

Edition No. 1
September 2008



Compliance Code

Managing asbestos in workplaces



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Preface

This compliance code provides practical guidance to those who have duties under the *Occupational Health and Safety Act 2004* (the OHS Act) or the Occupational Health and Safety Regulations 2007 (the Regulations) on how to comply with those duties or obligations.

It was made under the OHS Act and was approved by The Hon. Tim Holding MP, Minister for Finance, WorkCover and the Transport Accident Commission, on 19 September 2008.

This compliance code has been developed by WorkSafe Victoria. Representatives of employers, employees and government agencies were consulted during its preparation.

Employers, employees, self-employed persons and those with management and control of workplaces need to use the compliance code in conjunction with the OHS Act and Regulations.

This compliance code is not mandatory. A relevant duty holder who complies with the compliance code will – to the extent the compliance code deals with their duties or obligations under the OHS Act and Regulations – be considered to have complied with their duties and obligations.

If conditions at the workplace or the way work is done raise different or additional risks not covered by the compliance code, compliance needs to be achieved by another means.

WorkSafe publishes guidance to assist with this process at worksafe.vic.gov.au.

Evidence of a failure to observe a compliance code may be used as evidence in proceedings for an offence under the OHS Act or Regulations. However, a duty holder will not fail to meet their duty or obligation simply because of a failure to observe a compliance code.

A WorkSafe inspector may cite a compliance code in a direction or condition in an improvement notice or a prohibition notice as a means of achieving compliance.

A health and safety representative (HSR) may cite a compliance code in a provisional improvement notice when providing directions as to how to remedy an alleged contravention of the OHS Act or Regulations.

The approval of a compliance code may be varied or revoked by the Minister. To confirm this compliance code is current and in force, go to worksafe.vic.gov.au.

Introduction

Purpose

1. Exposure to asbestos fibres can cause a range of debilitating medical conditions affecting the respiratory system, including mesothelioma, asbestosis and lung cancer. Many asbestos-related conditions are life threatening or associated with a marked reduction in life expectancy.
2. This compliance code has been written primarily for persons who have management or control of workplaces or plant in workplaces and where a risk to health could arise from exposure to asbestos. These people have legal duties under the Occupational Health and Safety Regulations 2007 (the Regulations) and the *Occupational Health and Safety Act 2004* (the OHS Act). This compliance code should be read in conjunction with 'Part 4.3 – Asbestos' of the Regulations. It provides:
 - practical guidance that will assist these duty holders meet their regulatory duties, such as identifying asbestos in workplaces and plant and implementing control measures to reduce the risk to health
 - information about the legal requirements for workplaces where asbestos-related activities are carried out.

Further information about the risks to health from airborne asbestos fibres is provided in WorkSafe's *Asbestos – A handbook for workplaces*, which is a supplementary document to this compliance code.

Scope

3. The content of this compliance code relates to all occupational situations (except asbestos removal) where a risk to health could arise from exposure to asbestos, including:
 - workplaces where asbestos is fixed or installed in a building, structure, ship or plant
 - demolition works on a building, structure, ship or plant where asbestos is fixed or installed
 - specified activities involving asbestos-containing material (ACM).

For guidance about removing asbestos refer to WorkSafe's *Removing asbestos in workplaces* compliance code.

Application

4. This compliance code applies to:
 - people who manage or control a workplace
 - employers and employees at workplaces where asbestos is present
 - employers and employees engaged in asbestos-related activities at workplaces.
5. A person at the workplace must not be exposed to an atmospheric concentration of asbestos fibres above the exposure standard. People who manage or control a workplace and employers have legal responsibilities to eliminate exposure to asbestos or where this is not reasonably practicable, reduce the level of exposure so far as is reasonably practicable.
6. The ultimate goal is for workplaces to be free of ACM. Where reasonably practicable, asbestos should be removed prior to refurbishment, renovation or maintenance rather than implementing other control measures, such as enclosure or sealing.

Consultation

7. By law, employers must consult with employees on a range of matters that directly affect (or are likely to directly affect) their health and safety, so far as is reasonably practicable.
8. Consultation must involve sharing information with employees, giving employees a reasonable opportunity to express their views and taking those views into account.
9. Where employees are represented by health and safety representatives (HSRs), these representatives must be involved in the consultation, so far as reasonably practicable.
10. The law sets out specific requirements on how HSRs are to be involved in consultation. These are:
 - provide HSRs with all the information about the matter that the employer provides, or intends to provide, to employees. If it is reasonably practicable, the information must be provided to the HSRs a reasonable time before it is provided to employees
 - invite the HSRs to meet with the employer to consult on the matter or meet with the HSRs at their request
 - give the HSRs a reasonable opportunity to express their views on the matter and take those views into account.
11. The employer must include independent contractors and their employees in the consultation, so far as is reasonably practicable, if the employer has, or should have, control of a relevant matter that affects their health and safety.

12. Consultation is required when:
 - identifying or assessing hazards or risks
 - making decisions on how to control risks
 - making decisions about the adequacy of facilities for employee welfare (such as dining facilities, change rooms, toilets or first aid)
 - making decisions about procedures to:
 - resolve health and safety issues
 - consult with employees on health and safety
 - monitor employee health and workplace conditions
 - provide information and training
 - determining the membership of any health and safety committee in the workplace
 - proposing changes that may affect employee health and safety, such as changes to:
 - the workplace
 - plant, substances or other things used in the workplace
 - the work performed at the workplace
 - doing any other thing prescribed by the Regulations.
13. In practice, this means that when planning to implement measures identified in this compliance code or when making decisions to implement alternative measures to those specified in this compliance code, consultation must take place.

General requirements of the Occupational Health and Safety Regulations 2007

Duty to control exposure to airborne asbestos fibres

14. People with management or control of a workplace as well as employers and self-employed persons have duties to control exposure to airborne asbestos fibres in the workplace.
15. They must eliminate the exposure to airborne asbestos fibres so far as is reasonably practicable. If exposure cannot be eliminated, they must reduce the exposure so far as is reasonably practicable.
16. There are also duties to:
 - ensure that no person is exposed to an atmospheric concentration of asbestos fibres above the asbestos exposure standard (see definition on page 9)
 - determine the exposure of employees if there is uncertainty
 - ensure copies of the results of any atmospheric monitoring are accessible to any affected employee at the workplace and their HSRs.
17. The duties of both the person with management or control and the employer extend to all people at the workplace (not just employees), including independent contractors and their employees.

Management or control

The person who has management or control of a workplace can be the person who:

- owns the workplace but is not at or based at the workplace (it does not have to be that person's actual place of work)
- has legally been assigned management and control duties over the workplace (such as a management group that may or may not be located at the workplace, including commercial and industrial property agents)
- owns the workplace and is working (or has employees working) at the workplace – in this case the person is both the person with management or control and an employer (if they have employees).

General requirements of the Occupational Health and Safety Regulations 2007

Determining who has management or control of the workplace

18. To determine who has management or control of a workplace (or plant within a workplace), it is necessary to consider building and/or structure ownership and who can make physical or structural changes.
19. If an employer owns the workplace, they would almost certainly have management or control.
20. If an employer leases a building, they cannot make physical or structural changes unless there is an agreement in the lease to allow such works. The extent to which an employer has management or control of a workplace can vary depending on the details of the lease.
21. Buildings are sometimes leased to multiple tenants who are employers but do not own the building or have building management or maintenance responsibilities. In these instances, tenants have to approach the person with management and control of these areas to raise issues or have them addressed.

These scenarios demonstrate that employers who are tenants do not necessarily have management or control of the workplace:

- A tenant requires telecommunications access – and that access is achieved through sealed building riser shafts that contain asbestos insulation.
- Leaking/damaged asbestos cement roofing that needs to be repaired – the repair request needs to go to the building owner or building manager.
- Alterations to power plants and lifts that contain asbestos.
- Water damage to ceiling spaces that contain asbestos.
- Modifications to fire doors that contain asbestos.

22. Contractual leasing agreements should be examined to establish what extent employers have management or control of a workplace.

Determining who has management or control of plant in the workplace

23. If the employer has introduced plant or structures that contain asbestos into the workplace, it is the employer who has management and control of that plant or structure. For example, if an employer introduces a press machine with asbestos-containing brakes, they are responsible for management and control duties for that plant.

Regulatory prohibitions

24. The Regulations contain prohibitions that have been made under the OHS Act – which apply to workplaces and the *Dangerous Goods Act 1985* – which apply to all persons.

Prohibitions under the *Occupational Health and Safety Act 2004* (regulations 4.3.7 to 4.3.9)

Prohibition on asbestos removal

25. Asbestos must not be removed from a workplace unless the asbestos removal work:
- is conducted by a licensed removalist
 - is conducted by an employee of a person who is a licensed removalist
 - involves non-friable ACM with an area that does not exceed 10 square metres in total and the total time of all asbestos removal by the employer (including all employees) does not exceed one hour in any period of seven days, or
 - is for the purpose of sampling and identification (refer to Appendix C for more information about taking asbestos samples).

Contaminated clothing

26. Clothing contaminated with asbestos must not be removed from the workplace except for disposal and laundering. When clothing is removed from the workplace to be laundered, it should be placed in two 200 micron-thick plastic bags (ie double bagged) and labelled to identify the presence of asbestos. Clothing needs to be wet down before bagging to minimise the potential for dust to become airborne when the bag is reopened. The launderer must be told about the potential for asbestos contamination on the clothing prior to arrival at the laundry.
27. If the clothing is to be disposed of as waste, this must be done as soon as reasonably practicable, at a waste site licensed by the Environment Protection Authority (EPA) Victoria.

Use of tools or instruments on asbestos

28. The use of brooms, brushes (except for sealing asbestos), high-pressure water jets, power tools or similar tools or instruments on asbestos in workplaces is prohibited unless use is controlled to ensure a person's exposure does not exceed half the asbestos exposure standard. To verify that half the exposure standard is not exceeded, personal air monitoring would be required.

Asbestos exposure standard:

0.1 f/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 WorkSafe.

29. Acceptable control measures include:

- enclosing the tool or instrument
- engineering controls such as extraction ventilation, or
- a combination of these.

30. For example, a power tool may be used to drill holes in asbestos cement (AC) sheeting where a partial enclosure attached to a vacuum cleaner fitted with a high-efficiency particulate air (HEPA) filter is placed over the point of drilling. This control is a combination of enclosure and engineering control. If used correctly, these controls are likely to result in exposure of employees being below half the exposure standard.

31. Respiratory protection must not be relied upon to ensure half the exposure standard is not exceeded (refer to Appendix H for more information about respirators). If a respirator is required to reduce the exposure to below half the exposure standard, there is not adequate control and the tool or instrument must not be used.

Note: This provision does not apply however to the removal of ACM within an enclosed removal area in accordance with 'Division 7 – Removal of asbestos' in Part 4.3 of the Regulations.

Use of compressed air and other gases

32. The use of compressed air and other gases on asbestos is prohibited:

- in areas not enclosed to prevent the release of airborne asbestos fibres
- within six metres of an activity involving asbestos unless it can be demonstrated the use of that air or gas does not result in airborne asbestos fibres above half the exposure standard.

For example, using compressed air to clean dust off asbestos-containing automotive brakes in a workplace (such as a mechanics workshop) is prohibited.

33. The use of a pneumatic (compressed air powered) tool within six metres of any activity involving asbestos is only allowed if it can be shown that airborne asbestos fibres above half the exposure standard will not be produced. Atmospheric monitoring in the area during the task is the only method to determine half the exposure standard will not be exceeded. If atmospheric monitoring is done, all persons in the area must wear at least a P1 particulate respirator in case asbestos fibres become airborne.

Prohibitions under the *Dangerous Goods Act 1985* (regulations 4.3.10 to 4.3.16)

34. From 31 December 2003, the import and use of all forms of asbestos and ACM was banned nationally by Commonwealth, state and territory legislation. Customs legislation prohibits the import of ACMs. The Regulations include prohibitions to complement this ban.
35. Prohibitions apply to the manufacture of ACM; supply, storage, transport, sale and use of asbestos; and re-use, installation and replacement of ACM.
36. The prohibitions on 'use' do not extend to ACMs and products that are fixed or installed and currently being used. But when these products and materials require replacement, non-asbestos alternatives must be used. For example, an asbestos cement (AC) roof does not need to be removed from a workplace as a result of the prohibitions. However, the asbestos audit may result in the removal of the roof due to its poor condition. Other examples include: vinyl floor tiles, AC roofing, internal and external AC sheet walls, asbestos-containing lagging and other insulation materials such as millboard. These may be left in place until they need to be replaced – at which time they must be replaced with a non-asbestos alternative.
37. Prohibitions apply to all premises, not just workplaces. For example, a homeowner who removes AC sheeting from their home must not re-use or replace it with ACM.

Exclusions from the dangerous goods prohibitions

38. The prohibitions do not apply for the purpose of:
 - scientific analysis or research
 - sampling and identification
 - retention of asbestos samples for demonstration, education or practical training purposes
 - non-asbestos mining or the extraction of stone if asbestos is encountered.
39. The prohibitions also do not apply to soil from which visible ACM has been removed, so far as is reasonably practicable, by the person proposing to supply, store, transport, sell, use or re-use the soil. This person must visually inspect the soil and remove any visible ACM.

Supply, storage, transport, sale and use of fixed or installed asbestos

40. The supply, storage, transport, sale and use of ACM that is fixed or installed in a building, structure, ship, plant, aircraft or vehicle at the time the prohibitions came into operation is excluded from prohibitions on those activities. This ensures that domestic premises, buildings that are workplaces, private and commercial vehicles and plant (including domestic appliances) may continue to be sold and used after 31 December 2003.
41. The OHS Act requires persons who supply substances or plant that contain asbestos to be used at a workplace to provide information about any conditions necessary to ensure the plant or substance is safe and without risks to health if used for the purpose for which it was designed. This includes informing the person to whom the plant or substance is supplied that it contains asbestos.

Regulatory prohibitions

Examples of when information must be provided:

- selling and transporting an old domestic oven with a lining that contains asbestos or an industrial piece of plant that contains asbestos
- selling a property (such as a house) that has AC sheet
- selling and using a vehicle that has asbestos-containing brakes.

42. The selling and transporting of a small AC sheet clad building can be carried out because the ACM is fixed. However, where any ACM has to be removed in preparation for its transport, the removed material must be disposed of as asbestos waste and replaced with non-ACM.

Brake shoes lined with asbestos

43. Prior to 1 February 2008, an exclusion to the prohibition on transport of brake shoes lined with ACM for the purpose of re-lining them with non-ACM was in place. This exclusion has now expired.

Other exclusions from the prohibitions

44. An Australian Safety and Compensation Council (ASCC) process allows asbestos or ACM to be used regardless of the prohibitions in the Regulations. The ASCC has defined a limited number of uses of ACM that can continue beyond 31 December 2003 and WorkSafe has adopted this model in the Regulations. The specific uses are detailed in 'Schedule 6 – Asbestos' of the Regulations.
45. The Commonwealth Department of Defence and the Australian Defence Force have a current exemption (at the time of writing) to allow the use of chrysotile-containing ACM in Victoria. Refer to the Regulations and any amendments for further details of this exemption.

Responsibilities of importers and suppliers of goods and materials

46. Not all other countries have prohibited the manufacture and use of asbestos-containing goods and materials.
47. Importers and suppliers of products need to ensure they have adequate procedures in place to ensure the goods and materials they import do not contain asbestos.

Example:

A supplier of automotive parts stated that their overseas manufacturer advised them that parts were '100 per cent asbestos free'. However, a professional analysis of the brake shoe linings revealed the samples contained asbestos.

This shows seeking confirmation from an overseas manufacturer may not be sufficient.

Regulatory prohibitions

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48. The following precautions need to be taken to ensure goods imported from other countries that have banned the use of asbestos do not contain asbestos:
- check product specifications and related documentation
 - ask for analysis reports from the manufacturer to confirm asbestos is not present
 - include asbestos-free requirements in supply contracts
 - inspect the goods on delivery.
49. For products sourced from countries that have not banned the use of asbestos, more stringent verification processes are needed. Such procedures may include, in addition to the above procedures, an independent verification analysis conducted by an approved analyst. If there is uncertainty about whether the country of origin has banned the use of asbestos, the importer should assume the country has not.

Asbestos in workplaces

50. This section applies to a workplace where ACM is fixed or installed in a building, structure, ship or plant. It does not apply to a domestic premises (not a workplace, eg a home).

Duty to identify asbestos

51. In a workplace where ACM is fixed or installed in a building, structure, ship or plant, the person with management or control of that workplace (such as structures) and any employer who has management or control over asbestos (such as plant containing asbestos brakes) must, so far as is reasonably practicable, identify all asbestos. This includes asbestos that is not fixed or installed under their management or control.
52. The national *Code of Practice for the Management and Control of Asbestos in Workplaces* (published by the ASCC) contains a list of examples of materials in workplaces that may contain asbestos. Also see Appendix P for a list of examples. Both lists provide a good but not exhaustive reference – ie if a material is not listed, it is not definitely free of asbestos.

Duty of the person with management or control of the workplace

53. The person with management or control of a workplace must identify ACM and produce an asbestos register (see page 22 for more guidance on registers) with details of the location, form, type and condition of the asbestos. This could involve:
- Identifying the extent of areas over which they have management or control to establish the scope of the duties – refer to property management documentation or contractual leasing arrangements. The person with management or control of all the buildings and structures at the workplace needs to be established.
 - Obtaining information on the products used in making the building, structure, ship or plant (over which they have management or control) – this includes building plans, design papers and specifications, correspondence with builders and plant manufacturers. Employees in the workplace can also assist in this task. This information should be provided to the person who will identify where asbestos is in the workplace.

Duty of the employer (or self-employed person)

54. An employer or self-employed person in a workplace must obtain the asbestos register from the person who has management or control of the workplace and identify any ACM they have management or control of (such as asbestos in items of plant). They must then produce an employer's asbestos register with details of the location, form, type and condition of the asbestos. This could involve:
- identifying the extent of areas over which they have management or control, including any buildings, parts of buildings or structures
 - identifying if there are any pieces of plant which they have management or control over that may contain asbestos (eg a press machine that has asbestos-containing brakes)
 - consulting the supplier, manufacturer or designer of the plant to find out if there is asbestos present
 - consulting HSRs and employees about this identification process (they will be an important source of information on the presence of asbestos in plant in the workplace).
55. The employer or self-employed person must notify the person with management or control of the workplace if there is a risk resulting from the presence of asbestos due to the activities carried out in the workplace.

