



DRAFT

Code of Practice
**HOW TO MANAGE AND
CONTROL ASBESTOS IN
THE WORKPLACE**



safe work australia

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FOREWORD

This Code of Practice (this Code) on how to manage and control asbestos in the workplace is an approved code of practice under section 274 of the *Work Health and Safety (WHS) Act*.

An approved code of practice is a practical guide to achieving the standards of health, safety and welfare required under the WHS Act and the Work Health and Safety Regulations (the WHS Regulations).

A code of practice applies to anyone who has a duty of care in the circumstances described in the code. In most cases, following an approved code of practice would achieve compliance with the health and safety duties in the WHS Act, in relation to the subject matter of the code. Like regulations, codes of practice deal with particular issues and do not cover all hazards or risks which may arise. The health and safety duties require duty holders to consider all risks associated with work, not only those for which regulations and codes of practice exist.

Codes of practice are admissible in court proceedings under the WHS Act and Regulations. Courts may regard a code of practice as evidence of what is known about a hazard, risk or control and may rely on the code in determining what is reasonably practicable in the circumstances to which the code relates.

The WHS Act and Regulations may be complied with by following another method, such as a technical or an industry standard, if it provides an equivalent or higher standard of work health and safety than the code.

An inspector may refer to an approved code of practice when issuing an improvement or prohibition notice.

This Code of Practice has been developed by Safe Work Australia as a model code of practice under the Council of Australian Governments' *Inter-Governmental Agreement for Regulatory and Operational Reform in Occupational Health and Safety* for adoption by the Commonwealth, state and territory governments.

A draft of this Code of Practice was released for public consultation on 7 December 2010 and was endorsed by the Workplace Relations Ministers Council on [to be completed].

How to use this code of practice

This Code includes references to both mandatory and non-mandatory actions. The references to legal requirements contained in the WHS Act and the [draft] WHS Regulations (highlighted in text boxes in this Code) are not exhaustive and are included for context only.

The words 'must', 'requires' or 'mandatory' indicate that legal requirements exist which must be complied with.

The word 'should' indicates a recommended course of action, while 'may' indicates an optional course of action.

PURPOSE

This Code provides practical guidance for persons who have work health and safety duties under the WHS Act and the [draft] WHS Regulations to manage and control risks associated with the presence of in situ asbestos at the workplace and thereby reduce the incidence of asbestos related diseases such as mesothelioma, asbestosis and lung cancer.

SCOPE

This Code covers the steps to take to eliminate (where reasonably practicable) or minimise the risks associated with the presence of in-situ asbestos at the workplace, including hazard identification, risk assessment and risk control, to prevent people being exposed to airborne asbestos fibres.

In some cases, the most appropriate control measure determined may be to remove the asbestos. The *Code of Practice: How to Safely Remove Asbestos* provides further guidance for asbestos removalists on control measures to implement so that asbestos can be removed safely whilst minimising the exposure of workers and other persons to airborne asbestos fibres.

Other laws relating to matters including environmental protection, public health, building and construction and local government regulation may apply in addition to the WHS Act and the [draft] WHS Regulations.

Some chapters of this Code will apply to asbestos that is present in domestic premises where the premises becomes a workplace.

1. INTRODUCTION

1.1 Who should use this Code?

You should use this Code if you are a person conducting a business or undertaking who has a responsibility to ensure asbestos is identified as being present (or presumed to be present) at the workplace and control measures are implemented to eliminate or minimise any associated risks.

This Code has been written primarily for persons conducting a business or undertaking with management or control of a workplace (person with management or control) where asbestos is present (or presumed to be present) in a workplace. However, it is also intended to be used by government inspectors, asbestos removalists and others involved in managing and controlling risks of asbestos at a workplace including health and safety representatives and workers.

In some cases, there may be more than one person with management or control for example:

- a person with management of a workplace is usually a tenant, and
- 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, or
 - have management or control over a workplace, such as a property management group or agent.

A person can have more than one duty and more than one person can concurrently have the same duty.

1.2 The meaning of key terms

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 are counted.

Asbestos means the asbestiform varieties of mineral silicates belonging to the serpentine or amphibole groups of rock forming minerals including actinolite asbestos, grunerite (or amosite) asbestos (brown), anthophyllite asbestos, chrysotile asbestos (white), crocidolite asbestos (blue), and tremolite asbestos. For the purposes of this Code, the term asbestos also refers to any material or thing that contains asbestos.

Asbestos removalist means a person who is competent to remove asbestos. This person can be either licensed or unlicensed depending on the type of asbestos removal work being carried out.

Asbestos removal work means work involving the removal of asbestos or Class A removal work or Class B removal work.

Competent person means a person who has acquired through training, qualification or experience the knowledge and skills to carry out the task.

Exposure standard for asbestos is a respirable asbestos 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 of asbestos calculated over an eight-hour working day and measured over a minimum period of four hours in accordance with:

- (a) the Membrane Filter Method, or
- (b) a method determined by the relevant regulator.

Friable asbestos means material that can be crumbled, pulverised or reduced to a powder by hand pressure when dry that contains asbestos.

In-situ asbestos means asbestos fixed or installed in a place.

Licensed removalist means a person conducting a business or undertaking who is licensed under the [draft] WHS Regulations to carry out asbestos removal work.

NATA-accredited laboratory means an asbestos testing laboratory accredited by the National Association of Testing Authorities, Australia (NATA), or recognised by NATA either solely or with someone else.

Naturally occurring asbestos (NOA) means the natural geological occurrence of asbestos minerals found in association with geological deposits including rock, sediment or soil.

Non-friable asbestos means material containing asbestos that is not friable, including material containing asbestos fibres reinforced with a bonding component.

Respirable asbestos means an asbestos fibre that:

- (a) is less than 3 microns (μm) wide
- (b) more than 5 microns (μm) long, and
- (c) has a length to width ratio of more than 3:1.

Risk control means taking action to first eliminate health and safety risks so far as is reasonably practicable, and if that is not possible, minimising the risks so far as is reasonably practicable. Eliminating a hazard will also eliminate any risks associated with that hazard.

1.3 About asbestos¹

As a naturally occurring mineral fibre, asbestos has excellent fire resistance, insulation properties, fibre strength, durability and flexibility and as a result, it was used in more than 3000 products.

In Australia, the asbestos cement (AC) manufacturing industry was responsible for over 60 per cent of all production and 90 per cent of all consumption of asbestos fibre. From about 1940 to the late 1960s all three types of asbestos were used in this industry. The use of crocidolite was gradually phased out from 1967, but amosite was used until 2003. Much of this industry output remains in service today in the form of 'fibro' building materials and water and sewerage piping.

Asbestos can be non-friable or friable. Non-friable asbestos can become friable through deterioration.

Non-friable asbestos is contained in a bonding compound reinforced with asbestos fibre. Non-friable asbestos that has been subjected to extensive weathering or deterioration has a higher potential to release airborne asbestos fibres.



Non-friable - Contained in roof sheeting



Non-friable - Asbestos bricks

Friable asbestos is material that can be crumbled, pulverised or reduced to a powder by hand pressure when dry, that contains asbestos

¹ Images used in this Code have been sourced from the Health and Safety Executive (HSE) UK and OCTIEF Pty LIMITED.

Naturally occurring asbestos (NOA) is the natural geological occurrence of asbestos minerals found in association with geological deposits including rock, sediment or soil particularly during mining, construction and excavation operations. It can be either friable or non-friable. NOA may become friable if it is disturbed.

The potential for a mineral deposit to release airborne asbestos fibres depends on the physical characteristic of the particular mineral and the degree to which it is impacted by handling and processing. Where removal is undertaken, work systems and procedures must be used to minimise the release of airborne asbestos fibres.



Broken crumbled friable asbestos



NOA

Some asbestos is more vulnerable to damage and more likely to release airborne asbestos fibres than others, however in general, the materials which contain a high percentage of asbestos with less bonding agent are more easily damaged. For example, asbestos insulation and lagging can contain up to 85 per cent asbestos and are likely to release fibres. In comparison, AC contains only 10-15 per cent asbestos and as it is tightly bound, the material will only give off fibres if it is badly damaged, broken or is worked on.

The list below is roughly in order of ease of fibre release (with the highest potential fibre release first):

- sprayed asbestos and asbestos loose packing - generally used as loose fire insulation, fire breaks in ceiling voids, fire protection in ducts, panels, partitions, fire doors and on AC sheets around structural steel work
- moulded or preformed lagging—generally used in thermal insulation of pipes and boilers
- insulating boards used for fire protection, thermal insulation, partitioning and ducts, soffits and as ceiling or wall panels
- loose fill insulation
- AC pipes insulated with asbestos
- ceiling tiles
- vinyl tiles
- millboard, paper and paper products used for insulation of electrical equipment and electrical switchboards
- asbestos paper and paper products used as a fire-proof facing on wood fibreboard
- AC products, which can be fully or semi-compressed into flat or corrugated sheets used as roofing, fencing and wall cladding, and
- pits lined with asbestos.

It can be difficult to identify the presence of asbestos by sight so having a sample of the suspected material analysed will confirm whether a material is asbestos or not. Sampling can be hazardous and should only be undertaken by a competent person and samples must only be analysed by a NATA-accredited laboratory or a laboratory approved by the regulator or operated by the regulator.

Asbestos can be found in:

- certain textured coatings and paints
- bitumen roofing material

- vinyl or thermoplastic floor tiles, profiled sheets used on roofs and walls and flat sheets in flashings
- imitation brick cladding
- roof shingles
- plaster patching compounds
- roof tile coatings
- friction products such as brake shoes, disc pads, clutch housings or elevator brakes, and
- museum artefacts.

Appendix A includes a more comprehensive list of potential asbestos materials.

1.4 What are the potential health risks?

Asbestos is a known carcinogen and inhalation of these fibres can cause mesothelioma, lung cancer and asbestosis after a long latency period. It also poses other health risks whenever asbestos fibres become respirable and people are exposed to these fibres.

