



UNIVERSITY OF
ALBERTA

Asbestos Management Program

Facilities and Operations

IMPORTANT

Asbestos related incidents
must be reported IMMEDIATELY
to your supervisor

Emergency Contacts

During regular work hours contact the
Facilities Hazardous Material Coordinator at:
(780) 248-1378

For after-hours emergencies and on weekends
contact the University's Maintenance Emergencies at:
(780) 492-4833

General Campus Information

Facilities Hazardous Material Coordinator	248-1378
Facilities and Operations, Health and Safety Office	492-1177
Department of Environmental Health and Safety	492-1810
Trades Project Coordinator	492-3039

Facilities and Operations Hazardous Materials Website:

http://www.facilities.ualberta.ca/en/Planning_Project_Delivery/Hazardous_Materials.aspx

Facilities and Operations Health and Safety Website:

http://www.facilities.ualberta.ca/Operations_Maintenance_FO/Health_and_Safety_Program.aspx

Department of Environmental Health and Safety Website:

<http://www.ehs.ualberta.ca/>

Asbestos Management Program

This brochure provides general information about asbestos and asbestos containing building materials (ACM) found in University of Alberta buildings.

The intent of this information is to:

- enable workers to protect themselves, other workers and building occupants; and
- comply with University of Alberta and Alberta Workplace Health and Safety requirements for working with or around asbestos containing materials

The information presented here is generic. All requirements of the University's Asbestos Management Program and the safe work procedures contained in the Facilities and Operations Health & Safety Manual must be adhered to when working with or around ACM.

In addition to this brochure, Facilities and Operations also offers an "Asbestos Awareness" E-Learning course that can be arranged through the Facilities Hazardous Materials Coordinator.

To confirm the presence or absence of ACM prior to performing routine repair and/or maintenance contact the Facilities Hazardous Material Coordinator.

Sampling to determine the presence of ACM can only be conducted by personnel qualified to conduct this type of sampling.

What is Asbestos?

Asbestos is a naturally occurring, strong mineral fibre that is resistant to heat and many chemicals. It differs from other minerals because of its fibrous, crystalline structure that can be separated into flexible fibres.



Chrysotile asbestos (mineral form)

Types of Asbestos

- **Chrysotile** - This is the most common type (approximately 90%) of asbestos found in buildings. It is also known as “white asbestos.” It is the only serpentine form of asbestos.
- **Amosite** - Also known as “brown asbestos,” it has been used in thermal insulation and asbestos cement products where greater structural strength is required.
- **Crocidolite** - Also known as “blue asbestos,” it is not as commonly used as Chrysotile or Amosite and is typically found in asbestos cement products in University buildings as a mixture with Chrysotile asbestos.
- **Other Forms of Asbestos** - This includes Anthophyllite, Tremolite, and Actinolite. These are rarely encountered and are found mainly as contaminants in other minerals such as plaster and vermiculite insulation.

When is Asbestos a Hazard?

Intact and undisturbed asbestos containing material is not a direct hazard. Asbestos becomes a hazard when disturbed or in poor condition, and if in a friable form. Asbestos fibres must be inhaled to present a health hazard. Health risk is minimal when asbestos is in good condition and inaccessible.

Asbestos Applications

Asbestos was used extensively in over 3,000 products for many years. The primary use of asbestos was as an insulator or a fire retardant. Asbestos was also used as a reinforcing or binding agent in combination with plastics or cement.

Building materials including plaster, drywall joint compound, floor tiles, floor levelling compound, ceiling tiles, pipe and duct insulation, gaskets, roofing felt and a host of other materials may contain asbestos. It was used in spray-on applications until the mid-1970s. The use of asbestos in construction products was phased out in the early 1980s. As a result, University of Alberta buildings built after 1985 should not have ACM; however, certain leftover asbestos products, such as floor tile, ceiling tiles and cement pipe/board, may have been installed in buildings constructed up to 1990. As a precautionary measure buildings constructed between 1985 and 1990 should also be inspected for ACM prior to renovations.

Special procedures and precautions are required when undertaking repair and/or maintenance work that may disturb ACM or when working in the vicinity of ACM.

If you accidentally disturb or encounter ACM, IMMEDIATELY:

- stop work, isolate the work area, report the incident to your supervisor, and complete an incident report form (if you disturb the material)

If you suspect accidental exposure to airborne asbestos fibres:

- contact your supervisor, complete a WCB Worker's Report, and contact the Occupational Health Nurse for further follow-up.

Where may ACM be encountered in University of Alberta Buildings?

Vinyl Asbestos Tile (VAT)

12"x12" and 9"x9" tiles have been generally found to contain 1% to 10% Chrysotile asbestos. The asbestos fibres in VATs are tightly bound into the matrix of the tile and are considered non-friable.

