

# PROCEDURE

## Asbestos Management Plan

HS-ENV-PRO-008



# ZORM

## Revision Summary

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# 1: Introduction

This Asbestos Management Plan (AMP) covers the management of asbestos containing materials (ACM) at Z sites.

## 1.1: Objectives and Scope

The primary objective of this AMP is to ensure that any ACM in buildings are identified so the risks associated with asbestos fibres can be effectively managed. This includes maintenance of an asbestos register and a number of tools used to manage any work involving asbestos.

This plan has been prepared to provide general guidance for the management of asbestos with an emphasis on day to day management, maintenance activities and minor refurbishment work. This plan directs contractors to prepare a site-specific asbestos management plan for higher risk demolition and major refurbishment works.

It is not intended to remove the need for contractors to comply with their legal obligation to identify and manage asbestos in the workplace in accordance with the *Health and Safety at Work (Asbestos) Regulations 2016* (referred to as the Asbestos Regulations).

This AMP is limited to the identification and management of ACM on-site and encountered during maintenance and minor refurbishment works. Contractors undertaking work will need to develop a site-specific health and safety plan that considers the particular characteristics of ACM at each site.



## 2: Specialist Roles

The following is a list of specialist roles for work involving asbestos on Z sites to ensure clear and effective lines of communication are maintained and that the plan is implemented effectively:

**Table 1: Responsibilities**

<b>2.1: Role</b>	<b>2.2: Name (Organisation)</b>	<b>2.3: Contact Details</b>	<b>2.4: Responsibility</b>
<b>Retail Truck Stops and Commercial Z Maintenance Manager</b>	<b>Debbie Bere</b>	<b><a href="mailto:Debbie.Bere@z.co.nz">Debbie.Bere@z.co.nz</a></b>	<b>Inform maintenance contractors</b>
<b>Z Property Manager</b>	<b>Matt Brennan</b>	<b><a href="mailto:Matt.Brennan@z.co.nz">Matt.Brennan@z.co.nz</a></b>	<b>Inform tenants of asbestos</b>
<b>Z Assets Engineering Manager</b>	<b>Neil Moon (Z)</b>	<b><a href="mailto:Neil.Moon@z.co.nz">Neil.Moon@z.co.nz</a></b>	<b>Inform petroleum system contractors Design standards and decommissioning of petroleum systems</b>
<b>Z Assets HSSE Business partner</b>	<b>Michelle Vogt</b>	<b><a href="mailto:Michelle.Vogt@z.co.nz">Michelle.Vogt@z.co.nz</a></b>	<b>Inform Contractors and maintain tools (e.g. toolbox guides)  Permit to Work Administrator</b>
<b>Terminals Engineering and Delivery Manager</b>	<b>Matthew Tinnelly</b>	<b><a href="mailto:Matthew.Tinnelly@z.co.nz">Matthew.Tinnelly@z.co.nz</a></b>	<b>Inform terminals team and contractors</b>
<b>Asbestos Assessor/ Independent Competent Person</b>	<b>Anna Lukey (AECOM)</b>	<b><a href="mailto:anna.lukey@aecom.com">anna.lukey@aecom.com</a> 021 663 652</b>	<b>Assess asbestos and review asbestos plans</b>



### 3: Background to Asbestos

The primary risk driver for asbestos exposure is the cancer and disease risk arising from inhalation of airborne asbestos fibres. Refer to the *Health Risks from Asbestos Exposure* information sheet published by WorkSafe New Zealand (WorkSafe) is attached in Appendix 2, Sheet 1.

Asbestos is a naturally occurring mineral fibre that was used in various building and other products, mainly between the 1940s and late 1980s. Asbestos is a versatile product, which withstands heat, erosion and decay, and has fire- and water-resistant properties. The common types of asbestos available commercially have been chrysotile (white), crocidolite (blue) and amosite (brown). These asbestos types vary in physical and chemical properties, but all show good qualities of tensile strength, flexibility and resistance to heat and chemical attack.

ACM can exist in two distinct forms – bonded (generally quite stable) and friable (a more unstable form). Bonded (or stable) forms of asbestos can be found in materials such as asbestos-cement sheets, roof tiles, vinyl floor tiles and electrical switchboards. Friable asbestos, when dry, is in the form of a powder, or can be crumbled, pulverized or reduced to powder by hand pressure. Friable forms of asbestos materials include sprayed asbestos insulation, pipe and boiler insulation and woven asbestos fabric.

There are a number of adverse health effects associated with exposure to asbestos, including asbestosis (progressive and irreversible scarring of lung tissue that impairs breathing), lung cancer and mesothelioma (cancer of the linings around the lungs and abdomen). It should be noted that, without exception, the primary risk driver for asbestos exposure is via inhalation of airborne fibres. If there are no airborne asbestos fibres, there is no risk to human health.



## 4: Regulatory Context

Work undertaken at Z sites is covered by the following regulations:

- General health and safety – *Health and Safety at Work Act 2015*.
- Use, handling, removal and disposal of asbestos – *Health and Safety at Work (Asbestos) Regulations 2016*.
- Disposal will also be regulated by the Resource Management Act
- Asbestos in soils is subject to the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS)

It is important that everyone involved with projects are familiar with and operates in accordance with these regulations.





## 5: Z Asbestos Register

The Z Asbestos register is available on-line on the Z intranet. The Z asbestos register records where asbestos is known to be present and where it is likely or has been assumed to be present.

A programme of asbestos management surveys was completed in 2018 on Z owned sites and buildings. Information was also provided by landowners for sites that Z leases. The asbestos register links to specific reports where these are available (e.g. for all Z owned sites constructed prior to 2000). Site specific asbestos management surveys can be downloaded from the Z Hub and is included in Appendix 5.

It is important to note that the asbestos register is not a comprehensive intrusive investigation and therefore the presence of asbestos or ACM not identified in the register cannot be discounted. No intrusive works should take place in areas that have not been surveyed and / or where asbestos has been assumed to be present until further surveys have been completed by a competent person or the material is managed as asbestos during any intrusive works.

The asbestos register must be updated whenever a project is completed at a Z site and asbestos is identified or removed, or at any other time when asbestos is likely to or is assumed to be present. All removed asbestos should be able to be distinguished easily in the register and accompanied by an asbestos clearance certificate reference to confirm completion of removal. The register will continue to include details of all asbestos removed from site. Details and copies of asbestos surveys should be provided to the Assets HSSE Business Partner and must be retained on the project file AND the assets property file in addition to the register. Refer to Section 13 for the documenting, monitoring and record keeping procedure.

### 5.1: Identification of Asbestos in the Workplace

Workers will be informed of the AMP by the Z HSSE Business partners.

The tool box information provided to contractors outlines where asbestos may be present on site. If it is likely that they may need to work on ACM the contractor must indicate this in the Z Energy Work Clearance Form.

Any standard operating procedures or methodology for dealing with asbestos must be approved by the Z Permit Issuer under the Z Permit to Work system.

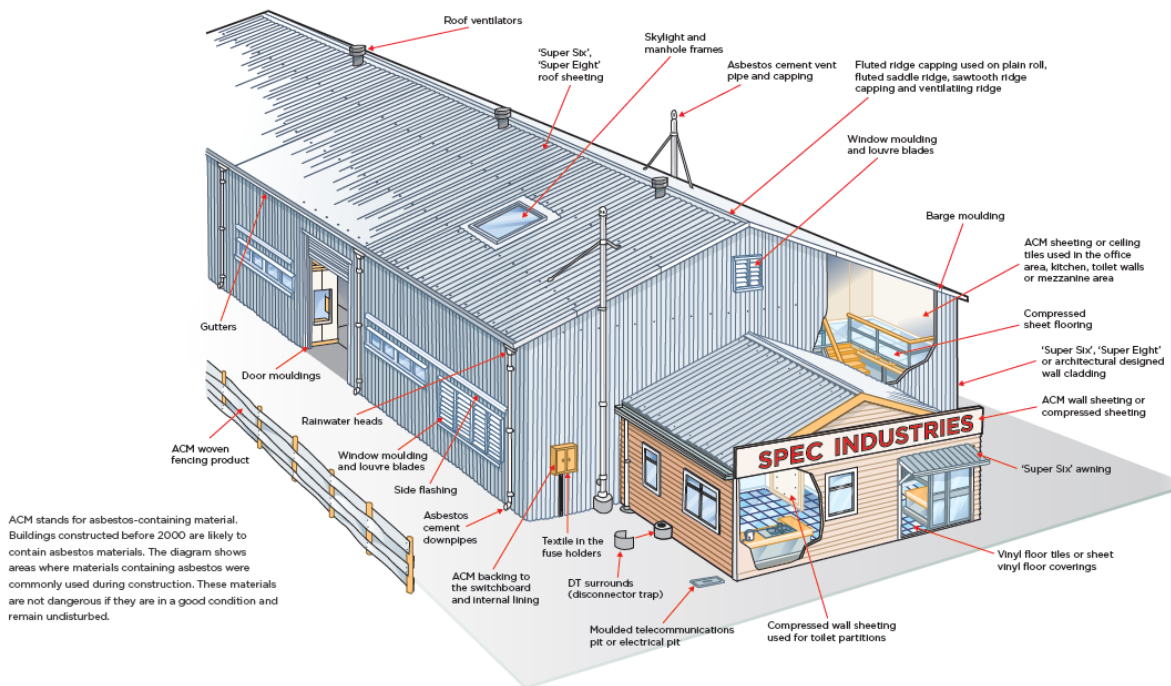
The AMP identifies where asbestos is likely to be found on site (Figure 1). If unidentified materials are likely to be present, they must be assumed to contain asbestos and the precautions documented in this asbestos management plan are to be followed. See Appendix 1 for a flow guide to working with asbestos or potential asbestos.



Figure 1

## WHERE ASBESTOS CAN BE FOUND IN A NEW ZEALAND INDUSTRIAL BUILDING

[www.business.govt.nz/worksafe/asbestos](http://www.business.govt.nz/worksafe/asbestos)



### 5.2: Asbestos on Z Sites

Asbestos has been identified at some Z-owned sites in the following locations. For each site-specific details are contained in the register but this indicative list is useful to indicate where extra caution should be exercised:

- Super type (6, 8, 12) cladding on lean to's and old workshops
- Monolithic cladding on canopies and buildings
- Gaskets between sections of fuel pipework
- Dust associated with servicing of vehicle brakes
- Vinyl flooring including underneath carpet, loose sheeting, on walls or inside cupboards

No friable asbestos was identified in the Z service station and truck stop sites surveyed in 2018. Terminals were sampled during 2018 and remedial works involving removal of dust were conducted at Mt Manganui South and Napier terminals in 2018.

### Principles of Asbestos Management

The following key principles of asbestos management shall be followed during works at Z sites:

### 5.3: Maintenance and Minor Refurbishment Works

Z's first priority is to manage the potential disturbance of ACM in areas where it is likely or is assumed to be present, rather than to identify and remove all ACM from buildings;



All reasonable steps must be taken to identify ACM that could potentially be disturbed as part of the work;

Where asbestos is likely or assumed to be present, and requires more than minor works an asbestos assessor is to be contacted and a site-specific plan developed after completion of an asbestos survey;

Where ACM is identified or presumed, the locations are to be recorded in an Asbestos Survey Summary and provided to the HSE business partner;

Control measures must be established to prevent exposure to airborne asbestos fibres during any disturbance of ACM;

Disturbance of ACM must be avoided where practically possible;

Any ACM exposed during the works must be re-encapsulated, enclosed or sealed to ensure there is no exposure risk;

Removal of ACM must only be considered if the material is identified to be in a degraded state or is required to be removed as part of renovation works; and

All workers and contractors on premises where ACM is present or presumed to be present and potentially disturbed, and all other persons who may be exposed to ACM as a result of being on the premises, must be made aware of the identified ACM within the site.

