APPROVED
CODE OF PRACTICE

Management and Removal of Asbestos

NOVEMBER 2016

New Zealand Government

WORKSAFE
NEW ZEALAND | MAHI HAUMARU AOTEAROA

ACKNOWLEDGEMENTS

WorkSafe New Zealand would like to thank the many people and organisations who contributed to this code's development. In particular, WorkSafe acknowledges the assistance from the members of the Asbestos Advisory Group.

This code was based on Safe Work Australia's codes of practice *How to Safely Remove Asbestos* and *How to Manage and Control Asbestos in the Workplace*. WorkSafe acknowledges and thanks Safe Work Australia for their co-operation and advice.

Figures 7 to 10 were based on drawings obtained from: www.asbestos.com

NOTICE OF APPROVAL

The *Code of Practice for the Management and Removal of Asbestos* sets out WorkSafe New Zealand's expectations in relation to identifying and controlling the work health and safety risks arising from asbestos, in order to help PCBUs and workers achieve compliance with the Health and Safety at Work Act 2015 and the Health and Safety at Work (Asbestos) Regulations 2016.

WorkSafe New Zealand developed the code with input from unions, employer organisations, other key stakeholders and the public.

Together with the right attitudes and actions of PCBUs and workers focused on improving health and safety practices at workplaces, the code will contribute to a 50% reduction in asbestos-related disease by 2040.

Accordingly I, Michael Allan Woodhouse, being satisfied that the consultation requirements of section 222(2) of the Health and Safety at Work Act 2015 have been met, approve the *Code of Practice for the Management and Removal of Asbestos* under section 222 of the Health and Safety at Work Act 2015.

Hon Michael Woodhouse
Minister for Workplace Relations and Safety

26 September 2016

FOREWORD

As the Chair of the Board of WorkSafe New Zealand, I am pleased to introduce this *Approved Code of Practice for the Management and Removal of Asbestos*.

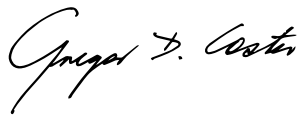
It was developed with input from our social partners, industry and public consultation.

This Approved Code of Practice will help duty holders comply with their requirement to provide healthy and safe work for everyone who works in the asbestos industry. It will also help make sure that other people do not have their health and safety adversely affected by the work conducted.

A healthy and safe workplace makes good sense. An organisation with health and safety systems that involves its workers can experience higher morale, better worker retention, increased worker attraction and – most importantly – workers who return home to their families, healthy and safe, after they finish their work.

Organisations benefit from having less downtime from incidents and higher productivity. An organisation known for its commitment to health and safety can benefit from its improved reputation.

We must all work together to make sure that everyone who goes to work comes home healthy and safe. By working together, we'll bring work-related harm down by making sure that all work conducted is healthy and safe work.



Professor Gregor Coster, CNZM
Chair, WorkSafe New Zealand

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PART A

INFORMATION FOR EVERYONE

IN THIS PART:

Section 1: Introduction

Section 2: Asbestos in New Zealand

Section 3: How the legislation applies to asbestos

Section 4: Permitted types of asbestos work

Section 5: Airborne contamination standard for asbestos and trace levels

PART A

01/

INTRODUCTION

IN THIS SECTION:

1.1 Background
1.2 Purpose
1.3 Legal status of this code
1.4 How to read this code
1.5 Scope
1.6 Audience
1.7 Key phrase: 'work involving asbestos'
1.8 Key phrase: 'so far as is reasonably practicable'
1.9 PCBUs and other duty holders
1.10 When multiple PCBUs are involved in an asbestos matter
1.11 Abbreviations
1.12 Interpreting the requirements in the code

1.1 BACKGROUND

Approved codes of practice (codes) set out WorkSafe New Zealand's (WorkSafe) expectations about how to comply with legal duties imposed by the Health and Safety at Work Act 2015 (the Act) and regulations made under the Act.

This code is designed to reflect the requirements of the Act and the Regulations as they apply to managing the health and safety risks of asbestos.

In particular, it reflects the requirements set out in the Health and Safety at Work (Asbestos) Regulations 2016 (the Asbestos Regulations) and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016 (together, the Regulations).

1.2 PURPOSE

This code sets out WorkSafe's expectations for carrying out work involving asbestos safely. It provides information on the following topics, among others:

> permitted types of work that involve asbestos
> airborne contamination standard for asbestos and trace level
> identifying and managing asbestos and asbestos-containing material (ACM) in the workplace
> prohibited and restricted tools and equipment
> personal protective equipment and health monitoring
> training
> asbestos-related work
> asbestos removal work
> licensed asbestos assessors.

