

# Asbestos: Information for Building Owners and Managers

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December 5, 2018

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# The Road Ahead



- History and Uses
- Health Effects
- Responsibilities
- Regulations
- Resources

# What is Asbestos?



- Fibrous rock found naturally in the Earth's crust.
- Resistant to heat and chemicals.
- Fibrils are very small and not visible to the human eye – form large bundles.
- Flexible – used in many products, including consumer products.



# What is Asbestos?



Three major types used in building materials:

- Chrysotile (white asbestos)
- Amosite (brown asbestos)
- Crocidolite (blue asbestos)

Others:

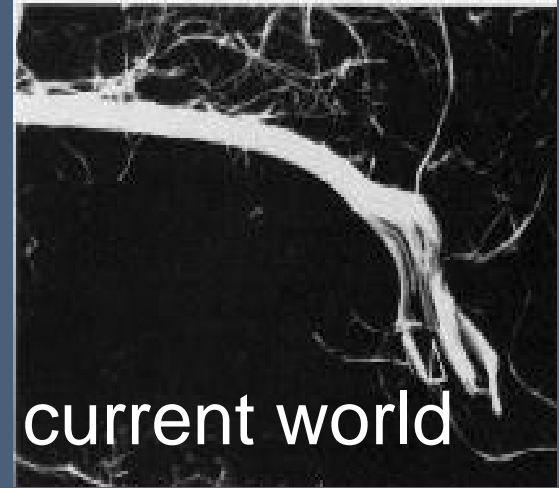
- Tremolite
- Actinolite
- Anthophyllite

# Serpentine Asbestos



## Chrysotile

- “White Asbestos”
- long, wavy and flexible fibres
- Accounts for about 90% of the current world consumption.

