Once the location of any asbestos-containing materials is determined it is then necessary to have a basis from which its condition and general accessibility can be measured. This in turn provides a baseline from which recommendations can be developed to establish and maintain a safe workplace while ensuring compliance with existing regulations and guidelines.

As the condition and general accessibility of asbestos can vary widely from location to location, the following system of evaluation shall be used to ensure a consistent approach to the evaluation and rating of asbestos-containing materials.

1.0 EVALUATION OF CONDITION

1.1 Sprayed Fireproofing, Thermal or Textured Finishes

Evaluating the condition of spray or trowel applied fireproofing, thermal insulation, texture coats, decorative or acoustic finishes shall be based on the following definitions:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOOD</td>
<td>Surface of material shows no signs of damage, deterioration or delamination. (Includes unencapsulated sprayed fireproofing, sprayed insulation and sprayed or texture coats where no delamination or damage is observed. Also includes encapsulated materials where the encapsulation was installed after the damage or fallout occurred). Up to 1% visible damage to surface of material is allowed within range of GOOD.</td>
</tr>
<tr>
<td>POOR</td>
<td>Sprayed materials show signs of damage, delamination or deterioration. More than 1% damage to surface of the material. Areas of spray where damage exists in isolated locations, may be listed as both GOOD and POOR condition for the same room. In this circumstance the extent of the POOR area is recorded separate from that rated as being in GOOD condition.</td>
</tr>
</tbody>
</table>

1.2 Mechanical Insulation

The condition of mechanical insulation (on boilers, breaching, ductwork, piping, tanks, equipment, etc.) shall be evaluated according to the following criteria:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOOD</td>
<td>Insulation is jacketed and has no sign of deterioration. No friable insulation is exposed. Includes conditions where the jacketing has minor damage (i.e. scuffs or stains), but jacket is not punctured or penetrated.</td>
</tr>
<tr>
<td>FAIR</td>
<td>Minor penetrating damage to jacketed insulation (cuts, tears, deterioration or delamination) or undamaged insulation that is not jacketed. Insulation is exposed but is not showing surface disintegration. Extent of missing insulation ranges from minor to none. Damage can be readily repaired.</td>
</tr>
<tr>
<td>POOR</td>
<td>Original insulation jacket is missing, damaged, deteriorated or delaminated. Friable insulation is exposed and significant areas have been dislodged. Damage cannot be readily repaired.</td>
</tr>
</tbody>
</table>
1.3 **Non-Friable and Potentially Friable Materials**

For non-friable ACM such as asbestos cement products (transite), and manufactured products that have the potential to become friable when handled, such as acoustic ceiling tiles or sheet vinyl flooring, the condition of these materials shall be evaluated as follows. Note that FAIR is not an applicable condition for rating non-friable materials.

<table>
<thead>
<tr>
<th>GOOD</th>
<th>No significant damage is present. Material may be cracked or broken but is stable and not likely to become friable upon casual contact.</th>
</tr>
</thead>
<tbody>
<tr>
<td>POOR</td>
<td>Material is severely damaged. Loose debris is present or binder has disintegrated to the point where contact will cause the material to become friable.</td>
</tr>
</tbody>
</table>

1.4 **Evaluation of ACM Debris**

The presence of fallen ACM debris, whether as a result of delamination, deterioration or damage to sprayed fireproofing, thermal insulation, textured surfaces, decorative or acoustic finishes or mechanical insulation shall be noted separately from the presumed source of ACM and is merely referred to as DEBRIS.

2.0 **EVALUATION OF ACCESSIBILITY**

The accessibility of ACM shall be rated according to the following criteria:

| ACCESS (A) | Common areas of the building within reach (from floor level) of all building users. Includes areas where occupant activities may result in disturbance of ACM not normally within reach (i.e. gymnasiums, warehouses, etc.). |
| ACCESS (B) | Frequently entered maintenance areas of the building within reach, without use of a ladder, by maintenance staff. Includes areas within reach from a fixed ladder or catwalk, i.e. tops of equipment or mezzanines (as well as regularly entered pipe chases and tunnels). |
| ACCESS (C) EXPOSED | Areas of the building above 8'-0" where use of a ladder is required to reach the ACM. Only refers to ACM materials that are exposed to view from the floor or ladder, without the removal or opening of other building components such as ceiling tiles, service access door or hatches. Does not include infrequently accessed service areas of the building. |
| ACCESS (C) CONCEALED | Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems, includes rarely entered crawlspace, attic spaces, etc. Observations may be limited to the extent visible from the access points. |
| ACCESS (D) | Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc. is required to reach the ACM. Evaluation of condition and extent of ACM is limited or impossible, depending on the surveyor's ability to visually examine materials in ACCESS D. |
1.0 ROUTINE MAINTENANCE & BUILDING OPERATIONS

1.1 In the absence of any major maintenance activities, renovations or demolition that may lead to widespread disturbance of asbestos, the following factors shall be given due consideration in the formulation of site-specific recommendations. These are as follows:

.1 The evaluation or viability of a specific asbestos control option shall be primarily based on the ACM's current condition and overall accessibility. The logic behind this statement is that damaged ACM located in frequently accessed areas of the building is of a higher priority than damaged ACM in an infrequently accessed area of the building.

.2 Existing regulations and good practice require the immediate clean-up and possible abatement of areas where there is ACM in POOR condition or ACM debris, or where such materials or debris is likely to be disturbed during normal use of the space (i.e. ACM is in POOR condition, and/or DEBRIS, combined with ACCESSIBILITY A or B).

.3 ACM in POOR condition is not routinely repairable. If an abatement action is necessary, removal is the preferred action (enclosure may also be considered in unusual circumstances).

.4 Mechanical insulation in FAIR condition can normally be repaired or removed based on the following general recommendations applied on a case-by-case basis. Note: Either repair or removal are both legally acceptable options for the treatment of ACM found in FAIR condition.

(a) Repair ACM mechanical insulation found in FAIR condition in ACCESS B or ACCESS C (EXPOSED) areas.

(b) Remove ACM mechanical insulation found in FAIR condition in ACCESS B and ACCESS C (EXPOSED) areas, where future damage to the ACM is likely to occur.

(c) Removal of ACM mechanical insulation found in FAIR condition in ACCESS A is normally recommended to eliminate the potential for future re-damaging of the ACM.

.5 Friable or potentially friable forms of ACM found in GOOD condition in ACCESS A is only subject to surveillance under existing regulations provided it is not subject to disturbance by future renovations or maintenance. However, as a matter of corporate policy all such asbestos-containing materials shall be abated on a pro-active basis wherever damage is possible by on-going occupant activity (accidental or intentional). This recommendation exceeds current regulatory requirements.

.6 Non-friable and/or manufactured products, which are in POOR condition, must be treated the same as friable materials in POOR condition and the appropriate Action assigned.

.7 For non-friable or manufactured products reported in GOOD condition, Action 7 (Surveillance) shall be assigned regardless of Accessibility.

.8 Consideration may also be given to whatever other action that can practically be performed to negate the need for the implementation of an Asbestos Management Program (AMP). Such measures may include the removal of ACM prior to renovations or at any other time when a major disturbance of the ACM is anticipated. Removal may also be considered a practical measure when small quantities of ACM are present in a specific area of the building.

1.2 With these principles in mind the following Action Matrix Table shall be utilized to establish the normal recommended asbestos control action. Note that factors not included in the above discussion may result in a recommendation different from that in the following table.
### ACTION MATRIX FOR FRIABLE ASBESTOS MATERIALS

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>GOOD</th>
<th>CONDITION FAIR</th>
<th>POOR</th>
<th>DEBRIS</th>
<th>SUSPECT MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Action 5/7&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Action 5/6&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Action 3</td>
<td>Action 1</td>
<td>Action 8</td>
</tr>
<tr>
<td>B</td>
<td>Action 7</td>
<td>Action 6</td>
<td>Action 3</td>
<td>Action 1</td>
<td>Action 8</td>
</tr>
<tr>
<td>C (Exposed)</td>
<td>Action 7</td>
<td>Action 6</td>
<td>Action 4</td>
<td>Action 2</td>
<td>Action 8</td>
</tr>
<tr>
<td>C (Concealed)</td>
<td>Action 7</td>
<td>Action 7</td>
<td>Action 4</td>
<td>Action 2</td>
<td>Action 8</td>
</tr>
<tr>
<td>D</td>
<td>Action 7</td>
<td>Action 7</td>
<td>Action 7</td>
<td>Action 7</td>
<td>Action 8</td>
</tr>
</tbody>
</table>

<sup>1</sup> If ACM in ACCESS (A)/GOOD condition is not removed ACTION 7 is required.

<sup>2</sup> If ACM in ACCESS (A)/FAIR condition is not removed ACTION 6 is required.

### NON-FRIABLE & POTENTIALLY FRIABLE MATERIALS

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>GOOD</th>
<th>CONDITION FAIR</th>
<th>POOR</th>
<th>SUSPECT MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Action 7</td>
<td>Action 3&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Action 1</td>
<td>Action 8</td>
</tr>
<tr>
<td>B</td>
<td>Action 7</td>
<td>Action 3&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Action 1</td>
<td>Action 8</td>
</tr>
<tr>
<td>C (Exposed)</td>
<td>Action 7</td>
<td>Action 4&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Action 2</td>
<td>Action 8</td>
</tr>
<tr>
<td>C (Concealed)</td>
<td>Action 7</td>
<td>Action 4&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Action 2</td>
<td>Action 8</td>
</tr>
<tr>
<td>D</td>
<td>Action 7</td>
<td>Action 7&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Action 7</td>
<td>Action 8</td>
</tr>
</tbody>
</table>

<sup>1</sup> Non-friable and potentially friable ACM found in POOR condition shall be treated as friable ACM.
LEGEND - ACTION MATRIX TABLES

<table>
<thead>
<tr>
<th>ACTION</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTION 1 Immediate Clean-up</td>
<td>Restrict access that is likely to cause a disturbance of the ACM debris and clean-up the ACM debris immediately. Utilize correct asbestos procedures. The surveyor should immediately notify the Asbestos Programs Officer of this condition.</td>
</tr>
<tr>
<td>ACTION 2 Type 2 Entry</td>
<td>At locations where ACM debris cannot be practically removed or cleaned-up, restrict access to the area to persons utilizing Type 2 asbestos precautions. The precautions will be required until the ACM debris has been cleaned-up, and the source of the debris has been stabilized or removed.</td>
</tr>
<tr>
<td>ACTION 3 Removal</td>
<td>Removal of ACM is required to comply with existing regulations and good practice. Utilize asbestos procedures appropriate to the scope of the removal work being done.</td>
</tr>
<tr>
<td>ACTION 4 Type 2 Access</td>
<td>Entry to these spaces which is likely to cause disturbance of the ACM will require Type 2 procedures until the ACM is abated (use ACTION 1 or 2 if debris is present).</td>
</tr>
<tr>
<td>ACTION 5 Recommended Removal</td>
<td>Existing regulations do not require removal, however as a matter of corporate policy, pro-active removal is recommended to avoid any future damage to the material and the resultant concerns.</td>
</tr>
<tr>
<td>ACTION 6 Recommended Repair</td>
<td>Repair ACM found in FAIR condition, but not likely to be disturbed during normal use of the area or room. Upon completion of the repair work treat the ACM as material in GOOD condition and implement ACTION 7.</td>
</tr>
<tr>
<td>ACTION 7 Surveillance</td>
<td>No immediate abatement action other than the implementation of the asbestos management program, including routine surveillance and use of asbestos precautions during disturbance of the ACM.</td>
</tr>
<tr>
<td>ACTION 8 Suspect Materials</td>
<td>Materials that are historically known to possibly contain asbestos but either cannot be sampled due to restricted access or the need to analyze an unreasonable number of samples to confirm with confidence the presence or absence of asbestos, are identified as Suspect Material (SM) (i.e. vinyl floor tiles, smooth plaster on walls or ceilings). These suspect materials are to be considered asbestos-containing with ACTION 7 applying until subsequent sampling confirms the presence or absence of asbestos. Sampling may be most cost-effective prior to disturbance of the suspected ACM by renovation, demolition, or maintenance work.</td>
</tr>
</tbody>
</table>

2.0 LARGE SCALE MAINTENANCE, RENOVATION OR DEMOLITION

2.1 Existing regulation and good practice require that all friable and non-friable asbestos-containing materials be removed prior to any large-scale maintenance work, demolition or renovations if the ACM is, or is likely, to become disturbed.

2.2 Retain the services on an outside Asbestos Consulting firm (either directly or as a sub-consultant to the Prime Consultant or Architect in charge of the renovation/demolition work) to assist in the preparation of contract documents necessary to effect the safe and proper removal of all ACM subject to disturbance.

2.3 As a matter of corporate policy, all large-scale asbestos abatement work shall be contracted out.
1.0 At present, the University is in the process of preparing a preliminary screening report for all buildings in which the presence of asbestos-containing materials is suspect. Such information is considered to be in addition, to that already compiled by the University for a select number of buildings where a preliminary asbestos survey has already been compiled.

For future reference, a copy of each building’s initial screening report or subsequent asbestos survey shall be maintained on file and is available for viewing at the following location(s):

- On the University’s own internal web page or intranet system;
- General office of the Physical Plant at each of the University’s primary campuses;
- At the office of the University’s Senior Asbestos Programs Officer; and
- With each of the University’s Asbestos Programs Officers.
1.0 A copy of the latest “Asbestos Survey Update” as required by existing regulation and as set forth under Section 5 of the AMP document to which this appendix is attached has been bound separately and is available for viewing at the following location(s):

- On the University’s own internal web page or intranet system;
- General office of the Physical Plant at each of the University’s primary campuses;
- At the office of the University’s Senior Asbestos Programs Officer; and
- With each of the University’s Asbestos Programs Officers.
1.0 The following Appendix shall be used to house a copy of all lab reports received from time-to-time as a result of any additional bulk sampling having been carried out internally by the University’s own employees or by an outside consulting firm.

2.0 Notwithstanding the attached test results, copies of the original test data collected during each of the initial Asbestos Screening Reports and any subsequent Asbestos Survey Updates are filed separately under Appendices C & D.

3.0 Additional copies of all test data are maintained on file and/or are available for viewing at the following location(s):

- On the University’s own internal web page or intranet system;
- General office of the Physical Plant at each of the University’s primary campuses;
- At the office of the University’s Senior Asbestos Programs Officer; and
- With each of the University’s Asbestos Programs Officers.
NOTE: The following sample collection & analytical practices shall be adhered to by all personnel whether such sampling is performed internally, or through an outside consultant, as a means of ensuring a consistent approach to sample collection and analysis.

1.0 BULK SAMPLING

NOTE: The following protocol shall be adhered to whenever the collection/analysis of a suspect asbestos-containing material is performed so as to establish its asbestos content.

For sampling conducted internally by the University’s own staff, refer to Appendix Y and the corresponding form for additional information and instruction.

1.1 Collection of Bulk Asbestos Samples

1.1.1 Prior to collecting the sample, ensure the required personal protective equipment (respirator, gloves, etc.), lagging materials or an approved encapsulant is at hand ready for use.

1.1.2 The worker collecting the sample need only collect a few grams (i.e. teaspoon) of the material in question.

1.1.3 Wherever practical, the sample should be collected during quiet hours or when the area surrounding the sampling location is unoccupied.

1.1.4 If the material being sampled is friable in nature (i.e. fireproofing, mechanical insulation, etc.), first spray the material in the immediate area surrounding the point of collection with a light misting of water.

1.1.5 Where possible, sample collection should be performed adjacent to a point of existing damage. Avoid any unnecessary contact or disturbance.

1.1.6 Depending on the condition of the material being sampled, significant amounts of airborne fibres can be discharged during sample collection. The use of a respirator is mandatory in such instances.

1.1.7 To avoid possible sample cross-contamination, ensure the knife (or any other instruments) used to collect the sample is properly cleaned using a damp rag following the collection of each individual sample.

1.1.8 Should additional fragments or pieces of the material being sampled break off during sample collection, the associated debris must be cleaned up using a HEPA equipped vacuum or damp rag. Unless otherwise indicated through subsequent analysis, dispose of all debris collected as asbestos-containing waste.

1.1.9 Place each sample collected in an independently labelled plastic bag (c/w zip-lock closure) or in a sealed plastic vial. Ensure container being used is clean and dry. The exterior of the container must also be wiped clean using a damp cloth to ensure the removal of any visible debris following sample collection.

1.1.10 Samples shall be identified with the following information:

- Date Sampled
- Sample Number
- Sample Description (i.e. cold water piping, boiler exhaust or sprayed fire proofing, etc.)
- Location at with the sample was collected (i.e. building, room number, etc.).
- Name and phone number of the individual who collected the sample.
1.1.11 Materials of differing composition or appearance should be sampled separately. Mechanical insulation must be sampled separately on a system-by-system basis as well as differentiating between the material present on the straight runs of the piping from that present on any fittings (i.e. tees, valves, elbows, etc.).

1.1.12 Ensure full-depth samples are collected as many products such as finishing plasters or mechanical insulation often involve multiple layers of application or coatings.

1.1.13 Follow sample collection, temporarily repair jacketing or seal exposed edges of underlying insulation using duct tape or approved asbestos encapsulant (i.e. Serpiflex Shield or approved equivalent).

1.1.14 Record sample location on a drawing and through a system of on-site labelling where appropriate. Ensure the data outlined in paragraph 1.1.9 above is recorded on a separate piece of paper and maintained on file prior to submitting the sample to the lab.

1.2 Analysis of Bulk Asbestos Samples

1.2.1 Following collection, each sample shall be submitted to an accredited laboratory for determination of its asbestos content using a combination of dispersion staining and polarized light microscopy.

1.2.2 Sample preparation and analysis shall follow the protocol outlined by NIOSH Method 9002 for bulk asbestos analysis, and the US EPA Method 600/R-93/116 dated July, 1993.

1.2.3 Sample results must be reported based on the lower limit of quantitation for this method of 0.1% by volume. If only a few asbestos fibres are detected in the analysis the asbestos content shall be reported as less than 0.1 percent.

1.2.4 The lab shall report each sample’s asbestos content based on the following chart so as to be in compliance with provincial codes:

<table>
<thead>
<tr>
<th>None Detected</th>
<th>5% to 25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 0.1%</td>
<td>25% to 50%</td>
</tr>
<tr>
<td>0.1% to 1%</td>
<td>50% to 75%</td>
</tr>
<tr>
<td>1% to 5%</td>
<td>More than 75%</td>
</tr>
</tbody>
</table>

1.2.5 For quality control purposes the selected lab, as well as the individual technician performing the analysis, shall be accredited by the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NAVLAP) for selected test methods for the identification of asbestos in bulk samples. Written proof of such accreditation must be provided upon request.

2.0 AIR SAMPLING BY PCM

2.1 Sample Collection

2.1.1 Sample collection shall be performed in accordance with the National Institute of Occupational Safety & Health (NIOSH) Method 7400 dated May 15, 1996.
2.1.2 Sample volumes shall be adjusted to allow statistically valid results to be reported down to levels equal to that outlined in the following chart.

<table>
<thead>
<tr>
<th>Classification of Sampling</th>
<th>Detection Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-asbestos abatement clearances for all Type 3 work.</td>
<td>&lt;0.01 Fib/mL</td>
</tr>
<tr>
<td>Post-asbestos abatement clearances for all Type 2 work performed in a negative pressure enclosure.</td>
<td>&lt;0.01 Fib/mL</td>
</tr>
<tr>
<td>Post-abatement clean-up as performed outside a sealed work enclosure while following Type 2 precautions.</td>
<td>&lt;0.05 Fib/mL</td>
</tr>
<tr>
<td>Sampling performed adjacent to, or following, the removal of asbestos-containing pipewrap as performed by “Glove Bag” method.</td>
<td>&lt;0.05 Fib/mL</td>
</tr>
<tr>
<td>Sampling performed adjacent to, or following, the repair of asbestos-containing mechanical insulation as performed while following Type 2 precautions.</td>
<td>&lt;0.05 Fib/mL</td>
</tr>
<tr>
<td>Sampling performed within a sealed Type 2 or 3 work negative enclosure.</td>
<td>0.1 Fib/mL (minimum)</td>
</tr>
</tbody>
</table>

¹Chart modified on November 27, 2014 to corroborate current provincial regulations.

2.1.3 Sampling equipment shall be flow calibrated on a daily basis.

2.1.4 For each sample collected, ensure the following information is recorded:

- Date Sampled
- Location
- Sample Volume
- Sample Number
- Pump Number
- On & Off Times
- Sample Description (i.e. personal, area, occupied, etc.)

2.2 Sample Analysis

2.2.1 Following collection, each sample shall be submitted to an accredited laboratory for determination of its asbestos content using Phased Contrast Microscopy (PCM). Sample results shall be expressed in terms of fibres per millilitre of air (Fib/mL).

