



McMaster University
Asbestos Awareness





Presented by Christopher Hurley
Environmental & Occupational Health Support Services



Topics Covered

- Properties of asbestos
- Uses of asbestos
- Health hazards of asbestos
- Activities resulting in potential asbestos exposure
- Asbestos regulations
- Where to get help


Properties of Asbestos



- Naturally occurring fibrous minerals
- Good tensile strength
- Flexibility
- Heat resistant
- Electrical resistance
- Good insulation
- Chemical resistant


Types of Asbestos

- Chrysotile
 - "White Asbestos"
- Amosite
 - "Brown Asbestos"
- Crocidolite
 - "Blue Asbestos"
- Tremolite (possible contaminant in vermiculite)
- Actinolite
- Anthophyllite




Uses of Asbestos

Asbestos insulated pipe in utility space




Sprayed-on fireproofing material

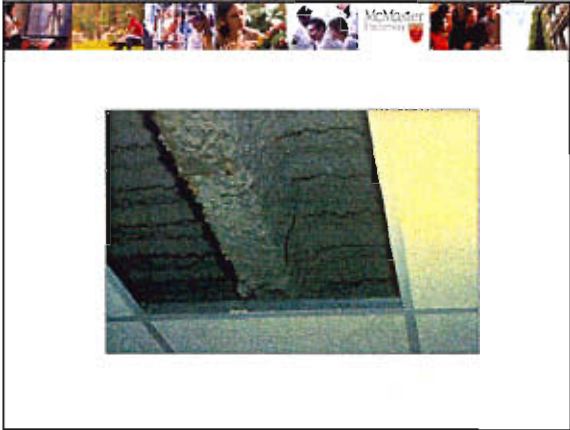


- Thermal system insulation
- Surfacing materials
- Reinforcement of materials
- Fireproofing
- Acoustic and decorative plaster
- Textiles

Uses of Asbestos

- Friction materials (brakes, clutches, etc.)
- Asphalt and vinyl felts
- Papers and adhesives
- Flooring and roofing materials
- Filters, sealants, caulk, and gaskets





Some Asbestos-Containing Materials

- Cement Pipes
- Cement Wallboard
- Cement Siding
- Asphalt Floor Tile
- Vinyl Floor Tile
- Vinyl Sheet Flooring
- Flooring Backing
- Construction Mastics (floor tile, carpet, ceiling tile, etc.)
- Acoustical Plaster
- Decorative Plaster
- Textured Paints/Coatings
- Ceiling Tiles and Lay-in Panels
- Spray-Applied Insulation
- Blown-in Insulation
- Fireproofing Materials
- Taping Compounds (thermal)
- Packing Materials (for wall/floor penetrations)
- High Temperature Gaskets
- Laboratory Hoods/Table Tops
- Laboratory Gloves
- Fire Blankets
- Fire Curtains

Some Asbestos-Containing Materials

- Elevator Equipment Panels
- Elevator Brake Shoes
- HVAC Duct Insulation
- Boiler Insulation
- Breaching Insulation
- Ductwork Flexible Fabric Connections
- Cooling Towers
- Pipe Insulation (corrugated air-cell, block, etc.)
- Heating and Electrical Ducts
- Electrical Panel Partitions
- Electrical Cloth
- Electric Wiring Insulation
- Chalkboards
- Roofing Shingles
- Roofing Felt
- Base Flashing
- Thermal Paper Products
- Fire Doors
- Caulking/Putties
- Adhesives
- Wallboard
- Joint Compounds
- Vinyl Wall Coverings
- Spackling Compounds

Asbestos is an Inhalation Hazard

- Breathable fibers are deposited in the alveoli, the ending small air sacs in the lungs.
- Body's defense mechanisms cannot break down the fibers.
- Fibers cause damage to respiratory system.

Asbestos-related Diseases

- Asbestosis
- Mesothelioma
- Lung Cancer
- Other cancers


Usually symptoms take 15 to 30 years or more to develop.

Health effects from asbestos exposure may continue to progress even after exposure is stopped.

What does Friable mean??

- Friable: can be easily crumbled or crushed by hand, releasing fibers into the air
- Very small fibers stay in the air for long periods
- Damaged or deteriorated ACM increases friability

How do asbestos fibers get in the air?




Water damage, deterioration

- Mechanical action on ACM (cutting, sawing, grinding, sanding, drilling, buffing)
- Disturbing/breaking ceiling tiles
- Removing/replacing insulation
- Disturbing sprayed-on asbestos
- Damaged/deteriorated ACM
- Asbestos abatement project

Asbestos Regulations - Ontario

- Designated Substances
- Reg 279/05 Asbestos
- Reg 278/05 Asbestos on Construction Projects




University Responsibility

- Maintain accurate inventory of Asbestos on campus
- Follow Reg 278 when removing the asbestos
- Provide information under the 'Right to Know'
- Conduct occupant meetings prior to construction
- Conduct awareness sessions for JHSC members or others



Exposure Control

- ▣ Type 1 – non-friable
 - Wet methods
 - Prompt disposal
 - Housekeeping
- ▣ Type 2 – friable small
 - Unventilated enclosure
- ▣ Type 3 – friable large
 - Ventilated enclosure, isolation




HEPA vacuum units

HEPA filter = high efficiency particulate air filter

Air Monitoring

- ▣ Air monitoring is conducted during Type 3 projects only.
- ▣ Conducted at the start, during and following a project.
- ▣ Clearance is given prior to enclosures being torn down.



Questions?

Contact EOHSS at ext 24352
or
Facility Services ext 24740