#### **5.4: Demolition or Refurbishment**

Prior to any demolition or refurbishment work, an asbestos survey must be completed in accordance with WorkSafe's Good Practice Guide titled "Conducting Asbestos Surveys" (WorkSafe, 2016b).

In the event that a structure or item is inaccessible, the presence of asbestos must be assumed.

The presence and location of confirmed and assumed asbestos must be recorded in an asbestos register.

Any confirmed or assumed asbestos likely to be disturbed during the demolition or refurbishment works must, so far as reasonably practicable, be removed prior to demolition/refurbishment works commencing.

A site-specific asbestos management plan and/or asbestos removal control plan must be prepared to detail how the works are to be undertaken.

The works must be undertaken in accordance with approved safe work practices (refer to Appendix 3) or other practices that achieve the same level of protection against the generation of asbestos fibres in air and as approved under a Permit to Work.

At the conclusion of the demolition/refurbishment works, the asbestos register for the site must be updated and copies of all documentation, including asbestos survey reports, asbestos registers, clearance certificates and disposal docket, saved to the Assets property file.



## 6: Unexpected Discovery of Asbestos

### 6.1: Inaccessible Areas or Hidden Asbestos

Any areas of the site not listed in the asbestos survey register is unlikely to have been inspected and would have been excluded from the asbestos register. Limited or inaccessible areas can include, but may not necessarily be limited to the following:

- Vinyl under carpet, on walls, in cupboards;
- Plant rooms;
- Ceiling voids beyond access hatches;
- Floor voids beyond access hatches;
- Wall voids;
- Hot water cylinders and water heaters (ZIP);
- Items older than the year 2000;
- Risers;
- Boilers;
- Heaters; and
- Confined spaces, including underground tank/s.

### 6.2: Asbestos Discovery Procedure

A guide to working with asbestos or potential asbestos is included in Appendix 1. If previously unidentified ACM is encountered during works then the following shall be carried out:

- Works in that area should cease immediately and the area isolated to prevent exposure to site workers;
- The Z nominated Asbestos assessor – or an alternative approved asbestos assessor - shall be consulted to confirm that the generic control procedures are appropriate for the situation;
- If a potential exposure risk exists, the area shall be covered, sealed or dust suppression measures implemented. This should be carried out in consultation with Z and the respective asbestos assessor;
- The asbestos assessor may advise a requirement for confirmation testing; and
- The asbestos assessor, in conjunction with the licenced asbestos removalist (if applicable), shall determine the appropriate course of action in relation to management of the identified ACM to allow the work to proceed.

For the benefit of removal of doubt, it is expected that confirmation sampling and an approved asbestos removal contractor will be engaged for demolition of asbestos regardless of volume (i.e. even if less than 10 m<sup>2</sup>).



## 7: Work Planning and Asbestos Identification

### 7.1: Preliminary Identification and Planning

The likelihood that ACM is present within buildings and structures built prior to 2000<sup>1</sup> is considered to be high. In order to determine the likelihood that ACM may be present at a site the following should be undertaken prior to any works commencing:

1. Review the asbestos register and any existing asbestos surveys. Note that asbestos is assumed to be present in petroleum system pipework gaskets, in soffits and canopy facings (it has generally not been tested). It can also be discovered in vinyl beneath carpet or old floorings;
2. If no survey exists review building records/aerial photographs to confirm the date and material of construction (including any renovations)
3. Review the potential for ACM to be in those areas to be disturbed during the proposed work. This should include an inspection and review of and/or asbestos survey reports for each site (if available);
4. Confirm the nature of proposed work where ACM has been identified or presumed and determine the appropriate definition of works under the Asbestos Regulations. The definition of the work will define the level of controls required to undertake the work. This is further outlined in Section 9.0. and below;
  - I) For maintenance and minor refurbishment - If the potential for ACM is identified and an existing survey or register does not exist or is not suitable for the intended works, adopt standard mitigation measures for asbestos minor works after confirming risk is low (See Appendix 3 for asbestos related work).
  - II) For demolition and more than minor works where disruption of asbestos is likely an asbestos survey (as detailed in Section 7.2 below) shall be completed and a site-specific management plan shall be developed.

### 7.2: Asbestos Survey

Under the Asbestos Regulations an asbestos survey must be completed for work involving asbestos. For minor works it is acceptable to assume material may contain asbestos and take appropriate control measures to manage “low risk” asbestos. Where an asbestos survey is required, the following should be completed by a competent person<sup>2</sup> in accordance with Regulation 20:

1. Perform an intrusive visual survey of the structures to be disturbed by the work for potential ACM (i.e. limited survey).
2. If potential ACM is identified, obtain a representative sample and submit to an IANZ accredited laboratory for analysis (alternatively, assume that the potential ACM does contain asbestos).
3. If asbestos presence is confirmed (or assumed), assess the condition of the ACM (friable or non-friable).
4. An Asbestos Survey Summary letter shall be prepared for each site outlining the location, condition and type of asbestos that is to be encountered at part of the proposed works and definition of the type of works to be carried out under the Asbestos Regulations.

The WorkSafe Good Practice Guidelines for “Conducting Asbestos Surveys” (WorkSafe, 2016b) outlines the expectations for an asbestos survey.

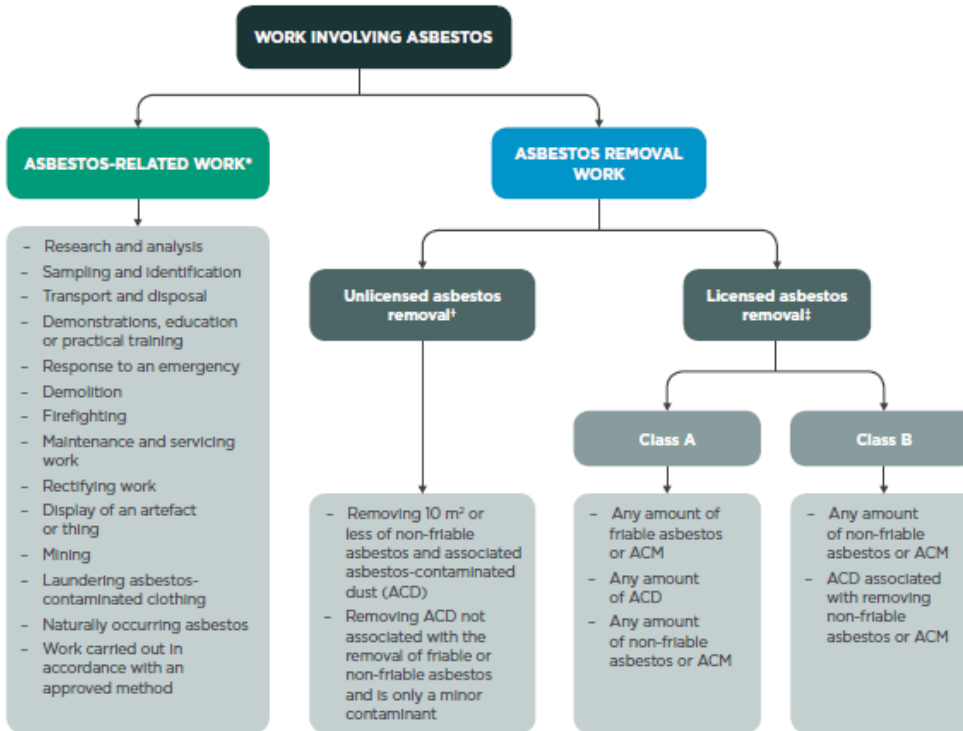
<sup>1</sup> Asbestos was widely used as construction and insulation material in buildings until the mid-1980s. It was still used until stockpiles of the product ran out. Asbestos was possibly used in buildings constructed before 2000.

<sup>2</sup> A competent person should have the knowledge and skills to identify or assume the presence of asbestos through training, qualifications and experience.



## 8: Definition of Asbestos Work Types

Work involving asbestos is prohibited by the Asbestos Regulations, except for certain specified activities. The Asbestos Regulations regulate the type of work people can do with asbestos, ACM and asbestos-contaminated dust or debris (ACD). The following is an overview of the permitted work involving asbestos and the definition of the type of asbestos work:



Source: WorkSafe New Zealand.

All work carried out that has the potential to disturb ACM will fall under the above categories. The level of controls (engineering and administrative) and requirements for specialist asbestos removalists is dependent on the definition of asbestos work being carried out, which is outlined in the following Sections.



## 9: 'Asbestos Related Work' Activity

Asbestos related work covers a number of activities including maintenance and servicing, and rectifying work, which are regularly undertaken on Z sites. This category also includes 'minor works' involving minor disturbance of asbestos, including tasks such as cutting a small hole or hand-drilling a few holes in a cement sheet (i.e. purpose to maintain, install, reconfigure or repair a service). This could potentially cover a number of activities associated with the routine maintenance and change or removal of signage and canopy fascia. Note that if removal of ACM is required, then the works must be carried out as 'asbestos removal work'.

Contractors involved in 'asbestos related work' do not need to be licenced asbestos removalists, however, they must show a level of competency in the general handling and management of asbestos including knowledge of the hazards associated with exposure to asbestos.

### 9.1: Responsibilities

Both Z and the contractor have responsibilities when asbestos related work is being undertaken.

Z's primary responsibilities are:

- to make sure decontamination facilities are available and used, and
- to make sure that asbestos waste is disposed of safely.

The contractor's primary responsibilities are to ensure:

- asbestos work area is separated from the rest of the workplace, and
- signage and barriers are installed to prevent other workers and people from entering the asbestos work area.

Z and the contractor are also jointly responsible for:

- identifying asbestos that may be encountered (or assuming that asbestos is present),
- informing workers of the health risks of asbestos exposure and providing health monitoring for workers at risk of exposure. A record of training must be available for inspection and must be kept for at least 5 years after the cessation of the worker working for the PCBU, and
- carrying out air monitoring if there is any uncertainty about whether the airborne contamination standard for asbestos might be exceeded.

### 9.2: Management Controls

The Approved Code of Practice Work for the Management and Removal of Asbestos (WorkSafe NZ, 2016a) recommends safe work practices for asbestos related work that are to be followed for several specific activities, including:

- Sealing, painting, coating and cleaning ACM;
- Replacing cabling in asbestos cement conduits or boxes;
- Working on electrical mounting boards containing asbestos; and
- Inspecting asbestos friction materials.

Copies of the safe work practices for each of these activities are included in Appendix 3. These safe work practices shall be followed where applicable. Where the minor work is different to the specific activities, additional safe practices shall be developed and be approved by Z prior to work commencing. These shall be based on the following principles and objectives:

- To undertake minor work in a way that minimises the potential for the release of asbestos into the air (i.e. wetting or using surfactants, shadow vacuuming (H13 HEPA Vacuum) or doing the work in a controlled environment);



- To capture any ACD and dispose of appropriately;
- Where possible, avoid disturbance of actual/potential ACM.

General asbestos management controls are detailed in Section 11. These must be followed for all work where exposure and disturbance of ACM is carried out.

### 9.3: Other Management Controls

A Work Clearance Permit form must be completed for all Z site works and this triggers a Work Permit Requirement under the Z Permit to Work system. A safe work method statement (SWMS) (or an approved safe work practice) is required. The SWMS should be reviewed by an asbestos assessor or competent person to ensure that appropriate controls are in place for the level of risk.

The Z Environmental *Management Plan for Site Works at Petroleum Handling Facilities* (Z, 2014) should also be followed.

In addition to an asbestos register identifying asbestos or potential asbestos (see Section 5), it is a requirement in the Approved Code of Practice to outline how ACM's will be managed, the risks involved and the reasons for this decision. This risk assessment is based on:

- ACM classification/friability of the material;
- condition of the material;
- activities which may affect the material;
- risk of fibre release from the material; and
- location of the material.