2.2.2 Sample preparation and analysis shall be performed in accordance with the National Institute of Occupational Safety & Health (NIOSH) Method 7400 dated May 15, 1996. Fibre identification shall be performed using the “A” set of counting rules.

2.2.3 Results of air sample analysis shall be made available on a same-shift basis wherever practicable and in all instances within a twenty-four (24) hour period following sample collection.

2.2.4 For quality control purposes the selected lab, as well as the individual technician performing the analysis, shall be accredited for the analysis of air samples by Phase Contrast Microscopy (PCM) by one or more of the following agencies. Written proof of such accreditation must be provided upon request.

.1 The American Industrial Hygiene Association’s Asbestos Analysts Registry (AIHA AAR)

.2 The Institut de recherché Robert-Sauvé en santé et en sécurité du travail (IRSSST)
SAMPLE COLLECTION & ANALYSIS

2.2.5 Programs, such as the American Industrial Hygiene Association’s Proficiency Analytical Test Program (AIHA PAT), that qualifies the lab only, are not acceptable.

2.3 Interpretation of Data

2.3.1 When reviewing the results obtained from any PCM sampling, it is important to note that fibres are not identified by this method. All particles greater than 5 µm in length and with a length to diameter ratio of 3:1 or greater are included in the count. Fibres with a diameter of less than 0.3 µm cannot be detected by this method regardless of their length.

3.0 AIR SAMPLING BY TEM

3.1 General Comments & Policy

3.1.1 As a matter of general policy, monitoring of a building or work area using an approved Transmission Electron Microscope (TEM) test method will not be performed due to a number of concerns surrounding its use (i.e. cost, turn-around times, lack of guidelines to establish safe levels) and should only be performed with the informed prior approval of the University’s Senior Asbestos Programs Officer.

3.1.2 Notwithstanding the above, the use of TEM monitoring can be beneficial in instances where air sampling by PCM or FAM indicates contamination of occupied areas by fibrous dust from an unknown source. However, should such a contamination occur as the result of a clear failure to observe prescribed precautions or a visible breach in the containment system, then TEM monitoring is not recommended and the attending APO, the assigned project coordinator, or manager, shall order an immediate clean-up of the affected area.

4.0 SURFACE DUST SAMPLING

4.1 As a matter of general policy, to collection of random dust samples from surfaces concentrated throughout any occupied areas of a building must only be undertaken with the informed consent of the University’s Senior Asbestos Programs Officer. Nor shall it be common practice to collect dust samples in response to a clear failure to observe prescribed precautions; in the presence of any fallen or dislodged asbestos debris; or as a result of a visible breach in a containment system. Instead, access to such areas shall be restricted to authorized personnel until such time as the attending APO has had the opportunity to fully assess the area and the required clean-up has been completed.

4.2 Notwithstanding the above, should it be established that such a program of sampling is indeed desirable, then the collection of such samples shall be performed while in compliance with the test methods and prescribed protocol established by the University’s Senior Asbestos Programs Officer under separate cover.
NOTE: The following applies to the use of a Half-face Negative Pressure Air Purifying Respirator equipped with HEPA filters.

WARNING: Such respirator does not generate or have their own supply of oxygen. They must not be used in oxygen deficient atmospheres (less than 19.5%); in poorly ventilated areas or enclosed spaces such as tanks or small rooms; for abrasive blasting or fire fighting; or for protection against contaminants excluded or not covered by the applicable Approval Label.

Respirators must be approved for protection against asbestos. Check for NIOSH certification.

1.0 RESPIRATOR FITTING

1.1 Persons required to wear a respirator must first pass a qualitative fit-test administered in accordance with the most current version of CSA standard Z-94.4. The fit-test should be repeated yearly.

1.2 The respirator wearer must be clean-shaven along all the seal points for proper protection to be obtained. Even stubble growth may be sufficient to reduce the seal of the face-piece, and therefore the protection. The respirator approval is voided for users with facial hair that may interfere with the seal.

2.0 CHECK PRIOR TO EACH USE

2.1 Examine face-piece for any:
   - dirt (clean if necessary);
   - cracks, tears or holes (obtain new face-piece);
   - distortion and inflexibility (stretch and knead to restore shape and flexibility or obtain new face-piece);
   - cracks, or breaks in filter holders, worn threads and missing gaskets (replace or obtain new face-piece).

2.2 Examine head straps for any:
   - breaks or tears (replace if discovered);
   - loss of elasticity (replace if discovered);
   - broken or malfunctioning buckles and attachments (replace if discovered).

2.3 Examine valves for signs of any:
   - detergent residue, dust or other material on valves or valve seats (clean before use);
   - cracks, tears or distortion in the valve material (replace if discovered);
   - missing or defective valves or valve covers (replace if discovered).

2.4 Examine filter for:
   - proper filter for protection against asbestos (High Efficiency Particulate)
   - incorrect installation, loose connections, missing or worn gaskets or cross threading (remove and re-install);
   - cracks or dents in filter housing (replace if discovered).
2.5 Perform the following tests for leaks on each donning of the respirator:

- **negative pressure test**: cover inlets to filters, breathe in and hold breath; respirator should be drawn to face for minimum of 10 seconds (if not, check exhalation valve and fit);
- **positive pressure test**: cover exhalation valve cover and puff out slightly and hold breath; respirator should slightly pressurize and still hold seal (if not, check inhalation valves and fit).

3.0 **RESPIRATOR CLEANING AND DISINFECTION**

3.1 Remove filters and disassemble face-piece. Discard or repair defective parts.

3.2 Wash components in warm water (50°C - 60°C) with mild detergent, using a brush. Respirator suppliers can provide ready-made cleaning and disinfectant solutions and instructions for use.

3.3 Thoroughly rinse components in clean, warm water.

3.4 Air dry or hand dry components with a clean, lint-free cloth.

3.5 Reassemble respirator and test to ensure that all components are working properly (see above). Be careful to check that valves are not lost in cleaning.
CERTIFICATE OF WORKER’S TRAINING

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBRES CAN CAUSE VARIOUS TYPES OF LUNG DISEASE INCLUDING CANCER. SMOKING INCREASES THE RISK OF LUNG CANCER FROM ASBESTOS EXPOSURE.

RESPIRATOR PROTECTION: I have been supplied with a respirator and received training for its proper use including qualitative fit testing (irritant smoke). I understand that I must be free of any facial hair that may interfere with the seal of the respirator with my face.

MEDICAL EXAMINATION: Medical examinations may be required for workers performing asbestos work. I acknowledge that I may have to undergo the necessary tests as prescribed by the Department of Labour and Immigration, Workplace Safety & Health Division.

TRAINING COURSE: I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

- Physical Characteristics and Use of Asbestos
- Health Hazards Associated with Asbestos
- Sampling & Analytical Methods
- Regulations Concerning Work With Asbestos
- Assessment of Asbestos-Containing Materials
- Respiratory Protection
- Use of Protective Equipment
- Work practices including hands-on or on-job training for (tick as appropriate):
  - Asbestos Awareness Training ONLY
  - General Procedures for Type 1, 2 & Glove Bag Work
  - Procedures for Type 1 or Low Risk Work
  - Procedures for Type 2 or Moderate Risk Work
  - Procedures for the Removal of Mechanical Insulation by Glove Bag Method
  - Personal Decontamination Procedures
  - Emergency Procedures in the Event of a Suspect Asbestos Spill
  - Procedures for Emergency Work

By signing this certificate, I acknowledge that I have received the above training and agree to follow these procedures for all work assigned to me.

EMPLOYEE NAME: ____________________________________________________________

DATE OF TRAINING: _________________________________________________________

RESPIRATOR MANUFACTURER: __________________________ SIZE: __________________

SIGNATURE: _______________________________________ DATE: __________________

TRAINER: _________________________________________ DATE: __________________
CONTRACTOR’S NOTIFICATION AND ACKNOWLEDGMENT

NOTIFICATION BY UNIVERSITY OF MANITOBA:

The University of Manitoba has identified the presence of various friable and non-friable asbestos-containing materials as being present throughout many of the buildings owned, leased and/or otherwise occupied by the University. For information on the presence of asbestos-containing or suspect asbestos material consult your University of Manitoba contact (project coordinator, manager, etc…).

Mb. Reg. 217.2006 (Workplace Safety and Health Regulation) and the Province of Manitoba Asbestos Guidelines apply to all maintenance and renovation work that may disturb asbestos or suspect asbestos-containing materials in the Workplace. Such regulations and guidelines state that any disturbance of asbestos-containing materials may only be performed by workers or by an outside contractor who have first received the required training in asbestos-related precautions.

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS CAN CAUSE VARIOUS TYPES OF LUNG DISEASE INCLUDING CANCER. SMOKING INCREASES THE RISK OF LUNG CANCER FROM ASBESTOS EXPOSURE.

The following is a partial listing of typical activities that will or may disturb known asbestos containing materials and hence requiring the implementation of Type 1, 2 or 3 asbestos precautions. Any Contractor required to perform any of the following activities and/or similar tasks that may result in the disturbance of a known or suspect asbestos-containing materials must first review the most recent version of the Asbestos Survey Report and advise their employees, agents, contractors and representatives as to the appropriate precautions and safety measures to be taken:

- Access above a suspected ceiling system at a location where known asbestos-containing spray or trowel applied fireproofing, thermal, or acoustic insulation is present.
- Access within a crawlspace, pipe chase, service area, or tunnel where damaged asbestos-containing materials are known to be present.
- Work that may disturb any spray or trowel applied fireproofing, thermal, or acoustic insulation known to contain asbestos.
- Work that may disturb any asbestos-containing spray or trowel applied texture coats.
- Work that may disturb any asbestos mechanical insulation (i.e. pipes, ducts, vessels, boiler, etc.).
- Removal, clean-up, or repair of any asbestos mechanical insulation (i.e. pipes, ducts, vessels, boilers, etc.).
- Removal of asbestos-containing ceiling tiles.
- Removal of asbestos-containing sheet flooring products.
- Removal, cutting, drilling, or other such disturbance of any non-friable asbestos materials (i.e. vinyl composite tile, asbestos hardboard, transit paneling, asbestos cement pipes, etc.)
- Demolition, cutting, drilling, or other such disturbance of any plaster finishes (i.e. wall or ceiling) known to contain asbestos and/or listed as a suspect material in the above mentioned asbestos survey report.
- Other materials, as informed by subsequent notices.

ACKNOWLEDGMENT AND INDEMNIFICATION BY CONTRACTOR:

As a condition of any contract to provide services and/or materials to the University of Manitoba, we, the undersigned company, hereby agree to perform our work in such a manner so as NOT to disturb any asbestos-containing materials without:

1. giving notice to the appropriate individual manager and/or project coordinator at the University that known or suspected asbestos-containing material(s) will be/needs to be disturbed.
2. advising our employees, agents, contractors and representatives as to the appropriate precautions and safety measures to be taken; and
3. halting work and giving notice to the appropriate individual manager and/or project coordinator at the University when unforeseen suspected asbestos-containing materials are uncovered during the provisions of services/materials to the University.
We further represent that our company and our employees, agents, contractors and representatives:

a) will attend the University of Manitoba contractor orientation session prior to starting work
b) are familiar and shall comply with all requirements set forth by the University of Manitoba as they may pertain to work undertaken by an outside contractor;
c) will conduct our work in accordance with such requirements and in compliance with all provincial regulations or guidelines pertaining to asbestos;
d) that all asbestos waste will be packaged and disposed of at a licensed landfill; and
e) that we will be responsible for advising and continuing to advise, our employees, agents, contractors and representatives with respect to any potential exposure to any asbestos-containing material while on or about the property of the University.

We indemnify and save harmless the University its officers, employees, agents, and representatives from any loss, damage, cost, or expense arising from any failure by our company and/or our employees, agents, contractors and representatives to comply with any requirements set forth by the individual manager and/or project coordinator and/or with any provincial or federal regulations or guidelines and/or our failure to oblige the conditions set out in paragraph 1 under the heading “Acknowledgment and Indemnification by Contractor” and/or subsections a, b, c, or d of this paragraph.

COMPANY NAME: _____________________

Per:____________________________________

AUTHORIZED SIGNING AUTHORITY

NAME & TITLE OF AUTHORIZED SIGNING AUTHORITY:

___________________________________________

DATE:_______________________________
1.0 CONTRACTOR QUALIFICATIONS

1.1 To ensure the highest standard of care is maintained at all times, only those contractors with established reputations for quality workmanship in the field of asbestos control and remediation shall be considered for work at any University of Manitoba owned or occupied facility.

1.2 Before a contractor may be considered for work at any University of Manitoba owned or occupied facility, the contractor must first be able to demonstrate his compliance with the following requirements:

- Both the firm as well as all supervisory staff must have a minimum of three (3) years prior experience in the field of asbestos control and remediation.
- All supervisory staff must hold a recognized certificate proving attendance at an asbestos removal training course (2 day minimum duration) and have performed supervisory functions on at least five (5) other asbestos abatement projects of similar size and complexity.
- The firm must carry and/or be able to provide Commercial General Liability insurance endorsed specifically to provide coverage in respect of any claim arising from the exposure, clean-up, removal, containment, testing or monitoring of asbestos. Said policy must provide coverage in an amount not less than two (2) million dollars ($ 2,000,000.00) per occurrence and must also be issued on an Occurrence-based form.
- Be licensed to transport asbestos waste and/or demonstrate that sufficient arrangements have been secured with a licensed waste hauler to ensure proper handling and final disposal of all waste at a licensed landfill site.
- Provide proof that all employees are medically fit to don a respirator and have been fit-tested for the class of respirator appropriate to the work at hand.
- Provide proof that all employees have had instruction on the hazards of asbestos exposure, the use of respirators and training on all other aspects of asbestos controls and procedures.
- Provide proof that all employees are enrolled in a medical surveillance program.

2.0 PRE-QUALIFIED ASBESTOS CONTRACTORS

2.1 The following is a list of contractors whose firms meet or exceed the above noted requirements and routinely carry out business within the Winnipeg area.

.1 Power Vac Services
   1355 Border Street
   Winnipeg, Manitoba  R3H 0N1
   (204) 632-4433
   (204) 633-4690 fax

.2 Western Waste Management Ltd.
   510 Plinguet Street
   Winnipeg, Manitoba  R2J 0E8
   (204) 956-9475
   (204) 956-9470 fax
GENERAL PROCEDURES FOR TYPE 1, 2 & GLOVE BAG WORK

All persons performing Type 1, 2 or Glove Bag remedial work while present at any University of Manitoba owned or occupied premises, shall comply with the following procedures at a minimum.

NOTE: The following procedures shall apply equally to all classifications (i.e. Type 1, 2 or Glove Bag) of work and shall be read in conjunction with all other requirements and procedures as set out in the AMP document to which this appendix is attached.

1.0 LOCATION OF ASBESTOS-CONTAINING MATERIALS (ACM)

1.1 For a general description as to the location of asbestos-containing materials known to be present throughout each building, refer to the initial Asbestos Screening Report or subsequent Asbestos Survey Update. A copy of this document is maintained on file by the Asbestos Programs Officer and is also available for viewing at those locations identified under Section 3.2.13 of the AMP Document.

1.2 Should any person encounter an unexpected material or material suspect of containing asbestos that has not clearly been identified in the above referenced survey document, work in the immediate area at risk of disturbing such a material shall be halted. Immediately notify the individual manager or project coordinator assigned to the work seeking further direction. Do not resume work until it has been determined if the material in question contain asbestos.

2.0 QUALITY ASSURANCE

2.1 Removal, clean-up or repair of asbestos-containing or contaminated materials is to be performed by persons trained in the methods, procedures and industry practices for Asbestos Abatement.

2.2 Work shall be complete in such a manner so that at no time airborne dust, visible debris, or water runoff contaminate an area outside the established Asbestos Work Area.

2.3 Any contamination of surrounding area (indicated by visual inspection or air monitoring) shall necessitate an immediate clean-up of affected area. The Asbestos Programs Officer (if available) shall be notified as soon as possible following such an occurrence and informed of the measures being implemented to correct the situation.

3.0 INSPECTION

3.1 The Asbestos Programs Office or Inspection Agency designated by the Asbestos Programs Officer, shall review each active asbestos work site a minimum of once per day as a means of ensuring worker compliance with the procedures and work practices established by the AMP document. For work undertaken by the Universities own staff, the frequency of the above site inspection shall be reduced to a random basis and at a minimum frequency so as to comply with standards set out by the Universities Senior Asbestos Programs Officer.

3.2 Ensure each site inspection conforms to the requirements set out under Section 8.0 of the AMP document to which this appendix is attached.
4.0 AIR MONITORING

4.1 The Asbestos Programs Officer or Inspection Agency designated by the Asbestos Programs Officer, shall monitor all asbestos disturbances on a daily basis to ensure worker safety and compliance with control limits established by governing authorities and as set out under the University’s AMP document.

4.2 Ensure air monitoring is performed in compliance with Section 8.0 and Appendix “F” of the AMP document to which this appendix is attached.

5.0 PROJECT NOTIFICATION

5.1 Refer to Section 10.0 of the Universities Asbestos Management Program for additional information and requirements.

5.2 Ensure all project notifications and requirements as set forth in the above document are provided in advance of any asbestos disturbance.

6.0 SCHEDULING OF WORK

6.1 Schedule work during quiet times approved by the individual manager or project coordinator in charge of the work and/or when the area is unoccupied. If unauthorized persons are present, do not start work.

6.2 Schedule work during times when any HVAC systems that may be affected by the work can be shutdown and/or are otherwise isolated.

6.3 If work is required on an emergency basis and the area is occupied, have the individual manager or project coordinator in charge of the work advise occupants to vacate area until work is complete and clearance is given to return to the area.

7.0 WORKER PROTECTION

7.1 General

7.1.1 Before entry to an Asbestos Work Area, all personnel must have undergone asbestos training.

7.1.2 Such training shall, at a minimum, satisfy each of the requirements as set forth under Section 10 of the Asbestos Management Program document to which this appendix is attached.

7.1.3 Workers shall not eat, drink, smoke or chew neither gum nor tobacco except in established areas outside the designated Asbestos Work Area.

7.1.4 Workers shall be protected at all times when a possibility of asbestos disturbance exists.
7.2 *Respirator Protection*

7.2.1 Respirators used shall be certified by the National Institute of Occupational Safety and Health (NIOSH) or other testing agency acceptable to governing authorities.

7.2.2 Filters used shall be tested following each use in accordance with manufacturer's specifications or replaced at the following minimum frequency:

- Replace filters for negative pressure respirator every sixteen (16) hours of wear unless tested on-site.
- Replace PAPR cartridge filters every eight (8) hours of wear unless tested on-site.

7.2.3 No person who has facial hair that may effect the seal between the respirator and his/her face shall be granted entry to an Asbestos Work Area.

7.2.4 Respirators shall be cared for in accordance with the procedures as set forth in Appendix G of the AMP document to which this appendix is attached.

7.3 *Protective Clothing*

7.3.1 All persons required to enter an Asbestos Work Area must be fitted with disposable full body coveralls with attached head covering and elastic hand and pant cuffs. Once worn within the Asbestos Work Area, dispose of as asbestos waste.

8.0 **SIGNAGE/LABELLING**

8.1 *Work Area Signs*: Post signs at all access points to the Asbestos Work Area. Where possible, provide signage immediately prior to entering the Asbestos Work Area, but out of public view. Letters on signs shall be in upper case "HELVETICA MEDIUM" and read as follows:

- **1.** CAUTION (25 mm high)
- **2.** Asbestos Hazard Area (19 mm high)
- **3.** Unauthorized Entry Prohibited (19 mm high)
- **4.** Wear Assigned Protective Equipment (19 mm high)
- **5.** Breathing Asbestos Dust May Cause Serious Bodily Harm (19 mm high)

8.2 *Container Signs*: Label containers for the disposal of asbestos as follows:

- **1.** CAUTION CONTAINS ASBESTOS FIBRES (25 mm high)
- **2.** Do Not Mishandle (19 mm high)

9.0 **WASTE & MATERIAL HANDLING**

9.1 Asbestos-containing or contaminated materials removed shall be treated, packaged, transported and disposed of as asbestos contaminated waste.

9.2 Materials that could tear or puncture a 6 mil (0.15 mm) polyethylene bag shall be packaged and disposed of in sealed rigid waste containers acceptable to the individual manager or project coordinator in charge of the work and local landfill authority.
9.3 Redundant non-asbestos-containing materials, rubble and debris removed during contaminated work shall be treated, packaged, and disposed of as asbestos contaminated waste. With written approval of the individual manager or project coordinator in charge of the work or Designated Inspection Agency, non-porous materials may be cleaned, sprayed with a sealer and disposed of as clean waste.