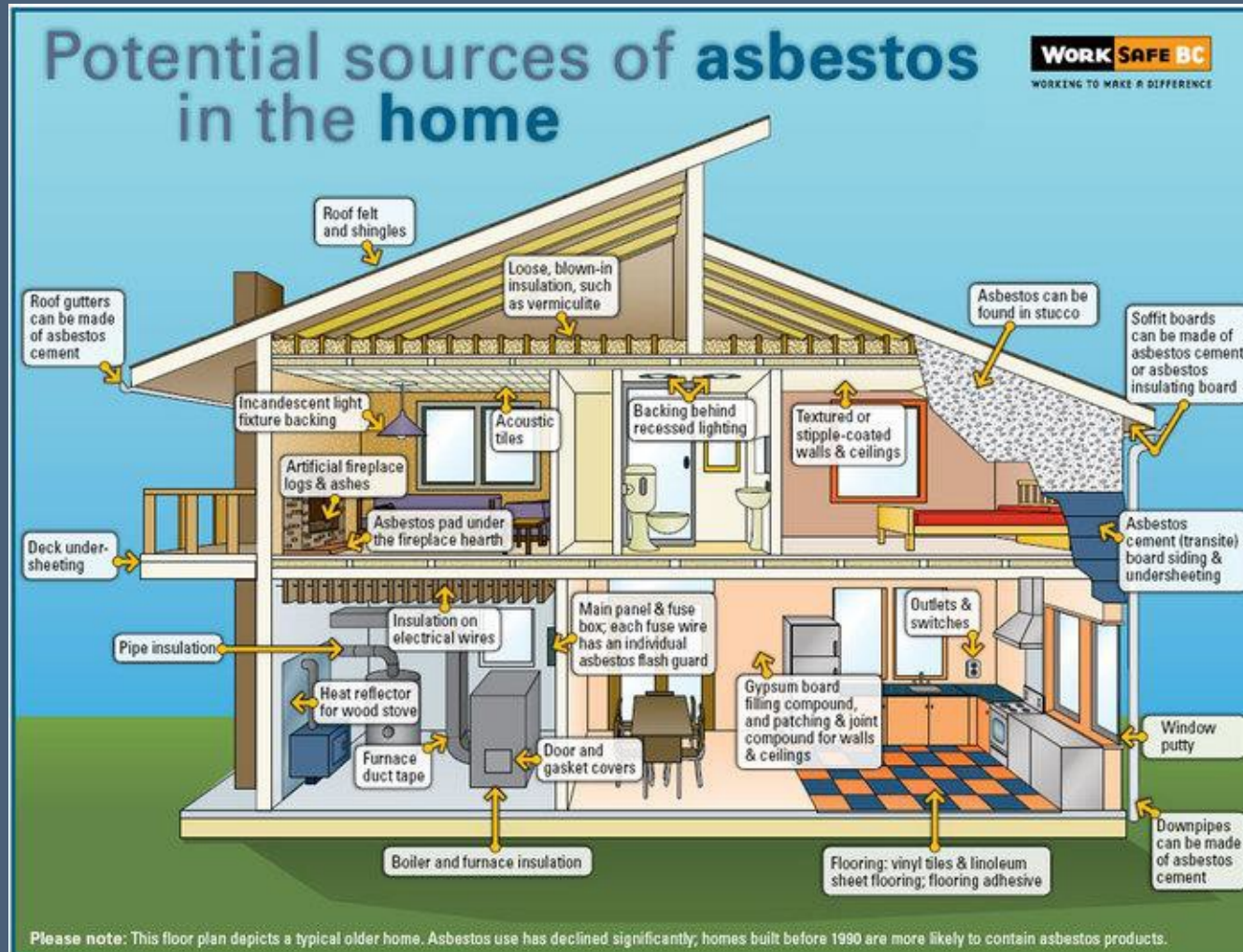


# Useful Properties



- Resists burning.
- High tensile strength.
- Dampens noise.
- Resists corrosion.
- Resists biological growth.
- Insulates against the conduction of electricity.

# Asbestos Containing Building Materials



# Asbestos Containing Building Materials



- 1 Roof felt and shingles
- 2 Roof gutters can be made of asbestos cement
- 3 Deck undersheeting
- 4 Asbestos can be found in stucco
- 5 Soffit boards can be made of asbestos cement or asbestos insulating board
- 6 Asbestos cement (transite) board siding and undersheeting
- 7 Downpipes can be made of asbestos cement
- 8 Window putty
- 9 Loose, blown-in insulation, such as vermiculite
- 10 Textured or stipple-coated walls and ceilings
- 11 Incandescent light fixture backing
- 12 Acoustic tiles
- 13 Artificial fireplace logs and ashes
- 14 Asbestos pad under the fireplace hearth
- 15 Backing behind recessed lighting
- 16 Insulation on electrical wires
- 17 Main panel and fuse box; each fuse wire has an individual asbestos flash guard
- 18 Pipe insulation
- 19 Heat reflector for wood stove
- 20 Furnace duct tape
- 21 Boiler and furnace insulation
- 22 Door and cover gaskets
- 23 Outlets and switches
- 24 Flooring: vinyl tiles and linoleum sheet flooring; flooring adhesive
- 25 Gypsum board filling compound, and patching and joint compound for walls and ceilings



# Health Effects

# Health Hazards



- Asbestos fibres are hazardous when inhaled.
- Asbestos fibres can remain airborne for several hours.
- The smaller the fibre, the longer it takes to settle.
- Fibre-related disease can result.

# Asbestos Related Diseases



- Asbestosis (10 to 20 years after exposure)
- Lung Cancer (15 to 25 years after exposure)
- Mesothelioma (30 to 45 years after exposure – in some cases as few as 5 years)

# Fatal Injuries and Diseases (2017)



Motor Vehicle Accidents	28
Other Injury	43
Asbestos Related	70
Other Occupational Disease	17
Total	158



# Responsibilities



# General Duty Responsibilities

- The owner has a responsibility to maintain his/her property in a manner that ensures the health and safety of workers as well as their responsibility under OHS20.112
- The owner must give the contractor information necessary to identify and control hazards to the health and safety of workers on his/her property.
- Every employer must ensure the health and safety of all workers working for the employer and any other workers at the workplace in which the employer is carrying out its work
- Every employer must remedy any health and safety hazards, ensure workers are aware of any foreseeable health hazards and provide workers with adequate information, instruction, training and supervision to ensure worker safety

# Asbestos Inventory or Survey?



- An **asbestos inventory** is a non-invasive listing of accessible asbestos materials in an existing building for the purpose of safe maintenance/repairs of the building.
- A **pre-demolition/renovation hazardous materials survey** includes destructive investigation/sampling and does not have limitations such as occupancy or access.