A site-specific management plan outlining the above is included in Appendix 4.





## 10: 'Asbestos Removal Work' Activity

### 10.1: Non-Licensed Removal Work

If the work is to involve the removal of less than 10 m<sup>2</sup> of ACM (non-friable asbestos) then as per Regulation 27 the removal works shall be considered to be non-licensed removal works and may be undertaken by a competent person (who has been trained in accordance with Regulation 17). The removal of friable asbestos is licensed removal work (see Section 10.2 below).

Z considers that any significant removal of cladding should be completed under a site-specific asbestos removal control plan. Only minor removal of broken sheeting should be considered as minor work (for example emergency storm repairs or vehicle impact damage repairs).

The competent person shall be responsible for ensuring that the ACM is removed and disposed of in accordance with the Asbestos Regulations and any additional guidance or codes of practice issued by WorkSafe. This includes carrying out the work in accordance with prepared and approved safe work practices (refer to Appendix 3).

If there is uncertainty about whether the airborne contamination standard for asbestos might be exceeded during the works, air monitoring shall be carried out.

In accordance with the Asbestos Regulations, no formal clearance inspection or clearance certificate is required for non-licensed work.

General asbestos management controls are detailed in Section 11. These must be followed for all work where exposure and disturbance of ACM is carried out.

### 10.2: Licensed Removal Work

If the work is to involve the removal of more than 10 m<sup>2</sup> of ACM and/or friable asbestos, then as per Regulation 27 the removal works shall be considered to be licensed removal works and shall be undertaken by, or, under the supervision of a licensed asbestos removalist (Class A or Class B as appropriate).

The licensed removalist must prepare an Asbestos Removal Control Plan and notifying WorkSafe at least 5 days prior to commencing the asbestos removal work. The Asbestos Removal Control Plan must be approved by Z Permit Issuer prior to the work being carried out.

In accordance with the regulations, a clearance inspection must be carried out by:

For Class A asbestos removal work, an independent licensed asbestos assessor; or

In any other case, an independent competent person.

The requirement for air monitoring during any licensed removal work shall be determined in consultation between Z, the asbestos assessor and the asbestos removalists and detailed in the Asbestos Removal Control Plan. Any air monitoring shall be carried out in accordance with the asbestos regulations.

General asbestos management controls are detailed in Section 11. These must be followed for all work where exposure and disturbance of ACM is carried out. Additional controls may be applied at the discretion of the removalist.



# 11: General Asbestos Management Controls

The following management controls (as a minimum) shall be applied for any work where ACM is exposed and/or disturbed. Refer also to WorkSafe's Approved Code of Practice for the Management and Removal of Asbestos (WorkSafe, 2016a) and also to the safe work practices included (refer to Appendix 3).

## 11.1: Use of Equipment

The following are prohibited for use on actual/potential ACM in accordance with Regulation 18:

1. A high-pressure water spray.
2. Compressed air.
3. A power tool, broom or any other implement that causes the release of airborne asbestos into the atmosphere (except under controlled conditions where airborne asbestos is captured or suppressed safely).

## 11.2: Work Area Isolation

An exclusion zone will need to be setup to isolate the work area to ensure only permitted personnel with appropriate training can enter.

Appropriate signage will also need to be installed and be clearly visible at all entrances to the work areas.

## 11.3: Personal Protective Equipment

Protective safety equipment must be available and used by those workers involved in all asbestos related and removal work to minimise exposure. Personal Protection Equipment (PPE) shall include but not be limited to the following and be based on an assessment of the level of risk of exposure to asbestos fibres:

- Safety boots (covers as required);
- Appropriate disposable coveralls;
- Protective gloves for any personnel handling ACM;
- Safety glasses;
- Appropriate particulate filter respirators (minimum P2) that is selected in accordance with AS/NZS 1715, Selection, use and maintenance of respiratory protective equipment. This will include undertaking a mask fit test to ensure the mask works on the individual. The selected respirator must comply with AS/NZS 1716 Respiratory protective devices; and
- For licenced asbestos removal work, additional PPE may be required to complete the work, at the discretion of the licenced removalist.

Additional PPE may be required for other site hazards in accordance with Z procedures.

## 11.4: Personnel and Access

Personnel undertaking the minor work involving ACM should be suitably trained in the identification and management of asbestos.

All personnel must sign in prior to entry onto the site, with no unregistered personnel allowed onsite;

The minimum number of personnel to safely undertake the minor work should be within the work area when there is potential for the minor work to disturb ACM; and

Outside normal working hours, access to the site is to be blocked by temporary fencing or other suitable barriers.



## 11.5: Decontamination

Decontaminating the work area, workers, PPE and tools used in asbestos related and asbestos removal work is vital to eliminate or minimise exposure to airborne asbestos fibres. Refer to the Approved Code of Practice for the Management and Removal of Asbestos (WorkSafe, 2016a) and specific safe work practices for further detail on decontamination.

### Decontamination of Work Area

The following decontamination methods shall be used:

Wet decontamination, or wet wiping, is the preferred method and involves using damp rags to wipe down contaminated areas. Rags should only be used once and then be treated as asbestos waste.

Dry decontamination involves carefully rolling or folding up and sealing plastic sheeting and/or vacuuming the asbestos work area with a vacuum cleaner used for asbestos work.

Only use dry decontamination when the wet method is not suitable or is risky because of other hazards such as electricity or slipping. All waste material shall be treated as potentially containing asbestos and disposed of accordingly (refer Section 11.6).

### Decontamination of Equipment and Clothing

All clothing, tools and equipment should be decontaminated using the wet or dry method before they are removed from the asbestos work area. The appropriate method will depend on its practicality, the level of contamination and electrical hazards.

Any tools or equipment that cannot be decontaminated must be placed in a sealed and labelled container (as detailed in Section 11.6).

In some circumstances it may be better to dispose of contaminated tools and equipment, depending on the level of contamination and the ease of replacement. If tools and equipment are disposable, so far as is reasonably practicable, they need to be disposed of.

### Personal Decontamination and Hygiene

Site personnel involved in the asbestos work should follow appropriate decontamination and personal hygiene measures as summarised below:

Personal protection equipment must be removed prior to leaving the work area and disposed of accordingly as asbestos contaminated waste (refer to Section 11.6);

Hands and other exposed parts of the body are to be washed prior to entering the designated eating area and on leaving the site following excavation works. Running water will be available on site for hand washing; and

For those activities involving licenced asbestos removal works, the removalist will outline the decontamination requirements, including the requirement to set up a dedicated decontamination unit.

## 11.6: Disposal of ACM and Asbestos Contaminated Waste

Any ACM removed during the de-branding work and any asbestos contaminated waste (including used PPE/decontaminating consumables) shall be packaged, transported and disposed of in accordance with Regulation 40.

Disposal of ACM/asbestos waste shall be to a facility (landfill) licensed to accept ACM under a valid disposal permit. Waste manifest records and landfill dockets should be retained on file to document the ACM/asbestos waste disposal.



## 12: Documentation, Monitoring and Record Keeping

### 12.1: Documentation

Where **asbestos is identified**, likely, or assumed to be present at a Z site, an asbestos register should be developed (or an existing register updated) to record the presence and location of asbestos.

Where **asbestos related work** is to be undertaken a site-specific asbestos management plan should be prepared, and all asbestos-related work must be included in the required SWMS (see Section 9.3).

Where **licenced asbestos removal work** is to be undertaken an asbestos removal control plan should be prepared by the licenced asbestos removalist.

Where **non-licenced asbestos removal work** (less than 10 m<sup>2</sup> of non-friable asbestos) is to be undertaken, an asbestos removal control plan, appropriate to the scale and complexity of removal work, should be prepared by a competent person.

### 12.2: Monitoring

Monitoring of work involving asbestos will depend on the nature of the activity being undertaken and the qualifications and experience of those undertaking the work. At a minimum, Z (and/or their consultant) should review the relevant documentation prior to the contractor commencing the works. For Class A asbestos removal, a licenced asbestos assessor or competent person should be engaged to observe the works, undertake air monitoring and clearance inspections, and issue clearance certificates as required.

For minor low risk works asbestos monitoring is expected to be an exception.

### 12.3: Record-Keeping

The asbestos register should be updated at the conclusion of any work that involves asbestos to ensure that the register remains current and can be relied on for future works.

Copies of all relevant documentation (such as asbestos register, asbestos management plans, asbestos removal control plans, air monitoring results, clearance certificates, landfill disposal dockets, etc) should be retained on the site file for future reference. The central repository for asbestos information is the Assets Asbestos directory which should be linked to the Asbestos Register.

The asbestos management plan and a review of the identified asbestos condition must be conducted at least every 5 years or when:

- asbestos controls are reviewed,
- asbestos is disturbed, removed or sealed/enclosed
- the plan is no longer adequate for managing the asbestos risk
- a representative for the workers requests a review if they believe the plan does not adequately protect the workers from asbestos fibres or if they believe the AMP has not been reviewed adequately.



## 13: References

*Health and Safety at Work (Asbestos) Regulations 2016.*

NZDAA, 2011. *Guidelines for the Management and Removal of Asbestos.* New Zealand Demolition and Asbestos Association.

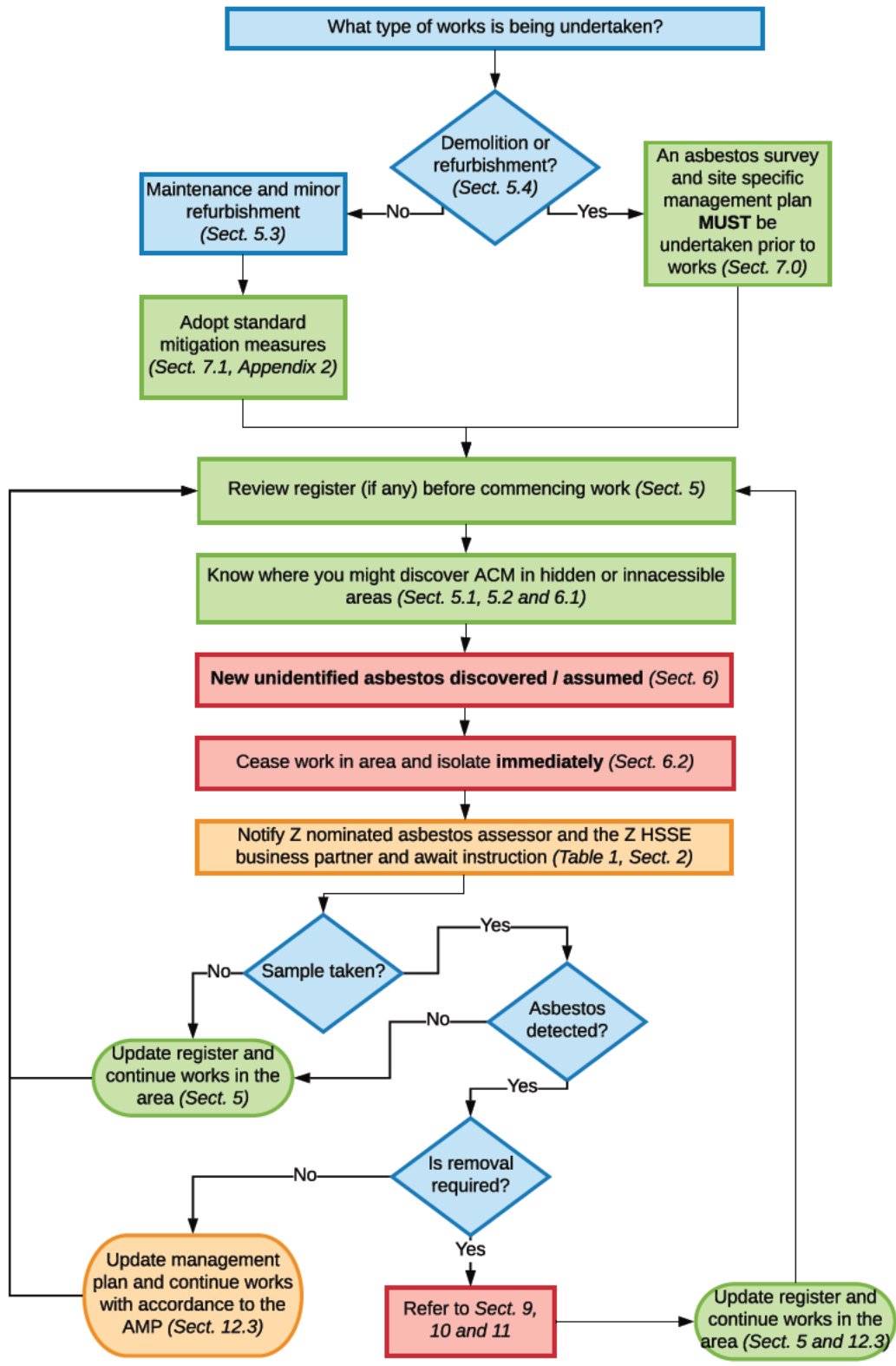
WorkSafe NZ, 2016a. *Approved Code of Practice for the Management and Removal of Asbestos.* WorkSafe New Zealand.