9.4 Waste removed off-site must be transported to an approved disposal site by a hauler licensed to transport asbestos waste by Manitoba Conservation.

9.5 Transportation of all waste and materials through Occupied Areas shall be covered or placed within unmarked carts and must never be left unattended. Clean-up waste route and loading area after each load. Use asbestos abatement precautions if appropriate or requested by the individual manager or project coordinator in charge of the work or Designated Inspection Agency.

9.6 For work undertaken by the University’s own employees, ensure waste is relocated at the end of each work shift to authorized areas for temporary storage. Access to this area shall remain locked when not occupied and shall be properly posted to identify the presence of asbestos waste.

9.7 For work completed by an outside contractor, waste must be removed off-site at the end of each work shift.

9.8 As the waste is removed off-site, the worker in charge of the work shall ensure a copy of the completed waste waybills is obtained from the disposal firm and submitted to the individual manager or project coordinator in charge of the work. A copy of the standardized “Asbestos Waste Manifest” is provided in Appendix T and forms part of the AMP document.

10.0 PRODUCTS & FACILITIES

10.1 Materials and equipment must be in good condition and free of asbestos, asbestos debris, and fibrous materials. Disposable items must be of new materials only.

10.2 Asbestos Waste Container: Impermeable container acceptable to local landfill authority, labelled as required and comprised of the following:

- A sealed 6 mil (0.15 mm) polyethylene bag or glove bag positioned inside a second 6 mil (0.15 mm) sealed polyethylene bag.
- A sealed 6 mil (0.15 mm) polyethylene bag or glove bag positioned inside or outside a rigid sealed container of sufficient strength to prevent perforation during filling, transportation and disposal.

10.3 Bridging Encapsulant: Bridging encapsulant for purpose of encapsulating remaining asbestos-containing material at locations deemed to be inaccessible by the individual manager or project coordinator in charge of the work and/or his appointed representative. Product shall be colour coded bright red and be capable of withstand ing surface temperature of substrate. Apply product uniformly to minimum thickness of 10 mil.

10.4 HEPA Vacuum: Vacuum equipped with a HEPA filtration system and the necessary fittings, tools and attachments to execute the work properly. Vacuum must also be labelled appropriately to identify that it contains asbestos dust and must never be opened except within a sealed Asbestos Work Area while following Type 2 precautions at a minimum.

10.5 Lock-down Agent: Sealant for purpose of trapping residual dust and shall be capable of withstanding surface temperature of substrate. Product must be compatible with replacement materials and shall leave no stain when dry.
10.6 **Negative Air Exhaust Ducting (Flexible):** Air tight tubing with metal reinforcement. Mechanically affixed each exhaust duct to the unit’s exhaust with metal hose clamp. Diameter of duct to equal negative air discharge. Acceptable product: Thermalflex S-LP 10 flexible ducting as manufactured by Flexible Technologies.

10.7 **Negative Air Unit:** Portable air handling system which extracts air directly from the Asbestos Work Area and discharges air to exterior of building. Equipped as follows:

- Pre-filter and HEPA filter. Air must pass HEPA filter before discharge.
- Pressure differential gauge to monitor filter loading.
- Auto shut off and warning system for HEPA filter failure.
- Separate hold down clamps to retain HEPA filter in place during change of pre-filter.

10.8 **Polyethylene Sheeting:** 6 mil (0.15 mm) minimum thickness in sheet size to minimize joints.

10.9 **Protective Coveralls:** Disposable full body coveralls complete with hoods and elasticized hand and pant cuffs. Acceptable material: Tyvek coveralls.

10.10 **Rip-Proof Polyethylene Sheeting:** 8 mil (0.20 mm) fabric made up from 5 mil (0.13 mm) weave and two (2) layers of 1.5 mil (0.05 mm) poly-laminate in sheet size to minimize on-site seams and overlaps.

10.11 **Wetting Agent:** Non-sudzing surface active agent. Acceptable product: Aqua-Gro.

11.0 **EXECUTION**

11.1 Refer to Appendix L – N of the AMP document for detailed procedures pertaining to each of the various classification of Low to Moderate Risk asbestos work (i.e. Type 1, Type 2 and Glove Bag).
These procedures are to be followed by all persons required to perform the following work:

- Handling, installation or removal of non-friable manufactured products known to contain asbestos provided no sanding, cutting or similar destructive operations are required. Such manufactured products include such items as vinyl composite floor tile, gaskets, seals, asbestos-cement panels, siding and piping.
- Working in close proximity to friable asbestos-containing materials (excluding jacketed mechanical insulation rated as being in GOOD condition) provided that such materials are not actively being disturbed.
- Using a mechanical or electrical power tool, fitted with a HEPA filtered dust collection shroud to cut, shape, drill or grind manufactured products containing asbestos.
- Using hand tools to cut, shape, drill, grind or remove manufactured products known to containing asbestos.
- Wearing or using protective equipment or clothing made of asbestos-containing textiles.
- Removing drywall where asbestos joint filling compounds have been used.

NOTE: The following Type 1 procedures assume the non-friable material being handled can be removed with relatively little debris, nor visible release of airborne dust. Generation of debris is permissible so long as the debris is maintained in a dampened state. If the work will release more than a trivial amount of loose friable debris or should visible dust be emitted during the work, do not proceed. For more information, consult the Asbestos Programs Officer to determine which of the Type 1, 2 or 3 procedures are more appropriate.

NOTE: The following procedures shall be read in conjunction with all other requirements and procedures as set forth under Appendix K of the AMP document.

1.0 EQUIPMENT

All tools, supplies and equipment necessary for the safe and effective completion of the work must be on-site before work proceeds.

1.1 Vacuum

Use of a vacuum is optional. Wet cleaning methods may be used in place of a vacuum where deemed to be more suitable to the work at hand. If a vacuum is to be used, it must be equipped with a high efficiency particulate aerosol (HEPA) filter and must also have the necessary brushes, fittings, etc. to execute the work properly.

1.2 Respirators

Use of a respirator is optional. However, a respirator is strongly advised for work on any type of ceiling tile or any other work performed overhead. If requested, the worker must be supplied with a half-face respirator equipped with HEPA filters and must first, or previously, been given proper training on the use and qualitative fit-testing of such equipment.

1.3 Protective Clothing

The use of re-usable or disposable clothing is optional. Should non-disposable clothing be used any visible asbestos contamination shall be cleaned using a HEPA vacuum prior to exiting the work area and/or laundered provided sufficient notice is given to the laundry facility that the clothing is contaminated with asbestos dust. If disposable coveralls are used, they must be disposed of as asbestos waste.
PROcedures for Type 1 or Low Risk Work

1.4 **Other Equipment**
- Barrier tape and signage – to identify extent of work area.
- Plastic sheeting (6 mil polyethylene) - to serve as a drop cloth.
- Duct tape, spray glue, etc. – to secure drop cloth in place.
- Pump sprayer with misting nozzle or alternative method to wet material before handling.
- Labelled asbestos waste bags (6 mil) or barrels – for all waste, disposable clothing, plastic, etc.
- Misc. small tools & cleaning supplies – i.e. scraper, sponge, rags, wire brush, bucket, utility knife, etc.

2.0 **Site Access & Egress**

2.1 Before entering an established Asbestos Work Area, each worker shall first don an approved respirator (c/w new or tested filters), a set of disposable coveralls, hood and all other personal protective equipment deemed appropriate to the work at hand.

2.2 Before leaving an established Asbestos Work Area, each worker shall complete the following:

.1 Remove any disposable coveralls and place them within a labelled asbestos waste receptacle for final disposal. If coveralls are to be re-used, pre-clean them using a HEPA vacuum prior to their removal then neatly fold them, or hang them up, at a point immediately adjacent to the point of egress.

.2 Once a worker’s coveralls have been removed, the worker should then step across the established barricade before removing his/her respirator.

.3 The worker should then proceed directly to the established wash station with respirator in hand.

.4 Once at the wash station, the worker shall then proceed to wash-up ensuring his/her face, hands, and respirator are adequately cleaned using soap and warm water. Dispose of respirator cartridge filters in container provided.

3.0 **Preparation**

3.1 Before undertaking any asbestos-related work, a copy of a signed and approved “Asbestos Work Permit” must be obtained from the Asbestos Programs Officer.

3.2 Relocate from the area, all non-essential equipment, tools, etc..

3.3 Isolate the Asbestos Work Area from adjoining spaces through the placement of a taped barrier, sawhorse or by closing any doors, windows, etc. at the perimeter of each work area.

3.4 Isolate or otherwise shutdown HVAC system, vents and diffusers located within the Asbestos Work Area.

3.5 Locate any tools, supplies and equipment necessary for the safe and effective completion of the work to inside the designated Asbestos Work Area.

3.6 Wherever settled dust on surfaces throughout the Asbestos Work Area is likely to be disturbed, pre-clean such surfaces using a HEPA vacuum or damp cloth prior to commencing any other work in the area.

3.7 Before disturbing non-friable asbestos materials (excluding floor tile), cover floor and surrounding surfaces situated directly beneath the work with polyethylene sheeting of sufficient size to catch all fallen debris.
3.8 Post signage at all points of entry clearly identifying the area as an Asbestos Work Site and that access by unauthorized personnel is strictly prohibited.

3.9 Do not proceed with any asbestos disturbance until the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

4.0 EXECUTION

4.1 Removal of Vinyl Asbestos Floor Tile

4.1.1 The use of a power scraper to assist in the removal of floor tile shall be strictly prohibited unless specifically approved for use by the Asbestos Programs Officer or Designated Inspection Agency.

4.1.2 Remove tile by wedging a heavy duty scraper in seam of two (2) adjoining tiles and gradually force edge of one (1) tile up and away from floor. While being careful not to break off pieces of tile, continue to force balance of tile upward.

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

4.1.4 As the tiles are removed, place into asbestos waste receptor. Avoid any unnecessary breakage of these tiles during packaging.

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

4.1.6 On completion of removal in each work area, clean floor surface with HEPA vacuum or wet mop.

4.1.7 Dispose of mop head as contaminated waste or store this and other materials which cannot be cleaned effectively in a labelled polyethylene bag until needed again (open only inside an Asbestos Work Area).

4.1.8 Proceed with the dismantlement of any barricades only after the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

4.2 Installing, Cutting or Drilling Non-Friable Asbestos Materials

4.2.1 Work requiring the use of any power tools (except a power drill) not equipped with a HEPA filter dust collector, must not be performed as Type 1 work.

4.2.2 Where possible wet all materials to be disturbed.

4.2.3 Immediately place waste into approved asbestos waste receptor. Clean area frequently during work with HEPA vacuum or by wet methods.

4.2.4 At completion of work, clean drop sheets to be re-used with HEPA vacuum or by wet methods.

4.2.5 Drop sheets not cleaned shall be disposed of as asbestos waste.

4.2.6 Proceed with the dismantlement of any barricades only after the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.
4.3 Removal of Other Non-Friable Asbestos Materials

4.3.1 The following Type 1 procedures apply only to materials that can be removed intact, or in sections, without producing any pulverized or powdered waste. This method is most applicable to the removal of asbestos-cement hardboard panelling (i.e. transite), mechanical gaskets and some forms of perforated ceiling tiles.

4.3.2 Wet all material to be disturbed, ceiling tiles excepted.

4.3.3 Undo fasteners necessary to remove material. Whenever possible, remove asbestos-cement panels intact. Break only if unavoidable. If broken, maintain freshly exposed edges in a dampened state.

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

4.3.5 Place removed material into approved asbestos waste receptor. Clean surrounding surfaces and Asbestos Work Area frequently with HEPA vacuum or with wet methods provided all cleaning rags are disposed of as asbestos waste.

4.3.6 Drop sheets that are not cleaned shall be disposed of as asbestos waste.

4.3.7 Proceed with the dismantlement of any barricades only after the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.
CHECKLIST FOR TYPE 1
OR LOW RISK WORK
Checklist for Type 1 or Low Risk Work

The following checklist should be used to ensure all requirements as set forth by the AMP document for Type 1 or Low Risk work have been complied with before, during and following any asbestos disturbance.

☐ The required “Asbestos Work Permit” has been obtained from the Asbestos Programs Officer.

☐ Arrangements have been made with the Asbestos Programs Officer and/or Designated Inspection Agency to complete any required site inspections or air monitoring during the abatement process.

☐ All non-essential equipment and personnel have been removed from the established work area.

☐ The area affected by the work has been isolated from adjoining areas of the building and the required signage has been posted identifying the site as an “Asbestos Work Area”.

☐ Adjoining surfaces and equipment (excluding floor tile) have been covered with a polyethylene drop cloth.

☐ Personal protective equipment (i.e. disposable coveralls, respirators, etc.) has been provided to all workers who have requested it.

☐ Required tools, equipment and waste receptacles have been located within the established work area.

☐ HVAC systems, vents and diffusers within the Asbestos Work Area have been shutdown or otherwise isolated.

☐ Suitable wash facilities have been located immediately adjacent to or near the established work area.

☐ Written authorization to proceed with the contaminated phase of the work has been received from the Asbestos Programs Officer and/or Designated Inspection Agency.

☐ Non-asbestos dust on surfaces likely to be disturbed has been pre-cleaned using a HEPA vacuum or damp cloth.

☐ Where possible, wet all asbestos-containing materials to be disturbed.

☐ Maintain established work area free of accumulated waste, dust or debris. All material removed shall be placed directly into approved and labelled asbestos waste receptacles as the work progresses.

☐ Drop sheets that will be re-used have been cleaned or placed within a sealed and labelled polyethylene bag.

☐ Final clean the work area to remove any visible trace of dust or debris.

☐ Continue to restrict access to the work area and maintain perimeter barricades in place until the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

☐ An “Asbestos Work Report” has been filed with the Asbestos Programs Officer detailing the extent of asbestos work completed and the location of any remaining asbestos-containing materials.
These procedures are to be followed by all persons required to perform the following work:

- Entry into any ceiling space above which an asbestos-containing fireproofing or thermal insulation is present.
- Entry into a crawlspace, mechanical chase, service area, etc. in which there is known to be loose and damaged asbestos-containing materials or debris.
- The clean-up, removal or encapsulation of minor amounts of friable asbestos-containing materials. Limitations as to the amount of material allowed to be removed or otherwise disturbed while adhering to Type 2 precautions shall be at the sole discretion of the Asbestos Programs Officer or Designated Inspection Agency.
- Removal of asbestos-containing sheet flooring.
- Repair of asbestos-containing mechanical insulation materials.
- Removal of greater than ten (10) asbestos-containing ceiling tiles. The removal of less than ten (10) ceiling tiles can be classified as a Type 1 operation provided the approval of the Asbestos Programs Officer or Designated Inspection Agency is obtained prior to the commencement of such work.

**NOTE:** The following procedures shall be read in conjunction with all other requirements and procedures as set forth under Appendix K of the AMP document.

### 1.0 EQUIPMENT

All tools, supplies and equipment necessary for the safe and effective completion of the work must be on-site before work proceeds.

#### 1.1 Vacuum

An asbestos-approved vacuum (HEPA filtered), equipped with miscellaneous brushes, fittings, etc.. Vacuum must not be opened, except by a fully protected worker while within a sealed Type 2 enclosure.

#### 1.2 Respirators

The use of a negative pressure non-powered half-face respirator equipped with HEPA cartridge filters shall be mandatory for all work performed within an established Type 2 work area.

#### 1.3 Other Equipment

- Plastic sheet (6 mil polyethylene) – to erect a total enclosure and to serve as a drop sheet.
- Wood framing or clips to support polyethylene sheeting as may be appropriate to work at hand.
- Duct tape to fasten plastic enclosure to ceiling, walls, or to tape drop sheet to floor; 3/4” double-sided tape recommended for attaching polyethylene to T-bar ceiling and floor surfaces.
- Labelled asbestos waste bag (6 mil) – for all asbestos waste, disposable suits, plastic for disposal, etc..
- Pump sprayer with misting nozzle or alternative method to wet material before handling.
- Barrier tape and signage – to identify extent of work area.
- Misc. small tools – i.e. scrapers, wire brushes, utility knives, hammer, nails, stapler and staples, etc..
- Cleaning supplies – i.e. scouring pads, sponges, rags, brushes, buckets, etc..
- Insulation repair supplies (lagging compound, canvas, PVC covers).
- Encapsulating sealer, for brush or airless spray application.
2.0 SITE ACCESS & EGRESS

2.1 Before entering Asbestos Work Area, each worker shall first don an approved respirator with new or tested filters, coveralls and all other personal protective equipment deemed appropriate to the work at hand.

2.2 Before leaving the Asbestos Work Area, remove contamination from protective clothing and equipment using a HEPA vacuum or damp cloth.

2.3 Immediately after exiting the Asbestos Work Area, each worker shall complete the following:
   .1 Notwithstanding the above, and wherever an attached airlock has been provided, each worker shall reseal the curtained doorway upon exiting the Asbestos Work Area.
   .2 Remove contaminated clothing and place it into a labelled asbestos waste container for disposal.
   .3 Clean contaminated footwear, hard hats, etc., or place into a sealed polyethylene bag for re-use.
   .4 Wash hands in wash bucket provided for this purpose.

2.4 Following the above, remove respirator then proceed directly to wash station and complete the following:
   .1 Notwithstanding the above, and wherever an attached airlock has been provided, each worker shall exit the airlock and reseal curtain doorway before removing their respirator.
   .2 Wash exposed skin and respirator with soap and water.
   .3 Seal inlet side of respirator filters with tape then remove filters for testing or dispose of as asbestos contaminated waste.

3.0 PREPARATION

3.1 Before undertaking any asbestos-related work, a copy of a signed and approved “Asbestos Work Permit” must be obtained from the Asbestos Programs Officer.

3.2 Shutdown ventilation systems to and from the work area. Seal over all ventilation openings, diffusers, grilles, etc., with polyethylene and tape.

3.3 Wherever any non-asbestos dust settled on surfaces throughout the Asbestos Work Area is likely to be disturbed, pre-clean such surfaces using a HEPA vacuum or damp cloth prior to commencing any other work in the area.

3.4 Where practical, clear areas of movable furnishings and equipment. This should include anything which occupants may wish to use during the work period. Any furnishings or equipment not removed shall be adequately covered and sealed over using polyethylene and tape. The intent of the protection is to provide an airtight envelope to protect the articles from airborne dust or splashed debris, water, sealer, etc..

3.5 For small rooms, cover walls with polyethylene such that the complete room becomes the work area. For larger rooms, erect enclosure of polyethylene of suitable dimensions to enclose the work area and any scaffolds or ladders that may be required to gain access. If a suspended ceiling is present, the enclosure shall extend to the u/s of ceiling line. The enclosure shall be as airtight as conditions permit including the provision of a double overlapping flap at the entrance. The floor of the work area shall be covered with a layer of polyethylene sealed to the plastic walls of the enclosure.
PROCEDURES FOR TYPE 2 OR MODERATE RISK WORK

3.6 At locations where a sealed work enclosure has been erected, provide an attached airlock to facilitate access and egress to and from the work area while minimizing any air movement.

3.7 Install temporary lighting to provide for safe and effective completion of the work.

3.8 At locations where a sealed Type 2 enclosure has been provided, establish negative pressure within the Asbestos Work Area as follows:

   .1 Provide a minimum of two (2) HEPA vacuums or required number of negative pressure units within each work area.

   .2 Operate vacuums (or negative pressure units) continuously from this point until completion of site dismantlement.

   .3 Provide additional vacuums (or negative air units) as necessary to maintain desired pressure drop and to ensure at all times air movement at perimeter of enclosure flows inward into the work area.

3.9 Locate any additional tools, supplies and equipment necessary for the safe and effective completion of the work to the designated Asbestos Work Area.

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

3.11 Do not proceed with any asbestos disturbance until the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

4.0 EXECUTION

4.1 Asbestos Removal, Clean-up or Ceiling Entry

4.1.1 Thoroughly wet asbestos-containing materials to be removed both prior to and throughout the removal process, ceiling tiles excepted.

4.1.2 Remove dust and loose friable material likely to be disturbed in the process of doing the work, with a HEPA vacuum or by damp wiping.

4.1.3 To remove mechanical insulation, first wet any area of damage, then carefully cut exterior jacket. Keep exposed surface of insulation wet. Remove insulation in large sections and place immediately in disposal bag. After all large pieces have been removed, saturate debris on mechanical equipment and clean all exposed surfaces with abrasive pads, sponges, cloths, etc..

4.1.4 Remove ceiling tiles required to complete work by carefully removing first tile and vacuum while still in a horizontal position. Vacuum other tiles to be removed while still in place and prior to removing from grid. Do not break tiles or allow them to drop to the floor.

4.1.5 Ensure complete saturation of spray or trowel applied materials before removal. Place materials removed directly into a waste container. Do not allow scrapped materials or debris to fall to the floor.