# Due Diligence



- Due diligence in all cases includes a review of the surveyor or consultant's experience as well as their accredited credentials.
- Deficient conclusions, inappropriate recommendations or work classification may be an indication that the person selected was not qualified.

# Employer Due Diligence



- Employers are responsible for selecting qualified persons, as defined in the Regulation, and ensuring that the provided work procedures are implemented.
- The employer must exercise due diligence in the selection of the qualified person. This is especially necessary if the person being engaged does not hold a certification or other proof of training.
- OHS20.112 applies to all employers and the owner



# Regulations

# 6.4 Inventory



## Section 6.4 of the OHS Regulation

- Applies to all asbestos containing materials (ACM) containing 0.5% or more asbestos and any vermiculite with any content of asbestos
- All accessible ACM is to be sampled by a qualified person
- An inventory is created which included location, description and method of identification
- Inaccessible materials presumed to contain are included in the inventory and includes presumed location, description and how it was determined that the material was not accessible.

## 6.4 Inventory



- Employer and owner to keep inventory current
- Record any changes to the inventory
- Keep the inventory readily accessible
- Retain the current inventory until all ACM is removed from the workplace
- Still expected that a hazardous materials survey is conducted prior to any renovation or demolition activities that may disturb asbestos

# 20.112 Hazardous Materials



## Section 20.112 of the *OHS Regulation*:

- (2) Before work begins on the demolition or renovation all employers responsible for that work, and the owner, must ensure that a hazardous materials survey is completed by a qualified person.
- (3) The qualified person (consultant/surveyor) must collect representative samples, identify where hazardous materials are, how much, write a report with conclusions including plans or specifications
- (4) Any employers on site, and responsible for the site, must ensure that all documentation (hazardous materials survey, post abatement clearance letter etc.) is available on site

# 20.112 Hazardous Materials



## Section 20.112 of the *OHS Regulation* cont'd:

- (5) Those responsible for removal of hazardous materials must do so safely (i.e. abatement contractors must follow compliant safe work procedures to safely remove the materials identified)
- (6) If hazardous materials are identified after removal and clearance, a qualified person must return and complete an updated or new survey as in subsection (2) to address the newly identified materials

# 20.112 Hazardous Materials



## Section 20.112 of the *OHS Regulation* cont'd:

- (7) All employers and the owner must ensure that all hazardous materials are safely contained or removed AND that a qualified person completes a post abatement inspection and issues a “confirmation in writing” commonly known as a “post abatement clearance letter”
- (8) A qualified person must inspect the building/area to ensure that all hazardous materials identified in the hazardous materials survey (including updated survey (6) if applicable) AND issue a written confirmation, commonly known as a “post abatement clearance letter”

# Guideline 20.112 Hazardous Materials - Asbestos



- What does “any asbestos” mean?
- What is an asbestos survey or inspection?
- Where do you find asbestos in commercial and residential buildings?
- How do you collect building product samples and how many samples should be collected?
- How are asbestos samples analyzed?
- What do asbestos survey reports look like?
- Who is qualified to perform an asbestos survey?

# Definition of “Asbestos-Containing Material”



The Occupational Health and Safety Regulation now defines asbestos-containing material as:

- Containing 0.5% or more asbestos as determined by polarized light microscopy, electron microscopy, and/or gravimetric analysis
- Vermiculite-containing insulation materials which contain any asbestos – even less than 0.5%

# What is a Qualified Person?



Defined in OHS6.1

(a) has knowledge of the management and control of asbestos hazards through education and training, and

(b) has experience in the management and control of asbestos hazards

# Types of Qualifications?



- Certified Industrial Hygienist (CIH)
- Registered Occupational Hygienist (ROH)
- Certified Safety Professional (CSP)
- Canadian Registered Safety Professional (CRSP) or Professional Engineer (P. Eng.)
- Other acceptable combination of education, training and experience. This should include completion of recognized training courses in asbestos inspection and extensive occupational health and safety experience within the asbestos abatement industry.

