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# Asbestos Management Plan & Report

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# 1. Introduction

Asbestos is a hazardous material that poses a risk to health by inhalation if the asbestos fibres become airborne and people are exposed to these airborne fibres. Asbestos containing materials were used extensively in Australian buildings and structures, plant and equipment and in ships, trains and motor vehicles during the 1950s, 1960s and 1970s, and some uses, including some friction materials and gaskets, were only discontinued on 31 December 2003.

## 1.1. National ban on the use of asbestos

On 17 October 2001, the National Health and Safety Commission (NOHSC) declared a prohibition on all uses of chrysotile (white) asbestos from 31 December 2003, subject to a very limited range of exemptions. This prohibition, originally set out in the Amendments to Schedule 2 of the National Model Regulations for the Control of Workplace Hazardous Substances (Prohibition of Asbestos) 2001 and subsequently reflected in Australian Government, State and Territory occupational health and safety and hazardous substances legislation, also confirmed earlier prohibitions of the use of amosite (brown) and crocidolite (blue) asbestos. There are no known current uses in Australia of the other three forms of asbestos: actinolite, anthophyllite and tremolite.

Under the National Model Regulations for the Control of Workplace Hazardous Substances the chrysotile asbestos ban prohibits the use (i.e. manufacture, supply, storage, sale, use, reuse, installation and replacement) of chrysotile asbestos except for:

- bona fide research or analysis;
- removal, handling and storage for disposal;
- chrysotile asbestos encountered during non-asbestos mining; and
- a small number of time-limited exemptions for particular, specified uses for which substitution by an alternative to chrysotile asbestos is technically impossible or would create significantly greater health, safety and environmental risks.

Similarly, the use of brown and blue asbestos is prohibited except for:

- removal and disposal purposes; and
- situations where brown or blue asbestos occurs naturally and is not used for any new application.

The prohibition also includes a small number of time-limited exemptions, which are restricted to specific products and uses where currently it is not:

- technically possible to substitute an alternative to chrysotile; or
- possible to substitute an alternative to chrysotile without creating a safety problem that has significantly greater health, safety and environmental risks than those presented by the use of chrysotile.

The prohibition does not extend to the removal of asbestos products in situ at the time prohibition took effect. These in situ asbestos containing materials (ACM) must be appropriately managed to ensure that the risks of exposure to airborne asbestos fibres are minimised.

The ultimate goal is for all workplaces to be free of ACM. Where practicable, consideration should be given to the removal of ACM during renovation, refurbishment, and maintenance, rather than other control measures such as enclosure, encapsulation or sealing.

Asbestos products, which were in situ on 31 December 2003, may only be replaced by products, which do not contain asbestos. Even when the use of asbestos is still permitted, in the very narrow circumstances listed above, it is subject to hazardous substances legislation, under which manufacturers, importers, other suppliers and employers must ensure that specified measures are properly taken care of.

## 1.2. Preventing health risks from in situ asbestos-containing materials

Strong management and control of all in situ asbestos-containing materials (ACM) is essential. The well-known adverse health consequences of exposure to airborne asbestos fibres can be prevented if precautions are taken and appropriate procedures are followed. The risks posed by ACM depend on the nature and condition of the materials and the potential for exposure. The main elements of managing the risks of ACM in workplaces are to:

- identify all ACM in the workplace, as far as practicable;
- assess the risks associated with all ACM; and
- introduce control measures to prevent, as far as practicable, the generation of airborne asbestos fibres and any exposure to airborne asbestos fibres.

A number of approaches for the control of ACM are outlined in this National Code of Practice for the Management and Control of Asbestos in Workplaces, but there may be specific applications where special approaches are required.

## 1.3. The removal and disposal of asbestos-containing materials

The removal of ACM poses significant additional hazards. Accordingly, a separate National Code of Practice for the Safe Removal of Asbestos [NOHSC:2002 (2005)] has been developed by NOHSC to supplement and support this Code of Practice for the Management and Control of Asbestos in Workplaces. The transport and disposal of removed ACM are controlled by Australian Government, State Territory legislation and a range of authorities, including but not limited to environmental, waste disposal and occupational health and safety authorities. All relevant authorities should be consulted before transporting and disposing of ACM wastes.

## 1.4. What are the prohibitions on asbestos in workplace?

A person conducting a business or undertaking must not carry out or direct or allow a worker to carry out work involving asbestos if that work involves manufacturing, supplying, transporting, storing, removing, using, installing, handling, treating, disposing of or disturbing asbestos or ACM, except in prescribed circumstances. The prohibition on the supply of asbestos also prohibits the sale of asbestos or ACM.

The final prohibition for asbestos in the workplace came into effect on 31 December 2003. These prohibitions do not apply if the work involving asbestos is any of the following:

- genuine research and analysis
- sampling and identification in accordance with the WHS Regulations
- maintenance of, or service work on, non-friable asbestos or ACM, fixed or installed before 31 December 2003, in accordance with the WHS Regulations
- removal or disposal of asbestos or ACM, including demolition, in accordance with the WHS Regulations
- transport and disposal of asbestos and asbestos waste in accordance with jurisdictional legislation
- demonstrations, education or practical training in relation to asbestos or ACM
- display, or preparation or maintenance for display, of an artefact or thing that is, or includes, asbestos or ACM
- management in accordance with the WHS Regulations of in situ asbestos that was installed or fixed before 31 December 2003
- work that disturbs asbestos during mining operations that involve the extraction of or exploration for a mineral other than asbestos
- laundering asbestos-contaminated clothing in accordance with the WHS Regulations
- where the regulator approves the method adopted for managing risk associated with asbestos.

Work involving asbestos-contaminated soil is not prohibited as long as a competent person has determined the soil does not contain any visible ACM or friable asbestos. If friable asbestos is visible, it should not contain more than trace levels of asbestos determined in accordance with AS4964:2004 Method for the qualitative identification of asbestos in bulk samples.

The management of naturally occurring asbestos (NOA) that stays in its natural state is not prohibited if managed in accordance with an asbestos management plan.

Although the ultimate goal of this prohibition is for all workplaces to be free of asbestos, it is only when these materials are being replaced or where they present a health risk that non-asbestos alternatives must be used. Caution needs to be taken when working with buildings constructed prior to 1990 or newer buildings that may have used recycled materials and may have reinstated old plant containing ACM gaskets and/or linings.

If asbestos or ACM is identified in a workplace and demolition or refurbishment work is going to be carried out, the asbestos or ACM must be removed if it is likely to be disturbed before the work starts. If other maintenance or service work is to be carried out at the workplace, removal of asbestos should be considered as a control measure.

Where removal is not reasonably practicable, other control measures must be implemented to minimise exposure, including encapsulation or sealing.

In addition to the prohibition, there is also a restriction on who can remove asbestos. Asbestos removalists and their workers must be competent to carry out asbestos removal work and, except in limited circumstances, must be licensed. Further details on who can remove asbestos can be found in the WHS Regulations and the Code of Practice: How to Safely Remove Asbestos.

### 1.4.1. Prohibitions on the import of plant and other materials that contain asbestos

The importation of asbestos or materials containing asbestos into Australia is generally prohibited under the Customs (Prohibited Imports) Regulations 1956 (Customs PI Regulations). To complement the ban on the importation, manufacture and use of all forms of asbestos and asbestos-containing products from 31 December 2003, the import prohibition on asbestos under the Customs PI Regulations was also introduced.

If plant or other materials are imported from countries where asbestos is not yet prohibited, a quality assurance system should be put in place to ensure they do not contain asbestos prior to supplying or using it in the workplace. Further information on importing asbestos or any other customs matter is available on the Customs Website

## 1.5. Who has duties to manage and control asbestos or ACM?

The WHS Act requires all persons who conduct a business or undertaking to ensure, so far as is reasonably practicable, that workers and other persons are not put at risk from work carried out as part of the business or undertaking. The WHS Regulations include specific obligations to manage and control asbestos and ACM at the workplace. These are summarised in the table below.

| Duty Holder | Responsibilities |
|---|---|
| **Person conducting a business or undertaking (PCBU)** | **Control risk of exposure**<br>- must ensure, so far as is reasonably practicable, that exposure of a person at the workplace to airborne asbestos is eliminated, except in an area that is enclosed to prevent the release of respirable asbestos fibres and negative pressure is used. If this is not reasonably practicable, the exposure must be minimised so far as is reasonably practicable<br>- must ensure the exposure standard for asbestos is not exceeded at the workplace.<br>**Health monitoring**<br>- must ensure health monitoring is provided to a worker who is carrying out licensed removal work, other ongoing asbestos removal work or asbestos-related work and there is risk of exposure when carrying out that work<br>- must ensure the health monitoring is carried out under the supervision of a registered medical practitioner and information as specified in the WHS Regulations is provided to that medical practitioner<br>- must pay all expenses for health monitoring, obtain report and keep records of all health monitoring.<br>**Training and use of equipment**<br>- must ensure that information, training and instruction provided to a worker is suitable and adequate and that it is provided in a way that is readily understandable by any person to whom it is provided<br>- must ensure that, if a worker is either carrying out asbestos-related work or may be involved in asbestos removal work, they are trained in the identification and safe handling of asbestos and ACM and the suitable control measures<br>- for workers who carry out work where NOA is likely to be found, training must be provided on hazards and risks associated with NOA.<br>**Controlling the use of equipment**<br>- must not use, or direct or allow a worker to use, certain equipment on asbestos and ACM.<br>**Asbestos – related work**<br>- must, if there is uncertainty as to whether work is asbestos-related work, assume asbestos is present or arrange for an analysis of a sample to be undertaken to determine if asbestos or ACM is present<br>- must give information as specified in regulation 480 of the WHS Regulations to a person who is likely to be engaged to carry out asbestos-related work<br>- must ensure the asbestos-related work area is separated from other work areas at the workplace, signs are used to indicate where the asbestos-related work is being carried out and barricades are used to delineate the asbestos-related work area<br>- must ensure a competent person carries out air monitoring of the work area if there is uncertainty as to whether the exposure standard is likely to be exceeded<br>- must ensure that decontamination facilities (including containers and labels labelled in accordance with the GHS) are available when asbestos-related work is being carried out<br>- must ensure that asbestos waste is contained and labelled in accordance with the GHS before it is removed, and is disposed of as soon as practicable<br>- must ensure, where personal protective equipment (PPE) is used and contaminated with asbestos, such PPE is sealed, decontaminated, labelled and disposed of in accordance with the WHS Regulations. If this is not reasonably practicable, the PPE must be laundered in accordance with the WHS Regulations. PPE that is not clothing and cannot be disposed of must be decontaminated and kept in a sealed container until it is reused for the purposes of asbestos-related work. |

| Duty Holder | Responsibilities |
|---|---|
| **PCBU with management or control of a workplace** | **Identifying or assuming asbestos or ACM**<br>- must ensure, so far as is reasonably practicable, that all asbestos or ACM at the workplace is identified by a competent person or assume its presence<br>- may identify asbestos or ACM by arranging a sample of the material to be analysed.<br>**Indicating presence and location**<br>- must ensure the presence and location of asbestos or ACM identified (or assumed to be identified) at the workplace is clearly indicated (by a label if reasonably practicable).<br>**Asbestos register**<br>- must ensure an asbestos register is prepared, maintained, reviewed and kept at the workplace. It must be readily available to workers, their health and safety representatives and other persons<br>- must ensure, when management or control of the workplace is relinquished, a copy of the asbestos register is given to the person assuming management or control. Asbestos management plan<br>- must, where asbestos has been identified at the workplace, ensure an asbestos management plan is prepared, maintained and reviewed. It must be accessible to workers, their health and safety representatives and other persons.<br>Naturally Occurring Asbestos (NOA)<br>- must manage the risks associated with NOA at the workplace and, where identified at the workplace or likely to be present, ensure that a written asbestos management plan is prepared, maintained and reviewed.<br>**Demolition and Refurbishment Work**<br>- prior to demolition or refurbishment work starting, must review the asbestos register and ensure all asbestos that is likely to be disturbed is identified and removed so far as is reasonably practicable<br>- must provide a copy of the asbestos register to the person carrying out the demolition or refurbishment work before the work commences<br>- must, if an emergency occurs and a structure or plant is to be demolished, ensure that before the demolition occurs there is a procedure to reduce the risk of exposure to asbestos to below the exposure standard and notify the regulator about the emergency. |
| **PCBU carrying out demolition or refurbishment work** | **Demolition and Refurbishment Work**<br>- must, prior to the demolition or refurbishment work being carried out:<br>- obtain a copy of the asbestos register for the workplace from the person with management or control before the work commences<br>- if an asbestos register is not available, ensure the structure or plant to be demolished or refurbished has been inspected by a competent person to determine if any asbestos or ACM is fixed to or installed (or assume it's presence)<br>- where asbestos is determined to be fixed to or installed, tell the occupier, owner (if at a domestic premises) or the person with management or control in any other case<br>- ensure asbestos at domestic premises that is likely to be disturbed by the demolition or refurbishment is identified and, if reasonably practicable, removed before the work starts<br>- if an emergency occurs at domestic premises where asbestos is identified (or assumed) and it must be demolished, ensure there is a procedure to reduce the risk of the exposure to asbestos to below the exposure standard and notify the regulator about the emergency. |

In some cases, there may be more than one person with management or control of a workplace. For example:

- a person with management of a workplace is a tenant
- a person with control of a workplace has the power to make decisions and changes to the structure and use of the workplace. This person will usually be the owner of the workplace or a representative of the owner and may:
  - own the workplace and engage workers to carry out work there
  - own the workplace but lease it to another person conducting a business or undertaking at the workplace
  - have management or control over the workplace, for example a property management group or agent.

## 1.6. Definitions

Definitions for the Asbestos management have been derived from the Code of practice for the management and control of asbestos in the workplace NOHSC: 2018 (2005).

**Accredited Laboratory** means a testing laboratory accredited by the National Association of Testing Authorities, Australia (NATA) or a similar accreditation authority, or otherwise granted recognition by NATA, either solely or in conjunction with one or more other persons.

**Administrative Control** means a system of work or a work procedure that is designed to eliminate or reduce a risk, but does not include a physical control or the use of personal protective equipment.

**Air Monitoring** means airborne asbestos fibre sampling to assist in assessing exposures and the effectiveness of control measures. Air monitoring includes exposure monitoring, control monitoring and clearance monitoring.

**Note:** Air monitoring should be undertaken in accordance with the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC:3003 (2005)].

**Airborne Asbestos Fibres** means any fibres of asbestos small enough to be made airborne. For the purposes of monitoring airborne asbestos fibres, only respirable asbestos fibres (those fibres less than 3 µm wide, more than 5 µm long and with a length to width ratio of more than 3 to 1) are counted.

**Note:** Airborne asbestos fibres are generated by the mechanical disintegration of Asbestos-Containing Materials (ACM) and subsequent dispersion of the fibres into the air from activities such as mining and the use, removal and disposal of asbestos and ACM. Airborne dust has the potential to contain respirable asbestos fibres.

**Airline respirator** means a device through which air, at greater then atmospheric pressure, from a source of compressed air capable of providing breathing air, is supplied to the wearer by means of an airline.

**Asbestos** means the fibrous form of mineral silicates belonging to the serpentine and amphibole groups of rock-forming minerals, including actinolite, amosite (brown asbestos), anthophyllite, chrysotile (white asbestos), crocidolite (blue asbestos), tremolite, or any mixture containing one or more of the mineral silicates belonging to the serpentine and amphibole groups

**Asbestos-Cement (AC)** means products consisting of sand aggregate and cement reinforced with asbestos fibres (e.g. asbestos cement pipes and flat or corrugated asbestos cement sheets).

**Asbestos-Containing Material (ACM)** means any material, object, product or debris that contains asbestos.

**Note:** Information for determining if a material contains asbestos is provided in Part 9 of the National Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018(2005)].

**Asbestos-contaminated dust or debris (ACD)** means dust or debris that has settled within a workplace and is (or assumed to be) contaminated with asbestos.

**Asbestos exposure standard** for asbestos is a respirable fibre level of 0.1 fibres/ml of air measured in a person's breathing zone and expressed as a time weighted average fibre concentration calculated over an eight-hour working day and measured over a minimum period of four hours in accordance with:

- the Membrane Filter Method
- a method determined by the relevant regulator.

**Asbestos-related work** means work involving asbestos (other than asbestos removal work to which Part 8.7 of the WHS Regulations applies) that is permitted under the exceptions set out in regulation 419(3), (4) and (5).

**Asbestos Removalist** means a competent person who performs asbestos removal work. Note: An asbestos removal licence is required in all State and Territory jurisdictions for the removal of friable ACM. Some States and Territories also require a licence for removal of specified quantities of ACM, regardless of whether they are friable, and relevant OHS authorities should be consulted prior to any removal work.

**Asbestos Vacuum Cleaner** means a vacuum cleaner that is fitted with a High Efficiency Particulate Air (HEPA) Filter and complies with Australian Standard 3544-1988 Industrial Vacuum Cleaners for Particulates Hazardous to Health. A domestic vacuum cleaner is not suitable for use with asbestos.

**Asbestos Waste** means all removed ACM and disposable items used during the asbestos work, such as plastic sheeting used to cover surfaces in the asbestos work area, disposable coveralls, disposable respirators, rags used for cleaning.

**Asbestos Work Area** means the immediate area in which work on ACM is taking place. The boundaries of the asbestos work area must be determined by a risk assessment. Note: The asbestos work area should include the boundaries of an enclosure or barriers set up to warn or restrict access to the area where the asbestos work is being undertaken.

**Breathing Zone** means a hemisphere extending in front of a person's face, with a radius of 300 mm from the midpoint of an imaginary line between the ears.

