



WINNIPEG SCHOOL DIVISION
INVESTING IN THE FUTURE

ASBESTOS MANAGEMENT PROGRAM

INTRODUCTION

This program has been developed, with the assistance of Manitoba Department of Labour, Workplace Safety and Health Division, to acquaint employees of The Winnipeg School Division with the hazards of asbestos containing material (s). Hazards regarding asbestos, general extent of asbestos containing material (s) in Division facilities, and procedures to be followed to prevent the risk of exposure to asbestos will be covered.

ASBESTOS MANAGEMENT PROGRAM

As part of a continuing effort to provide a safe environment for students, staff, contractors and visitors, the Division has implemented a program for the management of asbestos containing material (s) within its buildings. This Asbestos Management Program is broken down into 11 main parts:

- 1) Asbestos Identification**
- 2) Awareness Training**
- 3) Short Term Plan - Repair and Removal**
- 4) Inspections and Maintenance**
- 5) Long Term Plan – Removal**
- 6) Health Concerns**
- 7) Winnipeg School Division Facilities**
- 8) Precautions**
- 9) Safe Work Practices**
- 10) Glossary**
- 11) Summary**

The following is a description of each part:

1) Asbestos Identification

A survey conducted by a consultant at the schools within the Division identified the type, location, and condition of all asbestos containing material (s) which began in June, 1990 and was completed in January, 1992. The data collected during surveys identifies the type, condition, location, and quantity of asbestos containing material (s) in all Division buildings. This data is updated on a yearly basis and becomes an essential component of the Division's maintenance and operations program.

2) Awareness Training

The Division provides on-site awareness training for Administrators, Chief/Head Caretakers, Workplace Safety and Health Representatives, and Building Department staff. This training generally consists of:

- a) A presentation on the hazards of asbestos containing material (s);
- b) A review of the types and general locations of asbestos containing material (s) found within the Division's buildings;
- c) Procedures to be followed to prevent the risk of exposure to asbestos dust;
- d) A facility tour with Administrator, Chief/Head Caretaker, and Workplace Safety and Health Representative to review the type, location, and condition of asbestos containing material (s).

The Division will also provide group training sessions for Superintendents, Administrators, Caretakers, and Building Department staff as required. These sessions will not be site specific with more emphasis on hazard awareness and the procedures for preventing exposure.

3) Short Term Plan - Repair and Removal

The Division will continue to initiate prompt and appropriate action to address hazards identified in the building survey reports as well as deal with other operational asbestos related issues, which may arise on a day-to-day basis. The condition of the asbestos material and the hazard it presents will determine whether or not the asbestos is repaired or completely removed. Remedial work, depending on the type of removal as outlined in the Provincial Workplace Safety and Health Regulations, will be performed by a qualified asbestos removal contractor and may require the supervision of a qualified asbestos abatement monitoring consultant.

4) Inspections and Maintenance

Regular inspection and maintenance of all asbestos containing material (s) within the Division's buildings is a key component of the Division's Asbestos Management Program. This will require an annual review, by designated Division staff, of the asbestos containing material (s) in each facility followed by repairs or recommendations for removal as deemed appropriate.

5) Long Term Plan - Removal

The Winnipeg School Division has developed a long-term plan for removal of all asbestos containing material (s) within the Division's buildings. Factors which are considered in the prioritization of this plan are as follows:

- a) Location of asbestos containing material (s), i.e. accessibility to staff and students;
- b) Age and condition of asbestos containing material (s);
- c) Frequency of asbestos repairs required in the facility;

- d) Type of asbestos contained in the material;
- e) Cost implications;
- f) Future renovation/repair projects.

6) HEALTH CONCERNS ASSOCIATED WITH ASBESTOS

Asbestos is a term used for a group of naturally occurring minerals which can be separated into fibres. Asbestos fibres are non-combustible and cannot easily degrade or be destroyed.

Chrysotile (white asbestos) is the most commonly used asbestos and may be found contained in insulating material on many of the Division's boilers, expansion/holding/hot water tanks, and piping. Amosite (brown asbestos) has been used in spray-on coatings, heat insulation products and in asbestos cement products where greater structural strength was required. Crocidolite (blue asbestos) was commonly used prior to 1973 in spray-on coatings on structural steel work for fire protection and for heat or noise insulation. Some other types of asbestos seldom used in school buildings are Actinolite, Anthophyllite and Tremolite.