1.3 LEGAL STATUS OF THIS CODE

The Minister for Workplace Relations and Safety approved this code under the Act. It can be used in court as evidence of whether the relevant duties under health and safety law were complied with. Courts may have regard to this code:

> as evidence of what is known about the hazards and risks of work involving asbestos, and what controls apply to the risks
> to decide what is reasonably practicable when meeting the health and safety duties associated with work involving asbestos.

Following the code might not be the only way of complying with the Act and the Regulations. Duty holders may adopt other practices to achieve compliance, as long as they provide a level of work health and safety equivalent to or higher than the standard in this code.

1.4 HOW TO READ THIS CODE

This code applies to persons conducting a business or undertaking (PCBUs) with different legal responsibilities for managing the work-related health and safety risks of work involving asbestos. Some PCBUs will have multiple duties. Some may have one duty, but different Parts of the code may apply. Other PCBUs will have 'shared duties', where a duty could apply to multiple PCBUs who all have to make sure it is carried out.

Figure 1 shows how PCBUs can find the Parts of the code that apply to them. The code is also colour-coded to help readers find the relevant sections.

WorkSafe recommends that all duty holders familiarise themselves with all Parts of the code.

Figure 1: The code parts

AN EXAMPLE TO DEMONSTRATE HOW THE CODE MIGHT APPLY TO A PCBU

White Demolition Limited is a Class A licensed asbestos removalist. It operates out of a building that has a roof made from 'Super Six' asbestos roofing material.

White Demolition Limited has duties as a **licensed asbestos removalist**, so the following Parts of the code apply:

A C G H

White Demolition Limited also has duties as a workplace PCBU with asbestos in the workplace, so this part of the code also applies:

B

1.5 SCOPE

This section describes what topics are covered in the code and specifies particular topics that are not covered.

IN SCOPE	
Permitted types of work involving asbestos	Managing asbestos risks
Asbestos-related work	Tools and equipment
Asbestos removal work	Personal protective equipment
Air monitoring requirements	Airborne contamination standard for asbestos and trace level
Clearance inspection	Asbestos records
Health monitoring	Training
Demolition and refurbishment	Naturally occurring asbestos
NOT IN SCOPE	
Identifying asbestos by conducting asbestos surveys	
Transporting ACMs or asbestos waste (except where section 18 of this code applies)	
Asbestos removal and asbestos assessor licences (except where sections 23 and 24 of this code applies)	
Working with asbestos-contaminated soil (except where section 19 of this code applies).	

Table 1: Scope of the code

1.6 AUDIENCE

This code is structured around the Asbestos Regulations. Most of the legal requirements apply to PCBUs, asbestos removalists and licensed asbestos assessors.

However, other people with duties under the Act or the Regulations will benefit from reading this code.

This code is designed primarily for:

> PCBUs

> PCBUs who manage or control workplaces (workplace PCBUs)

> PCBUs carrying out asbestos removal

> PCBUs carrying asbestos-related work

> licensed asbestos assessors.

Visit WorkSafe's website for asbestos guidance developed for other duty holders: www.worksafe.govt.nz

1.6.1 PEOPLE WORKING ON THEIR OWN HOME THAT MAY CONTAIN ASBESTOS

The Act, Regulations and the code do not apply to home occupants who conduct 'do-it-yourself' (DIY) work on their own homes.

However, WorkSafe recommends that PCBUs with training and experience in work involving asbestos should conduct this work, because of the health risks involved.

This code can help home occupants make informed decisions about whether to engage a PCBU to conduct work involving asbestos, and what training and experience they should have to do the work safely.

