

# Fibrous minerals management in mining

## HEALTH RISKS

The health risks associated with the inhalation of airborne asbestos fibres are well established. Asbestos minerals encountered in exploration and mining operations must be managed carefully.

The national exposure standard for all asbestos fibres is 0.1 fibres per millilitre. Employers have a duty to ensure that workers' exposure to airborne asbestos fibres is as low as reasonably practicable. This can be achieved using appropriate recognition, evaluation and control strategies.

However, there are other mineral fibres besides asbestos that may need to be managed. For more information see *Management of fibrous minerals in WA mining operations – guideline*.

## EXPOSURE TO NATURALLY OCCURRING ASBESTOS

Asbestos only forms under rare geological circumstances, and the regions with potential for asbestiform minerals can be defined on geological maps.

If present, asbestos usually forms thin isolated veins.

The probability of intersecting isolated veins of asbestos during drilling is very low.

In open pit operations, where large surfaces may be uncovered, the probability of exposure (and detection) is much greater.

The probability of exposure in underground workings is between these extremes, with small veins occasionally found.

## HAZARD POTENTIAL

Asbestos represents a hazard only if fibres of a respirable size ( $< 5 \mu\text{m}$ ) become airborne and are inhaled.

Undisturbed asbestos does not spontaneously emit fibres. The potential for an asbestos mineral to release respirable fibres depends on its physical characteristics and the degree of handling and processing.

The danger from exposure is not immediately obvious because harmful fibres are too small to be seen with the naked eye, and there is often a long latency period between exposure and onset of disease.

The risk of asbestos-related disease depends upon:

- concentration of respirable fibres in the air
- duration of exposure
- type of fibre (amphibole asbestos or chrysotile)
- morphology of fibres (size and shape).

## WHAT CAN BE DONE TO MANAGE THE HAZARD?

- Identify and quarantine workplaces contaminated by asbestos (designated areas)
- Maintain a register that records all known locations of asbestos at the site
- Regularly inspect rock surfaces to ensure minimal disturbance of suspected fibrous minerals
- Emphasise good housekeeping and apply stringent dust control techniques
- Do not rely solely on the use of personal protective equipment
- Follow procedures for the secure disposal of any asbestos-bearing waste material
- Involve and educate the workforce in appropriate work practices
- Conduct regular audits and air monitoring

## WHAT CAN BE DONE TO REDUCE THE RISK?

- Adopt administrative procedures to control people entering or leaving designated areas
- Use sealed mining equipment
- Wet surfaces to reduce dust levels
- Suppress, contain and extract dust in processing operations where practicable
- Use wet drilling or other approved in-hole dust suppression
- Seal asbestos in situ using appropriate sealants or bonding agents
- Prevent the spread of contamination by using wash-down facilities
- Provide information, training and supervision of all employees potentially at risk
- Use respiratory protection where indicated

For advice on health matters in relation to mining or to advise changes in contact details for the MineHealth card, contact Resources Safety on 9358 8461, email [contammanager@dmp.wa.gov.au](mailto:contammanager@dmp.wa.gov.au) or visit [www.dmp.wa.gov.au/ResourcesSafety](http://www.dmp.wa.gov.au/ResourcesSafety)