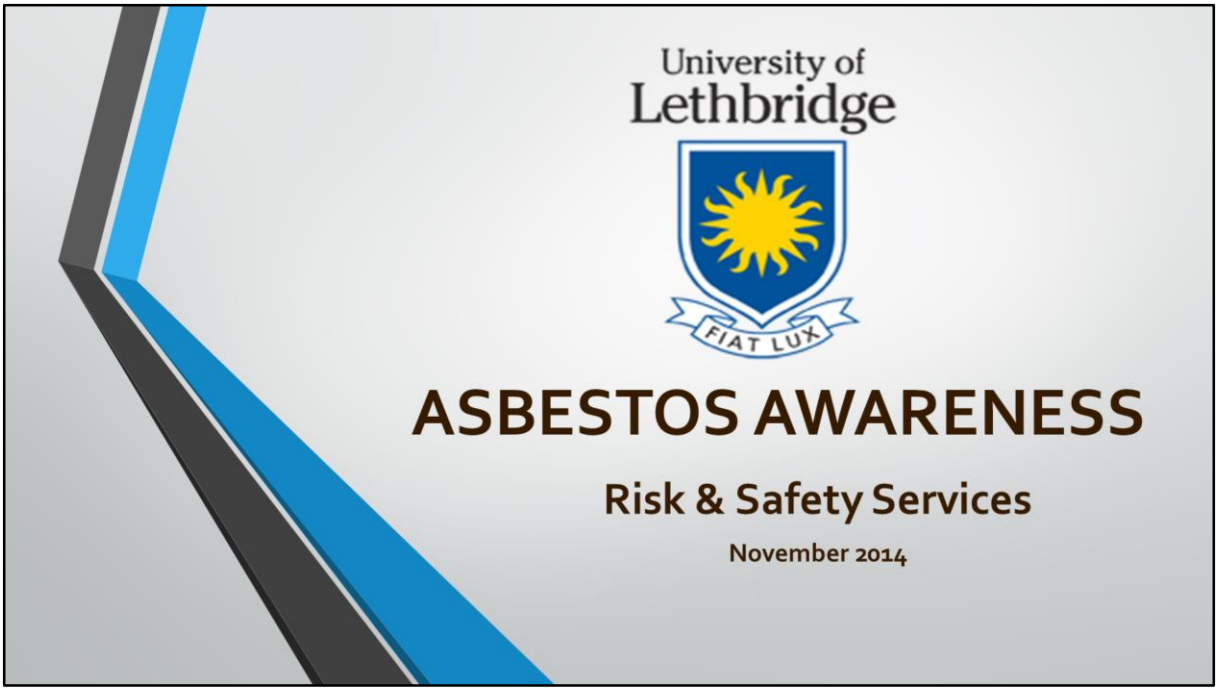


This presentation is an Asbestos Awareness presentation only. It's purpose is to familiarize faculty and staff with asbestos, it's health effects, associated hazards and recognition of asbestos materials on campus.

This presentation *DOES NOT* qualify staff and workers to remove or work with asbestos – it is only for general awareness information.

In-depth training as well as worker experience is required for individuals to perform asbestos abatement.

WHAT IS ASBESTOS?

- Asbestos is the generic name for 6 different naturally-occurring fibrous minerals.
- It was widely used in construction and industry by mixing Asbestos fibers with other construction materials

WHAT IS ASBESTOS?

Asbestos has six primary sub-classifications:


CHRYSOTILE


CROCIDOLITE


AMOSITE


ANTHOPHYLLITE


TREMOLITE


ACTINOLITE

Among these, **CHRYSOTILE** and **AMOSITE** asbestos are the most common

WHAT IS ASBESTOS?

Although asbestos fibers are microscopic in nature, the strength of asbestos, combined with its resistance to heat, allowed it to become the material of choice in a variety of products, including, but not limited to, roofing shingles, floor tiles, ceiling materials, cement compounds, textile products, and automotive parts.

Because Asbestos is very strong and heat resistant, it was the material of choice to be used in a variety of products:

- **Roof Shingles**
- **Floor Tiles**
- **Drywall Cement**
- **Ironing Board Covers and Oven Mitts**
- **Automotive Parts – brakes, transmission parts**

WHAT IS ASBESTOS?

