

**Stewart Biological Sciences Building**  
*management of asbestos*

**Wayne Wood, CIH, ROH, MScA**  
Associate Director, University Safety (EHS)



Presented at  
*Town Hall Meeting*  
February 21, 2014

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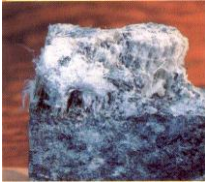
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What is Asbestos?



The generic name for 6 different naturally-occurring fibrous minerals

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What are the different types of asbestos?

**Serpentine**

- Curved fibres
- Includes chrysotile
- Mined in Quebec



**Amphibole**

- Straight fibres
- Includes Amosite
- Considered "somewhat more toxic"<sup>1</sup>



<sup>1</sup>Centers for Disease Control

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- Good heat insulator
- Non-flammable
- Non-conductive
- Resistant to oxidation
- Chemically stable
- Strengthens materials

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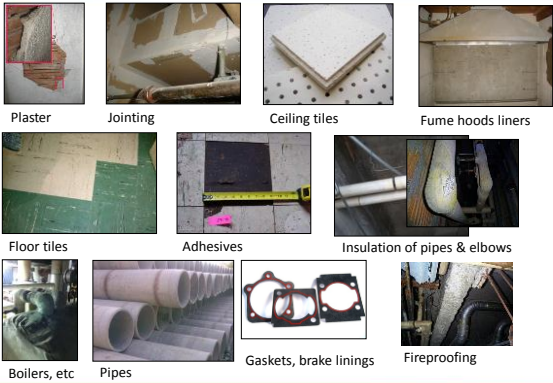
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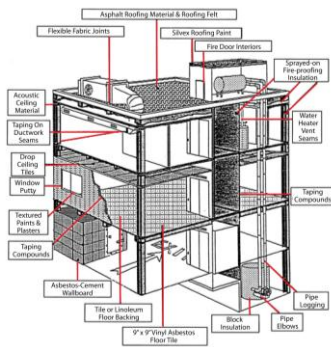
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Source: RGA Environmental (<http://blog.rgaenv.com/asbestos-containing-building-materials-are-not-always-limited-to-pre-1970%E2%80%99s-buildings/>)

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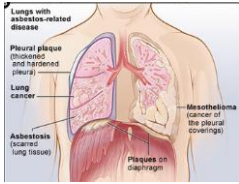
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National Institutes of Health

- Long latency period – 15 to 35 years
- Fibers must be respirable ( $>5\mu$ , aspect ratio 3:1)
- Co-factor = smoking
- Exposure dependent
- Certain Groups at risk

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1. Unprotected workers who made, installed, or removed products containing asbestos.
2. People who worked near 1)
3. Family members of exposed workers.
4. People who living near large (disturbed) deposits in the soil.

Source: National Institutes of Health: <http://www.nhbi.nih.gov/health/health-topics/topics/asb/>

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Definition of Asbestos-Containing Materials:

- US OSHA Code of Federal Regulations:  
**Asbestos-containing material means any material containing more than 1% asbestos.**
- Province of Quebec Safety Code for the Construction Industry:  
**Any material and product containing asbestos where the asbestos concentration is at least 0.1%.**

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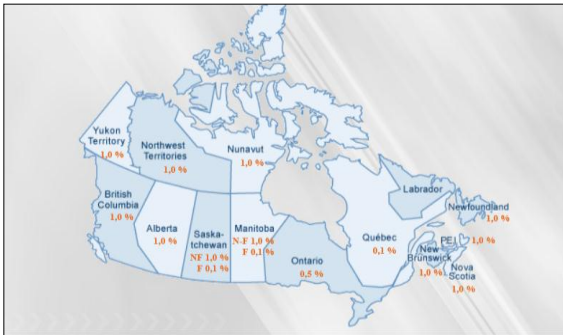
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- **Friable material:** material that can be crumbled, pulverized or powdered by hand pressure <sup>(1)</sup>
- "Asbestos poses health risks only when fibres are present in the air you breathe. There are no significant health risks if asbestos fibres stay enclosed or tightly bound in a product." <sup>(2)</sup>