**Clearance Inspection** means an inspection, carried out by a competent person, to verify that an asbestos work area is safe to be returned to normal use after work involving the disturbance of ACM has taken place. A clearance inspection must include a visual inspection, and may also include clearance monitoring and/or settled dust sampling. Note: A clearance inspection should only be carried out when the asbestos work area is dry.

**Clearance Monitoring** means air monitoring using static or positional samples to measure the level of airborne asbestos fibres in an area following work on ACM. An area is 'cleared' when the level of airborne asbestos fibres is measured as being below 0.01 fibres/ml. Note: Static or positional samples are taken at fixed locations which are usually between one and two metres above floor level.

**Competent Person** means a person possessing adequate qualifications, such as suitable training and sufficient knowledge, experience and skill, for the safe performance of the specific work. Note: A licence may be required for some of the tasks described in this document as requiring a competent person.

**Control Level** means the airborne concentration of a particular substance which, if exceeded, indicates a need to implement a control, action or other requirement. Control levels are generally set at no more than half the NES for the substance. Control levels are occupational hygiene 'best practice', and are not health-based standards. Note: The first Control Level for Asbestos is set at 0.01 fibres/ml of air.

**Control Monitoring** means air monitoring, using static or positional to measure the level of airborne asbestos fibres in an area during work on ACM. Control monitoring is designed to assist in assessing the effectiveness of control measures. Its results are not representative of actual occupational exposures, and should not be used for that purpose.

**Note:** Static or positional samples are taken at fixed locations which are usually between one and two metres above floor level.

**Dust and Debris** means visible particles, fragments or chunks of material, large and heavy enough to have settled in the work area, that are likely to have originated from ACM.

**Exposure Monitoring** means air monitoring to determine a person's likely exposure to a hazardous substance. Exposure monitoring is designed to reliably estimate the person's exposure, so that it may be compared with the NES. Note: Exposure monitoring includes airborne asbestos fibre sampling, analysis, estimation of time-weighted average exposure and interpretation. Samples are taken within the breathing zone and are usually obtained by fastening the filter holder to the worker's jacket lapel.

**Friable (Asbestos)** means asbestos-containing material which, when dry, is or may become crumbled, pulverised or reduced to powder by hand pressure. Note: This may include ACM that have been subjected to conditions that leave them in a state where they meet the above definition, such as weathering, physical damage, water damage etc.

**Hazard** means any matter, thing, process or practice that may cause death, injury, illness or disease.

**Health Surveillance** means the monitoring of a person to identify any changes in their health as a result of exposure to a hazardous substance. It does not include exposure monitoring.

**High Efficiency Particulate Air (HEPA) Filter** means a disposable, extended media, dry type filter, in a rigid frame, with a minimum filtration efficiency of 99.97% for nominal 0.3 µm diameter thermally generated dioctylphthalata (DOP) particles or an equivalent efficiency for a specified alternative aerosol and with an initial maximum resistance to airflow of 250 pa when tested at its rated airflow capacity (see Australian Standard 4260-1997 High Efficiency Particulate (HEPA) Filters – Classification, Construction and Performance).

**In situ** means fixed or installed in its original position, not having been moved.

**Inaccessible Areas** means areas which are difficult to access, such as wall cavities and the interiors of plant and equipment.

**Membrane Filter Method (MFM)** means the technique outlined in the NOHSC Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC:3003 (2005)].

**National Exposure Standard (NES)** means an airborne concentration of a particular substance, within the worker's breathing zone, which according to current knowledge, should not cause adverse health effects or undue discomfort to nearly all workers.

**Note:** The NES for all forms of asbestos is 0.1 fibres/ml of air, measured using the Membrane Filter Method (MFM).

**Person with Control** means, in relation to premises, a person who has control of premises used as a workplace. The person with control may be:

- the owner of the premises;
- a person who has, under any contract or lease, an obligation to maintain or repair the premises;
- a person who is occupying the premises;
- a person who is able to make decisions about work undertaken at the premises; or
- an employer at the premises.

**Personal Protective Equipment (PPE)** means equipment and clothing that is used or worn by an individual person to protect them against, or minimise their exposure to, workplace risks. It includes items such as facemasks and respirators, coveralls, goggles, helmets, gloves and footwear.

**Respirable Asbestos Fibre** means a fibre of asbestos small enough to penetrate into the gas exchange regions of the lungs. Respirable asbestos fibres are technically defined as fibres that are less than 3 µm wide, more than 5 µm in length and have a length to width ratio of more than 3 to 1.

**Risk** means the likelihood of a hazard causing harm to a person. Note: In this code of practice, Risk relates to illness or disease arising

from exposure to Airborne Asbestos Fibres.

**Settled Dust Sampling** means the sampling and analysis of settled surface dust to provide an indication of cleanliness following disturbance of ACM. Settled dust sampling does not provide an indication of risk to health. Sampling techniques include the use of adhesive tape, wipe or micro-vacuum (using an air sampling pump and filter). Analysis can be by polarised light microscopy (PLM) or transmission electron microscopy (TEM).

**Note:** Contamination may occur as a result of deterioration of, or work processes involving ACM.

**Shadow Vacuuming** means the operation of an asbestos vacuum cleaner that is either directly attached to a tool or hand-held by a second worker as close as possible to the source of released asbestos fibres throughout the use of the tool.

**Structure** means any construction, whether temporary or permanent. Note: A structure includes a bridge, erection, edifice, wall, chimney, fence, earth works, reclamation, ship, floating structure or tunnel.

**Stakeholder** any individual who may come into contact with ACM within premises, either directly or indirectly.

**Work** means any activity, physical or mental, carried out in the course of a business, industry, commerce, an occupation or a profession.

**Worker** means a person who does work, whether or not for reward or recognition. Note: ‘Workers’ include persons working under contracts of employment, apprenticeships, traineeships and other contracts of service, but they also include other persons subject to direction by persons with control, such volunteers and work experience students.

**Workplace** means any place where a person works.

## 2. Purpose

The purpose of an Asbestos Management Plan is to help persons with control of premises to comply with the asbestos prohibition and prevent exposure to airborne asbestos fibres while ACM remain in the workplace. Exposure to asbestos fibres can cause a range of debilitating medical conditions affecting the respiratory system, including mesothelioma, asbestosis and lung cancer. Many asbestos-related conditions are life threatening or associated with a marked reduction in life expectancy.

# 3. Asbestos

Asbestos is the generic name for a number of naturally occurring silicate mineral fibres. Asbestos is a versatile product. Due to its ability to withstand heat, erosion and decay, and for its fire and water resistant properties, asbestos was widely used in building materials for residential premises until it started to be phased out in the 1980s. Despite the use of all forms of asbestos being banned nationally since 31 December 2003, building materials containing asbestos are still prevalent in our community today. The most commonly found building materials that contain asbestos are asbestos cement products.

In general, the presence of asbestos in residential and non-residential buildings does not pose a risk to health if it is in a bonded form and in good condition.

Asbestos poses a health risk when asbestos fibres are released into the air and inhaled or ingested. This occurs once a material containing asbestos is broken, starts to deteriorate, or is disturbed in such a way that dust particles containing asbestos are produced. Therefore, DIY renovators and tradespeople are the ones most at risk of exposure to asbestos fibres as they are more likely to frequently undertake repairs, renovations and other work which can generate the release of asbestos fibres into the air. Asbestos is classed as being either bonded or friable.

## 3.1 Difference between bonded asbestos and friable asbestos

| Bonded Asbestos | Friable Asbestos |
|---|---|
| Bonded asbestos is in a form where asbestos fibres are held within another material (for example, cement) but does not include friable asbestos.<br>Examples of bonded asbestos include, asbestos cement sheeting and corrugated asbestos cement roofs (commonly known as 'Super Six'). | Friable asbestos is asbestos that (whether or not contained in other material):<br>- is crumbly, dusty or powdery; or<br>- when dry, can be crumbled, pulverised or reduced to powder by hand pressure.<br>Examples of friable asbestos include, sprayed asbestos coating or insulation, asbestos lagging, loose asbestos and asbestos in its raw form. |
|  |  |

# 4. Managing risks associated with asbestos and ACM

## 4.1. What is involved in managing risks?

**Managing risks associated with asbestos involves:**

- Identifying asbestos and ACM at the workplace and recording this in the asbestos register.
- Assessing the risk of exposure to airborne asbestos.
- Eliminating or minimising the risks by implementing control measures.
- Reviewing control measures to ensure they are effective.

**When choosing the most appropriate control measure, the following hierarchy of controls must be considered:**

- Eliminating the risk (for example, removing the asbestos).
- Substituting the risk, isolating the risk or applying engineering controls (for example, enclosing, encapsulation, sealing or using certain tools).
- Using administrative controls (for example, safe work practices).
- Using PPE (Personal Protective Equipment).

## 4.2. Consulting your workers

Consultation with workers and their health and safety representatives is a critical part of managing work health and safety risks. Consulting with and involving workers in the identification and safe handling of asbestos can assist in ensuring that safety instructions and safe work practices are complied with. Health and safety representatives must have access to relevant information on matters that can affect the health and safety of workers, for example asbestos exposure data and the asbestos register.

## 4.3. Identifying if asbestos or ACM is at the workplace

Identifying asbestos or ACM is the first step in managing the risk of exposure to asbestos in the workplace. As there may be more than one person in the workplace responsible for this duty, it is important that all duty holders consult, cooperate and coordinate with each other as well as consulting with workers and health and safety representatives, for example the person with control of the workplace may carry out the task of identifying asbestos with the person who has day-to-day management of the workplace to ensure it has been done accurately.

### 4.3.1. Who can be a competent person?

The WHS (Work Health and Safety Act) Regulations define a competent person to be someone who has acquired knowledge and skills to carry out the task through training, a qualification or experience. This may mean that the competent person who can identify asbestos is:

- trained to handle and take asbestos samples, have the knowledge and experience to identify suspected asbestos and be able to determine risk and controls measures
- familiar with building and construction practices to determine where asbestos is likely to be present
- able to determine that material may be friable or non-friable asbestos and evaluate its condition.

There may be a person within the business that is competent to identify asbestos. If there is not, an external competent person should be engaged. Persons who may be considered to be competent in the identification of asbestos include:

- occupational hygienists who have experience with asbestos
- licensed asbestos assessors
- asbestos removal supervisors

## 4.4. Factors to consider when identifying asbestos

A person who is carrying out the task of identifying asbestos should have all relevant information so they can correctly identify where asbestos is located in the workplace. For example, obtaining information on the products used in making the building, structure or plant; including building plans, design specifications and correspondence with builders and plant manufacturers. Consulting Workers in the workplace may also be able to assist the person with this task

There are number of factors considered to identify or assume the presence of asbestos in a workplace. These include:

| Factor | Consideration |
|---|---|
| When was the building constructed? | Asbestos was widely used as construction and insulation material in buildings until the late 1980s when bans on its manufacture and use were put in place. However, the use of asbestos was only completely prohibited on 31 December 2003. As the bans were not absolute prior to 2003 and building materials may have been stockpiled, stored, or recycled and used, it is possible that asbestos may be present in buildings that were constructed up to 31 December 2003 and possibly later. |
| Were there any refurbishments or additions to the building prior to 31 December 2003 | Any refurbishment or extensions to the original building prior to 1990 and potentially up to 31 December 2003 may have involved the use of asbestos. Even if the original parts of the building did not contain asbestos, it should not be assumed that subsequent additions have no asbestos. |
| What type of material was used to construct the building? | The main construction materials used are made from timber, brick, steel and cement sheet. If cement sheet is present and was installed up until 1990, it is likely to contain asbestos bonded to the cement particles. For example, a roof made from corrugated cement sheeting is likely to contain asbestos. Areas of buildings that are prone to wet conditions may contain asbestos in the walls and floors due to its hardiness and waterproofing qualities compared to other materials. For example, bathrooms, toilets and laundries may have asbestos sheeting or vinyl tiles. Likewise, pipes throughout the building that carry water and sewage may also contain asbestos. |
| Talk to the designers, manufacturers or suppliers of plant or refer the design plans | Asbestos may be present in specific parts of the plant in a workplace as it was used in gasket and friction brake products. Despite a large reduction in its use, chrysotile asbestos was still being used in some specific applications until recent years, including rotary vane vacuum pumps and in gaskets for certain types of equipment. If there is plant that was designed, built and installed prior to 1 January 2004, the supplier, manufacturer or designer of the plant should be consulted to find out if asbestos is present and, if possible, obtain this advice in writing. If this is not possible, review the design plans and seek advice from an experienced engineer or plant designer. Quality assurance systems or checks should be in place to confirm whether asbestos is present |

| Factor | Consideration |
|---|---|
| Talk to workers who have worked at the workplace for a long time | Speaking with experienced workers will assist in the identification process as they may be aware of the history of the building, including its age, construction, renovation or repairs, and may know where asbestos is located in the workplace. |
| Visually inspect the place to identify asbestos, ACM and inaccessible areas | A thorough inspection of all areas of the workplace must be conducted, including all buildings, structures, ceiling spaces, cellars, shafts, storage areas and wall cavities. Material needs to be considered to contain asbestos unless proven otherwise if:<br>- it cannot be identified<br>- there is uncertainty as to whether it contains asbestos<br>- it is inaccessible.<br>The design plans for a building, structure, ship or plant may assist in identifying inaccessible areas, as would discussion with builders, architects, manufacturers of plant and maintenance workers. Knowledge of materials used in the construction of the building or experience and findings from inspections of similar sections of the building (or similar buildings) may also assist. |
| Take notes and photographs | Taking notes and photographs while the inspection is being conducted can assist while making an asbestos report. |

## 4.5 Assuming asbestos or ACM is present

If there is uncertainty as to whether asbestos is present in any part of the structure or plant, the person with management or control of the workplace can either assume asbestos is present and treat it with appropriate caution based on the level of risk or have a sample analyzed. If it is assumed to be asbestos, it is considered to be asbestos for legal purposes. There is no need to take a sample for analysis and identification in all circumstances. This means the suspect material can remain undisturbed and the time and cost of sampling and analysis is avoided.

**The person with management or control of a workplace can assume asbestos or ACM is not present as long as this assumption is based on reasonable grounds which may include:**

- a workplace is constructed post 1990 and there is no plant or equipment made prior to 2004.
- pre-2004 buildings where the building is constructed (including the roof) wholly of metal, brick or concrete, and has no internal walls that are made of fibro, gyprock or similar cladding, for instance a corrugated iron shed or a colourbond type warehouse building constructed of double brick with bare brick internally. Flooring (vinyl tiles), switchboards and under eaves lining should also be considered.
- where a register indicates that all the identified and assumed asbestos has been removed.

**Once the presence and location of asbestos has been assumed:**

- all requirements for managing asbestos must be followed until the material is removed or testing has confirmed that it is not or does not contain asbestos.
- the workplace asbestos register must include all the presumptions made about materials in the workplace with a simple, generic statement such as, *'Roof sheeting is presumed to contain asbestos' or 'All underground conduits are presumed to contain asbestos.'*

## 4.6. Inaccessible areas

If there are inaccessible areas in the workplace that a competent person has identified as likely to have asbestos or ACM, it must be assumed they contain asbestos until they are accessed and it is determined whether asbestos is present or not. As a general rule, an inaccessible area is an area that cannot be accessed during normal daily activities or routine maintenance. The following areas are not regarded as 'inaccessible areas' and must be inspected or assumed to contain asbestos:

- locked rooms
- crawl spaces
- basement and cellars
- storage areas
- ceiling spaces
- fire doors
- locked security safes

Accessing fire door and security safe cores to determine whether they contain asbestos may create a risk, for example drilling can result in the release of airborne asbestos. If this is the case, cores should not be accessed and must be assumed to contain asbestos until otherwise proven (for instance, during maintenance when access is obtained) or information is obtained from the supplier. Fire doors may have a compliance tag on the door jamb stating the fire rating and a compliance date. This can provide an indication of whether the door is likely to contain asbestos.

**Examples of inaccessible areas that may contain asbestos or ACM are:**

- a cavity in a building that is completely (or almost completely) enclosed and suspected of containing asbestos (based on where asbestos is located elsewhere in the building) and access is only possible through destruction of part of the walls of the cavity
- the inner lining of an old boiler pressure vessel (information on this type of vessel suggests it contains asbestos) and the inner lining is not accessible due to the design and operation of the boiler and access can only be via partial destruction of the outer layer
- vinyl tiles that may contain asbestos, which have had a number of layers of non-ACM placed over them and secured, where the layers above it have been well secured and require some form of destruction in order to access the vinyl that may contain asbestos
- enclosed riser shafts in multi-storey buildings containing cables that may be insulated with ACM
- air-conditioning ducts that may contain asbestos gaskets and linings.

## 4.7. Taking asbestos samples

If samples are taken for the purpose of determining if asbestos is present, it is important that representative samples are taken. Any variation in appearance, texture or colour of the material will necessitate additional samples being taken for consistency and valid analysis. For example, full - thickness samples of friable material back to the substrate should be taken. Consideration should also be given to taking samples from difficult areas where there is evidence of previous asbestos removals. Any person who is suitably trained and experienced in a safe method for taking samples of ACM can take samples for the purpose of analysis under the Regulations.

Samples should be taken in a controlled manner that does not create a risk to people taking the sample or people who will work or visit the area where the sample was taken. People taking samples should assess the risk and implement appropriate controls. These may include the use of a high-efficiency particulate air (HEPA) filtered vacuum cleaner and a water spray bottle to suppress airborne dust (a respirator – approved by **AS/NZS 1716:2003** Respiratory protective devices – may also be used to minimize exposure). Samples need to be placed in sealed containers (such as snap-lock durable bags) and appropriately labelled to enable the location of the sample to be clearly identified at a later time.