WorkSafe NZ, 2016b. *Management and Removal of Asbestos for Asbestos Removal Supervisors.* WorkSafe New Zealand.

Z, 2014. *Environmental Management Plan for Site Works at Petroleum Handling Facilities.* Z Energy Ltd.



# Appendix 1 - Guide to Working with Asbestos or Potential Asbestos



# Appendix 2 WorkSafe NZ Information Sheets



INFORMATION SHEET 1

## HEALTH RISKS FROM ASBESTOS EXPOSURE

Inhaling asbestos fibres can result in asbestosis, lung cancer and mesothelioma.

### WHAT ARE THE HEALTH RISKS FROM ASBESTOS?

The health risks from asbestos occur when people breathe in airborne asbestos fibres. Once inhaled, they can become embedded in the lungs and may cause diseases such as asbestosis, lung cancer and mesothelioma.

### WHY IS ASBESTOS A HEALTH RISK?

Asbestos is a health risk when it is breathed in as fine fibres. The risk to health may increase with the number of fibres inhaled and with frequency of exposure. When asbestos fibre is breathed in, larger fibres tend to be cleared by the lungs and upper respiratory tract. The finer fibres are more difficult to remove and may settle in the lungs. This makes asbestos a construction site hazard that by itself cannot always be seen.

When comparing the size of asbestos fibres with human hair, the diameter of a hair is approximately 400-1200 times larger than either blue or brown asbestos fibres.



Health risks from breathing in asbestos fibres increase when:

- > more fibres are inhaled
- > exposure occurs more frequently
- > exposure occurs over a long period of time.

#### **WHO IS AT RISK FROM ASBESTOS?**

Generally speaking, the risk is low for low-level short-term exposure for occupants in older homes. People are more likely to experience asbestos-related diseases when they are exposed to higher concentrations of asbestos, are exposed frequently and over long periods of time.

Asbestos-related diseases generally occur in workers exposed to high dose rates over extended periods of time. Demolition and construction workers are at a high-risk of exposure to asbestos because of the work they do.

Workers should:

- > be aware of asbestos hazards
- > know how to manage the risk to themselves and others.

#### **HOW LONG DOES IT TAKE FOR AN ASBESTOS-RELATED DISEASE TO DEVELOP?**

Asbestos-related diseases are long-latency diseases - that is, it may take 20 years or more before symptoms appear. By this time it is too late to prevent the disease from occurring.


#### **IS ANY EXPOSURE TO ASBESTOS SAFE?**

IARC (International Agency for Research on Cancer) has classified **all** forms of asbestos as being carcinogenic to people (classification - Group 1\*).

**WORKERS SHOULD AIM TO HAVE NO EXPOSURE TO ASBESTOS.**

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\* From IARC website at: <http://monographs.iarc.fr/ENG/Classification/index.php>  
(site last updated: 22 February 2016)



## WHAT DISEASES ARE CAUSED BY ASBESTOS?

There are four main diseases caused by asbestos:

DISEASE	SYMPTOMS	EFFECTS OF THE DISEASE
<b>Pleural plaques</b>	Scar tissue on the outer lining of the lungs, internal chest wall and diaphragm	May or may not affect the ability to breathe  Not everyone exposed to asbestos develops pleural plaques
<b>Asbestosis</b>	Inflammation in the lungs resulting in the formation of scar tissue (fibrosis)	Shortness of breath, coughing  Lung damage is permanent  Condition can continue to get worse even when the person is no longer exposed to asbestos
<b>Lung cancer</b>	Cancerous tumours occurring mainly in the lungs	The risk of developing lung cancer from asbestos exposure is increased when people smoke
<b>Mesothelioma</b>	Cancer of the lining of the lungs (may also occur in other parts of the body)	Approximately 90% of people who have mesothelioma have had high exposure to asbestos  Mesothelioma may take more than 20 years to develop  Death usually occurs between 9 months and 3 years after symptoms occur

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INFORMATION SHEET 2

## LOCATIONS WHERE ASBESTOS MAY BE FOUND

**If you are doing work on a commercial building or a home and you are unsure whether asbestos may be present or not, proceed as if it is present.**

### WHERE IS ASBESTOS LIKELY TO BE FOUND?

Any building constructed, altered or refurbished before the late-1980s is likely to contain asbestos and/or asbestos-containing materials (ACMs).

Buildings constructed after 2000 are generally unlikely to contain ACMs but as materials containing asbestos are still permitted to be imported into New Zealand, some buildings built after 2000 may contain ACMs.

As a general rule, if a building was constructed:

#### BEFORE THE MID-1980s

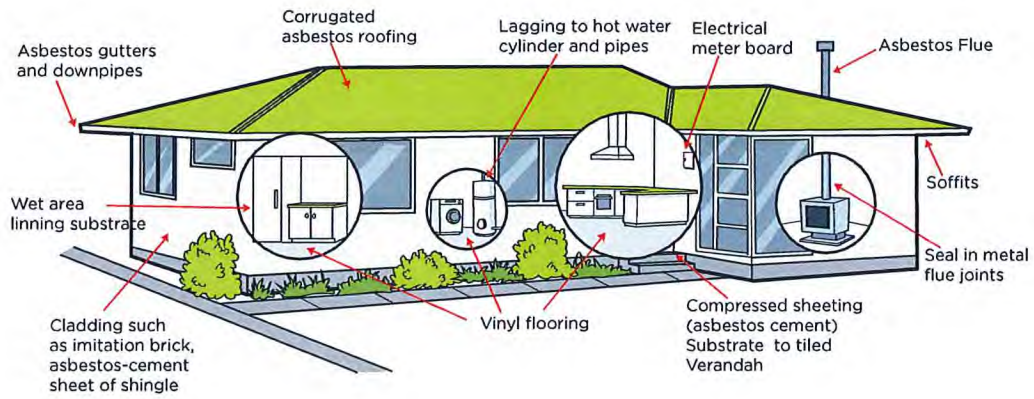
it is very likely to have materials containing asbestos

#### BETWEEN THE MID-1980s AND 2000

it is likely to have materials containing asbestos

#### AFTER 2000

it is unlikely to have material containing asbestos



ASBESTOS MAY BE FOUND IN:	
<b>Roofs</b>	corrugated cement roofing <sup>1</sup> , including lap cement dust
	guttering, downpipes, rainwater head
<b>Ceilings</b>	ceiling tiles
	textured ceilings
	lathe and plaster (skim coat)



<sup>1</sup> Debris in the roof space from a previous roof replacement may contain asbestos.

**ASBESTOS MAY BE FOUND IN:**

**External cladding and eaves**

sheet claddings (flat/corrugated)



baseboards and kickboards

shingles



imitation brick/stone claddings

soffit linings

**Interior walls and finishes**

sprayed/textured wall finishes

insulation board (eg around fireplaces)

plasterboard lining and jointing compound

skim coat on lathe and plaster

**Floors**

vinyl sheet and tile flooring



**ASBESTOS MAY BE FOUND IN:**

<b>Insulation</b>	roof and wall insulation
	lagging (insulation)
	hot water cylinder insulation
<b>Pipes</b>	drainage pipes
<b>Miscellaneous</b>	flues
	seals on wood burners/firedoors
	fuse boards (mill board)/linings in fuse holders
	fire cement in old chimneys
	night store heater
	fences
	moss, lichen and algae from the roof and exterior walls



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## MANAGING ASBESTOS

**When asbestos has been identified in a workplace, it is important to identify the specific asbestos risks and put controls in place to eliminate or minimise the chances of those risks harming people.**

### **WHAT ARE THE OPTIONS FOR MANAGING ASBESTOS?**

The options for managing asbestos or asbestos-containing material (ACM) are outlined on the table over the page.

### **WHAT IS AN ASBESTOS MANAGEMENT PLAN?**

An asbestos management plan sets out how a workplace's identified asbestos or ACM will be managed.

An asbestos management plan must include information about:

- > identified asbestos and ACM
- > decisions, and reasons for the decisions, about how the asbestos risks are managed
- > procedures for recording details of incidents or emergencies involving asbestos
- > information about the workers carrying out asbestos work, including information and training, roles and responsibilities and any health monitoring processes.