# Who Should Collect Samples?



- A qualified person with:
  - Appropriate training & industry experience
  - An exposure control plan (OHS6.3)
  - A respirator program (OHS8.5)
  - A detailed bulk sampling procedure (OHS6.8)
  - Appropriate protective equipment (respirator with current fit test, tyvek suit, gloves, safety glasses etc.)
  - Tools/materials (water, spray glue, duct tape, poly drop sheets, asbestos warning tape)

**Table 2: Bulk Material Sample Collection Guide**

Type of material	Size of area of homogeneous material	Minimum number of bulk material samples to be collected *
Surfacing materials, including textured coatings, drywall mud, plasters and stucco	less than 90 square metres (approx. 1,000 square feet)	At least 3 samples of each type of surfacing material
	between 90 square metres and 450 square metres (approx. 5,000 square feet)	At least 5 samples of each type of surfacing material
	greater than 450 square metres	At least 7 samples of each type of surfacing material
Sprayed insulation and blown-in insulation, including sprayed fireproofing and vermiculite insulation (including vermiculite insulation within concrete masonry units – CMUs).	less than 90 square metres (approx. 1,000 square feet)	At least 3 samples
	between 90 square metres and 450 square metres (approx. 5,000 square feet)	At least 5 samples
	greater than 450 square metres	At least 7 samples
Flooring, including vinyl sheet flooring (and backing) and floor tiles	Any size	At least 1 sample per flooring type in each room (and 1 from each layer of flooring)
Mechanical insulation, including duct taping, pipe insulation, elbows and boiler/tank insulation	Any size	At least 3 samples per house or mechanical or boiler room
Mastics and putty, including duct mastic (around penetrations) and window putty	Any size	At least 3 samples per house or mechanical or boiler room
Roofing materials, including felting and shingles	less than 90 square metres (approx. 1,000 square feet)	At least 1 sample (each layer of material must be sampled)
	between 90 square metres and 450 square metres (approx. 5,000 square feet)	At least 2 samples (each layer of material must be sampled)
	greater than 450 square metres	At least 3 samples (each layer of material must be sampled)
Asbestos cement (transite) board and pipe	Any size	At least 1 sample
Other materials	Any size	At least 1 sample per type of material

# Professional Accreditation?



## Contact with Accrediting agencies

- The Canadian Registration Board of Occupational Hygienists maintains contact information on persons with an ROH designation and can be accessed at [www.crboh.ca](http://www.crboh.ca).
- A list of persons with CIH can be found on the American Board of Industrial Hygiene web site at [www.abih.org](http://www.abih.org).
- Lists of persons with CRSPs, which are issued by the Board of Canadian Registered Safety Professionals, are available at [www.bcrsp.com](http://www.bcrsp.com).



# Resources

# Resources



WorksafeBC Homepage

<http://www.worksafebc.com>

WorksafeBC Asbestos Information

[www.worksafebc.com/en/health-safety/hazards-exposures/asbestos](http://www.worksafebc.com/en/health-safety/hazards-exposures/asbestos)

WorksafeBC Commercial Asbestos

[www.worksafebc.com/en/about-us/what-we-do/industry-initiatives/asbestos-commercial-properties](http://www.worksafebc.com/en/about-us/what-we-do/industry-initiatives/asbestos-commercial-properties)

WorksafeBC Regulation

<https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation>

WorksafeBC Guidelines for Asbestos

[www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-guidelines/guidelines-part-06](http://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-guidelines/guidelines-part-06)

# Questions?



## ASBESTOS



CHRYSOTILE



AMOSITE



CROCIDOLITE



TREMOLITE



ACTINOLITE



ANTHOPHYLLITE

