



# Frequently asked questions on fibrous minerals in Western Australia

It is well known that there are significant health risks associated with inhalation of airborne fibrous minerals. This includes asbestiform and non-asbestiform mineral fibres.

Fibrous minerals occur naturally in many rock formations, particularly in the Pilbara.

The Department of Mines and Petroleum's Resources Safety Division is responsible for regulating safety and health in Western Australia's resources industry. This includes ensuring operators manage the risks associated with fibrous minerals.

## 1. What is asbestos?

"Asbestos" is a commercial term referring to six types of naturally occurring silicate mineral fibres that can be separated into two broad categories – amphibole and serpentine minerals.

## 2. Where are fibrous minerals found in Western Australia?

While fibrous minerals can be found in many parts of Western Australia, they are particularly prominent in certain banded iron formations in the Pilbara. Fibrous minerals can also be found in Western Australia's greenstone belts, which contain the State's major gold, nickel and base metal deposits.

Fibrous minerals may be encountered in some exploration and mining operations for commodities such as iron ore, gold, nickel and base metals, and some quarries for construction materials.

Where there is the potential for fibrous minerals, operators should prepare and implement fibrous mineral management plans to ensure workers are protected if they are exposed.

The amount of fibrous minerals that can be encountered ranges from very small amounts to significant quantities. This is why each management plan can vary depending on the type and quantity of fibrous minerals found.

Operators are required to regularly record air quality to ensure contaminant levels, including fibrous minerals, are not above national safety standards.

## 3. Are they being encountered more frequently?

Increasing demand for minerals, particularly iron ore, has made mining and processing of previously uneconomic orebodies commercially viable. Consequently, fibrous minerals are now encountered in mining operations more frequently than in the past.

## 4. What are the risks?

The risk of contracting an asbestos-related disease depends on the:

- concentration of respirable fibres in the air
- length of time of exposure to fibres
- type of fibre (mineralogy)
- size and shape of the fibres
- persistence of fibres in the lung.

Provided exposures to airborne asbestos fibres are maintained within present mining industry standards, the risk of mine workers contracting an asbestos-related disease is very low, and certainly much lower than other risks associated with mining. If workers are exposed to asbestos for only short periods, or intermittently, the risk will be much lower than for workers who are continuously exposed.

## 5. What are the exposure standards in Western Australia?

The National Occupational Health and Safety Commission (1995) specified that the occupational exposure standard should:

- be defined as the time-weighted average (TWA) asbestos fibre concentration of the air breathed by a worker during a work shift
- not exceed 0.1 fibres per millilitre for all forms or mixtures of asbestos.

*Note: The occupational exposure standard of 0.1 fibres/ml is based on an 8-hour work shift. However, many sites work longer shifts. There is a guideline on adjusting exposure standards for extended work shifts.*

## 6. How are mine workers protected from exposure?

Employers have a duty to ensure that the exposure of workers to airborne fibrous minerals is within regulatory standards and as low as reasonably practicable.

Where there is potential for workers to be exposed to fibrous minerals at a mine, the employer has a responsibility to:

- identify the potential occurrence of fibrous minerals at the workplace
- assess the nature and degree of worker exposure
- develop and implement controls to reduce such exposures.

This should include the development and implementation of a fibrous minerals management plan. Essentially, the plan outlines the localised risks from fibrous minerals and how they will be managed.

## 7. Are employees trained to recognise risks from fibrous minerals?

Workers have a right to know about workplace hazards, which is why effective control strategies include provision of relevant information to workers and targeted training programs.

Where an asbestos or other fibrous mineral hazard exists, a risk-based approach to manage the hazard should be developed in consultation with workers. This includes developing written procedures for the identification, assessment and control of fibrous minerals. Operators must also provide information, instruction, training and supervision to workers.

Workers also have responsibilities for the safe and effective management of fibrous minerals. They must:

- comply with work procedures related to fibrous minerals and follow instructions given to them for their own safety and health and that of others
- cooperate with their employer in the identification, assessment and control of fibrous minerals
- report immediately to their supervisor any hazard related to the presence of suspected fibrous minerals.

## 8. How is the risk from exposure monitored?

The risk of exposure to airborne contaminants should be routinely monitored during each phase of all mining operations, including exploration, construction, mining (surface and underground), processing, shutdown, and care and maintenance and rehabilitation activities.

## 9. Where can I find more information?

More information about fibrous minerals, including a comprehensive guideline for industry and the guideline on adjusting exposure standards for extended work shifts, is available on the Department's website at [www.dmp.wa.gov.au/6751.aspx](http://www.dmp.wa.gov.au/6751.aspx)

For information about mining safety and health, contact:

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Comprehensive work safety and health information provided by the Department of Mines and Petroleum can be found at:

[www.dmp.wa.gov.au/ResourcesSafety](http://www.dmp.wa.gov.au/ResourcesSafety)

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