Asbestos related diseases are generally due to very fine fibres entering into the respiratory tract and lodge themselves in the lungs. The depth of penetration into the lungs depends on the fibre's length, diameter and shape. The size range of the fibres that appear to penetrate the deepest are those considered as being three micrometers or less in diameter and the length is at least three times the diameter (also known as the respirable fibre size). By comparison, a human hair is approximately 75 micrometers in diameter.

There are three main health consequences associated with exposure to asbestos dust:

Asbestosis is an incurable lung disease resulting from prolonged exposure to asbestos dust. The asbestos fibres gradually cause the lung to become scarred and stiff which results in increased breathing difficulty.

Lung Cancer may be caused by asbestos fibres lodged in the lungs. The exact way in which asbestos causes lung cancer is not fully known. It has been shown that the combination of smoking tobacco and inhaling asbestos fibres greatly increases the risk of lung cancer.

Mesothelioma is a very rare but very malignant form of cancer affecting the lining of the chest or the abdominal cavity.

Asbestos dust fibres are known to be a health risk however the fibres must become airborne and inhaled. The mere presence of asbestos containing material does not pose a health concern. Asbestos containing material in good condition (i.e. properly encapsulated with canvas and/or a locking agent) does not present a health hazard unless they become damaged and the fibres become airborne.

A good measure for the potential hazard of an asbestos product is its friability. The friability of

asbestos containing material is a measure in which the material can be ground or pulverised using hand pressure. This will provide an indication of the ease with which the fibres can be released to the air.

Friable asbestos containing material may be easily ground to dust between the fingers, whereas a non-friable asbestos containing material requires the use of a hammer/mechanical device in order to crush or grind the material into a powder. Some asbestos containing material (s), such as vinyl asbestos floor tile, have the asbestos fibres firmly bound together or encased within the tile and are considered non-friable. Asbestos fibres will not be released from a non-friable material unless they are cut, ground, or sanded. Non-friable asbestos containing material (s) is therefore not a high-risk health concern.

The use of proper work practices by maintenance, contractor, and custodial workers will minimise the disturbance of friable asbestos containing material (s) and will ensure a safe environment for all building occupants.

7) ASBESTOS IN THE WINNIPEG SCHOOL DIVISION FACILITIES

The Winnipeg School Division is primarily concerned with friable asbestos containing material (s). Potentially friable materials were primarily used for mechanical insulation, fireproofing, and decorative finishing. Generally, these materials are found in mechanical rooms, crawlspaces, on boilers, expansion/ holding/hot water tanks, and piping. To a lesser extent, potentially friable materials may be found on steel structures, and finished ceilings or walls.

The asbestos containing materials used for insulation of pipes or boilers may appear as a uniform block material or a formed corrugated paper-like product. Asbestos containing cement was also frequently used for added strength over fibreglass insulation and to strengthen the irregular sections around valves, elbows, and tees on piping systems. Asbestos containing cement is usually covered with a canvas wrap and paint finish.

8) PRECAUTIONS

The following circumstances may lead to an asbestos hazard condition requiring a classification and handling decision by qualified Division staff:

- 1) Water leak from piping with asbestos containing insulation;
- 2) Emergency repair of boiler or vessel insulated with asbestos containing material;
- 3) Discovery of dislodged asbestos containing pipe wrap;
- 4) Discovery of dislodged spray-applied asbestos containing insulation or fireproofing.

In the event that a suspected asbestos hazard condition is identified, the following steps must be taken:

- 1) Do not disturb the material in any way;
- 2) Isolate the area from access by unprotected and unauthorized persons;
- 3) Report the condition to the Administrator, Supervisor and Chief/Head Caretaker;
- 4) Administrator, Supervisor or Chief/Head Caretaker is to notify the Workplace Safety and Health Officer at 789-0408 or 771-3465 immediately.
- 5) Outside of regular working hours, notify your immediate Supervisor and the Division Workplace Safety & Health Officer.

9) SAFE WORK PRACTICES

Emergency Clean-up

Upon notification from a supervisory staff member of a hazardous asbestos condition, designated Division staff will be deployed to the school and complete an assessment of the hazard. Arrangements will then be made for remedial action to suit the hazardous condition. All remedial work will be performed by qualified asbestos abatement contractors and may require the supervision of a qualified asbestos abatement monitoring consultant.

Scheduled Work

Renovation and maintenance work scheduled within the Division which may involve the disturbance, or potential disturbance, of asbestos containing material (s) will be assessed by the Workplace Safety and Health Officer prior to the commencement of the work. If necessary, arrangements will be made to have a qualified asbestos removal contractor remove all asbestos containing material which may interfere with the proposed renovation or maintenance work. Monitoring and off-hours removal may be required on a case by case basis.

