

# WORKING WITH **ASBESTOS**

**GUIDE 2008**

**Disclaimer**

This publication may contain occupational health and safety and workers compensation information. It may include some of your obligations under the various legislations that WorkCover NSW administers. To ensure you comply with your legal obligations you must refer to the appropriate legislation.

Information on the latest laws can be checked by visiting the NSW legislation website ([www.legislation.nsw.gov.au](http://www.legislation.nsw.gov.au)) or by contacting the free hotline service on 02 9321 3333.

This publication does not represent a comprehensive statement of the law as it applies to particular problems or to individuals or as a substitute for legal advice. You should seek independent legal advice if you need assistance on the application of the law to your situation.

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# INTRODUCTION

Asbestos is the generic term for a number of fibrous silicate minerals. There are two major groups of asbestos:

- the **serpentine** group contains chrysotile, commonly known as white asbestos
- the **amphibole** group contains amosite (brown asbestos) and crocidolite (blue asbestos), as well as some other less common types, such as tremolite, actinolite and anthophyllite.

Since 31 December 2000, using all forms of asbestos has been banned.

## SERPENTINE GROUP

Chrysotile is the only form of asbestos that has been used commercially from the serpentine group.

In the past, chrysotile has been used in the manufacture of:

- asbestos cloth, tapes, ropes and gaskets for packing, and in thermal and chemical insulation
- asbestos cement sheets and pipes for construction, casing for water and electrical/telecommunication services
- rubber, plastics, thermosetting resins, adhesives, paints, coatings, caulking compounds and sealants for thermal, electrical and insulation applications
- fire-rated doors, equipment and structural beams of buildings
- fillers and filters.

Until recently, chrysotile was used almost exclusively in the manufacture of packing and friction material, such as gaskets, and brake and clutch linings. Take care that imported products do not contain any chrysotile asbestos.

## AMPHIBOLE GROUP

Until the early 1980s, amosite and crocidolite were used in many products but, in the mid-1980s, the use of all types of asbestos in the amphibole group was banned. The products included:

- asbestos cement sheets and pipes for construction, casing for water and electrical/telecommunication services
- thermal, acoustic and chemical insulation – eg fire-rated doors, limpet spray, lagging and gaskets.

## EFFECTS ON HEALTH

Asbestos is formed in fibre bundles and, as it is further processed or disturbed, the fibre bundles become progressively finer and more hazardous to health. The small fibres are the most dangerous. They are invisible to the naked eye and, when inhaled, penetrate the deepest part of the lungs (respirable fibres).

Significant health risks may arise from the inhalation of airborne asbestos fibres. Compared with straight amphibole fibres, such as amosite and crocidolite, chrysotile fibres are curly and less likely to penetrate the deepest parts of the lung.

Breathing in fibres brings a risk of asbestosis, lung cancer and mesothelioma. Evidence suggests that asbestos causes gastrointestinal and laryngeal cancers in humans, but to a far lesser extent than lung cancer. Usually, asbestos-related diseases have a delay or latency period of 20 to 40 years between first exposure and the onset of symptoms and detection of the disease. Asbestos-related diseases can appear or progress even after a person is no longer exposed.

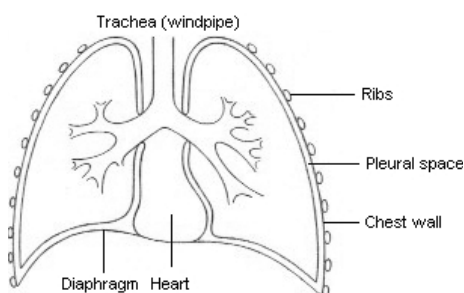
**Asbestosis** is the scarring of lung tissue that can result from the inhalation of substantial amounts of asbestos over a period of years. It results in breathlessness that may lead to disability and, in some case, death. Minor changes in X-ray images may be detected for many years without any symptoms of asbestosis or progression of the disease.

**Lung cancer** is related to the amount of fibre that is breathed in and the risk of lung cancer is greatly increased in those who also smoke tobacco.

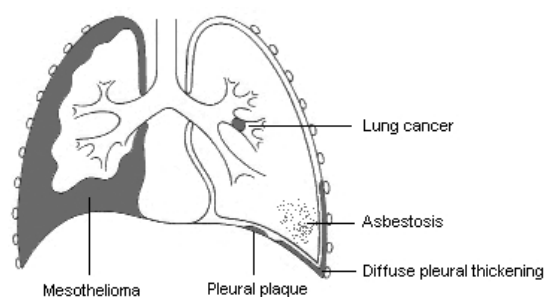
**Mesothelioma** is a cancer of the pleura (outer lung lining) or the peritoneum (the lining of the abdominal cavity). The risk of mesothelioma is less with chrysotile than with other types of asbestos. Both pleural and peritoneal mesothelioma can result from exposure to amosite and crocidolite. Exposure of humans to chrysotile alone has caused few pleural mesotheliomas, and has never produced peritoneal mesothelioma without exposure to either amosite or crocidolite. Mesothelioma rarely occurs in less than 15 years from first exposure, and most cases occur over 30 years after first exposure.

As for many cancer-causing substances, no safe level of exposure for lung cancer or mesothelioma has been identified. However, the amount of asbestos fibre in the air that people inhale is the important factor in determining the level of health risk. The highest risks involve inhaling air that contains a high concentration of asbestos fibre.

