Occupational Health and Safety Programs

Asbestos Management

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1.0 PURPOSE

The purpose of this program to provide and maintain a healthy and safe environment for faculty, staff, students and the general public working, studying or visiting the University.

Asbestos on campus in its present condition poses no health risk to anyone, so long as it is not disturbed, i.e. drilled into or cut, etc. In the interest of safety, members of the university community are reminded that walls, ceilings and floors should not be disturbed except by trained Facilities Management employees. All members of the St. Francis Xavier University community should rest assured that provided the asbestos is not disturbed, no health risk exists.

However, St. Francis Xavier University recognizes that inhalation of asbestos fibres can lead to illness. Asbestos containing material has been known to man for centuries and has been used in literally hundreds of products. Many of the University buildings were constructed before the harmful effects of asbestos were known. Where asbestos was commonly used up to the mid 1970's it was installed in some of the University's buildings because it is strong, insulates well, and resists fire and corrosion.

Despite the fact that over the past number of years St. Francis Xavier University has made considerable strides in removing asbestos from buildings, asbestos remains in some locations. Thus, it is likely to be encountered as renovations open concealed areas of buildings, and during some maintenance tasks. **As a general rule of thumb, all building materials installed before 1980 should be treated as ACM, unless tests are conducted to confirm its presence**.

St. Francis Xavier University is committed to managing the asbestos that is present in university buildings, to minimize exposure to airborne asbestos and thus protect the health of all people. The University's long-term goal is to remove all asbestos from all its buildings.

In dealing with the asbestos that remains in university buildings, StFX has developed an Asbestos Management Program. The overall objective of the Asbestos Management Program is to ensure that no-one is exposed to harmful air-borne asbestos fibres.

2.0 SCOPE

This Program applies to all buildings and structures owned by the University, to all faculty, and staff of the University, to all students and occupants of university buildings and to external organizations who may come into contact with or disturb asbestos-containing material in university buildings. This Program applies to routine work during which an employee might encounter asbestos.

3.0 PROCEDURES AND RESPONSIBILITIES

3.1 Facilities Management is responsible for:

a) Assessing the buildings of the StFX University to determine the presence and risks of asbestos-containing materials in buildings to persons in the areas. Depending on the risk as determined by trained staff or an external expert, the asbestos material shall be left in place, encapsulated or removed.

b) Maintaining an inventory indicating the location of asbestos/asbestos containing materials, updating the inventory and notifying all relevant parties of the changes.

c) Informing faculty and staff members and contractors of the known inventory of asbestos and potential hazards.

d) Informing immediate occupants, maintenance staff and contractors of the potential hazards of asbestos during renovations and maintenance and of the measures which will be taken to eliminate the hazard.

e) Testing prior to all renovations to identify the extent of the asbestos in areas where there is potential to have asbestos.

f) Requiring vendors to inform their staff of the presence of asbestos-containing material, and that only trained personnel work with asbestos.

g) Requiring vendor's proof of training and an asbestos removal procedure prior to the start of removal of asbestos.

h) Taking immediate steps to prevent fiber release where necessary.

i) Informing Facilities Management staff of the hazards of asbestos material, and training maintenance and custodial staff in safe operating procedures to be followed during repair and maintenance activities requiring contact with asbestos or asbestos containing materials, or in the vicinity of asbestos-containing material.

j) Ensuring any maintenance work that requires the disturbance of suspected asbestos containing material, according to the asbestos inventory will be performed by a qualified vendor. If the presence of asbestos is unclear, testing shall be performed.

k) Monitoring air quality prior to, during and after completion of the process of removing asbestos material. This information shall be made available to staff and the FMJOHSC and will be kept on file.

l) Regularly inspecting and removing or sealing damaged areas with open friable asbestos.

m) Ensuring that all Facilities Management staff receive Asbestos Awareness Training at least every five years.

3.2 Occupational Health and Safety is responsible for:

a) Ensuring all non-FM staff, faculty and students are aware of their responsibility to control activities that may disturb any suspect or known asbestos, through orientation and awareness training.