Asbestos Work Classifications

The hazard assessment of asbestos containing material (s) by Workplace Safety & Health Officer will result in a classification of the remedial work into one of the following three categories:

Type 1 - low risk classification activities

Type 2 - moderate risk classification activities

Type 3 - high risk classification activities

The following is a description of each type:

Type 1 Work or low risk classification activities

This work is performed where there is a low risk of exposure to air borne asbestos fibres and involves almost no health risk. This work is the only activity which may be performed by Division personnel. Anyone practicing This activity includes the following:

- a) Installing or removing non-friable asbestos containing manufactured products where sanding, cutting, or similar operations are not required. Manufactured products include vinyl tile, vinyl sheet flooring, and acoustic tiles. Only hand tools are permitted to be used;
- b) Working in close proximity to friable asbestos containing material provided this material will not be disturbed;
- c) Using protective equipment or clothing made of textiles containing asbestos;
- d) Removal of drywall or plaster where asbestos containing plaster or joint filling compounds have been used in which sample analysis indicates asbestos quantities of less than 1%;
- e) Removal of not more that ten (10) asbestos containing acoustic ceiling tiles for any given project to perform maintenance above the tiles.

Type 2 or moderate risk classification work

This work is performed where there is a moderate risk of exposure to airborne asbestos fibres and involves some health risk. This work is only performed by qualified asbestos removal contractors and may require the supervision of a qualified asbestos abatement monitoring consultant. This activity includes the following:

- a) Removing false ceiling, or part of it, to gain access to a work area and where friable material containing asbestos is or is likely to be, lying on the surface of the false ceiling;
- b) Removing, encapsulating, enclosing, or disturbing minor amounts of friable asbestos containing material during any part of the repair, alteration or maintenance of a building, structure, machine, tool, equipment. Examples of minor operations which involve the disturbance of friable material are:
 - i. Removal or encapsulation of up to 0.5 m² area of spray-on asbestos containing material;
 - ii. Removal of asbestos containing pipe insulation utilising approved pre-manufactured "glove bags";
 - iii. Repair only of splits, cuts, and exposed edges of asbestos containing mechanical insulation;
 - iv. Removal of up to 0.5 m² area of asbestos containing boiler insulation;
- c) Removal of eleven (11) or more asbestos containing acoustic ceiling tiles for any given project, to perform maintenance above the tiles or the replacement of a ceiling tile system.

Type 3 or high risk classification work

This work is performed where there is a high risk of exposure to airborne asbestos fibres and involves a high risk of health effects. This work is only performed by a qualified asbestos removal contractor and requires the supervision of a qualified asbestos abatement monitoring consultant. This activity includes:

- a) Any removal, other than that of a minor nature, of friable asbestos containing material;
- b) The spray application of a sealant to a friable asbestos containing material;
- c) Cleaning, maintaining or removing air handling equipment in buildings where spray-on asbestos containing fireproofing material has been applied to the airways or ventilation ducts;
- d) The repair, altering or dismantling of a boiler, furnace, kiln or similar device or part of it, where insulating asbestos containing material have been used or applied;
- e) Demolishing, dismantling, altering, or repairing any building structure, or parts of it, in which asbestos containing insulating material (s) has been used.

DISPOSAL

The disposal of any asbestos containing material must be disposed of in accordance to Provincial Workplace Safety and Health Regulations. This consists of the following:

- a) All asbestos containing material is required to be placed in a six (6) mil, double bag in which each bag is sealed with the use of packing tape or duct tape;
- b) All bags are required to be labelled as asbestos waste;
- c) All asbestos containing material is required to be disposed of as asbestos waste using a qualified asbestos removal contractor.

AUTOMOBILE BRAKE AND CLUTCH LININGS

Handling of asbestos containing brake and clutch linings is considered Type I Work (refer to Type 1 Work or low risk classification activities of this Guideline) and may be performed by Division personnel.

Asbestos was widely used as a major component of brake linings, disc brake pads, and clutch facings. Their asbestos content can vary from ten to seventy (10-70) percent. Because the fibres are locked in or bound by a resin binder, the potential for asbestos exposure is low during normal handling. Potentially hazardous airborne concentrations can be created by improper cleaning and handling of worn brake and clutch assemblies, uncontrolled machining operations and poor housekeeping. There are seven schools within the Division that offer auto repair programs which include maintenance and replacement of automobile brake/clutch linings.