Example:

If an employer is using a forklift to move and store pallets loaded with stock alongside an asbestos cement (AC) wall there may be a risk of damage to the wall and potential release of asbestos fibres in the air. In this case, the employer must inform the person who has management or control of the workplace so they can take appropriate action to control the risk.

Informing the person who has management or control of the workplace (likely to be the site owner or a representative of the owner such as an agent) of the risk to health may result in the implementation of a control measure, such as replacing the wall with non-asbestos materials or altering the workplace layout to reduce the risk.

Duties of employers and self-employed persons at domestic premises

56. If an employer or self-employed person attends a domestic premises (not a workplace, eg a home) to conduct work, the regulations apply.
57. It should be noted that domestic premises are not workplaces. This means that duties which relate to asbestos in workplaces – including to identify the presence of asbestos, to record the identified asbestos in a register and to subsequently implement controls based on the condition of this asbestos – are not placed on the:
- owner of the premises (the homeowner)
 - people who manage the premises
 - people leasing the premises, or
 - persons in the premises.

58. It is the duty of the employer or self-employed person who is conducting the work in the domestic premises to identify the presence of asbestos.

Example:

The occupier of a house who has engaged a plumbing company to perform cutting and drilling work in their bathroom does not have a duty to identify if there is asbestos in their bathroom or home. However, the plumbing company does have a duty to determine, so far as is reasonably practicable, whether asbestos is present. In this case, the plumbing company would need to identify if asbestos is present in the bathroom area (including the walls, ceiling, floors and waterproofing behind showers, baths and basins). Alternatively the employer can assume the material contains asbestos and treat it as such.

Competence of people identifying asbestos

59. Any person who inspects a workplace for material that may contain asbestos, determines risk or recommends control measures must be competent to do so. Taking into account factors outlined in paragraph 60, the person with management or control of a workplace will need to identify whether there is a competent person within their organisation. This person is not required to be approved by WorkSafe.
60. For a person to be considered competent they should:
- have appropriate training, knowledge and experience in identifying suspect asbestos materials and be able to determine risk and appropriate controls
 - be familiar with building and construction practices to determine where asbestos is likely to be present
 - be able to determine that material may be friable or non-friable ACM and evaluate its condition.
61. If there isn't a competent person within the organisation, the person with management or control will need to engage an external competent person such as a consultant. They will need to consider the external person's:
- background
 - experience
 - specific expertise
 - any qualifications or professional affiliations
 - referees and verify them (also ask for examples of reports prepared for other clients).

An example of a suitably competent person may be an occupational hygienist with experience in identifying asbestos and assessing its associated risks. A suitably competent person may also be found at companies approved by the National Association of Testing Authorities (NATA) for the identification of asbestos.

62. A competent person needs to consult with the person with management or control and/or employer to obtain as much information as possible about the:
- workplace
 - construction of the workplace
 - location of any inaccessible areas that are likely to contain asbestos.

How to identify asbestos

When was the building constructed?

63. When identifying whether asbestos is present in the workplace, the person with management or control of the building or structure needs to consider when it was constructed. Asbestos was widely used as a construction and insulation material for buildings prior to the mid to late 1980s before widespread bans on its use in the construction industry were introduced.
64. However, as the bans were not absolute and building materials may have been stockpiled, stored or recycled and used in the construction of a building after the mid to late 1980s, there is still a chance that ACM may be present.

Were there any refurbishments or additions to the building prior to the mid to late 1980s?

65. Any refurbishment or extensions to the original building prior to the mid to late 1980s may have involved the use of ACMs. Just because the original parts of the building do not contain asbestos, do not assume the subsequent additions do not.

Consider the type of materials that were used to construct the building

66. What are the main construction materials made from – timber, brick, steel, cement sheet or another material? If cement sheet is present there is a chance it could contain asbestos fibres bonded to cement particles. For example, if a roof is made from corrugated cement sheeting there is a chance it contains asbestos. The areas of the building prone to wet conditions (such as bathrooms, toilets and laundries) 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. Likewise, pipes throughout the building that carry water and sewage may contain asbestos.

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

67. An employer or self-employed person who has management or control of plant must identify if asbestos is present in plant such as gaskets, insulation or brake mechanisms. Asbestos was widely used in the mid to late 1980s in gasket and friction brake products and despite a large reduction in its use, it was still known to be used in some applications until recent years. The person with management or control of plant 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, they should refer to the design plans and seek advice from an experienced engineer or plant designer.

Talk to employees who have worked at the workplace for a long time

68. Experienced employees may know where asbestos is located in the workplace. They may be aware of the history of the building including its age, construction and subsequent renovations or repairs. Failure of an employer to consult with employees in the identification process breaches legislative requirements and may result in the omission of important knowledge. Recording minutes of discussions with employees may assist in future asbestos register reviews.

Conduct a walkthrough inspection of the workplace to visually identify asbestos, materials that may contain asbestos and inaccessible areas

69. A thorough inspection of all areas (inside and out) of the workplace must be conducted, including all buildings and structures. All rooms and spaces should be inspected including ceiling spaces, cellars, shafts, storage areas and wall cavities.
70. Material needs to be considered to contain asbestos unless proven otherwise if:
 - it cannot be identified
 - there is uncertainty as to whether it contains asbestos
 - it is inaccessible.
71. The design plans for a building, structure, ship or plant may assist in identifying inaccessible areas as would discussion with builders, architects, manufacturers of plant and maintenance employees. Knowledge of materials used in the construction of the building or experience and findings from inspections of similar sections of the building (or similar buildings) may also assist.

Take notes and photographs

72. It is important for the person with management or control of the workplace to take notes while the inspection is being conducted as the notes can be used to produce the asbestos register. The use of photographs may also supplement the information in the register (refer to page 22 for further guidance on asbestos registers).

Assuming asbestos to be present

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

Inaccessible areas likely to contain asbestos

74. If there are inaccessible areas (due to design or location) in the workplace likely to contain asbestos, they must be deemed to contain asbestos until they are accessed and it is determined whether asbestos is present or not. There is no time limit on when an inaccessible area has to be accessed but the space must be treated as if it contains asbestos for that duration.
75. Inaccessible areas likely to contain asbestos are areas that a competent person, through experience, knowledge and consultation (with the person with management or control of the workplace, employer and employees) has determined likely to contain asbestos but cannot be accessed. The competent person should identify the type of items in the area likely to be asbestos-containing. The person engaging a competent person to identify asbestos in the workplace needs to:
 - disclose all available information
 - enable the competent person to consult with employees in relation to the presence of asbestos in the workplace.
76. The competent person's report should be fully understood and referred to as required (eg prior to refurbishment or demolition).

77. As a general rule, an inaccessible area is an area that cannot be accessed during normal daily activities or routine maintenance. The following areas are therefore **not** regarded as 'inaccessible areas' and must be inspected (otherwise they must be considered to contain asbestos):

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

Fire doors and security safes – Accessing fire door and security safe cores to determine whether they contain asbestos may result in creating a risk (eg drilling resulting in the release of airborne asbestos fibres). Therefore, it would be better not to access the core and instead assume the core contains asbestos until otherwise shown (ie during maintenance when access is obtained) or obtain categorical information from the supplier of the door.

Risks relating to asbestos in inaccessible areas

78. Inaccessible areas must be considered when identifying asbestos in workplaces to avoid unsuspecting people being exposed to airborne asbestos fibres during installation, repair or maintenance activities as well as during renovation, partial or full demolition or even partial collapse of a building or structure due to fire or an accident.

Examples of inaccessible areas that are likely to contain asbestos:

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

79. The following case study is an example of what can happen when an asbestos audit does not take into account inaccessible areas where asbestos may be present. A consultant was taken to court by a developer and found to have published a misleading and deceptive report. This type of deceptive behaviour is an offence under the *Trade Practices Act 1974*.

Case study

An architect acting on behalf of a developer engaged a consultant to prepare reports identifying asbestos in buildings to be demolished by the developer. The report stated that the consultant had thoroughly inspected the site for the purposes of identifying and reporting the presence of asbestos and the site contained only the asbestos identified in the report.

The architect provided the report to the developer. In the course of demolition, asbestos was disturbed which had not been mentioned in the report and the site was contaminated, leading to additional cost. The evidence before the court showed the consultant did not know the developer would be relying upon its report. But the court found the consultant's conduct in publishing the report misleading and deceptive and that the developer had relied on the report and suffered loss as a result of that reliance.

Section 52 of the *Trade Practices Act 1974* and equivalent sections of fair trading acts in each state prohibit people from engaging in conduct in trade or commerce that is misleading or deceptive or which is likely to mislead or deceive. Any attempt in a contract to contract out liability for misleading and deceptive conduct under the Trade Practices Act will generally be ineffective.

Information to be recorded when asbestos has been identified

80. Where ACM is identified in the workplace, specific information about this material must be recorded as it forms the basis of the asbestos register that must be produced (see page 22). The following information must be noted when conducting an inspection of the workplace to identify the presence of asbestos:
- What is the **location** of the asbestos?
The location needs to be identified for all people to understand, including all employees at the workplace and new employees in the future.
Example – Building B, level 2, floor covering.
 - What is the likely **source** of any asbestos that is **not** fixed or installed that has been identified during the inspection?
Example – broken pieces of asbestos cement sheet lying on the floor alongside an asbestos cement wall.
 - What is the **type** of asbestos?
Example – asbestos cement sheet, vinyl tiles, pipe lagging.

Asbestos in workplaces

- Is the asbestos **friable** or **non-friable**?

Friable means 'when dry, may be crumbled, pulverised or reduced to powder by hand pressure'.

Asbestos cement (AC) sheet is normally non-friable. However, in some rare circumstances it may become friable. For example, where it has been exposed to substances such as acid mist from acid baths over a period of time. Vinyl tiles are non-friable but sprayed insulation is friable.

- What is the **condition** of the asbestos?

The material may be poorly bonded and falling apart due to exposure to weather and damage or it may be in good condition in an isolated indoor location.

- Is the ACM **likely to sustain damage or deterioration**?

- Are there any **activities** in the workplace that are likely to damage or disturb the asbestos?

Table 1: An example of an extract from a report

Location of asbestos	Type of asbestos	Friable or non-friable	Condition	Likely to sustain damage or deterioration	Date identified
Building B, level 2, room 4	Vinyl floor tiles	NF	Good, not damaged	Unlikely to sustain any significant damage or deterioration	31/07/07
Building B, basement plant room	Pipe lagging	F	Poor, exposed, deteriorating	Likely to deteriorate rapidly	31/07/07
Building B, northern exterior wall	Asbestos cement sheet	NF	Good	Potential for damage from mobile plant and exposed material will gradually deteriorate	31/07/07
Building C, ceiling space	Inaccessible area sprayed asbestos fire retardant assumed to be present on beams	F, considered friable because condition is unknown	Unknown	Not likely to sustain damage, degree of likely deterioration is unknown	31/07/07

Taking asbestos samples

81. If samples are taken for the purpose of determining if asbestos is present, it is important that representative samples are taken. Any variation in appearance, texture or colour of the material will necessitate additional samples being taken for consistency and valid analysis. For example, full-thickness samples of friable material back to the substrate should be taken. Consideration should also be given to taking samples from difficult areas where there is evidence of previous asbestos removals.
82. Any person who is suitably trained and experienced in a safe method for taking samples of ACM can take samples for the purpose of analysis under the Regulations.
83. Samples should be taken in a controlled manner that does not create a risk to people taking the sample or people who will work or visit the area where the sample was taken. People taking samples should assess the risk and implement appropriate controls. These may include the use of a high-efficiency particulate air (HEPA) filtered vacuum cleaner and a water spray bottle to suppress airborne dust (a respirator – approved by AS/NZS 1716:2003 *Respiratory protective devices* – may also be used to minimise exposure).
84. Samples need to be placed in sealed containers (such as snap-lock durable bags) and appropriately labelled to enable the location of the sample to be clearly identified at a later time (refer to Appendix C for further guidance on how to take asbestos samples safely).

Analysis of asbestos samples

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

Asbestos register

Duty to record results of identification in an asbestos register

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

Information that must be recorded in an asbestos register

92. There is no mandatory format for the asbestos register. However, it must be current and include the following information (most of which needs to be gathered as part of the identification process outlined on page 16):
 - location of the asbestos
 - likely source of unfixed or uninstalled asbestos
 - type of ACM
 - whether the asbestos is friable or non-friable
 - condition of the ACM
 - whether the ACM is likely to be damaged or disturbed
 - details of all inaccessible areas likely to contain asbestos
 - detailed information about activities carried out in the workplace that are likely to disturb the asbestos
 - dates when the identification and risk assessments were done.

See Appendix D for an example of an asbestos register and a blank pro forma that can be used.
93. It is suggested the register also contain a copy of all reports of analysis of samples conducted by NATA-approved laboratories.

Access to the asbestos register

94. The Regulations specify who must be provided with a copy of the asbestos register and who must be given access to the register (discussed in paragraphs 95 to 97).

The duty of the person who has management or control

95. The person who has management or control of the workplace must:

(a) **Provide a copy** of the asbestos register to any:

- employer or self-employed person whose business is located at the workplace – this will assist the employer or self-employed person to determine whether any of their activities in the workplace are likely to disturb or damage that asbestos
- licensed asbestos removalist if removal is required – this will enable the removalist to plan their work appropriately and safely
- employer who intends to carry out any of the following asbestos-related activities in the workplace so they are aware of the risk (if they request a copy):
 - sampling or analysis of suspected asbestos
 - enclosing or sealing of asbestos
 - hand-drilling and cutting of ACM
 - research involving asbestos
 - any other activity likely to produce airborne asbestos fibres above one half of the exposure standard (where an asbestos register or employer's asbestos register exists)
- employer or self-employed person who proposes to occupy the workplace (if they request a copy)
- person who is taking over the management or control of the workplace.

(b) **Inform** any person engaged to do work which involves the risk of exposure to asbestos of the register **and provide access** to the most recent register.

In this case, the term 'risk of exposure' is not the same as 'risk to health'. The person with management or control must evaluate tasks conducted in the workplace and determine whether they involve the risk of actually being exposed to airborne asbestos fibres. There is no need to identify or assess a risk to health for this duty to be enforceable.

(c) **Provide access** to the asbestos register on request to any person they have engaged to do work at the workplace.

The duty of employers

96. The employer must:

(a) Ensure a copy of the employer's asbestos register is **readily accessible** to any employee.

(b) **Provide a copy** of the register to:

- the HSR for any affected designated work group
- a licensed asbestos removalist if removal work is to be conducted – this will enable the removalist to plan their work appropriately and safely.

(c) **Provide a copy** of the register on request to any other employer in the workplace who intends to carry out any of the following asbestos-related activities:

- sampling or analysis of suspected asbestos
- enclosing or sealing of asbestos
- hand-drilling and cutting of ACM
- research involving asbestos
- any other activity likely to produce airborne asbestos fibres above one half of the exposure standard (where an asbestos register exists).

(d) **Inform** any person engaged to do work at the workplace that involves the risk of exposure to airborne asbestos fibres of the register and **provide access to the register**.

In this case, the term 'risk of exposure' is not the same as 'risk to health'. The employer must evaluate tasks conducted in the workplace and determine whether they involve the risk of actually being exposed to airborne asbestos fibres.

(e) **Provide access** to the register on request to any person engaged to do any work by the employer.

97. The flow chart in Appendix E sets out duties related to asbestos registers.

Reviewing the asbestos register

Keeping the asbestos register current

98. The asbestos register must be kept current by including:

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

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

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

100. All asbestos registers must be reviewed **at least every five years** even if there have been no changes. Any review of the asbestos register should be documented to identify:
- when the review was undertaken
 - what it involved
 - the outcome (eg changes in conditions)
 - who undertook it.

Competency of the person reviewing the asbestos register

101. Any person who conducts a review of the asbestos register must be competent to do so. The task involves locating the asbestos listed in the register and determining its condition and whether control measures are required to eliminate or reduce any risk to health. Previous registers and records related to asbestos removal jobs, such as clearance certificates (if available), should also be reviewed to enable a comprehensive review.

A **clearance certificate** is a written statement confirming that an area where asbestos removal has taken place has been cleared satisfactorily and is safe to be reoccupied for its normal use.

102. An in-house person who has been provided with appropriate instruction and training may be able to perform a walkthrough of the workplace to identify changes related to the ACM and make necessary changes on the revised asbestos register. As with the initial inspection, this person is not required to be approved by WorkSafe.

Keeping a copy of the asbestos register

The person with management or control of the workplace

103. The person with management or control must keep the current asbestos register for the workplace, but the old versions do not legally need to be kept. However, asbestos registers and clearance certificates will ensure that a record is kept of the asbestos that has been identified in the workplace. When relinquishing management or control of a workplace, employers must provide a copy of the current asbestos register to the person who is taking over management or control (if there is such a person).

The employer

104. Although it is not mandatory, any employer who is relinquishing management or control of plant containing asbestos needs to provide information – including the employer's asbestos register – to any new employer who will have management or control of the plant.

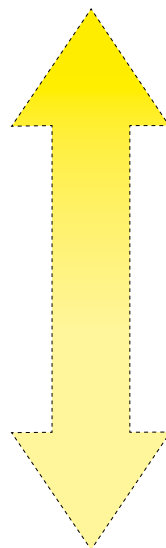
Indicating the presence of asbestos

105. Once asbestos has been identified in the workplace, its presence and location must be clearly indicated. This includes inaccessible areas that are likely to contain asbestos. Direct labelling of asbestos is usually the most effective way of identifying its presence and location. The Regulations require direct labelling of asbestos be considered first, however this may not always be reasonably practicable.
106. Different methods of indicating the presence of asbestos include:
- placing labels directly on ACM (if safe to do so)
 - placing colour-coded labels on ACM and informing all employees (including contractors) of the presence of these labels and their meaning
 - placing a sign at the entrance to the workplace or the work area
 - identifying the presence and location on site plans, making them accessible to all employees (including contractors) and ensuring employees are aware of the presence, meaning and purpose of the plans
 - using a register which identifies where the ACM is located – making it accessible to all employees (including contractors) and ensuring employees are aware of its presence and purpose.
107. Whatever system of identification is used, all employees must be aware of it and it must be maintained. Where direct labelling is not used, particular attention needs to be given to identifying the presence and location of asbestos to contractors such as plumbers, electricians and carpenters before they commence work. This may be achieved by implementing a permit-to-work system that ensures people are made aware of the presence and location of asbestos before they commence work.
108. Where there is material that does not contain asbestos but could be mistaken for asbestos, it may save time, confusion and money if its presence and location is identified and labelled as not containing asbestos.
109. Refer to Appendix F for examples of signs and labels that could be used to indicate the presence of asbestos in the workplace.