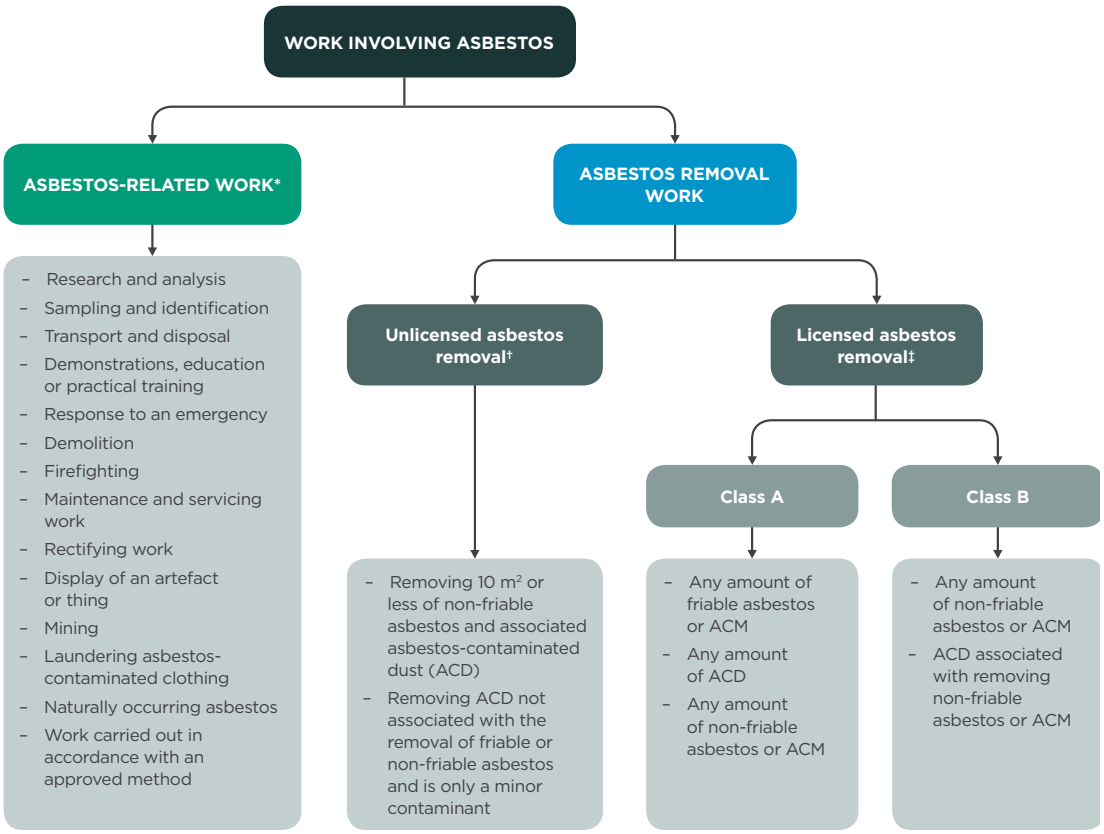
Note: Landlords are PCBUs and must comply with the Act and Regulations.

1.7 KEY PHRASE: 'WORK INVOLVING ASBESTOS'

When reading this code, it is important to understand whether 'work involving asbestos' is 'asbestos-related work' or 'asbestos removal work'.

This is because some regulations only apply to asbestos-related work, and others only apply to asbestos removal work.

Figure 2 shows the types of permitted work involving asbestos and where they fit.



Note: this diagram excludes work involving asbestos-contaminated soil.

* See Part E for more information.

† See section 29.3 for more information.

‡ See section 24 for more information.

Figure 2: Breakdown of work involving asbestos

1.8 KEY PHRASE: 'SO FAR AS IS REASONABLY PRACTICABLE'

Throughout the code, many of the described legal requirements come with the phrase 'so far as is reasonably practicable.'

For example, the primary duty of care in the Act requires a PCBU to ensure the health and safety of workers 'so far as is reasonably practicable.' In this context, something is reasonably practicable if it is reasonably able to be done to ensure health and safety, having weighed up and considered all relevant matters, including:

1. How likely are any hazards or risks to occur?
2. How significant could the harm that might result from the hazard or risk be?
3. What is known or ought to reasonably be known about the hazards or risks?
4. What are the ways of eliminating or minimising the risks?
5. How available and suitable are they?

Lastly, weigh up these matters with the cost:

1. What are the costs of available ways of eliminating or minimising the risk?
2. Is the cost grossly disproportionate to the risk?

For more information, see WorkSafe's Special Guide *Introduction to the Health and Safety at Work Act 2015*, available from WorkSafe's website: www.worksafe.govt.nz

1.9 PCBUS AND OTHER DUTY HOLDERS

Throughout the code, various duty holders must do or provide certain things to make sure work involving asbestos is done safely.

Many duty holders are PCBUs, which can make for confusing reading when two or more PCBUs may have the same or similar duties.

Table 2 lists the various duty holders referred to in this code.

Note: The terms may differ to that in the legislation.