### NORMAL LUNG ANATOMY

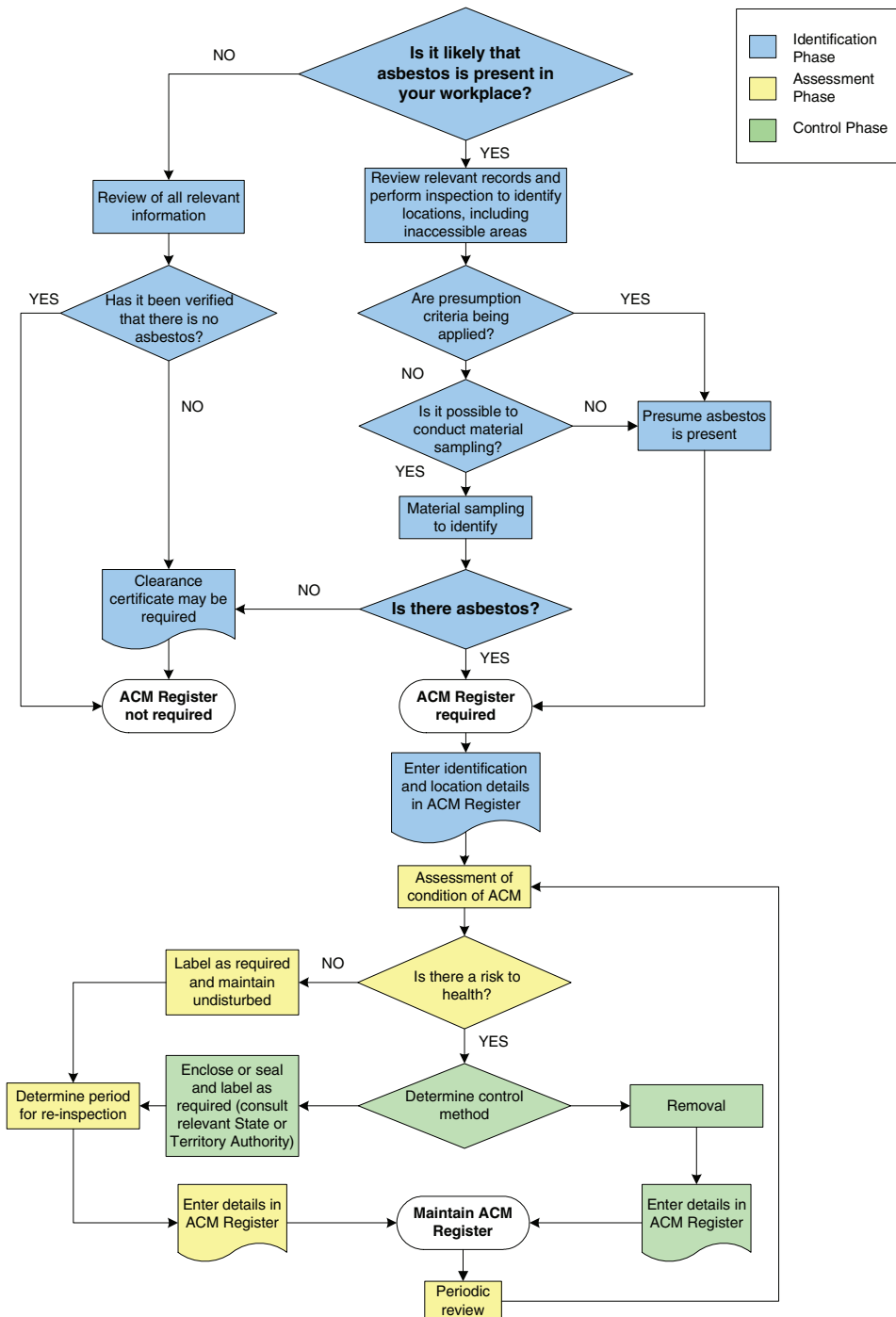


### LUNG DISEASES



# IDENTIFYING ASBESTOS

It is a legal requirement for the controller of premises to identify all asbestos containing materials (ACM) within a workplace, and these materials must be recorded in an asbestos register. Maintaining an updated asbestos register is part of an overall asbestos management plan.



**Reference** Code of Practice for the Control and Management of Asbestos in Workplaces (NOHSC 2018 [2005])

## HOW TO IDENTIFY ASBESTOS CONTAINING MATERIAL

Suspected ACM should be identified using AS 4964 *Method For the Qualitative Identification of Asbestos in Bulk Samples*. Analysis for identification purposes should be carried out by one of the National Association of Testing Authorities (NATA) laboratories accredited for this method.

## ASBESTOS REGISTER

The asbestos register must include details of:

- the location, type and condition of ACM
- the dates of inspection and details of those who carried out the inspection
- details of any materials presumed to contain asbestos material
- any inaccessible areas likely to have ACM
- the results of any analysis that has confirmed (or not confirmed) the presence of asbestos
- the date when the risk assessment was made and details on the competent persons who carried out the assessment
- the findings and conclusions of the risk assessment
- the results of any air monitoring or airborne fibres, and the assessment of these results
- the control measures recommended and decided upon as a result of the risk assessment
- any removal, repair or disturbance of ACM, including the company and persons involved, the date and scope of the work undertaken, and details of the clearance certificates.