Asbestos is now strictly regulated as exposure can now be directly and scientifically linked to a number of lung and respiratory health conditions.

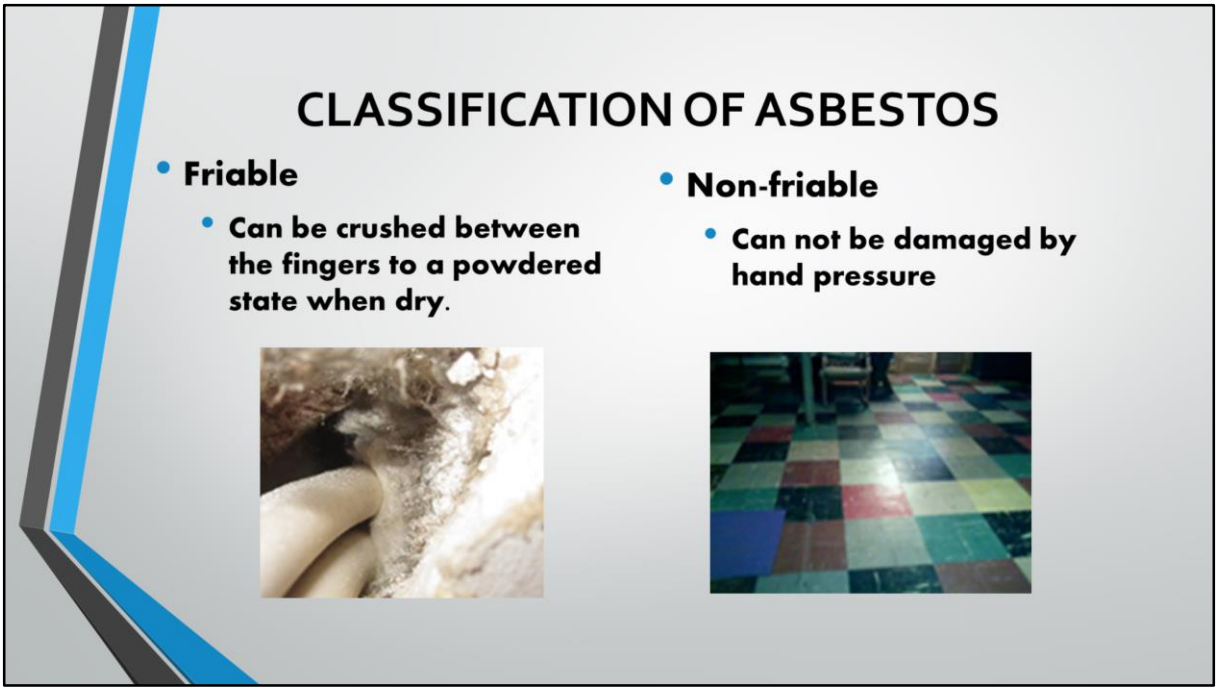
In 2011, Canada's remaining 2 asbestos mines, both located in Quebec, halted operations.

Federal legislation prohibits the sale and importation of many asbestos-containing products into Canada under the Hazardous Products Act – but not all.

Unlike most countries, Canada has never banned the use of asbestos and continues to import and export asbestos-containing materials, such as pipes and tiles (The Globe and Mail, June 27, 2014) – although there are strict regulations on how to cut and dispose of them.

A recent project was the McGill University Health Centre, a billion-dollar-plus, Montreal mega-hospital which was built by SNC-Lavalin. SNC-Lavalin said the pipes are used in storm water drainage and noted the only risk with this type of pipe is "when it is being cut upon installation," a risk that is regulated by the province . SNC-Lavalin claims "there are no risks associated with this type of piping once installation is completed" .

Other products that are still imported into Canada include some types of vinyl and tile flooring and brake pads and transmission parts.