- **Malignant mesothelioma** is a cancer of the outer covering of the lung (the pleura) or the abdominal cavity (the peritoneum). It is usually fatal. Mesothelioma is caused by the inhalation of needle-like asbestos fibres deep into the lungs where they can damage mesothelial cells, potentially resulting in cancer. The latency period is generally between 35 and 40 years, but it may be longer, and the disease is very difficult to detect prior to the onset of illness.
- **Lung cancer** has been shown to be caused by all types of asbestos. The average latency period of the disease, from the first exposure to asbestos, ranges from 20 to 30 years. Lung cancer symptoms are rarely felt until the disease has developed to an advanced stage. People who smoke may have a greater risk of developing lung cancer from inhaling airborne asbestos fibres.
- **Asbestosis** is a form of lung disease (pneumoconiosis) directly caused by inhaling asbestos fibres, causing a scarring (fibrosis) of the lung tissue which decreases the ability of the lungs to transfer oxygen to the blood. The latency period of asbestosis is generally between 15 and 25 years.

1.5 How can you be exposed to asbestos?

When asbestos is processed and disturbed, the fibre bundles become progressively finer and more hazardous to health as they can become airborne and breathed in. Small fibres, known as respirable fibres, are invisible to the naked eye and when inhaled can penetrate the deepest part of the lungs.

Asbestos can release airborne fibres whenever it is disturbed, particularly during the following:

- direct action on asbestos, such as drilling, boring, cutting especially with power tools, filing, brushing, grinding, sanding, breaking, smashing or blowing with compressed air
- removing asbestos from workplaces
- maintaining or servicing materials containing asbestos from vehicles, plant, equipment or workplaces, or
- renovating or demolishing workplaces (or a part of a workplace) that contains asbestos.

Exposure to airborne asbestos fibres for workers and other people must be either eliminated or minimised as far as is reasonably practicable, and kept below the exposure standard.

1.6 What are the prohibitions on asbestos in the workplace?

The [draft] WHS Regulations require 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, selling, transporting, storing, removing, using, installing, handling, treating, disposing of or disturbing asbestos, except in prescribed circumstances.

The final prohibition for asbestos in the workplace came into effect on 31 December 2003. The [draft] WHS Regulations provide some exceptions to the prohibitions which are:

- genuine research and analysis
- sampling and identification of asbestos in accordance with the [draft] WHS Regulations
- maintenance of non-friable asbestos, fixed or installed before 31 December 2003, in accordance with the [draft] WHS Regulations
- removal or disposal of asbestos, including demolition in accordance with the [draft] WHS Regulations
- demonstrations, education or practical training in relation to asbestos
- display, or preparation or maintenance for display, of an artefact or thing that is, or includes, asbestos
- management in accordance with the [draft] WHS Regulations of in situ asbestos that was installed or fixed prior to 31 December 2003
- non asbestos mining or extraction of stone if asbestos is met
- laundering asbestos contaminated clothing in accordance with the [draft] WHS Regulations, or
- where the relevant regulator approves the way of managing the asbestos.

The management of NOA that stays in its natural state is not prohibited if managed in accordance with the asbestos management plan. The use of soil contaminated with asbestos is also not prohibited if all visible traces of asbestos have been removed. A person who supplies, sells, transports, stores, uses or handles soil must visually inspect the soil, or ensure the soil is visually inspected, to ensure any visible asbestos is removed from the soil.

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. Therefore, it is likely that asbestos will still be found in structures and buildings built prior to 2003, and possibly found in plant manufactured before 2004.

If you identify that asbestos is in your workplace and you are carrying out demolition or refurbishment work, the asbestos should be removed as far as reasonably practicable prior to the work commencing if it is likely to be disturbed during the work being carried out. If other maintenance 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 such as enclosure, encapsulation or sealing should be considered.

In addition to the prohibition, there is also a restriction on who can remove asbestos. As a general rule, all asbestos removalists need to be competent to carry out the asbestos removal work and may need to be licensed depending on the type of asbestos being removed. Further details on the safe removal of asbestos can be found in the *Code of Practice: How to Safely Remove Asbestos*.

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

The *Customs (Prohibited Import) Regulations 1956* (Customs Regulations) prohibit the import of plant containing asbestos as well as any other form of asbestos. This prohibition has been in place since 31 December 2003.

While Australia has prohibited the import and use of asbestos since this time, many countries have not prohibited the use of asbestos, therefore plant and other materials which contain asbestos are still imported from time to time. Any importation of asbestos, whether or not deliberate, is a contravention of the Customs Regulations.

If you are importing plant and other materials from countries where asbestos is not prohibited, you should put in place a quality assurance system to ensure the plant and other materials does not contain asbestos prior to supplying or using the plant in the workplace.

2. RESPONSIBILITIES WHEN MANAGING ASBESTOS

2.1 What are the health and safety duties in relation to managing asbestos?

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 [draft] WHS Regulations include specific obligations in relation to manage and control asbestos at the workplace, summarised below:

Duty holder	Responsibilities
Person conducting a business or undertaking (PCBU)	<ul style="list-style-type: none">• must not carry out, or direct or allow a worker to carry out, work involving asbestos unless that work involved is an exception listed in the [draft] WHS Regulations• must ensure, so far as reasonably practicable, the exposure of a person at the workplace to airborne asbestos fibres is eliminated. Exposure must be minimised if elimination is not reasonably practicable• must ensure the exposure standard for asbestos is not exceeded• must, if you reasonably believe airborne asbestos fibres have been released or asbestos has been disturbed (other than during removal work) at the workplace:<ul style="list-style-type: none">○ determine the persons who were in the affected area at the time and warn them about the possible exposure○ determine whether the exposure standard was likely to have been exceeded○ ensure information about exposure to airborne asbestos fibres, including results of whether or not the exposure standard was exceeded, is accessible to those persons who were in the affected area• must ensure health surveillance is provided to a worker who is carrying out licensed removal work or is carrying out maintenance work on asbestos and is determined to have been in an area of the workplace in which the exposure standard was likely to have been exceeded• must pay all expenses for health surveillance, obtain results and keep records of all health surveillance• must, if you are engaging workers who you believe will be carrying out removal work or maintenance work on asbestos, ensure those workers are trained in the identification and safe handling of, and appropriate controls for, asbestos, and• must not use, or direct or allow a worker to use, certain equipment on asbestos that causes the release of airborne asbestos fibres, other than some types of equipment which may be used in controlled circumstances.

Duty holder	Responsibilities
Person with management or control	<ul style="list-style-type: none"> • must ensure all asbestos at the workplace is identified by a competent person or presume its presence • may identify asbestos by arranging a sample of the asbestos to be analysed • must ensure the presence and location of the asbestos at the workplace is clearly indicated (by a label if reasonably practicable) • must ensure an asbestos register for the workplace is maintained and reviewed at certain times and ensure it is readily available to workers who carry out, or intend to carry out work at the workplace, their health and safety representatives and other persons • must ensure when management or control of the workplace is relinquished by a PCBU, a copy of the asbestos register is given to the person taking over management or control • must, where asbestos has been identified at the workplace, ensure that an asbestos management plan is developed and maintained. The plan must be reviewed and revised (if necessary) every 5 years • must ensure a risk assessment is undertaken and reviewed by a competent person before the work is carried out • prior to demolition and refurbishment work, must review the asbestos register and ensure all asbestos that is likely to be disturbed is identified and removed as far as is reasonably practicable. A copy of the asbestos register must be given to the person carrying out demolition or refurbishment work • must, if an emergency occurs and a building, structure or plant is to be demolished, ensure that before the demolition occurs, there is a procedure to eliminate or minimise the exposure to asbestos to below the exposure standard and notify the regulator about the emergency.
Person carrying out demolition or refurbishment work	<p>must, prior to the work being carried out:</p> <ul style="list-style-type: none"> • obtain a copy of the asbestos register for the workplace • if an asbestos register is not available, ensure the building, structure or plant to be demolished or refurbished has been inspected by a competent person to determine if any asbestos is fixed or installed, and • where asbestos is determined to be fixed or installed, tell the occupier.

Deciding what is 'reasonably practicable' to protect people from harm requires weighing up certain matters, such as the likelihood of a hazard or risk occurring and the degree of harm that would result, and then making a judgment about what is reasonable in the circumstances.

Officers, such as company directors, have a duty to exercise due diligence to ensure that the business or undertaking complies with the WHS Act and [draft] WHS Regulations. This includes taking reasonable steps to ensure that the business or undertaking has and uses appropriate resources and processes to eliminate hazards or minimise risks associated with asbestos.

Workers have a duty to take reasonable care for their own health and safety and that they do not adversely affect the health and safety of other persons. Workers must comply with any reasonable instruction and cooperate with any reasonable policy or procedure relating to health and safety at the workplace. If personal protective equipment (PPE) is provided by the person conducting the

business or undertaking, the worker must use it in accordance with the information, instruction and training provided on their use.

2.2 What is involved in managing risks associated with asbestos?

The [draft] WHS Regulations require that if you are a person conducting a business or undertaking, you must ensure, so far as is reasonably practicable, that exposure to airborne asbestos at the workplace is eliminated. If this is not reasonably practicable, you must ensure the exposure is minimised so far as is reasonably practicable. You must always ensure the exposure standard is not exceeded at the workplace.

If you have management or control of a workplace, you must identify all asbestos and situations that can lead to a person being exposed to asbestos and understand the level of risk so that you can make the right decisions about what to do to eliminate or minimise the risks to health and safety.

The management and control of asbestos in workplaces must be based on a *risk management* process and involves the following four steps set out in this Code:

- identifying asbestos
- assessing the risks of exposure to airborne asbestos fibres
- eliminate or minimise the risks by implementing control measures, and
- reviewing control measures.

This Code provides more specific information about how the risk management process relates to asbestos. General guidance on the risk management process is available in the *Code of Practice: How to Manage Work Health and Safety Risks*.

Consulting your workers

The WHS Act requires that you consult, so far as is reasonably practicable, with workers who carry out work for you who are (or are likely to be) directly affected by a work health and safety matter.