There are two recommended methods for working with asbestos containing automobile brake and clutch linings. Regardless of the method used, the use a drop sheet of polyethylene to

control the spread of dust from the work area is required. Prior to handling, hammering, or loosening the drum in any way, spray the complete housing with a solvent solution, and wipe with clean shop rags. Where possible, use pre-machined materials that are ready for installation. Where machining is necessary, equipment **must** have a local exhaust system with a suitable dust collection device equipped with a **HEPA** filter.

WORK PRACTICES – AUTOMOBILE BRAKE AND CLUTCH LININGS

1) Method 1 - Enclosed Cylinder/HEPA Vacuum System

- a) Equipment: apparatus consisting of a wheel shaped cylinder designed to cover and enclose the brake or clutch assembly; a compressed air hose and nozzle that fit into a part in the cylinder; a vacuum equipped with a HEPA filter is used to evacuate airborne dust generated within the cylinder by the compressed air;
- b) Enclose the break or clutch assembly in a cylinder that has viewing ports to provide visibility and cotton sleeves through which the student or instructor can handle the brake or clutch assembly parts;
- c) Connect the compressed air hose and HEPA vacuum system to their respective ports;
- d) Direct compressed air at the brake and clutch assembly parts to loosen residue from these parts;
- e) The vacuum will then evacuate the loosened material from within the cylinder, capturing air borne material on the HEPA filter;
- f) When the vacuum is full, the HEPA filter must be replaced. Emptying of vacuum and replacement of the HEPA filter must only be performed by qualified person. Contact the Workplace Safety and Health Officer, at 789-0408, to arrange for the replacement of the HEPA filter and the disposal of the asbestos waste;
- g) The HEPA vacuum system can be disconnected from the brake assembly isolation cylinder when not in use. The HEPA vacuum can then be used for clutch facing work, grinding or other routine cleaning;

2) Method 2 - Compressed Air/Solvent System Method

- a) Apparatus consisting of a compressed air hose **combined** with a bottle of solvent **or** a spray can system of solvent is required to be used;
- b) Start spraying from a sufficient distance so that the force of the spray will not dislodge asbestos fibres on the surface of the material;
- c) Gradually move in closer, while spraying until all affected parts are thoroughly saturated with solvent;

- d) When thoroughly sprayed with solvent, wipe all parts clean with clean shop rags;
- e) Place rags and drop sheets in asbestos labelled containers while wet so that fibres will not become airborne as the rag or drop sheet dries;
- f) Dispose of rags used to wipe solvent sprayed parts as asbestos waste as described in section 8 of this guideline and contact the Workplace Safety and Health Officer, at 789-0408 to arrange for disposal.

SUMMARY

Asbestos work practices concerning automobile brake and clutch linings as outlined above will ensure that staff and students are aware of and can safely work at this portion of their course instruction and training.

BOILER GASKETS

Handling of asbestos containing boiler gaskets is considered Type I Work (refer to Type 1 Work or low risk classification activities of this Guideline) and may be performed by Division personnel.

Asbestos was a widely used component in the manufacturing of gaskets used for steam and hot water boilers. Gaskets may be of a flat formed and drilled shape, in rope form or as a packing material. Gaskets can be found on all water level controllers, boiler doors and boiler manholes and hand holes.

A concentrated effort has been made by the Division's Purchasing Departments to ensure that all new boiler gaskets are manufactured from asbestos-free material however some asbestos containing gaskets may still exist on school boilers.

WORK PRACTICES – BOILER GASKETS

The recommended method for working with asbestos containing boiler gaskets requires the use of a drop sheet of polyethylene to control the spread of dust in and around the work area. Where vacuuming is needed for cleaning the area, a vacuum equipped with a **HEPA** filter is required.

- 1) Suspect gaskets should be tested for possible asbestos materials. Contact the Workplace Safety & Health Officer at 789-0408 or 789-0488, to arrange for testing;
- 2) Drop sheets are to be used to control the potential spread of dust;
- 3) Do **NOT** use power tools for removing, cutting, shaping of old gaskets or installing new gaskets;
- 4) Thoroughly wet gasket material, and maintain in wet condition throughout removal process;

- 5) Do **NOT** use compressed air during gasket removal process;
- 6) Respiratory protection is available upon request;
- 7) Dispose of all waste including drop sheets while wet, as asbestos containing material in sealed and labelled containers as described in section 8 of this guideline. Contact the Workplace Safety & Health Officer at 789-0408 or 789-0488 to make arrangements for removal of these containers;
- 8) Wash hands and face at the completion of the work;
- 9) Replacement of gasket material shall be asbestos free.