## 4.8. Analysis of asbestos samples

Only analysts approved by National Association of Testing Authorities (NATA) can analyse samples containing asbestos for the purpose of the Regulations. An approved asbestos analyst is an analyst approved by NATA to perform asbestos fibre counting or to identify asbestos in samples and to issue findings as endorsed reports under the authority of a NATA-accredited laboratory. Endorsed reports have the NATA insignia stamped on the report. It is recommended that a copy of the endorsed analysis report be obtained as evidence of compliance. In order to ensure compliance, WorkSafe recommends prior verification is requested from the laboratory where the analysis is to be done to confirm the analyst is approved. The NATA website (nata.asn.au) can also be used to confirm the laboratory is accredited to perform asbestos analysis.

## 4.9. Indicating the presence of asbestos in workplace

All identified or assumed asbestos, including where the asbestos is inaccessible, must be clearly indicated. If it is reasonably practicable, labels must be used to identify the material as containing asbestos. However, signs may be more appropriate to use.

### 4.9.1. Labels

If labels can be used, a competent person should determine the number and positions of the labels required. The location of labels should be consistent with the location listed in the asbestos register.

If a risk assessment suggests asbestos may be disturbed or people are likely to be exposed and it is not reasonably practicable to label asbestos directly, a prominent warning sign must be posted in its immediate vicinity. For example, if floor tiles have been identified as containing asbestos, an appropriate warning sign may be displayed on an adjacent wall.

### 4.9.2. Warning Signs

All warning signs should comply with AS 1319 Safety Signs for the Occupational Environment. Any areas of a workplace that contain asbestos, including plant, equipment and components, should be signposted with warning signs to ensure the asbestos is not unknowingly disturbed without the correct precautions being taken. These signs should be weatherproof, constructed of light-weight material and adequately secured. Signs should be placed at all the main entrances to the work areas where asbestos is present. Where direct marking of asbestos is not possible, identifying the presence and location of asbestos to workers such as plumbers, electricians and carpenters before they commence work may be achieved by implementing a permit-to-work system. The presence and location of the asbestos should be entered on site plans and the asbestos register and be accessible to all workers to ensure they are aware of the presence of asbestos.

## 4.10. Assessing the risk of exposure

If asbestos or ACM is in good condition and left undisturbed, it is unlikely that airborne asbestos will be released into the air and the risk to health is extremely low. It is usually safer to leave it and review its condition over time. However, if the asbestos or ACM has deteriorated, has been disturbed, or if asbestos contaminated dust is present, the likelihood that airborne asbestos will be released into the air is increased.

The type of material that binds asbestos fibres will influence the potential for airborne asbestos to be released into the air from different asbestos or ACM. For example, a loosely bound sprayed (or limpet) coating is more likely to release fibres when disturbed than asbestos cement in which fibres are firmly bound.

The following list ranks different types of asbestos according to the likelihood that airborne asbestos can be released into the air if it has deteriorated or been disturbed. The potential risk to health is greater for items higher up the list if people are exposed to airborne asbestos, but any of the materials listed can produce asbestos fibres if they are disturbed.

**Higher likelihood of airborne fibres**
Asbestos contaminated dust (including dust left in place after past asbestos removal.
Sprayed (limpet) coatings or loose fill
Lagging and packings which are not enclosed
Asbestos insulating board
Rope and gaskets
Millboard and paper
Asbestos cement
Floor tiles, mastic and roof felt
Decorative paints and plasters
**Lower likelihood of airborne fibres**

**When deciding if there is a risk to health from asbestos, consider whether the asbestos or ACM is:**

- in poor condition
- likely to be further damaged or to deteriorate
- likely to be disturbed due to work practices carried out in the workplace (for example, routine and maintenance activities and their frequency)
- in an area where workers are exposed to the material.

A visual inspection of the material, its location and an understanding of the work practices at the workplace will assist this decision. Asbestos-related work activities (including maintenance) plus unusual and infrequent activities (such as emergency activities) need to be considered. Also take into account the proximity of the asbestos or ACM to where employees work, as this can affect the potential for exposure if asbestos fibres become airborne.

The following are examples of activities that could pose a risk to health:

- Forklifts driving adjacent to asbestos cement (AC) sheet walls may damage these sheets from accidental impacts during the course of work.
- Plumbers working on a long pipe that does not have asbestos insulation where the work is being done may cause disturbance to asbestos-containing insulation on the pipe some metres away.
- Electricians wiring in a ceiling space sprayed with material containing friable asbestos may disturb this material.
- Acid fumes from an acid bath located next to an asbestos cement wall and below an asbestos cement roof may cause deterioration of the asbestos material over time.?

# 5. Asbestos Register

A person with management or control of a workplace must ensure an asbestos register is prepared and kept at the workplace. The asbestos register must be maintained, to ensure the information in the register is up-to-date.

## 5.1. Duty to record results of identification in an asbestos register

The person who has management or control of a workplace must record in an asbestos register the results of the asbestos identification for materials, which they have management or control over. Any employer at the workplace must also record in an asbestos register the results of the asbestos identification for materials they have management or control over. This may include an item such as a machine they brought to the workplace that has an asbestos-containing brake. Therefore in some circumstances, there will be two separate asbestos registers relating to the same workplace. The employer's asbestos register should include the register created by the person who has management or control of the workplace. Where the person who has management or control of the workplace and the employer in the workplace is the same person, one asbestos register covering both duties would be sufficient. The asbestos register was known as the Part 5 audit under the Occupational Health and Safety Regulations 2003.

## 5.2. Information that must be recorded in an asbestos register

There is no mandatory format for the asbestos register. However, it must be current and include the following information:

- location of the asbestos
- likely source of unfixed or uninstalled asbestos
- type of ACM
- whether the asbestos is friable or non-friable
- condition of the ACM
- whether the ACM is likely to be damaged or disturbed
- details of all inaccessible areas likely to contain asbestos
- detailed information about activities carried out in the workplace that are likely to disturb the asbestos
- dates when the identification and risk assessments were done

It is suggested the register also contain a copy of all reports of analysis of samples conducted by NATA-approved laboratories.

## 5.3. Access to the asbestos register

The Regulations specify who must be provided with a copy of the asbestos register and who must be given access to the register. The person who has management or control of the workplace must:

a. Provide a copy of the asbestos register to any:
   - Employer or self-employed person whose business is located at the workplace – this will assist the employer or self-employed person to determine whether any of their activities in the workplace are likely to disturb or damage that asbestos.
   - Licensed asbestos removalist if removal is required – this will enable the removalist to plan their work appropriately and safely.
   - Employer who intends to carry out any of the following asbestos-related activities in the workplace so they are aware of the risk (if they request a copy):
     - sampling or analysis of suspected asbestos
     - enclosing or sealing of asbestos
     - hand-drilling and cutting of ACM

        - research involving asbestos
        - any other activity likely to produce airborne asbestos fibres above one half of the exposure standard (where an asbestos register or employer's asbestos register exists).
    - employer or self-employed person who proposes to occupy the workplace (if they request a copy)
    - person who is taking over the management or control of the workplace.

b. Inform any person engaged to do work which involves the risk of exposure to asbestos of the register and provide access to the most recent register. In this case, the term 'risk of exposure' is not the same as 'risk to health'. The person with management or control must evaluate tasks conducted in the workplace and determine whether they involve the risk of actually being exposed to airborne asbestos fibres. There is no need to identify or assess a risk to health for this duty to be enforceable.
c. Provide access to the asbestos register on request to any person they have engaged to do work at the workplace.

## 5.4. Reviewing the asbestos register

The asbestos register must be kept current by including:

- any change in the condition of ACM, such as damage or deterioration from exposure to weather, substances or impacts.
- details of ACM that has been removed, enclosed or sealed (and preferably by whom and when)
- details of recent identification of asbestos that was previously not identified.

Where an HSR for an affected designated work group requests the employer (on reasonable grounds) to review and revise the register, the employer must do so. The term 'on reasonable grounds' may mean where the HSR provides information to suggest that:

- material in the workplace contains asbestos and it is not included in the asbestos register.
- there has been a change to the condition of asbestos in the workplace that is included in the asbestos register, or
- the current asbestos register is out-of-date or incomplete.

All asbestos registers must be reviewed at least every five years even if there have been no changes. Any review of the asbestos register should be documented to identify:

- when the review was undertaken
- what it involved
- the outcome (eg changes in conditions)
- who undertook it.

## 5.5. Keeping a copy of the asbestos register

The person with management or control must keep the current asbestos register for the workplace, but the old versions do not legally need to be kept. However, asbestos registers and clearance certificates will ensure that a record is kept of the asbestos that has been identified in the workplace. When relinquishing management or control of a workplace, employers must provide a copy of the current asbestos register to the person who is taking over management or control (if there is such a person). A clearance certificate is a written statement confirming that an area where asbestos removal has taken place has been cleared satisfactorily and is safe to be reoccupied for its normal use.

## 5.6. Transferring an asbestos register

If the person with management or control of a workplace plans to relinquish management or control (for instance, selling the workplace or the business or undertaking), they must ensure, so far as is reasonably practicable, that a copy of the asbestos register is given to the person who is assuming management or control of the workplace.

# 6. Asbestos Management Plan

A person with management or control of a workplace must ensure a written asbestos management plan is prepared for the workplace if asbestos or ACM has been identified or assumed present, or is likely to be present from time to time at the workplace. The asbestos management plan must be maintained to ensure the information is up-to-date. This requirement does not apply to domestic premises.

## 6.1. What is an asbestos management plan?

An asbestos management plan sets out how asbestos or ACM that is identified at the workplace will be managed, for example what, when and how it is going to be done. An asbestos management plan must include:

- the identification of asbestos and ACM, for example a reference or link to the asbestos register for the workplace, and the locations of signs and labels.
- decisions, and reasons for the decisions, about the management of asbestos at the workplace, for example safe work procedures and control measures.
- procedures for detailing accidents, incidents or emergencies of asbestos at the workplace.
- workers carrying out work involving asbestos, for example consultation, information and training responsibilities.

Other information that may be included in the asbestos management plan is:

- an outline of how asbestos risks will be controlled, including consideration of appropriate control measures.
- a timetable for managing risks of exposure, for example priorities and dates for any reviews, circumstances and activities that could affect the timing of action.
- identification of each person with responsibilities under the asbestos management plan and the person's responsibilities.
- procedures, including a timetable for reviewing and, if necessary, revising the asbestos management plan and asbestos register.
- air monitoring procedures at the workplace, if required.

## 6.2. Reviewing an asbestos management plan

The person with management or control of the workplace must ensure the asbestos management plan is reviewed and, if necessary, revised at least once every five years or when:

- there is a review of the asbestos register or a control measure
- asbestos is removed from or disturbed, sealed or enclosed at the workplace
- the plan is no longer adequate for managing asbestos or ACM at the workplace
- a health and safety representative requests a review if they reasonably believe that any of the matters listed in the above points affects or may affect the health and safety of a member of their work group and the asbestos management plan was not adequately reviewed.

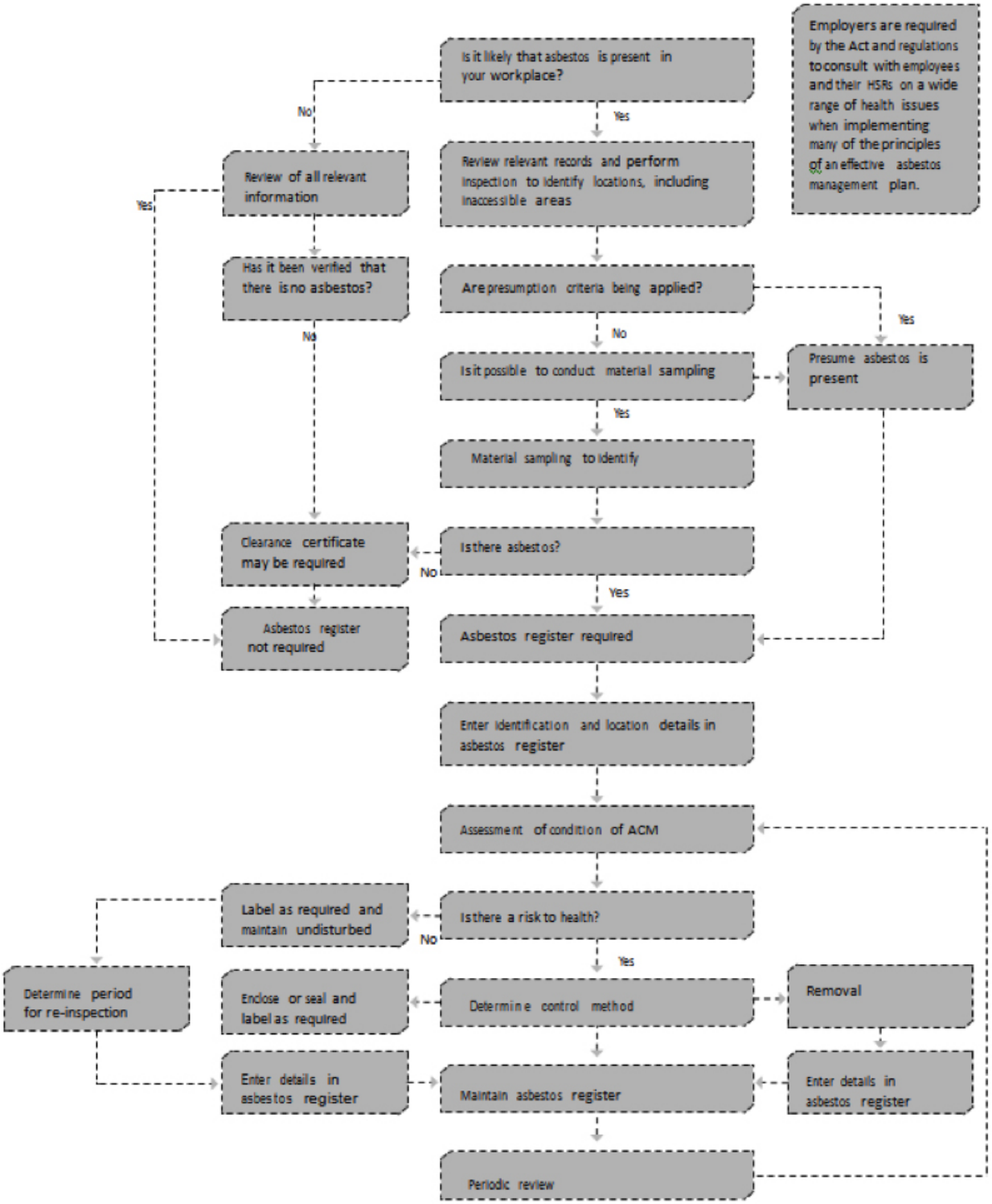
## 6.3. Accessing an asbestos management plan

The person with management or control of the workplace must ensure the asbestos management plan is readily accessible to:

- health and safety representatives who represent workers that carry out or intend to carry out work at the workplace
- a person conducting a business or undertaking who has carried out, carries out or intends to carry out work at the workplace, and
- a person conducting a business or undertaking who has required, requires or intends to require work to be carried out at the workplace.

The asbestos management plan should be kept at the workplace to ensue it is accessible.

The following flow chart outlines the general principles of an asbestos management plan.



# 7. Managing other asbestos related risks

## 7.1. Naturally occurring asbestos

A person with management or control of a workplace must manage the risks associated with naturally occurring asbestos (NOA) at the workplace. If NOA is identified at the workplace or is likely to be present from time to time, a written asbestos management plan must be prepared and maintained to ensure the information is up-to-date.

### 7.1.1. What is NOA?

In the majority of the workplaces, the asbestos that is encountered and poses a risk to health and safety will be found in manufactured products. However, some workplaces may have to deal with asbestos in its natural state. NOA may be encountered in road building, site and construction work, and other excavation activities. Asbestos may occur in veins within rock formations.

### 7.1.2. Requirements to manage NOA

Due to the difficulties in fully describing the location and extent of a NOA deposit in asbestos register, there is no requirement for NOA be listed in an asbestos register. However, any NOA identified or assumed at a workplace must be included on the asbestos management plan for the workplace or be the subject of a new asbestos management plan. This is to ensure steps are put in place, as with all other asbestos encountered in workplaces, to ensure that risks of exposure from NOA are assessed and managed.

### 7.1.3. Preparing and asbestos management plan

When preparing an asbestos management plan, the following should be considered:

- isolating the workplace or part of the workplace until controls are in place
- deviating excavation to ensure avoidance of the deposit, where possible
- using sealed excavation or mining equipment (air-conditioned cabins with filtered air)
- maintaining regular surveillance of the rock by a competent person to ensure minimal disturbance of suspected fibrous minerals
- developing procedures for the safe disposal of asbestos waste, if required
- educating the workers in safe work practices.

### 7.1.4. Managing NOA

Ongoing management of NOA may be determined with the aid of an air monitoring program to assess asbestos exposure levels and specific risk control measures. The person with management or control of a workplace must ensure the release of airborne asbestos is minimized. This can be done by:

- wetting surfaces to reduce the dust levels
- suppressing, containing and extracting dust in processing operations (water sprays or local exhaust at transfer points and vibrating screens)
- using wet drilling or other approved in-hole dust suppression
- preventing the spread of contamination by using wash down facilities
- providing information to and training and supervision of all workers potentially at risk

- using PPE where indicated.

### 7.1.5. Training of workers

Training on the hazards and risks associated with NOA must be provided to workers who carry out work where NOA is found. Detailed on training workers about asbestos is provided in the section 6.3 of this report.