The asbestos register must be made accessible to all those within the workplace and should be reviewed and appropriately updated at least every 12 months, or whenever there is a change in circumstances and/or conditions.

# EXPOSURE

## EXPOSURE STANDARDS

Exposure to airborne asbestos should be kept as low as reasonably practicable below the mandated exposure standard of 0.1 fibres per millilitre of air.

The Australian Safety and Compensation Council (ASCC) exposure standards are outlined in *Adopted National Exposure Standards for Atmospheric Contaminants In the Occupational Environment [NOHSC: 1003 (1995)]*. Values for the exposure standards can also be found online in the Hazardous Substances Information System (HSIS) database, and interpretation of these standards can be found in the *Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008 (1995)] 3rd edition*.

The amount of respirable fibre in the air can be measured by an occupational hygienist, using the membrane filter method. The air-monitoring analysis must be conducted by a laboratory with NATA accreditation for airborne fibre analysis.

Occupational hygienists who have training in asbestos identification, and who have knowledge and experience in asbestos removal, should carry out asbestos identification and assessment of the friability of asbestos materials. Contact the Australian Institute of Occupational Hygienists (AIOH) for a list of competent persons.

## MONITORING

There are three different types of monitoring for asbestos work:

- occupational monitoring
- control monitoring
- clearance monitoring.

### Occupational monitoring (personal monitoring)

Occupational monitoring is measuring airborne respirable fibres in the worker's breathing zone and comparing it with the exposure standard. This type of monitoring is generally not carried out during removal work. The exposure standard for all types of asbestos is 0.1 fibres per millilitre of air.

### Control monitoring (area or static monitoring)

Control monitoring indicates the adequacy of controls put into place during asbestos work. Control monitoring is measuring airborne respirable fibre levels and comparing them with the action levels shown below. If these levels are exceeded, action should be taken to re-evaluate controls.

Action Level (airborne asbestos fibres/mL)	Action
Less than 0.01	Continue with control measures
Between 0.01 and 0.02	Review control measures
More than 0.02	Stop removal work and find the cause

**Source** *Code of Practice for the Safe Removal of Asbestos [NOHSC:2002 (2005)]*

### **Clearance monitoring**

Clearance monitoring should be carried out following asbestos removal work. All friable asbestos removal work must have a clearance certificate at the completion of work. The clearance certificate must be completed by an occupational hygienist and the results assessed by a laboratory accredited by NATA for the test method.

Clearance monitoring generally requires air monitoring, settled dust samples and a visual assessment to determine the effectiveness of asbestos decontamination work.

**Air monitoring should not be used as an alternative to visual assessment in estimating asbestos contamination and exposure.**

## **HEALTH SURVEILLANCE**

To ensure the health and safety of those in workplaces, health surveillance is an important part of the monitoring of exposure to asbestos.

The main purpose of health surveillance is to ensure that control measures are effective – they should provide an opportunity to reinforce specific preventive measures and safe work practices.

The need for asbestos-related health surveillance should be determined by an assessment of the potential for exposure to asbestos in accordance with the *Occupational Health and Safety Regulation 2001* (OHS Regulation).

Additional guidance on health surveillance may be obtained from the *ASCC Guidelines for Health Surveillance [NOHSC: 7039 (1995)]*, which sets out, in a practical manner, the minimum requirements for health surveillance for those engaged in work that may expose them to asbestos and other hazardous substances.

Medical examinations for asbestos exposure are to be carried out by a WorkCover authorised medical practitioner or the Dust Diseases Board. Medical examinations of those recently exposed cannot reveal the presence or absence of health problems related to that exposure. The recording of exposure or potential exposure under clauses 169 and 170 of the OHS Regulation is a more effective immediate course of action to take when incidental exposure may have occurred.

## **ASBESTOS EXPOSURE REGISTER**

Under clauses 169 and 170 of the OHS Regulation, employers have an obligation to keep a record of any exposure or likely exposure to asbestos and provide a statement to employees on the termination of their employment. Employers are to include in an asbestos exposure register the name of those exposed, the date and location of exposure, and the type of work being carried out at the time of exposure. All records relating to asbestos exposure are to be kept for 30 years from the date of last exposure.

Upon termination of employment, the employer is to supply a letter to the employee noting that they could have been exposed to asbestos in the course of their employment. The letter (or statement) should contain:

- the name of the carcinogenic substance
- the period of exposure or potential exposure
- how and where records of the exposure or potential exposure can be obtained
- a recommendation to have periodic health assessments
- details of the types of health tests that are relevant in the circumstances.

## PROHIBITIONS AND LICENSING CONTROLS

The use of all forms of asbestos is no longer permitted. The use of all types of asbestos in the amphibole group was banned in the mid-1980s, and the manufacture and use of products containing chrysotile was prohibited nationally from 31 December 2003.

**The OHS Regulation does not allow the use (including the reuse) or sale of any asbestos product.**

### IN SITU ASBESTOS

*In situ* asbestos refers to asbestos material that is fixed or installed in its original position and has not been removed – eg wall sheeting and brake linings.

The prohibition of products containing chrysotile does not extend to the removal of asbestos products *in situ* at the time the prohibition took effect. These *in situ* asbestos-containing materials must be appropriately managed to ensure that the risks of exposure to airborne asbestos fibres are eliminated or controlled.