Precautions: Do not cut or break dry tiles. Only trained University staff may remove less than 10 square feet with hand tools using low risk procedures specific to this activity.



Vinyl asbestos tile (VAT)



Sheet vinyl flooring

Sheet Vinyl Flooring

The paper backing on the underside of sheet vinyl flooring may contain friable asbestos. The paper backing has been generally found to contain 50% to 90% Chrysotile asbestos.

Precautions: Do not cut dry sheet vinyl flooring. Safe work procedures are required to repair or remove this type of flooring.

Floor Leveling Compound, Mastic

Floor leveling compound (FLC) is generally found under tile, sheet flooring and carpet. It may contain 1% to 75% Chrysotile asbestos and is generally grey, white or brown in both a fibrous or cementitious form. In some areas, there may be VAT and FLC under the carpet or multiple layers of VAT and FLC in one room.

Mastic may also be present under VAT. It contains 1% to 10% Chrysotile asbestos. It is non-friable.



White FLC under carpet

Floor Leveling Compound (continued)



Grey FLC under floor tiles



Black mastic under vinyl floor tiles

Precautions: The flooring must be checked for floor leveling compound **prior** to removal of the flooring. This applies to carpet and floor tile removal. Sometimes FLC may be present under mastic or paint. If repair or maintenance work may cause disturbance of this material, contact your supervisor.

Drywall Joint Compound

Drywall joint compound is often present along drywall seams, over screws, over steel corner beads and sometimes as a thin layer on the drywall. The asbestos content in joint compounds has generally been found to be 1% to 10% Chrysotile asbestos. Asbestos containing dust may be generated during wall repair or demolition.



Drywall joint compound

Precautions: Use hand tools and wet methods to minimize dust. If a drill is used, it must have a dust collection device fitted with a HEPA filter. Trained University staff may undertake only minor repair and/or maintenance work using safe work procedures specific to this activity.

Plaster

Asbestos may be present in all layers of plaster but is typically found in the coarse "base" or "scratch coat" layer of plaster (beige or grey in color) typically on metal or wood lathe. The asbestos content has generally been found to be 1% to 5% Chrysotile and/or Actinolite asbestos. Asbestos containing dust may be generated during wall repair or demolition.



Beige "scratch coat" plaster



Decorative plaster (spray-applied)

Decorative plaster or "cement plaster" is mixed with cement and is either spray-applied or troweled. The asbestos content has generally been found to be 1% to 5% Chrysotile asbestos. Asbestos containing dust may be generated during wall repair or demolition.



Decorative plaster (troweled)

Precautions: Use hand tools and wet methods to minimize dust. If a drill is used, it must have a dust collection device fitted with a HEPA filter. Trained University staff can undertake only minor repair and/or maintenance work using safe work procedures specific to this activity.

Stippled and Textured Finishes

Stippled and textured ceiling finishes have been found to contain 1% to 50% Chrysotile asbestos. Stipple coat is typically applied as a thin, non-friable, layer on plaster or concrete whereas texture coat is applied as a thicker, more friable, layer.

Precautions: Do not disturb this material under dry conditions. Small penetrations and attachments can be done under wet conditions using safe work procedures specific to this activity. If a drill is used, it must have a dust collection device fitted with a HEPA filter.



Ceiling stipple coat



Ceiling texture coat

Spray-Applied Thermal/Acoustic Insulation (Fireproofing)

Spray-applied thermal/acoustic insulation is generally found in mechanical rooms and sometimes above suspended ceilings, on beams, metal decks, joists and columns. This type of insulation may contain 1% to 90% Chrysotile or Amosite asbestos and is very friable. Most asbestos containing spray-applied fireproofing insulation on campus has been removed or replaced with non-asbestos materials. If in doubt, request to have a sample taken for clarification.



Spray-applied thermal insulation (fireproofing)

Precautions: Do not disturb (scrape, drill or hammer into) surfaces covered with this material. If installing small attachments to a surface covered with this material, contact your supervisor.

T-Bar Ceiling Tile

T-Bar ceiling tiles may contain 1% to 25% Chrysotile or Amosite asbestos. Asbestos ceiling tiles range from a wide variety of sizes including 1'x1', 2'x2', 2'x4', and 1.5'x6'. There may be asbestos and non-asbestos tiles in the same area. The only way to know for sure is by having the tiles tested. Generally, ceiling tiles with deep fissures and a red backing are more likely to contain asbestos. The majority of asbestos containing ceiling tiles have been removed from campus and replaced with non-asbestos materials.