4.1.6 When asbestos material is removed, all pieces should be placed directly into an approved asbestos waste receptacle as each piece is removed. Avoid dropping material to floor wherever possible. After bulk removal is complete, brush clean completely, and wet wash the exposed surface.

4.1.7 Frequently, and at regular intervals during the work, clean-up dust, waste materials and debris throughout the work area by wet mopping or by HEPA vacuuming.
PROCEDURES FOR TYPE 2 OR MODERATE RISK WORK

4.1.8 After the completion of any mechanical insulation removal, seal exposed ends of insulation with heavy coating of encapsulant.

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

4.1.10 Apply a generous coating of lock-down agent (sealer) to surfaces from which any asbestos material was removed and to any polyethylene.

4.1.11 Where ceiling tiles were removed to facilitate work in the ceiling space above, re-establish such tiles before exiting the work enclosure.

4.1.12 Do not dismantle the work enclosure until after the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

4.2 Repair of Damaged Asbestos-Containing Mechanical Insulation

4.2.1 A sealed work enclosure is not required for areas where repair of mechanical insulation alone is to be performed. Floor and equipment in the vicinity of work must however be covered with polyethylene drop sheets prior to commencement of repairs. Size of drop sheet to be sufficient to catch any debris during repairs - minimum width 5 feet (1.5 m).

4.2.2 Spray surface of insulation to be repaired and adjacent material with amended water to reduce dust generation prior to patching or repair.

4.2.3 Saturate fully all material that must be removed to accommodate installation of patch or repairs and place directly into asbestos waste container for disposal. Do not allow material removed to fall to the floor.

4.2.4 Repair insulation using eight (8) oz. canvas pasted with lagging and overcoat of flame resistant coating.

4.2.5 Extend new canvas finish 12" (300 mm) either side of damaged area.

4.2.6 Paint repaired areas to match existing finishes.

4.2.7 HEPA vacuum fallen ACM, settled dust, etc., from surfaces throughout the Asbestos Work Area prior to and throughout the course of the work.

4.2.8 Proceed with the dismantlement of any barricades only after the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

4.3 Removal of Sheet Flooring

4.3.1 Remove binding strips or other restrictive mouldings.

4.3.2 Make series of cuts 100 to 200 mm (4" to 8") apart through top layers and about halfway through felt backing, parallel to wall.

4.3.3 Pry up corner of a strip at end of room furthest from access to work area.

4.3.4 Pull sheet back upon itself along with any adhering felt backing which remains adhered to top layers.

4.3.5 Roll strip face out into tight roll, tape or tie, and place into asbestos waste container.

4.3.6 Remove maximum of three (3) strips before wet scraping residual exposed felt underlay.
4.3.7 Remove remaining adhered underlay by wet scraping as follows:

.1 Soak area with water applied by sprayer.
.2 Allow water to penetrate felt.
.3 Scrape off remaining material.
.4 Place scrapings in asbestos waste container.
.5 Allow floor to dry. Clean with HEPA vacuum.

4.3.8 Treat all materials removed as ACM and dispose of as such. If materials or equipment removed to access sheet flooring are to be re-used, wet clean or vacuum.

4.3.9 Wet clean entire enclosure, including equipment, floor and wall surfaces, mechanical equipment and similar items not covered with polyethylene sheeting.

4.3.10 Apply coat of sealer to surface of floor and to any surfaces covered by polyethylene.

4.3.11 Do not dismantle the work enclosure until after the final air clearance results are made available and the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

4.4 Site Dismantlement & Clean-up

4.4.1 Carefully roll polyethylene inward onto itself. As polyethylene is rolled away from underlying finishes, immediately remove any visible debris using a HEPA vacuum or damp cloth.

4.4.2 Place polyethylene, tape, cleaning material, clothing and other contaminated waste in approved waste receptacle and dispose of as asbestos waste.

4.4.3 Equipment used in contaminated Asbestos Work Area shall be washed to remove any visible signs of asbestos contamination.

4.4.4 Dismantle and remove from the area, temporary framework used to support polyethylene.

4.4.5 Immediately upon shutdown of negative air unit(s), seal air inlet grill and exhaust vent with polyethylene and tape. Dispose of unit pre and intermediate filters as asbestos contaminated waste.

4.4.6 Seal vacuum hoses and fittings, flexible ductwork and any tools unable to be properly cleaned in a polyethylene bag prior to removal from work area.

4.4.7 Vacuum and/or wash and mop with clean water all floor surfaces throughout the work area.
CHECKLIST FOR TYPE 2
OR MODERATE RISK WORK
Checklist for Type 2 or Moderate Risk Work

The following checklist should be used to ensure all requirements as set forth by the AMP document for Type 2 or Moderate Risk work have been complied with before, during and following any asbestos disturbance.

☐ The required “Asbestos Work Permit” has been obtained from the Asbestos Programs Officer.

☐ Arrangements have been made with the Asbestos Programs Officer and/or Designated Inspection Agency to complete any required site inspections or air monitoring during the abatement process.

☐ All non-essential equipment and personnel have been removed from the established work area.

☐ The area affected by the work has been isolated from adjoining areas of the building and the required signage has been posted identifying the site as an “Asbestos Work Area”.

☐ Adjoining surfaces and equipment (excluding sheet flooring) have been covered with a polyethylene drop cloth.

☐ Personal protective equipment (i.e. disposable coveralls, respirators, etc.) has been provided to all workers.

☐ Required tools, equipment and waste receptacles have been located within the established work area.

☐ HVAC systems, vents and diffusers within the Asbestos Work Area have been shutdown or otherwise isolated.

☐ Suitable wash facilities have been located immediately adjacent to or near the established work area.

☐ Written authorization to proceed with the contaminated phase of the work has been received from the Asbestos Programs Officer and/or Designated Inspection Agency.

☐ Non-asbestos dust on surfaces likely to be disturbed has been pre-cleaned using a HEPA vacuum or damp cloth.

☐ Wet all asbestos-containing materials to be disturbed.

☐ Maintain established work area free of accumulated waste, dust or debris. All material removed shall be placed directly into approved and labelled asbestos waste receptacles as the work progresses.

☐ Drop sheets that will be re-used have been cleaned or placed within a sealed and labelled polyethylene bag.

☐ The work area has been final cleaned to remove any visible trace of dust or debris.

☐ Continue to restrict access to the work area and maintain sealed work enclosure and/or barricades in place until the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

☐ An “Asbestos Work Report” has been filed with the Asbestos Programs Officer detailing the extent of asbestos work completed and the location of any remaining asbestos-containing materials.
PROCEDURES FOR THE REMOVAL OF MECHANICAL INSULATION BY GLOVE BAG

The following procedures are to be adhered to by all persons required to complete any removal of mechanical pipewrap insulation performed by glove bag method.

NOTE: The following procedures shall be read in conjunction with all other requirements and procedures as set forth under Appendix K of the AMP document.

NOTE: The following procedures assume the quantity, access and overall configuration of the piping from which the insulation is being removed is suited to removal by glove bag method. If in the opinion of the Asbestos Programs Officer and/or Designated Inspection Agency such work can not be completed safely, complete the work from within a sealed Type 2 Enclosure or in the alternative, from within a Full Enclosure (Type 3) be an outside contractor experienced in such work.

1.0 EQUIPMENT

All tools, supplies and equipment necessary for the safe and effective completion of the work must be on-site before work proceeds.

1.1 Glove Bag

Single use prefabricated, 0.25 mm (10 mil) minimum thickness polyvinylchloride bag with integral 0.25 mm (10 mil) thick polyvinylchloride gloves and elasticized ports. Bag must be equipped with reversible double-pull, double throw, zipper to facilitate progressive movement along pipe and also be equipped with interior zip and nylon straps for sealing ends of bag around pipe. Acceptable product: Safe-T-Strip manufactured by Asbestosguard Equipment Inc., in configurations suitable for work.

1.2 Vacuum

An asbestos-approved vacuum (HEPA filtered), equipped with miscellaneous brushes, fittings, etc.. Vacuum must not be opened, except by a fully protected worker while within a sealed Type 2 enclosure.

1.3 Respirators

The use of a negative pressure non-powered half-face respirator equipped with HEPA cartridge filters shall be mandatory for all worker required to enter or complete work within an established Asbestos Work Area.

1.4 Knife

Utility knife with fully retractable blade for use inside a glove bag and/or wire cut saw.

1.5 Other Equipment

- Plastic sheet (6 mil polyethylene) – to wrap damaged sections of piping or to serve as a drop sheet.
- Labelled asbestos waste bag (6 mil) – for all asbestos waste, disposable suits, plastic for disposal, etc..
- Pump sprayer with misting nozzle or alternative method to wet material before handling.
- Barrier tape and signage – to identify extent of work area.
- Misc. small tools – i.e. scrapers, wire brushes, utility knives, duct tape, etc..
- Cleaning supplies – i.e. scouring pads, sponges, rags, brushes, buckets, etc..
- Encapsulating sealer, for brush or airless spray application.
Asbestos Management Program – University of Manitoba

PROCEDURES FOR THE REMOVAL OF
MECHANICAL INSULATION BY GLOVE BAG

2.0 SITE ACCESS & EGRESS

2.1 Before entering an established Asbestos Work Area, each worker shall first don an approved respirator (c/w new or tested filters), a set of disposable coveralls, hood and all other personal protective equipment deemed appropriate to the work at hand.

2.2 Before leaving an established Asbestos Work Area, each worker shall complete the following:

.1 Remove any disposable coveralls and place them within a labelled asbestos waste receptacle for final disposal. If coveralls are to be re-used, pre-clean them using a HEPA vacuum prior to their removal then neatly fold them, or hang them up, at a point immediately adjacent to the point of egress.

.2 Once a worker’s coveralls have been removed, the worker should then step across the established barricade before removing his/her respirator.

.3 The worker should then proceed directly to the established wash station with respirator in hand.

2.3 Once at the wash station, the worker shall then proceed to wash-up ensuring his/her face, hands, and respirator are adequately cleaned using soap and warm water. Dispose of respirator cartridge filters in container provided unless tested on-site and approved for re-use.

3.0 PREPARATION

3.1 Before undertaking any asbestos-related work, a copy of a signed and approved “Asbestos Work Permit” must be obtained from the Asbestos Programs Officer.

3.2 Shutdown ventilation systems to and from the work area. Seal over all ventilation openings, diffusers, grilles, etc., with polyethylene and tape.

3.3 Wherever any non-asbestos dust settled on surfaces throughout the Asbestos Work Area is likely to be disturbed, pre-clean such surfaces using a HEPA vacuum or damp cloth prior to commencing any other work in the area.

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

3.5 Isolate the Asbestos Work Area from adjoining spaces through the placement of a taped barrier, sawhorse or by closing any doors, windows, etc. at the perimeter of each work area.

3.6 Locate any additional tools, supplies and equipment necessary for the safe and effective completion of the work to the designated Asbestos Work Area.

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

3.8 Do not proceed with any asbestos disturbance until the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.
4.0 EXECUTION

4.1 Provide polyethylene drop sheet under piping where damaged or unjacketed insulation is present.

4.2 Spray surface of damaged jacketing with mist of amended water then tape over area of damage to provide temporary repair.

4.3 Mist areas of insulation with no jacketing and wrap with polyethylene.

4.4 Clean surface of pipe or minor amounts of fallen insulation by HEPA vacuuming or by damp wiping.

4.5 Place tools necessary to remove insulation in tool pouch then zip bag onto pipe and seal ends of bag with cloth securing straps. For valve glove bags, seal valve cover with wire tie or equivalent.

4.6 Place hands into gloves and use necessary tools to remove insulation from pipe.

4.7 Arrange insulation in bag to obtain full capacity of bag.

4.8 Roll jacketing carefully to minimize the possibility of ripping or puncturing bags.

4.9 Insert nozzle of spray pump into bag through valve and wash down pipe and interior of bag thoroughly. Alternate use of each hand to aid washing process.

4.10 Wet surface of insulation in lower section of bag and any exposed end of insulation remaining on pipe.

4.11 If bag is to be removed from pipe for use at a new location, seal closure strips from inside of bag then insert nozzle of HEPA vacuum into valve opening and evacuate air from balance of bag. Re-install and seal in new location before re-opening closure strips. Repeat insulation removal operation.

4.12 If bag is to be moved along the same pipe, insert nozzle of HEPA vacuum into valve opening and evacuate air from bag prior to loosen holding straps then carefully move bag along length of pipe and re-seal to pipe. Using double-pull zipper to pass hangers. Repeat insulation removal operation.

4.13 Should the glove bag become ripped, cut or opened in any way, cease work and repair opening before continuing work. If the rip, cut or opening cannot be easily repaired, dispose of as contaminated waste and replace with new.

4.14 Spilled material must be cleaned up using a HEPA vacuum immediately upon discovery.

4.15 To remove bag after completion of insulation removal or as each bag is filled:

   .1 Wash top section of glove bag and tools thoroughly.

   .2 Place tools in one hand (glove), then pull out inverted, twist to create a separate pouch, tape inverted hand at two (2) separate locations 1" apart to seal pouch.

   .3 Remove inverted glove and tools by cutting between the two (2) tape seals.

   .4 Place inverted glove and tools into the next clean glove bag to be used or into a water bucket, open pouch underwater and clean tools and then allow to dry.
.5 Insert nozzle of HEPA vacuum into valve opening and evacuate air from bag. Remove nozzle from valve opening and seal over end of valve with tape.

.6 Pull a 6 mil polyethylene bag over glove bag before removing from pipe.

.7 Remove securing straps, unfasten zipper and place sealed glove bag into a sealed 6 mil polyethylene bag so as to create an asbestos waste container.

4.16 Ensure that newly exposed sections of pipe are free of residue before resuming removal work or leaving the area. If necessary, after removal of each section of asbestos, vacuum all surfaces of pipe, using HEPA filtered vacuum equipment or wet wipe with damp cloth.

4.17 Before completion of shift, seal surfaces of exposed pipe with lock-down agent to seal any residual fibres.

4.18 Cover exposed ends of remaining asbestos insulation with heavy coat of bridging encapsulant.

4.19 Remove drop sheet and dispose of as contaminated waste.

4.20 Proceed with the dismantlement of any barricades only after the results of any final air clearances are made available and the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.
CHECKLIST FOR THE REMOVAL OF MECHANICAL INSULATION BY GLOVE BAG METHOD
Checklist for Glove Bag Work

The following checklist should be used to ensure all requirements as set forth by the AMP document for Glove Bag removal work have been complied with before, during and following any asbestos disturbance.

☐ The required “Asbestos Work Permit” has been obtained from the Asbestos Programs Officer.

☐ Arrangements have been made with the Asbestos Programs Officer and/or Designated Inspection Agency to complete any required site inspections or air monitoring during the abatement process.

☐ All non-essential equipment and personnel have been removed from the established work area.

☐ The area affected by the work has been isolated from adjoining areas of the building and the required signage has been posted identifying the site as an “Asbestos Work Area”.

☐ Adjoining surfaces and equipment have been covered with a polyethylene drop cloth.

☐ Personal protective equipment (i.e. disposable coveralls, respirators, etc.) has been provided to all workers.

☐ Required tools, equipment and waste receptacles have been located within the established work area.

☐ HVAC systems, vents and diffusers within the Asbestos Work Area have been shutdown or otherwise isolated.

☐ Suitable wash facilities have been located immediately adjacent to or near the established work area.

☐ Written authorization to proceed with the contaminated phase of the work has been received from the Asbestos Programs Officer and/or Designated Inspection Agency.

☐ Non-asbestos dust on surfaces likely to be disturbed has been pre-cleaned using a HEPA vacuum or damp cloth.

☐ Wet all asbestos-containing materials to be disturbed.

☐ Drop sheets that will be re-used have been cleaned or placed within a sealed and labelled polyethylene bag.

☐ The work area has been final cleaned to remove any visible trace of dust or debris.

☐ Continue to restrict access to the area and maintain barricades in place until the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

☐ An “Asbestos Work Report” has been filed with the Asbestos Programs Officer detailing the extent of asbestos work completed and the location of any remaining asbestos-containing materials.
The following procedures shall be adhered to in the event that any asbestos or suspect asbestos-containing materials are encountered, damaged or are otherwise disturbed during routine maintenance, construction, etc.

1. Suspend all activities at risk of disturbing the material in question.

2. Immediately notify his/her supervisor who in turn shall notify the Asbestos Programs Office and arrange for an emergency assessment of the area and the material in question.

3. Where practical, or where such actions will not interfere with established emergency or fire routes, isolate the area in question by closing and locking all perimeter exits. As an alternative, workers shall establish a tape or rope barricade c/w necessary signage at all points of entry.

4. If working alone, ensure the site is secured as detailed above before leaving the area to notify his/her supervisor.

5. Occupants in the immediate vicinity of the work area shall be instructed to vacate the area.

6. Shutdown or otherwise isolate ventilation systems to or from the affected area.

7. Should the individual worker(s) engaged in the work, at the time the suspect material was first encountered, feel he/she may have been exposed to asbestos, they shall remain in the area until such time as the attending Asbestos Programs Officer can provide the necessary instruction concerning the decontamination of any clothing, etc. In most instances, it is not necessary to dispose of the clothing in question, but rather to simply launder it.

8. Upon his/her attendance to the site, the Asbestos Programs Officer shall determine if the material in question contains asbestos, the extent of any contamination (if any) and the desired course of action. If necessary, the Asbestos Programs Officer shall collect a sample of the material (debris) in question and have it submitted for analysis at a laboratory that meets or exceeds the requirements set out in Appendix F.

9. Should the material (debris) in question be determined to be asbestos, the affected area shall be cleaned-up while following the appropriate asbestos precautions (i.e. Type 1, 2 or 3) as prescribed by the Asbestos Programs Officer.

10. Do not resume work in the area until it has been determined if the material in question contains asbestos, the required clean-up (if necessary) has been completed, and authorization to return to work has been granted by his/her supervisor.

11. Where requested by the attending Asbestos Programs Officer, the individual worker(s) engaged in the work shall file an incident report detailing events leading up to, and immediately following, the discovery of the suspect material in question.

In case of any emergency maintenance work, work shall proceed as set out in Appendix “P” – Procedures for Emergency Work.
In the event that standard Type 2 or Glove Bag procedures cannot strictly be observed due to the urgency of the situation to which the workers are responding, some judgement will be required of the person responsible for the work, and other staff or contractors responding to the emergency. The general principles of emergency response work is to protect the workers performing the repairs and to minimize the exposure of others to airborne asbestos. The procedures given below should be followed to the extent possible or modified as required given the specific circumstances surrounding each emergency.

1. Clear area of all non-essential personal. Provide personal protective gear to all persons required to remain.

2. Isolate the affected area by establishing a perimeter barricade (i.e. by placing a rope or tape barrier) or by closing all exits, windows, doors, etc.. If time permits, post signage at all points of entry clearly identifying the area as being temporarily off limits to all personal.

3. Shut down ventilation systems servicing or otherwise affected by the emergency work.

4. Worker(s) responding to the emergency shall wear protective respirator and disposable coveralls. If normal work clothes are worn they must be laundered or disposed of following the completion of the work.

5. Provide drop sheet in the immediate area of the work to minimize contamination and to aid clean-up efforts.

6. Wherever the use of water does not pose an additional hazard, workers shall ensure the asbestos or suspect asbestos-containing material in question is saturated both prior to and throughout its disturbance.

7. Perform emergency repairs with minimum disturbance of asbestos.

8. As workers are required to exit the controlled work area, other then on an emergency basis (i.e. explosion, fire, etc.) each worker shall first wipe off or vacuum clean all protective gear and footwear. If disposable coverall were used, they shall be removed prior to exiting the work area. Worker shall then proceed to a pre-established wash area and wash-up.

9. Notify the Asbestos Programs Officer of the need to have performed emergency work and obtain his/her direction as to the extent of required clean-up and desired course of action while continuing to restrict access to the area in question.

10. Obtain the necessary asbestos abatement equipment then proceed with a clean-up of the affected area and in a manner consistent with the direction provided by the Asbestos Programs Officer or Designated Inspection Agency. At a minimum, such an effort must address the clean-up of all visible debris and/or settled dust in the immediate area of the work. Dispose of all waste materials and cleaning supplies as contaminated waste.

11. Proceed with the dismantlement of any barricades only after the results of any final air clearances are made available and the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

The above emergency procedure would in most instances be appropriate in the event of a breach or failure of a Type 2, Glove Bag or Type 3 enclosure.
ASBESTOS WORK REQUISITION/PERMIT

NOTE: It is the responsibility of individual Project Coordinator or Manager assigned to the work to ensure the following form is completed, and then forwarded to the University’s Environmental Health & Safety Office, a minimum of 72 hours before the anticipated start of the work. Ensure the work DOES NOT commence until a signed and duly authorized permit is obtained.