SUMMARY

Boiler gaskets containing asbestos should now be rare throughout the Division. However, should this type of gasket be encountered, and if these gaskets are removed as outlined, workers will be adequately protected.

FLOOR TILES

Handling of asbestos containing floor tiles is considered Type I Work (refer to Type 1 Work or low risk classification activities of this Guideline) and may be performed by Division personnel.

Asbestos has been used in the manufacturing of some vinyl floor tiles and vinyl sheet flooring. These products were used in some of our older buildings and can be found in hallways, classrooms and under carpeting.

An effort has been made by the Division's Building Departments to ensure that all new flooring is manufactured from asbestos-free material.

WORK PRACTICES – ASBESTOS FLOOR TILES

The recommended method for working with asbestos containing flooring requires the use of polyethylene to control the spread of dust in and around the work area and ventilation systems. Where vacuuming is needed for cleaning the area, a vacuum equipped with a **HEPA** filter is required.

All floor tile removal shall follow the specifications outlined in the Procedures for the Removal of Asbestos Containing Vinyl Floor Tiles developed on August 23, 2011.

- 1) Suspect tiles should be tested for possible asbestos containing material (s). Contact the Workplace Safety & Health Officer, 789-0408, to arrange for testing;
- 2) Polyethylene sheets are to be used to control the potential spread of dust;
- 3) Do **NOT** use power tools for removing old flooring tiles;
- 4) Thoroughly wet flooring, and maintain in wet condition throughout removal process;
- 5) Do **NOT** use compressed air during flooring removal process;

- 6) Respiratory protection is available upon request;
- 7) Dispose of all waste including polyethylene sheets while wet, as asbestos containing material in sealed and labelled containers as described in section 8 of this guideline. Contact the Workplace Safety & Health Officer at 789-0408 or 789-0488 to make arrangements for removal of these containers;
- 8) Wash hands and face at the completion of the work.

SUMMARY

Flooring asbestos containing material (s) can be encountered throughout the Division. Should this type of flooring be encountered, and if this flooring is removed as outlined, workers will be adequately protected.

10) GLOSSARY

Abatement

Procedures to control fibre release from asbestos-containing building materials. These include encapsulation, enclosure and removal.

Air Monitoring

The process of measuring the number of fibre contained in a specific volume of air for a specific period of time.

Asbestos

From the Greek adjective meaning inextinguishable - is the name for a number of extremely strong fibrous silicate minerals that occur in rock formations throughout the world. These include Chrysotile, Amosite, Crocidolite, Tremolite, Anthophyllite, and Actinolite.

Asbestosis

A chronic lung disease in which breathing is restricted due to the inhalation of asbestos fibres.

Decontaminate

The removal of all asbestos containing material (s) using an approved removal method, leaving the work area clean and free of gross and air-borne asbestos fibres.

Encapsulate

The method of controlling the release of asbestos fibres, by applying a liquid sealant over the asbestos containing material (s).

Enclosure

The method of controlling the release of asbestos fibres by providing a barrier between the asbestos material (s) area and the building environment, e.g.: suspended ceiling, glove bag.

Friable Asbestos

Material that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

Glove Bag

Prefabricated, meter long plastic bag equipped with integral arms and glove ports to facilitate asbestos pipe insulation removal and fibre containment.

HEPA

High Efficiency Particulate Absolute air filters capable of collecting and retaining fibres greater than 0.3 microns in length at 99.97% efficiency. These filters are utilized for vacuum equipment, respiratory protection, and air exhaust systems.

Mesothelioma

A rare, malignant form of cancer affecting the lining of the chest or abdominal cavity.

Negative Pressure

A local exhaust system capable of maintaining a negative pressure differential between an asbestos abatement work site and adjacent areas. Air is extracted from the work area, through a HEPA filtering system and discharged directly outdoor.

Sealant (Encapsulating material)

Liquid applied over asbestos containing material (s) to control the release of asbestos fibres.

11) SUMMARY

The Winnipeg School Division's Asbestos Management Program has been developed to ensure staff are aware of the hazards associated with asbestos, inform staff of the location and type of asbestos found within their facility, ensure appropriate response procedures are in place to deal with any asbestos related problems, and implement regular inspection and maintenance of all asbestos-containing materials within Division facilities. The cooperation and assistance of all Division personnel is essential to the success of this Asbestos Management Program. If you have any questions, either of a routine or emergency nature, please contact the Workplace Safety and Health Officer at 789-0408 or 789-0488.