Friable asbestos



Non-friable asbestos



Non-friable can become friable through deterioration, construction or maintenance

(1) Regulation Respecting Occupational Health and Safety, Québec

(2) Health Canada: <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/environ/asbestos-amiante-eng.php>

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Jurisdiction	Asbestos Type	8-hour Time-Weighted Average (TWA) (Fibres/cc)
Quebec	Chrysotile, Tremolite, Anthophyllite, Actinolite	1
	Crocidolite*, Amosite*	0.2
Ont., BC, Alta, OSHA (USA)	All forms	0.1
McGill U.	All forms	0.1

\* Forms of asbestos banned from commercial products

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Low risk



High risk



Moderate risk

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At McGill, the management of asbestos entails:

- Inventory of asbestos-containing materials
- Training
- Protective equipment and respirator fit testing for those who deal with asbestos
- Policy and protocols
- Site supervision and air monitoring
- Clearance testing
- Final site inspection\*
- Perimeter sampling\*

\* Actions which go beyond basic legal requirements

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**McGill** Asbestos Projects: Risk Management

Safety measures	QC Legal requirements	McGill practices
Air tests TLV-TWA (chrysotile)	< 1 fiber/cc	< 0.1 fiber/cc
Air tests TLV-TWA (amosite)	< 0.2 fiber/cc	< 0.1 fiber/cc
Daily air tests in the work zone	Yes	Yes
Daily air tests in the adjacent occupied zone		Yes
Installation of a window in high risk enclosure		Yes
Zero tolerance policy (could lead to expulsion)	Yes	Yes
Supervision by external consultants during high risk abatement		Yes
Supervision by McGill construction safety professionals on all risk levels		Yes
Internal response protocol for incidents that may involve asbestos		Yes

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**McGill** Stewart Building: Additional Measures




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**McGill** Stewart Building: Additional Measures

- Regular air testing (4 times/year)
- Work order to verify all ceiling tiles
- Weekly inspections by EHS
- Increased surveillance by Security
- Sampling and investigation of settled dusts
- Broadcast [Asbestos Incident Response Protocol](#)
- Weekly meetings of Work Group

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RESPONSE PROTOCOL

A: Dust or debris is found in the workplace	B: Dust or debris falls on your person (you believe you have been exposed)	C: Other type of incidents
Keep everyone out of the area	Leave the immediate area and go to a safe location	Report the situation to FCC: • Downtown call 4555 • Mac Campus call 7828
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Await responders outside the area	Stay put until responders arrive to help you clean up	Await responders and further instructions
FCC will contact:	1. Security Services 2. The sector Maintenance Supervisor 3. Environmental Health & Safety	
Security Services will:	1. Ensure the well being of occupants 2. Issue an incident report	
The Maintenance Supervisor will:	1. Ensure that Operations related issues are addressed 2. Contact the Project Manager if required	
The Maintenance Supervisor or the Project Manager will:	1. Attend to the clean up or abatement as required 2. Provide Environmental Health & Safety with the appropriate documents regarding status of clean up and nature of contamination if any	
Once the area is deemed safe for occupation the security barriers will be removed and Environmental Health & Safety will issue a safety declaration to the occupants		

November 2009

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- 65 tests (51 area and 14 personal)
- All results well within legal limits and McGill action level
- Nearly all below limits of detection
- To be repeated 4x per year




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- Robert Stanley, (Chair), FOD
- Dean Martin Grant, Faculty of Science
- Robert Couvrette, AVP University Services
- Prof. Rudiger Krahe, Building Director
- Prof. David Ostry, Dept. of Psychology
- Prof. Frédérick Guichard, Biology
- Carole Verdon-Smith, Deputy Building Director
- Chuck Adler, Campus and Space Planning
- Doug Sweet, Internal Communication
- Victoria Percival-Hilton, Legal Services
- Luc Roy, Building Operations, FOD
- Barbara Lewis, University Services
- Claude Roy, Roy et Tremblay Inc., FOD
- Carlo Cimo, (Project Manager), FOD
- Daniel Chevarie, FOD
- Wayne Wood, EHS

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# Q & A



[stewart.bio@mcgill.ca](mailto:stewart.bio@mcgill.ca)

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