Workplace Health and Safety

Bulletin

WORK SAFE ALBERTA

Asbestos at the Work Site

Asbestos is a naturally occurring mineral. The most commonly used types of asbestos are named chrysotile, amosite and crocidolite. Asbestos has been and continues to be used in a variety of materials due to its strength and unique fire and chemical resistance properties. Asbestos products may be friable (easily crumbled by hand pressure), or non-friable (the asbestos fibres are bound into the product).

Uses of asbestos

In the past, asbestos-containing materials were applied to structural steel and concrete for fire protection and as insulation. Asbestos-containing products were also used as boiler and pipe insulation. Asbestos was used in many other building materials, including wall board, caulking compounds, floor tiles, vinyl floor sheeting, ceiling tiles, plaster, drywall joint compound and decorative texturing products. Asbestos is still used in some products such as cement board and sewer pipe.

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Asbestos has also been used in a wide variety of other products. These include gaskets, plastics, duct tape, fire curtains and other textile products e.g. clothing, rope, gloves and wire insulation. Some brake pads, clutch plates and automotive and industrial gaskets and valve packing materials can still contain asbestos. The use of asbestos in these products continues to decline.

Federal legislation prohibits the sale and importation of many asbestos-containing products into Canada. The Alberta Occupational Health and Safety Code prohibits the use of crocidolite asbestos, spray –applied asbestos materials and asbestos in air distribution systems in a form or location in which asbestos fibres could enter a supply or return air system.

Government of Alberta ■
Employment and Immigration

Health effects

Asbestos can affect the body if the fibres are inhaled. Once inhaled, the fibres settle in the airways and lung tissues. Three diseases that may be caused by inhaling asbestos fibres are asbestosis, lung cancer and mesothelioma.

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Asbestosis is a lung disease caused by exposure to high concentrations of asbestos over a long period of time. It takes from 10 to 30 years after exposure begins for the disease to show up. The main effects are scarring of the lung tissues and shortness of breath. These effects develop slowly and can worsen as the disease progresses, even if exposure stops.

Workers exposed to asbestos have an increased risk of developing lung cancer. Workers who smoke and are exposed to asbestos have a much greater risk (70 times greater) of developing lung cancer than non-smokers who are exposed to the same concentrations of fibres. Lung cancer takes about 15 to 25 years to develop, depending on the amount of exposure.

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Mesothelioma is a rare cancer of the chest cavity or abdominal cavity linings. Exposure to asbestos increases the risk of mesothelioma. This disease has no cure and is almost always fatal. The time period between exposure and the onset of disease can range from 15 to 55 years.

Controlling asbestos exposure

Asbestos fibres must be inhaled to cause disease. Asbestos-containing products in good condition and that are not disturbed are not a direct health hazard. These products become a potential health hazard when they are disturbed so fibres are released. Workers having the highest risk of asbestos exposure are those involved in asbestos abatement projects (removal, enclosure or encapsulation of asbestos-containing products), those doing maintenance on equipment or buildings that use asbestos-containing products, or those who may work in an area where asbestos is being disturbed by others.

Where asbestos-containing products must be disturbed, four principles should be followed in any work procedures:

(1) isolate the work area,

(2) protect workers,
(3) minimize the release of asbestos fibres, and
(4) ensure that the area is properly cleaned up after the work is completed.

Detailed recommended work practices for projects involving asbestos-containing materials are provided in the *Alberta Asbestos Abatement Manual*. The Manual can be purchased from the Alberta Queen's Printer or downloaded from the Workplace Health and Safety Web site at:

💻 www.employment.alberta.ca/documents/WHS/WHS-PUB_asbestos_manual.pdf
Alberta Asbestos Abatement Manual

Worker health assessment

A worker exposed to asbestos must have a health assessment within 30 days of becoming an "exposed worker" as defined by the legislation (the definition appears in Table 1, footnote 2 of this document). The initial assessment is called a baseline health assessment. This assessment permits the early detection of any changes from the baseline measurements. Subsequent tests are compared to the initial assessment.