## 7.2. Contaminated Sites

Sites contaminated with asbestos become a workplace when work is carried out there. The WHS Regulations require that, where asbestos is identified as contaminating a workplace, a register and asbestos management plan be created for the site. The management and remediation of sites contaminated with asbestos from illegal dumping and demolition is a specialised task. In some instances, site remediation may entail removal of asbestos and ACM from the site; in other cases this may not be practicable, and other management strategies should be used. Engaging specialists who may include asbestos removalists is highly recommended for all but the most minor of non-friable contaminations.

*The Assessment of Site Contamination* *National Environmental Protection Measure* (NEPM) sets out the general principles for assessment and remediation of sites contaminated with a number of hazardous materials including asbestos. It is recommended that a person conducting a business or undertaking, who has a workplace that is, or is suspected of being, contaminated with asbestos should engage specialists in accordance with the competencies found in the NEPM.

## 7.3. Demolition and refurbishment work

This section applies to the demolition or refurbishment of a structure or plant constructed or installed before 31 December 2003. Prior to any demolition or refurbishment work being carried out, a person with management and control of a workplace must:

- review the asbestos register
- provide a copy of the asbestos register to the person carrying out the demolition or refurbishment work, and
- ensure asbestos that is likely to be disturbed is identified and, so far as is reasonably practicable, removed.

The person conducting a business or undertaking who will carry out demolition or refurbishment at a workplace must obtain a copy of the asbestos register before they commence the work. **Examples of demolition may include:**

- complete dismantling of a decommissioned industrial plant
- total destruction of a building or part of a building
- total destruction of an old boiler for the purpose of disposal.

**Examples of refurbishment may include the partial dismantling of:**

- a boiler for the purpose of cleaning and repairing
- large plant in order to access and remove asbestos-containing gaskets for the purpose of replacement with non-asbesto--containing gaskets
- a building by removing sections of an asbestos cement roof
- part of a building for the purpose of renovation. Demolition and refurbishment work does not include minor routine maintenance work, or other minor work:
- Minor maintenance work includes routine work that is small scale, often short in duration and may be unscheduled. This work may require the partial dismantling of a structure or plant and may include the removal of asbestos or ACM such as gaskets or brake components, for example a piece of plant to remove an asbestos-containing gasket, a passenger lift or press machine to remove an asbestos-containing brake component, or a piece of plant for the purpose of cleaning or repair.
- Minor work includes small tasks that are of short duration, such as cutting a small hole or hand-drilling up to a few holes in an

AC sheet. It is not routine or regular such as planned maintenance. It is incidental work that can be done quickly and safely within minimal control measures required to ensure safety. Examples include cutting a small hole into an asbestos-containing eave to install a cable, removal of an asbestos-containing vinyl tile to install a plumbing fixture, or hand-drilling a few holes into an AC sheet to attach a fitting.

### 7.3.1. Reviewing the asbestos register

When reviewing the asbestos register, the person with management or control of the workplace or plant should consider the following questions:

- Where is the asbestos located in relation to the proposed demolition or refurbishment?
- Are there any inaccessible areas that are likely to contain asbestos and that will be disturbed as a result of the demolition or refurbishment?
- What is the type and condition of the asbestos?
- What is the quantity of asbestos?
- What is the method of demolition or refurbishment and how will it affect the ACM?
- If the asbestos will be disturbed during the demolition or refurbishment, can it be removed safely before work commences and how can this be done?

### 7.3.2. What to do if the asbestos register indicates that asbestos is present

If the asbestos register identifies that asbestos or ACM is present, the person with management or control of the workplace must ensure all asbestos likely to be disturbed is identified and removed, so far as is reasonably practicable, before the demolition or refurbishment work starts.

The WHS Regulations allow for the demolition of part of a structure or plant in order to access in situ asbestos so it can be removed. For example, part of a wall may be demolished to access asbestos located in the wall cavity so it can be removed prior to further demolition.

For demolition work, if an emergency occurs, the person with management or control of the workplace must ensure a procedure is developed before the demolition work starts. The procedure must outline how to minimise the risk of exposure of workers and persons in the vicinity of the demolition site and ensure the exposure standard is not exceeded, so far as is reasonably practicable. The person must also provide the regulator with written notice of the emergency immediately after they become aware of the emergency and before the demolition starts.

*Note: An emergency can occur if a building, structure or plant is structurally unsound or a collapse of the building, structure or plant is imminent*

### 7.3.3. If there is no asbestos register at the workplace

If there is no register for the workplace, the person who is carrying out the demolition or refurbishment work must not carry out the work until a competent person determines whether asbestos or ACM is fixed to or installed in the structure or plant.

If a competent person has reasonable grounds to be uncertain as to whether or not asbestos is present, before commencing demolition or refurbishment work the person carrying out the work must assume it is present. If it is determined or assumed to be present, the person carrying out the work must inform the occupier or owner (if it is domestic premises) or the person with management or control in any other case.

- **Demolition** – Once the person with management or control of the workplace or plant has been notified that asbestos is present and demolition work is to occur, they must decide whether the asbestos is likely to be disturbed by the work. If it is

likely to be disturbed they must ensure, so far as is reasonably practicable, that the asbestos is removed before the work commences.

- **Refurbishment** – Once the person with management or control of the workplace or plant has been notified that asbestos is present and refurbishment work is to occur, they must decide whether the asbestos is likely to be disturbed by the work. If it is likely to be disturbed they must ensure, so far as is reasonably practicable, that the asbestos is removed. Where reasonably practicable, asbestos should be removed prior to refurbishment, renovation or maintenance rather than implementing other control measures, such as enclosure or sealing.

### 7.3.4. Demolition and refurbishment at domestic premises

When a person has been engaged to conduct demolition or refurbishment at a domestic premise, it becomes the workplace of that person. Consequently, that person must identify and, if necessary, remove asbestos before work commences. The WHS Regulations place no duties on the homeowner.

- **Demolition** – A person who is engaged to conduct demolition work at a house (which has become their workplace) must identify asbestos under their management or control that is likely to be disturbed by the demolition work. They must ensure, so far as is reasonably practicable, that the asbestos is removed before the work commences.
  If an emergency occurs, the person carrying out the demolition work at the domestic premise must ensure, so far as is reasonably practicable, that before the demolition work starts a procedure is developed that will explain how to minimise the risk of exposure of workers and persons in the vicinity of the demolition site and ensure the exposure standard is not exceeded, so far as is reasonably practicable. The person must also provide the regulator with written notice of the emergency immediately after they become aware of the emergency and before the demolition starts.
- **Refurbishment** – A person who is engaged to conduct refurbishment work at a house (which has become their workplace) must identify asbestos under their management or control that is likely to be disturbed by the refurbishment work. They must ensure, so far as is reasonably practicable, that the asbestos is removed.

## 7.4. Asbestos related work

While work with asbestos is generally prohibited, the WHS Regulations allow work to occur on asbestos in certain circumstances: this is referred to as asbestos-related work. Under the WHS Regulations, asbestos – related work includes:

Under the WHS Regulations, asbestos-related work includes:

- genuine research and analysis
- sampling and identification in accordance with the WHS Regulations
- maintenance of, or service work on, non-friable asbestos or ACM, fixed or installed before 31 December 2003, in accordance with the WHS Regulations
- the transport and disposal of asbestos and asbestos waste in accordance with jurisdictional legislation
- demonstrations, education or practical training in relation to asbestos or ACM
- display, or preparation or maintenance for display, of an artefact or thing that is, or includes, asbestos or ACM
- management in accordance with the WHS Regulations of in situ asbestos that was installed or fixed before 31 December 2003
- work that disturbs asbestos during mining operations that involve the extraction of or exploration for a mineral other than asbestos
- laundering asbestos-contaminated clothing in accordance with the WHS Regulations
- where the regulator approves the method adopted for managing risks associated with asbestos
- soil that a competent person has determined:
  - does not contain any visible asbestos
  - does not contain more than trace levels of asbestos determined in accordance with AS 4964:2004 *Method for the qualitative identification of asbestos in bulk samples*

- NOA managed in accordance with an asbestos management plan.

When undertaking asbestos-related work activities, the WHS Regulations require that it only be performed in accordance with the following requirements:

- any worker undertaking asbestos-related work must be informed of the health risks of exposure to asbestos and that they will need to undergo health monitoring.
- a competent person carries out air monitoring of the work area where asbestos-related work is being carried out if there is uncertainty as to whether the exposure standard is likely to be exceeded.
- any asbestos that may be encountered by workers undertaking asbestos-related work must be identified, and if it is not possible to identify, it must be assumed asbestos is present
- the area in which asbestos-related work is undertaken is separate from the rest of the workplace, so far as is possible
- the asbestos work area must be signed and barricaded to ensure that other workers do not enter the area
- facilities must be provided to allow for the decontamination of workers, equipment and the items worked upon
- anything removed from the work area must decontaminated before it is removed from the work area
- if material contaminated with asbestos is to be removed from the work area, it must be sealed within a container, which is decontaminated and labelled to indicate the presence of the asbestos and disposed of at a licensed disposal facility as soon as is practicable.
- if personal protective equipment used in asbestos-related work is to be removed from the work area for disposal, it also must be sealed within a container, which is decontaminated and labelled to indicate the presence of the asbestos in accordance with the WHS Regulations and disposed of at a licensed waste facility as soon as reasonably practicable.

### 7.4.1. Managing risks with asbestos related work

If there is uncertainty as to whether asbestos is present or used in a certain activity at the workplace, the person with management or control of the workplace must assume asbestos is present and treat the activity as asbestos-related work or arrange for a sample to be analysed to determine if asbestos is present. If asbestos is identified or assumed to be present, it is essential that the asbestos register be obtained and a decision made as to whether work can be done without disturbing the asbestos, for example:

- instead of drilling a hole through an asbestos-contaminated sheeting wall to install electrical wiring, the wiring might be able to be routed over the wall.
- if a ventilation flue or pipe has to be installed in an asbestos-contaminated ceiling or roof, an alternative option may be to run the flue or pipe through a non-asbestos wall.

It is also essential to ensure all people carrying out the work have the appropriate training (refer to Section 6.3 of this Code), correct tools (refer to Section 6.4 of this Code), PPE including clothing, decontamination materials, labels and signs ready at the workplace before any work commences that may disturb the asbestos and to minimise the number of people in the area. For example:

- **Consultation and training** – Consultation with a person who may be affected by any maintenance and service work that might disturb asbestos should occur. People performing the work must receive all necessary training and access to the asbestos register, and the work should be documented and supervised.
- **Access to be asbestos work area** – The asbestos work area should be isolated and access restricted to only those people carrying out the asbestos work. Barriers and warning signs should be used.
- **PPE** – PPE needs to be selected to prevent the contamination of clothing and provide adequate respiratory protection.
- **Replacing asbestos** – Under the asbestos prohibition, wherever an asbestos component requires replacement the replacement product must be non-asbestos. It is illegal to reinstall or reuse any asbestos. Where an access hatch or panel that contains non-friable asbestos in good condition is moved in order to gain access, it may be replaced into its original position without modification.

- **Disposing of asbestos** – All asbestos must be disposed of correctly. Single-use PPE used during maintenance and service work must also be disposed of. The Code of Practice: How to Safely Remove Asbestos provides further information on disposing of asbestos.

Before commencing any asbestos-related work, plastic sheeting may need to be placed on the floor and any other surfaces that may become contaminated with asbestos dust. At a minimum, heavy-duty 200 µm (micron) thick plastic sheeting should be used for this purpose.

### 7.4.2. Control measures for asbestos related work

Whatever the control method used, it should be effective in making all maintenance workers aware of the presence of asbestos and preventing any work activity that might expose them, or others nearby, to airborne asbestos. Particular attention should be paid to controlling work activities that affect inaccessible areas listed in the asbestos register, such as wall cavities and ceiling spaces. Control measures include the following:

- Eliminate the risk by not conducting the work.
- Minimise the risk by using either an isolation control, engineering control or a combination of these
  - An example of isolation by barrier is applying a small amount of substance, such as silicon or paste, to the surface of an asbestos cement sheet where a hole will be drilled. When the drill bit is drilled through the paste into the sheet and is removed, any loose fibres are collected in the paste, preventing them from becoming airborne. After drilling, the paste can be wiped clean with a rag and disposed of as asbestos waste.
  - An example of isolation by distance is used in the automotive industry for the removal of asbestos-containing brake mechanisms from vehicles. A designated area in the workshop is isolated by distance from other work areas. Signs and barriers are used to communicate that access to the area is restricted during the activity. The activity also requires safe work procedures but the isolation control ensures that other workers are not at risk due to their distance from the activity. All workers must be provided with instruction and training so they understand the reason for the control measure and the relevant procedures.
  - An example of engineering control is the use of a mini-enclosure to isolate the source of asbestos fibres combined with the use of extraction to capture and remove airborne fibres from the air in the work environment. This approach could be used for the task of removing and replacing the lock mechanisms from an asbestos-containing fire door. A purpose-built adjustable perspex box is fitted to the door surrounding the lock and handles on both sides of the door. Adjustments can be made to ensure a secure fit to the door and tape used to seal any possible gaps between the enclosure and the door. The box has access points for the operator's arms to enable work to be done on the lock, as well as an entry point for a vacuum hose. The vacuum can create a negative pressure inside the enclosure to prevent fibres from escaping and can also be held directly at the source to capture any fibres that become airborne as the lock is removed from the door. At completion of the task, the vacuum is used to clean and decontaminate the enclosure as well as the operator's arms (before removing them).
- If the risk is still present and attempts have been made to minimise the risk to health, so far as is reasonably practicable, through elimination, isolation and engineering controls, administrative controls can be implemented.

Administrative controls are systems of work or work procedures designed to eliminate or minimise risk. These controls are lower order controls that cannot be relied upon to be as effective as the higher order controls such as elimination, isolation and engineering. This is because administrative controls are systems or procedures that rely on human behaviour to be effective and can easily fail. Administrative control measures must be understood, implemented and maintained. This requires training, information and supervision for workers but the control measure can still fail if procedures are not followed or understood.

For some activities, administrative controls are the only practicable controls that can be implemented. An example of an administrative control for asbestos-related work is a procedure for collecting samples of ACM for the purpose of analysis. Collecting the samples may involve breaking or dislodging ACM, which can lead to the release of airborne asbestos fibres and consequently a risk to health.

**A safe work procedure for this task would include actions such as:**

- isolating the area where the sample is to be collected
- assessing if the area is safe to enter
- minimising dust /wearing suitable personal protective equipment
- sealing the samples, and storing and transporting them in a safe, secure manner.

For the administrative control measure to be effective and reduce risk, the person conducting the sampling must understand the risk and implement all of the procedure. If the procedure is not followed, the health of the person conducting the sampling and others in the workplace may be at risk. If a risk to health still remains after the higher order control measures have been implemented, PPE must be used to supplement higher order controls.

Although PPE can be effective in controlling the risk from airborne asbestos fibres, the successful implementation and maintenance of this control measure requires further action and resources, including:

- the correct selection of appropriate PPE, including respirator, cartridge and coveralls
- the issuing of PPE to each individual
- training and supervision – all employees who are required to conduct asbestos-related activities and wear PPE must be given adequate training and supervision to enable them to fit and use the equipment correctly and conduct the task in a safe manner
- maintenance of PPE – non-disposable respirators must be checked before and after use to ensure the components are in good working order and are not damaged
- employee compliance and support for the system – it is essential that employees use PPE when it is required. An understanding of the risk to health from asbestos, the higher order control measures already in place and the need to use PPE to further reduce the risk to health all contribute to employees' willingness to use PPE.

Disposable coveralls need to be of a suitable standard to prevent penetration of asbestos fibres, so far as is practicable. Disposable coveralls rated type 5, category 3 (prEN ISO 13982-1) or the equivalent would meet this standard. Any clothing worn under coveralls must be disposed of or suitably bagged for laundering as asbestos-contaminated clothing.

## 7.5. Disposing of asbestos or ACM

There are additional responsibilities related to the removal and disposal of asbestos. Individual components and wiping rags must be placed in plastic bags, tying each bag separately prior to placing them in the container. Disposal bags need to be heavy duty (200 µm), made of clear plastic and marked with the label ***'Caution Asbestos – Do not open or damage bag. Do not inhale dust'***. Asbestos waste awaiting disposal must be stored in closed containers (for example, 60 or 200 litre steel drums with removable lids or sealed skip).

Asbestos waste must be transported and disposed of in accordance with the relevant state or territory Environment Protection Authority (EPA) requirements. Asbestos waste can only be disposed of at a site licensed by the EPA and it must never be disposed of in the general waste system.

# 8. Managing exposure to asbestos or ACM

## 8.1. Measuring the exposure standard

Airborne respirable fibre concentrations can be estimated using available data (for example, monitoring reports, data from scientific literature) or past experience (for example, monitoring reports) of the process in question. In cases of doubt, it may be necessary to confirm the estimates by measurement using the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC: 3003 (2005)].*

Exposure monitoring measures the levels of respirable fibres in the breathing zone of the worker while work is being undertaken. A competent person, who may include a licensed asbestos assessor or a person, who has undertaken the endorsed unit of competency for licensed asbestos assessors, must carry out exposure monitoring. An occupational hygienist who has experience in asbestos exposure monitoring may also be used. Where exposure monitoring is carried out, it is good practice to stop work and investigate the cause if the level of airborne asbestos in the breathing zone reaches half the exposure standard. Although the need for exposure air monitoring will depend on the particular circumstances, the results may assist in assessing risks associated with asbestos.

**Other forms of air monitoring that are relevant to asbestos work are:**

- control monitoring for ensuring that an enclosure or other controls used during asbestos removal are effective at preventing fibres from being found outside the work area.
- clearance monitoring to ensure that the work area is free of asbestos fibres prior to being certified for reoccupation.

