



ASBESTOS: WORKPLACE EXPOSURE STANDARDS AND MONITORING

This fact sheet provides essential information about asbestos workplace exposure standards (WES) and how to monitor asbestos air levels.

What occupations are likely to be exposed to asbestos?

The majority of products containing asbestos are likely to be found in the building industry. Demolition contractors in particular may encounter asbestos in working atmospheres, particularly if involved in the demolition of structures built before 1980.

Examples of construction products containing asbestos are:

- textured ceilings
- brick and block mortar
- fireproofing material
- floor tiles
- pipe coverings.

Products containing asbestos may still be found in a range of different settings, including automotive, fire retardant products, ceilings and flooring products. However, the range of products containing asbestos in New Zealand has significantly reduced.

Refer to Appendix E of the [New Zealand Guidelines for the Management and Removal of Asbestos](#) for further information.

What is a Workplace Exposure Standard (WES)?

There are a number of WES designed for people being exposed to substances over various time periods. For asbestos, time-weighted values have been assigned. This means that the average amount of asbestos a person may be exposed to over a certain period of time is considered.

When a WES is assigned, the aim is to define an exposure level that will not create adverse effects in exposed people, particularly if there is long-term exposure.

What are the WES for asbestos?

There are two separate WES values depending on the different type of asbestos.

For white asbestos, the WES-time weighted average is:

- an average concentration of one fibre per millilitre of air over any four-hour period, and
- an average concentration of six fibres per millilitre of air over any 10-minute period.

For brown and blue asbestos, the WES time-weighted average is:

- an average concentration of 0.1 fibres per millilitre of air over any four-hour period, and
- an average concentration of 0.6 fibres per millilitre of air over any 10-minute period.

Refer to the latest edition of the [Workplace Exposure Standards and Biological Indices](#) for further information.

Why is it necessary to monitor the working environment for asbestos?

Asbestos is a serious health threat to people who are exposed to it. It is important to confirm if asbestos is present in the work environment, so that the necessary controls are put in place to minimise harm to workers and those in the vicinity of the work.

The Health and Safety in Employment Act 1992 requires employers to take all practicable steps to monitor employees' exposure to minimised hazards – including hazards like asbestos dust that cannot be eliminated from the workplace or isolated from employees. Conducting asbestos monitoring is one way of achieving that requirement.

While it is the employer's requirement to ensure that the monitoring is conducted in accordance with a method specified by a New Zealand accredited laboratory for asbestos atmospheric testing, the testing itself is usually conducted by specialists.

How is asbestos monitored in the working environment?

Air sampling can be used to estimate how much airborne asbestos fibre is present in the work atmosphere.

One method is the **Membrane Filter** method, where a sample is collected by drawing a measured quantity of air through a membrane filter attached to a sampling pump. The asbestos fibres are counted and expressed as fibres per millilitre of air, calculated from the number of fibres observed on the filter and the volume of air sampled.

Another method is **SEM-EDXA** (Scanning Electron Microscopy – Energy Dispersive X-Ray Microanalysis), which is capable of distinguishing between asbestos and non-asbestos fibres. The microscope is used to make enlarged representations (up to 300,000 times) of small fibres. The microanalysis can provide information about the chemical composition of the asbestos fibres being measured.

Air sampling should only be conducted by people trained and experienced in taking samples and using the monitoring equipment.





The New Zealand Association of Consulting Laboratories has a list of members that conduct asbestos testing. Visit www.nzaccl.org.nz/members.htm for further information, or alternatively, consult the Yellow Pages.

What if the monitoring reveals levels of asbestos fibres in the air exceeding the WES?

If this happens, all practicable steps must be taken to eliminate, isolate or minimise airborne asbestos fibres to the workers. The Health and Safety in Employment (Asbestos) Regulations 1998 list the things that people handling asbestos must do in order to ensure a safe workplace.

Depending on the type of work conducted, this could include:

- removal, enclosure, encapsulation or sealing the asbestos
- providing asbestos decontamination facilities for workers
- providing personal protective clothing and equipment to workers and ensuring that it is used or worn where required
- providing training and information to workers on the hazards posed by asbestos
- developing plans to handle a potential emergency involving asbestos or the handling of asbestos.

For further information see the [New Zealand Guidelines for the Management and Removal of Asbestos](#), available from the [New Zealand Demolition and Asbestos Association](#).