Controlling risks to health associated with the presence of asbestos

Deciding if there is a risk to health that needs controlling

110. If ACM is in good condition and left undisturbed, it is unlikely that asbestos fibres will be released into the air and the risk to health is extremely low. It is usually safer to leave it fixed or installed and review its condition over time. However, if ACM has deteriorated, has been disturbed, or if asbestos-contaminated dust is present, the likelihood that asbestos fibres will be released into the air is increased.
111. The type of material which binds asbestos fibres will influence the potential for fibres to be released into the air from different ACMs. For example, a loosely bound sprayed (or limpet) coating is more likely to release fibres when disturbed than asbestos cement in which fibres are firmly bound.
112. The following list ranks different types of asbestos according to the likelihood that airborne asbestos fibres can be released into the air if it has deteriorated or been disturbed. The potential risk to health is greater for items higher up the list if people are exposed to airborne asbestos fibres from these substances, but any of the materials listed can produce asbestos fibres if they are disturbed.



Higher likelihood of airborne fibres

- Asbestos-contaminated dust (including dust left in place after past asbestos removal)
- Sprayed (limpet) coatings/loose fill
- Lagging and packings (that are not enclosed)
- Asbestos insulating board
- Rope and gaskets
- Millboard and paper
- Asbestos cement
- Floor tiles, mastic and roof felt
- Decorative paints and plasters

Lower likelihood of airborne fibres

Controlling risks to health associated with the presence of asbestos

113. When deciding if there is a risk to health from asbestos, consider whether the ACM is:
- in poor condition
 - likely to be further damaged or to deteriorate
 - likely to be disturbed due to work practices carried out in the workplace (eg routine and maintenance activities and their frequency), or
 - in an area where employees are exposed to the material.
114. A visual inspection of the material, its location and an understanding of the work practices at the workplace will assist this decision. By law, employers must consult employees and HSRs when assessing risks to health from asbestos (refer to page 4 for more information about consultation).
115. Routine work activities (including maintenance) plus unusual and infrequent activities (such as emergency activities) need to be considered. Also take into account the proximity of the ACM to where employees work as this can affect the potential for exposure if asbestos fibres become airborne.

Examples of activities that could pose a risk to health

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

Controlling risk using the hierarchy of control measures

116. Once a risk to health from asbestos in a workplace has been established, those with management or control of the workplace as well as employers and self-employed persons with management or control of plant in the workplace must implement control measures to eliminate the risk. If it is not reasonably practicable to eliminate the risk, it must be reduced so far as is reasonably practicable.
117. When making decisions about the measures to take to control risks, an employer must, so far as is reasonably practicable, consult with employees who are likely to be directly affected. The careful planning and design of proposed control measures is critical. Consideration should be given to engaging a suitably qualified person such as an occupational hygienist with experience in asbestos management to assist in the planning and design of such measures.

Controlling risks to health associated with the presence of asbestos

118. The law specifies a hierarchy of control measures that must be followed:

- **eliminate** the risk so far as is reasonably practicable by removing the asbestos
- if a risk remains, reduce the risk so far as is reasonably practicable by **enclosing** the asbestos
- if a risk remains, further reduce the risk so far as is reasonably practicable by **sealing** the asbestos.

Eliminating risk by removing the asbestos

119. The ultimate goal is for workplaces to be free of ACM. Therefore removing CM that is damaged or deteriorating from the workplace is the first control measure that must be implemented if it is reasonably practicable to do so. Where ACMs such as gaskets and seals are present, they should be removed and replaced regardless of their condition during maintenance. Employers must ensure the replacement gasket or seal does not contain asbestos.

120. Asbestos removal jobs should be well planned and designed to assist the removalist plan the specifics of their removal work and minimise the risks involved. Sole reliance on an asbestos register would not be adequate.

121. In most cases removal of the asbestos will have to be conducted by an asbestos removalist licensed by WorkSafe. For further guidance on asbestos removal (including the removal of gaskets) refer to WorkSafe's *Removing asbestos in workplaces* compliance code.

Reducing risk by enclosing the asbestos

122. Where removing the asbestos is not reasonably practicable, reducing the risk by enclosing the ACM is the second control measure that must be implemented, so far as is reasonably practicable.

123. Enclosing the ACM means placing a fixed barrier between it and the surrounding area so people are not at risk of exposure to airborne asbestos fibres from the material. However, the task of enclosing the asbestos may present a risk to health for the person conducting the work if the asbestos is disturbed and fibres become airborne.

124. The task of enclosing asbestos is a regulated asbestos activity under 'Division 8 – Activities involving asbestos' in Part 4.3 of the Regulations. As part of their overall duties, the person conducting the task must:

- be appropriately trained and experienced in working with asbestos
- isolate the area
- use suitable respiratory protection 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 dust
- follow a decontamination procedure upon completion of the task.

125. For further guidance on the duties of employers who conduct asbestos-related activities in the workplace, refer to 'Identifying regulated asbestos-related activities' on page 44.

Controlling risks to health associated with the presence of asbestos

Case study: Enclosing 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 asbestos cement (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 employees who work in the warehouse. The person with management or control of the warehouse conducts the regular inspection of the AC sheet and identifies that it is in good condition. It is noted at the time 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 airborne. Therefore the person with management or control decides to assess options for controlling the risk.

The most effective form of risk control in this case would be to remove the asbestos. But due to a range of issues – cost, warehouse downtime, productivity, the good condition of the AC sheet and the low risk it posed to health – the person with management or control decides not to remove the AC sheet but to enclose it to prevent future accidental damage.

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. The person with management or control must include the changes in the asbestos register and also continue to monitor the condition of the AC sheet as well as the newly installed control measure.

Reducing risk by sealing the asbestos

126. If the asbestos has been enclosed so far as is reasonably practicable and a risk still remains, sealing the ACM is the third control measure that must be implemented.
127. Sealing means covering the surface of the ACM with a protective coating to prevent the release of asbestos fibres into the air. However, the task of sealing the asbestos may present a risk to health for the person conducting the work if the asbestos is disturbed and fibres become airborne. Sealing or painting should only be carried out on materials that are in good condition. If the material is significantly weathered, damaged or broken, the material should be removed and replaced with a material that does not contain asbestos.
128. Sealing ACM is the least effective method for controlling the release of asbestos fibres into the air because the coating used is likely to deteriorate over time – especially if it is exposed to chemicals, extreme heat or cold, wet or dry conditions or physical impacts. Once it has deteriorated, the coating is also unlikely to provide any control. Therefore, sealing ACM should only be considered an interim control measure while a more effective control, such as removing or enclosing the asbestos, can be implemented.

Controlling risks to health associated with the presence of asbestos

Examples of sealing asbestos as an interim control measure

The extensive water pipe system in a large industrial workplace consists of asbestos cement (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, the employer has arranged for the removal of sections of pipe to reduce the risk. Where a risk still remained, the employer has enclosed the pipes so far as is reasonably practicable to reduce the risk further.

Where control valves are connected and the AC pipe was in good condition, the employer 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. Therefore, the employer decided to seal 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. This control measure is an interim control measure and is supported by regular inspections by the employer to identify if the pipes require removal due to damage or deterioration.

129. As with enclosure, the task of sealing asbestos is an asbestos-related activity regulated under 'Division 8 – Activities involving asbestos' in Part 4.3 of the Regulations and the same duties apply to the employer.
130. The surface on which the sealant is to be applied should be cleaned with a vacuum cleaner fitted with a HEPA filter. This will help capture any loose dust or debris from the surface and ensure good adhesion of the sealant. An airless spray at low pressure needs to be used to avoid generating high levels of asbestos dust. 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.
131. The use of sealants of a different colour to the ACM 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. Sealing is inappropriate where the sealed material is likely to suffer mechanical damage (eg drilling or sanding). Refer to Appendix J for further guidance on sealing asbestos.
132. A risk from the presence of ACM can usually be controlled through removal or enclosure. However, if a risk still exists and the ACM must be sealed, epoxy-based paints are a good control option – they often offer better durability and strength than other paints. It is important to select the specific coating that is appropriate to the material to be sealed and has the required fire resistance, thermal insulation and UV properties necessary for it to be an effective control.

Controlling risks to health associated with the presence of asbestos

Risk to people who enclose or seal asbestos

133. In some cases the risk to people from enclosing or sealing the asbestos may be so significant and the effort required to comply with the law so onerous that removal by a licensed asbestos removalist may be a better option. The person with management or control of the workplace also needs to consider the ongoing maintenance requirements associated with enclosure or sealing compared to removal.
134. In considering these three control options, the meaning of 'reasonably practicable' needs to be considered. For further guidance on the term refer to the WorkSafe Position on reasonably practicable.

Examples of controls that would be reasonably practicable

- The friable lagging on pipes where the outer casing has deteriorated, has been damaged and is likely to further deteriorate. Debris is located on the ground beneath it and employees are required to work on or near it. Removal is the most appropriate option and would be reasonably practicable.
- The friable lagging on a pipe where some of the outer casing has been removed is in good condition and has not deteriorated. Employees are not required to work on or near the lagging. Removal may be considered. However, enclosure (in the form of a box around the pipe) may also be an appropriate option and would be considered reasonably practicable.
- Asbestos cement (AC) sheets around a factory roller door entrance have been damaged and are deteriorating and posing a risk to health – the damage may have been due to forklifts or other vehicles over time knocking against them and this may continue to occur. Removal of these sheets is the most appropriate option and would be reasonably practicable.

135. Where the ACM is not removed but is enclosed, sealed or left as it is, the hazard remains. This means there is a need for ongoing review, indication or labelling of the presence and location of the ACM, and management of work tasks around the material.

Controlling risks to health associated with the presence of asbestos

Proper installation and maintenance of control measures

136. Where a control measure other than removal is implemented, it must be properly installed and maintained. The control measure must be installed by a person with training and knowledge of the risks of exposure to asbestos fibres. The person must also follow a safe system of work with appropriate risk controls. Once the risk control method is installed, there must be a system for regular inspection and review to ensure it is still in place, performing its function and has not deteriorated, been damaged or removed.
137. The law requires the person with management or control of the workplace to ensure that control measures are reviewed and if necessary, revised before any change likely to disturb or damage any asbestos is made. The costs of implementing control measures can be high and the requirements for ongoing maintenance onerous, meaning the removal of asbestos by a licensed asbestos removalist may be a more viable option.

Information, instruction and training

138. An employer required to control a risk associated with the presence of asbestos must provide sufficient information, instruction and training to employees as is necessary to enable them to perform their work in a manner that is safe and without risk to health. The information, instruction and training must include:
- the hazards associated with asbestos and the potential risk to health based on the particular circumstances at the workplace
 - control measures (including safety procedures) to be used
 - the reasons for the risk control measures
 - how the control measures are to be used and maintained
 - why medical examinations may be necessary and what is involved
 - the right of employees to have access to the asbestos register

Demolition and refurbishment

139. Where fixed or installed asbestos is present in a workplace or in plant and demolition or refurbishment is planned, there are legal duties on the person who has management or control of the workplace and any employer who has management or control of the plant. There are also duties on employers and self-employed persons who are to conduct the demolition or refurbishment.

Fixed or installed ACM

ACM is regarded as being fixed where it has been attached or secured in position (eg asbestos cement sheet screwed or nailed). ACM is considered installed where it has been specifically placed for a purpose (eg asbestos-containing refractory bricks placed on top of each other or loose asbestos-containing insulation blown into a ceiling space).

Definition of the terms ‘demolition’ and ‘refurbishment’

Demolition

140. For the specific purpose of this compliance code and in relation to ‘Part 4.3 – Asbestos’ of the Regulations only, ‘demolition’ is the complete dismantling or the complete or partial destruction of a building, structure, ship or plant such that it cannot be used in that form again.

Examples of demolition:

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

Refurbishment

141. For the specific purpose of this compliance code and in relation to the asbestos part of the Regulations only, 'refurbishment' may involve the partial dismantling of a building, structure, ship or plant for the purpose of renovating or rebuilding.

Examples of refurbishment include the partial dismantling of:

- a boiler for the purpose of cleaning and repairing
- large plant to access and remove asbestos-containing gaskets for the purpose of replacement with non-asbestos-containing gaskets
- a building by removing sections of an asbestos cement roof in stages for the purpose of replacing or rebuilding the roof
- part of a building for the purpose of renovation.

Difference between demolition and refurbishment under the Regulations

142. There is a difference in the way the Regulations deal with fixed or installed asbestos that may be disturbed by demolition as compared to refurbishment. The Regulations require fixed or installed asbestos that may be disturbed by demolition work to be removed before work commences, but allow refurbishment work (where asbestos may be disturbed) to commence without the asbestos being first removed. This allows for asbestos to be removed throughout the refurbishment process as required.

Removal of fixed or installed asbestos in stages during refurbishment

143. It is not always practical to remove all asbestos before commencing refurbishment as this work may need to be completed in stages or the ACM may not become accessible until refurbishment has commenced. An example of this is the removal of asbestos cement (AC) sheets from a roof. Rather than removing the entire roof at the one time it may be more practical to remove it in stages so that the building is not exposed to the weather. This process is considered 'refurbishment' rather than 'demolition' and therefore the removal of the asbestos can be done **during** the refurbishment rather than **before** it commences.

Demolition and refurbishment does not include minor or routine maintenance work or work of a minor nature

144. The Regulations state that demolition or refurbishment **does not** include minor or routine maintenance work or work of a minor nature (see paragraph 145 and 146 for an explanation of these terms). Therefore, if asbestos is being removed during minor or routine maintenance work, the requirements of 'Division 6 – Demolition and refurbishment where asbestos is present' **do not** apply. However, the duties of 'Division 7 – Removal of asbestos' **do** apply. See WorkSafe's *Removing asbestos in workplaces* compliance code for further information.

145. For the specific purpose of this compliance code and in relation to the asbestos part of the Regulations only, 'minor maintenance work' includes routine work that is small scale, often short in duration and may be unscheduled. This work may require the partial dismantling of a structure or plant and may include the removal of ACMs such as gaskets or brake components.

Examples of minor or routine maintenance work including partial dismantling of:

- a piece of plant to remove an asbestos-containing gasket
- a passenger lift or press machine to remove an asbestos-containing brake component
- a piece of plant for the purpose of cleaning or repair.

146. For the specific purpose of this compliance code and in relation to the asbestos part of the Regulations only, 'work of a minor nature' includes small tasks that are of short duration, such as cutting a small hole or hand-drilling up to a few holes into AC sheet. Work of a minor nature is not routine or regular such as planned maintenance. It is incidental work that can be done quickly and safely with minimal control measures required to ensure safety.

Examples of work of a minor nature:

- cutting a small hole into an asbestos-containing eave to install a cable
- removal of an asbestos-containing vinyl tile to install a plumbing fixture
- hand-drilling a few holes into AC sheet to attach a fitting.

Review of the asbestos register prior to demolition or refurbishment

147. Before demolition or refurbishment commences in a workplace with fixed or installed asbestos, the person with management or control of the workplace must review and where necessary, revise the asbestos register. A copy must be provided to the employer or self-employed person who is to conduct the work.
148. An employer who has management or control of the plant containing asbestos must also review and where necessary, revise the asbestos register. A copy must be provided to the employer or self-employed person who is to conduct the work prior to demolition or refurbishment of the plant commencing.
149. When reviewing the asbestos register, the person with management or control of the workplace or plant should consider the following questions:
- Where is the asbestos located in relation to the proposed demolition or refurbishment?
 - Are there any inaccessible areas that are likely to contain asbestos and will be disturbed as a result of the demolition or refurbishment?
 - What is the type and condition of the asbestos?
 - What is the quantity of asbestos?
 - What is the method of demolition or refurbishment and how will it affect the ACM?
 - If the asbestos will be disturbed during the demolition or refurbishment, can it be removed safely before work commences and how can this be done?

150. An employer or self-employed person who is to perform demolition or refurbishment in a workplace where fixed or installed asbestos is present must ensure they obtain the current asbestos register from the person who has management or control of the workplace. This also applies to an employer or self-employed person who is to perform demolition or refurbishment of plant where in situ asbestos is present.

What to do if the asbestos register indicates that asbestos is present

151. If the asbestos register identifies that fixed or installed ACM is present in a building, structure, ship or plant, the person who has management or control of the workplace must ensure, so far as is reasonably practicable, that any of the ACM which may become disturbed as a result of demolition, is removed **before** demolition commences. They must also ensure any ACM that may become disturbed as a result of refurbishment is removed.
152. The law allows for the demolition of part of a building, structure, ship or plant in order to access in situ asbestos so it can be removed. For example, part of a wall may be demolished to access asbestos located in the wall cavity so it can be removed prior to further demolition.

Duties that apply if no asbestos register exists for the workplace

Duty on the employer or self-employed person conducting demolition or refurbishment

153. The employer or self-employed person conducting demolition or refurbishment in a workplace or on plant in a workplace must not commence work until they have determined whether fixed or installed asbestos is present. The best way to do this is to obtain the asbestos register from the person with management or control of the workplace or plant. However, in some cases there will not be an asbestos register. This will be because:
- there is no asbestos present, or
 - the person with management or control of the workplace or plant has breached their duty to have a register.
154. If there is no asbestos register or there is uncertainty whether asbestos is present, the law allows the person who is to conduct the demolition or refurbishment two options. They can:
- assume fixed or installed asbestos is present, or
 - arrange for an appropriate sample to be analysed to identify if it contains asbestos.
155. If the employer or self-employed person who is performing the work determines (by either of the methods in paragraph 154) that asbestos is present in the workplace or plant, they must inform the person who has management or control of the workplace or the employer who has management or control of the plant.

Duty on the person with management or control who has been notified of the presence of asbestos

Demolition

156. Once the person with management or control of the workplace or plant has been notified that fixed or installed asbestos is present and demolition work is to occur, they must decide whether the asbestos is likely to be disturbed by the work. If it is likely to be disturbed they must ensure, so far as is reasonably practicable, that the asbestos is removed before the work commences.

Refurbishment

157. Once the person with management or control of the workplace or plant has been notified that fixed or installed asbestos is present and refurbishment work is to occur, they must decide whether the asbestos is likely to be disturbed by the work. If it is likely to be disturbed they must ensure, so far as is reasonably practicable, that the asbestos is removed.