If the workers are represented by a health and safety representative, the consultation must involve that representative.

Consultation with your workers and their health and safety representatives is a critical part of managing work health and safety risks.

When you are aware that asbestos is present or you are presuming that it is present, it is important to consult with people who could be affected by the exposure to risks associated with asbestos as early as possible. Your workers usually know the hazards associated with their work and the risks they face. They also have to follow safety instructions and procedures, and they will do this more effectively if they are involved in the safe identification and handling of asbestos. By drawing on the experience, knowledge and ideas of your workers you are more likely to identify all hazards and develop effective risk controls.

Consultation with workers and their health and safety representatives is necessary at every step of the risk management process. You must ensure health and safety representatives have access to relevant information such as asbestos exposure data and potential control options. If you have a health and safety committee, you should engage the committee in the process as well.

You must also consult your workers when proposing to make any changes that may affect their health and safety, for example when planning to buy new machinery or equipment. If possible request equipment on a trial basis, and involve your workers in testing.

Consulting, co-operating and co-ordinating activities with other duty holders

The WHS Act requires that you consult, co-operate and co-ordinate activities with all other persons who have a work health or safety duty in relation to the same matter, so far as is reasonably practicable.

There may be other businesses involved in the same activities as you are or who share the same workplace. This may mean your workers and other people may be exposed to asbestos that is found present or presumed present in the workplace. For example:

- if you are a business owner who is carrying out work as part of a large construction project, you will need to cooperate and coordinate with other people responsible for the project and site management as there will be other requirements that apply to the site, or
- if you share a workplace with other businesses you need to talk to those businesses about the risks your work could cause them and any precautions you are taking.

Further guidance on consultation is available in the *Code of Practice: How to consult on work health and safety matters*.

2.3 Duty to inform about asbestos exposure at the workplace

The [draft] WHS Regulations require that if a person conducting a business or undertaking knows or reasonably believes that airborne asbestos fibres have been released at the workplace or if it is presumed that they have been released due to the asbestos being disturbed (other than during asbestos removal), that person must:

- determine the people who were in the affected area where the airborne asbestos fibres were released at the time and after the fibres were released, and
- warn the people about possible exposure.

That person must also ensure:

- a determination is made as to whether the exposure standard was likely to have been exceeded in the workplace
- information is accessible about exposure to airborne asbestos fibres, including any results of the determination of whether or not the exposure standard was exceeded to the persons who were in the affected area
- the asbestos register is readily available to workers who carry out, carried out or intend to carry out work at the workplace, their health and safety representatives and other persons conducting a business or undertaking at the workplace, and
- asbestos or presumed asbestos is indicated by signs, labels and/or barriers.

2.4 Duty to provide training

The [draft] WHS Regulations require that a person conducting a business or undertaking at a workplace must ensure that workers engaged by the person who reasonably believes are going to be carrying out asbestos removal work or maintenance work are trained in the safe handling and identification of, and appropriate controls measures for, asbestos.

Depending on the circumstances and work being carried out, the training may include:

- purpose of the training
- health risks of asbestos
- types, uses and likely occurrence of asbestos in the workplace
- worker's roles and responsibilities under the workplace's asbestos management plan
- where the workplace's asbestos register is located and how it can be accessed
- processes and procedures to be followed to prevent exposure, including exposure from any accidental release of asbestos dust into the workplace
- where applicable, the correct use of maintenance and control measures, PPE and work

- methods to eliminate or minimise the risks associated with asbestos, limit the exposure to workers and prevent the spread of asbestos outside an asbestos work area
- exposure standard and control levels for asbestos, and
 - purpose of any air monitoring or health surveillance that may occur.

Additional training is required for workers who may be carrying out asbestos removal work. Further information on the training requirements for workers carrying out asbestos removal work is available in the *Code of Practice: How to Safely Remove Asbestos*.

Records of all training must be kept while the worker is carrying out the work and for 5 years after the day the worker stops carrying out the work.

2.5 Duty to conduct air monitoring

The [draft] WHS Regulations require that a person conducting a business or undertaking must ensure the exposure standard is not exceeded at the workplace.

Whether the exposure standard has been exceeded can be confirmed by conducting air monitoring in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC: 3003 (2005)]* during and after work involving asbestos.

The need for air monitoring will depend on the particular circumstances, however, the results may assist in assessing risks associated with asbestos.

Further information on conducting air monitoring is available in the *Code of Practice: How to Safely Remove Asbestos*.

2.6 Duty to provide health surveillance

The [draft] WHS Regulations require a person conducting a business or undertaking to ensure health surveillance is provided to a worker if the worker is carrying out licensed asbestos removal work or if the worker is carrying out other asbestos removal work or is involved in carrying out maintenance work on asbestos and is determined to have been in an area where the exposure standard was likely to have been exceeded.

Health surveillance is an important part of monitoring the exposure to airborne asbestos fibres to ensure the health and safety of people in workplaces. Workers should be made aware that health surveillance is necessary to check on their ongoing health.

Health surveillance includes a medical examination to provide an initial baseline medical assessment. The medical examination should be performed in accordance with the *Guidelines for Health Surveillance* (to be based on [NOHSC: 7039 (1995)]).

Further information on health surveillance responsibilities is available in the *Code of Practice: How to Safely Remove Asbestos*.

2.7 Responsibilities when removing and disposing of asbestos

There are additional responsibilities if you are removing or disposing of asbestos. Further information on these responsibilities is available in the *Code of Practice: How to Safely Remove Asbestos*.

3. IDENTIFYING ASBESTOS IN THE WORKPLACE

This requirement does not apply to domestic premises.

3.1 Who is responsible for identifying asbestos?

The [draft] WHS Regulations require that a person with management or control of a workplace must:

- ensure that asbestos at the workplace is identified by a competent person
- presume asbestos is present, if it cannot be identified but a competent person reasonably believes that asbestos is present, and
- presume asbestos is present, if part of the workplace is inaccessible and it is likely to contain asbestos.

However, those requirements do not apply if the person presumes that asbestos is present or if the person has reasonable grounds to believe that asbestos is not present.

If you have management or control of the workplace, you should identify if there is a person within your organisation competent to identify asbestos. If there is not a competent person within your organisation, you will need to engage an external competent person to identify asbestos unless you presume asbestos is present or you have reasonable grounds to believe that asbestos is not present. A competent person does not have to be licensed or approved by the relevant regulator, however, they should be:

- 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, and
- able to determine that material may be friable or non-friable asbestos and evaluate its condition.

All relevant information should be provided to the competent person so they can correctly identify where asbestos is in the workplace. For example, if you are the owner of a building, structure or plant, you should obtain information on the products used in making the building, structure or plant. This includes building plans, design papers and specifications, correspondence with builders and plant manufacturers. Workers in the workplace can also assist with this task.

As there may be more than one person with the duty, it is important that consultation and coordination occurs with others at the workplace to ensure all asbestos is identified, for example, the person with control may carry out the task of identifying the asbestos with the person who has day-to-day management of the workplace to ensure it has been done.

Appendix A may assist you in determining where asbestos may be present.

3.2 How to identify asbestos

The person identifying the asbestos should consider the following factors:

a. When was the building constructed?

Asbestos was widely used as construction and insulation material in buildings until 2003, before its use was completely prohibited. However, as the bans were not absolute prior to this time and building materials may have been stockpiled, stored or recycled and used, it is possible that asbestos may be present in buildings after the ban was introduced.

b. Were there any refurbishments or additions to the building prior to 2003?

Any refurbishment or extensions to the original building prior to 2003 may have involved the use of asbestos. Although the original parts of the building do not contain asbestos, you should not assume the subsequent additions do not.

c. Consider the type of materials that were 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 2003, it is likely to contain asbestos fibres bonded to cement particles. For example, if a roof is made from corrugated cement sheeting it is likely to contain asbestos. Areas of buildings that are prone to wet conditions may have asbestos sheeting or asbestos vinyl tiles in the walls and floors due to the hardness and waterproofing qualities of asbestos compared to other materials, for example, bathrooms, toilets and laundries. Likewise, pipes throughout the building that carry water and sewage may contain asbestos.

d. Talk to designers, manufacturers or suppliers of plant or refer to design plans

Asbestos may be present in specific parts of the plant in your workplace as it was used in gasket and friction brake products. Despite a large reduction in its use, it was still being used in some applications until recent years. You should talk to the supplier, manufacturer or designer of the plant to find out if asbestos is present and if possible, obtain this advice in writing. If this is not possible you should refer to the design plans and seek advice from an experienced engineer or plant designer. You should have quality assurance systems or checks in place to confirm whether asbestos is present.

e. 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.

f. Materials and inaccessible areas that may contain asbestos

A thorough inspection of the workplace must be conducted, including all buildings, structures, ceiling spaces, cellars, shafts, storage areas and wall cavities. You should also consider any portable items or items that are at the workplace from time to time, for asbestos content, for example, ore samples for analysis may contain NOA, or asbestos may be used for research purposes.

When you have inaccessible areas in the workplace, you may choose to take the following actions to assist you in identifying if asbestos is present (or presuming), until you can accurately determine if asbestos is present by the analysis of suspected asbestos samples:

- Review past asbestos registers or workplace inspection reports where determinations have previously been made to indicate where asbestos is likely to be present.
- Obtain a copy of the design plans for a workplace.
- Hold discussions with builders, architects, manufacturers of plant and maintenance workers.

As a general rule, an inaccessible area is an area that cannot be accessed during normal daily activities or routine maintenance. Therefore, the following areas are not regarded as 'inaccessible areas' and must be inspected or presumed to contain asbestos:

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

Accessing fire door and security safe cores to determine whether they contain asbestos may result in creating a risk, for example, drilling can result in the release of airborne asbestos fibres. If this is the case, you should not access the cores but you must then presume they contain asbestos until

otherwise proven (for instance, during maintenance when access is obtained) or information is obtained from the supplier.

g. Take notes and photographs

Taking notes and photographs while the inspection is being conducted can assist in producing the asbestos register.