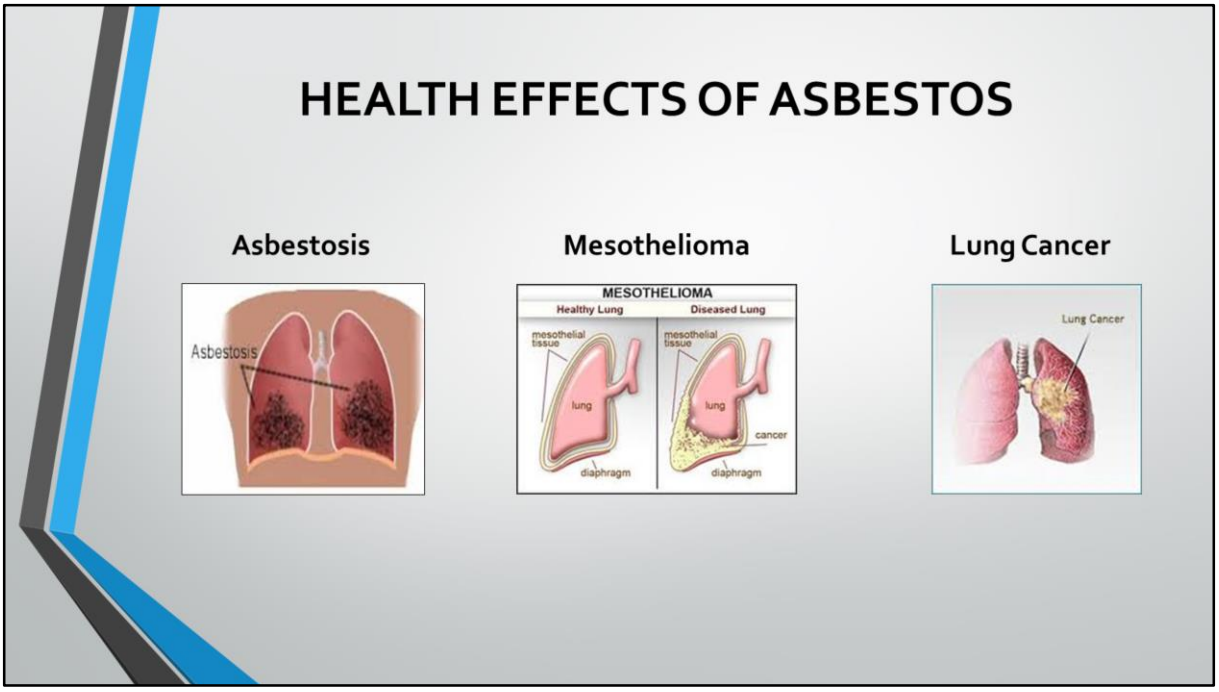
- **Asbestos is generally classified into 2 groups:**

- **Friable asbestos**

  Asbestos containing material that can be easily pulverized and reduced to dust by hand pressure
- Easily release asbestos fibers
- Presents the highest hazard as minor disturbance can easily result in exposure
  Example: Mag block, composite

Non-friable asbestos

- Asbestos containing material bound in a resin matrix. Cannot be damaged by hand pressure
- Does not easily release asbestos fibers
- Presents a lower hazard as disturbance requires more effort
- Example: Asbestos cement board



Three *common* diseases linked to asbestos exposure are:

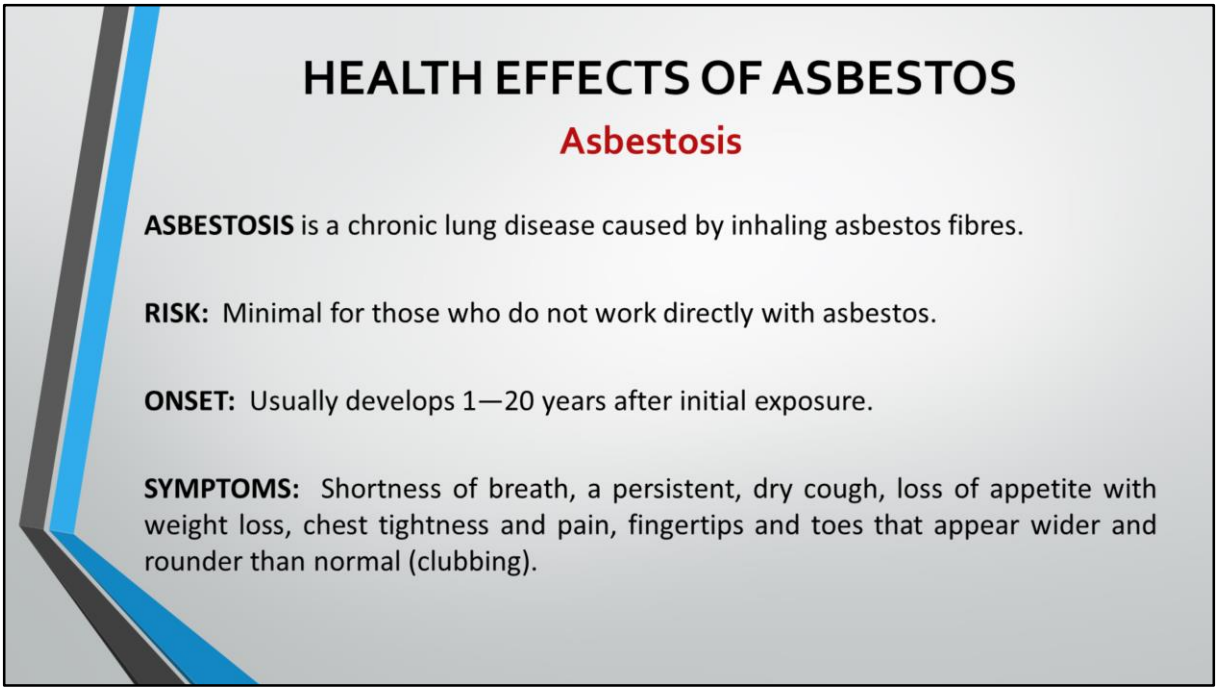
Asbestosis
Mesothelioma
Lung Cancer

- **Everyone is exposed to asbestos at some time during their life.**
- **Low levels of asbestos are present in the air, water and soil. Most people do not become ill from their exposure.**
- **People who become ill from asbestos are usually those who are exposed to it on a regular basis, most often in a job where they work directly with the material or through substantial environmental contact.**

When Asbestos is disturbed, it can travel through the air as very fine dust. As a result, it can enter the body through:

Inhalation – which is the most common route
Ingestion – fibers are inhaled , coughed out of the lungs in phlegm and then swallowed. From there, they can travel through the digestive system and become lodged in other organs.
Absorption – through the skin – asbestos fibers can become imbedded in the

skin and form asbestos warts.



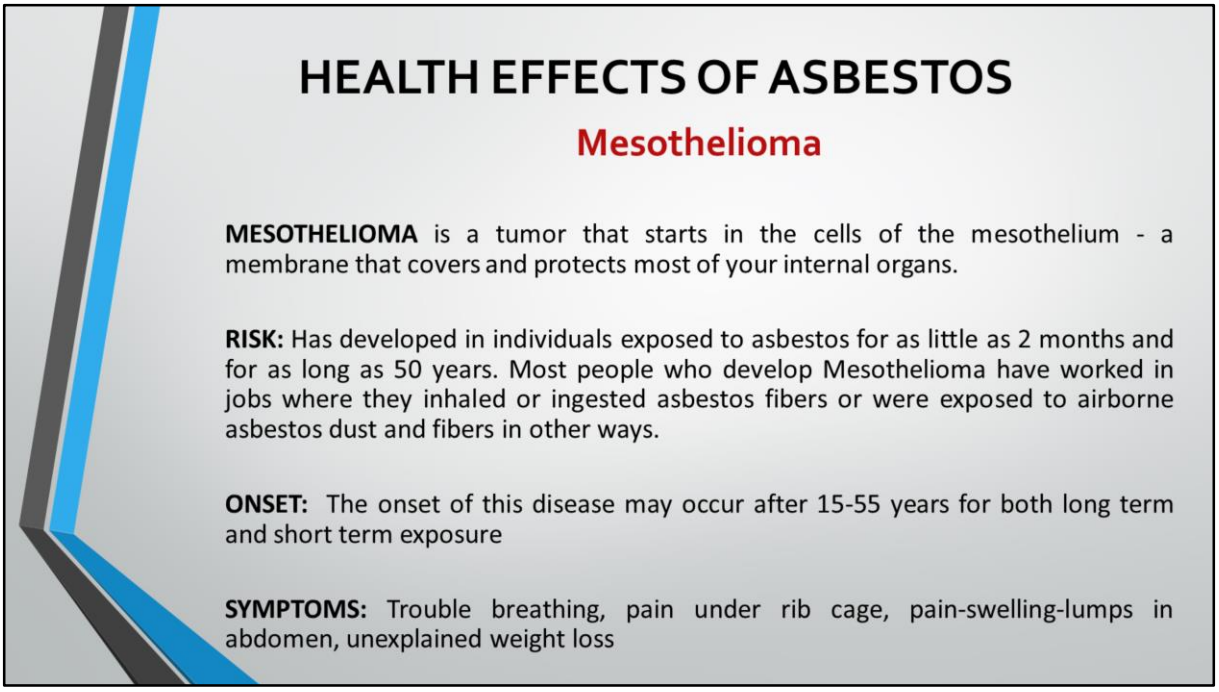
ASBESTOSIS is a chronic lung disease - only caused by inhaling asbestos fibres.