158. The ultimate goal is for workplaces to be free of ACM. Where reasonably practicable, asbestos should be removed prior to refurbishment, renovation or maintenance rather than implementing other control measures, such as enclosure or sealing (the removal of asbestos is covered by WorkSafe's *Removing asbestos in workplaces* compliance code).

Demolition and refurbishment at domestic premises

159. When an employer or self-employed person has been engaged to conduct demolition or refurbishment at a domestic premises, it becomes the workplace of that person. Consequently, that person must identify and if necessary, remove asbestos before work commences. The law places no duties on the homeowner.

Demolition

160. A person who is engaged to conduct demolition work at a house (which has become their workplace) must identify asbestos under their management or control that is likely to be disturbed by the demolition work. They must ensure, so far as is reasonably practicable, that the asbestos is removed before the work commences.

Refurbishment

161. A person who is engaged to conduct refurbishment work at a house (which has become their workplace) must identify asbestos under their management or control that is likely to be disturbed by the refurbishment work. They must ensure, so far as is reasonably practicable, that the asbestos is removed.

Conducting asbestos removal prior to demolition or refurbishment

162. In most workplaces, removal of asbestos prior to demolition or refurbishment must be conducted by a licensed removalist in accordance with 'Division 7 – Removal of asbestos' in Part 4.3 of the Regulations. In very limited circumstances, some non-friable asbestos may be removed by persons without a licence. However, anyone who conducts asbestos removal work must do so safely and in accordance with the Regulations (guidance on these legal requirements can also be found in WorkSafe's *Removing asbestos in workplaces* compliance code).

Regulation 4.3.45 permits an employer or self-employed person to conduct a limited amount of asbestos removal work without a licence if the:

- ACM is **non-friable**
- area of ACM to be removed **does not exceed 10 square metres** in total
- total time over which asbestos removal work is performed in any period of seven days **does not exceed one hour**. (This period is the cumulative total time for which the asbestos removal work is carried out by all employees of the employer over a period of seven days).

The removal of non-friable ACM exceeding these limits must be carried out by a WorkSafe-licensed asbestos removalist (either a Class A or B-licence holder). Removal of friable ACM must always be carried out by a Class A-licence holder.

Workplace emergency where asbestos is present

Defining emergency

163. For the purpose of the law, an emergency exists if a building (or part of a building) or structure is structurally unsound or in danger of imminent collapse as determined:

- by an emergency order issued under the *Building Act 1993*, or
- in a report by a structural engineer.

164. An emergency is likely to include the situation where a building (or part of a building) is in danger of collapse due to a fire or explosion. If asbestos is present in this situation there is an added risk to health and safety due to the potential for asbestos fibres to be released into the air if ACMs are disturbed during the collapse of the building or during demolition.

Duties in the case of an emergency

165. If an emergency occurs at a workplace where asbestos is fixed or installed, the person who manages or controls the workplace (or the employer or self-employed person performing demolition on domestic premises) must take the following action:
- Consider the asbestos register.
 - If demolition is required, before it commences document a procedure that reduces the risk of exposure of employees and people in the vicinity of the demolition site, so far as is reasonably practicable, to below the asbestos exposure standard. When drafting the procedure, the items listed in Appendix Q need be considered. The demolition contractor and licensed asbestos removalist engaged to do the work also needs to be consulted where possible when drafting the procedure.
 - Notify WorkSafe in writing of their contact details and the location of the emergency immediately after it is known and before commencing demolition work.
166. The person who has management or control of the workplace must ensure, so far as is reasonably practicable, that the workplace and the means of entering and leaving it are safe and without risks to health. Therefore, action may be required prior to considering the asbestos register, documenting a procedure and notifying WorkSafe in writing. In taking such action, care should be taken to minimise the risk from any potential asbestos exposure.
167. The construction part of the Regulations includes a duty for employers to prepare a safe work method statement for any high-risk construction work that involves both asbestos removal and demolition. Therefore, in the case of an emergency requiring asbestos removal and/or demolition, the employer conducting the work has duties in both parts of the Regulations (ie asbestos and construction) to record how the work will be done safely. The preparation of a control plan for licensed removal work is taken to be the equivalent of a safe work method statement, hence the safe work method statement is not required in relation to asbestos removal. However, if there are activities other than asbestos removal that fall within the meaning of high-risk construction work, a safe work method statement addressing those other activities must be completed. A reference on the safe work method statement to the asbestos control plan would be useful.

Notifying WorkSafe of removal in an emergency situation

168. A person who has been engaged to carry out asbestos removal work as part of an emergency must comply with the duties in 'Division 7 – Removal of asbestos' of Part 4.3 in the Regulations, so far as is reasonably practicable. Guidance on these requirements can also be found in WorkSafe's *Removing asbestos in workplaces* compliance code.

Asbestos management plan

169. An asbestos management plan is a documented outline of how asbestos in the workplace will be managed. It is a beneficial tool for managing the risk from asbestos in the workplace and complying with regulatory requirements. The plan needs to be clear and unambiguous and set out:

- what is going to be done
- when it is going to be done
- how it is going to be done
- who is going to do it.

170. The asbestos management plan should include the following information:

- the current asbestos register for the workplace
- the method by which all relevant people (including contractors) will be consulted (as required by the OHS Act and Regulations) and provided with information about the location, type and condition of ACM and any risk to health
- an outline of how asbestos risks will be controlled, including consideration of appropriate control measures
- a timeline for action that sets out priorities based on the level of risk to health
- the method by which the person with management and control of the workplace will monitor the condition of 'in situ' asbestos
- the method by which the person with management and control of the workplace will monitor any control measures that are in place to ensure there is no risk to health
- the responsibilities of all people involved and the sections of the plan they are responsible for
- the information, instruction and training required for employees at the workplace and how it will be provided
- a timetable for reviewing and updating the asbestos management plan and asbestos register.

171. The asbestos management plan should be reviewed whenever the asbestos register is reviewed. These reviews should critically reassess all asbestos management processes and their effectiveness in:

- preventing exposure to airborne asbestos fibres
- controlling the work carried out by maintenance workers and contractors, highlighting the need for action to maintain or remove ACM
- raising awareness among employees
- maintaining the accuracy of the asbestos register.

172. The flow chart in Diagram 1 (page 42) outlines the general principles of an asbestos management plan.

Asbestos management plan

Diagram 1: General principles of an asbestos management plan



Asbestos-related activities

Identifying regulated asbestos-related activities

173. 'Division 8 – Activities involving asbestos' of Part 4.3 in the Regulations sets out the duties on employers where asbestos-related activities (other than asbestos removal) are undertaken in their workplace. These activities involve working with or handling asbestos of some type and are listed in Appendix G.
174. The law requires employers to identify if there are any asbestos-related activities conducted in their workplace. The first step is to determine whether any asbestos is used or is present in the workplace. Employers then need to refer to Appendix G and decide whether they conduct an asbestos-related activity on that list.
175. If the employer is uncertain whether asbestos is present or used in a certain activity at the workplace, the employer must assume asbestos is present and treat the activity as an asbestos-related activity or arrange for a sample to be analysed to determine if asbestos is present.
176. If an employer identifies an asbestos-related activity is being carried out at the workplace and there is an asbestos register that is relevant to that activity, they must obtain the asbestos register from the person who has management or control of the workplace.
177. If the asbestos-related activity is to be carried out in a domestic premises and the person who commissioned the work lives at the premises, the requirement to obtain an asbestos register does not apply. This is because there is no duty on a homeowner to produce an asbestos register. In this case, the employer or self-employed person who is to carry out the asbestos-related activity must identify and control any risks to health from the activity.

Information and training must be provided

Information to job applicants

178. When a person applies for work involving an asbestos-related activity, the employer must provide that person with information about asbestos and risks to health from exposure to airborne asbestos fibres.

Training for employees

179. Before an employee commences any asbestos-related activity, the employer must provide adequate training for that employee to be able to conduct the work in the safest possible manner. When planning training the employer needs to consider the following:

- How often and for how long is the activity conducted?
- What is the risk to health?
- Who is at risk?
- What risk controls are in place?
- What PPE is required and how is it used?
- Who is the best person to conduct the training?

Employer's duty to control risks to health associated with asbestos-related activities

180. Because asbestos fibres may be released and become airborne during an asbestos-related activity, this may present a risk to the health of employees and other people in the workplace. Any employer or self-employed person who conducts an asbestos-related activity in a workplace must ensure the release of asbestos fibres into the air is eliminated, so far as is reasonably practicable. They must also control any risk associated with the activity by implementing control measures according to the hierarchy identified below. The employer should also consider performing atmospheric monitoring (see Appendix I) for airborne asbestos fibres to validate the controls implemented.

(a) Eliminate any risk

181. If a risk to health exists from an asbestos-related activity, the employer must first attempt to eliminate the risk. The most effective example of eliminating the risk would be to cease conducting the activity.

(b) Reduce any risk by isolation or using engineering controls

182. If the employer has attempted to eliminate the risk to health, so far as is reasonably practicable, but a risk still exists from the asbestos-related activity, the employer must ensure the risk is reduced through implementing an isolation control, engineering control or combination of these controls. Examples of such controls include:

- Isolation control by barrier – reduce the risk to health by placing a barrier between people and the hazard. The purpose of the barrier is to prevent the asbestos fibres from becoming airborne.

An **example** of isolation by barrier is applying a small amount of substance, such as silicon or paste, to the surface of an asbestos cement sheet where a hole will be drilled. When the drill bit is drilled through the paste into the sheet and is removed, any loose fibres are collected in the paste, preventing them from becoming airborne. After drilling, the paste can be wiped clean with a rag and disposed of as asbestos waste.

Asbestos-related activities

- Isolation control by distance – reduce the risk to health by ensuring there is a distance between the hazard and people in the workplace by designating an area where an asbestos-related activity will be conducted. Entry to this area needs to be restricted to authorised persons.

An **example** of isolation by distance is used in the automotive industry for the removal of asbestos-containing brake mechanisms from vehicles. A designated area in the workshop is isolated by distance from other work areas. Signs and barriers are used to communicate that access to the area is restricted during the activity. The activity also requires safe work procedures but the isolation control ensures that other employees are not at risk due to their distance from the activity. All employees must be provided with instruction and training so they understand the reason for the control measure and the relevant procedures.

- Engineering control – reduce the risk to health by suppressing or containing an airborne contaminant at the source or by minimising the amount of the contaminant in the work environment by extraction.

An **example** of engineering control is the use of a mini-enclosure to isolate the source of asbestos fibres combined with the use of extraction to capture and remove airborne fibres from the air in the work environment.

This approach could be used for the task of removing and replacing the lock mechanisms from an asbestos-containing fire door. See Figures 1 to 3 on page 46.

A purpose-built adjustable perspex box is fitted to the door surrounding the lock and handles on both sides of the door. Adjustments can be made to ensure a secure fit to the door and tape used to seal any possible gaps between the enclosure and the door. The box has access points for the operator's arms to enable work to be done on the lock, as well as an entry point for a vacuum hose. The vacuum can create a negative pressure inside the enclosure to prevent fibres from escaping and can also be held directly at the source to capture any fibres that become airborne as the lock is removed from the door. At completion of the task, the vacuum is used to clean and decontaminate the enclosure as well as the operator's arms (before removing them).

(c) Reduce any risk that remains by using administrative controls

183. If the employer has attempted to reduce the risk to health, so far as is reasonably practicable, through elimination, isolation and engineering controls but a risk still exists from the activity, the employer must ensure the risk is reduced through implementing administrative controls.
184. Administrative controls are systems of work or work procedures designed to eliminate or reduce risk. These controls are lower order controls that cannot be relied upon to be as effective as the higher order controls such as elimination, isolation and engineering. This is because administrative controls are systems or procedures that rely on human behaviour to be effective and can easily fail. The employer must ensure administrative control measures are understood, implemented and maintained. This requires training, information and supervision for employees but the control measure can still fail if procedures are not followed or understood.

Asbestos-related activities

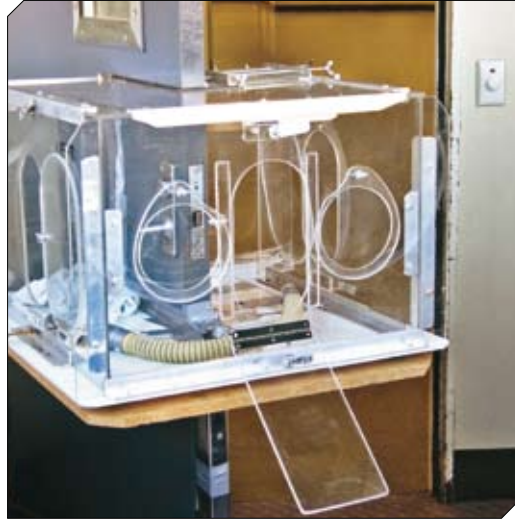


Figure 1: Front view showing entry holes for arms and tools as well as the vacuum hose inside the enclosure.



Figure 2: Side view showing the enclosure fitted around the door.



Figure 3: Side view showing the operator using the vacuum hose to 'shadow vac' below the screw as it is unscrewed from the lock housing.

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

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

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

For the administrative control measure to be effective and reduce risk, the person conducting the sampling must understand the risk and implement all of the procedure. If the procedure is not followed the health of the person conducting the sampling and others in the workplace may be at risk (see Appendix C for further guidance on taking samples of suspected asbestos).

(d) Reduce any risk that remains by using personal protective equipment

187. If a risk to health still remains after the higher order control measures have been implemented, the employer must ensure the risk is reduced, so far as is reasonably practicable, by using personal protective equipment (PPE) to supplement higher order controls.

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

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

Refer to Appendix H for information on selecting appropriate PPE and clothing for asbestos-related activities.

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



Figure 4: An example of a barricade.



Figure 5: An example of appropriate signage.

Employer's duty to review and revise risk control measures

190. The employer must review and where necessary, revise measures used to control risks from an asbestos-related activity in a workplace:

- before any change is made to the activity which is likely to increase risk
- if the risk controls are not adequately controlling the risk, or
- if an HSR requests a review based on these.

Work area to be separated and signs and barricades to be used

191. Where an asbestos-related activity (not including asbestos removal) is carried out in a workplace, the employer must ensure the area is separated from other work areas. The following needs to be considered when determining how best to do this:

- What is the asbestos-related activity and what form of asbestos is involved?
- Where is the activity conducted?
- How often and how long is the activity conducted?
- Is there potential for asbestos fibres to become airborne?
- What control measures are in place?
- Is there a physical barrier (such as a wall) in place to prevent the spread of dust in the air?
- What other activities are conducted in the workplace?

192. Taking these factors into account, a distance between three to 10 metres may be appropriate for separating the asbestos-related activity area from other work areas.

193. So far as is reasonably possible, appropriately placed signs and barricades must also be used to indicate that an asbestos-related activity is being conducted in a work area (refer to Appendix F for examples of signs).

194. There is no specific type of barricade that must be used. However it must, in combination with signage, serve the purpose of indicating the area is restricted due to an asbestos-related activity being conducted. It is recommended that a solid physical barricade be used. However, in some cases industrial safety tape may be adequate (see Figures 4 & 5).

Cleaning the work area

195. The work area where an asbestos-related activity is conducted must be kept clean to ensure there is no build up of potentially asbestos-contaminated dust or debris from the activity. Therefore, there needs to be a system in place for cleaning the area each time it is used. The cleaning method used must not create a risk to health or have the potential to spread airborne asbestos fibres outside the work area. The method used must not involve dry sweeping or brushing or use compressed air which can cause dust to become airborne. A vacuum cleaner fitted with a HEPA filter is suitable for cleaning if the area is dry but not if the area is wet because the filter may become damaged.

196. Asbestos vacuum cleaners must conform to the requirements of AS/NZS 60335.2.69:2003 *Household and similar electrical appliances – Safety – Particular requirements for wet and dry vacuum cleaners, including power brush, for industrial and commercial use* or its equivalent. Filters for these vacuum cleaners must conform to the requirements of AS 4260-1997 *High efficiency particulate air (HEPA) filters – Classification, construction and performance* or its equivalent.

197. Damp rags can be used to clean dusty surfaces that are hard to reach with a vacuum cleaner. Used rags must not be removed from the area and must be disposed of as asbestos waste.

Warning: Domestic vacuums are unsuitable for cleaning an area where an asbestos-related activity is conducted, even with a HEPA filter.

Caution must also be taken when emptying the contents of the vacuum cleaner due to the likelihood of concentrated asbestos fibres being present.

Using and emptying asbestos vacuum cleaners

198. Emptying an asbestos vacuum cleaner is possibly the most dangerous part of working with ACMs. Unless the job is done in a safe manner, the person could be exposed to a concentrated dust containing asbestos fibres. Employers need to consider whether a licensed asbestos removalist could be contracted to empty the asbestos vacuum cleaner and dispose of the asbestos waste.
199. When the asbestos-related activity is completed, the vacuum cleaner and its attachments need to be decontaminated. If possible, clean the vacuum cleaner's outer casing and attachments with the vacuum cleaner, followed by damp rags. Inspect the case, hose and attachments visually and store them in a labelled, impervious container. Place a cap over the opening to the asbestos vacuum cleaner when the attachments are removed.
200. Procedures need to be established for the general maintenance (including emptying) of asbestos vacuum cleaners in a controlled environment. A competent person wearing the correct PPE needs to empty asbestos vacuum cleaners in a controlled environment and in compliance with the manufacturer's instructions. It is often more convenient and safer to empty the vacuum cleaner in the asbestos work area.
201. When required, remove the bag and filter in accordance with the manufacturer's instructions and dispose of them as asbestos waste. Wipe the inside and outside of the vacuum cleaner with damp rags (dispose of rags as asbestos waste after use). The asbestos vacuum cleaner needs to be re-sealed in the storage container provided. The sealed storage container should then be decontaminated by wet wiping the exterior before being removed from the asbestos work area. In between removal jobs, the vacuum cleaner should be isolated to prevent untrained people using it in an inappropriate manner.
202. Whenever possible, asbestos vacuum cleaners should not be hired as they can be difficult to fully decontaminate. If hiring is necessary they need to be:
- hired only from organisations that provide vacuum cleaners specifically for work with asbestos
 - transported in a sealed airtight container with instructions that it may be removed only when it is inside the asbestos work area and users are wearing appropriate PPE.
203. Organisations that hire out asbestos vacuum cleaners must ensure that all their asbestos vacuum cleaners, filters and bags are maintained in good working order. People hiring asbestos vacuum cleaners must be competent to use them safely.



