1) shall set out,
- (a) the name and address of the person giving the notice;
 - (b) the name and address of the owner of the place where the work will be carried out;
 - (c) the municipal address or other description of the place where the work will be carried out sufficient to permit the inspector to locate the place, including the location with respect to the nearest public highway;
 - (d) a description of the work that will be carried out;
 - (e) the starting date and expected duration of the work; and
 - (f) the name and address of the supervisor in charge of the work. O. Reg. 278/05, s. 11 (3).

**ADVANCE NOTICE
TYPE 3 OPERATION AND CERTAIN TYPE 2 OPERATION**

**TO: Ministry of Labour
Ellen Fairclough Building
119 King St. West
Hamilton, Ontario
L8P 4Y7
TEL: 905 577-6221
FAX: 905 577-1200**

FROM: McMaster University



1280 Main Street West
Hamilton, Ontario
L8S 4L8
TEL: 905 525-9140, EXT: _____
FAX: 905 _____

Location the place of work is to be carried out:

Description of the work to be carried out:

Name of Contact: _____
Date: _____

cc: EOHSS (ext. 24352)
JHSC Worker Representative (name & ext)

APPENDIX E

CLEARANCE AIR TESTING - Section 18 (5) - Type 3

(5) The following rules apply to clearance air testing:

1. Sample collection and analysis shall be done,
 - i. using the phase contrast microscopy method, in accordance with subsection (6) or;
 - ii. using the transmission electron microscopy method, in accordance with subsection (7).
2. If the work area inside the enclosure fails the clearance air test, the steps set out in subparagraphs 15 ii, iii and iv of subsection (4) shall be repeated and the work area shall be allowed to dry before a further test is carried out, unless paragraph 6 of subsection (6) applies. O. Reg. 278/05, s. 18 (5).

(6) Clearance air testing using the phase contrast microscopy method shall be carried out in accordance with U.S. National Institute of Occupational Safety and Health Manual of analytical Methods, Method 7400, Issue 2: Asbestos and other Fibres by PCM (August 15, 1994), using the asbestos fibre counting rules, and shall comply with the following requirements:

1. Testing shall be based on samples taken inside the enclosure.
2. Forced air shall be used, both before and during the sampling process, to ensure that fibres are dislodged from all surfaces inside the enclosure before sampling begins and are kept airborne throughout the sampling process.
3. At least 2,400 litres of air shall be drawn through each sample filter, even though the standard mentioned above provides for a different amount.
4. The number of air samples to be collected shall be in accordance with Table 3.
5. The work area inside the enclosure passes the clearance air test only if every air sample collected has a concentration of fibres that does not exceed 0.01 fibres per cubic centimeters of air.
6. If the work area inside the enclosure fails a first test that is done using the phase contrast microscopy method, the samples may be subjected to a second analysis using transmission electron microscopy in accordance with the standard mentioned in subsection (7).

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7. When a second analysis is done as described in paragraph 6, the work area inside the enclosure passes the clearance air test only if every air sample collected as a concentration of asbestos fibres that does not exceed 0.01 fibres per cubic centimeter of air. O. Reg. 278/05, s. 18 (6).
- (7) Clearance air testing using the transmission electron microscopy method shall be carried out in accordance with U.S. National Institute of Occupational Safety and Health Manual of Analytical Methods, Method 7402, Issue 2, Asbestos by TEM (August 15, 1994), and shall comply with the following requirements:
1. Testing shall be based on samples taken inside the enclosure and samples taken outside the enclosure but inside the building.
 2. Forced air shall be used inside the enclosure, both before and during the sampling process, to ensure that fibres are dislodged from all surfaces before sampling begins and are kept airborne throughout the sampling process.
 3. At least 2,400 litres of air shall be drawn through each sample filter, even though the standard mentioned above provides for a different amount.
 4. At least five air samples shall be taken inside each enclosure and at least five air samples shall be taken outside the enclosure but inside the building.
 5. Sampling inside and outside the enclosure shall be conducted concurrently.
 6. The work area inside the enclosure passes the clearance air test if the average concentration of asbestos fibres in the samples collected inside the enclosure is statistically less than the average concentration of asbestos fibres in the samples collected outside the enclosure, or if there is no statistical difference between the two average concentrations. O. Reg. 278/05, s. 18 (7).
- (8) Within 24 hours after the clearance air testing results are received,
- (a) The owner and the employer shall post a copy of the results in a conspicuous place or places,
 - (i) at the workplace, and
 - (ii) if the building contains other workplaces, in a common area of the building;
and
 - (b) a copy shall be provided to the joint health and safety committee or the health and safety representative, if any, for the workplace and for the building. O. Reg. 278/05, s. 18 (8).