This disease leads to long-term breathing complications and does not have a cure.

RISK: Minimal for those who do not work directly with asbestos.

ONSET: Usually develops 1—20 years after initial exposure.

SYMPTOMS: Shortness of breath, a persistent, dry cough, loss of appetite with weight loss, chest tightness and pain, fingertips and toes that appear wider and rounder than normal (clubbing).



MESOTHELIOMA is an aggressive cancer affecting the membrane lining of the lungs and abdomen.

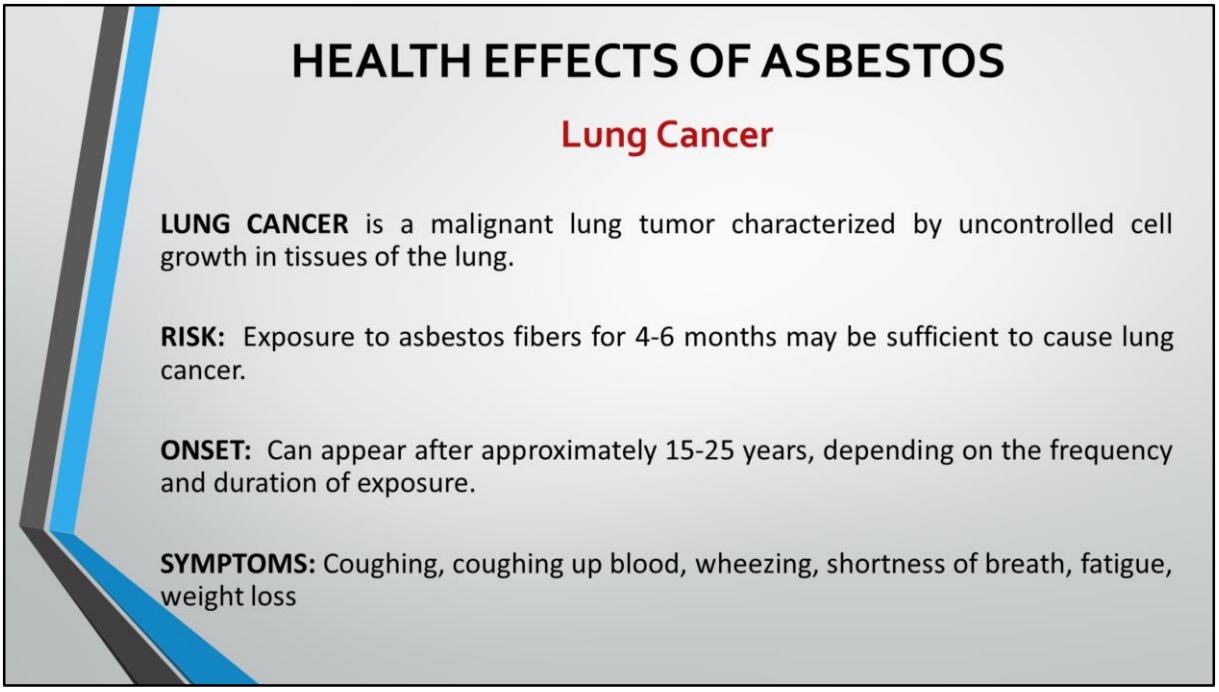
It is the most serious of all asbestos-related diseases and currently, there is no known cure.

RISK: Has developed in individuals exposed to asbestos for as little as 2 months and for as long as 50 years. This is most commonly seen in people who have worked in jobs where they inhaled or ingested asbestos fibers or were exposed to airborne asbestos dust and fibers in other ways.