Figure 6: A HEPA vacuum cleaner.

Medical examinations for employees who conduct asbestos-related activities

204. The employer must arrange for an appropriate medical examination by a registered medical practitioner for each employee engaged in an ongoing asbestos-related activity if there is a risk of exposure to airborne asbestos above half of the exposure standard. Work is considered to be 'ongoing' if it is done or is planned to be done regularly.
205. Medical examinations must be provided:
- at intervals of not more than two years
 - within 30 days after the employee ceases the asbestos-related activity (unless the employee has had an appropriate medical examination within the preceding year).
206. The registered medical practitioner does not have to be approved by WorkSafe for the purpose of performing a medical examination under the Regulations. It is important however, that they are aware of the ASCC health surveillance document *Guidelines for health surveillance* (available at ascc.gov.au). This publication sets out the minimum requirements for health surveillance for people engaged in work that may expose them to asbestos. A medical examination performed in accordance with this guidance material is regarded as appropriate.
207. The examination is simple and will usually include a discussion about whether the employee has had a history of exposure to ACM. A simple lung function test known as spirometry (where the person exhales into a tube) may be conducted to test the performance of the lungs and the medical practitioner may also recommend an x-ray.

Notifying WorkSafe of the contact details of the medical practitioner

208. The employer must notify WorkSafe of the registered medical practitioner's name and contact details in writing within seven days of their engagement to conduct the asbestos medical examinations.

Employers to obtain results of asbestos medical examinations

209. Employers must obtain a summary of the results of the medical examination from the medical practitioner that indicate whether or not the employee has an asbestos-related disease and whether the fitness of the person is suitable for conducting an asbestos-related activity. The employer must provide employees with a copy of the results of the medical examination.

Decontamination at the end of the activity

210. At the end of an asbestos-related activity, the employer must ensure the area is clean and safe for people to enter (as well as decontaminating themselves) before leaving the asbestos work area.

Decontamination of the work area

211. Any asbestos-contaminated dust and debris must be collected in a safe manner and the area must be decontaminated (paying particular attention to walls, ledges, fittings and furnishings). An industrial vacuum cleaner fitted with a HEPA filter can be used for this purpose, but employees must be trained in the safe use of the vacuum, including how to empty and dispose of the contents as asbestos waste. An alternative method is to use wet rags to wipe dust from surfaces. Any used rags must be disposed of as asbestos waste.

Decontamination of tools and equipment

212. All tools and equipment used during the asbestos-related activity need to be decontaminated using the HEPA vacuum or wet rags before they are removed from the asbestos work area. In some cases, solvent-based cleaning products may assist in cleaning and extending the life of the tools and equipment but prior to using such cleaning products, appropriate controls need to be in place. If tools and equipment, such as the vacuum, cannot be decontaminated in the asbestos work area and are to be re-used for an asbestos-related activity, they should:

- be tagged to indicate asbestos contamination
- be double bagged in clearly labelled asbestos bags with an appropriate warning statement (the bag must be decontaminated before being removed from area)
- remain sealed until they have been decontaminated or the commencement of the next asbestos-related activity (where the equipment can be taken into the next asbestos-related activity area and re-used under controlled conditions).

213. PPE should be worn when opening the bag to clean or re-use the tools and equipment. In some circumstances it may be better to dispose of contaminated tools and equipment depending on the extent of contamination, the difficulty of decontamination and the ease of replacement.

Personal decontamination

214. Personal decontamination must be undertaken before employees leave the asbestos work area at any time. Asbestos-contaminated PPE must not be transported outside the asbestos work area except for disposal or laundering purposes where it is double bagged, sealed and labelled. These practices help to ensure contamination of other areas in the workplace does not occur.

215. Before leaving the asbestos work area, employees should remove all visible dust from protective clothing and footwear using an asbestos vacuum cleaner and/or wet wiping with a damp rag. Use damp rags with a gentle patting action (rubbing can disturb fibres) or spray overalls with a fine mist to suppress the dust. Where there are two employees they can help each other (see Figure 7).

216. While still wearing their respirator, employees should carefully peel off the coveralls inside out and then place them into an asbestos-waste container for disposal.

217. Respiratory protective equipment must be worn until all contaminated coveralls and clothing has been vacuumed and/or removed and bagged for disposal (or laundering) and personal washing has been completed. After removing their respirator, employees need to wash their face and hands and clean under their fingernails.



Figure 7: 'Buddy' cleaning – decontaminating colleagues with a HEPA vacuum cleaner.

Employer's duty to contain and dispose of asbestos waste

218. Employers must ensure any asbestos waste related to the asbestos-related activity is contained and disposed of as soon as possible. Asbestos waste includes any:

- asbestos associated with the activity and is no longer required
- dust in the asbestos work area
- contaminated clothing or PPE
- rags used to clean the area
- contaminated tools or equipment that cannot be decontaminated and are no longer required.

219. A waste disposal program is a useful way of controlling the risk associated with asbestos waste. A program should be developed taking account of:
- the containment of waste so as to eliminate the release of airborne asbestos fibres
 - the location and security of waste storage on site
 - the transport of waste within the site and off site
 - the location of the Environment Protection Authority (EPA) Victoria waste disposal site
 - approvals needed from the relevant local disposal authority
 - any local disposal authority requirements that may apply to the amount and dimensions of asbestos waste (eg the EPA Victoria's licensed waste disposal site requirements).
220. Asbestos waste must be contained to eliminate the release of airborne asbestos fibres. This may be achieved by using plastic bags (double bagged), a drum or designated plastic-lined bin.



Figure 8: An asbestos waste bag with appropriate warnings.

Waste bags

221. Asbestos waste should be collected and double bagged in heavy-duty 200 micron (minimum thickness) polythene bags that are no more than 1200mm long and 900mm wide. The bags must be labelled with an appropriate warning and clearly indicate that they contain asbestos (see Figure 8).
222. Avoid filling waste bags beyond half full to reduce the chance of tears in the bag. Bags need to then be twisted tightly and have the neck folded over and secured with adhesive tape or any other effective method (referred to as goose-necking). The external surface of each bag needs to be cleaned to remove any dust. This should be done at the 'clean' end of a decontamination area or at the designated boundary of the asbestos-related activity area. Once cleaned, it should be placed in a second clean asbestos waste bag, goose-necked and then taken away from the asbestos work area for disposal.
223. If asbestos waste cannot be disposed of immediately, it needs to be stored in a solid waste drum, bin or skip and sealed. It must be secured to prevent unauthorised access. If the waste cannot be secured on the site it should not be left on site.

Waste drums or bins

224. All drums or bins used for the storage and disposal of asbestos waste should be lined with plastic (minimum 200 micron thickness) and have asbestos waste warning labels (indicating the presence of asbestos) placed on the exterior. Appropriate wording would be: **'Danger: Asbestos. Do not break seal'**.
225. Any risks associated with the manual handling of drums or bins must be controlled. Drums or bins should not be moved manually once they have been filled. Trolleys or drum lifters should be used.

Disposal of asbestos waste

226. Asbestos waste must be disposed of at an EPA Victoria-licensed waste disposal site as soon as reasonably practicable. The method of disposal, which includes transport to a disposal site, must eliminate the release of airborne asbestos fibres. Waste containers must be sealed, secured and labelled during transport in an appropriate vehicle as required by the EPA Victoria. Further information on the transport and disposal of asbestos waste, including the licensing of waste transport vehicles and licensed asbestos waste disposal sites, can be obtained from the EPA Victoria (epa.vic.gov.au).

Appendices

Appendix A	The compliance framework
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Appendix P	Examples of asbestos-containing materials
Appendix Q	Information required to be included in an asbestos control plan
Appendix R	Documents applied, adopted or incorporated by this compliance code, in whole or in part, under section 149(2) of the <i>Occupational Health and Safety Act 2004</i> (the OHS Act)
Appendix S	Documents associated with this compliance code

Appendices

Appendix A – The compliance framework



Occupational Health and Safety Act 2004

Act No. 107/2004

The **Occupational Health and Safety Act 2004** (the OHS Act) sets out the key principles, duties and rights in relation to occupational health and safety (OHS).



Occupational Health and Safety Regulations 2007

Statutory Rule No. 54/2007

The **Occupational Health and Safety Regulations 2007** (the Regulations) specify the way in which a duty imposed by the Act must be performed, or prescribe procedural or administrative matters to support the Act (eg requiring licences for specific activities, the keeping of records or giving notice).



Compliance codes provide practical guidance to duty holders. If a person complies with a provision of a compliance code, they are deemed to comply with the Act or Regulation duty covered by the code provision. However, compliance codes are not mandatory and a duty holder may choose to use some other way to achieve compliance.



WorkSafe Positions are guidelines made under section 12 of the Act that state how WorkSafe will apply the Act or Regulations or exercise discretion under a provision of the Act or Regulations. WorkSafe Positions are intended to provide certainty to duty holders and other affected parties.



Non-statutory guidance includes information published by WorkSafe aimed at building people's knowledge and awareness of OHS issues, risks to health and safety and the disciplines and techniques that can be applied to manage and control risks. Non-statutory guidance is not mandatory, nor does it provide any 'deemed to comply' outcomes for duty holders. This guidance does, however, form part of the 'state of knowledge' about OHS.

Appendix B – Definitions

Administrative control

A system of work or a work procedure that is designed to eliminate or reduce a risk, but does not include:

- (a) a physical control, or
- (b) the use of personal protective equipment.

Air-supplied respiratory protective equipment

A device that supplies air to the wearer from a source other than the ambient atmosphere.

Approved asbestos analyst

An analyst approved:

- (a) by NATA to perform asbestos fibre counting or to identify asbestos in samples, and to issue findings as endorsed reports under the authority of a NATA accredited laboratory, or
- (b) by some other scheme determined by WorkSafe.

Asbestos

- (a) the fibrous form of the mineral silicates belonging to any one or a combination of the serpentine and amphibole groups of rock-forming minerals, including actinolite, amosite (brown asbestos), anthophyllite, crocidolite (blue asbestos), chrysotile (white asbestos) or tremolite, or
- (b) any material or object, whether natural or manufactured, that contains one or more of the mineral silicates referred to in paragraph (a) above.

Asbestos exposure standard

0.1 f/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 WorkSafe.

Asbestos licence holder

An employer or self-employed person who is the holder of an asbestos removal licence issued under Part 6.1 of the Regulations (Licences).

Asbestos paraoccupational air monitoring

Air sampling to estimate the airborne asbestos fibre concentration in the occupational environment taken at fixed locations, usually between one and two metres above floor level in accordance with:

- (a) the membrane filter method, or
- (b) a method determined by WorkSafe.

Asbestos register

The asbestos register kept under regulation 4.3.21 as revised in accordance with 'Part 4.3 – Asbestos' of the Regulations.

Asbestos removal supervisor

A person who is appointed by an asbestos licence holder to oversee asbestos removal work in accordance with Regulation 4.3.62.

Asbestos removal work

The removal of asbestos that is fixed or installed in a building, structure, ship or plant so that the asbestos is no longer fixed or installed in that building, structure, ship or plant up to the point of containment.

Asbestos waste

Asbestos removed and disposable items used during asbestos removal work or asbestos-related activities, including plastic sheeting and disposable personal protective clothing and disposable protective equipment including tools.

Asbestos-containing material (ACM)

Any manufactured material or object that, as part of its design, contains one or more of the mineral silicates referred to in paragraph (a) of the definition of **asbestos** (other than plant in which asbestos is fixed or installed).

Atmospheric monitoring

A procedure whereby air is sampled within the breathing zone of a person to evaluate the person's exposure to airborne contaminants.

Australian Safety and Compensation Council (ASCC)

Australian Safety and Compensation Council as defined in section 3 of the *Australian Workplace Safety Standards Act 2005* of the Commonwealth.

Note: The ASCC succeeded the National Occupational Health and Safety Commission in February 2005.

Domestic premises

Domestic premises used solely for domestic purposes.

Employer's asbestos register

The employer's asbestos register kept under regulation 4.3.29 as revised in accordance with part 4.3 (Asbestos) of the Regulations.

Engineering control

A physical control of any kind that is designed to eliminate or reduce a risk, but does not include:

- (a) a system of work or procedure, or
- (b) the use of personal protective equipment.

Friable

When dry:

- (a) may be crumbled, pulverised or reduced to powder by hand pressure, or
- (b) as a result of a work process becomes such that it may be crumbled, pulverised or reduced to powder by hand pressure.

f/ml

Fibres per millilitre.

HEPA filter

A high efficiency particulate air filter that is a disposable, extended media, dry type filter, in a rigid frame, with a minimum filtration efficiency of 99.97% filtration for nominal 0.3 micrometres (μm) diameter thermally generated dioctylphthalata particles or an equivalent efficiency for a specified alternative aerosol and with an initial maximum resistance to airflow of 250 pascals when tested at its rated airflow capacity.

NATA

National Association of Testing Authorities – Australia's national laboratory accreditation authority.

Person who commissioned the work

The person managing or controlling a workplace or the employer who arranged for asbestos removal work to be performed.

Personal protective equipment

Includes respiratory protective equipment and personal protective clothing.

Structure

Any construction, including a bridge, tunnel, shaft, dam, pipe or access pit, or any part of a construction but does not include a building, ship or plant.

Type of asbestos-containing material

A description of asbestos-containing material.

Example: Asbestos-containing cement sheeting, cement pipes, vinyl tiles, sprayed insulation, telecommunications pits and pipes, pipe lagging, millboard and gaskets.

Appendix C – Taking asbestos samples

The task of collecting samples must be done in a controlled manner that does not create a risk to persons taking the sample or persons who will be in the area from which the sample was taken. Before a sample of suspect material is collected, the employer of any person (or a self-employed person) taking the sample should:

- determine if there will be a risk to the health of any person including the person taking the sample, taking into account the nature and condition of the material and its location
- ensure that the person collecting the sample is appropriately trained, experienced and possesses knowledge of the risk of exposure to airborne asbestos fibres
- assess the risk associated with the specific task to ensure appropriate personal protective clothing and equipment is selected, provided and used during the task
- where the assessment has determined that a respirator is required ensure that it complies with AS 1716:2003 *Respiratory protective devices*
- ensure that appropriate risk control measures are used to control the risk of generating airborne asbestos fibres during the sampling, including where appropriate a HEPA (high-efficiency particulate air) vacuum to capture dust and a water spray bottle to dampen surfaces during the task
- ensure, so far as is reasonably practicable, that a safe method of breaking or dislodging the sample without generating dust is followed
- ensure the sample is immediately placed in a sealed container which is labelled with details such as the date, time, specific location of the suspect material and the address of the site
- ensure any tools used to break or dislodge a sample are decontaminated or placed into a labelled asbestos waste bag and disposed of as asbestos waste
- ensure the area where the sample is collected has been decontaminated and made safe before the area is reoccupied by any person. This will usually be achieved using a HEPA vacuum or wet-wiping surfaces to clean up residual dust
- ensure any waste such as dust collected by the HEPA vacuum, any debris caused by the sampling process and any material used to wipe up surfaces is placed into a labelled asbestos waste bag and disposed of as asbestos waste
- ensure the person who has taken the sample follows a suitable personal decontamination process appropriate to the level of risk. This could be very simple, such as removing and disposing of coveralls into an asbestos waste bag and washing hands and face with water followed by removing the respirator last and placing it into a labelled asbestos waste bag.

The analysis technique used in laboratories to identify asbestos in samples does not require the sample to be big. In fact, the sample required is quite small – a sample the size of a 50 cent coin would be sufficient as long as it is a representative sample of the suspect material. It should be the intent of the person collecting the sample to take the smallest possible sample, therefore reducing the potential for generating airborne asbestos dust during the sampling and analysis tasks.

The person taking the sample should have a HEPA-filtered vacuum cleaner and a water spray bottle to use for minimising the generation of airborne asbestos-containing dust during the task and during clean up of the area after taking the sample. They should also wear a respirator that complies with AS/NZS1716:2003 *Respiratory protective devices* while conducting the task and may also need to wear clothing such as disposable coveralls if the location is dusty or the suspect material is deteriorated or damaged. Samples should be immediately placed in sealed containers such as snap lock durable bags or screw top clear plastic containers, and appropriately labelled to enable the source of the sample to be clearly identified at a later point in time.