NOTICE: All work shall conform to Federal, Provincial, Municipal standards, codes and guidelines in addition to the requirements set forth by the University’s Asbestos Management Program and any project specifications. In the case of any conflict, the most stringent requirements shall apply.

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### Project Co-ordinator or Manager:

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### Project Title/Description:

### W.O./REQ 7 Reference:

### Building Name/Description:

### Room No.:

### Room Name/Description:

### Date of Request:

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### Anticipated Completion:

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### Description of Work Being Undertaken:

Note: The above must clearly describe the scope of work. Include equipment reference, estimated quantities, location, etc.

### Department Reference:

### Contact:

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### ASBESTOS PROCEDURES

( ) TYPE 1 – REMOVAL OR REPAIRS

( ) TYPE 2 – REMOVAL OR REPAIR OF MECHANICAL INSULATION

( ) TYPE 2 – ACCESS TO CONTAMINATED CEILING SPACE OR AREAS

( ) TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR

( ) TYPE 3 – REMOVAL OF MECHANICAL INSULATION (PIPING OR EQUIPMENT)

( ) OTHER:

### OTHER RESTRICTIONS

- Restricted Hours of Work
- Specify Hours:

- Weekend Work
- Specify Hours:

- Occupant Access Required
- Specify Areas/Equipment:

- HVAC Shut Down
- Specify Hours and Zones:

- Other System Shut Down
- Specify:

- Other:

- Additional Restrictions:

### AUTHORIZATION

(The following section is to be completed by a duly authorized Asbestos Programs Officer)

<table>
<thead>
<tr>
<th>Name:</th>
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<td>(APO)</td>
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<tr>
<th>Signature:</th>
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<td>Y/M/D</td>
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Appendix Q
Revised Jan 3, 2003
NOTE: It is the responsibility of individual Project Coordinator or Manager assigned to the work to ensure the following form is completed, and then forwarded to the University’s Environmental Health & Safety Office, a minimum of 72 hours before the anticipated start of the work. Ensure the work DOES NOT commence until a signed and duly authorized permit is obtained.

**NOTICE:** All work shall conform to Federal, Provincial, Municipal standards, codes and guidelines in addition to the requirements set forth by the University’s Asbestos Management Program and any project specifications. In the case of any conflict, the most stringent requirements shall apply.

**PERMIT NO.**

**EXTERNAL FORCES**

<table>
<thead>
<tr>
<th>Project Co-ordinator or Manager:</th>
<th>Telephone No.:</th>
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</table>

**W.O./REQ 7 Reference:**

<table>
<thead>
<tr>
<th>Building Name/Description:</th>
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**Room No.:**

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<th>Room Name/Description:</th>
</tr>
</thead>
</table>

**Date of Request:**

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<th>Anticipated Start:</th>
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</table>

<table>
<thead>
<tr>
<th>Anticipated Completion:</th>
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</table>

**Description of Work Being Undertaken:**

Note: The above must clearly describe the scope of work. Include equipment reference, estimated quantities, location, etc.

**Asbestos Contractor:**

<table>
<thead>
<tr>
<th>Completing the Work</th>
</tr>
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<table>
<thead>
<tr>
<th>Contact:</th>
</tr>
</thead>
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<table>
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<tr>
<th>Phone No.:</th>
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**ASBESTOS PROCEDURES**

( ) TYPE 1 – REMOVAL OR REPAIRS

( ) TYPE 2 – REMOVAL OF SHEET FLOORING INSULATION BY GLOVE BAG

( ) TYPE 2 – REMOVAL OF MECHANICAL INSULATION

( ) TYPE 2 – SPRAYED TEXTURE COAT REMOVAL OR REPAIR

( ) TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR

( ) TYPE 2 – EMERGENCY CLEAN-UP, REMOVAL AND/OR REPAIRS

( ) TYPE 3 – REMOVAL OF MECHANICAL INSULATION (PIPING OR EQUIPMENT)

( ) TYPE 3 – REMOVAL OF SPRAYED TEXTURE COAT OR FIREPROOFING

( ) TYPE 2 – CEILING TILE REMOVAL

( ) TYPE 2 – REMOVAL OF MECHANICAL INSULATION

( ) TYPE 2 – ACCESS TO CONTAMINATED CEILING SPACE OR AREAS

( ) TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR

( ) TYPE 3 – REMOVAL OF SPRAYED TEXTURE COAT OR FIREPROOFING

( ) OTHER:

**OTHER RESTRICTIONS**

- [ ] Restricted Hours of Work Specify Hours:

- [ ] Weekend Work Specify Hours:

- [ ] Occupant Access Required Specify Areas/Equipment:

- [ ] HVAC Shut Down Specify Hours and Zones:

- [ ] Other System Shut Down Specify:

- [ ] Other:

**AUTHORIZATION**

(The following section is to be completed by a duly authorized Asbestos Programs Officer)

<table>
<thead>
<tr>
<th>Name:</th>
<th>Signature:</th>
<th>Date:</th>
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<tbody>
<tr>
<td>(APO)</td>
<td></td>
<td>(Y/M/D)</td>
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</table>

Additional Restrictions:
STANDING PERMIT - GLOVEBAG

NOTE: This duly authorized standing permit is issued to the University of Manitoba Plumbing Shop for INTERNAL FORCES use only. It is the responsibility of Plumbing Shop management to ensure that this permit is completed and forwarded to EHSO prior to the commencement of the work. This form may be used for up to 10 separate glovebag jobs provided they are scheduled for the same workday.

**NOTICE:** All work shall conform to Federal, Provincial, Municipal standards, codes and guidelines in addition to the requirements set forth by the University’s Asbestos Management Program and any project specifications. In the case of any conflict, the most stringent requirements shall apply.

<table>
<thead>
<tr>
<th>PERMIT NO.</th>
<th>WPI 0043</th>
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| Project Co-ordinator or Manager: PLUMBING SHOP | Telephone No.: 474-7234/7235 |

| Project Title/Description: GLOVEBAG REMOVAL OF ASBESTOS CONTAINING MECHANICAL INSULATION |

| Date of Request: (Y/M/D) | Anticipated Start: (Y/M/D) |

| Description of Work Being Undertaken: |

<table>
<thead>
<tr>
<th>Location</th>
<th>Details</th>
<th>W.O. /Req7</th>
<th>Damage Report No. (if applicable)</th>
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<tbody>
<tr>
<td>Please include any applicable restrictions (weekend work, HVAC shutdown etc…)</td>
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</tbody>
</table>

| 1) | | ADR_____ |
| 2) | | ADR_____ |
| 3) | | ADR_____ |
| 4) | | ADR_____ |
| 5) | | ADR_____ |
| 6) | | ADR_____ |
| 7) | | ADR_____ |
| 8) | | ADR_____ |
| 9) | | ADR_____ |
| 10) | | ADR_____ |

| Department Reference: PLUMBING SHOP (Completing the Work) | Contact: Phone No.: |

**AUTHORIZATION** (The following section is to be completed by a duly authorized Asbestos Programs Officer)

| Name: PAUL HOULE (APO) | Signature: | Date: (Y/M/D) |

| Additional Restrictions: |

ALL GLOVEBAG WORK MUST BE PERFORMED IN ACCORDANCE WITH THE UNIVERSITY OF MANITOBA ASBESTOS MANAGEMENT PROGRAM (AMP).

AN ASBESTOS WORK REPORT MUST BE COMPLETED AND FILED WITH EHSO AND THE PHYSICAL PLANT MAIN OFFICE UPON COMPLETION OF EVERY GLOVEBAG OPERATION.

EHSO WILL PERFORM PERIODIC INSPECTIONS OF GLOVEBAG OPERATIONS TO ENSURE COMPLIANCE WITH THE PROCEDURES SET FORTH IN THE AMP AND ANY APPLICABLE REGULATIONS, CODES OR GUIDELINES.
NOTE: The following form has been designed to maintain a current record of all asbestos-related work undertaken by the University’s own staff and/or workforce. It shall be the responsibility of the individual Project Coordinator or Manager assigned to the work to ensure the following form is completed; and then forwarded to the General Office of the Physical Plant and to Environmental Health & Safety.

REQ 7 - REFERENCE: ________________________ ASBESTOS REQUISITION/PERMIT: ____________

BLDG.: ________________________ ROOM. NO.: ____________

ROOM NAME/DESCRIPTION: ________________________

WORK-commenced: ________________________ WORK-completed: ________________________

(Y/M/D) (Y/M/D)

DESCRIPTION OF WORK: ________________________

Note: The above must clearly describe the scope of work completed. Include equipment reference, estimated quantities, location, etc.

CLASSIFICATION OF WORK:

( ) TYPE 1 – REMOVAL OR REPAIRS

( ) TYPE 2 – REMOVAL OR REPAIR OF MECHANICAL INSULATION

( ) TYPE 2 – CEILING TILE REMOVAL

( ) TYPE 2 – REMOVAL OR REPAIR OF MECHANICAL INSULATION

( ) TYPE 2 – ACCESS TO CONTAMINATED CEILING SPACE OR AREAS

( ) TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR

( ) TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR

( ) TYPE 2 – REMOVAL OF MECHANICAL INSULATION

( ) TYPE 2 – REMOVAL OF MECHANICAL INSULATION BY GLOVE BAG

( ) TYPE 2 – SPRAYED TEXTURE COAT REMOVAL OR REPAIR

( ) TYPE 2 – SPRAYED TEXTURE COAT REMOVAL OR REPAIR

( ) TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR

( ) TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR

( ) TYPE 2 – EMERGENCY CLEAN-UP, REMOVAL AND/OR REPAIRS

( ) TYPE 2 – EMERGENCY CLEAN-UP, REMOVAL AND/OR REPAIRS

( ) OTHER: ________________________

DEPARTMENT: ________________________

(Performing the Work)

SUPERVISOR: ________________________ PHONE: ________________________

(In charge of the Work)

DESIGNATED INSPECTION AGENCY: ________________________

LIST OF ASBESTOS WORKERS (CONTRACTORS EXCLUDED)

<table>
<thead>
<tr>
<th>NAME</th>
<th>HOURS</th>
<th>NAME</th>
<th>HOURS</th>
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</table>

COMPILED BY: ________________________ PHONE: ________________________

(Name & Title)

SIGNATURE: ________________________ DATED: ________________________

(Y/M/D)
NOTE: The following form has been designed to maintain a current record of all asbestos-related work undertaken by the University through the engagement of any outside contractors, service firms, etc. It shall remain the responsibility of the individual Project Coordinator or Manager assigned to the work to ensure the following form is completed; and then forwarded to the General Office of the Physical Plant and to Environmental Health & Safety.

<table>
<thead>
<tr>
<th>REQ 7 - REFERENCE:</th>
<th>ASBESTOS REQUISITION/PERMIT:</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDG.:</td>
<td>ROOM. NO.:</td>
</tr>
<tr>
<td>ROOM NAME/DESCRIPTION:</td>
<td></td>
</tr>
<tr>
<td>WORK COMMENCED:</td>
<td>WORK COMPLETED:</td>
</tr>
<tr>
<td>(Y/M/D)</td>
<td>(Y/M/D)</td>
</tr>
<tr>
<td>DESCRIPTION OF WORK:</td>
<td></td>
</tr>
</tbody>
</table>

Note: The above must clearly describe the scope of work completed. Include equipment reference, estimated quantities, location, etc.

CLASSIFICATION OF WORK:

( ) TYPE 1 – REMOVAL OR REPAIRS
( ) TYPE 2 – CEILING TILE REMOVAL
( ) TYPE 2 – REMOVAL OR REPAIR OF MECHANICAL INSULATION
( ) TYPE 2 – ACCESS TO CONTAMINATED CEILING SPACE OR AREAS
( ) TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR
( ) TYPE 2 – SPRAYED TEXTURE COAT REMOVAL OR REPAIR
( ) TYPE 2 – REMOVAL OR REPAIR OF MECHANICAL INSULATION
( ) TYPE 2 – REMOVAL OF MECHANICAL INSULATION BY GLOVE BAG
( ) TYPE 2 – SPRAYED TEXTURE COAT REMOVAL OR REPAIR
( ) TYPE 2 – EMERGENCY CLEAN-UP, REMOVAL AND/OR REPAIRS
( ) TYPE 3 – REMOVAL OF MECHANICAL INSULATION (PIPING OR EQUIPMENT)
( ) TYPE 3 – REMOVAL OF SPRAYED TEXTURE COAT OR FIREPROOFING
( ) OTHER:

ASBESTOS CONTRACTOR: _____________________________________________
FOREMAN/SUPERVISOR: _____________________________________________
(Assigned by the Contractor) PHONE: ________________________________
TESTING AGENCY/FIRM: _____________________________________________
PHONE: ________________________________

PROJECT FINAL INSPECTION:

<table>
<thead>
<tr>
<th>Project Coordinator: (U of M)</th>
<th>SIGNATURE:</th>
<th>HOURS:</th>
<th>DATE: (Y/M/D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>APO:</td>
<td>SIGNATURE:</td>
<td></td>
<td>DATE: (Y/M/D)</td>
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<tr>
<td>CAW/Union:</td>
<td>SIGNATURE:</td>
<td></td>
<td>DATE: (Y/M/D)</td>
</tr>
<tr>
<td>ASBESTOS CONTRACTOR:</td>
<td>SIGNATURE:</td>
<td></td>
<td>DATE: (Y/M/D)</td>
</tr>
</tbody>
</table>

Not Applicable
# Milestone Requisition

**Milestone Requisition Form**

<table>
<thead>
<tr>
<th>To:</th>
<th>Date:</th>
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<tbody>
<tr>
<td>Fax:</td>
<td>cc:</td>
</tr>
<tr>
<td>Phone:</td>
<td></td>
</tr>
<tr>
<td>From:</td>
<td>Fax:</td>
</tr>
<tr>
<td>Phone:</td>
<td></td>
</tr>
<tr>
<td>Project:</td>
<td>Work Area:</td>
</tr>
</tbody>
</table>

Please be advised that the above referenced work area will be ready for your review;

**Date:**

**Time:**

Your review and approval of the following Milestone Inspection and authorization to proceed with the next phase of the work is hereby requested.

<table>
<thead>
<tr>
<th>Company:</th>
</tr>
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<tbody>
<tr>
<td>Signature:</td>
</tr>
<tr>
<td>Name &amp; Title:</td>
</tr>
</tbody>
</table>

### Milestone Requested:

(Please Check Desired Inspection)

<table>
<thead>
<tr>
<th><strong>Type 3 – Asbestos Work Area</strong></th>
<th><strong>Type 1 &amp; 2 - Asbestos Work Areas</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>____ Clean Site Preparation</td>
<td>____ Clean Site Preparation</td>
</tr>
<tr>
<td>____ Contaminated Perimeter Preparation</td>
<td>____ Dismantlement Inspection</td>
</tr>
<tr>
<td>____ Contaminated Site Preparation</td>
<td></td>
</tr>
<tr>
<td>____ Visual Clearance</td>
<td></td>
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<tr>
<td>____ Air Clearance</td>
<td></td>
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<tr>
<td>____ Dismantlement Inspection</td>
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<td>____ Other:</td>
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</table>

### Outcome of Inspection:

- [ ] Authorization is hereby granted to proceed with the next phase of the work.
- [ ] Authorization to proceed with the next phase of the work is hereby withheld for reasons outlined in the attached report (Rpt. #).

Signed by: *(Designated Inspection Agency Representative)*

---

**Appendix S**
## ASBESTOS WASTE TRANSPORTATION MANIFEST

<table>
<thead>
<tr>
<th>Project No.:</th>
<th>Project:</th>
<th>Date:</th>
<th>Manifest No.:</th>
<th>Waybill:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>(y/m/d)</td>
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<table>
<thead>
<tr>
<th>Generator:</th>
<th>Landfill Site:</th>
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<table>
<thead>
<tr>
<th>Carrier:</th>
<th>Shipping Date:</th>
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<table>
<thead>
<tr>
<th>Container Type (Drum/Bag/Etc.)</th>
<th>Quantity Being Shipped</th>
<th>State of Waste (Solid/Liquid/Slurry)</th>
<th>Estimated Weight (kg)</th>
</tr>
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<tbody>
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**Note:** All waste transportation manifest to be accompanied by waybill from an authorized waste disposal site confirming actual weights/quantities received.

<table>
<thead>
<tr>
<th>Estimated Volume Shipped (bags, drums, etc.)</th>
<th>Estimated Weight (kg)</th>
</tr>
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<tbody>
<tr>
<td></td>
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</table>

Site Superintendent’s Name: Signature:

Appendix T
Existing asbestos guidelines and good practice dictates, that consideration be given to the development of a system of on-site identification whereby general work area signage, placards or stencilling is used to provide a final line of defense against the accidental disturbance of known asbestos-containing materials.

In many instances however, the physical labelling of known asbestos-containing materials represents a series of technical or logistical concerns. For example, the labelling of architectural finishes such as sheet flooring products, vinyl asbestos floor tile (VAT), ceiling tiles, sprayed texture coats, wall plasters or other similar material are almost always exempt from labelling. In addition, access to these materials and others is not always practical. The use of visually similar products or jacketing of mechanical systems often makes it impossible to readily distinguish between known asbestos-containing materials and newer, non-asbestos products.

In light of the above concerns, and others, the University will not be undertaking a program of wholesale labelling of all known asbestos-containing materials as a matter of corporate policy.

Notwithstanding the above, conditions within a specific service area or building may arise whereby the on-site labelling of asbestos maybe desirable. In such instances, workers shall, with the informed consent and knowledge of the Senior Asbestos Programs Officer, proceed with any labelling in a manner consistent with the following section.

1.0 MECHANICAL SYSTEMS & SERVICES

Individual mechanical systems or services insulated with asbestos shall be labelled (using bright red upper case “HELVETICA” lettering) as follows and in such a manner as to clearly define the extent and approximate location of known asbestos-containing materials.

1.1 At locations where asbestos-containing pipewrap is present on straight runs and fittings of mechanical services, label as follows with continuous runs labelled at maximum intervals of 12 feet (3.6 m):

← CAUTION: ASBESTOS →

1.2 At locations where asbestos-containing pipewrap is present on fittings of mechanical services alone, label as follows with continuous runs labelled at maximum intervals of 12 feet (3.6 m):

← CAUTION: ASBESTOS PRESENT AT FITTINGS →

1.3 At locations where asbestos-containing insulation is present on the surface of mechanical equipment label as follows and on each conversing side of the equipment exposed to view:

CAUTION: ASBESTOS
DO NOT DISTURB

1.4 At locations where existing asbestos-containing insulation has been removed and replaced with asbestos-free insulation, label mechanical services as follows at locations where the newly applied insulation butts up against the remaining asbestos:

← ASBESTOS FREE | CAUTION: ASBESTOS →

2.0 MECHANICAL AND/OR OTHER SERVICE AREAS

2.1 At locations where known asbestos-containing debris or materials are present within existing crawlspaces, mechanical services areas, pipechases, shafts or within existing ceiling plenums, its presence shall be identified via the installation and use of general work area signage.
2.2 Such signage shall be posted in close proximity to all points of entry and must be clearly visible to all personnel upon entry.

2.3 In the case of most mechanical rooms, service shafts, ceiling plenums or crawlspaces, where access is controlled via a limited number of doorways, hatches, etc., it shall be permissible to post such signage on the backside of each doorway, hatch, etc..

2.4 The following is a listing of pre-approved signage for use within varying spaces. Alternative signage (wording) may only be used with the prior approval of the Senior Asbestos Programs Officer.