Incidence of this disease is still quite rare, however, there was a spike in reported cases between 1970-1984 which is attributed to the height of industrial exposures .

ONSET: The onset of this disease may occur after 15-55 years for both long term and short term exposure

SYMPTOMS: Trouble breathing, pain under rib cage, pain-swelling-lumps in abdomen, unexplained weight loss



LUNG CANCER is a malignant lung tumor characterized by uncontrolled cell growth in tissues of the lung.

Asbestos lung cancer is a rare type of lung cancer. An estimated 4000 deaths a year (USA) are linked to this illness – the overwhelming majority of other lung cancer deaths - 90% - are linked to smoking.

Smokers who are also exposed to asbestos have a greatly increased risk of lung cancer. There is evidence that quitting smoking will reduce the risk of lung cancer among asbestos-exposed workers.

RISK: Exposure to asbestos fibers for 4-6 months may be sufficient to cause lung cancer.

ONSET: Can appear after approximately 15-25 years, depending on the frequency and duration of exposure.

SYMPTOMS: Coughing, coughing up blood, wheezing, shortness of breath, fatigue, weight loss

HOW ARE PEOPLE EXPOSED?

- **Inhalation of asbestos fibers**
  - **Exposure = the amount of fibers inhaled**
    - **Fiber concentration in the air**
    - **Duration of Exposure**
    - **Breathing rate**
- **Asbestos-containing products in good condition and that are not disturbed are <u>not</u> a direct health hazard.**

- As mentioned previously, the main route of entry for asbestos fibres to enter the body is through inhalation. Smaller fibres can also become embedded into the esophagus, larynx, trachea, lungs, abdomen, stomach, intestines, colon and rectum. Once embedded into the body's tissue, asbestos fibres may remain for extended periods of time.

- Example of Exposure: Individuals involved in the rescue, recovery and cleanup at the site of the September 11, 2001 attacks on the WTC in NYC are a group at risk of developing an asbestos-related disease. Because asbestos was used in the construction of the North Tower of the WTC, when the building was attacked, hundreds of tons of asbestos were released into the atmosphere

ASBESTOS EXPOSURE CAN OCCUR ONLY WHEN SMALL ASBESTOS FIBRES ARE DISTURBED AND RELEASED INTO THE AIR

- Disturbing, or removing insulation, roofing shingles or siding containing asbestos
- Break-down of lab heat insulating screens, or insulation in lab incubators and fume hoods
- Sanding or scraping older surface treatments containing asbestos, such as:
  vinyl floor tile, roofing tar paper, spackling, sealants, paint, putty, caulking or drywall

Information obtained from Government of Canada website:

http://www.healthycanadians.gc.ca/healthy-living-vie-saine/environment-environnement/air/contaminants/asbestos-amiante-eng.php

Information obtained from Government of Canada website:

http://www.healthycanadians.gc.ca/healthy-living-vie-saine/environment-environnement/air/contaminants/asbestos-amiante-eng.php

MINERS, SHIP LOADERS and **TRUCK DRIVERS** – loose asbestos was shipped to developing countries from Canada in large reinforced paper bags where they were handled by untrained and inadequately protected workers.

CARPENTERS, CONSTRUCTION WORKERS, INSULATION INSTALLERS, PLUMBERS, ROOFERS, SHIP BUILDERS AND TEXTILE WORKERS – these are people who work in trades that are one step removed from the process of removing asbestos from mines and transporting it to second and third world countries who continue to use asbestos products in construction.

FIRE FIGHTERS and INSURANCE ADJUSTERS – during a burning building, asbestos fibres can be released. After the fire, Insurance Adjusters inspect the buildings and can be exposed to fibres.

HOW MUCH IS TOO MUCH?