3.3 Arranging a sample to identify asbestos in the workplace

The [draft] WHS Regulations require a person with management or control of a workplace may identify asbestos by arranging for a sample of material to be analysed for the presence of asbestos.

It can be difficult to tell whether a material contains asbestos simply by looking at it, unless it is labelled. Therefore, you may want to have a sample of suspected asbestos analysed.

Only a person trained in the process of sampling may take the samples for analysis because of the increased health risk of fibres being released during the process. If the sampling process is conducted incorrectly, it can be more hazardous than leaving the material alone. All asbestos samples must be analysed by a NATA-accredited laboratory or one that is approved by or operated by the relevant regulator.

If asbestos is stable and non-friable and will not be disturbed, it should be left alone. Only material that is damaged or will be disturbed should be sampled.

A competent person should take the following steps to carry out sampling:

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're inside. If 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, PVA glue, plastic drop sheet, water spray bottle, and
 - P2 respirator, rubber gloves.

Step 2 - Taking the sample

- Wear disposable gloves.
- Put on respiratory protective equipment (RPE) and disposable gloves.
- 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 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 by or operated by the relevant regulator.

Step 3 - Cleaning up

- Seal the edges with PVA glue 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 rubbish bag along with the damp rag and drop sheet.
- Seal plastic bag.
- Wash hands.
- Keep RPE on until clean up is completed.
- Follow a decontamination procedure (personal washing) upon completion of the task.

Once the results of the sampling are known, the person with management or control must ensure the asbestos register is updated to reflect the confirmation that asbestos is present, or presumed to be present. The location, type (if known), form, and condition of the asbestos should be recorded. The record may include a photograph or drawing which shows where the asbestos is located and must be available at the workplace so that people can easily find it.

3.4 Presuming materials contain asbestos

Where a competent person is not able to determine whether asbestos is present, the person conducting a business or undertaking must presume asbestos is present. Similarly, if there are inaccessible areas that are likely to contain asbestos, it must be presumed that asbestos is present in those areas.

Alternatively, a person conducting a business or undertaking may presume that asbestos is present at the workplace without engaging a competent person.

Once the presence and location of asbestos has been presumed, it must be treated as if it has been identified to be asbestos. This means:

- 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, and
- the workplace asbestos register must include all the presumptions made about materials in the workplace with a simple, generic statement, for example, '*Roof sheeting is presumed to contain asbestos*' or '*All underground conduits are presumed to contain asbestos.*'

3.5 Maintaining an asbestos register

The [draft] WHS Regulations require a person with management or control of a workplace to ensure that all identified asbestos (including that presumed to be present) and asbestos that is likely to be present at the workplace from time to time is recorded in an asbestos register that is accessible at the workplace. The asbestos register must be regularly reviewed and revised if necessary.

The asbestos register is a key part of managing asbestos in the workplace. It provides information on the location and condition of asbestos in the workplace.

If you have management or control of a workplace, for example a building owner, owner or controller of plant, or a person who engages workers to work at the workplace, you must ensure that an asbestos register is maintained at the workplace.

If you are carrying out or intend to carry out work at a workplace, you should obtain the current asbestos register and identify any asbestos you may have management or control of (for example, in items of plant). You should talk to the person with management or control of the workplace if you come across any asbestos that is not included in the register.

If you are a worker, you should consider whether the work you are about to do will disturb asbestos. You should ask the person with management and control of the workplace for a copy of the workplace asbestos register to ensure that you do not disturb asbestos in the course of your work as this can lead to exposure for yourself and others in the workplace. The person with management or control of the workplace must ensure the register is readily available to you.

Where asbestos is only temporarily in the workplace

In some cases it may not be necessary to include asbestos that is only temporarily in the workplace. For example, plant that contains asbestos is being repaired at the workplace but it is only there for a short period while being repaired, it does not need to be recorded in the asbestos register because it is only temporarily present at the workplace. However, if plant is often at the workplace, (for example, where the company specialises in repairing plant that typically contains asbestos) it would be appropriate to consider how the associated risks will be managed.

Where there is no asbestos register at the workplace

If you are carrying out work and there is no asbestos register, you should identify, so far as you can, any asbestos which you encounter. You should report any asbestos that you identify as being present or likely to be present, to the person with management or control of the workplace.

If you are carrying out work in domestic premises, there will be no asbestos register. You should identify so far as you can, any asbestos which you encounter and discuss this and any appropriate actions with the homeowner or landlord.

Contents of an asbestos register

An asbestos register must record any asbestos that is identified, or presumed to be present and therefore identified, and also state if there is asbestos likely to be present at the workplace from time to time. Specifically, an asbestos register should, as a minimum, include the following:

At the identification stage:

- Date when the workplace was inspected or when the asbestos was identified
- Details of the competent person who inspected the workplace or identified the asbestos
- Location and condition of the asbestos
- Whether the asbestos is friable or non-friable
- Type of asbestos identified (for example, chrysotile (white) asbestos)
- Details of any asbestos that is presumed to be present at the workplace including its location
- Results of any analysis that confirms a material at the workplace is or is not asbestos
- The likely source of unfixed or uninstalled asbestos

At the risk assessment stage:

- Date the assessment was carried out
- Details of the competent person who carried out the assessment
- Findings and conclusions, including reviews and/or revisions of the assessment
- The results and any analysis done of any air monitoring that was conducted

At the control measure stage:

Any control measures, recommended by the competent person who carried out the risk assessment and decided on by the person conducting the business or undertaking

When maintenance or service work is being carried out on the asbestos:

Date the work was carried out

Details of the people who carried out the work

Reviewing and revising an asbestos register

If you have management or control of a workplace, you must ensure an asbestos register for the workplace is reviewed and where necessary revised if the risk assessment or a control measure is reviewed, or if further asbestos is identified at the workplace. Reviewing the asbestos register can occur at the same time the asbestos management plan is reviewed, however, it is likely that it will be necessary to review the register more frequently.

The person completing the review should locate the asbestos listed on the asbestos register and undertake a visual inspection to determine its condition and whether control measures are required to eliminate or minimise any risks. Previous asbestos registers and records relating to asbestos removal jobs, such as clearance certificates (if available), can assist in identifying all asbestos in the workplace.

Accessing an asbestos register

The asbestos register must be readily accessible to:

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

Where work is being carried out or about to be carried out at your workplace by another person conducting a business or undertaking and it is likely that there is risk of exposure to respirable asbestos fibres, you must ensure that person is given a copy of the asbestos register.

Keeping a copy of the register at the workplace is the easiest way of ensuring it is accessible.

Transferring an asbestos register if a person relinquishes management or control

If you are a person with management or control and you plan to relinquish management or control, (for instance, you sell the workplace or the business or undertaking that is being conducted), you must ensure that, as far as reasonably practicable, a copy of the asbestos register is given to the person, if any, who is assuming management or control of the workplace.

3.6 Demolition and refurbishment

Demolition and refurbishment work does not include minor routine maintenance work, or other minor work.

The [draft] WHS Regulations require a person with management or control of a workplace to review the asbestos register and ensure that all asbestos that is likely to be disturbed is identified prior to any demolition or refurbishment work is undertaken.

If an asbestos register is not available, the person who is carrying out the demolition or refurbishment work must determine if any asbestos is fixed or installed before starting the work.

Person with management and control of a workplace

If you are a person with management or control of a workplace, prior to any demolition or refurbishment work being carried out, you 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, as far as reasonably practicable, removed.

If an emergency occurs and there is asbestos present (or presumed present) in a building, structure or plant and the building, structure or plant must be demolished:

- ensure a procedure is developed to reduce the risk of exposure to workers and persons in the vicinity of the demolition site to asbestos to below the exposure standard, and
- notify the regulator about the emergency in writing.

Person carrying out demolition and refurbishment work

If you are carrying out demolition or refurbishment work, prior to the work commencing, you must:

- obtain a copy of the asbestos register from the person with management or control before starting the work
- if an asbestos register is not available, ensure the building, structure or plant has been inspected by a competent person to determine, or presume, if any asbestos is fixed or installed before starting the work
- where asbestos is identified or presumed as being fixed or installed, tell the occupier or owner if it is domestic premises or the person with management or control in any other case, and
- when carrying out work at domestic premises, ensure asbestos that is likely to be disturbed is identified and if reasonably practicable removed.

If an emergency occurs at domestic premises and there is asbestos present (or presumed present) in a building, structure or plant and the building, structure or plant must be demolished:

- ensure a procedure is developed to reduce the risk of exposure to workers and persons in the vicinity of the demolition site to asbestos to below the exposure standard, and
- notify the relevant regulator in writing about the emergency.

4. INDICATING THE PRESENCE OF ASBESTOS IN THE WORKPLACE

This requirement does not apply to domestic premises.

The [draft] WHS Regulations require a person with management or control of a workplace to ensure the presence and location of asbestos that has been identified at the workplace is clearly indicated.

Once asbestos has been identified, the person with management or control must ensure a combination of labels, warning signs and barricades are used to inform people asbestos is present and its location in the workplace.

Examples of warning signs and labels are shown in **Figure 1**. These examples provide only an indication of the words that may be used - these words are not mandatory.

Labels

All identified asbestos or presumed 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. 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 instead of labelling. For example, if floor tiles have been identified as containing asbestos, an appropriate warning sign, displayed on an adjacent wall, might read, '*Warning. Floor Tiles Contain Asbestos. Do Not Disturb Without Proper Training And Equipment*'.

All labels must comply with the labelling elements of the Globally Harmonized System of Classification and Labelling of chemicals (GHS) 3rd edition Annex 1 Allocation of Label Elements signal word, pictogram hazard statement and precautionary statements.

Warning signs

All warning signs should comply with *AS1319 Safety Signs for the Occupational Environment*.