Asbestos products that were *in situ* on 31 December 2003 should be maintained in good order and condition. Once the asbestos material has deteriorated or is no longer fit for use, it must be replaced with a non-asbestos alternative. Asbestos products cannot be reused.

### BONDED AND FRIABLE ASBESTOS LICENCES

Under NSW OHS legislation, material that contains asbestos is referred to as friable or bonded.

#### **Bonded asbestos material**

Bonded asbestos material is any material that contains asbestos in a bonded matrix. It may consist of Portland cement or various resins/binders, and it cannot be crushed by hand when dry. Asbestos cement (AC) products and electrical meter boards in good condition are examples of bonded asbestos material.

A large number of products made from bonded asbestos material are still found in Australian buildings, motor vehicles and plant components. These products include:

- flat (fibro), corrugated or compressed asbestos cement sheeting
- asbestos cement pipes such as electrical, water, drainage and flue pipes
- brake and clutch linings.

### **Bonded asbestos licence**

Since 1 January 2008, a bonded asbestos licence has been required to remove more than 10 square metres of bonded asbestos material. A licensed bonded asbestos removalist can remove any amount of bonded asbestos material.

To obtain a bonded asbestos licence you must undertake a WorkCover-recognised training course in bonded asbestos removal and bonded asbestos supervision. Apply to WorkCover on the prescribed form and attach copies of your training records, workers compensation policy, and evidence of your experience in bonded asbestos removal or associated building trades.

The following are key conditions of maintaining a bonded asbestos licence:

- all bonded asbestos removal work must be notified to WorkCover in the prescribed manner at least seven days prior to the work being carried out.
- the work is to be supervised by a person with appropriate qualifications and experience, and who is nominated by the licence holder to be recorded on WorkCover's licensing system.
- all those involved in bonded asbestos removal must have undertaken WorkCover-recognised training in bonded asbestos removal.

### **BONDED ASBESTOS (FIBRO)**



### **BONDED ASBESTOS TILES**



### **Friable asbestos material**

Friable asbestos material is any material that contains asbestos and is in the form of a powder, or can be crumbled, pulverized or reduced to powder by hand pressure when dry. Examples of friable asbestos include:

- sprayed limpet
- asbestos cloth and rope
- millboard
- pipe lagging
- boiler lagging.

Any asbestos cement products that have been subjected to weathering, or damaged by hail, fire or water blasting, are considered to be friable asbestos and an asbestos removal contractor with a WorkCover licence for friable asbestos is required for its removal.

### **Friable asbestos licence**

A friable asbestos licence is required to remove, repair or disturb any amount of friable asbestos.

A friable asbestos removalist can remove any quantity of bonded and/or friable asbestos.

To obtain a friable asbestos licence you must undertake a WorkCover-recognised training course in friable asbestos removal and friable asbestos supervision. Apply to WorkCover on the prescribed form and attach copies of your training records, workers compensation policy, and evidence of your experience in the supervision of friable asbestos removal, including encapsulation.

The following are key conditions of maintaining a friable asbestos licence:

- an application for a friable asbestos worksite permit must be lodged with WorkCover in the prescribed manner at least seven days prior to the work being carried out.
- all friable asbestos removal work must be supervised by a person with appropriate qualifications and experience, and who is nominated by the licence holder to be recorded on WorkCover's licensing system.
- all those involved in friable asbestos removal must have undertaken WorkCover-recognised training in friable asbestos removal.
- for emergency work, the seven days notice can be waived by contacting WorkCover and providing details of why a waiver is required.
- application forms for licences and information about licence requirements are available at [www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au)

### **FRIABLE ASBESTOS – PIPE LAGGING**



### **FRIABLE ASBESTOS – SPRAYED LIMPET ON BEAMS**



## **NATURALLY OCCURRING ASBESTOS**

Asbestos is found as a naturally-occurring mineral in many areas of NSW. Where naturally occurring asbestos (NOA) is encountered – eg in road works, pipe works and telecommunications works – the risk from the NOA disturbance should be assessed by an occupational hygienist.

For NOA, an exemption from holding a friable licence may be obtained. An application should be forwarded to WorkCover with the reason the exemption is being applied for, a comprehensive risk assessment and safe work procedure for the work that is to be carried out, and details of workplace consultation and training that has been provided to employees, contractors and the general public. The application should address all safety issues. WorkCover will consider the application to ensure that there is an equivalent level of safety, the same as that required if a licence were in place.

## **ROCKS CONTAINING NATURALLY OCCURRING FIBROUS SILICATE MINERALS**



# SAFE WORKING GUIDE

The OHS Regulation calls up the ASCC codes of practice. For specific precautions and procedures of commonly encountered asbestos work, see:

- *Code of Practice for the Safe Removal of Asbestos [NOHSC: 2002 (2005)]*
- *Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC:2018 (2005)].*

Consider the following generic controls when developing your asbestos management plans:

## WORKING WITH BONDED ASBESTOS MATERIAL

If products containing bonded asbestos are maintained in good order, they do not present a significant health risk. Nevertheless, safety precautions must be taken when working on any product containing asbestos. Work procedures should be developed to minimise the release of dust or fibres.