Example No. 1

CAUTION

INSULATION PRESENT ON MECHANICAL SERVICES THROUGHOUT THIS AREA IS KNOWN TO CONTAIN ASBESTOS

BREATHING ASBESTOS FIBRES IS KNOWN TO CAUSE SERIOUS HEALTH PROBLEMS, LUNG DISEASE AND CANCER

DO NOT DISTURB ANY INSULATION WITHOUT PROPER TRAINING, EQUIPMENT AND PRIOR WRITTEN APPROVAL OF THE ASBESTOS PROGRAMS OFFICER

Example No. 2

CAUTION

INSULATION PRESENT ON PIPING THROUGHOUT THIS AREA IS KNOWN TO CONTAIN ASBESTOS

BREATHING ASBESTOS FIBRES IS KNOWN TO CAUSE SERIOUS HEALTH PROBLEMS, LUNG DISEASE AND CANCER

DO NOT DISTURB ANY INSULATION WITHOUT PROPER TRAINING, EQUIPMENT AND PRIOR WRITTEN APPROVAL OF THE ASBESTOS PROGRAMS OFFICER

Example No. 3

CAUTION

SPRAYED FIREPROOFING MATERIAL PRESENT THROUGHOUT THIS AREA IS KNOWN TO CONTAIN ASBESTOS

BREATHING ASBESTOS FIBRES IS KNOWN TO CAUSE SERIOUS HEALTH PROBLEMS, LUNG DISEASE AND CANCER

DO NOT DISTURB THIS MATERIAL WITHOUT PROPER TRAINING, EQUIPMENT AND PRIOR WRITTEN APPROVAL OF THE ASBESTOS PROGRAMS OFFICER

Example No. 4

CAUTION

HARDBOARD PANELLING PRESENT THROUGHOUT THIS AREA IS KNOWN TO CONTAIN ASBESTOS

BREATHING ASBESTOS FIBRES IS KNOWN TO CAUSE SERIOUS HEALTH PROBLEMS, LUNG DISEASE AND CANCER

DO NOT DISTURB THIS MATERIAL WITHOUT PROPER TRAINING, EQUIPMENT AND PRIOR WRITTEN APPROVAL OF THE ASBESTOS PROGRAMS OFFICER
Example No. 5

CAUTION

ASBESTOS CONTAINING MATERIALS ARE
KNOWN TO BE PRESENT IN THIS AREA
BREATHING ASBESTOS FIBRES IS KNOWN TO
CAUSE SERIOUS HEALTH PROBLEMS, LUNG
DISEASE AND CANCER
DO NOT DISTURB ANY SUSPECT
MATERIAL WITHOUT PROPER TRAINING,
EQUIPMENT AND PRIOR WRITTEN
APPROVAL OF AN ASBESTOS PROGRAM
OFFICER

Example No. 6

CAUTION

ASBESTOS CONTAINING MATERIALS ARE
KNOWN TO BE PRESENT UPON ENTRY
INTO THIS SPACE
BREATHING ASBESTOS FIBRES IS KNOWN TO
CAUSE SERIOUS HEALTH PROBLEMS,
LUNG DISEASE AND CANCER
DO NOT DISTURB ANY SUSPECT
MATERIAL WITHOUT PROPER TRAINING,
EQUIPMENT AND THE NECESSARY WORK
PERMITS
CONTACT PHYSICAL PLANT AT 474-8911

2.5 Notwithstanding the above area signage, a system of “Coloured Dots”, placed in the upper right hand corner of all doorways, service hatches or openings, shall be used to identify the presence of any known or suspect asbestos-containing materials within the adjoining room, service area, shaft, etc.

The following is a summary of the individual colours that are to be used, and the conditions each is intended to reflect. Variations to the following colour scheme are not to be made without the informed consent and authorization of the Senior Asbestos Programs Officer.

Suggested Colour Scheme - Table No. 1

“Red” Dots Known asbestos-containing materials are present within the room at locations accessible to workers without demolition.

“Yellow” Dots Suspect asbestos-containing materials are known to be present within the room, at locations accessible without demolition and/or known asbestos-containing materials may also be present at a location ONLY accessible through selective demolition. i.e. Above a fix ceiling system or column enclosure, etc.

“Green” Dots The room is free of any known or suspect asbestos-containing materials. This should only be used at locations where the Asbestos Programs Officer and/or Designated Inspection Agency have certified the space as being asbestos-free.

3.0 EXEMPTIONS

3.1 Architectural finishes (i.e. sheet flooring, vinyl composite floor tiles, ceiling tiles, wall or ceiling finishing plasters, texture coats, etc.) and/or mechanical insulation materials visible to the general public are exempt from labelling.
The completion of Type 1, Type 2 and Glove Bag remedial work by the University’s own employees can be accomplished with tools normally maintained on hand by the building’s maintenance department supplemented by the following asbestos-related equipment.

1.0 PROTECTIVE EQUIPMENT & APPAREL

1.1 Disposable Coveralls: Disposable full body coveralls complete with hood and elasticized hand and pant cuffs. Extra-large in size. Acceptable products: Kleen-guard and/or Tyvek.

1.2 Respirators: A half face-piece negative pressure air purifying respirator equipped with high efficiency (P-100) cartridge filters. Respirators should be individually assigned.

1.3 Respirator wipes/sanitizing pads.

1.4 Rubber Boots: To ease cleaning of footwear after use. As an alternative, disposable boot covers.

1.5 Safety glasses, hardhats and other construction related safety items.

2.0 EQUIPMENT

2.1 HEPA Vacuum: Vacuum as equipped with necessary attachments (i.e. crevice tools). Discharged air must pass through a High Efficiency Particulate Air (HEPA) filter prior to being discharged.

2.2 Signage: Appropriately worded to clearly identify the Asbestos Work Area and the need to don protective equipment, etc. prior to entry.

2.3 Misc. Tools & Cleaning Supplies: i.e. buckets, sponges, scrapers, utility knives c/w retractable blade, wire brushes, cleaning/scouring pads, rags, etc.

2.4 Water Sprayer: Manual garden-type hand pump c/w nozzle capable of providing a fine mist.

3.0 SUPPLIES

3.1 Asbestos Disposal Bags: 6 mil (0.15 mm) polyethylene bags. Labelled as containing asbestos waste.

3.2 Barrier Tape: Worded appropriately. Used to define the extent of an established Asbestos Work Area.

3.3 Glove Bags: Single use prefabricated, 0.25 mm (10 mil) minimum thickness polyvinylchloride bag with integral 0.25 mm (10 mil) thick polyvinylchloride gloves and elasticized ports. Bag must be equipped with reversible double-pull, double-throw, zipper to facilitate progressive movement along pipe and also be equipped with interior zip and nylon straps for sealing ends of bag around pipe. Acceptable product: Safe-T-Strip manufactured by Asbesguard Equipment Inc., in configurations suitable for work.

3.4 High Temperature Bridging Encapsulant: Bridging type lagging compound suitable for surface temperatures up to 1000 °C (1800 °F). Acceptable products: Serpiflex Shield or Childers product CP-210.

3.5 Insulator’s Canvas: 8 oz canvas sheeting to be used in the repair of piping, ducts, etc. Ensure product purchased has appropriate flame spread and smoke generation ratings.

3.6 Lock-down Agent: For post-abatement application. Acceptable product: Serpiflex Shield
3.7 **Low Temperature Bridging Encapsulant**: Bridging type lagging compound suitable for surface temperatures up to 80 °C (180 °F). Acceptable products: Bakelite 120-19 or Childers product CP-211.

3.8 **Polyethylene Sheeting**: 6 mil (0.15 mm) minimum thickness in sheet size to minimize joints.

3.9 **Rip-proof Polyethylene Sheeting**: 8 mil (0.20 mm) fabric made up from 5 mil (0.13 mm) weave and two (2) layers of 1.5 mil (0.05 mm) poly-laminate in sheet size to minimize on-site seams and overlaps.

3.10 **Tape**: To include a variety of duct tape, double sided tapes, and packing tape to suit varying conditions.

3.11 **Wetting Agent**: Non-sudzing surface active agent. Acceptable products: Aqua-Gro or Palmolive dish soap.

### 4.0 SUGGESTED SUPPLIERS (SERVICING THE WINNIPEG AREA)

1. **ACKLANDS-GRANGIER**
   - 19 Scurfield Blvd.
   - Winnipeg, Manitoba
   - R3Y 1G4
   - (204) 949-5800

2. **HAZMASTERS ENVIRONMENTAL**
   - 3131 Underhill Avenue
   - Burnaby, British Columbia
   - V5A 3C8
   - (604) 420-0025

3. **SAFETY EXPRESS**
   - 4060 B Sladeview Crescent, Unit 2
   - Mississauga, Ontario
   - L5L 5Y5
   - 1-800-465-3898

4. **KIMRIK SAFETY EQUIPMENT INC.**
   - Unit 16 Mazenod Road
   - Winnipeg, Manitoba
   - R2J 4H2
   - (204) 668-8886
   - 1-800-363-2234

5. **MSA CANADA**
   - 1393 Boarder Street, Unit 1
   - Winnipeg, Manitoba
   - R3H 0N1
   - (204) 632-7570

6. **POWER VAC OF CANADA**
   - 1355 Border Street
   - Winnipeg, Manitoba
   - R3H 0N1
   - (204) 632-4433

7. **TIGER VAC**
   - 11600 6th Avenue
   - Montreal, Quebec
   - H1E 1S1
   - (416) 782-4687

8. **INLAND PRODUCTS**
   - Box 2199
   - Drumheller, Alberta
   - T0J 0Y0
   - 1-800-661-1062

9. **POLYTARP PRODUCTS**
   - 11 LePage Court
   - Downsview, Ontario
   - M3J 2A3
   - (416) 633-2231
1.0 CONSULTANT QUALIFICATIONS

1.1 To ensure the highest standard of care is maintained at all times, only those firms with established reputations for quality workmanship in the field of asbestos consulting, design, inspection, and testing shall be considered for work at any University of Manitoba owned or occupied facility.

1.2 Before a firm may be considered for work at any University of Manitoba owned or occupied facility, they must first be able to demonstrate compliance with each of the requirements as set out below or as may reasonably be requested of them, by the University, as part of any request for proposal or similar solicitation of services.

2.0 EXPERIENCE

2.1 The firm, as well as all senior project officers, consultants and any supervisory staff, who may have occasion to offer services in association with the firm’s involvement at the University, must have a minimum of five (5) years prior experience in the field of asbestos control and remediation.

2.2 The firm’s senior project officer or consultant assigned to any project involving the design and preparation of any project specific specifications, drawings, etc., shall furnish evidence of having provided similar services in association with a minimum of five (5) other projects of similar size and complexity.

2.3 All senior project officers, consultants, any supervisory staff and all project inspectors must hold a recognized certificate proving attendance at an asbestos management course of a minimum three (3) day duration.

2.4 All project inspectors must have a minimum of three (3) years experience in the field of asbestos control and remediation and must also have performed inspection and air monitoring services on a minimum of five (5) other asbestos abatement projects of similar size and complexity.

3.0 CAPABILITIES OF THE FIRM

3.1 To avoid any unnecessary delay in the work, the firm must be capable of providing an experienced and duly accredited technician on site for the analysis of all PCM air samples as performed following the NIOSH 7400 test method. In such instances, the results of any air sampling must be available to all parties within two (2) hours of the sample being collected.

3.2 The firm must be able to successfully demonstrate its ability, and willingness, to staff the project with sufficient, and duly qualified staff members, when and as required, so as to avoid any possible delay to the performance of the work.

3.3 All supervisory staff, in addition to the firm’s senior project officer or consultant assigned to the project, must be able to be reached on a twenty-four (24) hour, seven (7) day a week basis, to respond to any emergencies that may arise.

3.4 The firm must also be able to demonstrate its ability to provide competent asbestos related consulting services including, but not limited to the following items.

   .1 Comprehensive asbestos surveys.
   .2 Collection of air, bulk, and surface dust samples.
   .3 Detailed risk assessments.
.4 Preparation of site specific recommendations concerning any required remedial action.

.5 Preparation of site specific specifications, drawings, etc.

.6 Project management and administration.

.7 Inspection of active asbestos abatement work.

4.0 QUALITY ASSURANCE

4.1 All services provided by the firm, including any inspection or air monitoring services, shall be under the supervision of a Registered Occupational Hygienist (ROH) who shall be responsible for the firm’s quality assurance program and final interpretation of all air sampling and any other test data.

4.2 The firm, as well as the individual technician performing any bulk sample analysis, shall be accredited by the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NVLAP), for selected test methods for the identification of asbestos in bulk samples.

4.3 The firm, as well as the individual technician performing the analysis of any air samples by Phase Contrast Microscopy (PCM) shall be accredited by one or more of the following agencies.

.1 The American Industrial Hygiene Association’s Asbestos Analysts Registry (AIHA AAR).

.2 The Institut de recherché Robert-Sauvé en santé et en sécurité du travail (IRSST).

4.4 Programs, such as the American Industrial Hygiene Association’s Proficiency Analytical Test Program (AIHA PAT), that qualifies the lab only, are not acceptable.

5.0 INSURANCE

5.1 In addition to providing evidence of coverage for any General Civil Liability Insurance, Property Damage Liability or Automobile Insurance policies requested of them, by the University, the firm must also have in place, an Errors and Omissions policy, endorsed to provide coverage for pollution or discharge of pollutants to air, soil, or water, including asbestos, with a minimum coverage of $5,000,000.00 per occurrence.
1.0 The following appendix shall be used to house a copy of any “Standardized Work Procedures” that may be developed from time-to-time while in communication with the Universities Senior Asbestos Programs Officer and/or designated representative.

2.0 It is the intent of the University, that the following “Standardized Work Procedures” shall be used to provide workers with instruction regarding a specific or unique work function or task. As such, the following may contain modifications (deletions and/or additions) to the specific work practices and procedures otherwise set out under Appendix K-N.

3.0 Notwithstanding the above, an electronic copy of all “Standardized Work Procedures” shall be posted on the University’s own internal web page or intranet system.
Routine Drilling Procedures For Drilling Holes – Up to one (1) Inch diameter

**Required Equipment:**
- Hilti TE 5 or 6 hammer drill (fitted with Hilti dust collection shroud attached to HEPA vacuum) or DeWalt cordless hammer drill fitted with custom (UofM built) boot style dust collection shroud attached to a HEPA vacuum
- Spray Adhesive
- HEPA vacuum
- 6 mil asbestos labelled poly bags
- Spray mist bottle of water
- Wash cloth and wash bucket w/amended water
- Poly drop sheet

**Optional Equipment:**
- Half-faced respirator fitted with new or tested P-100 HEPA filtered cartridges
- Disposable Gloves
- Disposable Coveralls

**Work Procedures:**
1. Install a poly drop sheet beneath the work area using duct tape
2. Delineate area of drilling (Mark it)
3. Drill desired hole in wall or ceiling material (using a drill fitted with a dust collection shroud/ HEPA vacuum unit)
4. Using the HEPA vacuum, clean out debris of freshly drilled hole
5. Apply spray adhesive to drilled hole
6. Affix necessary mounting to wall or ceiling
7. Clean area of any debris with HEPA vacuum
8. Use wet cloth to clean (wipe down) drill and dust collection shroud
9. Place drill bit into pail of water and clean
10. All waste is to be disposed within two independently sealed 6 mil asbestos labeled poly bags
Procedure for Drilling Holes greater than one (1) inch diameter \textit{(Two inch maximum)}

\textbf{Required Equipment:}

- Hilti TE 5 or 6 hammer drill (fitted with Hilti dust collection shroud attached to HEPA vacuum) \textit{or} DeWalt cordless hammer drill fitted with custom (UofM built) boot style dust collection shroud attached to a HEPA vacuum
- Two 6 mil (minimum thickness) clear polyethylene bags. Bags must be free of any punctures and rated in good condition
- Minimum of two rolls of duct tape
- Plastic sheeting (6 mil polyethylene)
- Minimum of two (2) HEPA filtered vacuums, equipped with miscellaneous nozzle attachments
- Workers in the area must wear non-powered half-faced respirators equipped HEPA filtered cartridges and disposable coveralls
- Drill equipped with dust collection shroud fitted to a HEPA filtered vacuum
- Diamond Cutter Drill with a maximum (2) inch bit
- Labeled asbestos waste bags (6mil)
- Mist spray bottle filled with amended water
- Warning signage and tape - used to identify the work area
- Encapsulating sealer

\textbf{Work Site Preparation:}

- Shutdown the HVAC system affecting the work area. Cover all HVAC vents and diffusers. These openings can be covered by poly or duct tape
- Prior to work, pre-clean any surfaces within the area by method of wet wiping and HEPA vacuuming
- Clear work area of any equipment and furnishings that may become contaminated as a result of the drilling
- Isolate the work area from adjoining spaces through the placement of a taped barrier or by closing doors at the perimeter
- Be sure to have all tools required for the work (and any additional tools) within the immediate area to ensure the work is performed in a safe and effective manner
- Post warning signage outside of the work area indicating that “Asbestos Related Work” is in progress

\textbf{Work Procedures:}

1. Place polyethylene sheeting on walls and floor surrounding area being drilled
2. Delineate the precise area of wall to be drilled (mark it), be sure to estimate area on other side of wall
3. Tape a 6-mil poly bag around area to be drilled, be sure to extend area within bag by minimum of twelve (12) inches from drill point (all four sides). Prior to taping bag on wall, be sure wall is wet wiped to ensure the surface is clear of dust for a proper seal of bag
4. Cut a hole on the underside of bag to allow for the HEPA vacuum hose, tape around hole to ensure proper seal. This will place the bag under negative pressure. (Repeat this procedure for wall on other side)
5. Cut hole in the back end of the bag to allow for the extended drill bit. Be sure to tape off hole around bit to maintain a proper seal. (Repeat this procedure for wall on other side)
6. Once drilling has been completed, use HEPA vacuum nozzle to suck up any residual material within bag
7. Remove bag from wall and place into an “Asbestos Waste” labeled bag for disposal
8. Wet wipe and HEPA vacuum surface of wall to ensure area is clean

9. After bags have been removed from wall, apply encapsulant to freshly drilled hole. This will lock down any loose material

10. Place all poly sheeting in 2 individually sealed and labeled asbestos waste bags (6mil) for disposal
Procedures for Working in a Kontrol Kube

The following outlines the necessary work procedures and required equipment in order to access a ceiling known or suspected to contain asbestos contaminated material using a Kontrol Kube.

----------------- The Kontrol Kube is not to be used for work creating major asbestos disturbance -----------------

Required Equipment:

- Half-face negative pressure respirator equipped with P-100 filters
- Disposable coveralls with boot covers
- Manufactured Kontrol Kube
- HEPA filtered vacuum
- 6 mil asbestos labelled poly bags and a roll of duct tape
- Approved asbestos warning signage and caution tape barriers
- Worker wash bucket with amended water and washcloths
- Hand pump pressure sprayer with amended water

Please See Manufacture’s Specifications for Assembly of Kontrol Kube

Work Procedures:

1. Shut down area HVAC system
2. Roll Kontrol Kube into desired position and properly seal work area (ceiling) by extending Kontrol Kube vertically
3. Establish negative pressure by connecting Hepa vacuum hose to the port
4. Prior to entering the Kontrol Kube, don approved respirator with new or tested filters and disposable coveralls with boot covers
5. Perform required task (entry into ceiling space, removal of over sprayed light fixture, etc.)
6. After task is complete, replace any ceiling tiles or light fixtures that have been removed
7. Clean any visible contamination from the inner walls of the Kontrol Kube with a HEPA vacuum or damp washcloth
8. Dispose of any waste in two (2) sealed 6 mil asbestos labelled poly bags
9. Once the inner walls of the Kontrol Kube are wiped down, clean coveralls with a HEPA vacuum or wet wipe. Discard and package used coveralls with boot covers and washcloths within two (2) 6 mil asbestos labelled poly bags. Seal HEPA vacuum inlet and hosing with tape
10. Proceed to worker wash bucket and wash hands and respirator. Seal used filter cartridges with tape for disposal or re-testing
11. Dismantle Kontrol Kube and proceed to next work area (repeating above procedures)
Procedures For Using a HEPA Vacuum During General Cleaning

**Required Equipment:**
- One (1) HEPA vacuum equipped with a length of hose
- Additional length of hose (if required)
- Accessories (various nozzle attachments)
- Duct Tape
- Wet cloths

**Optional Equipment:**
- Half-faced respirator fitted with P-100 HEPA filtered cartridges
- Disposable coveralls
- Nitrile gloves

**Work Procedures:**
1. Sign out HEPA vacuum from shop
   - If vacuum bag needs to be changed notify your supervisor
   *Vacuum bag replacement must be performed within a Type 2 enclosure*
2. Prior to start of work:
   - a) Turn power on
   - b) Remove duct tape from vacuum hose port and fasten desired length of hose in place
   - c) Remove tape from end of hose and fasten desired attachment head
3. Begin vacuuming desired area
4. If job requires the use of another attachment, remove and replace with the vacuum power on. (To avoid any debris fallout)
5. Once vacuuming is complete (with vacuum power on):
   - a) Tape attachment head with duct tape
   - b) Once attachment head removed, wet wipe and tape off the opposite end and place in equipment bag
   - c) Wet wipe end of hose and tape it off
   - d) Remove hose from vacuum unit, tape it off and place in equipment bag
   - e) Tape off vacuum hose port
   - f) Turn power off
6. Return HEPA vacuum to shop and record use
Removal of Asbestos Hardboard Ceiling Tiles in the Parker/Allen Buildings

The following outlines the necessary work procedures and required equipment for the removal of non-friable asbestos hardboard ceiling tiles following Type I asbestos precautions. This procedure is only applicable to the non-friable, grey colored perforated tiles found in the Parker and Allen buildings.