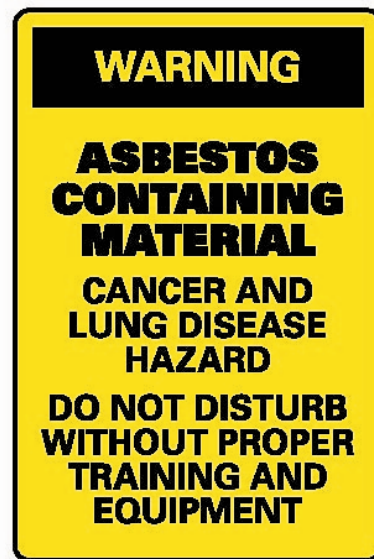
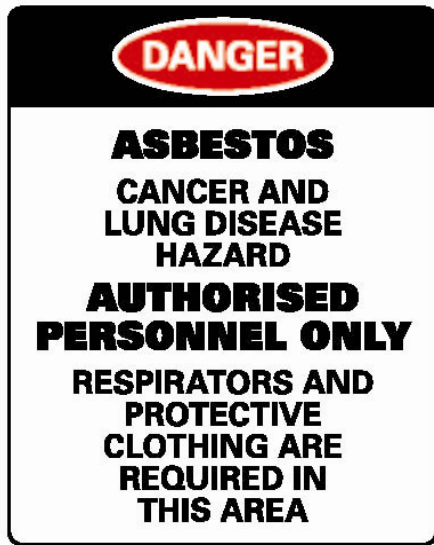
Any areas of a workplace which contain asbestos, including plant, equipment and components, should be signposted with warning signs to ensure the asbestos is not unknowingly disturbed without the correct precautions being taken. These signs should be weatherproof, constructed of light-weight material and adequately secured. Signs should be placed at all of 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.

Barricades

A risk assessment can assist determining what barriers are required. For example, tape can be used as a barrier to define an asbestos work area for some types of asbestos work of short duration. If a sign is not feasible, tape with the words 'asbestos hazard' along its length can be used instead to communicate the hazard. Further information on barricades is available in the *Code of Practice: How to Safely Remove Asbestos*.

Figure 1 – Examples of warning signs and labels



5. RISK ASSESSMENT

A risk assessment estimates the level of risk by combining the consequence of an event (such as death, injury or illness) and the likelihood of it occurring.

The [draft] WHS Regulations require the person with management or control of a workplace where asbestos is identified, presumed to be present or likely to be present at the workplace from time to time ensure that a risk assessment is undertaken:

- by a competent person, and
- prior to any work being carried out that is expected to disturb asbestos.

The person with management or control of a workplace must ensure the risk assessment is reviewed, and revised where necessary, by a competent person.

The purpose of this risk assessment is to allow informed decisions to be made about matters including control measures, induction and training, air monitoring and health surveillance requirements. The risk assessment must consider:

- the type and location of the asbestos in the workplace
- the condition of the asbestos
- whether exposure to asbestos at the workplace is likely
- whether work carried out, or to be carried out, at the workplace is likely to disturb asbestos
- other factors that may disturb asbestos, for example, abrasion from tree branches, and
- any results of air monitoring at the workplace.

Where the risk assessment relates to repetitive work practices in the one location, such as the inspection and removal of friction products in vehicles, the risk assessment should relate to the overall work practice, taking into account the repetitive nature of the task.

The need for air monitoring will depend on the particular circumstances, however, the results may assist in assessing risks associated with asbestos. Further information on air monitoring procedures, refer to the *Code of Practice: How to Safely Remove Asbestos* and the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres* [NOHSC: 3003 (2005)].

When assessing risks associated with asbestos, you may want to use a risk assessment tool to assist you in ranking materials consistently on the basis of the likely of release of asbestos fibres. An example of a risk assessment tool can be found on the United Kingdom's Health and Safety Executive (HSE) website at www.hse.gov.uk.

Reviewing risk assessments

You must ensure risk assessments are reviewed by a competent person and revised if:

- a change is made that affects the risk of exposure to asbestos at the workplace
- the condition of the asbestos changes, or
- there is evidence that the risk assessment or a control measure adopted is no longer adequate.

6. ASBESTOS MANAGEMENT PLAN

This requirement does not apply to domestic premises.

The [draft] WHS Regulations require a person with management or control of a workplace to ensure an asbestos management plan is developed for the workplace when asbestos has been identified or presumed present, or likely to be present from time to time.

An asbestos management plan helps a person that has management or control at a workplace to comply with the requirements of the [draft] WHS Regulations so that potential exposure is eliminated or minimised. It sets out how asbestos that is present at the workplace will be managed, for instance, what is going to be done, when it is going to be done and how it is going to be done. It should also set out clear lines of responsibility so that each person involved understands their role and any health risks are minimised.

Contents of an asbestos management plan

An asbestos management plan should, as a minimum, include:

- a reference or link to the asbestos register for the workplace
- the most recent risk assessment for the workplace
- details of how many people will be trained and any training procedures and related information
- locations for the display of warning signs and labels
- details of who was consulted
- decisions, and reasons for decisions, about the management of asbestos at the workplace
- procedures for dealing with accidents, incidents or emergencies involving asbestos at the workplace
- timetable for managing risks associated with asbestos, for example, priorities and dates for reviewing risk assessments, circumstances and activities that could affect the timing of action
- identification of each person with responsibilities under the plan, and the person's responsibilities
- procedures, including a timetable for reviewing and if necessary, revising the plan and asbestos register
- air monitoring procedures at the workplace, if required, and
- safe work procedures in relation to handling or using asbestos at the workplace.

Reviewing an asbestos management plan

If you have management or control of the workplace, you must ensure the asbestos management plan is reviewed and if necessary revised at least once every 5 years.

You must also ensure that a review is completed if:

- the asbestos register, risk assessment or control measures are reviewed
- the plan is no longer adequate to manage the asbestos in the workplace, or
- a reasonable request is received from a health and safety representative.

These reviews should critically reassess all processes and their effectiveness in:

- preventing exposure to airborne asbestos fibres
- controlling maintenance workers and contractors
- highlighting the need for action to maintain or remove asbestos
- raising awareness among people who may be exposed to asbestos, and
- maintaining the accuracy of the asbestos register.

Appendix C provides an example of an asbestos management plan that can be used as a guide.

7. MANAGING AND CONTROLLING ASBESTOS IN THE WORKPLACE

The most important step in the risk management process involves controlling risks by eliminating them so far as is reasonably practicable, or if that is not possible, by minimising the risks so far as is reasonably practicable.

There are many ways to control hazards and risks. Some control measures are more effective than others. You should consider various options and choose the control that most effectively eliminates the hazard or minimises the risk in the circumstances. This may involve a single control measure or a combination of different controls that together provide the highest level of protection that is reasonably practicable.

In deciding how to eliminate hazards or minimise risks, you must consult with your workers and their health and safety representatives who will be directly affected by this decision. Their experience will help you choose appropriate control measures and their involvement will increase the level of acceptance of any changes that may be needed to perform their job.

Some problems can be fixed easily and should be done straight away, while others will need more effort and planning to resolve. Of those requiring more effort, you should prioritise areas for action, focusing first on those hazards with the highest level of risk.

A combination of control measures may be used. A different control measure may also be implemented following a review of the asbestos management plan.

7.1 Removing asbestos

The ultimate goal is to have a workplace free of asbestos. Removal may be the most appropriate way to achieve this but this should be determined by the risk assessment. 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.

Non-friable asbestos – If asbestos is non-friable and it has been determined that it should be removed, it must be removed by an asbestos removalist as soon as reasonably practicable. Where it is not reasonably practicable to remove it, control measures must be put into place to eliminate any exposure, so far as reasonably practicable or to minimise exposure so far as reasonably practicable, but always ensuring the exposure standard is not exceeded.

Depending on the outcome of the risk assessment, specific instances where removal may be the best control measure include:

- asbestos in plants and pipes
- asbestos-contaminated dust (ACD)
- asbestos-contaminated soil and debris
- small-scale, low risk site contamination
- large scale and/or high risk site contamination
- NOA (where reasonably practicable), and
- loose fibre insulation.

The *Code of Practice: How to Safely Remove Asbestos* provides detailed guidance on appropriate work methods and additional controls for the removal of asbestos.

If removing asbestos is not the most practical option, other control measures should be implemented to ensure people are not exposed to airborne asbestos fibres, including enclosing or sealing the asbestos.

7.2 Enclosing asbestos (encapsulation)

Where it is not reasonably practicable to remove asbestos, an alternative control measure that can be implemented is encapsulation.

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. This may be determined during the risk assessment by reviewing a range of issues including cost, productivity, the condition of the asbestos and the low risk it poses to health.

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.

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 fibres, and
- follow a decontamination procedure upon completion of the task.

What is encapsulation?

Encapsulation is the enclosing of asbestos within a protective shell, creating a structure built around the asbestos so that it is completely covered to prevent exposure of the asbestos to air and other substances. This encapsulation will seal any loose fibres into place and should be used only when the original asbestos bond is still intact.

Encapsulation helps protect the asbestos from mechanical damage, increases the length of serviceability of the product and prevents the release of respirable asbestos fibres during the removal process.

Asbestos that is encapsulated in a resilient matrix such as in reinforced plastics, vinyls, resins, rubber, mastics, bitumen, paints, flexible plasters and cements have little opportunity to release fibres unless the matrix is damaged.

Example of encapsulation to enclose 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 that no risk to health exists currently. However, it is decided there is a chance that the sheets may be damaged again and if so, a risk to health may occur if fibres become respirable. 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 loader is operating inside the warehouse. These changes are included in the asbestos register and also the condition of the AC sheet is monitored as well as the newly installed control measure.

7.3 Sealing asbestos

If the asbestos cannot be removed and enclosed, sealing the asbestos is the third control measure that should be implemented. Sealing asbestos is the least effective method for controlling the release of airborne asbestos fibres, therefore, it should only be considered as an interim control while a more effective control such as removing or encapsulation can be implemented, for example, if the asbestos is weathered, damaged or broken, you should organise for it be removed.

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 fibres. 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, 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, you should use a method that does not disturb the matrix of 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 above ground 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.

