

OHS INFORMATION SHEET 10: ASBESTOS

August 2005

Background

The term “Asbestos” is used to describe a group of naturally occurring fibrous silicate minerals that have a crystalline structure. There are two major groups of asbestos based upon the fibre type; these are:

- Serpentine (wavy fibres): The mineral Chrysotile commonly known as white asbestos
- Amphibole (straight fibres): The minerals Amosite (brown), Crocidolite (blue), Tremolite, Actinolite and Anthophyllite: The minerals Amosite and Crocidolite are the two types commonly used for commercial purposes.

Asbestos has very good thermal, biological, chemical and physical resistance. Asbestos fibres are very strong and are capable of being spun and woven into fabric. Asbestos has been used as strengthening fibres in a large variety of materials such as cement, vinyl and cotton. It is electrically non-conductive.

Possible Health Effects

Asbestos fibres are made up of fine fibrils; thus each fibre can split into progressively finer fibres. Fine fibres are more likely to penetrate to the lower regions of the lungs (alveoli) and potentially cause disease. There is generally a latency period of years between first exposure and the onset of disease. Long-term over-exposure to airborne asbestos fibres can result in the following diseases:

- Asbestosis: scarring of the lung tissues resulting from inhalation of large amounts of asbestos over a period of years.
- Lung Cancer: the risk of lung cancer is strongly related to the amount of fibre inhaled. (Note: the risk of lung cancer from exposure to both asbestos and cigarette smoke is much greater than the sum of the individual risks).
- Mesothelioma: cancer of the pleura (outer lung lining) or the peritoneum (lining of the abdominal cavity).

Worksafe Australia have set a standard of 0.1 fibres/ml for airborne asbestos to minimise the risk of developing one of the above health effects for a person exposed to asbestos over a long period of time.

There are two main types of asbestos containing products, these are:

- Non-Friable: Asbestos is bound within a matrix that does not allow airborne fibres to be readily generated (eg vinyl tiles, asbestos cement sheet). Asbestos fibres are not generally detected in the air (i.e. detection limit of 0.01 fibre/ml) near non-friable products unless the product is being physically damaged or abraded at the time of measurement.
- Friable: Products are easily damaged (eg pipe lagging) or their composition is such that airborne fibres can be generated readily (eg sprayed limpet). They do not generally give rise to detectable airborne asbestos levels unless they are physically disturbed for a

significant proportion of the monitoring time. However airborne fibres are more readily produced from friable products.

Victorian Regulations

The Occupational Health and Safety (Asbestos) Regulations govern the use of asbestos. The purpose of these regulations is to prevent asbestos-related disease in employees working in asbestos processes, and to protect the health of workers who may be exposed to airborne asbestos fibres due to asbestos products in their buildings or machinery. These regulations require the following:

- Identify: Employers and occupiers must identify whether asbestos is present.
- Assess: The risk of exposure from these products must be assessed.
- Control: Risk control measures must be implemented where necessary.

Asbestos at Monash University

Surveys to identify asbestos have been carried out at Monash University campuses. Removal or encapsulation of high risk asbestos has also been carried out.

- Labelling: Many items containing asbestos have been labelled. Areas not generally accessed by the general public were labelled. Items that were not generally labelled were asbestos cement walls and ceilings, vinyl tiles and vermiculite ceilings. The warning on the labels of "serious inhalation health hazard" does not indicate that the current airborne fibre level constitutes a risk; it indicates that the product/ item should not be disturbed.
- Remediation: A central budget exists for remediation and management of asbestos. Asbestos items are being sealed or removed to minimise the risk of staff, students and visitors being exposed to unacceptable levels of asbestos fibres. Where an immediate risk is thought to exist, air monitoring will be done to assess potential exposure. If this indicates high levels of air-borne asbestos then immediate remediation will occur.

For Further Information

Where staff members are concerned about the location of asbestos and the above health issues, these concerns should be raised with the relevant supervisor, safety officer or health and safety representative. Assistance in assessing the risk, and controlling exposure or if asbestos-containing items have to be disturbed can be obtained from Occupational Health, Safety and Environment on Tel: (03) 990 51016 or the Occupational Health and Safety website: <http://www.adm.monash.edu.au/ohse/> or via email to ohsehelpline@adm.monsh.edu.au