**Required Equipment:**
- HEPA filtered vacuum or wash bucket with amended water and washcloths
- Hand pump pressure sprayer with amended water
- 6 mil asbestos labelled poly bags and a roll of duct tape
- Encapsulant
- Approved asbestos warning signage
- Poly drop sheet
- Necessary hand tools and equipment (ex. ladder, screwdriver, etc.)

**Note:** Power tools are not to be used for removing fasteners.

**Optional Equipment:**
- Half-face negative pressure respirator equipped with new or tested P-100 filters
- Disposable coveralls with boot covers

**Work Procedures:**
1. Shutdown the HVAC system affecting the work area. Cover all HVAC vents and diffusers. These openings can be covered by poly or duct tape
2. Isolate the work area by posting approved asbestos warning signage at the access points
3. Install a poly drop sheet beneath the work area using duct tape
4. Ensure all hardboard tiles to be disturbed remain in a damp state using a pump pressure sprayer
5. Undo fasteners necessary to remove the hardboard using hand tools. Avoid breaking the board if possible
6. HEPA vacuum top of tiles and screw holes in order to control dust levels
7. Apply an approved encapsulant to the screw holes prior to re-installing tiles
8. Upon completion of the required removal, thoroughly clean the work area with a HEPA vacuum or washcloth and dispose of the poly drop sheet as asbestos waste
9. Dispose of any waste in two (2) sealed 6 mil asbestos labelled poly bags
Removal of Asbestos Hardboard Fume Hood Cabinet Lining

**Required Equipment:**
- HEPA filtered vacuum or wash bucket with amended water and washcloths
- Hand pump pressure sprayer with amended water
- 6 mil asbestos labelled poly bags and a roll of duct tape
- Approved asbestos warning signage
- Poly drop sheet
- Necessary hand tools and equipment (e.g., screwdriver, etc.)
- Encapsulant (if reinstalling panels)

**Optional Equipment:**
- Half-face negative pressure respirator equipped with new or tested P-100 filters
- Disposable coveralls with boot covers

**Work Procedures:**
1) Refer to issued asbestos work permit for details relating to shutdown of the HVAC system and fumehood (many fumehoods are manifolded and shut down may negatively impact other fumehoods)
2) Ensure that any chemicals have been removed from fumehood and lower cabinet prior to prepping site
3) Isolate the work area by posting approved asbestos warning signage at the access points
4) Install a poly drop sheet beneath the work area using duct tape
5) Ensure all hardboard cabinet lining to be disturbed remains in a damp state using a pump pressure sprayer
6) Undo fasteners necessary to remove the hardboard using hand tools. Avoid breaking the board if possible
7) HEPA vacuum underside of cabinet hardboard and screw holes in order to control dust levels
8) Use encapsulant to seal screw holes if hardboard is to be reinstalled
9) Upon completion of the required removal, thoroughly clean the work area with a HEPA vacuum or washcloth and dispose of the poly drop sheet as asbestos waste
10) Dispose of any waste in two (2) sealed 6 mil asbestos labelled poly bags
External Work Report Inspections

The following outlines the necessary work procedures and required equipment to perform final inspections of external asbestos related work. A total of five inspectors are required to perform external inspections. They are: UofM Project Manager/Coordinator, CAW/Union representative, APO, Asbestos Contractor, Inspection Agency (external). Rare circumstances may exist where all parties are not available to perform inspections such as after hours. In this case one or more inspectors may appoint a 3rd party to perform the inspection on their behalf.

Required Equipment:
- Half-face negative pressure respirator equipped with new or tested P-100 filters
- Disposable coveralls with boot covers
- Any additional personal protective equipment specifically required (safety footwear, hardhats, eye protection etc…)
- Red tape to identify problem areas
- Flashlight

Half face respirators and disposal coveralls must be brought onsite by inspectors. The individual inspectors (UofM Project Manager/Coordinator, CAW/Union, APO, Asbestos Contractor, Inspection Agency (external) will decide if they are required as specified below.

Work Procedures:
1) The University project manager/coordinator will ensure that final air clearance has been given by the inspection agency and complete the top portion of the External Forces Asbestos Work Report
2) The University project manager/coordinator will contact the required inspectors as listed on the asbestos work report and schedule a final inspection
3) A pre-entry meeting will be held onsite
   - All inspectors will review the issued asbestos work permit and individually decide if half face respirators and disposable coveralls with boot covers are required
     - If all parties concur that they are not required the inspection may proceed without personal protective equipment
     - If one or more inspectors deem the personal protective to be required than all persons shall don half-face negative pressure respirator equipped with new or tested P-100 filters and disposable coveralls with boot covers.
   Additional PPE such as hardhats and eye protection shall also be used if hazards are present
4) All inspectors shall enter the cleared work area and perform a visual inspection of the area
5) If the visual inspection is failed by one or more of the inspectors the project manager/coordinator shall instruct the asbestos contractor to remedy the problem areas. Steps 1 to 5 shall be repeated until all inspectors sign off on the work permit
6) The job shall be deemed complete and tear down may commence. The external inspection agency shall forward a copy of the post dismantlement inspection to EHSO
Type 2 Entry Locations and procedures

The following outlines the necessary procedures for entering areas where asbestos containing debris is present and likely to be disturbed. These areas include:

<table>
<thead>
<tr>
<th>Location</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>School of Music - Crawlspace</td>
<td>Asbestos damage report issued – Abatement pending</td>
</tr>
<tr>
<td>Basic Medical Sciences Building – Interstitial spaces and SW Mechanical Riser (See X-20)</td>
<td>Spray on insulation – Ongoing surveillance as per AMP</td>
</tr>
<tr>
<td>University College Planetarium – Ceiling space</td>
<td>Spray on insulation – Ongoing surveillance as per AMP</td>
</tr>
<tr>
<td>Pharmacy - Ceiling spaces</td>
<td>Spray on insulation – Ongoing surveillance as per AMP</td>
</tr>
<tr>
<td>Frank Kennedy/Extended Education Ceiling spaces along perimeter walls</td>
<td>Spray on insulation – Ongoing surveillance as per AMP</td>
</tr>
<tr>
<td>St. Andrews College - Ceiling spaces</td>
<td>Spray on insulation – Ongoing surveillance as per AMP</td>
</tr>
<tr>
<td>Russell Building Ceiling Spaces along perimeter walls</td>
<td>Spray on insulation – Ongoing surveillance as per AMP</td>
</tr>
<tr>
<td>Tier – Attic space (access door in room 509)</td>
<td>Asbestos damage report issued – Abatement pending</td>
</tr>
<tr>
<td>Tier – 5th floor attic (access hatch in 600 stairwell)</td>
<td>Asbestos damage report issued – Abatement pending</td>
</tr>
<tr>
<td>Education Building – Ceiling spaces</td>
<td>Ongoing surveillance as per AMP</td>
</tr>
<tr>
<td>Human Ecology - Crawlspace</td>
<td>Asbestos damage report issued – Abatement pending</td>
</tr>
<tr>
<td>Agriculture - Crawlspace</td>
<td>Asbestos damage report issued – Abatement pending</td>
</tr>
<tr>
<td>Armes – Ceiling spaces (above textured ceiling finish)</td>
<td>Ongoing surveillance as per AMP</td>
</tr>
<tr>
<td>St. Andrews College – Crawlspace</td>
<td>Spray on insulation - Ongoing surveillance as per AMP</td>
</tr>
<tr>
<td>Basic Sciences Building – Crawlspace</td>
<td>Asbestos damage report issued – Abatement pending</td>
</tr>
<tr>
<td>Chown Building - Crawlspace</td>
<td>Asbestos damage report issued – Abatement pending</td>
</tr>
<tr>
<td>St. John’s College (Zone 1 only) - Crawlspace</td>
<td>Asbestos damage report issued – Abatement pending</td>
</tr>
</tbody>
</table>

The above list consists of asbestos contaminated areas known to require type 2 precautions for entry. Other areas may exist. If you encounter such an area do not proceed. Contact your supervisor and EHSO immediately.

Required Equipment:

- Half face respirator (fitted with new or tested P100 HEPA filtered cartridges)
- Disposable coveralls
- 6-mil asbestos labeled poly bags and a roll of duct tape
- Worker wash bucket with amended water and washcloths
- Tools necessary for work
- HEPA vacuum

Work Procedures:

Appendix X  X - 10
Revised August 15, 2012
1. Shutdown area HVAC system
2. Before entering ensure warning signage indicating a Type 2 entry restriction is posted on exterior door
3. Prior to entering contaminated area, don approved respirator (fitted with new or tested P100 filtered cartridges) and disposable coveralls with booties
4. Establish clean area inside area (drop sheet or HEPA vacuum)
5. Place all required work tools and equipment within the established clean area
6. Perform required work
7. Once work has been completed, proceed to the established clean area
8. Remove contaminated coveralls and place into 6 mil poly asbestos waste bag
9. If necessary, clean any contaminated footwear, hard hat, etc. with wet cloth or place into sealed polyethylene bag for re-use/disposal
10. Proceed to worker wash bucket and wash hands and respirator. Seal used filter cartridges with tape for disposal or re-use

Note: Periodic air monitoring may be conducted during entry into these spaces at the discretion of the Asbestos Programs Officer (APO).

This procedure is intended for internal work. Work by external forces will require that the contractors have an appropriate level of training provided by a University approved consultant. Any external work also requires a duly authorized work permit.
Drywall Removal and Demolition

The following outlines the necessary procedures for the removal or demolition of drywall where the joint compound contains or is suspected to contain asbestos. As a general rule asbestos was used in joint compound prior to 1980. Requirements for this type of work emphasize strongly on dust control. The use of a respirator denotes this work to be a modified Type 1 procedure. As with any type 1 work, power tools must not be used. Suspect materials should be kept damp to keep dust controlled, but care should be exercised not to create a situation that may cause water accumulation and promote future mould growth in or on remaining building materials.

**Required Equipment:**

- Half-face negative pressure respirator equipped with new or tested P-100 filters
- Disposable coveralls with boot covers
- Garden sprayer filled with amended water (soapy water)
- Poly drop sheet
- Hand tools

**Work Procedures:**

**Small removal jobs**

1. Use of a respirator fitted with new or tested P100 filtered cartridges and disposable coveralls is optional for small removal jobs.
2. Install a poly drop sheet beneath the work area using duct tape.
3. Mist the drywall to be removed concentrating on corners and any areas where seams are visible or suspected to be present.
4. Continue to mist any suspect material as work progresses.
5. Dispose of all waste material as regular construction debris (asbestos waste disposal is not required).

**Demolition:**

1. Shutdown the HVAC system affecting the work area. Cover all HVAC vents and diffusers.
2. Don approved respirator (fitted with new or tested P100 filtered cartridges) and disposable coveralls.
3. Mist the drywall to be removed concentrating on corners and any areas where seams are visible or suspected to be present.
4. Continue to mist any suspect material as work progresses.
5. Control dust in area by misting fallen debris.
6. Dispose of all waste material as regular construction debris (asbestos waste disposal is not required).

Note: No special waste disposal or air monitoring is required for this type of work. However a duly authorized asbestos work permit is required.
Replacement of HVAC Compartment Filters – Basic Medical Sciences Building

Required Equipment & Supplies:

- Approved asbestos warning signage.
- Asbestos caution tape.
- Poly drop sheet (6-mil or better).
- Disposable coveralls c/w attached hood.
- Half-face negative pressure respirator equipped with new or tested P-100 filters.
- Necessary hand tools and equipment (ie. screwdriver, etc.).
- 6 mil asbestos labelled poly bags and a roll of duct tape.
- Hand pump sprayer with amended water.
- HEPA filtered vacuum or wash bucket with amended water and washcloths.

Optional Equipment:

- Hand pump pressure sprayer with amended water.

Work Procedures:

1. Place a drop sheet, consisting of one layer 6-mil polyethylene sheeting, at the base of access hatch or doorway leading to each filter compartment. Ensure drop sheet is sized accordingly to accommodate waste being generated and to provide a suitable staging area for worker access/egress to and from each filter compartment.

2. Isolate the immediate work area from the balance of the Mechanical Room via the installation of asbestos caution tape at the perimeter of the above drop sheet. Provide and post required signage at the perimeter of the work area, in such a manner as to clearly identify the area as an Asbestos Work Area.

3. Coordinate unit shutdown with the Physical Plant Engineer on shift. Ensure the fan has come to a complete stop and has been properly locked and tagged out in accordance with current University of Manitoba standardized “Tag-out” procedure prior to entering the filter compartment.

4. Don required personal protective equipment (PPE) prior to entering the filter compartment. At minimum, required PPE shall consist of a set of disposable coveralls and a half-face negative pressure respirator equipped with P-100 filters. Ensure coveralls being donned cover any existing or reusable clothing and come equipped with attached head cover (hood) and elasticized cuff at worker wrists and ankles.

5. Enter filter compartment and mist down filter using the hand pump pressure sprayer with amended water. Commence filter replacement as per manufacture’s instruction. Place each filter directly into a labelled 6-mil polyethylene waste bag as it is removed. Do not allow filter medium to drop to the floor of the filter compartment.

6. As work progresses, transport sealed polyethylene waste bags to drop sheet provided adjacent to each access hatch or doorway.

7. HEPA vacuum and/or damp wipe surfaces throughout each filter compartment. Repeat cleaning process until all visible trace of dust, debris or any filter medium has been removed.

8. Proceed with installation of replacement filters as per manufacture’s instruction.

9. Exit filter compartment. Ensure all tools, equipment, and any left over materials are removed from each filter compartment prior to worker egress.

10. Immediately upon egress, worker(s) shall proceed to double bag all waste generated during the above filter change-out.
11. Following the completion of the above process, and while still wearing his/her respirator, remove disposable coveralls and place them inside a sealed and labelled polyethylene waste bag. Any dedicated footwear shall be removed, HEPA vacuumed or wet wiped and inspected for any signs of residual dust, debris or filter medium.

12. Proceed to perimeter exit, remove respirator, then proceed directly to designated wash station where each worker shall complete the following:
   - wash exposed skin and respirator with soap and water; and
   - seal inlet side of respirator filters with tape then remove filters for testing or dispose of as asbestos-contaminated waste.

13. Report to the Physical Plant Engineer on shift and coordinate unit start-up.

14. Return to the above Mechanical Room and transport sealed asbestos waste bags to designated waste storage site. Dispose of drop cloth as asbestos-contaminated waste. Removal of waste shall be coordinated at times approved by an APO and where possible, while the adjoining areas are unoccupied.
Replacement of HVAC Compartment Filters – Buildings with Asbestos-Containing Materials

Building HVAC filters can potentially accumulate a variety of materials that may pose respiratory hazards. These materials may include asbestos fibres, mould, viruses, bacteria or mites. There are two types of buildings that contain asbestos materials;

a) buildings with asbestos sprayed fireproofing materials in plenums (such as the BMSB). For these buildings, the use of respirators and disposable coveralls is mandatory. (A list of the buildings that have asbestos-containing sprayed on fireproofing products is provided at the end of this procedure.)

b) buildings with asbestos containing materials used in other locations of the building. For these buildings, the use of respirators and disposable coveralls is at the discretion of the worker.

Required Equipment & Supplies:

- Approved asbestos warning signage.
- Asbestos caution tape.
- Poly drop sheet (6 mil or better).
- Necessary hand tools and equipment (ie. screwdriver, etc.).
- Hand pump pressure sprayer with amended water.
- 6 mil asbestos labelled poly bags and a roll of duct tape.
- HEPA filtered vacuum or wash bucket with amended water and washcloths.
- Disposable coveralls c/w attached hood. (Optional for buildings without spray)
- Half-face negative pressure respirator equipped with new or tested P-100 filters. (Optional for buildings without spray)

Work Procedures:

1. Isolate the immediate work area from the balance of the Mechanical Room and provide a suitable staging area for worker access/egress to and from each filter compartment via the installation of asbestos caution tape at the perimeter of the hatch or doorway leading to each filter compartment. Provide and post required signage at the perimeter of the work area, in such a manner as to clearly identify the area as an Asbestos Work Area.

2. Coordinate unit shutdown with the Central Energy Plant. Ensure the fan has come to a complete stop and has been properly locked and tagged out in accordance with current University of Manitoba standardized Lock-out/Tag-out procedure prior to entering the filter compartment.

3. Prior to entering the filter compartment don applicable personal protective equipment (PPE). Recommended PPE would consist of a set of disposable coveralls and a half-face negative pressure respirator equipped with P-100 filters. Ensure coveralls being donned cover any existing or reusable clothing and come equipped with attached head cover (hood) and elasticized cuff at worker wrists and ankles.

4. Enter filter compartment and mist down filter using the hand pump pressure sprayer with amended water. Commence filter replacement as per manufacturer’s instruction. Place each filter directly into an asbestos labelled 6 mil polyethylene waste bag as it is removed. Do not allow filter medium to drop to the floor of the filter compartment.

5. As work progresses, transport sealed polyethylene asbestos waste bags to the staging area adjacent to each access hatch or doorway.

6. HEPA vacuum and/or damp wipe surfaces throughout each filter compartment. Repeat cleaning process until all visible trace of dust, debris or any filter medium has been removed.

7. Proceed with installation of replacement filters as per manufacturer’s instruction.

8. Exit filter compartment. Ensure all tools, equipment, and any left over materials are removed from each filter compartment prior to worker egress.
9. Immediately upon egress, worker(s) shall proceed to double bag all waste generated during the above filter change-out including disposable coverall.

10. Following the completion of the above process, and while still wearing his/her respirator (if worn), remove disposable coveralls and place them inside a sealed and asbestos labelled polyethylene waste bag. Any dedicated footwear shall be removed, HEPA vacuumed or wet wiped and inspected for any signs of residual dust, debris or filter medium. Proceed to perimeter exit, remove respirator (if worn), then proceed directly to designated wash station where each worker shall complete the following:

wash exposed skin and respirator with soap and water; and
seal inlet side of respirator filters with tape for disposal or re-use.

11. Report to the Central Energy Plant and coordinate unit start-up.

12. Return to the above Mechanical Room and transport sealed asbestos waste bags to designated waste storage site. HEPA vacuum and/or damp wipe the staging area prior to the removal of the site isolation (ie. Caution Tape & Signage)

University of Manitoba buildings which contain sprayed asbestos fireproofing within the ceiling plenum:

Basic Medical Sciences Building
(see appendix X-14 and X-15)

University College Planetarium

Pharmacy Building

Frank Kennedy Centre

St. Andrews College

Russell Building

Extended Education
Work Above Asbestos-containing Ceilings within the Education Building

Textured acoustic plaster on the ceilings and upper portions of walls throughout Zones 1 and 2 of the Education Building located on the Fort Garry Campus of the University of Manitoba have been determined to contain Chrysotile asbestos. These procedures must be followed for all work within the ceiling space. The use of respirators and disposable coveralls is mandatory.

All work is to be conducted in conjunction with all other requirements and procedures as set forth under Appendix K of the AMP document.

Ceiling Access Through Existing Light Fixture Openings and/or Metal Access Hatches

Required Equipment & Supplies:
- Approved asbestos warning signage.
- Asbestos caution tape.
- Polyethylene drop sheet (6 mil or better).
- Necessary hand tools and equipment (i.e. screwdriver, etc.).
- Hand pump pressure sprayer with amended water.
- 6 mil asbestos labelled poly bags and duct tape.
- HEPA filtered vacuum or wash bucket with amended water and washcloths.
- Disposable coveralls c/w attached hood.
- Half-face negative pressure respirator equipped with new or tested P-100 filters.
- Wash cloth and wash bucket with amended water.

Work Procedures:
1. Isolate the immediate work area by closing doors, placing of barricades or tape barriers, etc., at the perimeter of each phase or work area. Provide and post required signage at the perimeter of the work area, in such a manner as to clearly identify the area as an Asbestos Work Area.
2. Isolate or otherwise shut down HVAC system, vents and diffusers located within the Asbestos Work Area.
3. Provide polyethylene drop sheet on floor directly below the access hatch.
4. Prior to entering the work area don applicable personal protective equipment (PPE). Recommended PPE would consist of a set of disposable coveralls and a half-face negative pressure respirator equipped with P-100 filters. Ensure coveralls being donned cover any existing or reusable clothing and come equipped with attached head cover (hood) and elasticized cuff at worker wrists and ankles.
5. Open access hatch or light fixture in a careful manner that would avoid disturbing the asbestos-containing materials.
6. Proceed with necessary work within the ceiling space. Physical entry (i.e. access past waist level) into the ceiling space is prohibited when following this set of procedures.
7. Any material dislodged from ceiling over the course of the work, must be cleaned up using a HEPA vacuum immediately upon discovery.
8. Once work has been completed, ensure all tools, equipment, and any left over materials are removed from the ceiling space prior to closing the access hatch or light fixture in a careful manner that would avoid disturbing the asbestos-containing materials.
9. Remove drop sheet and dispose of as contaminated waste.
10. Immediately upon egress, worker(s) shall proceed to double bag all waste generated during the above activities.
11. Following the completion of the above process, and while still wearing his/her respirator (if worn), remove disposable coveralls and place them inside a sealed and asbestos labelled polyethylene waste bag. Any
dedicated footwear shall be removed, HEPA vacuumed or wet wiped and inspected for any signs of residual dust, or debris or filter.