4.0 WHAT IS ASBESTOS?

4.1 Uses of Asbestos in Buildings

Asbestos has been widely used in buildings and some uses continue today. The uses of asbestos are generally classed into two groups; friable and non-friable products.
Friable material when dry can be crumbled, pulverized or powdered by hand pressure. The use of friable materials in construction is banned today but due to the widespread use of friable materials in the past, these materials still are present in many buildings. Examples of this type of asbestos containing materials are; sprayed fireproofing or insulation, applied texture or acoustic plasters, and insulations.

Non-friable material when dry cannot be crumbled, pulverized or powdered by hand or moderate pressure. Examples of this type of asbestos containing material are; vinyl tiles, asbestos cement tiles, gaskets, seals, friction products, drywall compound, and asbestos cement products.

4.1.1 Friable Asbestos Materials

These products are the main concern of the public and most asbestos management programs due to the ease of fibre release. None of the products are still in production.

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

- **Sprayed or Trowel Applied Texture or Acoustic Plasters**
  The use of asbestos was widespread in trowel applied or sprayed texture coats, stipple coats or acoustic plasters commencing in the 1950's through to the late 1970's. These products always contained less than 25% chrysotile. Some of these products may be considered non-friable in place and only become friable when disturbed by construction or demolition. Other products in this group can be very soft and extremely friable.

- **Mechanical System Insulation**
  This is the most widespread use of friable asbestos in buildings. Their use dates from the late 1800's to the late 1970's. The material can have a number of appearances and asbestos contents:
  - ♦ white, brown, pink or grey block
  - ♦ white or grey corrugated paper
  - ♦ white, grey or brown layered paper
  - ♦ grey trowel or hand applied material (with the appearance of hard grey dry mud)

It is possible to find all asbestos types in mechanical insulation although chrysotile is predominant.

4.1.2 Non-Friable Asbestos Materials

- **Asbestos-Cement Products**
  The largest use of asbestos, in terms of the tonnage of fibres employed, is as a reinforcing agent in cement products. Asbestos-reinforced cement is strong, durable, rigid and resistant to both fire and weather. Such products made from cement, water and asbestos can then be formed into sheets, pipes and a wide variety of other shapes.

  The asbestos fibre content of asbestos cement products is usually about 15 percent. Asbestos-cement sheeting that is produced comes in four basic forms: flat sheets, corrugated sheets, siding shingles or roofing shingles. The main use of asbestos cement sheeting is for roofing and for cladding the exterior of buildings.

  Other uses are decorative paneling, electrical insulation and laboratory tabletops. Asbestos-cement piping is used for water supply, sewage, irrigation, drainage applications, the transport of corrosive chemical fluids, and electric and telephone conduits. Asbestos cement products are still in production and use today.

- **Gaskets and Packings**
  The combination of long asbestos fibres and high temperature rubbers has provided some of the best gasket materials ever produced. The asbestos, in bulk fibre, woven, or plaited form, provides strength and temperature resistance, while the rubber acts as a binder and sealing material.

  Asbestos yarns have been commonly used in the manufacture of braided and woven packing materials. Many of these uses, particularly in sheet forms are still in production and use today.

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

- **Paper Products**
  Asbestos paper products are used in a wide variety of applications. Among the most important in construction are roofing felts, gaskets, pipeline wrap, millboard and electrical insulation. Some uses (particularly where impregnated with tar or asphalt for roofing and pipeline wrap) are still in production today.

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

- **Friction Materials**
  Asbestos has been used in the manufacture of brake and clutch linings and pads. The asbestos fibres may be embedded in a phenolic resin with various mixtures of fillers or a woven asbestos cloth may be impregnated with the resin. Friction products are primarily used in vehicles but may be used in any rotating machinery. They are still widely produced and used.

- **Asbestos Textiles**
  Asbestos textile materials are predominantly manufactured from chrysotile fibres. Two types of yarn are produced: plain, possible braced with organic fibres, and reinforced, which incorporates either wire or another yarn such as nylon, cotton or polyester.

  Major uses for asbestos textiles are gaskets, packings, friction materials, thermal and electrical insulation, and fire-resistant applications, e.g. welding curtains, protective clothing, theatre curtains, hot conveyor belts and ironing board covers. These products may be considered or become friable in use. Asbestos textiles are no longer in widespread production.