ASBESTOS MANAGEMENT OPTION	OPTION INVOLVES	APPROPRIATE WHEN	NOT APPROPRIATE WHEN	ADVANTAGES	DISADVANTAGES
<b>Removal<sup>1</sup></b>	<ul style="list-style-type: none"> <li>&gt; complete removal of asbestos or ACM from building</li> </ul>	<ul style="list-style-type: none"> <li>&gt; surface is friable or asbestos poorly bonded</li> <li>&gt; asbestos is severely water-damaged or liable to damage or deterioration</li> <li>&gt; there is lichen growth or damage due to lichen</li> <li>&gt; asbestos is located in air conditioning ducts</li> <li>&gt; airborne asbestos levels exceed exposure standard</li> <li>&gt; other control techniques are inappropriate</li> </ul>	<ul style="list-style-type: none"> <li>&gt; asbestos is located on complex or inaccessible surfaces</li> <li>&gt; removal would be extremely difficult and other techniques provide satisfactory alternative</li> </ul>	<ul style="list-style-type: none"> <li>&gt; hazard is removed</li> <li>&gt; no further action is required</li> </ul>	<ul style="list-style-type: none"> <li>&gt; increase in immediate risk of exposure, particularly to removal workers</li> <li>&gt; creates significant disruption to building occupants</li> <li>&gt; may be the most costly, complex and time-consuming option</li> <li>&gt; removal may increase fire risk in building so a substitute material would be required</li> <li>&gt; potential for contamination of whole building if removal is not carried out correctly</li> </ul>
<b>Encapsulation<sup>1,2</sup></b>	<ul style="list-style-type: none"> <li>&gt; coating ACM with a product that penetrates into and hardens the material</li> </ul>	<ul style="list-style-type: none"> <li>&gt; removal of asbestos is difficult or not feasible</li> <li>&gt; the likelihood of the asbestos being damaged is minimal</li> <li>&gt; the building has a short life expectancy</li> <li>&gt; the asbestos is readily visible for regular assessment</li> </ul>	<ul style="list-style-type: none"> <li>&gt; asbestos is deteriorating or has been water-damaged</li> <li>&gt; sealant application may damage the asbestos</li> <li>&gt; area of damaged asbestos is large</li> </ul>	<ul style="list-style-type: none"> <li>&gt; quick and cost-effective</li> <li>&gt; asbestos dust is contained</li> </ul>	<ul style="list-style-type: none"> <li>&gt; hazard has not been removed</li> <li>&gt; if the area of asbestos is large, cost may be similar to cost of removal</li> <li>&gt; eventual removal may be made more difficult and costly</li> <li>&gt; enclosure and clearance procedures for encapsulation are still required</li> </ul>
<b>Sealing<sup>1,2</sup></b>	<ul style="list-style-type: none"> <li>&gt; applying a protective coating to the ACM that creates an impermeable seal for the asbestos eg paint</li> </ul>				
<b>Enclosure<sup>2,3</sup></b>	<ul style="list-style-type: none"> <li>&gt; placing a barrier between ACM and the surrounding environment</li> </ul>	<ul style="list-style-type: none"> <li>&gt; removal of asbestos is extremely difficult</li> <li>&gt; fibres are able to be fully contained within enclosure</li> <li>&gt; most of the surface already is inaccessible (ie enclosed)</li> <li>&gt; disturbance to, or entry into the enclosure is unlikely</li> </ul>	<ul style="list-style-type: none"> <li>&gt; enclosure is liable to be damaged or water damage may occur</li> <li>&gt; asbestos cannot be fully enclosed</li> </ul>	<ul style="list-style-type: none"> <li>&gt; minimal disruption to occupants</li> <li>&gt; provides an adequate method of asbestos control for some situations</li> </ul>	<ul style="list-style-type: none"> <li>&gt; hazard remains</li> <li>&gt; ongoing maintenance of enclosure is required</li> <li>&gt; asbestos management programme is required</li> <li>&gt; if the asbestos is removed in the future, the enclosure will need to be removed first</li> <li>&gt; precautions required to prohibit entry of enclosure</li> <li>&gt; the asbestos hazard remains</li> <li>&gt; ongoing assessment and monitoring is required</li> <li>&gt; asbestos management programme required</li> </ul>
<b>Deferral</b>	<ul style="list-style-type: none"> <li>&gt; no action is taken at present time</li> </ul>	<ul style="list-style-type: none"> <li>&gt; risk of asbestos exposure is negligible, and</li> <li>&gt; asbestos is inaccessible and fully contained, or</li> <li>&gt; asbestos is stable and unlikely to be damaged</li> </ul>	<ul style="list-style-type: none"> <li>&gt; there is a possibility of damage or deterioration to asbestos</li> <li>&gt; airborne asbestos dust levels exceed recommended exposure standards</li> </ul>	<ul style="list-style-type: none"> <li>&gt; no initial cost</li> <li>&gt; cost of removal is deferred</li> </ul>	

<sup>1</sup> Work may only be carried out by a person holding a certificate of competence.  
<sup>2</sup> If the enclosure, encapsulation or sealing options are used in commercial buildings, the location of the asbestos must be clearly labelled and recorded on the building plans.  
<sup>3</sup> This option is only acceptable where AC is in good condition and the barrier is designed to protect against mechanical damage.



## **WHO MAY CARRY OUT ASBESTOS WORK?**

### **FRIABLE ASBESTOS**

Asbestos-related work involving friable asbestos, including encapsulation and sealing needs to be carried out by trained and experienced people.

Removal of friable asbestos must be carried out by a PCBU with a class A removal licence.

### **NON-FRIABLE ASBESTOS**

Asbestos-related work involving non friable asbestos, including encapsulation and sealing needs to be carried out by trained and experienced people.

Removal of over 10 m<sup>2</sup> of non-friable ACM or asbestos must be carried out by a PCBU with a class A or B removal licence.

### **UNDAMAGED ASBESTOS**

Where ACM is present and undamaged, it may be left in place and no further action may be required.

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INFORMATION SHEET 6

## NON-FRIABLE ASBESTOS

### WHAT IS NON-FRIABLE ASBESTOS?

Non-friable asbestos is asbestos that is not able to be crumbled, pulverised or reduced to a powder by hand pressure only.

Non-friable asbestos-containing materials (ACMs) are generally materials where asbestos fibres are bonded in a cement, bituminous or resin matrix. Such material may become friable due to deterioration.

Non-friable ACMs can become friable due to:

- > age
- > weathering
- > fire damage
- > abrasion
- > water blasting
- > chemical treatment
- > algae attack.

### WHO MAY WORK WITH NON-FRIABLE ASBESTOS?

A class A or B asbestos removal licence is required before removing more than 10 sq m of non-friable asbestos. 10 sq m or less may be removed by a competent person who has the experience and knowledge of working with asbestos without risk to their own or others' lives.

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INFORMATION SHEET 7

## DISPOSAL OF ASBESTOS WASTE

**Asbestos waste must be disposed of at approved local authority refuse sites. It must not be sold or re-used.**

### WHAT IS REQUIRED WHEN DISPOSING OF ASBESTOS?

Asbestos must be removed from the site to an approved refuse site as soon as practicably possible. Before removal the asbestos waste must be placed in a sealed container and marked clearly to indicate the presence of asbestos.

A licensed asbestos removalist must prepare an asbestos removal control plan for any licensed asbestos removal work being undertaken.

The removal control plan must include details of the means of transport and disposal of asbestos waste.

An asbestos removal control plan should describe:

- > how the waste is contained (on and off site)
- > the quantity (amount and dimensions) of waste
- > where the waste will be stored on site before disposal
- > how the waste will be transported (on and off site)
- > approvals from the local authority
- > local authority requirements such as quantity of asbestos and dimensions of containers
- > where the waste will be transported to
- > verification of correct disposal such as tip dockets.

The asbestos removal plan must be kept on site.

### HOW IS ASBESTOS WASTE STORED ON SITE PRIOR TO REMOVAL?

Before being removed from site, asbestos waste must be:

- > stored in closed containers that are impermeable to asbestos dust, such as
  - 200 micron thick plastic bags, or
  - 200 micron thick polythene sheet.

Asbestos waste should:

- > be double-bagged in case of one bag rupturing
- > be in bags no bigger than 1200 mm x 900 mm
- > not be more than half-filled
- > have excess air in the bag carefully removed before sealing
  - so there is no release of asbestos dust
- > have the bags tied with a goose-neck closure.



Goose-neck bag closure

All stored asbestos waste must be clearly marked to indicate the presence of asbestos.

### WHERE CAN ASBESTOS WASTE DISPOSAL SITES BE FOUND?

Contact your local council for information on disposal sites.

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# DRILLING HOLES IN ASBESTOS-CONTAINING BOARD



### INTRODUCTION

This sheet describes good practices to follow when drilling into board that contains asbestos (ACM board). This might happen when you want to attach fittings or pass through cables or pipework.

### PREPARING THE WORK AREA

- > Make sure there is safe access to the work area.
- > Restrict access - reduce the number of people present.
- > Close doors opening into the work area. Use tape and notices to inform others why the area is restricted.
- > If it's possible, also restrict access to the area behind the ACM board.
- > Let other people know the area is contaminated.

### KEEP DUST DOWN

- > Use a thick paste, like wallpaper paste or shaving foam, to contain drilling debris.
- > Only use power tools set at the lowest speed so you do not create a lot of dust. Use dust collection equipment if it is available.
- > Use plastic sheets to cover your work area to help stop the spread of dust. They will also make cleaning up easier.

### USE THE RIGHT PROTECTIVE EQUIPMENT

#### WEAR A MASK

- > Not all masks protect from asbestos.
- > A disposable P2 mask with a valve is the minimum needed for this work. P1 or 'nuisance dust' masks will not provide the protection you need.
- > Don't re-use disposable masks.
- > Make sure your mask fits properly. Facial hair and stubble make it almost impossible to get a good seal between your face and the mask.

#### WEAR OVERALLS

- > Disposable overalls will stop the tiny asbestos fibres getting on your clothes.
- > Don't re-use disposable overalls.
- > Wear the overalls one size too big as it will help prevent ripping at the seams.
- > Make sure you put the legs of the overalls over the top of your footwear - don't tuck them in as it lets in dust.

#### PROCEDURE

- > Put on mask and overalls and make sure they fit properly.
- > Protect nearby surfaces from contamination.
- > Cover the drilling point and the rear

(if accessible) with masking tape to prevent the edges crumbling.

- > For cable and pipework, make the hole slightly bigger than required.

#### METHOD 1:

- > Cover the drill entry and, if accessible, exit points, with a generous amount of paste, foam or a proprietary device.
- > Drill through the paste, foam or device.
- > Clean off the paste, foam and debris with damp rags. Or remove the device and clean the surface. Clean the back surface with damp rags, if accessible.
- > Rags and paste or foam contain dust and fibres. Dispose of as asbestos waste.
- > Seal the drilled edge with sealant.
- > Insert a sleeve to protect the hole's edges.

#### METHOD 2:

- > Place a plastic enclosure over the drill point. Put the drill bit or cutter through the enclosure opening.
- > Use a vacuum with a type of filter designed to capture fine particles like asbestos. Attach the hose of a vacuum cleaner to the plastic enclosure. Turn it on.
- > Drill the hole.
- > Vacuum the drilled hole, and the rear of the board if accessible.
- > Seal the drilled edge with sealant.
- > Insert a sleeve to protect the hole's edges.



**Figure 1:** Asbestos-containing material was commonly used around fireplaces

## CLEAN UP PROPERLY

It's really important to clean up properly so that you safely remove and dispose of the asbestos waste.

### THE WORK AREA AND TOOLS

- > Clean up as you go to stop waste building up.
- > Use a damp cloth to wipe down tools and surfaces to remove asbestos fibres. Do not re-use the cloth. It must be disposed of as asbestos waste.
- > Don't sweep up because this will spread asbestos fibres into the air.
- > Don't use domestic vacuum cleaners to clean up asbestos dust. Use a vacuum with a type of filter designed to capture fine particles like asbestos.

### PERSONAL CLEAN-UP

- > Dispose of disposable masks and overalls safely after you have finished the job. The mask and overalls are asbestos waste.
- > Don't take overalls home or wear them in vehicles. This will prevent people at home being exposed to asbestos fibres.

### DISPOSAL

- > Make sure all waste, including masks, overalls, cloths and plastic sheets are double-bagged in heavy-duty plastic bags, sealed with tape and marked as asbestos waste.
- > Dispose of the asbestos waste at an authorised disposal site. Contact the local tips in your area to find one that accepts asbestos waste.

### FINISHING THE JOB

- > Visually inspect the area to make sure it has been cleaned properly.

From 4 April 2016 regulations on asbestos work will change. This includes the introduction of a new asbestos removal licensing system. Find out more at [www.business.govt.nz/worksafe/asbestos](http://www.business.govt.nz/worksafe/asbestos)

# Appendix 3 WorkSafe NZ Safe Work Practices



## APPENDIX F: RECOMMENDED SAFE WORK PRACTICES FOR ASBESTOS-RELATED WORK

This Appendix contains some recommended Safe Work Practices that demonstrates control measures that can be used when asbestos is present at the workplace.

They are designed to comply with Asbestos Regulation 7(2)(h): *maintenance and servicing work involving ACM in accordance with these regulations.*

All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

The Safe Work Practices specified for asbestos-related work are:

<b>One</b>	Sealing, painting, coating and cleaning ACMs
<b>Two</b>	Replacing cabling in asbestos cement conduits or boxes
<b>Three</b>	Working on electrical mounting boards (switchboards) containing asbestos
<b>Four</b>	Inspecting asbestos friction materials

**Note 1:** The Safe Work Practices link to Parts of the code. They should not be read on their own. Depending on the type of asbestos-related work, follow the requirements outlined in Asbestos Regulations 47 to 53, and Parts A, B, C and E of this code (as applicable).

**Note 2:** The Safe Work Practices reflect good practice. PCBUs can conduct asbestos-related work using different practices, but they must achieve or exceed the same levels of safety provided by these practices.

**Note 3:** This Appendix does not address other hazards that may be present at a workplace, such as falls from heights or electrical risks. These risks must also be identified and controlled.