When working with bonded asbestos products, you should:

- use barriers to restrict entry of unauthorised personnel to the work area and to control contamination
- place asbestos removal caution signs at the barriers, which comply with AS 1319 *Safety Signs for Occupational Environment*
- use personal protective equipment, including coveralls and a respirator (eg a half-face P1/P2 respirator) – coveralls should preferably be disposable and coveralls with Velcro-type fasteners are not suitable
- only use non-powered hand tools as they generate less dust – **do not use power tools, such as abrasive cutters and sanders**
- use wet methods to dampen material, or use a suitable vacuum cleaner that complies with the AS/NZ 60035.2.60 and is fitted with an appropriate attachment to reduce the release of dust – **do not use a household vacuum cleaner**
- work in well-ventilated areas, where possible
- use 200-micron thick plastic drop sheets to collect debris, and label and dispose of appropriately – **take precautions to prevent slips and trips hazards**
- clean-up using wet methods, or a suitable vacuum cleaner – do not use a household vacuum cleaner
- dispose of waste and collected dust in 200-micron thick plastic bags that are sealed and clearly labelled as containing asbestos waste
- avoid any abrading or scrubbing of the material's surface

### **Water blasting**

It is illegal to water-blast asbestos containing materials because there is a high risk of asbestos fibres being released into the atmosphere and inhaled.

### **House relocation**

Although buildings clad in bonded asbestos material are considered to be *in situ*, it is recommended that all bonded asbestos be removed from the building before it is relocated. Moving buildings clad with asbestos cement can cause the material to become loose and fall off, causing a hazard in transit or when the building is re-constructed. This could result in expensive clean-up costs. Any bonded asbestos material that is removed cannot be reused. Weathered asbestos roofing and gutters should be cleaned and removed prior to relocation.

### **Cladding**

Over cladding of bonded asbestos material should not be undertaken unless it can be carried out without causing damage to the bonded asbestos. Over-cladding may result in more hazardous and expensive removal at a later date. All buildings with existing cladding over bonded asbestos should be labelled appropriately, somewhere on the building, to highlight to tradespeople and occupiers that the building contains bonded asbestos material.

## **REMOVAL OF ASBESTOS CEMENT PRODUCTS**

Safe work procedures should be followed when removing asbestos cement products (including sheeting, guttering and down pipes) from buildings and other structures. To minimise breakage, care should be taken when removing asbestos cement products.

You should:

- for external work, close all windows and doors to the building to prevent dust entering the building
- use barriers to restrict entry of unauthorised personnel to the work area and to control contamination
- place asbestos removal caution signs at the barriers to comply with AS 1319 *Safety Signs for Occupational Environment*
- when working on roofs, take appropriate precautions to prevent workers from falling off or falling through the roof – eg use suitable fall restraint devices or elevated working platforms
- where practical, seal the asbestos cement with a PVA sealant or dampen with water (wetting down may not be necessary on previously painted or sealed AC products) – when removing asbestos cement roofs, dampening should be done well before removal to allow the roof to dry sufficiently so workers do not slip
- wear disposable coveralls and respiratory protection (eg a half-face P1/P2 respirators) during the removal and clean-up process
- remove bolts and screws, and remove the asbestos cement sheets with minimal breakage – asbestos cement products should not be thrown into bins or onto the ground, but rather lowered as whole sheets where possible
- wrap the asbestos cement products in 200-micron thick plastic sheeting, label, then transport to the waste facility as soon as possible

- clean gutters by wetting down after removing the asbestos cement roofs – contaminated waste material must be bagged, labelled and disposed of as asbestos waste
- take precautions to prevent slips and trips hazards when working on roof surfaces
- if using a building skip or loading directly into trucks, line the internal surfaces with 200-micron thick plastic sheeting and ensure the load is securely covered and labelled before transporting to an authorised waste disposal facility
- pick-up visible asbestos cement debris in the roof space and around the removal area, then decontaminate using wet methods or a suitable vacuum cleaner
- use PVA to seal any residues of asbestos cement that cannot be removed, such as that on timber beams.

**Plastic used for drop sheets and debris is not to be re-used and is to be disposed of as asbestos waste.**

## **ASBESTOS CONTAMINATED SOILS**

A competent occupational hygienist should assess the site to determine:

- if the asbestos material is bonded or friable
- the extent of asbestos contamination
- safe work procedures for the remediation of the site.

The assessment and safe work procedures should reflect the level of the hazards and the proposed use of the land. Environmental and planning legislative requirements must be complied with.

You should:

- have a documented safe system of work for the removal of asbestos contaminated soils, which includes clean-up procedures and requirements for personal protective equipment and disposal
- wear coveralls and suitable respiratory protection during the removal and clean-up process – the level of respiratory protection will depend on the type and condition of the asbestos material
- pick-up any obvious asbestos cement debris and place it into labelled asbestos waste bags
- keep asbestos contaminated soil wet at all times, place it in a sealed truck, cover it, then transport it to a Department of Environment and Climate Change (DECC) approved disposal facility
- decontaminate trucks that are used to transport asbestos contaminated soil before leaving the worksite and after disposing of the contaminated soil at the disposal facility
- carry-out work as outlined below under 'Removal of friable asbestos', if asbestos material is deemed to be friable.

## **REMOVAL OF FRICTION MATERIALS**

Prior to 2004, chrysotile was used almost exclusively in the manufacture of motor vehicle friction material, such as brake and clutch linings. However, installed brake components are the major source of asbestos in the motor vehicle industry.