DUTY HOLDER	NOTES
PCBU who manages or controls a workplace **Otherwise known in this code as the 'workplace PCBU.'**	In this code, generally refers to the PCBU in charge of the workplace where asbestos is or may be present. Some workplaces will have more than one of this type of PCBU, such as multi-tenanted buildings.
PCBU at a workplace where asbestos-related work is being carried out	Usually this is the workplace PCBU, but it could also be a PCBU carrying out the asbestos-related work, or any other PCBU at the workplace when this work is conducted. Some workplaces will have more than one of this type of PCBU.
PCBU for which asbestos-related work is being carried out	Usually this is the workplace PCBU that engaged another PCBU to do asbestos-related work. It could also be another PCBU that arranged for this work to be carried out. Some workplaces will have more than one of this type of PCBU.
PCBU carrying out asbestos-related work	This is the PCBU who does asbestos-related work in a workplace or a home.
PCBU carrying out demolition or refurbishment of a home **Note:** In workplaces, the workplace PCBU has the duties for identifying and removing asbestos before demolition or refurbishment is carried out, and for developing an emergency plan.	This is the PCBU who conducts demolition or refurbishment activities in a home that has asbestos in it.

DUTY HOLDER	NOTES
PCBU that commissions the removal of asbestos	Usually this is the workplace PCBU who will commission an asbestos removalist to remove asbestos. The workplace PCBU could be, for example, the building owner, or manager of a business operating in the building.
PCBU who supplies plant, substances or structures	This is the PCBU who sells or otherwise supplies plant, substances or structures for use in a workplace.
Asbestos removalist	This is a PCBU who removes asbestos. It can be either a licensed or unlicensed asbestos removalist.
Licensed asbestos removalist	This is a PCBU that has either a Class A or Class B licence for asbestos removal.
Licensed asbestos assessor	This is a person who is licensed to conduct air monitoring and clearance inspections for friable and non-friable asbestos projects.
Competent person conducting clearance inspections	This is a person who can conduct clearance inspections for non-friable asbestos projects.

Table 2: Asbestos duty holders

For a more detailed explanation of PCBUs and their legal obligations, see WorkSafe's Special Guide *Introduction to the Health and Safety at Work Act 2015*.

See **Appendix K** for the legal definition of 'person conducting a business or undertaking' (PCBU).

1.10 WHEN MULTIPLE PCBUS ARE INVOLVED IN AN ASBESTOS MATTER

When more than one PCBU has the same health and safety duty in an asbestos matter (overlapping duties), all PCBUs must, so far as is reasonably practicable, consult, co-operate and co-ordinate activities with one another over the same matter.

PCBUs do not need to duplicate each other's efforts.

Consultation will help avoid unnecessary duplication of effort, and help to prevent gaps in managing health and safety risks. It can help PCBUs reach a common understanding and establish clear roles, responsibilities and actions.

A PCBU cannot contract out of its duties, but can make reasonable agreements with other PCBUs to meet the duties. It still has the responsibility to meet its duties.

The PCBUs should also monitor one another to make sure everyone is doing what they agreed.

1.10.1 WORKING OUT THE EXTENT OF EACH PCBU's DUTY

The extent of the duty to manage asbestos-related health and safety risks depends on each PCBU's ability to influence and control the matter. This is likely to be different from PCBU to PCBU.

It will depend on what ability each PCBU has, or would be expected to have, to influence and control the asbestos risks. The more influence and control a PCBU has over an asbestos health and safety risk, the more responsibility it is likely to have.

All involved PCBUs should:

> discuss what work activities are being, or going to be, carried out
> agree on the degree of influence and control each PCBU has
> agree on who will manage what, and how
> agree on the use of shared facilities, if applicable
> monitor and check how things are going regularly.

Example

R.B. Advertising Limited (RBAL) works in an office leased from J.D. Property Management Limited (JDPL). They manage the site for owner P.M. Enterprises Limited (PMEL).

RBAL want to expand their office, and got permission to do this from PMEL via JDPL.

When RBAL discusses the planned work with JDPL, it is established the work may disturb asbestos. The asbestos needs to be identified.

The duty to make sure the asbestos is identified rests with the workplace PCBU and the PCBU intending to carry out the refurbishment.

WHO IS THE WORKPLACE PCBU?

All three organisations are the 'workplace PCBU', since they have a level of management or control over all or part of the workplace. Each one has the duty to make sure the asbestos is identified.

WHAT SHOULD THE PCBUS DO?