12. Remove respirator, then proceed directly to wash bucket or designated wash station where each worker shall complete the following:
   a. wash exposed skin and respirator with soap and water; and
   b. seal inlet side of respirator filters with tape for disposal or re-use.

13. Return to the above work area and transport sealed asbestos waste bags to designated waste storage site. HEPA vacuum and/or damp wipe the area prior to the removal of the site isolation (ie. Caution Tape and Signage).

14. Report to the Central Energy Plant and coordinate start-up of the building’s HVAC.

**Ceiling Access Through Drywall Access Hatches Coated with Textured Acoustic Plaster**

For access to the ceiling space through access hatches that are coated with textured asbestos-containing acoustic plaster all work shall be conducted within a sealed Type 2 enclosure complete with an attached airlock as set forth under Appendix M of the AMP (or following the Appendix X procedures for the Kontrol Kube).

Physical entry into the ceiling space is **prohibited** when following this set of procedures.

**Ceiling Access Requiring Worker Entry into the Ceiling Space**

For all work where physical entry (ie. access past waist level) into the ceiling space will be required, the entire room located below the area of work shall be isolated such that the entire room becomes a Type 2 Work Enclosure complete with an attached airlock as set forth under Appendix M of the AMP.
BMSB – Access to Interstitial Space for Maintenance Activities

Activities within the Interstitial Space above occupied areas of the BMSB can potentially result in disturbance of asbestos-containing materials that may cause respiratory hazards. This procedure is to be followed for all activities requiring access to the Interstitial Space above occupied areas of the BMSB (excluding 600 level – see X-22). The use of respirators and disposable coveralls is mandatory. Periodic air monitoring will be conducted at the discretion of the Asbestos Programs Office (APO).

**Hours of Work:**

**Normal Hours** are defined as 07:00 through 17:00 (Mon-Fri)

**Quiet Hours** are defined as: 17:00 through 07:00

Access to the Interstitial Space for Maintenance Activities is to be restricted to **QUIET HOURS** for all activities other than **Emergency Work**.

**Emergency Work** is defined as: Any activity which requires immediate access within the interstitial space that is required to prevent loss or damage to physical or intellectual property or risk to Health and Safety of the building occupants.

**Required Equipment & Supplies:**

- Disposable coveralls c/w attached hood.
- Half-face negative pressure respirator equipped with new or tested P-100 filters.
- Approved asbestos warning signage.
- Asbestos caution tape.
- Necessary hand tools and equipment (i.e., screwdriver, etc.).
- Hand pump pressure sprayer with amended water.
- 6 mil asbestos labelled poly bags and a roll of duct tape.
- HEPA filtered vacuum or wash bucket with amended water and washcloths.

**Work Procedures (excluding 600 level):**

1. Ensure that an Asbestos Work Requisition/Permit is completed and forwarded to the University’s Environmental Health and Safety Office before the anticipated start of work. Ensure that work DOES NOT commence until a signed and duly authorized permit is obtained.

2. Ensure that the following parties are notified and advised to vacate the space below the Work Area in advance of work:
   a. The Dean, Director, Department Head or Manager responsible for the work floor or work area where work is being performed;
   b. The specific offices or work areas directly impacted by the work; and
   c. The general public, students, and/or any other individuals or staff who may have cause to frequent the office or area directly impacted by the work.

3. Ensure that copies of the “Notice of Asbestos Work” form have been filled out and posted at the appropriate locations within the Building.

4. Coordinate HVAC unit shutdown with the Physical Plant Engineer on shift. Ensure the fan has come to a complete stop and has been properly locked and tagged out in accordance with current University of Manitoba standardized Lock-out/Tag-out procedure prior to entering the Interstitial Space.

5. Prior to entering the Interstitial Space, from the Staging Area:
   a. Don applicable personal protective equipment (PPE). Required PPE would consist of a set of disposable coveralls and a half-face negative pressure respirator equipped with P-100 filters.
b. Ensure coveralls being donned cover any existing or reusable clothing and come equipped with attached head cover (hood) and elasticized cuff at worker wrists and ankles.

6. Enter Interstitial Space and proceed to the appropriate work area following the most direct route that will not disturb asbestos-containing materials.

7. Clean-up any minor fallen debris that may be encountered on existing building surfaces, equipment, etc. present within the defined work area or along the established access and egress route(s) or pathway. Clean-up of ACM is to be conducted in compliance with procedures established within Appendices K and M of the University’s AMP. Notify your supervisor of requirement to fill out an ADR for any material requiring major clean-up.

8. Proceed with scheduled work while adhering to asbestos precautions specified herein and Appendices K and M.

9. Upon completion of work, transport sealed polyethylene asbestos waste bags to the Staging Area.

10. Exit Interstitial Space into the adjoining Staging Area. Ensure all tools, equipment, and any left over materials are removed prior to worker egress.

11. Immediately upon egress into the Staging Area, worker(s) shall proceed to double bag all waste generated during the scheduled activities.

12. Following the completion of the above process, and while still wearing his/her respirator, remove disposable coveralls and place them inside a sealed and asbestos labelled polyethylene waste bag. Any dedicated footwear shall be removed, HEPA vacuumed or wet wiped and inspected for any signs of residual dust, or debris.

13. Proceed to perimeter exit, remove respirator, then proceed directly to designated wash station where each worker shall complete the following:
   a. wash exposed skin and respirator with soap and water; and
   b. seal inlet side of respirator filters with tape for disposal or re-use.

14. Upon completion of all activities within the Interstitial Space and prior to start-up of the HVAC and re-occupancy by building occupants, conduct a visual inspection of all occupied areas below the Interstitial Space Work Area.

15. In the event that visible debris is encountered in the occupied area that is suspect to contain asbestos, proceed as follows:
   a. Isolate the area by posting approved asbestos warning signs and/or caution tape at access points.
   b. Conduct a clean-up the suspect material while adhering to the procedures set forth in Appendix P of the University’s AMP.
   c. Remove warning signs and/or caution tape upon satisfactory clean-up, visual inspection and air monitoring.

16. Report to the Physical Plant Bannatyne Campus Engineer and coordinate unit start-up.

17. Return to the above Staging Area and transport sealed asbestos waste bags to designated waste storage site.

18. HEPA vacuum and/or damp wipe the Staging Area upon completion of all work.

**Emergency Work Procedures (excluding 600 level):**

1. Emergency Work may be conducted during Normal Work Hours.

2. An Asbestos Work Requisition/Permit is not required for Emergency Work.

3. Notify the APO of the need to perform emergency work and obtain his/her direction as to the need for any further requirements.

4. Ensure that the following parties are notified and advised to vacate the space below the Work Area in advance of work:
   a. For Normal Work Hours:
Appendix X
Final – November 2, 2006

Asbestos Management Program – University of Manitoba

STANDARDIZED WORK PROCEDURES  BMSB INTERSITIAL SPACE

i. The Dean, Director, Department Head or Manager responsible for the work floor or work area where work is being performed; and

ii. The specific offices or work areas directly impacted by the work.

b. If after hours, notify security services at (204) 474-9312.

5. Proceed with Emergency work adhering with all other work procedures for work within the interstitial space.

6. Notify the APO upon completion of Emergency Work.

7. A work report shall be completed upon completion of the work.

Level 600 Interstitial Space Access

The thermal spray insulation in the 600 level interstitial space is encased. The above noted (type 2) procedures are not required to enter but the following precautions must be adhered to when accessing the space. **Any deviation from the following precautions is subject to the issuance of a duly authorized asbestos work permit.**

- No disturbance of the encasement product is allowed without prior authorization by an Asbestos Programs Officer (i.e. no drilling, cutting, chipping, affixing fasteners, etc… without an authorized asbestos work permit).
- Non-asbestos mechanical insulation (i.e. pipe and duct insulation) must not be disturbed as overspray is known to be present under the insulation.
- Any new wiring run in the area should be routed through the conduit that was installed under the floor I beam during the encasement project.

BMSB – Pot Light Bulb Replacement

Replacement of the pot lights in the BMSB can potentially result in disturbance of asbestos-containing materials that may cause respiratory hazards. Settled asbestos-containing dust or debris from asbestos-containing fireproofing in the interstitial space may have contaminated the tops of the pot lights. This procedure is to be followed for the replacement of light bulbs in any of the pot lights within the BMSB where the light fixture is mounted into the underside of the interstitial space ceiling. The use of respirators and disposable coveralls is mandatory.

**Hours of Work:**

**Normal Hours** are defined as 07:00 through 17:00 (Mon-Fri)

**Quiet Hours** are defined as: 17:00 through 07:00

Replacement of pot light bulbs is to be restricted to **QUIET HOURS.**

**Required Equipment:**

- Disposable coveralls c/w attached hood.
- Half-face negative pressure respirator equipped with new or tested P-100 filters.
- HEPA filtered vacuum or wash bucket with amended water and washcloths.
- Plastic sheeting to secure as a drop cloth.
- Duct tape, spray glue, etc. to secure drop cloth in place.

**Other Equipment:**

- Barrier tape and signage.
- Pump sprayer with misting nozzle.
- Labelled asbestos waste bags (6 mil).
- Misc. small tools and cleaning supplies

**Work Procedures:**
1. Ensure that the following parties are notified and advised to vacate the space below the Work Area in advance of work:
   a. the Dean, Director, Department Head or Manager responsible for the work floor or work area where work is being performed;
   b. the specific offices or work areas directly impacted by the work; and
   c. the general public, students, and/or any other individuals or staff who may have cause to frequent the office or area directly impacted by the work.

2. Ensure that copies of the “Notice of Asbestos Work” form have been filled out and posted at the appropriate locations within the Building.

3. Coordinate unit shutdown with the Physical Plant Engineer on shift. Ensure the fan has come to a complete stop and has been properly locked and tagged out in accordance with current University of Manitoba standardized Lock-out/Tag-out procedure prior to work.

4. Prior to commencing work, isolate the work area by:
   a. posting approved asbestos warning signs and/or caution tape at access points; and
   b. cover floor and furnishings in the vicinity of the work with polyethylene.

5. Don applicable personal protective equipment (PPE). Required PPE would consist of a set of disposable coveralls and a half-face negative pressure respirator equipped with P-100 filters. Ensure coveralls being donned cover any existing or reusable clothing and come equipped with attached head cover (hood) and elasticized cuff at worker wrists and ankles.

6. Proceed with scheduled work while adhering to asbestos precautions specified herein and Appendices K and L.

7. Proceed with the replacement of the light bulbs.

8. Upon completion of bulb replacement, clean drop sheets to be reused with HEPA vacuum or by wet methods.

9. Dispose as asbestos waste, drop sheets not cleaned.

10. Following the completion of the above process, and while still wearing his/her respirator, remove disposable coveralls and place them inside a sealed and asbestos labelled polyethylene waste bag. Any dedicated footwear shall be removed, HEPA vacuumed or wet wiped and inspected for any signs of residual dust, debris or filter medium.

11. Remove respirator, then proceed directly to designated wash station where each worker shall complete the following:
   a. wash exposed skin and respirator with soap and water; and
   b. seal inlet side of respirator filters with tape for disposal or re-use.

12. Report to the Physical Plant Engineer on shift and coordinate unit start-up.
Daily inspection form for inactive type 3 enclosures

The following inspection form is to be used to perform the daily inspection of inactive type 3 enclosures. Inactive enclosure are defined as asbestos work areas where work has not be undertaken during a 24 hour period. The project coordinator is responsible to notify the Powerhouse when inactive type 3 inspections are required to be completed by Power Engineers during weekends and holidays.

The following criteria shall be verified from outside the enclosure only. Entrance to the enclosure is not required or advised to complete the inspection.

Building: _______________________________
Room/Area description: _______________________________

<table>
<thead>
<tr>
<th>Enclosure identified with Asbestos warning signage</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosure in good repair</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><em>(no visible tears or rips in polyethylene, no gaps in tape, walls structurally sound)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative pressure at a minimum of -0.04 inches of water</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Exhaust ducts in good condition and routed to building exterior</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Deflection detected in poly flaps at entrance to enclosure <em>(if applicable)</em></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Entrance/access to enclosure secured from public access <em>(e.g. locked room, locked access doors, plywood covering on enclosure opening, etc…)</em></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Any other deficiencies observed that may result in migration of fibres outside the enclosure</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>If yes specify: __________________________________________________</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inspection completed by:

Name (please print): _______________________________
Signature: _______________________________
Date: _______________________________

The University of Manitoba emergency manager on call shall be notified in the event of any deficiency *(a NO answer above)* involving an inactive type 3 enclosures. The manager shall then attempt to contact an Asbestos Programs Officer to rectify the deficiency.

Upon completion this form must be forwarded to EHSO.
Fax: 474-7629.
**Notice of Asbestos Work**

**Location**  
____________________________________  

**Date Posted**  
____________________

**ASBESTOS PROCEDURES BEING UNDERTAKEN**

- ( ) TYPE 1 – REMOVAL OR REPAIRS
- ( ) TYPE 2 – REMOVAL OF MECHANICAL INSULATION
- ( ) TYPE 2 – REMOVAL OF MECHANICAL INSULATION BY GLOVE BAG
- ( ) TYPE 2 – REPAIR OF MECHANICAL INSULATION
- ( ) TYPE 2 – SPRAYED TEXTURE COAT REMOVAL OR REPAIR
- ( ) TYPE 2 – CEILING TILE REMOVAL
- ( ) TYPE 2 – REMOVAL OF SHEET FLOORING
- ( ) TYPE 2 – REMOVAL OF MECHANICAL INSULATION
- ( ) TYPE 2 – ACCESS TO CONTAMINATED AREAS
- ( ) TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR
- ( ) TYPE 2 – REPAIR OF MECHANICAL INSULATION
- ( ) TYPE 3 – REMOVAL (As performed by an outside Contractor)
- ( ) TYPE 2 – EMERGENCY REMOVAL OR REPAIRS
- ( ) OTHER:  

**Details of Work (Describe)**

________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________

**Times**

<table>
<thead>
<tr>
<th>Start Date</th>
<th>Finish Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Time</td>
<td>Finish Time</td>
</tr>
<tr>
<td>am</td>
<td>pm</td>
</tr>
</tbody>
</table>

**Contact Information**

- **Person on-Site**  
  ___________________________  Tel______________________
- **Departmental Contact**  
  ___________________________  Tel______________________
- **Project Coordinator**  
  ___________________________  Tel______________________

- If you have any concerns regarding the work being undertaken, please contact the Environmental Health and Safety Office at 474-6633.
- If there is an Emergency Situation, call Security at #555 (474-9341)
1.0 The following appendix shall be used to house a copy of any requisitions and/or standardized forms that may be developed from time-to-time to assist the University with its control and management of any asbestos-related issues.

2.0 Notwithstanding the above, an electronic copy of above documentation shall be posted on the University’s own internal web page or intranet system.
# ASBESTOS DAMAGE REPORT

**NOTE:** The following form has been designed to assist individual staff members, outside contracting firms, etc., in their obligation, under the University’s current Asbestos Management Program, to report any damage to a known or suspect asbestos-containing material. In the case of a University of Manitoba staff or faculty member, such damage shall be reported to his/her immediate supervisor who shall in turn, provide an executed copy of the following form to the University’s Environmental Health and Safety Office and/or designated Asbestos Programs Officer. Any outside contractors or service firms shall provide an executed copy of the following form to their designated contact at the University, who shall in turn, forward a copy of this document to the University’s Environmental Health and Safety Office and/or designated Asbestos Programs Officer.

**REPORTED BY**

<table>
<thead>
<tr>
<th>COMPILLED BY:</th>
<th>EMPLOYEE NO.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Name &amp; Title)</td>
<td></td>
</tr>
<tr>
<td>DEPARTMENT:</td>
<td>PHONE:</td>
</tr>
<tr>
<td>(or Outside Contracting Firm)</td>
<td></td>
</tr>
<tr>
<td>SIGNATURE:</td>
<td>DATED:</td>
</tr>
</tbody>
</table>

**FORM forwarded to/RECEIVED BY**

<table>
<thead>
<tr>
<th>RECEIVED BY:</th>
<th>EMPLOYEE NO.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Name &amp; Title)</td>
<td></td>
</tr>
<tr>
<td>DEPARTMENT:</td>
<td>PHONE:</td>
</tr>
<tr>
<td>SIGNATURE:</td>
<td>DATED:</td>
</tr>
</tbody>
</table>

**GENERAL DESCRIPTION AND LOCATION OF DAMAGE**

<table>
<thead>
<tr>
<th>BLDG.:</th>
<th>ROOM NO.:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**URGENCY OF REQUEST:**

- [ ] High (Immediate Response Required)
- [ ] Moderate (3-5 Day Turnaround)
- [ ] Low

If the response time is critical. i.e. Access to the area has been shutdown or risk of exposure is high. Please follow-up with a phone call directly to the University’s EHSO and/or the designated APO.

**General Description and Location of Damage:**

| Room Name/Description: | |
|------------------------| |
|                       | |

(See Attached Sketch – Optional)

**REQUIRED ACTION/TRACKING OPTIONS**

To be completed by the attending APO. Please specify any site specific instructions, required compliance dates, etc.

**General Comments/Requirements:**

<table>
<thead>
<tr>
<th>Immediate actions taken by APO:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Immediate area isolated (caution tape and signage)</td>
</tr>
<tr>
<td>[ ] Occupant(s) ordered to vacate until abatement or repair completed</td>
</tr>
</tbody>
</table>

**Requested Compliance Date:**

<table>
<thead>
<tr>
<th>(Y/M/D)</th>
<th>DAMAGE REPORT NO.</th>
</tr>
</thead>
</table>

**Actual Compliance Date:**

| (Y/M/D) | |
|---------| |

<table>
<thead>
<tr>
<th>Name: (APO)</th>
<th>Signature:</th>
<th>Date: (Y/M/D)</th>
</tr>
</thead>
</table>
Pre-Project Asbestos Identification and Assessment Summary

**NOTICE:** This form shall be utilized when a pre-renovation survey is not commissioned for a project. It is the responsibility of the individual designer, project coordinator or manager with whom the project is originating to ensure this form is completed at the initial phase of the project. Upon completion, this form shall be forwarded to EHSO and a duplicate copy shall accompany the projects documents up to the physical completion of the work.

Asbestos work permits are also required prior to performing asbestos work.

<table>
<thead>
<tr>
<th>Project Designer, Co-ordinator or Manager:</th>
<th>Telephone No.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Name/Description:</td>
<td>Room Name/Description:</td>
</tr>
<tr>
<td>Building Number:</td>
<td></td>
</tr>
<tr>
<td>Project Title/Description of Project:</td>
<td></td>
</tr>
</tbody>
</table>

Date of Request: (Y/M/D)  Anticipated Start: (Y/M/D)  W.O./REQ 7 Reference:

The following information was compiled from:
- Pre-renovation survey
- HMIS database
- Consultation with EHSO

<table>
<thead>
<tr>
<th>Location</th>
<th>System</th>
<th>Hazard</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor</td>
<td>Sheet</td>
<td>-</td>
<td>Asbestos</td>
</tr>
<tr>
<td></td>
<td>Tile</td>
<td>Specify:</td>
<td>Suspect</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Specify:</td>
<td>None</td>
</tr>
<tr>
<td>Ceiling</td>
<td>Plaster</td>
<td>-</td>
<td>Asbestos</td>
</tr>
<tr>
<td></td>
<td>Drywall</td>
<td>-</td>
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Attach additional location sheets as necessary (one sheet per location)

Page # _____ of _____

Completed by: ________________________   Date: _________________ (Y/M/D)

REVIEWED BY: (THE FOLLOWING SECTION IS TO BE COMPLETED BY A DULY AUTHORIZED ASBESTOS PROGRAMS OFFICER)

Name: ____________________________  Signature: ____________________________  Date: ____________ (Y/M/D)

Additional Information:

________________________________________________________________________________________

______________________________________________________________________________________

______________________________________________________________________________________

Appendix - Y Asbestos Identification and Assessment Summary  Y – 5

Revised May 5, 2008
## Additional location sheets

### Project Title/Description of Project:

### Location System Hazard Comments

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## Appendix - Y Asbestos Identification and Assessment Summary

**Revised May 5, 2008**
1.0 The following appendix shall be used to house a copy of all relevant correspondence with regulatory authorities, internal policies, memoranda, etc. pertaining to the control and management of asbestos at all University of Manitoba owned or occupied buildings.