Unless otherwise known, friction materials, such as brake components, should be treated as if they contained asbestos. See *Guidance Note: Working with Asbestos in the Motor Vehicle Repair Industry*. Appropriate written safe work procedures should be in place in all workplaces that handle motor vehicle brake components. Inspection of asbestos friction material should be treated as in *situ* asbestos.

Additional guidance is available in the ASCC *Code of Practice for the Management and Control of Asbestos in Workplaces*.

**Compressed air must never be used to clean dust from surfaces and brake drums.**

## **REMOVAL OF FRIABLE ASBESTOS**

A friable asbestos removal licence is required to remove friable asbestos.

The procedures as described in the *Code of Practice for the Safe Removal of Asbestos NOHSC[2002(2005)]* must be followed when removing friable asbestos from buildings and other structures. A clearance certificate from an occupational hygienist must be obtained following the completion of all friable asbestos removal work.

## **NATURALLY OCCURRING ASBESTOS**

All those working in naturally occurring asbestos (NOA) areas must receive training that is appropriate to the work they are carrying out.

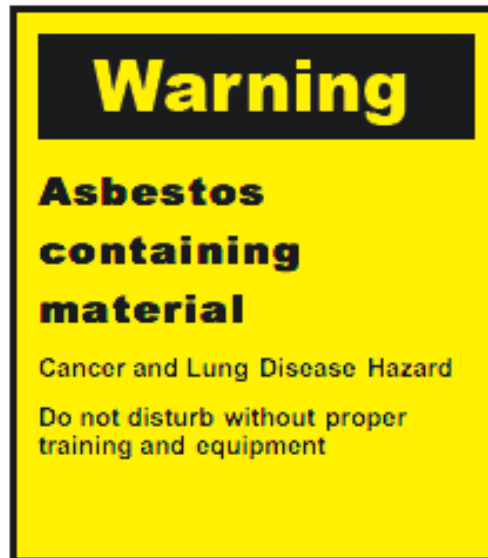
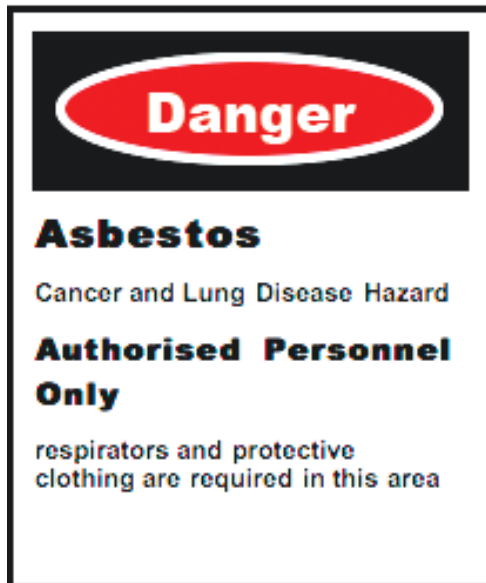
A monitoring program for airborne asbestos fibres should be carried out during disturbance work on NOA.

All work associated with disturbing NOA must be done under a friable asbestos removal licence, or an exemption order. Exemption orders are issued by WorkCover and application forms for exemptions are available at [www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au). An exemption application must include a comprehensive asbestos management plan, training and monitoring requirements.

## **DECONTAMINATION OF ASBESTOS SITES AND EQUIPMENT**

Consider decontaminating sites and equipment where asbestos containing products have previously been manufactured, used or stored. This should be done in a safe manner. Refer to the ASCC *Code of Practice for the Management and Control of Asbestos in the Workplace*.

## WARNING SIGNS AND LABELS



Source Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC 2018 (2005)]

## RESPIRATORY PROTECTIVE DEVICES

Respirators should comply with the AS/NZS 1716 *Respiratory Protective Devices* and selected, used and stored in accordance with AS/NZS 1715 *Selection, Use and Maintenance of Respiratory Protective Devices*. Always refer to the manufacturer's or supplier's information regarding the suitability of respirators.

Facial fit is a prime factor in obtaining good protection when utilising half or full-facepiece respirators. Workers must be clean-shaven when wearing respirators that rely on facial fit. Facial fit tests should be conducted to ensure an effective seal.

Employers must provide their employees with appropriate instruction and training on the proper wear and care of the respirators. To ensure that adequate protection is achieved at all times, a full respiratory protection program is essential – it should include training, cleaning and storage requirements, and proper facial fit procedures. See AS/NZS1715 *Selection, Use and Maintenance of Respiratory Protective Devices*.

### BONDED ASBESTOS REMOVAL – LOW RISK

When inspecting areas for the removal of bonded asbestos or where friable asbestos removal work is not in progress, use a half-face piece disposable or cartridge-type particulate respirator (Class P1 or P2 filter).

### FRIABLE ASBESTOS REMOVAL – HIGH RISK

Friable asbestos can generate very high levels of respirable fibre, which may give rise to serious health effects if inhaled. Absolute respiratory protection must be provided - dust masks/respirators (Class P1 or P2 filter) are not suitable. See the ASCC *Code of Practice for the Safe Removal of Asbestos* [NOHSC:2002 (2005)].

# RESPIRATORS

The following list of respirators runs from least efficient (figure 1) to most efficient (figure 7).