- (9) The owner of the building shall keep a copy of the clearance air testing results for at least one year after receiving them. O. Reg. 278/05, s. 18 (9).

APPENDIX E (cont'd)

TABLE 3
AIR SAMPLES
Paragraph 4 of subsection 18 (6)

Minimum number of air samples to be taken from each enclosure	Area of enclosure
2	10 square metres or less
3	More than 10 but less than 500 square metres
5	500 square metres or more

O. Reg. 278/05 Table 3.

APPENDIX F

RESPIRATORS – Section 13

- (1) A respirator provided by an employer and used by a worker in a Type 1, Type 2 or Type 3 operations,
 - (a) 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;
 - (b) shall be assigned to a worker for his or her exclusive use, if practicable;
 - (c) shall be used and maintained in accordance with written procedures that are established by the employer and are consistent with the manufacturer's specifications;
 - (d) shall be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker;
 - (e) shall have damaged or deteriorated parts replaced prior to being used by a worker; and
 - (f) when not in use, shall be stored in a convenient, clean and sanitary location. O. Reg. 278, s. 13 (1).
- (2) The following additional requirements apply to a respirator of the supplied air type:
 1. The compressed air used for breathing shall meet the standards set out in Table 1 of CSA Standard Z180.1-00, Compressed Breathing Air and systems (March, 2000).
 2. If an oil-lubricated compressor is used to supply breathing air, a continuous carbon monoxide monitor equipped with an alarm shall be provided.
 3. If an ambient breathing air system is used, the air intake shall be located in accordance with Appendix B of the standard referred to in paragraph 1. O. Reg. 278/05, s. 13 (2).
- (3) If respirators are used in the workplace,
 - (a) the employer shall establish written procedures regarding the selection, use and care of respirators; and
 - (b) a copy of the procedures shall be provided to and reviewed with each worker who is required to wear a respirator. O. Reg. 278/05, s. 13 (3).

-
- (4) A worker shall not be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator. O. Reg. 278/05, s. 13 (4).

APPENDIX G

INSTRUCTION AND TRAINING – Section 19

19. (1) The employer shall ensure that instruction and training in the following subjects are provided by a competent person to every worker working in a Type 1, Type 2 or Type 3 operation:
1. The hazards of asbestos exposure.
 2. Personal hygiene and work practices.
 3. The use, cleaning and disposal of respirators and protective clothing. O. Reg. 278/05, s. 19 (1).
- (2) The joint health and safety committee or the health and safety representative, if any, for the workplace shall be advised of the time and place where the instruction and training prescribed by subsection (1) are to be carried out. O. Reg. 278/05, s. 29 (2)
- (3) Without restricting the generality of paragraph 3 of subsection (1), the instruction and training related to respirators shall include instruction and training related to,
- (a) the limitations of the equipment;
 - (b) inspection and maintenance of the equipment;
 - (c) proper fitting of a respirator; and
 - (d) respirator cleaning and disinfection. O. Reg. 278/05, s. 19 (3).

ASBESTOS ABATEMENT TRAINING PROGRAMS – Section 20

20. (1) The employer shall ensure that,
- (a) every worker involved in a Type 3 operation has successfully completed the Asbestos Abatement Worker Training Program approved by the Ministry of Training, colleges and Universities; and
 - (b) every supervisor of a worker involved in a Type 3 operation has successfully completed the Asbestos Abatement Supervisor Training Program approved by the Ministry of Training, Colleges and Universities. O. Reg. 278/05, s. 20 (1).
- (2) The employer shall ensure that every worker and supervisor successfully completes the appropriate program required under subsection (1) before performing or supervising the work to which the program relates. O. Reg. 278/05, s. 20 (2).
- (3) A document issued by the Ministry of Training, Colleges and Universities, showing that a worker has successfully completed a program mentioned in subsection (1), is

conclusive proof, for the purposes of this section, of his or her successful completion of the program. O. Reg. 278/05, s. 20 (3).

- (4) In accordance with the *Agreement on Internal Trade, 1995* and the *Protocols of Amendment*, a worker shall be deemed to hold a document showing successful completion referred to in subsection (3) if he or she has successfully completed equivalent training in another province or territory of Canada, as determined by the Director. O. Reg. 278/05, s. 20 (4).