Appendix D – Example of an asbestos register

Asbestos Register

Workplace address: 1234 High Street							Conducted by: John Smith			
Type of asbestos-containing material (ACM)	Specific location	Is this area inaccessible?	Source of unfixated 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		
1. Vinyl tiles	Kitchen floor, ground floor, Building 3	No	n/a	Non-friable	Good, undisturbed	Not likely to sustain damage but over time the tiles will deteriorate and need replacing	None, under normal conditions of use	31/07/07		
2. Asbestos cement sheet	Wall at rear of the storage shed	No	n/a	Non-friable	Damaged, needs repair or removal	Yes, may be damaged further	Forklifts stacking pellets near the shed may hit the wall	31/07/07		
3. Asbestos cement sheet debris	NE corner of storage shed	No	Damaged asbestos cement sheet wall in shed due to impact	Non-friable	Debris	Yes	Any activities may disturb the debris needs to be removed	31/07/07		
4. Pipe lagging (insulation)	Along the western wall of plant room, Building 2	No	n/a	Friable	Deteriorating, old, needs removal	Yes, will deteriorate further	May be struck by ladders that are leaned against the wall for storage	31/07/07		
5. Sprayed asbestos insulation deemed to be present	Inside of cable shaft that runs from ground floor to the third floor, at the rear of Building 2	Yes, inaccessible	n/a	Friable	Good	Not likely to sustain damage but will deteriorate over time	No	31/07/07		

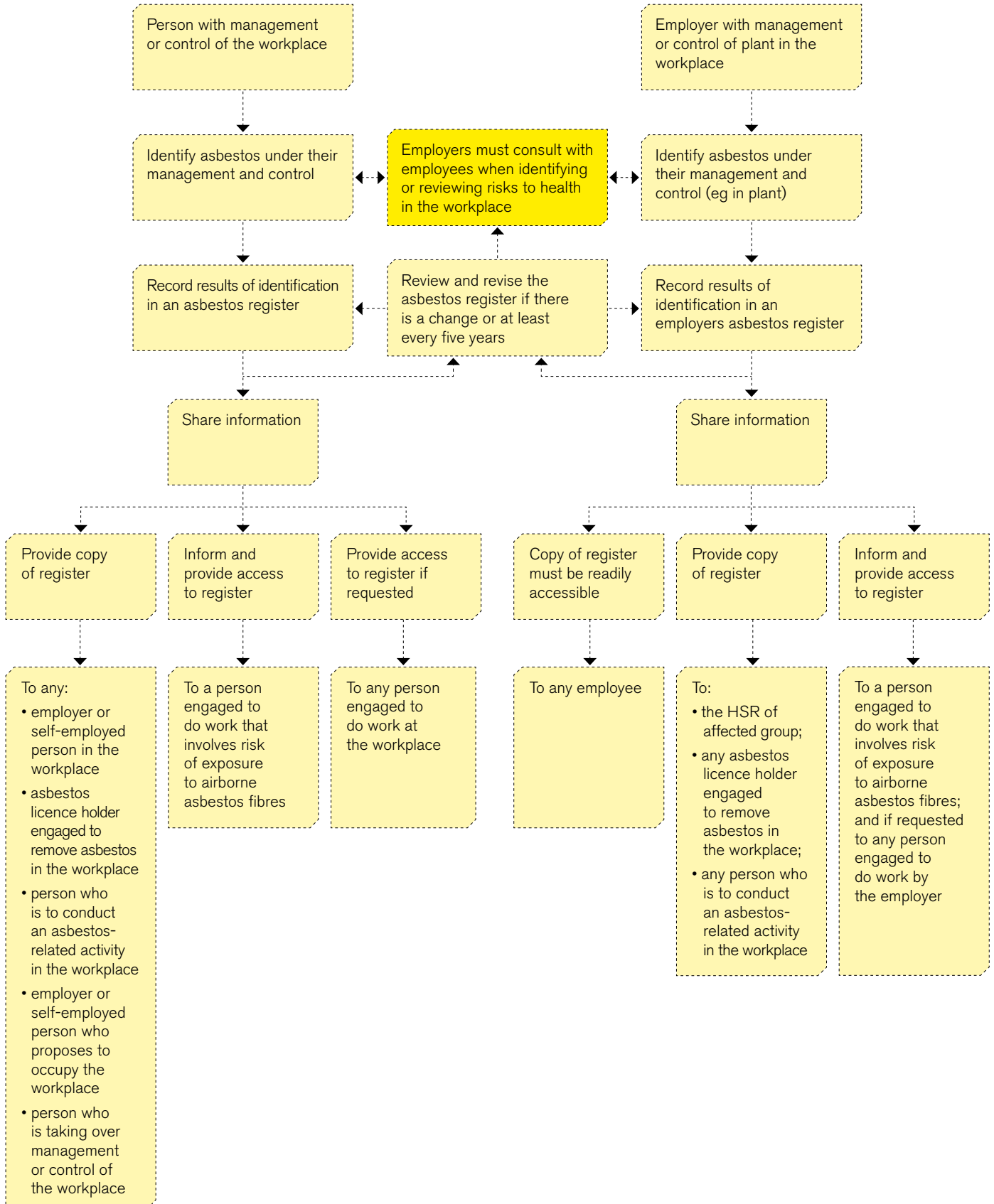
Appendix D – Asbestos register pro forma

Asbestos Register

Workplace address:							Conducted by:				
Type of asbestos-containing material (ACM)	Specific location	Is this area inaccessible?	Source of unfixated 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			

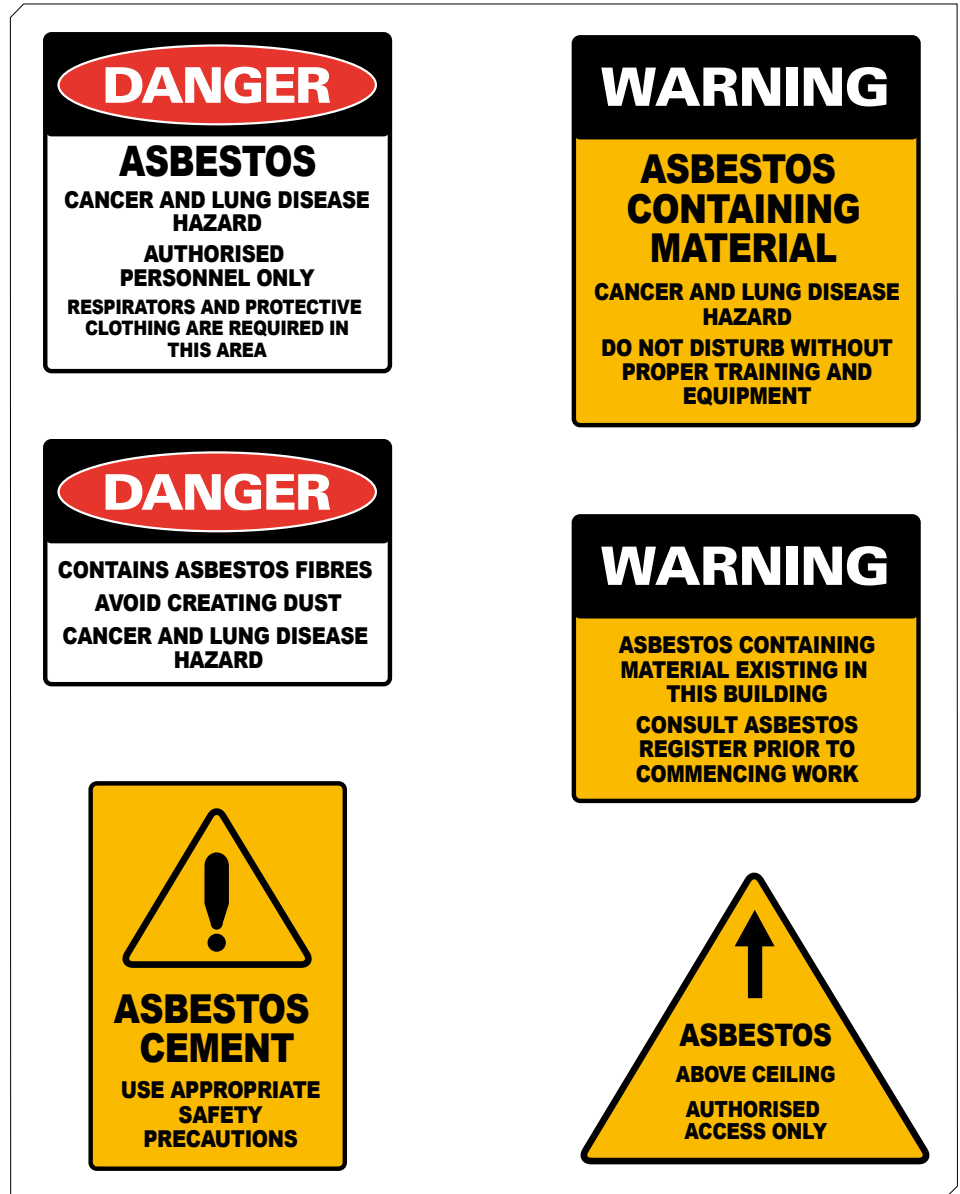


Appendix E – Asbestos register duties



Appendix F – Signs and labels

Examples of signs and labels for indicating the presence of asbestos in the workplace:



Appendix G – Asbestos-related activities

'Division 8 – Activities involving asbestos' of the Regulations sets out the duties on employers where asbestos-related activities (other than asbestos removal) are undertaken in their workplace. These activities include:

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

Appendix H – Selection and use of personal protective equipment and clothing for asbestos-related activities

Personal protective equipment (PPE) may need to be used in combination with other effective control measures when working with asbestos-containing materials. If PPE is required, the employer has a duty to provide employees with suitable equipment to enable them to conduct the activity safely and without risks to health.

The selection and use of PPE for an asbestos-related activity needs to be based on risk assessments and determined by a competent person with experience and knowledge of the activity and the potential risk to health.

The ease of decontaminating the equipment needs to be one of the factors considered when choosing PPE. Where possible, disposable equipment needs to be used such as disposable respirators and coveralls that can be disposed of as asbestos waste after the asbestos-related activity is completed. This reduces the risk of exposure to airborne asbestos fibres (if there are any) while cleaning and handling re-usable PPE.

When selecting protective clothing for an asbestos-related activity, factors such as potential heat stress, fire risk and electrical hazards related to the activity need to also be considered. Clothing made from wool or other materials that attract fibrous dusts should not be worn during an asbestos-related activity.

If an asbestos-related activity requires the use of other chemicals that are also hazardous substances, a further risk assessment must be performed. The relevant material safety data sheets (MSDSs) must be referred to for information on the appropriate PPE to be used and any other precautions to be taken when using the substances (the manufacturer can supply the MSDSs).

Coveralls

In most cases, coveralls need to be worn when conducting asbestos-related activities. A risk assessment for the task needs to be conducted if there is uncertainty whether coveralls are to be worn. It needs to take into account the nature and duration of the work, the type and condition of the ACM and the likelihood that dust will be generated during the task.

Disposable coveralls are preferred to reusable coveralls. They need to be of a suitable standard to prevent penetration of asbestos fibres as far as practicable. Disposable coveralls rated type 5, category 3 (prEN ISO 13982 – 1) or the equivalent would meet this standard. They should never be re-used and must be disposed of as asbestos waste after completion of the asbestos-related activity. Never wear the coveralls apart from when carrying out the asbestos-related activity and never take them out of the area except in a sealed and labelled asbestos-waste container for disposal. Personal clothing should not be worn underneath coveralls.

Special consideration needs to be given to the risks of heat stress from working in coveralls in hot conditions. A competent person needs to determine the most suitable protective clothing taking into account the nature of the work and heat sources in the workplace. Ensure that coveralls worn by employees are one size too big as this will help prevent ripping at the seams and provide better airflow through the garment to help keep the employee cooler.

Coveralls need to have fitted hoods and cuffs and be made from material capable of providing adequate protection against asbestos fibre penetration. Coveralls with open pockets and/or velcro fastenings should not be used because these features can be easily contaminated and are difficult to decontaminate. Fitted hoods need to always be worn over the straps of respirators, and loose cuffs need to be sealed with tape. The overall legs need to be worn over footwear – tucking them in can let dust into the footwear.

Asbestos fibres must be prevented from being transported outside the asbestos work area on the overalls. Thoroughly wet wipe or vacuum dust from the coveralls using a designated vacuum cleaner fitted with a HEPA filter. After decontamination, disposable coveralls need to be disposed of as asbestos waste. Non-disposable coveralls must also be disposed of as asbestos waste or stored in a sealed asbestos waste bag for laundering. Laundering of asbestos-contaminated coveralls is not recommended however, because decontamination cannot be guaranteed.

Footwear and gloves

When selecting appropriate safety footwear for an asbestos-related activity, avoid lace-up boots because 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. Footwear with safety steel caps may be required depending on the nature of the workplace where the asbestos-related activity is to occur. Safety footwear (and all other PPE) must be decontaminated before leaving the asbestos-related activity area for any reason.

The use of protective gloves needs to be determined by a risk assessment of the asbestos-related activity. If significant amounts of asbestos fibres may be present disposable gloves need to be worn. Protective gloves can be unsuitable if dexterity is required. Employees must clean their hands and fingernails thoroughly after work, and any gloves used must be disposed of as asbestos waste.

Respirators

Wearing a respirator is the last resort for controlling the risk from airborne asbestos fibres. But there is often a need to supplement existing control measures with PPE, including a respirator, to reduce the risk further.

In general, the selection of suitable respiratory protection equipment for asbestos-related activities depends on the nature of the work, the potential (if any) for airborne asbestos fibres to be generated by the work and any personal characteristics of the wearer that may affect the facial fit of the respirator (eg facial hair or glasses).

A competent person needs to determine the most appropriate respirator for the asbestos-related activity. This person needs to have knowledge of the risks to health from asbestos, the nature of the activity to be performed and the control measures already in place to reduce risk. The person needs to also be familiar with the appropriate Australian Standards for respiratory protective devices.

Respirators must 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*. These respirators have been tested to certain standards and are capable of filtering the type of fibres that could be generated by asbestos-related activities.

There are different types of respirators that can be used for protection from airborne asbestos fibres, including full-face and half-face non-disposable rubber masks as well as half-face disposable masks. For many asbestos-related activities an Australian Standard-compliant disposable mask will suffice. They need to be marked with the standard reference number as well as having two straps (not one).

If an employee is required to wear a respirator during an asbestos-related activity, the employer needs to issue them with a respirator for their exclusive use. Not only is this important from a personal hygiene perspective, it also contributes to improved cooperation by employees to comply with the requirement to wear it and can also lead to employees taking better care of it as well.

Individuals must be medically fit to wear a respirator. The employer needs to seek medical advice if there is any uncertainty. If a medical condition precludes the use of negative-pressure respirators, individuals need to be provided with a continuous-flow, positive-pressure respirator wherever possible. The suitability of these individuals for work in the asbestos removal industry needs to be assessed by a qualified medical practitioner.

Employees with beards or other facial hair (including stubble) will not be protected properly by negative-pressure respirators that require a facial seal so all asbestos removal workers using respirators that require a facial seal must be clean-shaven otherwise a continuous flow positive-pressure respirator will be necessary.

Employees need to select a size and make of respirator that fits them. The fit of a negative-pressure respirator to a person's face is critical. A fit test (a test that determines the suitability of a particular respirator for an individual's face) in accordance with AS/NZS 1715:1994 *Selection, use and maintenance of respiratory protective devices* and the manufacturer's instructions needs to be performed to assist in determining that the respirator fits the individual. Respirators should never be worn over the fitted hood of coveralls because the airtight seal on the face may be affected by the awkward position of the respirator straps.

Respirators must be worn until all contaminated clothing has been vacuum cleaned and/or wet-wiped, removed and bagged for disposal, and personal decontamination has been completed. Non-disposable respirators need to be cleaned and disinfected according to the manufacturer's instructions and stored in a clean, airtight container and out of sunlight when not in use.

Don't forget the use of PPE, including respirators, needs to be a last resort after higher order control measures have been implemented so far as is reasonably practicable.

Use and maintenance of respirators

A simple fit check (different to a fit test) in accordance with AS/NZS 1715:1994 *Selection, use and maintenance of respiratory protective devices* and the manufacturer's instructions needs to be performed immediately prior to commencing work with the respirator each time it is to be used. This will determine whether the respirator can provide an effective seal and protection should there be airborne asbestos fibres in the asbestos-related activity area.

The respirator must be worn in accordance with the manufacturer's instructions and the coverall hood must go over the respirator straps. At the end of a shift or at a break, as part of the decontamination process, ensure that the respirator is taken off last. Disposable respirators must be disposed of as asbestos waste after a single use. Non-disposable respirators must be cleaned and stored in a safe place away from contamination.

The respirator should never be left lying around where it can collect dust and should never be dangled around a person's neck.

A system of regular cleaning, inspection and maintenance must be provided for non-disposable respirators. Records of all respirators issued needs to be established and maintained (eg in a log book). Respirators need to be maintained in a clean and good working condition. All parts need to be inspected before and after each use, including the valves and seals. Respirator defects need to be repaired or it needs to be replaced immediately.

The length of use of a particulate filter for asbestos removal work depends on resistance to breathing and damage to the filter. The filters need to be replaced when damaged or when resistance increases and in accordance with the manufacturer's instructions. Used filters that are being replaced must be disposed of as asbestos waste. Do not attempt to clean filters.

There is a wide range of respiratory protection available for protection against airborne asbestos fibres. In general, the selection of suitable respiratory protection equipment depends on the nature of the asbestos work, the probable maximum concentrations of asbestos fibres that would be generated by the work and any personal characteristics of the wearer that may affect the facial fit of the respirator (eg facial hair or glasses).

The diagrams on page 68 provide, in approximate order of increasing efficiency, an overview of some of the respirators that can be used for protection against airborne asbestos fibres. The protection afforded by each device depends not only on the design and fit of the respirator but upon the efficiency of the filters (ie P1, P2 or P3 – where P stands for particulate or dust).

The table 'Selection of appropriate respiratory equipment for work with asbestos' (page 69) provides guidance for the selection of appropriate respiratory protection for different tasks, assuming the correct work procedures are being followed.

This guide does not take account of personal features (such as facial hair or the need to wear glasses) or misuse of the protective equipment.

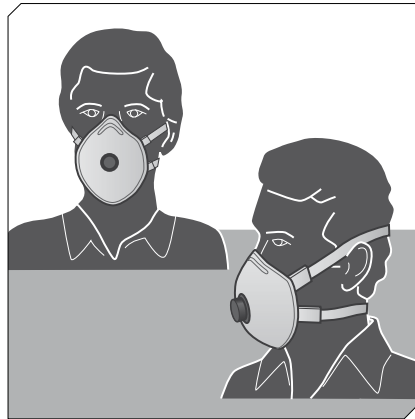
The respirators and filters presented in the table on page 69 are the minimum recommended for the corresponding task. The most efficient respirator and filter needs to be used.

Types of respiratory protective equipment (see diagrams on page 68):

- disposable, half-face particulate respirator (A)
- half-face, particulate filter (cartridge) respirator (B)
- powered, air-purifying, ventilated helmet respirator (C)
- full-face, particulate, filter (cartridge) respirator (D)
- full-face, powered air-purifying particulate respirator (E)
- full-face, positive pressure demand air-line respirator (F).

Appendices

These diagrams are indicative only. In order to show the correct respirator fit they do not show the use of hoods. Respirators must always be worn under a hood.



(A) Disposable, half-face particulate respirator.



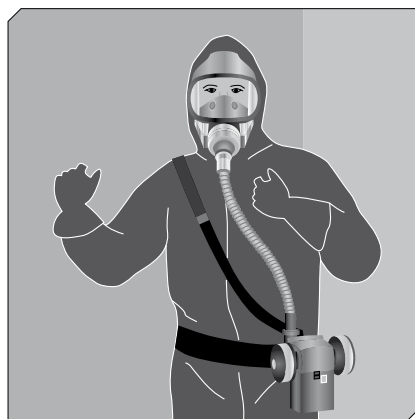
(B) Half-face, particulate filter (cartridge) respirator.