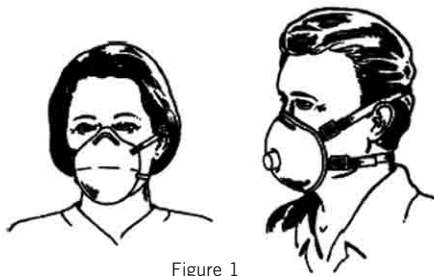


Figure 1



Figure 2



Figure 3



Figure 4



Figure 5a

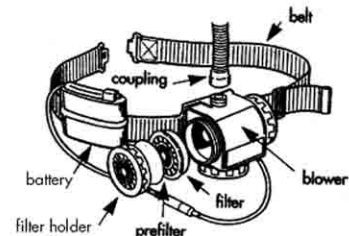


Figure 5b



Figure 6

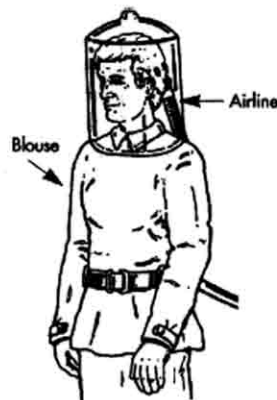


Figure 7

FIGURE	RESPIRATOR
1	Disposable, half-face particulate respirators
2	Half-face, particulate filter (cartridge) respirator
3	Powered, air-purifying, ventilated helmet respirator
4	Full-face, particulate, filter (cartridge) respirator
5a	Full-face, powered air-purifying particulate respirator – face piece
5b	Full-face, powered air-purifying particulate respirator – power pack
6	Full-face, positive pressure demand air-line respirator
7	Full suit or hood, continuous flow air-line respirator

Source Code of Practice for the Safe Removal of Asbestos [NOHSC 2002 (2005)]

# SAFE DISPOSAL

## COLLECTION AND STORAGE

All bonded asbestos waste must be:

- kept damp (prevent runoff water)
- collected, labelled and sealed using appropriate plastic or leak proof containers
- stored in labelled, plastic-lined bins that are covered, or leak-proof containers that are covered
- placed in bins or trucks that are large enough to contain full sheets without breaking them
- stored in a secure area
- removed from the site as soon as practicable.

All friable asbestos material must be:

- kept damp or sealed with PVA glue
- collected and sealed in 200-micron thick, appropriately labelled, plastic bags
- double wrapped in 200-micron thick plastic bags
- in bags that weigh not more than 25 kilograms, and are less than half full
- stored in a secure area, awaiting removal
- removed from the site as soon as practicable.

The DECC allows transport of asbestos contaminated soil in unlined bulk trucks, provided the soil is kept damp, the load is securely locked and covered with plastic and a fully protective tarp, and the truck is decontaminated before it leaves the waste facility.

## TRANSPORTATION

All asbestos waste must be transported in a covered leak-proof vehicle and:

- not mixed with general building waste
- not taken to a waste facility for recycling.

Only vehicles licensed by the DECC can transport friable asbestos waste in the metropolitan area.

## DISPOSAL

Asbestos waste in any form must be disposed of in a manner approved by DECC and at a waste facility licensed by the DECC to accept asbestos waste.

NSW licensed landfills that accept asbestos waste from the public are listed by region on the DECC website.

Vehicles and their containers must be cleaned before leaving the waste facility.

Contact the DECC and/or the local council for details of waste facilities that can accept asbestos waste.

To demonstrate proof of proper disposal, copies of asbestos waste disposal receipts are to be kept for inspection by WorkCover, the DECC or the local council.

## ASBESTOS WASTE DISPOSAL PROCEDURES

WRAPPING SHEETS



LINING BINS IN 200micron PLASTIC



WRAPPED ASBESTOS WASTE



## OHS LEGISLATION

The *Occupational Health and Safety Act 2000* (OHS Act) states that 'an employer must ensure the health and safety at work of all his employees'.

The *Occupational Health and Safety Regulation 2001* (OHS Regulation) outlines the following requirements for asbestos:

- for the controller of premises, in relation to a risk assessment of asbestos-containing products, the asbestos register and exposure standards – Chapter 4
- for employers, in relation to hazardous substances; all forms of asbestos are a prohibited carcinogenic substance; the use of asbestos in the form of chrysotile, crocidolite, amosite, fibrous anthophyllite, tremolite or actinolite are prohibited except for the purpose of sampling or analysis, maintenance, removal, disposal, encapsulation or enclosure – Chapter 6
- specific conditions for asbestos work on construction sites and prohibition on the reuse of asbestos products or water blasting asbestos products – Chapter 8
- the requirements for licensing bonded and friable asbestos removalists; from the 1 January 2008, a licence is required to remove more than 10 square metres of bonded asbestos material – Chapter 10
- permits for friable asbestos removal work – Chapter 11
- notification of bonded asbestos removal work; exemption requirements for naturally occurring asbestos – chapter 12.