7.4 Safe work practices

It is important that safe work practices are in place when carrying out asbestos 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, and
- 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 maintenance or service tasks are assessed by a competent person as involving similar levels of risk, they too may be performed only after the risks for that task have been assessed and appropriate control measures implemented.

Care should be taken when using high-speed abrasive power and pneumatic tools including angle grinders, sanders and saws and high-speed drills. If you are unsure, you should consult the relevant regulator.

Appendix D outlines some safe work practices of service and maintenance tasks that are likely to disturb asbestos, and may be performed, only after a risk assessment has been conducted and control measures have been implemented to eliminate or minimise exposure to airborne asbestos fibres.

7.5 Tools and equipment

It is important to select the correct equipment to minimise the generation of airborne asbestos fibres.

The [draft] WHS Regulations require a person conducting a business or undertaking must never use or direct or allow a worker to use a high pressure water spray or compressed air on asbestos.

A person conducting a business or undertaking must not use or direct or allow a worker to use any of the following equipment on asbestos unless the use of the equipment is controlled:

- power tools
- broom, and
- another implement that causes the release of airborne asbestos into the atmosphere.

The use of the equipment is considered to be controlled if, during use:

- the equipment is enclosed
- the equipment is designed to capture or suppress asbestos fibres, or
- the equipment is used in a way that is designed to capture or suppress asbestos fibres safely.

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 which are able to 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.

Care should be taken when using brooms, high pressure water and compressed air, as if they are incorrectly used, they can cause asbestos to become friable.

Asbestos vacuum cleaners

Asbestos vacuum cleaners should comply with the requirements in Australian Standard AS/NZS 60335.2.69 *Industrial vacuum cleaners*. Household vacuum cleaners must never be used where asbestos is or may be present, even if they have a HEPA filter.

More comprehensive information about asbestos vacuum cleaners is provided in the *Code of Practice: How to Safely Remove Asbestos*

7.6 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 can supply the SDS).

The ease of decontamination should be one of the factors considered when choosing PPE. Where possible, disposable equipment should be used and should be disposed of as asbestos waste. Further information on decontamination and asbestos waste disposal is available in the *Code of Practice: How to Safely Remove Asbestos*.

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 should 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 water spray bottle or damp cloths may be appropriate.
- Disposable coveralls should be disposed of as asbestos waste at the completion of the work. Non-disposable coveralls are not recommended and would require specialist laundering if used.

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. Laceless boots, such as gumboots, are preferred where practicable. Boot covers should not be worn as they collect dust and are a slipping risk.
- Safety footwear should 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. Workers must clean their hands and fingernails thoroughly after work. Any gloves used must be disposed of as asbestos waste.

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 must 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.
- More comprehensive advice on RPE is provided in the *Code of Practice: How to Safely Remove Asbestos*.

7.7 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, a clearance certificate will be required before the work area can be reoccupied for ordinary use.

The *Code of Practice: How to Safely Remove Asbestos* provides details on decontamination, waste disposal and clearance certificates.

7.8 Managing naturally occurring asbestos

Where NOA has been identified at the workplace, is confirmed by a competent person and the work carried out at the workplace is likely to result in the emission of airborne asbestos fibres, the following actions should be considered when developing the asbestos management plan:

- Isolating the workplace or part of the workplace until the NOA is contained.
- Deviating excavation to ensure avoidance of the deposit where possible.
- Providing appropriate labels and signs indicating NOA.
- 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 secure disposal asbestos waste if required.
- Educating the workers in safe work practices.

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.

If you have management or control at a workplace, you must ensure the release of airborne asbestos fibres is minimised by:

- wetting surfaces to reduce the dust levels
- suppression, 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
- sealing asbestos through the use of appropriate sealants or bonding agents
- preventing the spread of contamination by using wash down facilities
- providing information and training and supervision of all workers potentially at risk, and
- using PPE where indicated.

7.9 Maintenance and service work

If asbestos is identified or presumed to be present, it is essential to determine whether maintenance or service work can be done without disturbing the asbestos, for example:

- instead of drilling a hole through an AC sheeting wall to install electrical wiring, the wiring might be able to be routed over the wall, or
- if a ventilation flue or pipe has to be installed in an AC 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 and licence, correct tools, PPE, decontamination materials, barricades and warning 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 work area** - The asbestos work area should be isolated and access restricted only to 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.
- **Disposing asbestos** - All asbestos must be disposed of correctly. 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 asbestos.

Before commencing any maintenance, 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

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 respirable asbestos fibres. 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.

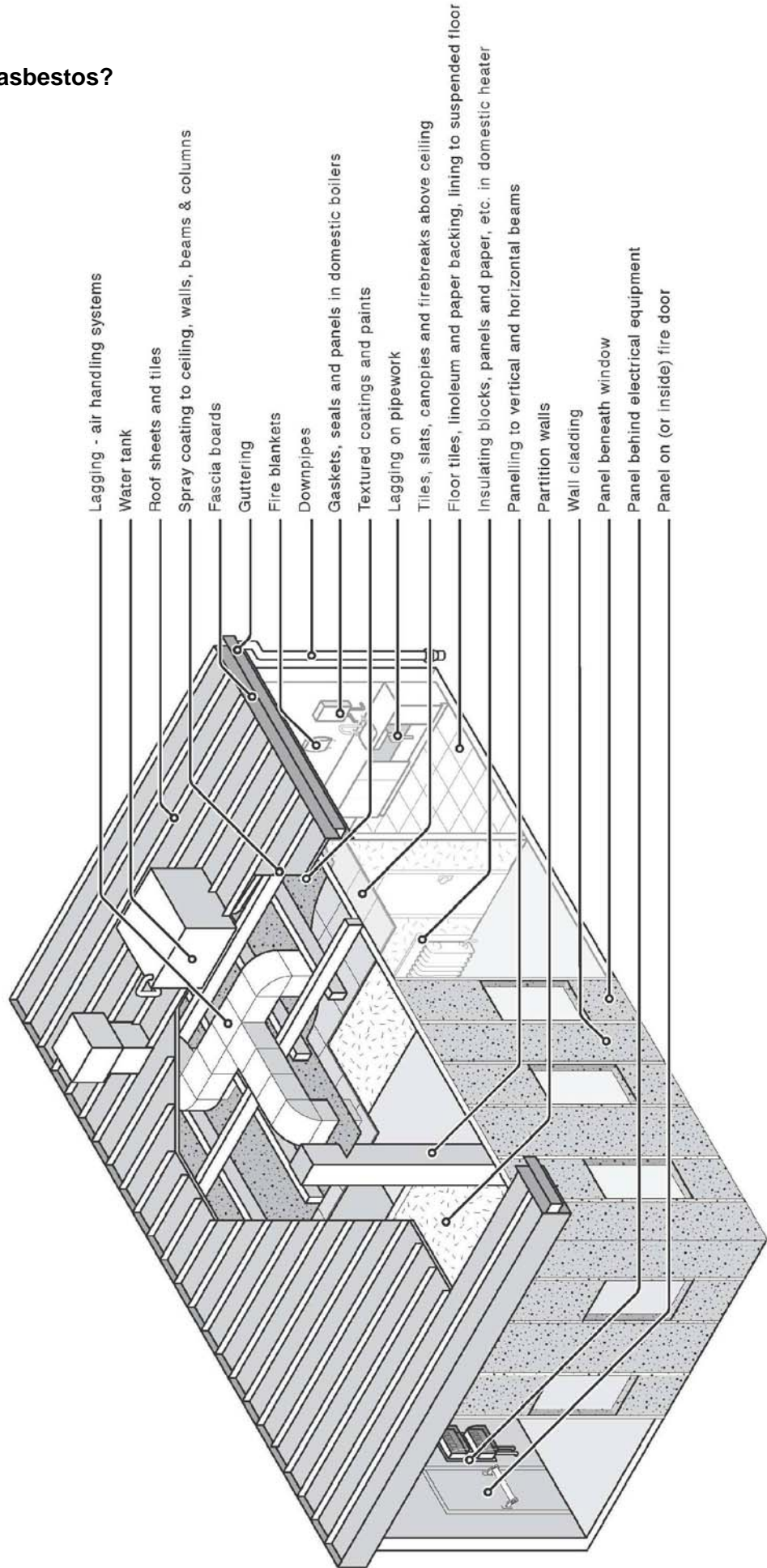
APPENDIX A – EXAMPLES OF ASBESTOS

List of common areas

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 seat
	Asbestos ceiling tiles
	Asbestos cement (AC) conduit
	AC electrical fuse boards
	AC external roofs and walls
	AC in the use of form work when pouring concrete
	AC moulded products such as gutters, ridge cappings, gas meter covers, cable troughs and covers
	AC pieces for packing spaces between floor joists and piers
	AC (underground) pits, as used for traffic control wiring, telecommunications cabling, etc
	AC render, plaster, mortar and coursework
	AC sheet
	AC sheet behind ceramic tiles
	AC sheet internal over exhaust canopies such as ovens, fume, cupboards, etc
	AC sheet internal walls and ceilings
	AC sheet underlays for vinyl
	AC storm drain pipes
	AC water pipes (usually underground)
	Asbestos-containing pegboard
	Asbestos felts
	Asbestos marine board, e.g. marinate
	Asbestos mattresses used for covering hot equipment in power stations
Asbestos paper used variously for insulation, filtering and production of fire 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 (typically Telecom)
	Calorifier insulation
	Car body filters (not common)
	Caulking compounds, sealant and adhesives
	Cement render
	Chrysotile wicks in kerosene heaters
	Clutch faces
	Compressed AC panels for flooring, typically verandas, bathrooms and steps for demountable buildings
	Compressed asbestos fibres (CAF) used in brakes and gaskets for plant and automobiles
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 Pitched-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 and 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	Galbestos™ roofing materials (decorative coating on metal roof for sound proofing)
	Gaskets – chemicals, refineries
	Gaskets – general
	Gauze mats in laboratories / chemical refineries
	Gloves – asbestos
H	Hairdryers – insulations 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 – AC panels lining the shaft at the opening of each floor, and asbestos packing around penetrations
	Limpet asbestos spray insulation
	Locomotives – stems, lagging on boilers, steam lines, steam dome and gaskets
	Loose fibre insulation
	Low density fibre board (e.g. asbestolux)
	M
Millboard between heating unit and wall	
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 section, water-mix type, rope braid and sheet
	Pitch-based (e.g. zelemite, asbestos, lebah) electrical switchboard
	Plaster and plaster cornice adhesives
R	Refractory linings
	Refractory tiles
	Roof tile, stone chip on metal type (asbestos may be in the biner)
	Rubber articles – extent of usage unknown
S	Sealant between floor slab and wall, usually in boiler rooms, risers or lift shafts
	Sealant or mastic on windows
	Sealants and mastics in air-conditioning 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 nuts internally, for bolts holding external building wall panels
T	Stoves – old domestic type, wall insulation
	Tape and rope – lagging and jointing
	Tapered ends of pipe lagging, where lagging in not necessarily asbestos
	Tilux sheeting in place of ceramic tiles in bathrooms
	Trailing cable under lift cabins
	Trains – country – guards vans – millboard between heater and wall
V	Trains – Harris cars – sprayed asbestos between steel shell and laminex
	Valve, pump insulation
W	Welding rods
	Woven asbestos cable sheath

Where can you find asbestos?