## 8.2. Health Effects

Health risk increases when fibres become airborne and people are exposed, regardless of whether they are in the direct vicinity of the source or not. Therefore preventing exposure should be achieved wherever possible. Exposure to asbestos occurs through the inhalation of asbestos fibres and the delay between initial exposure and noticeable symptoms generally occurs between 35 and 40years. Diagnosis of the symptoms leads to diseases such as asbestosis, lung cancer and mesothelioma.

- **Asbestosis** – This is a form of fibrosis (scarring) of the lungs, which results in breathlessness.
- **Lung Cancer** – A cancer of the larger and medium sized airways, which are similar to, that caused by smoking. The combination of asbestos exposure and smoking has a synergistic effect, which greatly increases the risk of lung cancer.
- **Mesothelioma** – a rare cancer of the pleura and peritoneum. Crocidolite (blue asbestos) is very potent in inducing Mesothelioma and Amosite (brown asbestos) is to a lesser extent.

## 8.3. Health Monitoring

A person conducting a business or undertaking must ensure health monitoring is provided to a worker if they are carrying out licensed asbestos removal work, other ongoing asbestos removal work or asbestos-related work and are at risk of exposure to asbestos when carrying out the work. Health monitoring includes a medical examination to provide an initial baseline medical assessment. Health monitoring must include the following (unless another form of health monitoring is recommended by a registered medical practitioner):

- consideration of the worker's demographic, medical and occupational history
- consideration of records of the worker's personal exposure
- a physical examination of the worker with emphasis on the respiratory system, including standardised respiratory function tests unless another form of health monitoring is recommended by a registered medical practitioner.

### 8.3.1. When should health monitoring occur?

Where a worker is at risk of exposure to asbestos due to work other than licensed asbestos removal, health monitoring must also be undertaken. Examples of work where there is a risk of exposure include ongoing unlicensed removal work, undertaking maintenance work on ACM regularly as part of another job (for instance, electricians or building maintenance staff in older buildings) and carrying out asbestos-related work.

The need for health monitoring for these workers should be determined on the basis of:

- the potential for exposure
- the frequency of potential exposure
- the duration of the work being undertaken.

If a worker is carrying out licensed asbestos removal work, the health monitoring must be conducted prior to the worker commencing the work. Health monitoring should also be provided to the worker at regular intervals after commencing the asbestos-related work but at least once every two years.

### 8.3.2. Who can carry out health monitoring?

Health monitoring must be carried out under the supervision of a registered medical practitioner with the relevant competencies. Prior to deciding who the registered medical practitioner will be, the person conducting a business or undertaking must consult the worker.

### 8.3.3. Who pays for health monitoring?

The person conducting a business or undertaking must pay all expenses relating to health monitoring. Where there are two or more persons that have a duty to provide health monitoring to a worker, they may choose that one person organises health monitoring (known as the person who commissions the health monitoring), however the costs must be shared equally between each person unless they agree otherwise.

### 8.3.4. What information must be provided to the register medical practitioner?

**The person who commissions health monitoring must provide the following information to the registered medical practitioner:**

- their name and address
- a description of the work the worker is, or will be, carrying out that has triggered the requirement for health monitoring
- whether the worker has started the work or, if the worker has commenced carrying out the work, how long this has been for.

### 8.3.5. Health monitoring report

A person who commissions health monitoring must take all reasonable steps to obtain a report from the registered medical practitioner as soon as practicable after the monitoring is carried out.

**The health monitoring report must include the following information:**

- the name and date of birth of the worker

- the name and registration number of the registered medical practitioner
- the name and address of the person conducting the business or undertaking who commissioned the health monitoring
- the date of the health monitoring
- any advice that test results indicate the worker may have contracted a disease, injury or illness as a result of carrying out the work that triggered the need for health monitoring
- any recommended remedial measures, including whether the worker can continue to carry out the work
- whether medical counselling is required for the worker

**That person must also give a copy of the report, as soon as reasonably possibly after obtaining it from the medical practitioner, to:**

- the worker
- the regulator, if the report contains:
  - any test results that indicate the worker may have contracted a disease, injury or illness as a result of the work that triggered the need for health monitoring
  - any recommended remedial measures, including whether the worker can continue to carry out the work
- all other persons conducting a business or undertaking who have a duty to provide health monitoring for that worker.

Reports must be kept as a confidential record for at least 40 years after the record is made and identified as a formal record for the particular worker. The report and results must not be disclosed to anyone unless the worker has provided their written consent. However, if the person was releasing the record under a duty of professional confidentiality, the worker's written consent is not required.

## 8.4. Training workers about asbestos or ACM

**A person conducting a business or undertaking must ensure that information, training and instruction provided to a worker is suitable and adequate, having regard to:**

- the nature of the work carried out by the worker
- the nature of the risks associated with the work at the time the information, training or instruction is provided,
- the control measures implemented

The person must, so far be reasonably practicable, to ensure the information, training and instruction is provided in a way that is readily understandable by any person to whom it is provided.

**This training may include the following topics:**

- purpose of the training
- health risks of asbestos
- types, uses and likely presence of asbestos in the workplace
- persons conducting a business or undertaking and the worker's roles and responsibilities under the asbestos management plan
- where the asbestos register is located, how it can be accessed and how to understand the information contained in it
- processes and safe work procedures to be followed to prevent exposure, including exposure from any accidental release of airborne asbestos
- where applicable, the correct use of PPE including respiratory protective equipment (RPE)
- the implementation of control measures and safe work methods to eliminate or minimise the risks associated with asbestos to limit the exposure to workers and other persons
- exposure standard and control levels for asbestos
- purpose of any exposure monitoring or health monitoring that may occur.

This training is more general than the training that a worker undertaking asbestos removal work would receive. Workers who are undertaking licensed asbestos removal work are required to complete specific units of competency. Records of all training must be kept while the worker is carrying out the work and for five years after the day the worker stops carrying out the work. These records must also be available for inspection by the regulator.

## 8.5. Limited use of equipment

A person conducting a business or undertaking must not use, or direct or allow a worker to use, specific equipment on asbestos or ACM unless the use of the equipment is controlled.

High-pressure water spray and compressed air must not be used on asbestos or ACM. However, high-pressure water spray can be used for fire fighting or fire protection. Power tools, brooms and any other equipment or tool that may release airborne asbestos in the workplace may only be used if it is controlled by it being:

- enclosed
- designed to capture or suppress airborne asbestos
- used in a way that is designed to capture or suppress airborne asbestos safely.

A combination of the controls mentioned above may be required to ensure that airborne asbestos is not generated.

# 9. Controlling the risks

As mentioned in Chapter 4 of this report, to eliminate risk of exposure, or if this is not reasonably practicable, minimising them so far as is reasonably practicable, a risk management process should be followed that involves identifying whether asbestos or ACM is at a workplace and including them in the asbestos register, assessing the risk of exposure and then implementing appropriate control measures.

**When choosing the most appropriate control measure, the following hierarchy of controls must be considered:**

- leave in situ (defer action)
- eliminating the risk (for example, removing the asbestos)
- substituting for the risk, isolating the risk or applying engineering controls (for example, enclosing, encapsulation, sealing or using certain tools)
- using administrative controls (for example, safe work practices)
- using PPE

## 9.1. In situ

The identification of asbestos in a building or plant does not automatically necessitate its removal. Asbestos in a stable condition and not prone to damage can generally remain in situ. The asbestos will need to be inspected on a regular basis to ensure its integrity is maintained, should be labelled with an appropriate warning, and must be removed under controlled conditions prior to demolition or refurbishment works that may disturb the asbestos.

### 9.1.1. Managing in situ

Re-inspections will involve visual assessment of the condition of the materials to determine whether the material remains in a satisfactory condition, or if deterioration has occurred. Such re-inspections will determine if any remedial action, such as encapsulation, isolation or removal of the ACM, is required. Re-inspections will be performed on a regular basis.

## 9.2. Removing Asbestos

The ultimate goal is to have a workplace free from asbestos. Removal may be the most appropriate way to achieve this. For example:

- **Friable Asbestos** - If asbestos is friable and it has been determined that it should be removed, it must be removed by a Class A licensed removalist as soon as reasonably practicable. Instances where removal should be of the highest priority would include friable asbestos that is in poor condition and is located in an area where it poses a significant risk of exposure.
- **Non-Friable Asbestos** – If asbestos is non-friable, is more than 10 m² and has been determined that it should be removed; a licensed asbestos removalist as soon as reasonably practicable must remove it. Where it is not reasonably practicable to remove it, control measures must be put in place to eliminate any exposure, so far as is reasonably practicable, or to minimise exposure so far as is reasonably practicable, but always ensuring the exposure standard is not exceeded.

**Specific instances where removal may be the best control measure include:**

- asbestos lagging on pipes
- asbestos in plant
- asbestos-contaminated dust (ACD)
- loose fibre insulation
- cracked or damaged fibreboard containing asbestos.

If it is not reasonably practicable to remove asbestos, then other control measures must be implemented to ensure people are not exposed to airborne asbestos, including either enclosing or sealing the asbestos.

## 9.3. Enclosing asbestos

Where it is not reasonably practicable to removes asbestos, the preferred alternative control measure is enclosure. This may be determined during the risk assessment by reviewing a range of issues including productivity, the condition of the asbestos, the risk it poses to health and cost. This is an interim control measure and should be supported through regular inspections by a competent person to identify if the asbestos requires removal due to damage or deterioration.

### 9.3.1. What is enclosure?

Enclosure is the creation of a structure built around the asbestos so that it is completely covered to prevent exposure of the asbestos to air and other substances. Enclosure creates a separate physical barrier that prevents access to the asbestos and therefore minimises the potential for exposure to airborne fibres. Enclosure should only be used on non-friable asbestos where removal is not reasonably practical and where the asbestos is at risk of damage from work activities. Consideration must be given when designing the enclosure for the need to provide access to the asbestos for regular inspection of its condition.

***Example of enclosure of asbestos as a control measure:***

A large dockside warehouse used for temporarily storing quantities of grain and stockfeed has walls made from a variety of materials, including AC sheet. Apart from the driver of a large front end loader that is briefly driven into the warehouse to load or unload the feed, there are no other workers who work in the warehouse. An inspection of the AC sheet identifies that it is in good condition and noted that areas of previous minor damage (broken sheets) have been repaired appropriately and there is minimal risk of fibre release. However, it is decided there is a chance the sheets may be damaged again and if so, a risk to health may occur if fibres are released. A solid false wall is constructed to enclose the AC sheet and bollards are erected in front of the new wall to prevent collisions that may occur when the front-end loader is operating inside the warehouse. These changes are included in the asbestos register. The condition of the AC sheet is also monitored as well as the newly installed control measure.

## 9.4. Encapsulation and sealing asbestos

If the asbestos cannot be removed or enclosed; encapsulation or sealing is the next appropriate control measure. For example, if the asbestos is weathered, damaged or broken, it should be removed.

### 9.4.1. What is encapsulation?

Asbestos that is encapsulated in a resilient matrix, for example in reinforced plastics, vinyls, resins, mastics, bitumen, flexible plasters and cements have little opportunity to release airborne asbestos unless the matrix is damaged. This type of encapsulation will seal any loose fibres into place and should be used only when the original asbestos bond is still intact. Although encapsulation has limited application and can create a health risk for workers undertaking the activity, it is used when it would create a greater risk to remove the asbestos.

Encapsulation helps protect the asbestos from mechanical damage, increases the length of serviceability of the product and may also be used to prevent the release of airborne asbestos during the removal process.

**If encapsulation is recommended, the person carrying out the work should:**

- be trained and experienced in working with asbestos
- isolate the area
- use suitable RPE that complies with AS/NZS 1716:2003 Respiratory Protective Devices

- wear suitable protective clothing such as disposable overalls
- follow a safe system of work that reduces the risk of creating airborne asbestos
- follow a decontamination procedure upon completion of the task.

### 9.4.2. What is sealing?

Sealing is the process of covering the surface of the material with a protective coating over the asbestos to prevent exposure to airborne asbestos. Sealing asbestos is the least effective method for controlling the release of airborne asbestos. It should only be considered as an interim control while a more effective control such as removing or enclosing can be implemented. It is commonly used for pipe, furnace and boiler insulation. The process either coats the material, reducing fibre release, or binds the fibres together. Asbestos should be sealed, coated or painted to protect it. Sealing is inappropriate where the sealed material is likely to suffer mechanical damage (for example, drilling or sanding). It is important to select coating that is appropriate to the material to be sealed and has the required fire resistance, thermal insulation and ultraviolet (UV) properties necessary for it to be an effective control. The coating will deteriorate if it is exposed to chemicals, extreme heat or cold, wet or dry conditions or physical impacts. For example, epoxy-based paints offer better durability and strength than other paints.

Under no circumstances should asbestos be water blasted or dry sanded in preparation for painting, coating or sealing, as there is no system of use that can effectively capture or suppress asbestos fibres in such circumstances. To treat asbestos, a method should be used that does not disturb the asbestos.

An airless sprayer at low pressure is preferred to rollers or brushes on exposed (or unsealed) asbestos, as rollers and brushes may cause abrasion/damage and result in fibres being released from the surface of the material. When using a spray brush, never use a high-pressure spray to apply the paint. You should apply it with a dry airless spray using a low pressure to avoid generating high levels of asbestos dust. Several coatings may be needed for full protection.

The surface on which the sealant is to be applied should be cleaned with an asbestos vacuum cleaner fitted with a high efficiency particulate air (HEPA) filter. This will help capture any loose dust or debris from the surface and ensure good adhesion of the sealant. The surface during application should not be disturbed as this releases asbestos dust.

The use of sealants of a different colour to the asbestos being sprayed is helpful in identifying its condition over time and when conducting reviews of the asbestos register. A date-stamped photograph of the sealed surface is also a good way of assisting in the recording of condition.

**Example of sealing asbestos as a control measure:**

The extensive water pipe system in a large industrial workplace consists of AC piping and conduits. Some of the pipes are located underground, some within inaccessible areas such as walls, and others run aboveground throughout the workplace and are exposed. Connected to some of these pipes in the workplace are control valves that need to be accessed occasionally. Over time, as some of the AC pipes have deteriorated or been damaged, and where practicable to do so, sections of pipe have been removed to reduce the risk. Where a risk still remained, the pipes are enclosed so far as is reasonably practicable to reduce the risk further. Where control valves were connected and the AC pipe was in good condition, it was determined that it was not practicable to remove the asbestos due to lack of available replacement parts, nor was it practicable to enclose the asbestos because access was occasionally required. In this case, sealing the surface of the AC pipes near control valves with an epoxy-based paint to protect the material from deterioration and reduce the risk of airborne asbestos fibres was an appropriate option.

## 9.5. Tools and equipment

As mentioned in section 8.5 of this report, certain equipment must not be used on asbestos. It is therefore important to select the correct equipment to minimise the generation of airborne asbestos.

Manually operated (non-powered) hand tools should be used wherever possible. If they will not provide sufficient physical force to

perform the required operation, low-speed, battery-powered tools that can be used in conjunction with wet methods for dust control are preferred.

Battery-powered tools should be fitted with a Local Exhaust Ventilation (LEV) dust control hood wherever possible. If an LEV dust control hood cannot be attached and other dust control methods—including pastes and gels—are unsuitable, then shadow-vacuuming techniques should be used. Where power tools with dust suppression/extraction are used, exposure monitoring should be carried out to ensure the controls used are effective in reducing the generation of fibres. It is good practice to ensure that the levels of airborne fibres do not exceed one half of the exposure standard (0.1 fibres / ml). If more than half the exposure standard is exceeded, work should be stopped and improvements made to the controls being used. The use of high-pressure water and compressed air is prohibited under the WHS Regulations as they can cause asbestos to become friable.

### 9.5.1. Asbestos vacuum cleaners

Asbestos vacuum cleaners should comply with the requirements in AS/NZS 60335.2.69:2003 Household and similar electrical: *Particular requirements for wet and dry vacuum cleaners, including power brush, for industrial and commercial use* (IEC 60335--69 Ed 3.2 MOD). Household vacuum cleaners **must never** be used where asbestos is or may be present, even if they have a HEPA filter.

## 9.6. Safe work practices

It is important that safe work practices are in place when carrying out asbestos work asbestos-related work. Wherever possible, dry asbestos should not be worked on. Techniques that prevent or minimise the generation of airborne asbestos fibres include:

- the wetting of asbestos using surfactants or wetting agents, such as detergent water
- the use of thickened substances, pastes and gels, including hair gel and shaving cream, to cover the surfaces of asbestos being worked on (these substances should be compatible with the conditions of use, including the temperature, and should not pose a risk to health)
- the use of shadow vacuuming
- performing the task in a controlled environment (for instance, a ventilated enclosure).

When selecting the best technique, the work should first be assessed for any electrical hazards that might result from the use of water or other liquids. If an electrical hazard exists, primary consideration should be given to removing the asbestos, rather than relying on dry work methods. If a competent person as involving similar levels of risk assesses asbestos-related work or maintenance or service tasks, they too may be performed only after the risks for that task have been assessed and appropriate control measures implemented.

The use of high-speed abrasive power and pneumatic tools, including angle grinders, sanders and saws, and high-speed drills, is prohibited under the WHS Regulations, except where used with dust suppression/extraction controls. These controls include local exhaust ventilation (LEV) dust control hoods that attach to the tool and isolate the area being worked on (drilled, sanded etc.) from the environment, ensuring that the dust is captured.

## 9.7. Personal protective equipment

PPE will need to be used, in combination with other effective control measures, when working with asbestos. The selection and use of PPE should be based on a risk assessment.

If work with asbestos requires the use of other chemicals that are themselves hazardous chemicals, a further risk assessment must be performed. Safety data sheets (SDS) must be referred to for information on appropriate PPE to use and any other precautions to take when using the chemicals (the manufacturer or importer of a hazardous chemical must supply an SDS on request).