**SAFE WORK PRACTICE ONE: SEALING, PAINTING, COATING AND CLEANING ACMs**

This safe work practice is designed to comply with regulation 7(2)(h): *maintenance and servicing work involving ACM in accordance with these regulations.*

Depending on the type of asbestos-related work, follow the requirements outlined in Asbestos Regulations 47 to 53.

In addition to this Safe Work Practice, follow the information contained in the following Parts of the code (as applicable):

**A**   **B**   **C**   **E**

All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

<p><b>Information</b></p>	<p>As a first priority, considering removing the ACM. If it is not practicable to be removed, there may be a risk to health. These tasks should only be carried out on asbestos that is in good condition. For this reason, thoroughly inspect the ACM before starting the work.</p> <p>There is a risk to health if the surface of asbestos cement sheeting is disturbed (eg from hail storms and cyclones), or if it has deteriorated as a result of environmental factors like pollution. If it is so weathered that its surface is cracked or broken, the ACM matrix may be eroded, increasing the likelihood that asbestos fibres will be released.</p> <p>If treatment is essential, use a method that does not disturb the matrix. Never water-blast AC products or dry-sand them in preparation for painting, coating or sealing.</p>
<p><b>Equipment that may be required before starting work (in addition to what is needed for the task)</b></p>	<ul style="list-style-type: none"> <li>&gt; disposable cleaning rags</li> <li>&gt; a bucket of water, or more as appropriate, and/or a misting spray bottle</li> <li>&gt; sealant</li> <li>&gt; spare PPE</li> <li>&gt; a suitable asbestos waste container</li> <li>&gt; warning signs and/or barrier tape.</li> </ul>
<p><b>PPE</b></p>	<ul style="list-style-type: none"> <li>&gt; protective clothing and RPE             <ul style="list-style-type: none"> <li>- it is likely a P2 half-face respirator will be adequate for this task if the person doing the work follows the Safe Work Practice</li> </ul> </li> <li>&gt; if applying paint, use appropriate RPE to control the paint vapours/mist.</li> </ul>
<p><b>Preparing the asbestos work area</b></p>	<p>If the work will be conducted at height, use appropriate control measures to prevent falls.</p> <p>Assess the ACM for damage.</p> <p>Have appropriately marked asbestos waste disposal bags available.</p> <p>Carry out the work with as few people present as possible.</p> <p>Segregate the asbestos work area to make sure unauthorised personnel are restricted from entry (use warning signs and barrier tape at all entry points). Determine the distance for segregation with a risk assessment.</p> <p>If working at a height, segregate the area below.</p> <p>If possible, use plastic sheeting secured with tape to cover any floor surface within the asbestos work area which could become contaminated. This will help to contain any run-off from wet methods.</p>

	<p>Make sure there is adequate lighting.</p> <p>If using a bucket of water, do not re-soak used rags in the bucket, as this will contaminate the water. Either fold the rag so a clean surface is exposed or use another rag.</p> <p>Never use high-pressure water cleaning methods.</p> <p>Never prepare surfaces using dry sanding methods. If sanding is the only way it can be done, consider removing the asbestos and replacing it with a non-asbestos product.</p> <p>Use wet sanding methods to prepare the asbestos, as long as all the run-off is captured and filtered where possible.</p> <p>Wipe dusty surfaces with a damp cloth.</p>
<b>Painting and sealing</b>	<p>If using a roller, use it lightly to avoid abrasion or other damage. Airless paint spray application is preferred.</p> <p>Never use a high-pressure spray brush to apply the paint.</p>
<b>Decontaminating the asbestos work area and equipment</b>	<p>If required, use damp rags and/or a vacuum cleaner used for asbestos work to clean the asbestos work area and equipment.</p> <p>Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container that is labelled to indicate the presence of asbestos.</p> <p>Wet-wipe the external surfaces of the asbestos waste bags/container to remove any adhering dust before removing them from the asbestos work area.</p>
<b>Carry out personal decontamination in a designated area</b>	<p>If wearing disposable coveralls, clean the coveralls while still wearing RPE using a vacuum cleaner used for asbestos work, damp rag or fine water spray. Clean the RPE with a wet rag or cloth.</p> <p>While still wearing RPE, remove coveralls, turning them inside out to trap any remaining contamination and then place them into a labelled asbestos waste bag.</p> <p>Remove RPE.</p> <p>If the RPE is reusable, inspect it to make sure it is not contaminated, clean it with a wet rag and store in a clean container.</p> <p>If disposable, place RPE in a labelled asbestos waste bag or waste container.</p>
<b>Clearance procedure</b>	<p>Visually inspect the asbestos work area to make sure it has been properly cleaned.</p> <p>Clearance air monitoring is not normally required for this task.</p> <p>Dispose of all waste as asbestos waste.</p>

**SAFE WORK PRACTICE TWO: REPLACE CABLING IN ASBESTOS CEMENT CONDUITS OR BOXES**

This safe work practice is designed to comply with regulation 7(2)(h): *maintenance and servicing work involving ACM in accordance with these regulations.*

Depending on the type of asbestos-related work, follow the requirements outlined in Asbestos Regulations 47 to 53.

In addition to this Safe Work Practice, follow the information contained in the following Parts of the code (where applicable):



All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

<p><b>Equipment that may be required before starting work (in addition to what is needed for the task)</b></p>	<ul style="list-style-type: none"> <li>&gt; disposable cleaning rags</li> <li>&gt; a bucket of water, or more as appropriate, and/or a misting spray bottle</li> <li>&gt; 200 µm thick plastic sheeting</li> <li>&gt; cable slipping compound</li> <li>&gt; appropriately marked asbestos waste disposal bags</li> <li>&gt; spare PPE</li> <li>&gt; tape</li> <li>&gt; warning signs and/or barrier tape</li> <li>&gt; vacuum cleaner used for asbestos work.</li> </ul>
<p><b>PPE</b></p>	<ul style="list-style-type: none"> <li>&gt; Protective clothing and RPE                         <ul style="list-style-type: none"> <li>- it is likely that P2 RPE will be adequate for this task, provided the worker follows the recommended Safe Work Practice.</li> </ul> </li> </ul>
<p><b>Preparing the asbestos work area</b></p>	<p>If the work will be carried out in a confined space, put controls in place to prevent the risk of asphyxiation.</p> <p>Have appropriately marked asbestos waste disposal bags available.</p> <p>Carry out the work with as few people present as possible.</p> <p>Segregate the asbestos work area to make sure unauthorised personnel do not enter (eg use warning signs and barrier tape at all entry points). Determine the distance for segregation by a risk assessment.</p> <p>Use plastic sheeting secured with tape to cover any surface in the asbestos work area that could become contaminated.</p> <p>Place plastic sheeting below conduits before pulling any cables through.</p> <p>Have adequate lighting to do the job safely.</p> <p>Do not work in windy environments where asbestos fibres can be redistributed.</p> <p>If using a bucket of water, do not re-soak used rags in the bucket as this will contaminate the water. Either fold the rag so a clean surface is exposed or use another rag.</p>

<b>Replacement or installation of cables</b>	<p>Wet down the equipment and apply adequate cable slipping compound to the conduits/ducts throughout the process.</p> <p>Clean all ropes, rods or snakes used to pull cables after use. Clean close to the point(s) where the cables exit from the conduits/ducts.</p> <p>Ropes used for cable pulling should have a smooth surface that can easily be cleaned.</p> <p>Do not use metal stockings when pulling cables through AC conduits.</p> <p>Do not use compressed air darts to pull cables through AC conduits/ducts.</p>
<b>Decontaminating the asbestos work area and equipment</b>	<p>Use damp rags to clean the equipment. Consider electrical risks.</p> <p>Wet-wipe around the end of the conduit, sections of exposed cable and the pulling eye at the completion of the cable pulling operation.</p> <p>If the rope or cable passes through any rollers, wet-wipe these after use.</p> <p>Wet-wipe the surface of excess cable pulled through the conduit/duct, as close as possible to the exit point from the conduit, before removing it.</p> <p>Carefully roll or fold plastic sheeting covering any surface within the asbestos work area. Do not spill any collected dust or debris.</p> <p>If required, use damp rags or a vacuum cleaner used for asbestos work to clean any remaining contaminated sections of the asbestos work area.</p> <p>Place all debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container.</p> <p>Wet-wipe the external surfaces of the asbestos waste bags/container to remove any adhering dust before removing them from the asbestos work area.</p>
<b>Carry out personal decontamination in a designated area</b>	<p>If using disposable coveralls, clean the coveralls while still wearing RPE using a vacuum cleaner used for asbestos work, damp rag or fine water spray. Clean RPE with a wet rag or cloth.</p> <p>While still wearing RPE, remove coveralls, turning them inside out to trap any remaining contamination and then place them into a labelled asbestos waste bag.</p> <p>Remove RPE.</p> <p>If the RPE is reusable, inspect it to make sure it is not contaminated, clean it with a wet rag and store in a clean container.</p> <p>If disposable, place the RPE in a labelled asbestos waste bag or waste container.</p>
<b>Clearance procedure</b>	<p>Visually inspect the asbestos work area to make sure it has been properly cleaned.</p> <p>Clearance air monitoring is not normally required for this task.</p> <p>Dispose of all waste as asbestos waste.</p>

**SAFE WORK PRACTICE THREE: WORKING ON ELECTRICAL MOUNTING BOARDS CONTAINING ASBESTOS**

This safe work practice is designed to comply with regulation 7(2)(h): *maintenance and servicing work involving ACM in accordance with these regulations.*

Depending on the type of asbestos-related work, follow the requirements outlined in Asbestos Regulations 47 to 53.

In addition to this Safe Work Practice, follow the information contained in the following Parts of the code (where applicable):



All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

**Equipment that may be required before starting work (in addition to what is needed for the task)**

- > a hand drill or a low-speed battery-powered drill or drilling equipment
- > battery-powered drills should be fitted with a LEV dust control hood wherever possible. If this is not practicable and other dust control methods, such as pastes and gels, are unsuitable, use shadow vacuuming techniques
- > tape
- > warning signs and/or barrier tape
- > disposable cleaning rags
- > a plastic bucket of water and/or a misting spray bottle
- > spare PPE
- > a suitable asbestos waste container
- > 200 mm plastic sheeting
- > a vacuum cleaner used for asbestos work.

**PPE**

- > protective clothing and RPE
  - it is likely that P2 RPE will be adequate for this task if the person doing the work follows the Safe Work Practice.

**Preparing the asbestos work area**

As the work area will involve electrical hazards, have controls in place to prevent electrocution.

Have appropriately marked asbestos waste disposal bags available.

Carry out the work with as few people present as possible.

Segregate the asbestos work area to make sure unauthorised personnel cannot enter (eg use warning signs and barrier tape at all entry points). The distance for segregation should be determined by a risk assessment.

Use plastic sheeting secured with tape to cover any surface within the work area that could become contaminated.

Have adequate lighting to do the job safely.

Do not working in windy environments where asbestos fibres can be redistributed.

If using a bucket of water, do not re-soak used rags in the bucket as this will contaminate the water. Either fold the rag so a clean surface is exposed or use another rag.