APPENDIX H

ASBESTOS WORK REPORT – Section 21

- 21.(1) The employer of a worker working in a Type 2 operation or a Type 3 operation shall complete an asbestos work report in a form obtained from the Ministry for each worker,
- (a) at least once in each 12-month period; and
 - (b) immediately on the termination of the employment of the worker. O. Reg. 278/05, s. 21 (1).
- (2) As soon as the asbestos work report is completed, the employer shall,
- (a) forward it to the Provincial Physician, Ministry of labour, and
 - (b) give a copy to the worker. O. Reg. 278/05, s. 21 (2).
- (3) For the purposes of clause (2) (a), the employer may deliver the report to the Provincial Physician in person or send it by ordinary mail, by courier or by fax. O. Reg. 278/05, s. 21 (3).

ASBESTOS WORKERS REGISTER – Section 22

22. (1) The Provincial Physician, Ministry of Labour, shall establish and maintain an Asbestos Workers Register listing the name of each worker for whom an employer submits an asbestos work report under Section 21. O. Reg. 278/05, s. 22, (1).
- (2) On the recommendation of the Provincial Physician, a worker who is listed in the Register may volunteer to undergo the prescribed medical examination described in paragraph 1 of subsection (4). O. Reg. 278/05, s 22, (2).
- (3) A worker who has undergone the prescribed medical examination described in paragraph 1 of subsection (4) may volunteer to undergo subsequent examinations of the same type if they are recommended by his or her physician. O. Reg. 278/05, s. 22 (3).
- (4) The following medical examinations are prescribed for the purposes of subsection 26 (3) of the Act:
- 1. An examination consisting o a medical questionnaire, chest x-rays and pulmonary function tests.
 - 2. A subsequent examination that consists of the components described in paragraph 1, is recommended by the worker's physician and takes place at least two years after the most recent examination. O. Reg. 278/05, s. 22 (4).

- (5) A worker who is removed from exposure to asbestos because an examination discloses that he or she may have or is a condition resulting from exposure to asbestos and suffers a loss of earnings as a result of the removal from exposure to asbestos is entitled to compensation for the loss in the manner and to the extent provided by the *Workplace Safety and Insurance Act, 1997*.
O. Reg. 278/05, s. 22 (5).

APPENDIX I

USE OF EQUIVALENT MEASURE OR PROCEDURE – Section 23

23. A constructor, in the case of a project, or the employer, in any other case, may vary a measure or procedure required by this regulation if the following conditions are satisfied:

1. The measure or procedure, as varied, affords protection for the health and safety of workers that is at least equal to the protection that would be provided by complying with this Regulation.
2. The constructor or employer gives written notice of the varied measure or procedure, in advance, to the joint health and safety committee or the health and safety representative, if any, for the workplace.
O. Reg. 278/05, s. 23.

APPENDIX J

Notice to Inspector – Section 24

24. (1) When this Regulation requires written notice to an inspector at an office of the Ministry of Labour, the notice shall be given,

- (a) by delivering it to the office in person;
- (b) by sending it by ordinary mail, by courier or by fax, or;
- (c) by sending the notice to the inspector by electronic means that are acceptable to the Ministry. O. Reg. 278/05, s. 24 (1).

(2) When this Regulation requires oral notice to an inspector at an office of the Ministry of Labour, the notice shall be given,

- (a) in person;
- (b) by telephoning the inspector, or;
- (c) by sending the notice to the inspector by electronic means that are acceptable to the Ministry. O. Reg. 278/05, s. 24 (2).

APPENDIX K

WORK PRACTICES-EMERGENCY WORK

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

Procedures for asbestos work, required as an immediate response to floods, pipe breaks, ceiling collapses, or other emergencies that affect asbestos materials, are as follows:

1. Clear area of all occupants.
2. Construct enclosure around area if time permits.
3. Shut down ventilation system serving area.
4. Worker performing repair shall wear protective respirator and disposable suit. If normal work clothes are worn they must be disposed of if visibly contaminated.
5. Use drop sheet under work, if possible, to minimize clean-up.
6. Perform emergency repair with minimum disturbance of asbestos.
7. Obtain asbestos equipment and perform clean-up of visible material. Use HEPA filtered vacuum, or wet cleaning. Dispose of all cleaning supplies as contaminated waste.
8. The worker should wipe off or vacuum disposable clothing and footwear. Proceed to washroom to wash face and hands.
9. Notify the Asbestos Coordinator regarding the asbestos disturbance, before allowing unprotected persons to enter the area. The Asbestos Coordinator will contact an asbestos consultant if deemed necessary to obtain inspection and air monitoring.
10. The McMaster University Asbestos Coordinator shall investigate the extent of asbestos disturbance, to determine additional actions to be undertaken. Shall notify EOHSS and JHSC worker representative on the status of the situation.