The ease of decontamination should be one of the factors considered when choosing PPE.

For PPE that is not clothing and cannot be disposed of, it must be decontaminated and kept in a sealed container until it is reused for the purposes of asbestos-related work.

### 9.7.1. Coveralls

- Protective clothing should be made from material capable of providing adequate protection against fibre penetration.
- When selecting protective clothing, other hazards—including heat stress, fire and electrical hazards—should also be considered.
- Disposable coveralls with fitted hoods and cuffs should be worn. Coveralls with open pockets and/or velcro fastenings should not be used, because these features can be contaminated and are difficult to decontaminate. Fitted hoods should always be worn over the straps of respirators and loose cuffs should be sealed with tape. Disposable coveralls rated type 5, category 3 (prEN ISO 13982–1) or equivalent would meet this standard.
- Asbestos fibres must be prevented from being transported outside the workplace by thoroughly vacuuming asbestos fibres from work clothes using an asbestos vacuum cleaner or, depending on the level of contamination and risk, the use of a water spray bottle or damp cloths may be appropriate.
- Disposable coveralls need to be of a suitable standard to prevent penetration of asbestos fibres so far as is practicable. Disposable coveralls rated type 5, category 3 (prEN ISO 13982-1) or the equivalent would meet this standard.
- Non-disposable coveralls are not recommended and would require specialist laundering if used.
- Any clothing worn under coveralls must be disposed of or suitably bagged for laundering as asbestos-contaminated clothing.

### 9.7.2. Footwear and gloves

- Laced boots should be avoided as they can be difficult to clean and asbestos dust can gather in the laces and eyelets. Lace less boots such, as gumboots are preferred where practicable. If boot covers are worn, they should be of a type that has anti-slip soles to reduce the risk of slipping.
- Safety footwear must be decontaminated before being removed from the asbestos work area or sealed in double bags, the exterior of which is decontaminated, for use only on the next asbestos maintenance task. Alternatively, work boots that cannot be effectively decontaminated should be disposed of as asbestos waste at the end of the work.
- The use of protective gloves should be determined by a risk assessment. If significant amounts of asbestos fibres may be present, disposable gloves should be worn. Protective gloves can be unsuitable if dexterity is required. Personal decontamination including hand and fingernail washing should be carried out each time workers leave the asbestos work area and at the completion of asbestos maintenance and service work. Any gloves used must be disposed of as asbestos waste.

### 9.7.3. Respiratory protective equipment (RPE)

- In general, the selection of suitable RPE depends on the nature of the asbestos work, the probable maximum concentrations of asbestos fibres that would be encountered in this work and any personal characteristics of the wearer that may affect the facial fit of the respirator (for example, facial hair and glasses).
- A competent person should determine the most efficient respirator for the task.
- RPE should comply with AS/NZS 1716-2003 *Respiratory Protective Devices* and be selected, used and maintained in accordance with AS/NZS 1715-1994 *Selection, Use and Maintenance of Respiratory Protective Devices.* They must always be worn under fitted hoods. Face pieces should be cleaned and disinfected.
- RPE should be used until all contaminated disposable coveralls and clothing has been vacuum cleaned and/or removed and bagged for disposal and personal washing has been completed. RPE should be properly stored when not in use.

**The following are examples of different types of RPE:**

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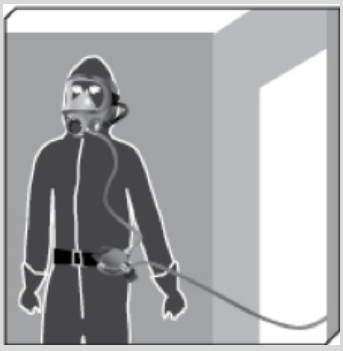
| Disposable, half face particulate respirator. | Half - face particulate (cartridge) respirator. |
|  |  |
| Powered, air - purifying ventilated helmet respirator. | Full - face, particulate filter (cartridge) respirator. |
|  |  |
| Full - face, powered air purifying particulate respirator. | Full - face, positive pressure demand air-line respirator. |

## 9.8. Laundering clothing

Disposable coveralls should be used as protective clothing unless it is not reasonably practicable to do so. When non-disposable protective clothing is used, the contaminated clothing must be laundered in a suitable laundering facility that is equipped to launder asbestos-contaminated clothing. Contaminated protective clothing must not be laundered in homes. Any clothing worn under coveralls must be disposed of or suitably bagged for laundering as asbestos-contaminated clothing.

**The laundering facility that is equipped to launder asbestos – contaminated clothing:**

- should be informed of the asbestos contamination
- should have a management plan in place to control the release of respirable fibres
- should be constructed of smooth surfaces that are able to be lined with polythene sheeting or easily wiped clean
- may use conventional washing machines provided they are not used for other clothing
- may need to have a laundry room that is under negative pressure to eliminate or minimise the release of airborne asbestos fibres during the laundering process. This can be determined during the risk assessment
- should have procedures established for cleaning up spills and for the prevention of flooding of neighbouring areas.

**The contaminated clothing should:**

- be removed damp and thoroughly wet, then placed in impermeable containers or bags the outside of which are decontaminated and labelled to indicate the presence of asbestos before being sent to the commercial laundering facility
- not to be allowed to dry out before washing.

**At the laundry facility:**

- the containers and bags holding the asbestos contaminated clothing should be opened in the washing machine while being further saturated. As a minimum, P1 respiratory protection must be worn while unloading clothes into the washing machine
- the empty containers or bags should be disposed of as asbestos waste. Waste water must be filtered and the filtering medium disposed of as asbestos waste.

## 9.9. Cleaning up

Following any asbestos work carried out, there are requirements to ensure the work area, tools and workers are decontaminated and asbestos waste is disposed of properly. In addition to this, for licensed removal work a clearance certificate will be required before the work area can be reoccupied for ordinary use.

# Appendix A - The compliance framework

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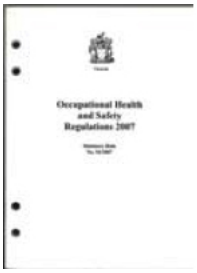
|  | **Occupational Health and Safety Act 2004 Act No. 107/2004** | The ***Occupational Health and Safety Act 2004*** (the OHS Act) sets out the key principles, duties and rights in relation to occupational health and safety (OHS). |
|  | **Occupational Health and Safety Regulations 2007 Statutory Rule No. 54/2007** | The **Occupational Health and Safety Regulations 2007** (the Regulations) specify the way in which a duty imposed by the Act must be performed, or prescribe procedural or administrative matters to support the Act (e.g. requiring licenses for specific activities, the keeping of records or giving notice). |
|  | | **Compliance codes** provide practical guidance to duty holders. If a person complies with a provision of a compliance code, they are deemed to comply with the Act or Regulation duty covered by the code provision. However compliance codes are not mandatory and a duty holder may choose to use some other way to achieve compliance. |
|  | | **WorkSafe Positions** are guidelines made under section 12 of the Act that states how WorkSafe will apply the ACT or Regulations or exercise discretion under a provision of the Act or Regulations. WorkSafe Positions are intended to provide certainty to duty holders and other affected parties. |
|  |  | **Non - statutory guidance** includes information published by WorkSafe aimed at building people's knowledge and awreness of OHS issues, risks to health and safety and the disciplines and techniques that can be applied to manage and control risks. Non - statutory guidance is not mandatory, nor does it provide any 'deemed to comply' outcomes for duty holders. This guidance does, however, form part of the 'state of knowledge' about OHS. |

# Appendix B - Taking asbestos samples

A competent person should take the following steps to carry out sampling process for taking asbestos samples:

## Step 1: Preparation

- Make sure no one else is in the vicinity when sampling is done.
- Shut down any heating or cooling systems to minimize the spread of any released fibres.
- Turn off any fans if you are inside. If you are outside, then sample on a non windy day.
- Do not disturb the material any more than is needed to take a small sample.
- Collect the equipment you will need for sampling, including:
  - pliers, resealable plastic bags, disposable coveralls, waterproof sealant, plastic drop sheet, water spray bottle
  - P2 respirator, rubber gloves.

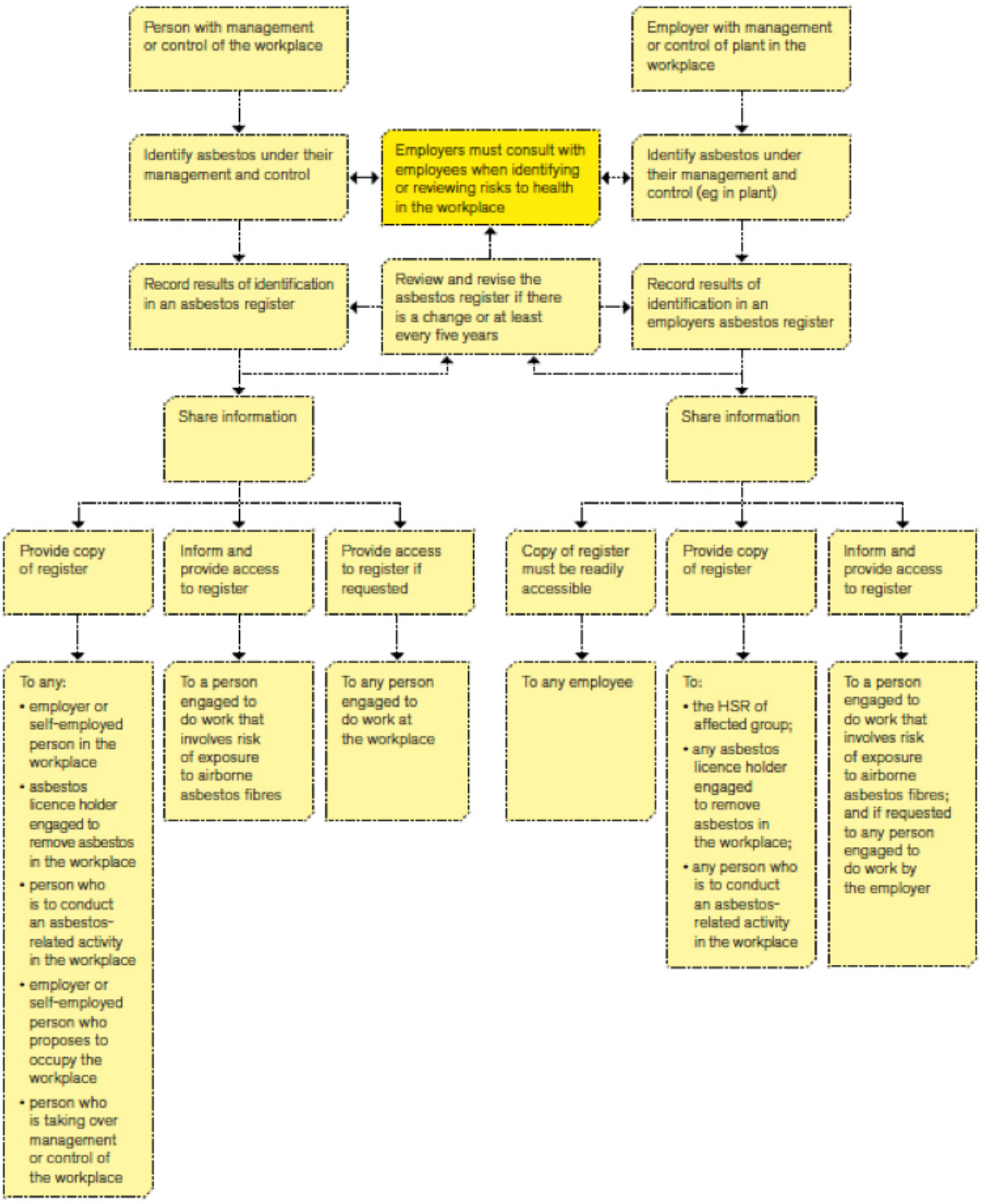
## Step 2: Taking the sample

- Wear disposable gloves.
- Put on respiratory protective equipment (RPE).
- Wear a pair of disposable coveralls.
- Lay down a plastic drop sheet to catch any loose material that may fall off while sampling.
- Wet the material using a fine mist of water containing a few drops of detergent before taking the sample. The water/detergent mist will reduce the release of asbestos fibres.
- Carefully cut a thumb nail piece from the entire depth of the material using the pliers.
- For fibre cement sheeting, take the sample from a corner edge or along an existing hole or crack.
- Place the small piece into the resealable plastic bag.
- Double bag the sample, include the date and location and an asbestos caution warning.
- Tightly seal the container after the sample is in it.
- Carefully dispose of the plastic sheet.
- Use a damp paper towel or rag to clean up any material on the outside of the container or around the area sampled.
- Dispose of asbestos materials according to state or territory and local procedures.
- Patch the sampled area with the smallest possible piece of duct tape to prevent fibre release.
- Send the sample to a NATA-accredited laboratory or one that is either approved or operated by the relevant regulator.

## Step 3: Cleaning up

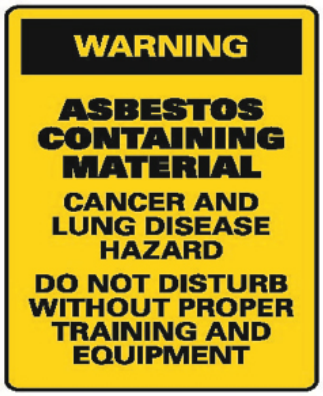
- Seal the edges with waterproof sealant where the sample was taken.
- Carefully wrap up the plastic drop sheet with tape and then put this into another plastic rubbish bag.
- Wipe down the tools and equipment with a dampened rag.
- Place disposable gloves and coveralls into a rubbish bag, along with the damp rag and drop sheet.
- Seal plastic bag.
- Wash hands.

# Appendix C - Asbestos register duties



# Appendix D - Signs and labels

Following are the examples of signs and labels for indicating presence of asbestos in the workplace:





# Appendix E - Asbestos related activities

'Division 8 – Activities inv asbestos' of the Regulations out the duties on employers where asbestos – related activities (other than asbestos removal) are undertaken in their workplace.

**These activities include:**

- the handling, including for the purpose of removal or transport for disposal, of aircraft and automotive components that are asbestos-containing material or that have ACM fixed to them or installed in them
- the laundering of clothing contaminated with asbestos
- research involving asbestos
- sampling or analysis involving suspected asbestos
- the transport of asbestos waste for disposal purposes
- working at a site licensed by the Environment Protection Authority (EPA) Victoria to accept asbestos waste
- the enclosing or sealing of asbestos
- hand-drilling and cutting of ACM
- maintenance of dust extraction equipment, contaminated with asbestos
- processing of construction and demolition material in accordance with the method determined by WorkSafe
- any other activity (other than asbestos removal work to which Division 7 applies) that is likely to produce airborne asbestos fibres in excess of one half of the asbestos exposure standard
- any other activity determined by WorkSafe for the purposes of this Division.

# Appendix F - Safe work practices

As a first priority, planning for the maintenance of asbestos at the workplace must include consideration of the removal of the asbestos as the most preferred control option. Where removed, products containing asbestos must be replaced with products that do not contain asbestos. Removal of asbestos products must be done in accordance with the Code of Practice: How to Safely Remove Asbestos.

**Below are some recommended safe working methods that demonstrate how control measures can be used when asbestos is present at the workplace:**

- Safe work practice 1 – Drilling for asbestos-containing material
- Safe work practice 2 – Sealing, painting, coating and cleaning of asbestos-cement products
- Safe work practice 3 – Cleaning leaf litter from gutters of asbestos cement roofs
- Safe work practice 4 – Replace cabling in asbestos cement conduits or boxes
- Safe work practice 5 – Working on electrical mounting boards (switchboards) containing asbestos
- Safe work practice 6 – Inspection of asbestos friction materials.

# Safe work practice 1 - Drilling of ACM

The drilling of asbestos cement sheeting can release asbestos fibres into the atmosphere, so precautions must been to protect the drill operator and other persons from exposure fibres. A hand drill is preferred to a battery – powered drill, because the quantity of fibres is drastically reduced if a hand drill is used.