T-Bar ceiling tile

Precautions: Always lift ceiling tiles gently and slide over onto the next tile. Use low-risk safe work procedures to remove or move 10 square feet or less of ceiling tiles that may contain asbestos. Never break asbestos ceiling tiles during removal. For work involving ceiling tile removal in areas greater than 10

ACM Debris on Ceiling Tiles

ACM debris may be found on top of ceiling tiles in areas that have spray-applied fireproofing, ceiling stipple/texture finishes or asbestos pipe insulation.

Precautions: Use extreme care when lifting ceiling tiles that may have ACM debris. Use low-risk safe work procedures specific to accessing ceiling spaces that may contain ACM.



Texture coat debris on ceiling tiles & light fixtures

Pipe – Fitting Insulation

Pipe fitting insulation or “mud” includes a mixture of asbestos and cement on pipe elbows, joints, valves, reducers, hangers, etc. The mud is usually found wrapped with painted or non-painted canvas, but occasionally as bare mud. Mud may also be found applied on joints as a thin layer over fibreglass insulation and wrapped with canvas. This type of material usually contains 5% to 90% Chrysotile asbestos. It may occasionally be mixed with Amosite or Crocidolite.



Pipe elbow mud wrapped with non-painted

Precautions: Do not disturb material. If repair or maintenance work may disturb the ACM; it must be removed prior to the repair and/or maintenance using safe work procedures specific to this activity.



Mud on fibreglass adjacent to valve

Pipe – Run Insulation

Besides asbestos mud, there are other types of asbestos containing materials used to insulate pipes throughout University buildings including corrugated “Aircell” insulation, construction paper, solid fibrous insulation and solid block insulation.



Corrugated “Aircell” insulation

Aircell looks like corrugated cardboard insulation and is found on straight lengths of pipes. It usually contains 25% to 90% Chrysotile asbestos. This type of insulation is friable.

Precautions: Do not disturb material. If repair or maintenance work may disturb the ACM; it must be removed prior to the repair and/or maintenance using safe work procedures specific to this activity.

Pipe – Run Insulation (continued)

Block Insulation may be found on pipe runs and elbows. It is preformed as two half circle pieces that fit around a pipe. The two pieces are held together with either canvas and/or wire. It is generally found on high temperature steam lines and contains 50% to 90% Amosite and/or Chrysotile asbestos.

Precautions: Do not disturb material. If repair or maintenance work may disturb the ACM; it must be removed prior to the repair and/or maintenance using safe work procedures specific to this activity.



White solid block insulation



Brown solid fibrous insulation

Asbestos containing construction paper is sometimes found on pipe runs covering layers of felt and fibreglass and wrapped with canvas. It typically contains 1% to 5% Chrysotile asbestos.

Precautions: Use hand tools and wet methods to minimize dust. Trained University staff may undertake minor repair and/or maintenance work using safe work procedures specific to this activity.

Fibrous pipe insulation is another form of asbestos insulation that was used on pipe runs and elbows on high temperature steam lines. It contains 90% Amosite asbestos. It is very friable.

Precautions: Do not disturb material. If repair or maintenance work may disturb the ACM; it must be removed prior to the repair and/or maintenance using safe work procedures specific to this activity.



White construction paper insulation

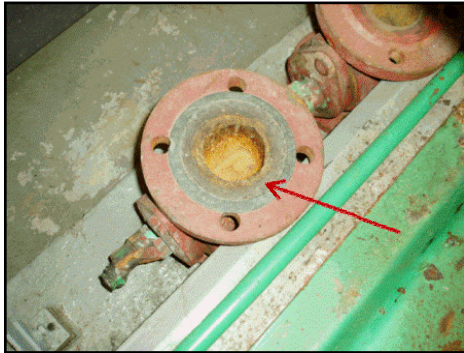
Pipe – Gaskets and Packing

Oakum-type packing at cast iron pipe joints may contain ACM. It has been found to contain 1% to 75% Amosite or Chrysotile asbestos.

Precautions: Do not disturb or cut into the packing. If repair or maintenance work may cause disturbance of this material, contact your supervisor.



Joint packing on a cast iron pipe



Pipe gasket

Gaskets at flanged pipe joints have been found to contain 50% to 75% Chrysotile asbestos. This material becomes very friable if disturbed or damaged.

Precautions: Do not cut into gaskets. Removal of the gasket as a whole piece is recommended. If repair or maintenance work may cause disturbance of this material, contact your supervisor.

Duct – Parging Cement

Parging cement is typically found on ducting as a thin layer between canvas and layers of felt, foil and/or fibreglass. It contains 5% to 90% Chrysotile asbestos.

Precautions: Do not disturb material. If repair or maintenance work may disturb the ACM; it must be removed prior to the repair and/or maintenance using safe work procedures specific to this activity.