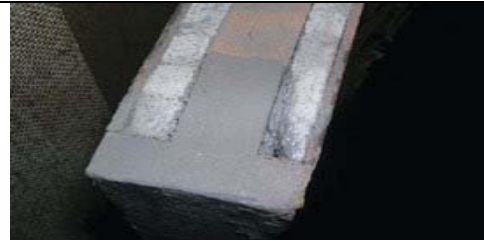
APPENDIX B – PHOTOS OF ASBESTOS²

	
<p>PVC or vinyl floor tiles with added asbestos (low %) chrysotile (non-friable)</p>	<p>Open electrical switchboard with asbestos flash guard (non-friable)</p>
	
<p>Asbestos textiles were widely used as a reinforcing material in friction products. e.g. conveyor and fan belts, brake and clutch linings (non-friable)</p>	<p>Fire retardant door insulation (friable)</p>
	
<p>Spray coating on a building walkway (friable)</p>	
	<p>Asbestos rope seal on drying oven (non-friable)</p>
<p>Loose fibres – friable</p>	
	<p>Metal clad gas Flue containing chrysotile lining (non-friable)</p>
<p>Chrysotile tape scrim</p>	

² Images used in this Code have been sourced from the Health and Safety Executive (HSE) UK and OCTIEF Pty LIMITED.



Friable asbestos roof cladding (friable)



Asbestos thermal insulation (friable)



Asbestos brake lining on output shaft of AC motor (friable)



Amosite and chrysotile packing on a water pipe (friable)



Asbestos bitumen coating under metal cladding (non-friable)



Chrysotile pebble dash exterior wall coating (non-friable)



Wall plasters containing asbestos (non-friable)



Asbestos cement (AC)



AC roof and wall cladding (non-friable)



AC downpipe (friable)



Friable asbestos debris (friable)



AC moulding gutter (friable)

APPENDIX C – EXAMPLE OF AN ASBESTOS REGISTER

ASBESTOS REGISTER								
Workplace address:					Inspection conducted by:			
Type of asbestos	Specific location	Is this area inaccessible?	Source of unfixed or uninstalled asbestos	Friable or non-friable?	What is its condition?	Likely to sustain damage or deteriorate?	Activities that may disturb the asbestos	Date of identification

APPENDIX D – RECOMMENDED SAFE WORKING 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*.

A risk assessment, as described in **Chapter 5** of this Code, should be undertaken before any maintenance or service work with asbestos is commenced, and only competent persons should carry out work with 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 ASBESTOS-CONTAINING MATERIALS

The drilling of asbestos cement sheeting can release asbestos fibres into the atmosphere, so precautions must be taken to protect the drill operator and other persons from exposure to these 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.

<p>Equipment that may be required on site prior to commencing the work (in addition to any equipment required to complete particular task)</p>	<ul style="list-style-type: none"> • A non-powered hand drill or a low-speed battery-powered drill or drilling equipment. Battery-powered drills 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 – such as pastes and gels – are unsuitable then shadow vacuuming techniques should be used. • Disposable cleaning rags. • A bucket of water, or more as appropriate, and/or a misting spray bottle. • Duct tape. • Sealant. • Spare PPE. • A thickened substance such as wallpaper paste, shaving cream or hair gel. • 200 µm plastic sheeting. • A suitable asbestos waste container (e.g. 200 µm plastic bags or a drum, bin or skip lined with 200 µm plastic sheeting). • Warning signs and/or barrier tape. • An asbestos vacuum cleaner. • A sturdy paper, foam or thin metal cup, or similar (for work on overhead surfaces only).
<p>PPE</p>	<ul style="list-style-type: none"> • 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.
<p>Preparing the asbestos work area</p>	<ul style="list-style-type: none"> • If the work is to be carried out at a height, appropriate precautions must be taken to prevent the risk of falls. • Ensure appropriately marked asbestos waste disposal bags are available. • Carry out the work with as few people present as possible. • 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. • If drilling a roof from outside, segregate the area below. • If access is available to the rear of the asbestos cement, segregate this area as well, as above. • If possible, use plastic sheeting, secured with duct tape, to cover any surface within the asbestos work area that could become contaminated. • Ensure there is adequate lighting. • Avoid working in windy environments where asbestos fibres can be redistributed. • 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.
<p>Drilling vertical surfaces</p>	<ul style="list-style-type: none"> • 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. • Cover the drill entry and exit points (if accessible) on the asbestos with a generous amount of thickened substance. • Drill through the paste. • Use damp rags to clean off the paste and debris from the wall and drill bit. • Dispose of the rags as asbestos waste, as they will contain asbestos dust and fibres • Seal the cut edges with sealant. • If a cable is to be passed through, insert a sleeve to protect the inner edge of the hole.
<p>Drilling overhead horizontal surfaces</p>	<ul style="list-style-type: none"> • Mark the point to be drilled. • Drill a hole through the bottom of the cup. • Fill or line the inside of the cup with shaving cream, gel or a similar thickened substance. • 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. • Align the drill bit with the marked point. • Ensure the cup is firmly held against the surface to be drilled. • Drill through the surface. • Remove the drill bit from the cup, ensuring that the cup remains firmly against the surface. • Remove the cup from the surface. • Use damp rags to clean off the paste and debris from the drill bit. • Dispose of the rags as asbestos waste, as they will contain asbestos dust and fibres. • Seal the cut edges with sealant. • 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 equipment	<ul style="list-style-type: none"> • Use damp rags to clean the equipment. • 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. • If necessary, use damp rags and/or an asbestos vacuum cleaner to clean any remaining visibly contaminated sections of the asbestos work area. • Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container. • 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 decontamination should be carried out in a designated area	<ul style="list-style-type: none"> • 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. • 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. • 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. <p>Refer to the <i>Code of Practice: How to Safely Remove Asbestos</i> for more information.</p>
Clearance procedure	<ul style="list-style-type: none"> • Visually inspect the asbestos work area to make sure it has been properly cleaned. • Clearance air monitoring is not normally required for this task. • Dispose of all waste as asbestos waste. <p>Refer to the <i>Code of Practice: How to Safely Remove Asbestos</i> for more information.</p>

SAFE WORK PRACTICE 2 - SEALING, PAINTING, COATING AND CLEANING OF ASBESTOS-CEMENT PRODUCTS

These tasks should only be carried out on asbestos that are in good condition. For this reason, the AC material should be thoroughly inspected before commencing 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 the sheeting has deteriorated as a result of aggressive environmental factors such as pollution. If asbestos cement sheeting 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 of asbestos cement sheeting is considered essential, a method that does not disturb the matrix of the asbestos cement sheeting should be used. Under no circumstances should asbestos cement products be water blasted or dry sanded in preparation for painting, coating or sealing.

Equipment that may be required on site prior to commencing the work (in addition to any equipment required to complete particular task)	<ul style="list-style-type: none"> • Disposable cleaning rags. • A bucket of water, or more as appropriate, and/or a misting spray bottle. • Sealant. • Spare PPE. • A suitable asbestos waste container. • Warning signs and/or barrier tape.
PPE	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • If work is to be carried out at a height, precautions must be taken to prevent the risk of falls. • Before starting, assess the asbestos cement for damage. • Ensure appropriately marked asbestos waste disposal bags are available. • Carry out the work with as few people present as possible. • 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. • If working at a height, segregate the area below. • 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. • Ensure there is adequate lighting. • 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. • Never use high-pressure water cleaning methods. • 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. • 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. • Wipe dusty surfaces with a damp cloth.
Painting and sealing	<ul style="list-style-type: none"> • When using a spray brush, <i>never</i> use a high pressure spray to apply the paint. • When using a roller, use it lightly to avoid abrasion or other damage.
Decontaminating the asbestos work area and equipment	<ul style="list-style-type: none"> • Use damp rags to clean the equipment. • Where required, use damp rags and/or an asbestos vacuum cleaner to clean the asbestos work area. • Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container. • 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 decontamination should be carried out in a designated area	<ul style="list-style-type: none"> • 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. • 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. • 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. <p>Refer to the <i>Code of Practice: How to Safely Remove Asbestos</i> for more information.</p>
Clearance procedure	<ul style="list-style-type: none"> • Visually inspect the asbestos work area to make sure it has been properly cleaned. • Clearance air monitoring is not normally required for this task. • Dispose of all waste as asbestos waste. <p>Refer to the <i>Code of Practice: How to Safely Remove Asbestos</i> for more information.</p>