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| **Equipment that may be required prior to starting work (in addition to what is needed for the task)** | - A non-powered hand drill or a low-speed battery-powered drill or drilling equipment. Battery-powered drills should be fitted with local exhaust ventilation (LEV) dust control hood wherever possible. If an LEV dust control hood cannot be attached and other dust control methods such as pastes and gels are unsuitable then shadow vacuuming techniques should be used.<br>- Disposable cleaning rags.<br>- A bucket of water, or more as appropriate, and/or a misting spray bottle.<br>- Duct tape.<br>- Sealant.<br>- A thickened substance such as wallpaper paste, shaving cream or hair gel.<br>- 200 µm plastic sheeting.<br>- A suitable asbestos waste container (e.g. 200 µm plastic bags or a drum, bin or skip lined with 200 µm plastic sheeting).<br>- Warning signs and/or barrier tape.<br>- An asbestos vacuum cleaner.<br>- A sturdy paper, foam or thin metal cup, or similar (for work on overhead surfaces only). |
| **PPE** | - Protective clothing and RPE (see AS1715, AS 1716). It is likely that a class P1 or P2 half face respirator will be adequate for this task, provided the recommended safe work procedure is followed. |
| **Preparing the asbestos work area** | - If the work is to be carried out at a height, appropriate precautions must be taken to prevent falls.<br>- Ensure appropriately marked asbestos waste disposal bags are available.<br>- Carry out the work with as few people present as possible.<br>- Segregate the asbestos work area to ensure unauthorised personnel are restricted from entry (e.g. close door and/or use warning signs and/or barrier tape at all entry points). The distance for segregation should be determined by a risk assessment.<br>- If drilling a roof from outside, segregate the area below.<br>- If access is available to the rear of the asbestos cement, segregate this area as well as above.<br>- If possible, use plastic sheeting, secured with duct tape, to cover any surface within the asbestos work area that could become contaminated.<br>- Ensure there is adequate lighting.<br>- Avoid working in windy environments where asbestos fibres can be redistributed.<br>- If using a bucket of water, do not resoak used rags in the bucket, as this will contaminate the water. Instead, fold the rag so a clean surface is exposed or use another rag. |

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| **Drilling certical surfaces** | - Tape both the point to be drilled and the exit point, if accessible, with a strong adhesive tape such as duct tape to prevent the edges crumbling.<br>- Cover the drill entry and exit points (if accessible) on the asbestos with a generous amount of thickened substance.<br>- Drill through the paste.<br>- Use damp rags to clean off the paste and debris from the wall and drill bit.<br>- Dispose of the rags as asbestos waste as they will contain asbestos dust and fibres.<br>- Seal the cut edges with sealant.<br>- If a cable is to be passed through, insert a sleeve to protect the inner edge of the hole. |
| **Drilling overhead horizontal surfaces** | - Mark the point to be drilled.<br>- Drill a hole through the bottom of the cup.<br>- Fill or line the inside of the cup with shaving cream, gel or a similar thickened substance.<br>- Put the drill bit through the hole in the cup so that the cup encloses the drill bit, and make sure the drill bit extends beyond the lip of the cup.<br>- Align the drill bit with the marked point.<br>- Ensure the cup is firmly held against the surface to be drilled.<br>- Drill through the surface.<br>- Remove the drill bit from the cup, ensuring that the cup remains firmly against the surface.<br>- Remove the cup from the surface.<br>- Use damp rags to clean off the paste and debris from the drill bit.<br>- Dispose of the rags as asbestos waste, as they will contain asbestos dust and fibres.<br>- Seal the cut edges with sealant.<br>- If a cable is to be passed through, insert a sleeve to protect the inner edge of the hole. |
| **Decontaminating the asbestos work area and equipemnt** | - Use damp rags to clean the equipment.<br>- Carefully roll or fold any plastic sheeting used to cover any surface within the asbestos work area, so as not to spill any dust or debris that has been collected.<br>- If necessary, use damp rags and/or an asbestos vacuum cleaner to clean any remaining visibly contaminated sections of the asbestos work area.<br>- Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container.<br>- Wet wipe the external surfaces of the asbestos waste bags/container to remove any adhering dust before they are removed from the asbestos work area. |

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| **Personal decontamination should be carried out in a designated area** | - If disposable coveralls are worn, clean the coveralls while still wearing RPE using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth.<br>- While still wearing RPE, remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag.<br>- Remove RPE. If non-disposable, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. If disposable, cleaning is not required but RPE should be placed in a labelled asbestos waste bag or waste container. |
| **Clearance procedure** | - Visually inspect the asbestos work area to make sure it has been properly cleaned.<br>- Clearance air monitoring is not normally required for this task.<br>- Dispose of all waste as asbestos waste. |

# Safe work practices 2 - Sealing, painting, coating and cleaning of asbestos cement products

These tasks should only to be carried out on asbestos that are in good condition. For this reason, the ACM should be thoroughly inspected before starting the work. There is a risk to health if the surface of asbestos cement sheeting is disturbed (e.g. from hail storms and cyclones) or if it has deteriorated as a result of aggressive environmental factors such as pollution. If it is so weathered that its surface is cracked or broken, the asbestos cement matrix may be eroded, increasing the likelihood that asbestos fibres will be released. If treatment is considered essential, a method that does not disturb the matrix should be used. Under no circumstances should asbestos cement products be water blasted or dry sanded in preparation for painting, coating or sealing.

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| **Equipment that may be required prior to starting work (in addition to what is needed for the task)** | - Disposable cleaning rags.<br>- A bucket of water, or more as appropriate, and/or a misting spray bottle.<br>- Sealant.<br>- Spare PPE.<br>- A suitable asbestos waste container.<br>- Warning signs and/or barrier tape. |
| **PPE** | - Protective clothing and RPE (see AS1715, AS 1716). It is likely that a class P1 or P2 half face respirator will be adequate for this task, provided the recommended safe work procedure is followed. Where paint is to be applied, appropriate respiratory protection to control the paint vapours/mist must also be considered. |
| **Preparing the asbestos work area** | - If work is being carried out at heights, precautions must be taken to prevent falls.<br>- Before starting, assess the asbestos cement for damage.<br>- Ensure appropriately marked asbestos waste disposal bags are available.<br>- Carry out the work with as few people present as possible.<br>- Segregate the asbestos work area to ensure unauthorised personnel are restricted from entry (e.g. close door and/or use warning signs and/or barrier tape at all entry points). The distance for segregation should be determined by a risk assessment.<br>- If working at a height, segregate the area below.<br>- If possible, use plastic sheeting secured with duct tape to cover any floor surface within the asbestos work area which could become contaminated. This will help to contain any runoff from wet sanding methods.<br>- Ensure there is adequate lighting.<br>- If using a bucket of water, do not resoak used rags in the bucket, as this will contaminate the water. Instead, fold the rag so a clean surface is exposed or use another rag.<br>- Never use high-pressure water cleaning methods.<br>- Never prepare surfaces using dry sanding methods. Where sanding is required, you should consider removing the asbestos and replacing it with a non-asbestos product.<br>- Wet sanding methods may be used to prepare the asbestos, provided precautions are taken to ensure all the runoff is captured and filtered, where possible.<br>- Wipe dusty surfaces with a damp cloth. |

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| **Painting and sealing** | - When using a spray brush, ***never*** use a high-pressure spray to apply the paint<br>- When using a roller, use it lightly to avoid abrasion or other damage |
| **Decontaminating the asbestos work area and equipment** | - Use damp rags to clean the equipment.<br>- If required, use damp rags and/or an asbestos vacuum cleaner to clean the asbestos work area.<br>- Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container.<br>- Wet wipe the external surfaces of the asbestos waste bags/container to remove any adhering dust before they are removed from the asbestos work area. |
| **Personal documentation should be carried out in a designated area** | - If disposable coveralls are worn, clean the coveralls while still wearing RPE using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth.<br>- While still wearing RPE, remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag.<br>- Remove RPE. If non-disposable, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. If disposable, cleaning is not required but RPE should be placed in a labelled asbestos waste bag or waste container. |
| **Clearance procedure** | - Visually inspect the asbestos work area to make sure it has been properly cleaned.<br>- Clearance air monitoring is not normally required for this task.<br>- Dispose of all waste as asbestos waste. |

# Safe work practice 3 - Cleaning leaf litter from gutters of asbestos cement roofs

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| **Equipment that may be required prior to starting work (in addition to what is needed for the task)** | - A bucket of water, or more as appropriate, and detergent.<br>- A watering can or garden spray.<br>- A hand trowel or scoop.<br>- Disposable cleaning rags.<br>- A suitable asbestos waste container.<br>- Warning signs and/or barrier tape.<br>- An asbestos vacuum cleaner. |
| **PPE** | - Protective clothing and RPE (see AS1715, AS 1716). It is likely that a class P1 or P2 half face respirator will be adequate for this task, provided the recommended safe work procedure is followed. |
| **Preparing the asbestos work area** | - Since the work is to be carried out at a height, appropriate precautions must be taken to prevent the risk of falls.<br>- Ensure appropriately marked asbestos waste disposal containers are available.<br>- Segregate the asbestos work area to ensure unauthorised personnel are restricted from entry (e.g. use warning signs and/or barrier tape at all entry points). The distance for segregation should be determined by a risk assessment.<br>- Segregate the area below.<br>- Avoid working in windy environments where asbestos fibres can be redistributed.<br>- If using a bucket of water, do not resoak used rags in the bucket as this will contaminate the water. Instead, fold the rag so a clean surface is exposed or use another rag. |
| **Gutter cleaning** | - Disconnect or re-route the downpipes to prevent any entry of contaminated water into the waste water system and ensure there is a suitable container to collect contaminated runoff. Contaminated water must be disposed of as asbestos waste.<br>- Mix the water and detergent.<br>- Using the watering can or garden spray, pour the water and detergent mixture into the gutter but avoid over-wetting as this will create slurry.<br>- Remove the debris using a scoop or trowel. Do not allow debris or slurry to enter the water system.<br>- Wet the debris again if dry material is uncovered.<br>- Place the removed debris straight into the asbestos waste container. |

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| **Decontaminating the asbestos work area and equipment** | - Use damp rags to wipe down all equipment used.<br>- Use damp rags to wipe down the guttering.<br>- Where practicable, and if necessary, use an asbestos vacuum cleaner to vacuum the area below.<br>- Place debris, used rags and other waste in the asbestos waste container.<br>- Wet wipe the external surfaces of the asbestos waste container to remove any adhering dust before it is removed from the asbestos work area. |
| **Personal documentation should be carried out in a designated area** | - If disposable coveralls are worn, clean the coveralls while still wearing RPE using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth.<br>- While still wearing RPE, remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag.<br>- Remove RPE. If non-disposable, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. If disposable, cleaning is not required but RPE should be placed in a labelled asbestos waste bag or waste container. |
| **Clearance procedure** | - Visually inspect the asbestos work area to make sure it has been properly cleaned.<br>- Clearance air monitoring is not normally required for this task.<br>- Dispose of all waste as asbestos waste. |

# Safe work practice 4 - Replace cabling in asbestos cement conduits or boxes

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| **Equipment that may be required prior to starting work (in addition to what is needed for task)** | - Disposable cleaning rags.<br>- A bucket of water, or more as appropriate, and/or a misting spray bottle.<br>- 200 µm thick plastic sheeting.<br>- Cable slipping compound.<br>- Appropriately marked asbestos waste disposal bags.<br>- Warning signs and/or barrier tape.<br>- An asbestos vacuum cleaner. |
| **PPE** | - Protective clothing and RPE (see AS1715, AS 1716). It is likely that a class P1 or P2 half face respirator will be adequate for this task, provided the recommended safe work procedure is followed. |
| **Preparing the asbestos work area** | - If the work will be carried out in a confined space, appropriate precautions must be taken to prevent the risk of asphyxiation.<br>- Ensure appropriately marked asbestos waste disposal bags are available.<br>- Carry out the work with as few people present as possible.<br>- Segregate the asbestos work area to ensure unauthorised personnel are restricted from entry (e.g. use warning signs and/or barrier tape at all entry points). The distance for segregation should be determined by a risk assessment.<br>- Use plastic sheeting secured with duct tape to cover any surface within the asbestos work area which could become contaminated.<br>- Place plastic sheeting below any conduits before pulling any cables through.<br>- Ensure there is adequate lighting.<br>- Avoid working in windy environments where asbestos fibres can be redistributed.<br>- If using a bucket of water, do not resoak used rags in the bucket as this will contaminate the water. Instead, fold the rag so a clean surface is exposed or use another rag. |
| **Replacement or installation of cables** | - Wet down the equipment and apply adequate cable slipping compound to the conduits/ducts throughout the process.<br>- Clean all ropes, rods or snakes used to pull cables after use. Cleaning should be undertaken close to the point(s) where the cables exit from the conduits/ducts.<br>- Ropes used for cable pulling should have a smooth surface that can easily be cleaned.<br>- Do not use metal stockings when pulling cables through asbestos cement conduits.<br>- Do not use compressed air darts to pull cables through asbestos cement conduits/ducts. |

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| **Decontaminating the asbestos work area and equipment** | - Use damp rags to clean the equipment.<br>- Wet wipe around the end of the conduit, sections of exposed cable and the pulling eye at the completion of the cable pulling operation.<br>- If the rope or cable passes through any rollers, these must also be wet wiped after use.<br>- Carefully roll or fold any plastic sheeting used to cover any surface within the asbestos work area, so as not to spill any dust or debris that has been collected.<br>- If required, use damp rags or an asbestos vacuum cleaner to clean any remaining visibly contaminated sections of the asbestos work area.<br>- Place all debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container.<br>- Wet wipe the external surfaces of the asbestos waste bags/container to remove any adhering dust before they are removed from the asbestos work area. |
| **Personal documentation should be carried out in a designated area** | - If disposable coveralls are worn, clean the coveralls while still wearing RPE using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth.<br>- While still wearing RPE, remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag.<br>- Remove RPE. If non-disposable, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. If disposable, cleaning is not required but RPE should be placed in a labelled asbestos waste bag or waste container. |
| **Clearance procedure** | - Visually inspect the asbestos work area to make sure it has been properly cleaned.<br>- Clearance air monitoring is not normally required for this task.<br>- Dispose of all waste as asbestos waste. |

# Safe work practice 5 - Working on electrical mounting boards containing asbestos

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| **Equipment that may be required prior to starting work (in addition to what is needed for the task)** | - A non-powered hand drill or a low-speed battery-powered drill or drilling equipment. Battery-powered drills should be fitted with a LEV dust control hood wherever possible. If a LEV dust control hood cannot be attached and other dust control methods, such as pastes and gels, are unsuitable then shadow vacuuming techniques should be used.<br>- Duct tape.<br>- Warning signs and/or barrier tape.<br>- Disposable cleaning rags.<br>- A plastic bucket of water and/or a misting spray bottle.<br>- Spare PPE.<br>- A suitable asbestos waste container.<br>- 200 mm plastic sheeting.<br>- An asbestos vacuum cleaner. |
| **PPE** | - Protective clothing and RPE (see AS1715, AS 1716). It is likely that a class P1 or P2 half face respirator will be adequate for this task, provided the recommended safe work procedure is followed. |
| **Preparing the asbestos work area** | - As the work area will involve electrical hazards, precautions must be taken to prevent electrocution.<br>- Ensure appropriately marked asbestos waste disposal bags are available.<br>- Carry out the work with as few people present as possible.<br>- Segregate the asbestos work area to ensure unauthorised personnel are restricted from entry (e.g. use warning signs and/or barrier tape at all entry points). The distance for segregation should be determined by a risk assessment.<br>- Use plastic sheeting secured with duct tape to cover any surface within the asbestos work area which could become contaminated.<br>- Ensure there is adequate lighting.<br>- Avoid working in windy environments where asbestos fibres can be redistributed.<br>- If using a bucket of water, do not resoak used rags in the bucket as this will contaminate the water. Instead, either fold the rag so a clean surface is exposed or use another rag. |

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| **Work on electrical mounting panels** | - Providing the panel is not friable, maintenance and service work may include:<br>- replacing asbestos containing equipment on the electrical panel with non-asbestos equipment<br>- operate main switches and individual circuit devices<br>- pull/insert service and circuit fuses<br>- bridge supplies at meter bases<br>- use testing equipment<br>- access the neutral link<br>- install new components/equipment. |
| **Decontaminating the asbestos work area and equipment** | - Use damp rags to clean the equipment.<br>- Carefully roll or fold any plastic sheeting used to cover any surface within the asbestos work area so as not to spill any dust or debris that has been collected.<br>- If there is an electrical hazard, use an asbestos vacuum cleaner to remove any dust from the mounting panel and other visibly contaminated sections of the asbestos work area.<br>- If there is no electrical hazard, wet wipe with a damp rag to remove minor amounts of dust.<br>- Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container.<br>- Wet wipe the external surfaces of the asbestos waste bags/container to remove any adhering dust before they are removed from the asbestos work area. |
| **Personal documentation should be carried out in a designated area** | - If disposable coveralls are worn, clean the coveralls while still wearing RPE using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth.<br>- While still wearing RPE, remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag.<br>- Remove RPE. If non-disposable, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. If disposable, cleaning is not required but RPE should be placed in a labelled asbestos waste bag or waste container. |
| **Clearance procedure** | - Visually inspect the asbestos work area to make sure it has been properly cleaned.<br>- Clearance air monitoring is not normally required for this task.<br>- Dispose of all waste as asbestos waste. |

# Safe work practice 6 - Inspection of asbestos friction materials

This guide may be used when friction ACM (e.g. brake assemblies or clutch housings) needs to be inspected or housings need to be cleaned. Compressed air must not be used to clean dust from a brake assembly.