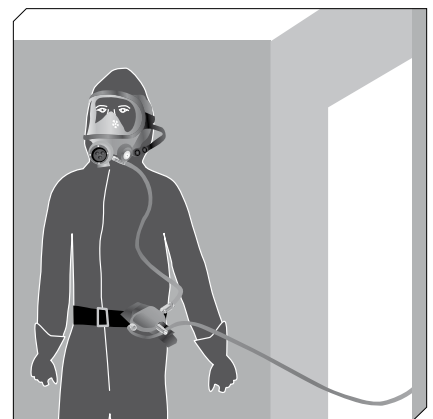
(C) Powered, air-purifying, ventilated helmet respirator.



(D) Full-face, particulate filter (cartridge) respirator.



(E) Full-face, powered air-purifying particulate respirator.



(F) Full-face, positive pressure demand air-line respirator.

Appendices

Selection of appropriate respiratory equipment

Work procedure	Required respirator	Filter type (where applicable)
Simple enclosure erection for containing undamaged asbestos materials to prevent damage – no direct handling but possible disturbance of asbestos	Disposable,* half-face particulate respirators or Half-face, particulate filter (cartridge) respirator	P1 or P2
Inspection of the condition of any installed, friable asbestos, which appears in poor condition or has been disturbed	Disposable,* half-face particulate respirators or Half-face, particulate filter (cartridge) respirator	P1 or P2
Sampling material for the purpose of identifying asbestos	Disposable,* half-face particulate respirators or Half-face, particulate filter (cartridge) respirator	P1 or P2
For work with asbestos cement (fibro) (eg hand-drilling and sawing)	Disposable,* half-face particulate respirators or Half-face, particulate filter (cartridge) respirator	P1 or P2
For work with asbestos-based friction materials	Disposable,* half-face particulate respirators or Half-face, particulate filter (cartridge) respirator	P1 or P2
Maintenance work in the vicinity of installed asbestos insulation – no direct handling but possible disturbance of asbestos	Full-face, particulate, filter (cartridge) respirator	P3
Extensive sample operations on friable asbestos	Full-face, particulate, filter (cartridge) respirator or Full-face, positive pressure demand air-line respirator or Full suit or hood, continuous flow air-line respirator	P3

* Disposable half-face respirators are not preferred for ongoing asbestos-related activities.

Appendix I – Exposure standard and atmospheric monitoring

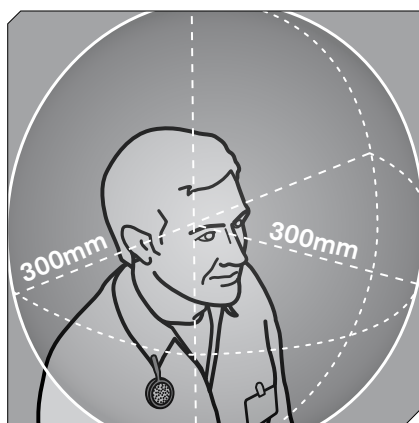
How is an employee's exposure determined?

Employees' exposure to asbestos can be determined through personal atmospheric monitoring and comparing those atmospheric monitoring results with the asbestos exposure standard.

What is personal atmospheric monitoring?

Personal atmospheric monitoring involves the use of sampling and analytical techniques to obtain an estimate of the level of airborne asbestos inhaled by employees. This level is then compared with the asbestos exposure standard.

These measurements must be made in accordance with the Australian Safety and Compensation Council's Guidance Note *Membrane filter method for estimating airborne asbestos dust* 2nd Edition [NOHSC: 3003 (2005)].



The breathing zone.

What is the exposure standard?

The exposure standard for all forms of asbestos is 0.1 fibres per millilitre of air (0.1 f/ml). This standard is expressed as a time-weighted average fibre concentration of asbestos calculated over an eight-hour working day. An exposure standard represents an airborne concentration of a particular substance in the breathing zone that according to current knowledge, should neither impair employees' health nor cause them undue discomfort.

The breathing zone is defined as a hemisphere with a radius of 300mm extending in front of a person's face measured from the midpoint of an imaginary straight line joining the ears.

Exposure standards do not represent 'no-effect' levels at which every employee can be guaranteed adequate protection nor do they constitute a 'fine line' between satisfactory and unsatisfactory working conditions.

The results of the atmospheric monitoring are compared with the asbestos exposure standard to determine if an employee's exposure to asbestos is excessive.

Results of atmospheric monitoring can only be directly compared to the exposure standard if personal monitoring was performed in the breathing zone of the employee over a continuous period of not less than four hours and the sample is considered representative of exposure.

The results of static or fixed position monitoring should not be used as an indicator of actual employee exposure to a substance. However in certain circumstances, static or fixed position

monitoring can help in determining the design of risk controls or the effectiveness of existing risk controls.

When is atmospheric monitoring required?

Personal atmospheric monitoring must be carried out to determine employees' exposure to airborne asbestos fibres if, based on reasonable grounds, there is uncertainty as to whether the exposure standard has been exceeded.

In other words, atmospheric monitoring is needed if risk to health cannot be determined with confidence by simply reviewing the information about asbestos and examining the nature of the work.

The following are examples of situations in which atmospheric monitoring may be needed because of uncertainty about the level of exposure or whether there is a risk:

- it is not clear whether new or existing risk controls are effective
- the risk to health is largely controlled through the use of respiratory protection but there are concerns that respiratory equipment has not been correctly selected, used, fitted, maintained or stored, and employees have not been adequately trained in its use
- the risk to health is largely managed through administrative controls (ie safe work practices or systems of work) and employees do not always follow these practices – perhaps due to lack of training or supervision
- there is evidence (such as dust deposits in the work area) that the risk controls (such as engineering controls) have deteriorated as a result of poor maintenance, or
- process modifications or changes in work practices have occurred that may adversely affect employee exposure.

Where it is not practicable to eliminate exposure to asbestos, the Regulations require that exposure to asbestos is reduced so far as is reasonably practicable for all people at the workplace.

If it is obvious that there is potential for exposure to asbestos, priority needs to be given to controlling the risk rather than carrying out atmospheric monitoring just to confirm that the potential for exposure exists. However, once controls have been put in place their effectiveness can be determined by performing atmospheric monitoring.

For further information about atmospheric monitoring refer to relevant documented standards, technical journals or publications issued by WorkSafe and the Australian Safety and Compensation Council (ASCC). Further information and advice can be obtained from professionals such as occupational hygienists. Other employers in the industry could also be approached for advice.

Who can conduct the atmospheric monitoring?

People who perform atmospheric monitoring do not have to be approved under the Regulations. However, atmospheric monitoring and the interpretation of the results (including comparison with the asbestos exposure standard) need to be undertaken by a competent person, such as an occupational hygienist or safety professional who has the appropriate qualifications, knowledge, skills and experience.

The Australian Institute of Occupational Hygienists (AIOH) is an incorporated institute that represents the occupational hygiene field both nationally and internationally. A list of service providers who may be able to conduct atmospheric monitoring can be found at the AIOH website (aioh.org.au).

Who can analyse the atmospheric monitoring samples?

If an analysis of any sample is required under the Regulations, the analysis must be undertaken by an approved analyst. The accurate identification of asbestos and counting of fibres by approved analysts is an important step in controlling exposure to this harmful substance. The Regulations define an approved analyst as 'An analyst approved by the National Association of Testing Authorities (NATA) to perform asbestos fibre counting or to identify asbestos in samples and to issue findings as endorsed reports under the authority of a NATA accredited laboratory.'

Employers, self-employed persons and persons with management or control of a workplace who have commissioned the analysis of atmospheric monitoring samples for asbestos must ensure that the person who undertakes the analysis is an approved analyst and can issue endorsed reports under the authority of the accredited laboratory. Endorsed reports have the NATA insignia stamped on the report. It is recommended that a copy of the endorsed analysis report be obtained as evidence of compliance.

Prior to engaging an analyst, request verification from the laboratory where the analysis is to be done confirming the analyst is NATA approved. The website (nata.asn.au) can also be used to confirm that the laboratory is accredited to perform asbestos analysis.

What actions are required after atmospheric monitoring?

If atmospheric monitoring results indicate that control measures have deteriorated or are not effective, prompt action must be taken to reduce employee exposure to airborne asbestos. Control measures need to be restored or improved as soon as possible. This may involve ceasing work while normal control measures are restored to the required level of effectiveness, providing portable or temporary ventilation, adopting modified work practices or providing personal protective equipment.

Results of atmospheric monitoring to be available

Copies of the results of atmospheric monitoring must be accessible to the HSR of any affected designated workgroup and to affected employees. It is important that all atmospheric monitoring results are communicated to the employees involved, regardless of whether the results indicate excessive, minimal or no employee exposure to asbestos.

Appendix J – Sealing, painting, coating and cleaning of asbestos cement products

As a first priority removing ACM must be considered. Where ACM cannot be removed and must be sealed, painted, coated or cleaned, there may be a risk to health. Such tasks can only be carried out on ACMs that are in good condition. For this reason, the ACM needs to be thoroughly inspected before the work begins.

There is a risk to health if the surface of asbestos cement sheeting has been disturbed (eg from hail storms and cyclones) or if the sheeting has deteriorated as a result of 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 could be released if disturbed.

If treatment of asbestos cement sheeting is considered essential, a method that does not disturb the matrix of the asbestos cement sheeting needs to be used. 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.

Under no circumstances can ACM be water-blasted or dry-sanded in preparation for painting, coating or sealing.

Equipment

In addition to any equipment required to complete the particular task (eg paint, paint brushes, paint rollers or airless spray gun/equipment) the following equipment may be required on site before the work begins:

- disposable cleaning rags
- bucket of water and/or a misting spray bottle
- sealant
- spare PPE
- suitable asbestos waste container
- warning signs and/or barrier tape.

Personal protective equipment (PPE)

- See Appendix H for guidance on protective clothing.
- 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. See Appendix H for guidance on selecting appropriate respirators.
- Where paint is to be applied, appropriate respiratory protection to control the paint vapours/mist must also be considered.

Preparing the asbestos work area

- If work is to be carried out at height appropriate 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 (eg close doors and/or use warning signs and/or barrier tape at all entry points). The distance for segregation needs to be determined by a risk assessment.

- If working at 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.
- Ensure there is adequate lighting.
- If using a bucket of water do not re-soak used rags in the bucket as this will contaminate the water. Instead either fold the rag so a clean surface is exposed or dispose of as asbestos waste and use another rag.
- Never use high-pressure water cleaning methods.
- Never prepare surfaces using dry-sanding methods. Where sanding is required consideration needs to be given to removing the ACM and replacing it with non-ACM.
- Wet sanding methods may be used to prepare the material 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

- When using a spray brush never 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

- 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 labelled asbestos waste bags/containers.
- Wet-wipe the external surfaces of the asbestos waste bags/containers to remove any adhering dust before they are removed from the asbestos work area.

Personal decontamination

Carry out the following personal decontamination procedure in a designated area:

- If disposable coveralls are worn for the activity, clean the coveralls and respirator while still wearing them. Coveralls can be cleaned using a HEPA vacuum, damp rag or fine-water spray and the respirator can be cleaned with a wet rag or cloth.
- While still wearing the respirator remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag.
- Remove the respirator. If a non-disposable respirator was used inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. Disposable respirators do not require cleaning. They need to be placed into a labelled asbestos waste bag or waste container dedicated for asbestos waste.

Clearance procedure

- Visually inspect the asbestos work area to make sure it has been properly cleaned.
- Consider seeking a competent independent person's visual assessment to confirm there is no visible asbestos residue.
- Clearance air sampling is not normally required for this task.
- Dispose of all waste as asbestos waste.

Appendix K – Drilling of asbestos-containing material

Drilling of ACM for any purpose is not encouraged by WorkSafe. The preference is to remove the material without any drilling and replace it with a non-ACM. However, the Regulations do not prohibit drilling into ACM (as long as the task is controlled in accordance with the Regulations).

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 that can become airborne is significantly reduced if a hand drill is used.

Equipment

In addition to any equipment required to complete the particular task, the following equipment may be required on site before the work begins:

- a non-powered hand drill or a low-speed battery-powered drill or drilling equipment. Battery-powered drills need to be fitted with a local exhaust ventilation (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 needs to be used
- disposable cleaning rags
- bucket of water and/or a misting spray bottle
- duct tape
- sealant
- spare PPE
- a thickened substance, such as wallpaper paste, shaving cream or hair gel
- a suitable asbestos waste container (eg 200 micron plastic bags or a drum, bin or skip lined with 200 micron plastic sheeting)
- 200 micron plastic sheeting
- warning signs and/or barrier tape
- an asbestos vacuum cleaner fitted with a HEPA filter
- a sturdy paper, foam or thin metal cup or similar (for work on overhead surfaces only).

Personal protective equipment (PPE)

- See Appendix H for guidance on protective clothing.
- 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. See Appendix H for guidance on selecting appropriate respirators.

Preparing the asbestos work area

- If the work is to be carried out at height, appropriate precautions must be taken to prevent the risk of falls.
- Ensure appropriately labelled 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 (eg close doors and/or use warning signs and/or barrier tape at all entry points). The distance for segregation needs to be determined by a risk assessment taking into account the area, the nature of the work and the type of asbestos etc.

- If drilling a roof from outside, segregate the area below.
- If access is available at the rear of the asbestos cement, segregate this area as well.
- 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 become airborne.
- If using a bucket of water do not re-soak used rags in the bucket as this will contaminate the water. Instead either fold the rag so a clean surface is exposed or dispose of as asbestos waste and use another rag.

Drilling vertical surfaces

- Tape both the point to be drilled and the exit point (if accessible) with a strong adhesive tape (such as duct tape) to prevent the edges crumbling.
- Cover the drill entry and exit points (if accessible) on the ACM with a generous amount of thickened substance.
- Drill through the paste.
- Withdraw the drill and use damp rags to clean off the paste from it and any debris from the wall.
- 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.

Drilling overhead horizontal surfaces

- 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 and the wall.
- 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-related activity area and equipment

- Use damp rags to clean the equipment including the drill.
- If required, use damp rags or an asbestos vacuum cleaner to collect any loose debris on any plastic sheeting used to cover any surface within the asbestos work area.
- 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.
- 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 labelled asbestos waste bags/container.
- Wet-wipe the external surfaces of the asbestos waste bags/container to remove any dust before they are removed from the asbestos work area.

Disposal of equipment, such as drills and drill bits, as asbestos-contaminated waste is always an alternative to decontamination or bagging it.

Personal decontamination

Carry out the following personal decontamination procedure in a designated area:

- If disposable coveralls are worn for the activity, clean the coveralls and respirator while still wearing them. Coveralls can be cleaned using a HEPA vacuum, damp rag or fine-water spray and the respirator can be cleaned with a wet rag or cloth.
- While still wearing the respirator remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag.
- Remove the respirator. If a non-disposable respirator was used, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. Disposable respirators do not require cleaning. They need to be placed into a labelled asbestos waste bag or waste container dedicated for asbestos waste.

Clearance procedure

- Visually inspect the asbestos work area to make sure it has been properly cleaned.
- Consider seeking a competent independent person's visual assessment to confirm there is no visible asbestos residue.
- Clearance air sampling is not normally required for this task.
- Dispose of all waste as asbestos waste.

Appendix L – Cleaning leaf litter from asbestos cement roof gutters

As a first priority, removing ACM must be considered. If this is not reasonably practicable, leaf litter can be cleaned from asbestos cement roof gutters as long as the activity is controlled in accordance with the Regulations.

Equipment

In addition to any equipment required to complete the particular task, the following equipment may also be required on site before the work begins:

- bucket of water and detergent
- watering can or garden spray
- hand trowel or scoop
- disposable cleaning rags
- suitable asbestos waste container
- warning signs and/or barrier tape
- vacuum cleaner fitted with a HEPA filter.

Personal protective equipment (PPE)

- See Appendix H for guidance on protective clothing.
- 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. See Appendix H for guidance on selecting appropriate respirators.

Preparing the asbestos work area

- Since the work is to be carried out at 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 (eg use warning signs and/or barrier tape at all entry points). The distance for segregation needs to be determined by a risk assessment.
- Segregate the area below.
- Avoid working in windy environments where asbestos fibres can become airborne.
- If using a bucket of water do not re-soak used rags in the bucket as this will contaminate the water. Instead either fold the rag so a clean surface is exposed or dispose of as asbestos waste and use another rag.

Gutter cleaning

- Disconnect or re-route the downpipes to prevent any entry of contaminated water into the waste water system and ensure there is a suitable container to collect contaminated run-off. 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 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

- Use damp rags to wipe down all equipment used.
- Use damp rags to wipe down the guttering.
- If necessary (and where practicable), use an asbestos vacuum cleaner to vacuum the area below.
- Place debris, used rags and other waste in a labelled asbestos waste container.
- Wet-wipe the external surfaces of the asbestos waste container to remove any dust before it is removed from the asbestos work area.

Personal decontamination

Carry out the following personal decontamination procedure in a designated area:

- If disposable coveralls are worn for the activity, clean the coveralls and respirator while still wearing them. Coveralls can be cleaned using a HEPA vacuum, damp rag or fine-water spray and the respirator can be cleaned with a wet rag or cloth.
- While still wearing the respirator remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag.
- Remove the respirator. If a non-disposable respirator was used, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. Disposable respirators do not require cleaning. They need to be placed into a labelled asbestos waste bag or waste container dedicated for asbestos waste.

Clearance procedure

- Visually inspect the asbestos work area, paying particular attention to the ground below for any spoil and debris to make sure it has been properly cleaned. Where the clean-up/removal is greater than 'a minor contamination' consider seeking a competent independent person's visual assessment to confirm there is no visible asbestos residue.
- Clearance air sampling is not normally required for this task.
- Dispose of all waste, including all water, as asbestos waste.

Appendix M – Replacing cabling in asbestos cement conduits or boxes

As a first priority, removing ACM must be considered. If this is not reasonably practicable, cabling in asbestos cement conduits or boxes can be replaced as long as the activity is controlled in accordance with the Regulations.

Caution – use of water and electrical hazards

In many cases, water is used to dampen asbestos material to reduce the potential for dust to become airborne during asbestos-related activities (and removal). Where electricity is present, the use of water in this manner may present an immediate risk to health and safety from electrocution. Water must only be used to wet ACM if there is no source of electricity present in the work area.

Equipment

In addition to any equipment required to complete the particular task, the following equipment may also be required on site before the work begins:

- disposable cleaning rags
- bucket of water and/or a misting spray bottle
- 200 micron thick plastic sheeting
- cable slipping compound
- appropriately marked asbestos waste disposal bags
- spare PPE
- duct tape
- warning signs and/or barrier tape
- asbestos vacuum cleaner.