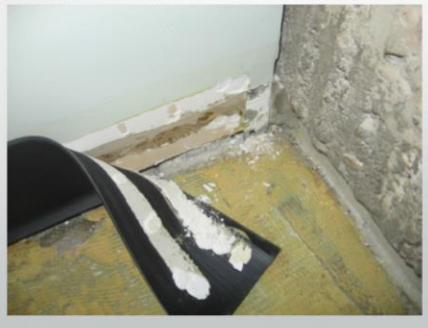
- **Asbestos Exposure is Regulated by the Alberta Occupational Health and Safety Code**
  - **Occupational Exposure Limit is 0.1 fibers per cubic centimeter of air or 100,000 fibers per cubic meter of air averaged over an 8 hour period**

Alberta's OHS legislation sets out employer and worker responsibilities at the work site. The 8-hour Occupational Exposure Limit (OEL) for all forms of asbestos is 0.1 fibres per cubic centimetre (f/cc) of air.

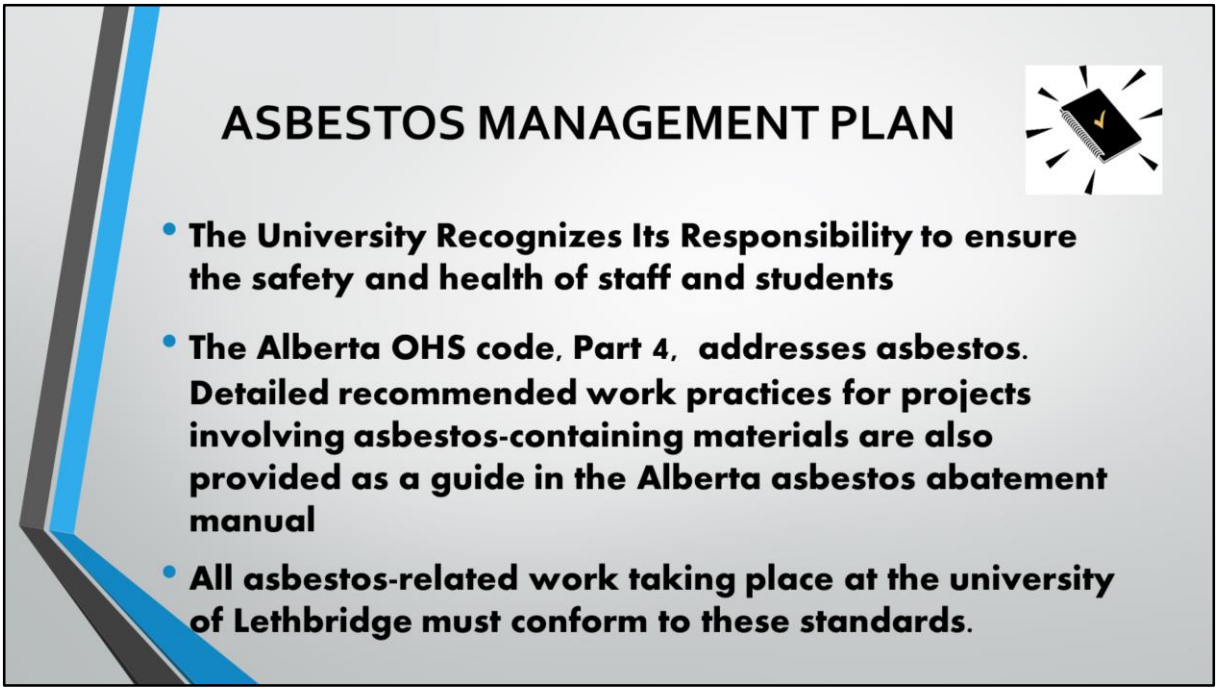
Samples can be collected by using a special equipment which draws air through a filter. The filter is then examined under a microscope to estimate the number of asbestos fibres on the filter.

ASBESTOS ON CAMPUS

- **WALLS**: plaster, textured plaster, drywall joint compound (See Below)
- **FLOORING**: Floor Tiles, Sheet Flooring
- **CEILINGS**: Plaster, Texture Coat
- **MECHANICAL**: Pipe Insulation, Duct Insulation
- **LABS**: Fume hood and incubator insulation,



Most of the Asbestos on Campus has now been removed.



As per the Alberta OHS Code – detailed SWP's and SJP's must be followed.

As mentioned earlier, only trained and competent individuals can work with asbestos abatement.