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| **Equipment that may be required prior to starting work (in addition to what is needed for the task)** | - A misting spray bottle.<br>- Duct tape.<br>- Warning signs and/or barrier tape.<br>- Disposable cleaning rags.<br>- A bucket of water and detergent.<br>- Spare PPE.<br>- A suitable asbestos waste container.<br>- A catch tray or similar container.<br>- An asbestos vacuum cleaner. |
| **PPE** | - Protective clothing and RPE (see AS1715, AS 1716). It is likely that a class P1 or P2 half face respirator will be adequate for this task, provided the recommended safe work procedure is followed. |
| **Preparing the asbestos work area** | - Ensure appropriately marked asbestos waste disposal bags are available.<br>- Carry out the work with as few people present as possible.<br>- Determine whether to segregate the asbestos work area<br>- Ensure unauthorised personnel are restricted from entry by using barrier tape and/or warning signs.<br>- Use a suitable collection device below where the work will be carried out to collect any debris/ runoff.<br>- Ensure there is adequate lighting.<br>- Avoid working in windy environments where asbestos fibres can be redistributed.<br>- If using a bucket of water, do not resoak used rags in the bucket as this will contaminate the water. Instead, fold the rag so a clean surface is exposed or use another rag. |

| | |
|---|---|
| **Inspection of asbestos friction materials** | - A misting spray bottle should be used to wet down any dust. If spray equipment disturbs asbestos, use alternative wetting agents e.g. a water-miscible degreaser or a water/detergent mixture.<br>- Use the wet method, but if this is not possible the dry method may then be used.<br>**Wet method:**<br>- Use the misting spray bottle to wet down any visible dust.<br>- Use a damp rag to wipe down the wheel or automobile part before removal. Ensure the dust is kept wet to prevent atmospheric contamination.<br>- Use hand tools rather than power tools to reduce the generation of airborne fibres.<br>- Partially open the housing and softly spray the inside with water using the misting spray bottle. Any spillage of dust, debris or water must be controlled (e.g. capturing any runoff in a container) and either filtered or disposed of as asbestos waste.<br>- Open the housing and clean all asbestos parts using a damp rag, ensuring all runoff water is caught in an asbestos waste container.<br>**Dry method:**<br>- Place a tray under the components to catch dust or debris spilling from the housing or components during the inspection and dispose of any material as asbestos waste.<br>- Use an asbestos vacuum cleaner to remove asbestos from the brakes and rims or other materials before carrying out the inspection |
| **Decontaminating the asbestos work area and equipment** | - Use damp rags to clean the equipment, including the dust collection tray.<br>- If necessary, use damp rags or an asbestos vacuum cleaner to clean any remaining visibly contaminated sections of the asbestos work area.<br>- Place debris, used rags and other waste in the asbestos waste bags/container.<br>- Wet wipe the external surfaces of the asbestos waste bags/container to remove any adhering dust before removing them from the asbestos work area. |
| **Personal documentation should be carried out in a designated area** | - If disposable coveralls are worn, clean the coveralls while still wearing RPE using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth.<br>- While still wearing RPE, remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag.<br>- Remove RPE. If non-disposable, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. If disposable, cleaning is not required but RPE should be placed in a labelled asbestos waste bag or waste container. |
| **Clearance procedure** | - Visually inspect the asbestos work area to make sure it has been properly cleaned.<br>- Clearance air monitoring is not normally required for this task.<br>- Dispose of all waste as asbestos waste. |

# Appendix G - Examples of asbestos containing materials

**A**

Air-conditioning ducts – exterior or interior acoustic and thermal insulation
Arc shields in lift motor rooms or large electrical cabinets
Asbestos-based plastics products – as electrical insulates and acid-resistant compositions or
aircraft seats Asbestos ceiling tiles
Asbestos cement conduits
Asbestos cement electrical fuse boards
Asbestos cement external roofs and walls
Asbestos cement in the use of form work when pouring concrete
Asbestos cement internal flues and downpipes
Asbestos cement moulded products, such as gutters, ridge capping, gas meter covers, cable troughs and
covers Asbestos cement pieces for packing spaces between floor joists and piers
Asbestos cement underground pits, as used for traffic control wiring and telecommunications cabling
Asbestos cement render, plaster, mortar and coursework
Asbestos cement sheet
Asbestos cement sheet behind ceramic tiles
Asbestos cement sheet internal over exhaust canopies, such as ovens and fume cupboards
Asbestos cement sheet internal walls and ceilings
Asbestos cement sheet underlays for vinyl
Asbestos cement storm drain pipes
Asbestos cement water pipes (usually underground)
Asbestos-containing laminates (eg Formica) used where heat resistance is required (eg ships)
Asbestos-containing pegboard
Asbestos felts
Asbestos marine board (eg marinate) Asbestos mattresses used for covering hot equipment in power stations
Asbestos paper used variously for insulation, filtering and production of fire resistant laminates
Asbestos roof tiles
Asbestos textiles
Asbestos textile gussets in air-conditioning ducting systems
Asbestos yarn
Autoclave/steriliser insulation

**B**

Bitumen-based water proofing such as malthoid (typically on roofs and floors but also in brickwork)
Bituminous adhesives and sealants
Boiler gaskets
Boiler insulation, slabs and wet mix
Brake disc pads
Brake linings

**C**

Cable penetration insulation bags
Calorifier insulation
Car body filters (not common) Caulking compounds, sealant and adhesives
Cement render
Chrysotile wicks in kerosene heaters
Clutch faces
Compressed asbestos cement panels for flooring, verandas, bathrooms and steps for demountable
buildings Compressed asbestos fibres (CAF) used in brakes and gaskets for plant and vehicles

**D**

Door seals on ovens

**E**

Electric heat banks – block insulation
Electric hot water services (normally not asbestos but some millboard could be present)
Electric light fittings, high wattage, insulation around fitting (and bituminised)
Electrical switchboards (see pitch-based)
Exhausts on vehicles

**F**

Filler in acetylene gas cylinders
Filters – beverage, wine filtration
Fire blankets
Fire curtains
Fire door insulation
Fire-rated wall rendering containing asbestos with mortar
Fire-resistant plaster board, typically on ships
Fire-retardant material on steel work supporting reactors on columns in refineries in the chemical
industry Flexible hoses
Floor vinyl sheets
Floor vinyl tiles
Fuse blankets and ceramic fuses in switchboards

**G**

GalbestosTM roofing materials (decorative coating on metal roofs for sound proofing)
Gaskets – chemicals, refineries
Gaskets – general
Gauze mats in laboratories/chemical refineries
Gloves – for insulation against heat

**H**

Hairdryers – insulation around heating elements
Header (manifold) insulation

**I**

Insulation blocks
Insulation in electric reheat units for air-conditioner systems

**L**

Laboratory bench tops
Laboratory fume cupboard panels
Laboratory ovens – wall insulation
Lagged exhaust pipes on emergency power generators
Lagging in penetrations in fireproof walls
Lifts shafts – asbestos cement panels lining the shaft at the opening of each floor and asbestos
packing around penetrations Limpet asbestos spray insulation
Locomotives (steam) lagging on boilers,
steam lines, steam dome and gaskets

**M**

Mastics
Millboard between heating units and walls
Millboard lining of switchboxes
Mortar

**P**

Packing materials for gauges, valves
etc – can be square packing, rope
or loose fibre
Packing material on window anchorage points in high-rise buildings
Paint (typically industrial epoxy paints)
Penetrations through concrete slabs
in high-rise buildings
Pipe insulation including moulded sections, water-mix type, rope braid and sheet
Pitch-based (eg Zelemite, Ausbestos, Lebah) electrical switchboards
Plaster and plaster cornice adhesives
Pump insulation

**R**

Refractory linings
Refractory tiles
Rubber articles (extent of usage unknown)

**S**

Sealant between floor slab and wall, usually in boiler rooms, risers or lift shafts
Sealant or mastik on windows
Sealants and mastics in airconditioning ducting joints
Spackle or plasterboard wall-jointing compounds
Sprayed insulation – acoustic wall and ceiling
Sprayed insulation – beams and ceiling slabs
Sprayed insulation – fire retardant sprayed on nut internally, for bolts holding external building
wall panels Stoves – old domestic type, wall insulation

**T**

Tape and rope – lagging and jointing
Tapered ends of pipe lagging (where lagging is not necessarily asbestos)
Tilux sheeting in place of ceramic tiles in bathrooms
Trailing cable under lift cabins
Trains, guards vans, millboard between heater and wall
Trains – Harris cars (sprayed asbestos between steel shell and laminex)

**V**

Valve insulation

**W**

Welding rods
Woven asbestos cable sheath

# Appendix H - Information required to be included in an asbestos control plan

**Following information is required to be included in an asbestos control plan:**

1. A record to indicate that the notification requirements have been met and that required documentation is kept at the workplace where the asbestos removal work is being performed.
2. In relation to asbestos:
    - its location
    - in relation to ACM:
        - whether the ACM is friable or non-friable
        - the type of ACM
        - the condition of the ACM
        - the quantity of ACM proposed to be removed.
3. The type of personal protective clothing and personal protective equipment to be used including respiratory protective equipment.
4. Proposed risk control measures to be used to prevent release of airborne asbestos fibres from the area where the asbestos removal work is being performed.
5. If the area where the asbestos removal work is being performed in a negative air enclosure, details regarding:
    - smoke testing
    - negative air units.
6. Details of decontamination procedures for:
    - persons performing the asbestos removal work
    - tools and equipment used for the asbestos removal work
    - non-disposable personal protective clothing and personal protective equipment.
7. Method of disposal of:
    - asbestos waste
    - disposable personal protective clothing and personal protective equipment
    - the structure used to enclose the areas where the asbestos removal work is being performed.
8. Administrative controls to be implemented, including:
    - security
    - work practices.
9. Methods of cleaning following asbestos removal work.
10. Names of persons engaged by the license holder or person who commissioned the work (as applicable) to conduct asbestos para-occupational air monitoring (if any) and to conduct the clearance inspection.

# Appendix I - Risk assessment and risk matrix

## Risk Assessment

Risk assessment rationale allows the concerned parties to make informed decisions about future ACM control measures, such as site inductions, staff training and regular monitoring. In addition preventative actions can be implemented to either encapsulate or eliminate the ACM source. Determining the appropriate level of risk is achieved through professional judgement of the following attributes:

- Location.
- Probability of exposure.
- Material description.
- Coverage or amount of ACM.
- Material condition (the level of encapsulation, damage and its extent).
- Possibility for disturbance/contamination (The degree of contact that will occur during either through routine or customary working activities)
- Current control measures
- Friable / non-friable (friable is the materials ability to become airborne)

# Risk Matrix

| Risk rating | Disturbance potential | ACM area description | Action Required |
|---|---|---|---|
| R1 | High exposure risk if repeatedly disturbed. | ACM's are damaged, degrading or are exposed to continual disturbance. | The ACM has been categorised as High Risk and poses a health threat to workers, because controls such as encapsulation or sealing will have minimal effect. These areas should maintain restricted access until it can be safely removed by a registered contractor. |
| R2 | Moderate potential for disturbance. Medium exposure risk if frequently disturbed. | ACM's are present and are either unstable or have the potential for disturbance. | Remedial action may involve stabilising and/or isolating the material from any non-essential workers. Removal or repair of the asbestos-containing materials is preferred; however continual monitoring of the ACM condition is the minimum that would be acceptable. |
| R3 | Disturbance probability is low to medium. Exposure risk low to medium. | Asbestos materials are stable, and maybe disturbed. | Regular assessment will be required to make sure the condition does not worsen because of disturbance or environmental conditions. In the case change condition occurs the risk rating may need to be re-evaluated, requiring implementation of management procedures for any maintenance or emergency repair in the vicinity of the asbestos materials. |
| R4 | Low to moderate disturbance potential in its current state. Exposure risk low to medium. | Asbestos-containing materials are unlikely to be disturbed in their present location in the facility. | No immediate action is required; however the asbestos product(s) continual monitoring is required to ensure the materials conditional status does not change. This rating can also apply to suspected materials that are present in inaccessible locations, thereby treating the item as asbestos until confirmation by further risk assessment and testing. |

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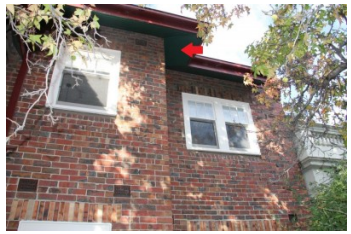
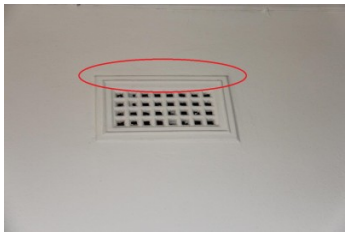
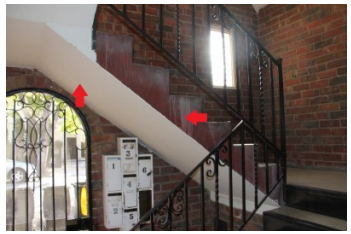
# Appendix J
# Asbestos Register

| No. | Location / Material Description | Probability of ACM's<br>1. Highly Likely<br>2. Likely<br>3. Unlikely<br>4. Highly Unlikely | Material Condition<br>1. Poor<br>2. Average<br>3. Good | Control measures current and preventative | Friable (Y/N) | Approx. Coverage | Probability Disturbance<br>1. High<br>2. Medium<br>3. Low | Probability Exposure<br>1. High<br>2. Medium<br>3. Low | Risk Level | Photo |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Tiled roofing – throughout property. | 4 | 3 | No ACM suspected. No further monitoring required. | N/A | > 10sqm | N/A | N/A | N/A |  |
| 2 | Metal and PVC gutters and downpipes throughout common property. | 4 | 3 | No ACM suspected. No further monitoring required. | N/A | > 10sqm | N/A | N/A | N/A |  |
| 3 | Eaves appear to be fully timber construction. | 3 | 3 | No ACM suspected. No further monitoring required. | N/A | > 10sqm | N/A | N/A | N/A |  |

| No. | Location / Material Description | Probability of ACM's 1. Highly Likely 2. Likely 3. Unlikely 4. Highly Unlikely | Material Condition 1. Poor 2. Average 3. Good | Control measures current and preventative | Friable (Y/N) | Approx. Coverage | Probability Disturbance 1. High 2. Medium 3. Low | Probability Exposure 1. High 2. Medium 3. Low | Risk Level | Photo |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | Left Main Switchboard Cabinet. Timber cabinet, timber backing board, RCD's and smart meters. | 4 | 3 | No ACM suspected. No further monitoring required. | N/A | < 10sqm | N/A | N/A | N/A |  |
| 5 | Centre Main Switchboard Cabinet. Timber cabinet, timber backing board, RCD's, smart meters and ceramic fuses. Ceramic fuses are likely to contain an asbestos flash pad inside which acts as an insulating material. | 1 | 2 | Monitor condition and if no changes occur, inspect in 3 years. | No | < 10sqm | 3 | 3 | R4 |  |
| 6 | Right Main Switchboard Cabinet. Timber cabinet, timber backing board, RCD's and smart meters. | 4 | 3 | No ACM suspected. No further monitoring required. | No | < 10sqm | N/A | N/A | N/A |  |

| No. | Location / Material Description | Probability of ACM's 1. Highly Likely 2. Likely 3. Unlikely 4. Highly Unlikely | Material Condition 1. Poor 2. Average 3. Good | Control measures current and preventative | Friable (Y/N) | Approx. Coverage | Probability Disturbance 1. High 2. Medium 3. Low | Probability Exposure 1. High 2. Medium 3. Low | Risk Level | Photo |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | Flue - likely from gas heater. Lining is likely to contain ACM for it's insulation properties given the age of construction. | 2 | 2 | Monitor condition and if no changes occur, inspect in 3 years. | No | < 10sqm | 3 | 3 | R4 |  |
| 8 | Ceramic grate in brickwork. Lintel is a likely site for AC fibro cement sheeting given the age of construction. | 2 | 3 | Monitor condition and if no changes occur, inspect in 3 years. | No | < 10sqm | 3 | 3 | R4 |  |
| 9 | Vinyl floor tiles on stairs and throughout internal common areas. Tiling adhesive is likely to contain ACM given the age of construction. | 1 | 2 | Monitor condition and if no changes occur, inspect in 3 years. | No | > 10sqm | 3 | 3 | R4 |  |

| No. | Location / Material Description | Probability of ACM's 1. Highly Likely 2. Likely 3. Unlikely 4. Highly Unlikely | Material Condition 1. Poor 2. Average 3. Good | Control measures current and preventative | Friable (Y/N) | Approx. Coverage | Probability Disturbance 1. High 2. Medium 3. Low | Probability Exposure 1. High 2. Medium 3. Low | Risk Level | Photo |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | Gaskets. Services pipes of this age typically contain asbestos gaskets used as a sealing material. | 1 | 3 | Monitor condition and if no changes occur, inspect in 3 years. | No | < 10sqm | 3 | 3 | R4 |  |
| 11 | Mailbox. Fully timber construction. | 4 | 2 | No ACM suspected. No further monitoring required. | N/A | < 10sqm | N/A | N/A | N/A |  |
| 12 | Common stairwell ceiling appears to be plasterboard construction. | 3 | 3 | No ACM suspected. No further monitoring required. | N/A | > 10sqm | N/A | N/A | N/A |  |

| No. | Location / Material Description | Probability of ACM's 1. Highly Likely 2. Likely 3. Unlikely 4. Highly Unlikely | Material Condition 1. Poor 2. Average 3. Good | Control measures current and preventative | Friable (Y/N) | Approx. Coverage | Probability Disturbance 1. High 2. Medium 3. Low | Probability Exposure 1. High 2. Medium 3. Low | Risk Level | Photo |
|---|---|---|---|---|---|---|---|---|---|---|
| 13 | Internal common area ceilings appear to be plasterboard construction. | 3 | 3 | No ACM suspected. No further monitoring required. | N/A | > 10sqm | N/A | N/A | N/A |  |
| 14 | Laundry and Tradesman's WC. Brickwork and timber construction with metal sheet roofing. | 4 | 3 | No ACM suspected. No further monitoring required. | N/A | < 10sqm | N/A | N/A | N/A |  |
| 15 | Staircase and landing are fully concrete construction. | 4 | 3 | No ACM suspected. No further monitoring required. | N/A | > 10sqm | N/A | N/A | N/A |  |

## General Notes

**Summary**

Overall there is a relatively high likelihood that ACM's are present on this site especially in the ceramic fuses in the main switchboard,  gaskets, flues, brick vents, vinyl floor tiles throughout the internal common area. All ACM's appear to be in good condition and are in  locations which are unlikely to be disturbed unless further work by trades are conducted.

**Telstra Pits**

Telstra's pits are the property of Telstra. Telstra should be contacted if works need to be conducted in or on one of the pits. Contractors will need to abide by Telstra's overriding Asbestos Management Plan. Telstra states "Unless the pit is made of plastic it will be assumed to contain ACM and treated appropriately".

**Fire Doors**

Fire doors installed up to 1990 may potentially contain asbestos insulation. At the time of the inspection all reasonable steps have been taken to accurately identify all fire doors which may contain asbestos, however due to limited access and physical proof it may not be possible to identify all doors. If any doors are certified fire doors installed prior to 1990, it must be assumed they may contain asbestos insulation. We recommend sample testing before any works are undertaken.

**Follow Up Inspection**

Recommended follow up inspection to re-assess the condition of suspected asbestos: 3 years

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