**The OHS Regulation does not allow the use, reuse or sale of any asbestos product.**

## FURTHER INFORMATION

The following **WorkCover publications** are available at [www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au)

- *The Guidelines and Procedures for Asbestos and Electrical Work*
  - o Guidelines for working on electrical meter panels that contain asbestos
  - o Assessment of commercial and residential metering/electrical panel installations for potential asbestos containing materials – industry model procedure No.1
  - o Minor works on asbestos-based electrical mounting boards for domestic and commercial metering/electrical installations – industry model procedure No.2
- *Compliance and Enforcement Strategy for Chrysotile*
  - o NSW, in conjunction with other Australian states, banned all uses of chrysotile asbestos (except for bona fide research or analysis, when handled for storage awaiting disposal, for removal or disposal, or when encountered during non-asbestos mining) from 31 December 2003.
- *Guidelines for Licensed Asbestos Removal Contractors*
  - o Outlines WorkCover's requirements for the licensing of asbestos removalists. Intended to ensure compliance with legal obligations for asbestos removal work in NSW and are based on the ASCC asbestos publication.
- *Choosing an Asbestos Consultant*
  - o A fact sheet outlining selection criteria for choosing an asbestos consultant.
- *Bonded Asbestos*
  - o A fact sheet
- *Guidance Note: Working with Asbestos in the Motor Vehicle Repair Industry*
  - o Provides guidance for employers and employees in the automotive repair industry to eliminate or minimise the risk of exposure to asbestos during repairs to brakes, clutches and high-temperature gaskets in motor vehicles.

The **Australian Safety and Compensation Council (ASCC)** was previously known as the National Occupational Health and Safety Commission (NOHSC). Visit [www.ascc.gov.au](http://www.ascc.gov.au)

The ASCC publishes the following guidance material:

- *Code of Practice for the Safe Removal of Asbestos [NOHSC: 2002(2005)]*
- *Code of Practice for the Management and Control of Asbestos in the Workplace [NOHSC: 2018 (2005)]*
- *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust [NOHSC: 3003 (2005)]*

Additional guidance on the inspection of asbestos friction material is available in the ASCC *Code of Practice for the Management and Control of Asbestos in Workplaces*, in particular *Appendix I (Inspection of Asbestos Friction Materials)* – this guidance may be used when friction materials containing asbestos (eg brake assemblies or clutch housings) need to be inspected or their housings need to be cleaned.

**Australian Standards** are available from Standards Australia (charges apply). Visit [www.standards.org.au](http://www.standards.org.au)  
Phone 131 242; Fax 1300 65 49 49; Email [sales@sai-global.com](mailto:sales@sai-global.com) Web shop <http://www.saiglobal.com/shop>

- *AS/NZS 1715 Selection, Use and Maintenance of Respiratory Protective Devices*
  - o Sets out the principles of respiratory protection and provides information on the correct selection, use and maintenance of respirators.
- *AS/NZS 1716 Respiratory Protective Devices*
  - o Specifies requirements, performance and testing criteria to be observed in the manufacture of respirators.
- *AS/NZS 60335.2.69: 2003/Amdt 1:2005 Household and Similar Electrical Appliances – Safety Part 2 – 69 Particular Requirements for Wet and Dry Vacuum Cleaners, including Power Brush, for Industrial and Commercial Use*
  - o Sets out testing requirement for industrial vacuum cleaners to ensure that those used in industry for collection of particulates hazardous to health do not permit particulates to be recirculated to the immediate atmosphere.
- *AS4964 Method for the Qualitative Identification of Asbestos in Bulk Samples*
  - o Sets out the procedure for preparation and analysis of asbestos in bulk samples. This is a qualitative analysis using polarised light microscopy as the primary technique for identification.

**Department of Environment and Climate Change (DECC).** Visit [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

The DECC publishes *Safely Disposing of Asbestos Waste from Your Home* – disposal of asbestos waste.

NSW Government. Visit [www.nsw.gov.au](http://www.nsw.gov.au) See *Fibro and asbestos – A Renovator and Home Owner's Guide* – provides guidance on safe disposal of fibro and some general tips about what to do if fibro is damaged and a safety checklist.

# USEFUL CONTACTS

## Licensed Asbestos Removalists

WorkCover NSW – Asbestos/Demolition Hotline (02) 8260 5885  
[www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au)

## OHS Legislative Requirements

Local WorkCover Office [www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au)  
WorkCover Information Centre 13 10 50

## Asbestos Removal Training Courses

TAFE NSW 1300 131 499  
Comet Training Pty Ltd (02) 9649 5000  
Master Builders Association (A.R.C.A.) (02) 8586 3521  
Housing Industry Association (H.I.A.) (02) 9978 3333

## Approved Asbestos Disposal Tips

Department of Environment and Climate Change (02) 9995 5000  
[www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)  
Environment line 13 15 55  
NSW Environment Solutions 1300 6551 116  
Relevant Local Council [www.dlg.nsw.gov.au](http://www.dlg.nsw.gov.au)

## Industry Associations and Unions

Asbestos Removal Contractors Association (ARCA) Phone: (02) 9642 0011  
Fax (02) 9642 0111  
Civil Contractors Federation (CCF) Phone: (02) 9009 4000  
Fax: (02) 9009 4050  
[www.civilcontractors.com](http://www.civilcontractors.com)  
Construction, Forestry, Mining, Energy Union (CFMEU) Phone: (02) 8524 5850  
Fax: (02) 8524 5851  
[www.cfmeu.net.au](http://www.cfmeu.net.au)  
Demolition Contractors Association (NSW) (DCA) Phone: (02) 9009 4007  
Fax: (02) 9677 2595  
Master Builders Association (MBA) Phone: (02) 8583 555  
Fax: (02) 9660 3700  
[www.mbansw.asn.au](http://www.mbansw.asn.au)

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