ASBESTOS MANAGEMENT PLAN

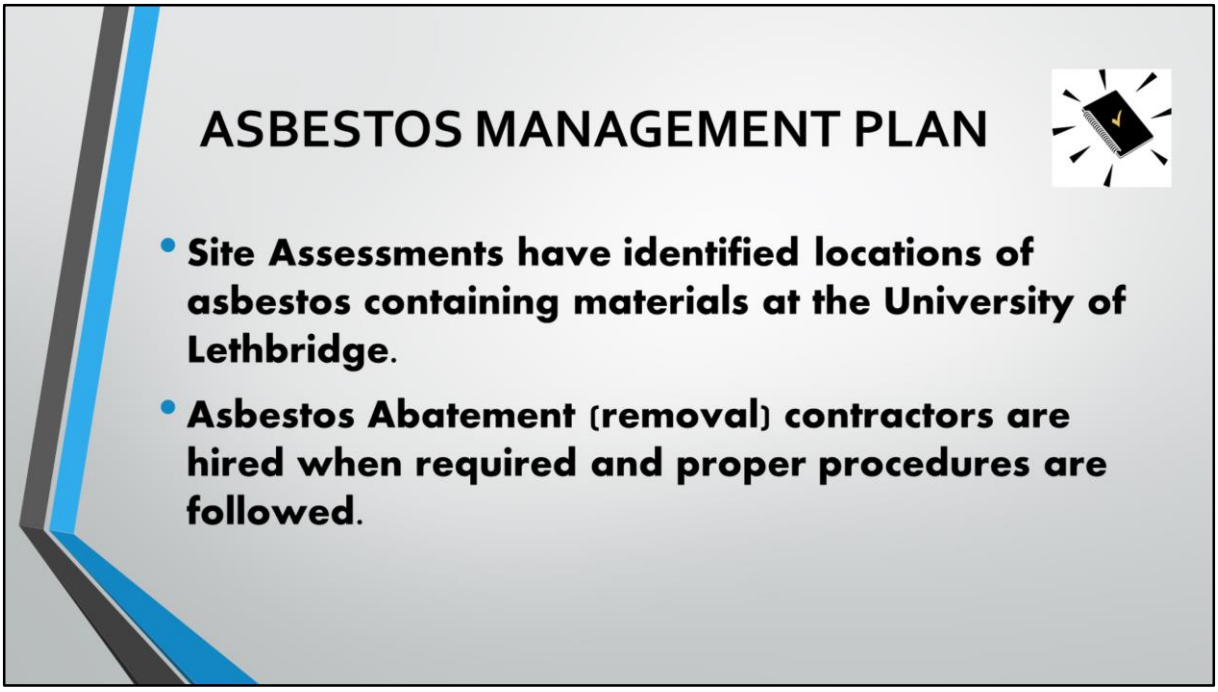
ADVANTAGES OF REMOVING ASBESTOS

- Eliminates the source
- Ends the need for a Management Plan if no asbestos remains on campus
- It is significantly less expensive if combined with renovation or demolition

ASBESTOS MANAGEMENT PLAN

DISADVANTAGES OF ASBESTOS REMOVAL

- The process is costly, complicated and time-consuming
- If fireproofing and insulation properties are still required, the material must be replaced
- There is a potential for worker and building occupant exposure during removal.



Locations containing asbestos have been identified on our Campus and an inventory is maintained.

Asbestos Abatement Projects are generally contracted to professionals trained to do this type of work. Small project where there is a very minor amount of Asbestos removal may be completed by University employees who are trained and have the competence to complete the work.

ASBESTOS RESOURCES

Alberta Asbestos Abatement Manual

- http://work.alberta.ca/documents/Asbestos-Abatement-Manual.pdf

Alberta Occupational Health and Safety

- http://work.alberta.ca/occupational-health-safety/12508.html

CAUT – Canadian Association of University Teachers

- http://archive.caut.ca/pages.asp?page=431

WHAT TO DO IF YOU FIND DAMAGED ASBESTOS OR IF YOU HAVE ANY OTHER CONCERNS ABOUT ASBESTOS

- **Notify your Supervisor who will contact Facilities**
- **Contact Risk and Safety Services (RSS)**

http://www.uleth.ca/risk-and-safety-services/content/contact

Both Facilities and RSS have a role to play if there are concerns with asbestos, therefore, both parties require notification.

Anyone concerned about asbestos exposure in their workplace should also discuss the situation with their Supervisor.

Questions?