Personal protective equipment (PPE)

- See Appendix H for guidance on protective clothing.
- 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. See Appendix H for guidance on selecting appropriate respirators.

Preparing the asbestos work area

- If the work will be carried out in a confined space, appropriate precautions must be taken to prevent the risk of asphyxiation.
- 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 (eg use warning signs and/or barrier tape at all entry points). The distance for segregation needs to 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 cables are to be pulled.
- Ensure there is adequate lighting.
- Avoid working in windy environments where asbestos fibres can become airborne.
- If using a bucket of water do not re-soak 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

- 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 needs to be undertaken close to the points where the cables exit from the conduits/ducts.
- Ropes used for cable pulling need to 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

- 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 passes 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.
- If required use damp rags or an asbestos vacuum cleaner to collect any loose debris on any plastic sheeting used to cover any surface within the asbestos work area.
- 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

Carry out the following personal decontamination procedure in a designated area:

- If disposable coveralls are worn for the activity, clean the coveralls and respirator while still wearing them. Coveralls can be cleaned using a HEPA vacuum, damp rag or fine-water spray and the respirator can be cleaned with a wet rag or cloth.
- While still wearing the respirator remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag.
- Remove the respirator. If a non-disposable respirator was used, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. Disposable respirators do not require cleaning. They need to be placed into a labelled asbestos waste bag or waste container dedicated for asbestos waste.

Clearance procedure

- Visually inspect the asbestos work area to make sure it has been properly cleaned.
- Consider seeking a competent independent person's visual assessment to confirm there is no visible asbestos residue.
- Clearance air sampling is not normally required for this task.
- Dispose of all waste as asbestos waste.

Appendix N – Working on electrical mounting boards (switchboards) containing asbestos

As a first priority removing ACM must be considered. If this is not reasonably practicable, work on electrical mounting boards containing asbestos can be carried out as long as the activity is controlled in accordance with the Regulations.

A risk assessment needs to be carried out on electrical mounting panels containing asbestos in poor condition (ie friable) and those requiring major works to determine if they need to be removed.

Equipment

In addition to any equipment required to complete the particular task, the following equipment may also be required on site before the work begins:

- non-powered hand drill or a low-speed battery-powered drill or drilling equipment. Battery-powered drills need to be fitted with a local exhaust ventilation (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 needs to be used
- duct tape
- warning signs and/or barrier tape
- disposable cleaning rags
- spare PPE
- suitable asbestos waste container
- 200 micron plastic sheeting
- asbestos vacuum cleaner fitted with HEPA filter
- cleaning rags
- misting spray bottle with water (for cleaning the equipment after the activity is finished and also for cleaning the asbestos waste bags prior to removing them from the asbestos-related activity area).

Personal protective equipment

- See Appendix H for guidance on protective clothing.
- 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. See Appendix H for guidance on selecting appropriate respirators.

Preparing the asbestos work area

- 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 (eg use warning signs and/or barrier tape at all entry points). The distance for segregation needs to 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 become airborne.
- Use the asbestos vacuum cleaner to remove any dust from the work area prior to commencing the asbestos-related activity.

Work on electrical mounting panels

Providing the panel is not friable, maintenance and service work may include:

- The replacement of asbestos-containing equipment on the electrical panel with non-asbestos-containing equipment.
- The 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.
- The installation of new components/equipment.

If the asbestos-containing electrical mounting panel has to be removed for work behind the board, it must be replaced with a non-asbestos-containing product. Removal of ACM must be done in accordance with the Regulations.

If drilling is required, the control process needs to follow the measures described in Appendix K.

Decontaminating the asbestos work area and equipment

- In areas where there is an electrical hazard, an asbestos vacuum cleaner needs to be used to remove any dust or debris from the mounting panel and other visibly contaminated sections of the asbestos work area.
- Avoid electrocution hazard – only use the spray bottle and rags to clean the equipment after completing the activity.
- 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.
- Pick up larger pieces of debris (if any) by hand and vacuum dust and smaller debris.
- Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container.
- Spray and 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

Carry out the following personal decontamination procedure in a designated area:

- If disposable coveralls are worn for the activity clean the coveralls and respirator while still wearing them. Coveralls can be cleaned using a HEPA vacuum, damp rag or fine-water spray and the respirator can be cleaned with a wet rag or cloth.
- While still wearing the respirator remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag.
- Remove the respirator. If a non-disposable respirator was used inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. Disposable respirators do not require cleaning. They need to be placed into a labelled asbestos waste bag or waste container dedicated for asbestos waste.

Clearance procedure

- Visually inspect the asbestos work area to make sure it has been properly cleaned.
- Consider seeking a competent independent person's visual assessment to confirm there is no visible asbestos residue.
- Clearance air sampling is not normally required for this task.
- Dispose of all waste, including all water, as asbestos waste.

Appendix O – Working with asbestos friction materials

The risk of exposure to significant amounts of dust that contains asbestos fibres may exist while repairing brakes, clutches and high-temperature gaskets on motor vehicles.

Practical methods of reducing the spread of asbestos fibres

If the following simple controls are applied carefully, it generally should not be necessary to carry out air monitoring in the workshop while servicing vehicle brakes, clutches and cylinder head/exhaust gaskets.

Using a high-efficiency particulate air (HEPA)-filter industrial vacuum cleaner

A HEPA-filter industrial vacuum cleaner needs to be certified by the manufacturer as fit for asbestos work and can be used to clean all asbestos dust from components and other parts in the immediate vicinity. It may be necessary to purchase or fabricate special hose nozzles to reach difficult areas to ensure components are effectively cleaned of asbestos. Any remaining dust needs to be removed with a wet rag. A domestic or standard vacuum cleaner is ineffective as asbestos fibres will pass right through the filters and be blown into the air.

Using a fine water mist from a hand spray bottle

A fine spray of water on the dust will dampen it and prevent it being dispersed. The component and parts in the immediate vicinity can then be wiped down with a wet rag. The rag can only be used once. It then needs to be placed in a plastic bag and into an asbestos waste disposal bin. Any spillage onto the workshop floor needs to be wiped up and disposed of in the same way. It is important that only a gentle misting spray is used as a coarse spray will disperse the asbestos fibres into the air. A respirator certified by the manufacturer as suitable for asbestos dust (eg a P1 or P2 disposable respirator) needs to be worn during the above cleaning processes.

Compressed air, water hoses and aerosol cans cannot be used safely to clean asbestos dust off components in the open workshop as these methods will disperse large numbers of fibres into the air.

Dedicated asbestos-handling area

To minimise risks to other people, the area where asbestos components are cleaned and removed needs to be segregated and in a location where wind or cooling fans etc will not disturb any dust. All employees must be provided with information and training on asbestos hazards, its presence and the safety procedures that must be followed.

How to apply these controls to typical workshop jobs

1. Brake assembly repairs – vacuum method (preferred method)

- Segregate the vehicle from surrounding work areas. Try to have at least three metres separation and avoid windy locations and cooling fans etc.
- Use portable signs to indicate that asbestos removal is going on.
- Wear a P1 or P2 disposable respirator.
- Use a HEPA-filter vacuum cleaner to clean the wheel prior to undoing the wheel nuts.
- Remove the wheel and vacuum any remaining dust on the wheel.
- Vacuum all dust off the brake assembly.
- Use a wet rag to wipe down all parts and remove final traces of dust.

- Vacuum any additional dust that is exposed during disassembly.
- Place the component and rags etc into a plastic bag, seal or tie it and then place it into a marked plastic-lined disposal bin or skip (see Disposal section on page 86).
- If the component is to be sent to a specialist remanufacturing workshop rather than dumped, double-sealed bags are a suitable method of containing dust during transport. The outer bag needs to be marked with the words **'Caution Asbestos – Do not open or damage bag. Do not inhale dust'**.

2. Brake assembly repairs – wet method

- Segregate the vehicle from surrounding work areas. Try to have at least three metres separation and avoid windy environments and cooling fans etc.
- Use portable signs to indicate that asbestos removal is going on.
- Wear a P1 or P2 disposable respirator.
- Place a tray or tape plastic sheeting to the floor under the removal area to catch spillage and to make clean up easier.
- Use a saturated rag to wet down the wheel and wipe off dust prior to removing the wheel nuts.
- Remove the wheel and clean off any remaining dust with the wet rag.
- Use a saturated rag and gentle water mist to thoroughly damp down any dust on the brake assembly.
- Use a saturated rag to wipe off exposed dust and dust exposed during disassembly. Wipe up any spillage on the floor.
- Place the component and rags etc into a plastic bag, seal or tie it and then place it into a marked plastic lined disposal bin or skip (see disposal section below).
- If the component is to be sent to a specialist remanufacturing workshop rather than dumped, double-sealed bags are a suitable method of containing dust during transport. The outer bag needs to be marked with the words: **'Caution Asbestos – Do not open or damage bag. Do not inhale dust'**.

3. Clutch repairs

- Segregate the vehicle from surrounding work areas. Try to have at least three metres separation and avoid windy locations and cooling fans etc.
- Use portable signs to indicate that asbestos removal is going on.
- Wear a P1 or P2 disposable respirator.
- After separating the gearbox from the engine, vacuum/wet-wipe inside the bell housing and around the pressure plate.
- On removal of the pressure plate and clutch plate, vacuum/wet-wipe the flywheel, housing and components.
- Place used rags and removed components in a plastic bag and seal or tie it.
- Place this plastic bag into a marked plastic-lined disposal bin or skip (see disposal section below).

4. Cylinder head and exhaust gaskets

- Segregate the vehicle from surrounding work areas. Try to have at least three metres separation and avoid windy locations and cooling fans etc.
- Use portable signs to indicate that asbestos removal is going on.
- Wear a P1 or P2 disposable respirator.

- If the gasket is damaged during separation of the components, wet it with water to control asbestos fibres.
- Keep the gasket wet and carefully remove it without using power tools.
- Wipe down the joint faces and the immediate area with a wet rag.
- Place the gasket and rag into a plastic bag and seal or tie it.
- Place this plastic bag into a marked plastic lined disposal bin or skip (see disposal section below).

5. Brake shoe remanufacturing

The process of removing asbestos-containing linings from brake shoes and clutch parts has the potential to release large quantities of asbestos fibres. Because of this, control measures have to be more stringent. All work involving power tools needs to be carried out within an enclosure that is fitted with an effective dust extraction and filtration system that will prevent the release of asbestos fibres. If components are to be hand worked carry out the following procedure:

- Undertake the work in a separate area away from other employees, preferably in a purpose-built enclosure.
- Thoroughly wet down the component to control dust/fibres.
- Wear a disposable respirator and overalls.
- Use local extraction to minimise the spread of dust/fibres.
- Atmospheric monitoring must be carried out to determine asbestos fibre exposure levels and the suitability of protective equipment.
- Clean up after removal with a vacuum cleaner and wet rag.
- Place waste asbestos into a plastic bag and seal or tie it.
- Place this plastic bag into a marked disposal bag, tie or seal it and place the bag into the disposal bin or skip (see disposal section below).
- Used respirators and overalls should not be worn away from the work area and need to be disposed of in the same way as asbestos waste.

Disposal

Individual components and wiping rags etc need to be placed in plastic bags, tying each bag separately prior to placing them in the container. Disposal bags need to be heavy duty (200 micron), made of clear plastic and marked with the label **'Caution Asbestos – Do not open or damage bag. Do not inhale dust'**.

Asbestos waste awaiting disposal at the workshop must be stored in closed containers (eg 60 or 200 litre steel drums with removable lids or sealed skip).

Asbestos waste must be transported and disposed of in accordance with Environment Protection Authority (EPA) Victoria requirements. Asbestos waste can only be disposed of at a site licensed by the EPA Victoria and it must never be disposed of in the general waste system. It is recommended that packaging, transporting and disposing of asbestos waste be left to specialists. Firms specialising in this area can be found under 'Asbestos removal' in the phone directory.

Appendix P – Examples of asbestos-containing materials

A

Airconditioning ducts – exterior or interior acoustic and thermal insulation

Arc shields in lift motor rooms or large electrical cabinets

Asbestos-based plastics products – as electrical insulates and acid-resistant compositions or aircraft seats

Asbestos ceiling tiles

Asbestos cement conduits

Asbestos cement electrical fuse boards

Asbestos cement external roofs and walls

Asbestos cement in the use of form work when pouring concrete

Asbestos cement internal flues and downpipes

Asbestos cement moulded products, such as gutters, ridge cappings, gas meter covers, cable troughs and covers

Asbestos cement pieces for packing spaces between floor joists and piers

Asbestos cement underground pits, as used for traffic control wiring and telecommunications cabling

Asbestos cement render, plaster, mortar and coursework

Asbestos cement sheet

Asbestos cement sheet behind ceramic tiles

Asbestos cement sheet internal over exhaust canopies, such as ovens and fume cupboards

Asbestos cement sheet internal walls and ceilings

Asbestos cement sheet underlays for vinyl

Asbestos cement storm drain pipes

Asbestos cement water pipes (usually underground)

Asbestos-containing laminates (eg Formica) used where heat resistance is required (eg ships)

Asbestos-containing pegboard

Asbestos felts

Asbestos marine board (eg marinate)

Asbestos mattresses used for covering hot equipment in power stations

Asbestos paper used variously for insulation, filtering and production of fire resistant laminates

Asbestos roof tiles

Asbestos textiles

Asbestos textile gussets in airconditioning ducting systems

Asbestos yarn

Autoclave/steriliser insulation

B

Bitumen-based water proofing such as malthoid (typically on roofs and floors but also in brickwork)

Bituminous adhesives and sealants

Boiler gaskets

Boiler insulation, slabs and wet mix

Brake disc pads

Brake linings

C

Cable penetration insulation bags

Calorifier insulation

Car body filters (not common)

Caulking compounds, sealant and adhesives

Cement render

Chrysotile wicks in kerosene heaters

Clutch faces

Compressed asbestos cement panels for flooring, verandas, bathrooms and steps for demountable buildings

Compressed asbestos fibres (CAF) used in brakes and gaskets for plant and vehicles

Appendices

D

Door seals on ovens

E

Electric heat banks – block insulation

Electric hot water services (normally not asbestos but some millboard could be present)

Electric light fittings, high wattage, insulation around fitting (and bituminised)

Electrical switchboards (see pitch-based)

Exhausts on vehicles

F

Filler in acetylene gas cylinders

Filters – beverage, wine filtration

Fire blankets

Fire curtains

Fire door insulation

Fire-rated wall rendering containing asbestos with mortar

Fire-resistant plaster board, typically on ships

Fire-retardant material on steel work supporting reactors on columns in refineries in the chemical industry

Flexible hoses

Floor vinyl sheets

Floor vinyl tiles

Fuse blankets and ceramic fuses in switchboards

G

Galbestos™ roofing materials (decorative coating on metal roofs for sound proofing)

Gaskets – chemicals, refineries

Gaskets – general

Gauze mats in laboratories/chemical refineries

Gloves – for insulation against heat

H

Hairdryers – insulation around heating elements

Header (manifold) insulation

I

Insulation blocks

Insulation in electric reheat units for air-conditioner systems

L

Laboratory bench tops

Laboratory fume cupboard panels

Laboratory ovens – wall insulation

Lagged exhaust pipes on emergency power generators

Lagging in penetrations in fireproof walls

Lifts shafts – asbestos cement panels lining the shaft at the opening of each floor and asbestos packing around penetrations

Limpet asbestos spray insulation

Locomotives (steam) lagging on boilers, steam lines, steam dome and gaskets

M

Mastics

Millboard between heating units and walls

Millboard lining of switchboxes

Mortar

Appendices

P

Packing materials for gauges, valves etc – can be square packing, rope or loose fibre

Packing material on window anchorage points in high-rise buildings

Paint (typically industrial epoxy paints)

Penetrations through concrete slabs in high-rise buildings

Pipe insulation including moulded sections, water-mix type, rope braid and sheet

Pitch-based (eg Zelemite, Ausbestos, Lebah) electrical switchboards

Plaster and plaster cornice adhesives

Pump insulation

R

Refractory linings

Refractory tiles

Rubber articles (extent of usage unknown)

S

Sealant between floor slab and wall, usually in boiler rooms, risers or lift shafts

Sealant or mastik on windows

Sealants and mastics in airconditioning ducting joints

Spackle or plasterboard wall-jointing compounds

Sprayed insulation – acoustic wall and ceiling

Sprayed insulation – beams and ceiling slabs

Sprayed insulation – fire retardant sprayed on nut internally, for bolts holding external building wall panels

Stoves – old domestic type, wall insulation

T

Tape and rope – lagging and jointing

Tapered ends of pipe lagging (where lagging is not necessarily asbestos)

Tilux sheeting in place of ceramic tiles in bathrooms

Trailing cable under lift cabins

Trains, guards vans, millboard between heater and wall

Trains – Harris cars (sprayed asbestos between steel shell and laminex)

V

Valve insulation

W

Welding rods

Woven asbestos cable sheath

Appendix Q – Information required to be included in an asbestos control plan

Information required to be included in an asbestos control plan:

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

Appendix R – Documents applied, adopted or incorporated by this compliance code, in whole or in part, under section 149(2) of the *Occupational Health and Safety Act 2004* (the OHS Act)

The documents or parts of documents listed below are applied, adopted or incorporated into this compliance code. This means that the documents in whole or in part as referenced form part of this compliance code.

Victorian Occupational Health and Safety Act 2004, Act No.107/2004

Victorian Dangerous Goods Act 1985, Act No.10189/1985

Victorian Occupational Health and Safety Regulations 2007 Statutory Rule No.54/2007

WorkSafe Victoria *Removing asbestos in workplaces* compliance code

AS/NZS 1715:1994 *Selection, use and maintenance of respiratory protective devices*

AS/NZS 1716:2003 *Respiratory protective devices*

AS/NZS 60335.2.69: 2003 *Household and similar electrical appliances – Safety – Particular requirements for wet and dry vacuum cleaners, including power brush, for industrial and commercial use*

AS 4260-1997 *High efficiency particulate air (HEPA) filters – Classification, construction and performance*

Appendix S – Documents associated with this compliance code

The references listed below are not incorporated into this compliance code. This means that they do not form part of this compliance code, although they may have regulatory status in their own right. They are included only to provide an indication of sources of further information.

Australian Safety and Compensation Council Asbestos Code for the Management and Control of Asbestos in the Workplace, 2nd edition [NOHSC: 2018 (2005)]

Australian Safety and Compensation Council Guidelines for Health Surveillance (asbestos part)

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