<b>Work on electrical mounting panels</b>	<p>If the panel is not friable, maintenance and service work may include:</p> <ul style="list-style-type: none"> <li>&gt; replacing asbestos-containing equipment with non-asbestos equipment</li> <li>&gt; operating main switches and individual circuit devices</li> <li>&gt; pulling/inserting service and circuit fuses</li> <li>&gt; bridging supplies at meter bases</li> <li>&gt; using testing equipment</li> <li>&gt; accessing the neutral link</li> <li>&gt; installing new components/equipment.</li> </ul>
<b>Decontaminating the asbestos work area and equipment</b>	<p>Use damp rags to clean the equipment. Consider electrical risks.</p> <p>Carefully roll or fold any plastic sheeting used to cover surfaces in the asbestos work area. Do not spill any collected dust or debris.</p> <p>If there is an electrical hazard, use a vacuum cleaner used for asbestos work to remove any dust from the mounting panel and other visibly contaminated sections of the asbestos work area.</p> <p>If there is no electrical hazard, wet-wipe with a damp rag to remove minor amounts of dust.</p> <p>Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container.</p> <p>Wet-wipe the external surfaces of the asbestos waste bags/container to remove any adhering dust before removing them from the asbestos work area.</p>
<b>Carry out personal decontamination in a designated area</b>	<p>If wearing disposable coveralls, clean the coveralls while still wearing RPE using a vacuum cleaner used for asbestos work, damp rag or fine water spray. Clean RPE with a wet rag or cloth.</p> <p>While still wearing RPE, remove coveralls, turning them inside out to trap any remaining contamination and then place them into a labelled asbestos waste bag.</p> <p>Remove RPE.</p> <p>If the RPE is reusable, inspect it to make sure it is not contaminated, clean with a wet rag and store in a clean container.</p> <p>If disposable, cleaning is not required but RPE must be placed in a labelled asbestos waste bag or waste container.</p>
<b>Clearance procedure</b>	<p>Visually inspect the asbestos work area to make sure it is clean.</p> <p>Clearance air monitoring is not normally required for this task.</p> <p>Dispose of all waste as asbestos waste.</p>

**SAFE WORK PRACTICE FOUR: INSPECTING ASBESTOS FRICTION MATERIALS**

This safe work practice is designed to comply with regulation 7(2)(h): *maintenance and servicing work involving ACM in accordance with these regulations.*

Depending on the type of asbestos-related work, follow the requirements outlined in Asbestos Regulations 47 to 53.

In addition to this Safe Work Practice, follow the information contained in the following Parts of the code (where applicable):



All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

**Equipment that may be required before starting work (in addition to what is needed for the task)**

- > a misting spray bottle
- > duct tape
- > warning signs and/or barrier tape
- > disposable cleaning rags
- > a bucket of water and detergent
- > spare PPE
- > a suitable asbestos waste container
- > a catch tray or similar container
- > a vacuum cleaner used for asbestos work.

**PPE**

- > protective clothing and RPE
  - it is likely that P2 RPE will be adequate for this task, if the worker follows the safe work procedure.

**Preparing the asbestos work area**

- Have appropriately marked asbestos waste disposal bags available.
- Carry out the work with as few people present as possible.
- Conduct a risk assessment to determine whether to segregate the asbestos work area.
- Make sure unauthorised personnel cannot enter by using barrier tape and/or warning signs.
- Use a suitable collection device if the work will be carried out to collect any debris/ run-off.
- Make sure there is adequate lighting.
- Do not work in windy environments where asbestos fibres can be redistributed.
- If using a bucket of water, do not re-soak used rags in the bucket as this will contaminate the water. Either fold the rag so a clean surface is exposed or use another rag.

**Inspecting asbestos friction materials**

- Use a misting spray bottle to wet down any dust. If the spray equipment disturbs asbestos, use other wetting agents (eg a water-miscible degreaser or a water/detergent mixture).
- Use the wet method if practicable, but if this is not possible, use the dry method.

	<p><b>WET METHOD:</b></p> <p>Use the misting spray bottle to wet down any visible dust.</p> <p>Use a damp rag to wipe down the wheel or automobile part before removing it. Keep the dust wet to prevent atmospheric contamination.</p> <p>Use hand tools instead of power tools to reduce generating airborne fibres.</p> <p>Partially open the housing and softly spray the inside with water with the misting spray bottle. Control any dust, debris or water spillage (eg capture run-off in a container) and either filter it or dispose of it as asbestos waste.</p> <p>Open the housing and clean all asbestos parts using a damp rag, capturing all run-off water in an asbestos waste container.</p> <p><b>DRY METHOD:</b></p> <p>Place a tray under the components to catch dust or debris from the housing or components during the inspection and dispose of any material as asbestos waste.</p> <p>Use a vacuum cleaner used for asbestos work to remove asbestos from the brakes and rims or other materials before carrying out the inspection.</p>
<b>Decontaminating the asbestos work area and equipment</b>	<p>Use damp rags to clean the equipment, including the dust collection tray.</p> <p>If necessary, use damp rags or a vacuum cleaner used for asbestos work to clean any remaining visibly contaminated sections of the asbestos work area.</p> <p>Place debris, used rags and other waste in the asbestos waste bags/container.</p> <p>Wet-wipe the external surfaces of the asbestos waste bags/container to remove any dust before removing them from the asbestos work area.</p>
<b>Carry out personal decontamination in a designated area</b>	<p>If wearing disposable coveralls, clean the coveralls and RPE while still wearing them using a vacuum cleaner used for asbestos work, damp rag or fine water spray. Clean RPE with a wet rag/cloth.</p> <p>While still wearing RPE, remove coveralls, turning them inside out to trap any remaining contamination and then place them into a labelled asbestos waste bag.</p> <p>Remove RPE.</p> <p>If the RPE is reusable, inspect it to make sure it is not contaminated, clean it with a wet rag and store in a clean container.</p> <p>If the RPE is disposable, place RPE in a labelled asbestos waste bag or waste container.</p>
<b>Clearance procedure</b>	<p>Visually inspect the asbestos work area to make sure it is clean.</p> <p>Clearance air monitoring is not normally required for this task.</p> <p>Dispose of all waste as asbestos waste.</p>



## APPENDIX G: RECOMMENDED SAFE WORK PRACTICES FOR ASBESTOS REMOVAL WORK

This Appendix provides guidance on how to perform specific asbestos removal tasks.

These Safe Work Practices are designed to comply with Asbestos Regulation 5(2)(c): *removal or disposal of asbestos or ACM, including demolition, in accordance with these regulations.*

Depending on the type of asbestos-related work, follow the requirements outlined in Asbestos Regulations 27 to 46, or Parts C, F and G of this code.

All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

The Safe Work Practices specified for asbestos removal work are:

<b>One</b>	Asbestos cement products
<b>Two</b>	Asbestos cement roof sheeting
<b>Three</b>	Removing bituminous (malthoid) products
<b>Four</b>	Removing ceiling tiles
<b>Five</b>	Removing gaskets and rope seals
<b>Six</b>	Removing pipe lagging using a glove back (small section)
<b>Seven</b>	Fire-retardant material
<b>Eight</b>	Removing decorative coatings

**Note 1:** The Safe Work Practices link to Parts of the code. They should not be read on their own. Depending on the type of asbestos removal work, follow the requirements outlined in Asbestos Regulations 27 to 46, and Parts A, C, F, G and H of this code.

**Note 2:** The Safe Work Practices reflect good practice. PCBUs can conduct asbestos removal work using different practices, but they must achieve or exceed the same levels of safety provided by these practices.

**Note 3:** This Appendix does not address other hazards that may be present at a workplace, such as falls from heights or electrical risks. These risks must also be identified and controlled.

**SAFE WORK PRACTICE ONE: REMOVING ACMs**

This safe work practice is designed to comply with regulation 7(2)(c): *removal or disposal of asbestos or ACM, including demolition, in accordance with these regulations.*

Depending on the type of asbestos removal work, follow the requirements outlined in Asbestos Regulations 27 to 46.

In addition to this Safe Work Practice, follow the information contained in the following Parts of the code (where applicable):



All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

<b>Information</b>	ACMs were used in a wide range of products as exterior flexible building boards, including roofing, shingles, exterior cladding on industrial, public and some domestic premises, corrugated/profile sheets as well as flat sheets.
<b>Removal</b>	<p>Measure and conduct an inspection of the ACMs to determine its area and condition. This will help determine whether or not the removal will require an asbestos removal licence.</p> <p>If possible, remove the ACM product whole. If some sections were damaged before removal, they can be strengthened with duct tape.</p> <p>Identify how the ACM is held in place, and use a method that will minimise airborne dust generation in removing the product. For example:</p> <ul style="list-style-type: none"> <li>&gt; fasteners: dampen then carefully remove using a chisel</li> <li>&gt; bolts: dampen then use bolt cutters (or an oxy torch) - do not use an angle grinder</li> <li>&gt; screws: dampen then carefully unscrew with a screwdriver</li> <li>&gt; nails: dampen then carefully lever the panel or punch through if absolutely necessary.</li> </ul> <p>Avoid breaking the ACM. If breakage is absolutely necessary to remove/dislodge the product, dampen the material and minimise breakage.</p> <p>Remove the ACM wet/damp by applying a fine water spray, unless this creates an electrical risk.</p> <p>Once removed from its position, spray the back of the product with a fine water spray. A fine water spray may need to be frequently applied, depending on the circumstances (for example, a very hot day) but be careful not to create a slip hazard.</p>

**SAFE WORK PRACTICE TWO: ASBESTOS CEMENT ROOF SHEETING**

This safe work practice is designed to comply with regulation 7(2)(c): *removal or disposal of asbestos or ACM, including demolition, in accordance with these regulations.*

Depending on the type of asbestos removal work, follow the requirements outlined in Asbestos Regulations 27 to 46.

In addition to this Safe Work Practice, follow the information contained in the following Parts of the code (where applicable):



All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

<b>Information</b>	Asbestos cement can become brittle with age, so any removal work on roofs must address the risk of fall hazards from the edge or through the roof. When wet, the roof will be slippery, especially if it is covered with lichen.
<b>Equipment</b>	<ul style="list-style-type: none"> <li>&gt; fall protection equipment</li> <li>&gt; lifting devices</li> <li>&gt; 200 µm thick plastic sheeting</li> <li>&gt; tape</li> <li>&gt; a bucket of water, or more as appropriate, and/or a misting spray bottle</li> <li>&gt; sealant</li> <li>&gt; warning signs and/or barrier tape</li> <li>&gt; appropriately marked asbestos waste disposal bags available</li> <li>&gt; vacuum cleaner used for asbestos work.</li> </ul>
<b>PPE</b>	<ul style="list-style-type: none"> <li>&gt; protective clothing and RPE</li> <li>&gt; spare PPE                             <ul style="list-style-type: none"> <li>- it is likely P2 RPE will be adequate for this task if the person doing the work follows the recommended Safe Work Practice.</li> </ul> </li> </ul>
<b>Preparing the removal area</b>	<p>Measure and conduct an inspection of the ACMs to determine its area and condition. This will help determine whether or not the removal will require an asbestos removal licence.</p> <p>If the work will be conducted at height, use appropriate control measures to prevent or arrest falls.</p> <p>Assess the asbestos cement for damage.</p> <p>Inspect the ceiling space for dust before work starts.</p> <p>Make sure people in the vicinity will be safe during and after the work. If it is warranted to control dust, use an enclosure.</p> <p>If working at a height, segregate the area below.</p> <p>Plastic sheeting needs to be appropriately fixed and taped beneath the roof to contain material that may enter the space below.</p> <p>Make sure fall prevention or arrest equipment is in place and used. Cover access/walking areas and skylights to prevent fall-through. Walking on the roof should be done using ply sheeting, roof ladders, walk boards or similar. This will also reduce the risk of accidental abrasive contact with the roof that releases fibres.</p> <p>Make sure plastic drop sheets are used below any areas where unwrapped sheets are removed or handled.</p>

**Removal**

Carry out the work with as few people present as possible.

Remove anchoring screws/bolts from the roofing sheets using screwdrivers, sockets or gripping tools. An oxy/acetylene torch or other similar device that will not damage the sheets may also be an option. Do not use angle grinders directly on the roof as it will damage the asbestos cement and cause fibre release.

Vacuum laps and beneath cappings with a vacuum cleaner used for asbestos work and spray with sealant.