EMERGENCY REACTION IN THE EVENT OF SUSPECTED ASBESTOS SPILL

1. Do not clean up, cover, move or contact asbestos-suspect material. Cease work in the area and do not resume work at risk of disturbing material. Leave the area and notify your Supervisor immediately. The Supervisor shall contact Facility Services immediately. For off hours contact Security Services (dial 88).

2. Isolate the area by locking doors if this can be done without blocking emergency or fire routes.
3. If it is not possible to safely isolate the area, the Supervisor will notify: appropriate persons not to enter the area, EOHSS and a JHSC worker representative. If possible, post a sentry to prevent unnecessary access.
4. Facility Services along with consultation with EOHSS will determine if asbestos is likely contained in the debris. If material cannot be confirmed asbestos-free by records or appearance, follow procedures below.
5. Facility Services will arrange to shut down ventilation systems to the affected area.
6. Contact Asbestos Abatement Contractor to clean-up contaminated area.
7. Facility Services will contact the asbestos consultant or EOHSS to provide testing of suspect material or inspection and air monitoring when required.
8. In cases of emergency maintenance work "Work Practices – Emergency Work" must be followed.

APPENDIX L

REPORTING THE RESULTS

Final test reports shall also include:

- (a) Reporting limit
- (b) Modification to the test method, if applicable
- (c) Date of sample receipt
- (d) Page numbers on each page, and either x of y page numbering or a clear indication of the end of the report

Measurements below the method reporting limit shall be reported a < (less than) or not detected (ND) and reference the reportable limit. The reporting of zero (0.00) concentration is **not** permitted.

The final report shall state the measured quantitative result of the analysis of any blank samples submitted to the laboratory. Also, a statement must be made that discloses whether or not the sample results have been corrected for contamination based on the field blank or other analytical blank.

APPENDIX M

COMMUNICATION PROTOCOL

Communication Protocol

Notification Requirements for Type 2 and Type 3 Asbestos Abatement and for Non-Asbestos Work utilizing Type 2 Procedures

Type 2 and Type 3 Asbestos Abatement:

This communication protocol will be used when Type 2 and Type 3 asbestos work is being performed in an occupied building.

The Facility Services Project Manager shall contact building occupants impacted by the work as well as all related Faculty Offices (i.e. the Office of the Dean) prior to the start of any asbestos abatement. The notification shall be in writing and issued with enough time to organize an Occupants Meeting to discuss the details of the proposed work. A contact name and email address from Facility Services will be included in the notification to impacted building occupants.

The Project Manager shall contact Environmental and Occupational Support Services (EOHSS) to advise of any upcoming projects and provide the necessary documents to EOHSS, to review the procedures and protocols to be implemented and provide feedback where necessary.

EOHSS shall inform the Joint Health and Safety Committee (JHSC) of the project (Type 2 or Type 3) and expected timelines, including notification of testing/sampling to permit attendance by a JHSC worker representative.

The Project Manager shall coordinate an Occupants Meeting to take place prior to the start of abatement work. The Occupants Meeting should occur at least five working days prior to the start of the abatement project. In the case of an emergency abatement, the five day advanced notice may not be possible. The Project Manager, the Abatement Consultant and a representative from EOHSS will be present at the Occupants Meeting to provide details of the work and answer questions.

EOHSS shall notify JHSC worker representatives of any testing and request attendance during the testing. Results of the testing/sampling will be communicated to the JHSC.

Occupants in the work area and the JHSC shall be informed when the work has been completed.

EOHSS shall be informed when the work has been completed. **Environmental & Occupational Gilmour Hall,**

Non-Asbestos Work utilizing Type 2 Procedures:

This communication protocol will be used when non-asbestos work is being performed where the worker will be utilizing Type 2 procedures in an occupied building.

The Facility Services Project Manager shall notify building occupants as well as all related Faculty Offices (i.e. the Office of the Dean) prior to the start of any work where Type 2 procedures will be in place. The notification shall be in writing. A contact name and email address from Facility Services will be included in the notification to impacted building occupants.

The Project Manager shall contact Environmental and Occupational Support Services (EOHSS) to advise of any upcoming projects and provide the necessary documents to EOHSS, to review the procedures and protocols to be implemented and provide feedback where necessary.

EOHSS shall inform the Joint Health and Safety Committee (JHSC) of the project and expected timelines, including notification of testing/sampling to permit attendance by a JHSC worker representative.

EOHSS shall notify JHSC worker representatives of any testing and request attendance during the testing. Results of the testing/sampling will be communicated to the JHSC.

Occupants in the work area and the JHSC shall be informed when the work has been completed.

EOHSS shall be informed when the work has been completed