Parging cement on duct

Duct – Mastic

Mastic may be found along duct joints on bare ducts or on ducts covered with insulation. Asbestos has been found in various colors of mastics including red, black and yellow. It is a non-friable material. It has been found to contain 1% to 10% Chrysotile asbestos. Not all mastics contain asbestos. As a result, testing should be conducted prior to impacting the material.

Precautions: Do not cut into the mastic. The most effective way to abate this material is to wrap the mastic, cut the duct on either side of the mastic and dispose of the whole piece of duct with the mastic as asbestos waste.



Red duct mastic

Tank/Vessel – Parging Cement

Parging cement is also found on tanks, vessels, boilers, etc. as either a layer between canvas and felt/fibreglass or as a thicker layer on wire lathe and covered with canvas. It contains 5% to 90% Chrysotile asbestos.



Parging cement on a tank

Precautions: Do not disturb material. If repair or maintenance work may disturb the ACM; it must be removed prior to the repair and/or maintenance using safe work procedures specific to this activity.

Fire Doors

The interior filler of certain fire doors contain asbestos. It may be in a block or sheet form. It has been found to contain 50% to 90% Chrysotile and/or Amosite asbestos. The filler may be exposed when removing hardware or when the door is damaged. This material is very friable.

Precautions: There is a potential for fibre release. Remove the door or hardware using water to control fibre release. Use safe work procedures specific for this activity.



Fire door interior (white sheets of asbestos)

Countertops

Countertops are located throughout campus buildings and are typically dark grey or green in color. This material is non-friable. It contains 5% to 50% Chrysotile asbestos.

Precautions: Do not cut under dry conditions. Attach or remove under controlled conditions using specific low-risk safe work procedures.



Underside of countertop

Cement Board (Transite)

Cement board or “Transite” is a mixture of cement and asbestos. Due to its high resistance to heat and corrosion, cement board has been used in a wide range of applications. Examples include fume hood linings, flammable and chemical storage cabinets, roof and siding panels, perimeter heat register panels and wall and ceiling panels. It has been found to contain 5% to 90% Chrysotile asbestos. The material may also be painted.



Transite fume hood lining

Precautions: Do not cut under dry conditions. Attach or remove under controlled conditions using specific low-risk safe work procedures.

Cement Duct/Pipe (Transite)

Transite may also be found in the form of piping or ducting. Transite ducts are used to exhaust fume hoods and are generally found to contain 5% to 50% Crocidolite and/or Chrysotile asbestos. Transite pipes generally contain 25% to 50% Chrysotile asbestos.



Transite duct

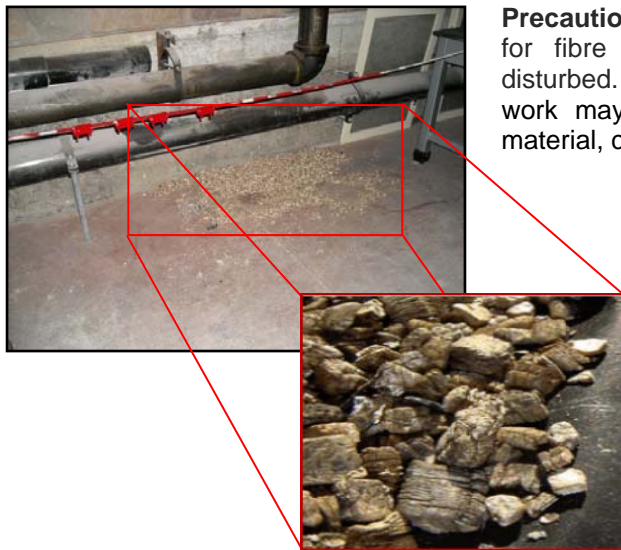
Precautions: Do not disturb material. If repair or maintenance work may disturb the ACM; it must be removed prior to the repair and/or maintenance using safe work procedures specific to this activity.



Transite pipe

Vermiculite (Zonolite) Insulation

Some vermiculite insulation may be contaminated with asbestos. This type of vermiculite is known as Zonolite® and is typically contaminated with <1% Anthophyllite or Tremolite asbestos. Although the material is contaminated with trace amounts of asbestos, it is very friable and disturbing it can produce high levels of airborne asbestos fibres. Zonolite® may be found as loose insulation in an attic space or within the cavity of exterior cinder block walls. It may be brown or grey in color.



Precautions: There is a high potential for fibre release if the material is disturbed. If repair or maintenance work may cause disturbance of this material, contact your supervisor.

Vermiculite debris from a cinder block wall cavity

For more information regarding asbestos on campus please view our website at:
http://www.facilities.ualberta.ca/en/Planning_Project_Delivery/Hazardous_Materials.aspx

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Facilities Hazardous Material Coordinator at:
fohazmat@ualberta.ca

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