The health assessment consists of exposure and health history information, a chest x-ray, a radiologist's report, a lung function test, and a copy of the physician's interpretation and explanation of the health assessment. Table 1 summarizes the parameters considered in the health assessment for workers exposed to asbestos. The complexity of the health assessment depends on the severity of the exposure to asbestos fibres.

The chest x-ray consists of a single back to front (posterior-anterior) view of the chest. The x-ray needs to be interpreted by a radiologist and the resulting report must be sent to the physician. The chest x-ray consists of a single back to front (posterior-anterior) view of the chest. The x-ray needs to be interpreted by a radiologist and the resulting report must be sent to the physician. Digital imaging format of x-rays is being used by some radiologists. Digital imaging can be used to meet the requirements in the OHS Code, section 40(2), provided that the imaging facility is able to print to file when requested.

The lung (pulmonary) function test is done by a pulmonary function technician and involves measuring the volume capacity of the lungs and the rate of air flow out of the lungs.

Legislation

Occupational Exposure Limits

Alberta’s occupational health and safety 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).

Employer responsibilities

Employers must:

- control the release of asbestos fibres to keep the concentration of fibres in the air as low as reasonably practicable
- ensure that workers at the work site are protected from exposure to asbestos and other hazards
- develop work procedures to minimize exposure to asbestos
- provide suitable protective equipment to workers
- train workers in the hazards of asbestos
- train workers in the employer’s work procedures
- ensure that asbestos exposed workers are provided with a health assessment.

Worker responsibilities

Workers are responsible for taking reasonable care of themselves and others at the work site. Workers must:

- become aware of the hazards associated with working with asbestos
- follow the employer’s work procedures
- practice good personal hygiene
- wear the protective equipment required for the work and use the equipment properly
- participate in training programs provided by the employer.

Table 1 Summary of health assessment parameters for workers exposed to asbestos

<table>
<tr><th>Worker exposed to asbestos below the OEL[1]</th><th>Worker with confirmed asbestos exposure above the OEL, but not meeting the “exposed worker”[2] definition</th><th>Asbestos exposed worker according to the legal definition of an “exposed worker”[2]</th></tr>
<tr><td>▪ Consult family doctor (inform doctor of potential exposure)</td><td>▪ Consult family doctor (inform doctor of potential exposure)</td><td>▪ Health assessment performed as required by law</td></tr>
<tr><td>▪ Chest x-ray and PFT[3] not recommended unless advised by family doctor
▪ History of exposure should be recorded (see below)</td><td>▪ Chest x-ray and PFT[3] not recommended unless advised by family doctor
▪ History of exposure should be recorded (see below)</td><td>▪ Health assessment to include:
□ chest x-ray
□ PFT[3] with FEV_1[4], FVC[5]
□ written interpretation and explanation of health assessment results
□ history (see below)</td></tr>
<tr><td colspan="3">History should cover:
▪ worker’s name
▪ employer’s name
▪ occupational exposure to asbestos, industrial dusts and carcinogens
▪ any significant exposure to asbestos, dusts or carcinogens during recreational or hobby activities
▪ any symptoms related to impaired respiratory function or that may be an indication of asbestosis or malignancy
▪ any past or present medical diagnoses of respiratory disease
▪ history of smoking
▪ dates of chest x-ray and PFT[3]</td></tr>
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[1] OEL — Occupational Exposure Limit

[2] An “exposed worker” is legally defined as a worker who may reasonably be expected to work in a restricted area at least 30 work days in a 12-month period.
A “restricted area” means an area of a work site where there is a reasonable chance that the airborne concentration of asbestos exceeds the OEL.

[3] PFT — Pulmonary Function Test

[4] FEV_1 — Forced Expiratory Volume in the first second

[5] FVC — Forced Vital Capacity

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Web Site

💻 www.worksafely.org

Getting copies of OHS Act, Regulation & Code:

Queen's Printer

💻 www.qp.gov.ab.ca

☎ Edmonton (780) 427-4952

Workplace Health and Safety

💻 http://employment.alberta.ca/whs-ohs

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