5.0 TRAINING

- All StFX employees must be trained to understand how to identify ACM, and the procedures to follow when the possible hazard exists in their workplace.
- All StFX employees, including vendors who work around friable asbestos and those whose work might disturb friable ACM will be trained to carry out the work without endangering themselves, their co-workers or other building occupants.
- Asbestos awareness and familiarization will be part of all new employee orientations, including awareness of this program.
- All vendor workers will be made aware of this program during their vendor safety orientation.

6.0 REFERENCES

- NS LAE Asbestos in the Workplace: A Guide to Assessment & Management of Asbestos in the Workplace
- NS LAE Asbestos in the Workplace: A Guide to Removal of Friable Asbestos
- Facilities Management Safe Operating Procedure - Working in Areas Where Asbestos is Present
- Facilities Management Asbestos Inventory
- OHS-09 Respiratory Protection Program

REVISION SUMMARY		
DATE	**REVISION**	**SUMMARY**
17 Nov 23	0	New program

Appendix "A" - Working In Areas Where Asbestos is Present

Safe Operating Procedure

Hazards	inhalation, skin contact, eye contact
Tools/Equipment	HEPA vacuum
Employee Group(s)	All of Facilities Management

Required PPE:

Safety Shoes | **Ear Protection** | **Eye Protection** | **Gloves** | **P or N-100 Respirator** | **Protective Suit**

SAFE WORK PRACTICES

- Do not undertake any work involving removal or abatement of asbestos-containing material (ACM)
- Ensure you are trained to know how to identify ACM
- Ensure you are familiar with the asbestos inventory
- Report any disturbances in ACM to your supervisor
- All building materials installed before 1980 should be treated as ACM, unless tests are conducted to confirm its presence.

PROCEDURE

Work around pipes

When work must be done around pipes that contain asbestos insulation:

1. If asbestos is present or the pipe insulation covering asbestos is in poor shape, close up the ceiling immediately by returning the ceiling tile or taping plastic over the hole or area containing asbestos. Immediately report the asbestos to your supervisor or the Maintenance Manager. Clean up any debris that may have fallen from the area using a HEPA Vacuum.
2. If the pipe insulation is in good condition and no asbestos materials are present, and the area does not contain asbestos, complete the work to be done. If at any time the pipe insulation is damaged during the work or asbestos is encountered, refer to step 1 to take the appropriate action.
3. When the work is complete, check the condition of the pipe insulation to ensure it was not damaged. If it was damaged, refer to step 1.
4. Close up the ceiling or area and ensure there are no holes or gaps in the ceiling or area.

The same procedure shall be followed when working around walls, ceiling tile, flooring, and insulated equipment and piping in mechanical rooms.

Minor Fibre Release Work

Minor releases include puncturing of or damage to insulated pipe coverings and small breakages of tiles or wall panels. Minor releases may also occur when drilling or cutting into a wall.

1. Access to the affected area will be controlled; unauthorized people shall not be permitted to enter the area.

2. P100 or N100 respirators shall be worn during this procedure.

3. Loose wall dust containing asbestos shall be covered or wet down with finely-misted water immediately. All collected material containing asbestos shall be disposed of through a recognized Asbestos Abatement vendor. The material shall be held in a proper yellow bag identified with labeling indicating asbestos until picked up by the vendor.

4. The debris area must be thoroughly vacuumed with a HEPA vacuum.

5. When installing items on walls containing asbestos that requires drilling, the wall and debris shall be wetted down and collected, or the dust created by the drilling shall be collected by a HEPA vacuum during the drilling process. Only trained and qualified staff shall do this work and shall wear a half-face respirator when drilling the hole.

Major Fibre Release Work

All removal of asbestos and asbestos abatement will be done only by a qualified vendor under the coordination of Facilities Management following the Province of Nova Scotia Department of Labour and Advanced Education, and Facilities Management requirements.

NOTE: All PPE, tools and equipment shall be used in accordance with provincial OH&S legislation, manufacturer's specifications, applicable standards and codes of practice.