Dust generation may be minimised by the following:

- > removing whole sheets
- > avoiding breaking sheets
- > use hand (not powered) tools with appropriate dust control methods such as a wet sealer or shadow vacuuming
- > treating the sheets with a sealant to reduce the release of asbestos fibres
  - wait until dry before removing the sheet because it may be slippery
  - once removed, either wet or treat the underside of the sheet.

Vacuum the ceiling space to collect accumulated dust.

Keep sheets flat and wrap on the roof to be hoisted down – consider the risk of overloading the roof.

Vacuum and collect loose material from the rafters, and the plastic sheeting. Spray the area with a sealant before fitting new roofing material.

Do not use compressed air, a water-blaster or any other high-pressure water to clean the material or surfaces.

Sheets can be passed by hand over short distances. Make sure ACM and ACD is not spread around by this process. In other circumstances, use suitable lifting devices.

When lowering the asbestos cement product to the ground, make sure this is done in a way that will minimise the generation of respirable dust. Do not use chutes, ramps or similar gravity-dependent devices.

If the removal area is greater than the size of an average domestic house or if considerable dust will be generated, consider using a full decontamination unit.

**SAFE WORK PRACTICE THREE: REMOVING BITUMINOUS (MALTHOID) PRODUCTS**

This safe work practice is designed to comply with regulation 7(2)(c): *removal or disposal of asbestos or ACM, including demolition, in accordance with these regulations.*

Depending on the type of asbestos removal work, follow the requirements outlined in Asbestos Regulations 27 to 46.

In addition to this Safe Work Practice, follow the information contained in the following Parts of the code (where applicable):



All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

<b>Information</b>	This material is regarded as non-friable and includes bitumen products like roofing felts and damp-proof courses that have been widely reinforced by the addition of asbestos, usually chrysotile paper. Bitumen-based wall and floor coverings were also produced.
<b>Removal</b>	<p>Measure and conduct an inspection of the ACMs to determine its area and condition. This will help determine whether or not the removal will require an asbestos removal licence.</p> <p>Some mastics used to stick to the bitumen products commonly had asbestos added to them for flexibility. Other sealants also had asbestos added to improve the product's performance.</p> <p>When removing bituminous products:</p> <ul style="list-style-type: none"> <li>&gt; seal access points (for example, skylights) with material like 200 µm plastic sheeting and tape</li> <li>&gt; if there are exhaust vents from gas-fired equipment in the area, it is dangerous to seal over them - turn the gas off if possible</li> <li>&gt; cut and remove manageable sections</li> <li>&gt; place cut pieces in a lined skip or wrap in plastic sheeting</li> <li>&gt; remove adhering material by dampening and gently scraping</li> <li>&gt; keep the removed pieces as intact as possible</li> <li>&gt; if using heating to soften the material so it can be peeled, it is important not to burn the material, as this can release respirable asbestos fibres. Excessive heating is also likely to generate toxic fumes and gases and generate a fire hazard</li> <li>&gt; collect all debris and dispose of waste according to the waste disposal procedures.</li> </ul>

## SAFE WORK PRACTICE FOUR: REMOVING CEILING TILES

This safe work practice is designed to comply with regulation 7(2)(c): *removal or disposal of asbestos or ACM, including demolition, in accordance with these regulations.*

Depending on the type of asbestos removal work, follow the requirements outlined in Asbestos Regulations 27 to 46.

In addition to this Safe Work Practice, follow the information contained in the following Parts of the code (where applicable):



All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

### Information

False ceiling tiles or suspended ceilings may need to be removed to perform maintenance work. If asbestos has been used on structural materials above a false ceiling there could be contamination on the upper surface of the tiles.

### Removal

Measure and conduct an inspection of the ACMs to determine its area and condition. This will help determine whether or not the removal will require an asbestos removal licence.

The minimum RPE suitable for this operation is P2 RPE. If large amounts of asbestos dust or debris are likely to be involved, workers should wear full-face air-purifying positive-pressure respirators and conduct the work as Class A licensed asbestos removal.

Cover any surface below the tiles that might be contaminated with plastic sheeting.

Lift the first tile carefully to minimise the disturbance of any asbestos fibres. Thoroughly vacuum and wet-wipe the top of each tile, where possible, before removing the other tiles.

If re-using non-asbestos ceiling tiles, cover them with plastic as they are removed from the ceiling to prevent further dust settling on them.

Wrap the asbestos ceiling tiles in a double layer of heavy-duty, 200 µm thick plastic sheeting.

**SAFE WORK PRACTICE FIVE: REMOVING GASKETS AND ROPE SEALS**

This safe work practice is designed to comply with regulation 7(2)(c): *removal or disposal of asbestos or ACM, including demolition, in accordance with these regulations.*

Depending on the type of asbestos removal work, follow the requirements outlined in Asbestos Regulations 27 to 46.

In addition to this Safe Work Practice, follow the information contained in the following Parts of the code (where applicable):



All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

<b>Information*</b>	Use this Safe Work Practice when removing gaskets and rope seals.
<b>Removal</b>	<p>Measure and conduct an inspection of the ACMs to determine its area and condition. This will help determine whether or not the removal will require an asbestos removal licence.</p> <p>When removing gaskets and rope seals:</p> <ul style="list-style-type: none"> <li>&gt; Shut down or isolate the plant or equipment.</li> <li>&gt; Dismantle the equipment carefully. Protect any other components with plastic sheeting.</li> <li>&gt; Confirm the plant and equipment has been made safe (pipework emptied, electrical supply isolated and equipment shutdown, etc).</li> <li>&gt; Unbolt or unscrew the flange or dismantle the equipment.</li> <li>&gt; Once accessible, dampen the asbestos with a fine water mist or similar. Continue dampening the asbestos as more of it is accessible.</li> <li>&gt; Ease the gasket or rope seal away with the scraper and place into the waste container positioned directly beside or beneath it. Keep the area damp and scrape away any residue.</li> <li>&gt; Use a vacuum cleaner used for asbestos work while scraping.</li> </ul>

\* The information section above was amended on 7 December 2016 by Amendment 2 to the *Approved Code of Practice for the Management and Removal of Asbestos* as approved by the Minister for Workplace Relations and Safety on 29 November 2016.

### SAFE WORK PRACTICE SIX: REMOVING PIPE LAGGING USING A GLOVE BAG (SMALL SECTION)

This safe work practice is designed to comply with regulation 7(2)(c): *removal or disposal of asbestos or ACM, including demolition, in accordance with these regulations.*

Depending on the type of asbestos removal work, follow the requirements outlined in Asbestos Regulations 27 to 46.

In addition to this Safe Work Practice, follow the information contained in the following Parts of the code (where applicable):



All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

#### Information

Asbestos was widely used to insulate pipes, boilers and heat exchangers, or sealed with a hard plaster (often asbestos-containing) to protect against knocks and abrasion.

Other types of asbestos-containing felts, blankets, tapes, ropes and corrugated papers were also used.

#### Removal

**A Class A licensed asbestos removalist must perform the asbestos removal work.**

For bends and joins, make sure the plant and equipment has been made safe (for example, pipework emptied, electrical supply isolated and equipment shut down).

Set up/attach the glove bag and perform the removal work as described in this code.

Remove and dispose of waste according to the relevant sections of this code.



**SAFE WORK PRACTICE SEVEN: FIRE-RETARDANT MATERIAL**

This safe work practice is designed to comply with regulation 7(2)(c): *removal or disposal of asbestos or ACM, including demolition, in accordance with these regulations.*

Depending on the type of asbestos removal work, follow the requirements outlined in Asbestos Regulations 27 to 46.

In addition to this Safe Work Practice, follow the information contained in the following Parts of the code (where applicable):



All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

<p><b>Information</b></p>	<p>These are normally coatings sprayed or trowelled onto reinforced concrete or steel columns or beams as fireproofing. Sprays were also commonly used on the underside of ceilings for fireproofing and sound and thermal insulation in many high-rise premises. Warehouses and factories commonly had sprayed asbestos applied to walls, ceilings and metal support structures for fireproofing.</p> <p>Some fire doors contained loose asbestos insulation sandwiched between the wooden or metal facings to give them the appropriate fire rating. Loose asbestos was also packed around electrical cables, sometimes using chicken wire to contain it.</p> <p>Mattresses containing loose asbestos were widely manufactured for thermal insulation. Acoustic insulation has been provided between floors with loose asbestos in paper bags, and in some areas near removal works loose asbestos has been used as a readily available form of loft insulation.</p> <p>Asbestos textiles were manufactured for primary heat protection (for example, insulation tapes and ropes) or fire protection uses (for example, fire blankets, fire curtains and fire-resistant clothing). Textiles were also used widely as a reinforcing material in friction products/composites.</p>
<p><b>Removal</b></p>	<p>It will depend on where the fire-retardant material is located and how much material there is as to how the removal process is conducted. However, this type of asbestos is friable and <b>a Class A licensed asbestos removalist must perform the asbestos removal work.</b></p> <p>Develop an asbestos removal control plan.</p> <ul style="list-style-type: none"> <li>&gt; Establish the extent of the removal area and move all items out of the area or cover them with 200 µm plastic sheeting if they could be contaminated during the removal work.</li> <li>&gt; Develop an enclosure that allows smooth flow of air from the decontamination unit to the NPUs. In constructing the enclosure, pay particular attention to penetrations through the floor and ceiling/roof. Set up the enclosure and decontamination unit, and remove and dispose of asbestos.</li> <li>&gt; Make sure all air conditioning equipment has been shut and isolated/blanked from this area.</li> <li>&gt; Keep regular checks on the NPUs and decontamination unit. A licensed asbestos assessor must conduct/control air monitoring throughout the asbestos removal work.</li> <li>&gt; Clearance monitoring and a clearance certificate is required before re-entry into the asbestos removal area.</li> </ul>

## SAFE WORK PRACTICE EIGHT: REMOVING DECORATIVE COATINGS

This safe work practice is designed to comply with regulation 7(2)(c): *removal or disposal of asbestos or ACM, including demolition, in accordance with these regulations.*

Depending on the type of asbestos removal work, follow the requirements outlined in Asbestos Regulations 27 to 46.

In addition to this Safe Work Practice, follow the information contained in the following Parts of the code (where applicable):



All workplace health and safety risks need to be managed in accordance with the Health and Safety at Work Act 2015.

### Removal

Measure and conduct an inspection of the ACMs to determine its area and condition. This will help determine whether or not the removal will require an asbestos removal licence.

Carry out the work with as few people present as possible.

#### WET THE CEILING:

Before and during removal, thoroughly saturate ACM with water to keep asbestos fibres out of the air.

#### TEST FOR WETNESS:

Once inside the asbestos work area, test for wetness by scraping off a few centimetres of ceiling material. If it is thoroughly wet to the gib board or other substrate, begin removing. If the material is not thoroughly wet, re-apply water and allow time to soak in.

#### TAKING DOWN THE TEXTURED COATING:

Cushion ladder legs by wrapping them with rags or a similar material to prevent penetrating the plastic sheeting on the floor.

Using putty or wallboard taping knives, thoroughly scrape the ACM from the ceiling, letting the debris to fall onto the plastic sheets.

Wipe remaining residue off with clean wet rags. Turn rags often to wipe with a clean surface. Do not re-soak rags. Dispose of rags in an asbestos waste disposal bag.

Use clean rags to wet-wipe the exposed portion of the wall between the top of the duct tape and ceiling.

Always keep plastic on the floor and walls wet by periodically spraying them to prevent debris from drying and becoming airborne.

Keep asbestos debris wet until packaged and sealed for disposal.

# Appendix 4 Site-Specific Management Decisions

Refer to the online Asbestos Register for current site-specific management information



# Appendix 5 Asbestos Management Survey

Available on request from Z Environmental Manager. A summary of asbestos identified in the survey is contained in Appendix 4.