SAFE WORK PRACTICE 3 - CLEANING LEAF LITTER FROM GUTTERS OF ASBESTOS CEMENT ROOFS	
Equipment that may be required on site prior to commencing the work (in addition to any equipment required to complete particular task)	<ul style="list-style-type: none"> • A bucket of water, or more as appropriate, and detergent. • A watering can or garden spray. • A hand trowel or scoop. • Disposable cleaning rags. • A suitable asbestos waste container. • Warning signs and/or barrier tape. • An asbestos vacuum cleaner.
PPE	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Since the work is to be carried out at a height, appropriate precautions must be taken to prevent the risk of falls. • Ensure appropriately marked asbestos waste disposal containers are available. • 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. • Segregate the area below. • Avoid working in windy environments where asbestos fibres can be redistributed. • 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.
Gutter cleaning	<ul style="list-style-type: none"> • 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. • Mix the water and detergent. • Using the watering can or garden spray, pour the water and detergent mixture into the gutter, but avoid over-wetting as this will create a slurry. • Remove the debris using a scoop or trowel. Do not allow debris or slurry to enter the water system. • Wet the debris again if dry material is uncovered. • Place the removed debris straight into the asbestos waste container.
Decontaminating the asbestos work area and equipment	<ul style="list-style-type: none"> • Use damp rags to wipe down all equipment used. • Use damp rags to wipe down the guttering. • Where practicable, and if necessary, use an asbestos vacuum cleaner to vacuum the area below. • Place debris, used rags and other waste in the asbestos waste container. • 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 decontamination should be carried out in a designated area	<ul style="list-style-type: none"> • 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. • 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. • 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. <p>Refer to the <i>Code of Practice: How to Safely Remove Asbestos</i> for more information.</p>
Clearance procedure	<ul style="list-style-type: none"> • Visually inspect the asbestos work area to make sure it has been properly cleaned. • Clearance air monitoring is not normally required for this task. • Dispose of all waste as asbestos waste. <p>Refer to the <i>Code of Practice: How to Safely Remove Asbestos</i> for more information.</p>

SAFE WORK PRACTICE 4 - REPLACE CABLING IN ASBESTOS CEMENT CONDUITS OR BOXES

Equipment that may be required on site prior to commencing the work (in addition to any equipment required to complete particular task)	<ul style="list-style-type: none"> • Disposable cleaning rags. • A bucket of water, or more as appropriate, and/or a misting spray bottle. • 200 µm thick plastic sheeting. • Cable slipping compound. • Appropriately marked asbestos waste disposal bags. • Spare PPE. • Duct tape. • Warning signs and/or barrier tape. • An asbestos vacuum cleaner.
PPE	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • If the work will be carried out in a confined space, appropriate precautions must be taken to prevent the risk of asphyxiation. • Ensure appropriately marked asbestos waste disposal bags are available. • Carry out the work with as few people present as possible. • 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. • Use plastic sheeting, secured with duct tape, to cover any surface within the asbestos work area which could become contaminated. • Place plastic sheeting below the conduits through which cable(s) are to be pulled, prior to pulling any cables. • Ensure there is adequate lighting. • Avoid working in windy environments where asbestos fibres can be redistributed. • 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.
Replacement or installation of cables	<ul style="list-style-type: none"> • Wet down the equipment and apply adequate cable slipping compound to the conduits/ducts throughout the process. • 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. • Ropes used for cable pulling should have a smooth surface that can easily be cleaned. • Do not use metal stockings when pulling cables through asbestos cement conduits. • Do not use compressed air darts for pulling cables through asbestos cement conduits/ducts.
Decontaminating the asbestos work area and equipment	<ul style="list-style-type: none"> • Use damp rags to clean the equipment. • Wet wipe around the end of the conduit, sections of exposed cable and the pulling eye at the completion of the cable pulling operation. • If the rope or cable pass through any rollers, these must also be wet wiped after use. • Wet wipe the external surface of excess cable pulled through the conduit/duct, as close as possible to the exit point from the conduit, before it is removed from the work site. • 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. • If required, use damp rags or an asbestos vacuum cleaner to clean any remaining visibly contaminated sections of the asbestos work area. • Place all debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container. • 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 decontamination should be carried out in a designated area	<ul style="list-style-type: none"> • 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. • 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. • 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. <p>Refer to the <i>Code of Practice: How to Safely Remove Asbestos</i> for more information.</p>
Clearance procedure	<ul style="list-style-type: none"> • Visually inspect the asbestos work area to make sure it has been properly cleaned. • Clearance air monitoring is not normally required for this task. • Dispose of all waste as asbestos waste. <p>Refer to the <i>Code of Practice: How to Safely Remove Asbestos</i> for more information.</p>

SAFE WORK PRACTICE 5 - WORKING ON ELECTRICAL MOUNTING BOARDS CONTAINING ASBESTOS	
<p>If the asbestos-containing electrical mounting panel has to be removed for work behind the board, the procedures for removing electrical meter boards outlined in the <i>Code of Practice: How to Safely Remove Asbestos</i> should be followed. If drilling is required, the control process should be consistent with the measures described in Safe Work Practice 1.</p>	
<p>Equipment that may be required on site prior to commencing the work (in addition to equipment required to complete particular task)</p>	<ul style="list-style-type: none"> • 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. • Duct tape. • Warning signs and/or barrier tape. • Disposable cleaning rags. • A plastic bucket of water and/or a misting spray bottle. • Spare PPE. • A suitable asbestos waste container. • 200 mm plastic sheeting. • An asbestos vacuum cleaner.
PPE	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Because the asbestos work area will involve electrical hazards, appropriate precautions must be taken to prevent the risk of electrocution. • Ensure appropriately marked asbestos waste disposal bags are available. • Carry out the work with as few people present as possible. • 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. • Use plastic sheeting, secured with duct tape, to cover any surface within the asbestos work area which could become contaminated. • Ensure there is adequate lighting. • Avoid working in windy environments where asbestos fibres can be redistributed. • 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.
Work on electrical mounting panels	<ul style="list-style-type: none"> • Providing the panel is not friable, maintenance and service work may include: <ul style="list-style-type: none"> ○ replacement of asbestos containing equipment on the electrical panel with non-asbestos equipment ○ operation of main switches and individual circuit devices ○ pulling / inserting service and circuit fuses ○ bridging supplies at meter bases ○ using testing equipment ○ accessing the neutral link, and ○ installation of new components/equipment.
Decontaminating the asbestos work area and equipment	<ul style="list-style-type: none"> • Use damp rags to clean the equipment. • 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. • In areas where there is an electrical hazard, an asbestos vacuum cleaner should be used to remove any dust or debris from the mounting panel and other visibly contaminated sections of the asbestos work area. • In areas where there is no electrical hazard, wet wiping with a damp rag can be used to remove minor amounts of dust or debris. • Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container. • 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 decontamination should be carried out in a designated area	<ul style="list-style-type: none"> • 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. • 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. • 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. <p>Refer to the <i>Code of Practice: How to Safely Remove Asbestos</i> for more information.</p>
Clearance procedure	<ul style="list-style-type: none"> • Visually inspect the asbestos work area to make sure it has been properly cleaned. • Clearance air monitoring is not normally required for this task. • Dispose of all waste as asbestos waste. <p>Refer to the <i>Code of Practice: How to Safely Remove Asbestos</i> for more information.</p>

SAFE WORK PRACTICE 6 - INSPECTION OF ASBESTOS FRICTION MATERIALS

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

Equipment that may be required on site prior to commencing the work (in addition to equipment required to complete particular task)	<ul style="list-style-type: none"> • A misting spray bottle. • Duct tape. • Warning signs and/or barrier tape. • Disposable cleaning rags. • A bucket of water and detergent. • Spare PPE. • A suitable asbestos waste container. • A catch tray or similar container. • An asbestos vacuum cleaner.
PPE	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Ensure appropriately marked asbestos waste disposal bags are available. • Carry out the work with as few people present as possible. • A risk assessment should determine whether to segregate the asbestos work area, but it may be necessary to ensure unauthorised personnel are restricted from entry (e.g. using barrier tape and/or warning signs). • Use a suitable collection device below the location where the work will be carried out to collect any debris or runoff. • Ensure there is adequate lighting. • Avoid working in windy environments where asbestos fibres can be redistributed. • 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.
Inspection of asbestos friction materials	<ul style="list-style-type: none"> • A misting spray bottle should be used to wet down any dust. If using spray equipment to wet the asbestos might disturb asbestos fibres, use alternative wetting agents, e.g. a water-miscible degreaser or a water/detergent mixture. • The wet method should be used, but if this is not possible the dry method may then be used. <p><u>Wet method:</u></p> <ul style="list-style-type: none"> • Use the misting spray bottle to wet down any visible dust. • Use a damp rag to wipe down the wheel or automobile part before removal. Ensure the dust is kept wet to prevent atmospheric contamination. • Use hand tools rather than power tools to reduce the generation of airborne fibres. • 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. • Open the housing and clean all asbestos parts using a damp rag, ensuring all runoff water is caught in a suitable asbestos waste container. <p><u>Dry method:</u></p> <ul style="list-style-type: none"> • 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. • Use an asbestos vacuum cleaner to remove asbestos fibres from the brakes and rims or other materials before carrying out the inspection.
Decontaminating the asbestos work area and equipment	<ul style="list-style-type: none"> • Use damp rags to clean the equipment, including the dust collection tray. • If necessary, use damp rags or an asbestos vacuum cleaner to clean any remaining visibly contaminated sections of the asbestos work area. • Place debris, used rags and other waste in the asbestos waste bags/container. • 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 decontamination should be carried out in a designated area	<ul style="list-style-type: none"> • If disposable coveralls are worn, clean the coveralls and RPE while still wearing them using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth. • 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. • 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 <p>Refer to the <i>Code of Practice: How to Safely Remove Asbestos</i> for more information.</p>
Clearance procedure	<ul style="list-style-type: none"> • Visually inspect the asbestos work area to make sure it has been properly cleaned. • Clearance air monitoring is not normally required for this task. • Dispose of all waste as asbestos waste. <p>Refer to the <i>Code of Practice: How to Safely Remove Asbestos</i> for more information.</p>