All three workplace PCBUs and the PCBU intending to carry out the refurbishment have to work out among themselves how they will make sure the asbestos is identified.

In practice, one PCBU ('lead PCBU') may agree to take the lead in arranging to have the asbestos identified. However, the other PCBUs must make sure this has been successfully done to confirm they met the duty. They cannot transfer the duty to the lead PCBU.

For more information about overlapping duties, see WorkSafe's Special Guide *Introduction to the Health and Safety at Work Act 2015*, available from WorkSafe's website: www.worksafe.govt.nz

1.11 ABBREVIATIONS

Some lengthy phrases have been simplified into abbreviations. Table 3 lists these abbreviations and what they mean.

ABBREVIATION	TERM OR PHRASE
ACD	Asbestos-contaminated dust or debris
ACM	Asbestos-containing material
Asbestos Regulations	The Health and Safety at Work (Asbestos) Regulations 2016
The Act	The Health and Safety at Work Act 2015
GRWM Regulations	The Health and Safety at Work (General Risk and Workplace Management) Regulations 2016
PCBU	A person conducting a business or undertaking (see Table 2 for a list of the PCBUs with duties in this code)
SQEP	Suitably qualified and experienced practitioner (soil)
The Regulations	The Asbestos Regulations and the GRWM Regulations (together)
Workplace PCBU	A PCBU who manages or controls a workplace

Table 3: Commonly-used abbreviations in the code

1.12 INTERPRETING THE REQUIREMENTS IN THE CODE

TERM	DEFINITION
Must	legal requirement that has to be complied with
Needs to, or content written as a specific direction (eg 'Make sure the...')	a practice or approach that has to be followed to comply with this code – WorkSafe's minimum expectation (subject to the legal status of this code described in section 1.2)
Should	recommended practice or approach, not mandatory to comply with the Act or this code
May	permissible practice or approach, not mandatory to comply with the Act or this code

Table 4: Requirements in this code

PART A

02/

ASBESTOS IN NEW ZEALAND

IN THIS SECTION:

2.1 Introduction

2.2 What is asbestos?

2.3 A brief history of asbestos

2.4 Asbestos and New Zealand

2.5 Asbestos-related diseases

2.6 WorkSafe's National Asbestos Registers

2.1 INTRODUCTION

Asbestos is a major health threat to thousands of New Zealanders and millions of people around the world.

The goal of this code is to help duty holders minimise harm to people who work with asbestos until it is eventually eliminated. People living and working near asbestos and ACMs should expect their health to be protected as PCBUs and workers use safe practices to manage or remove asbestos.

This section of the code provides information and a background context for asbestos in New Zealand, including:

> what is asbestos?

> a brief history of asbestos

> where it may be found in New Zealand

> asbestos-related health effects and why we should be careful around it.

2.2 WHAT IS ASBESTOS?

'Asbestos' is a term describing naturally occurring fibrous silicate minerals (rock-forming minerals). There are two groups, and six common types:

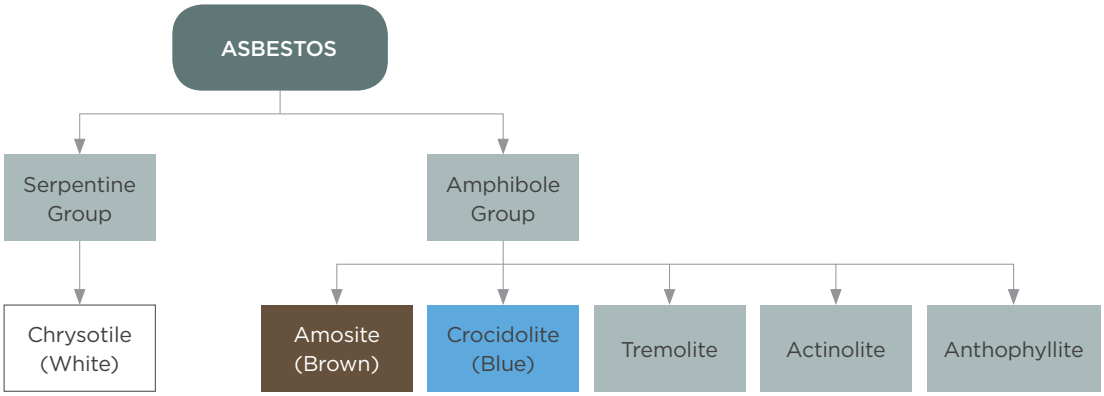


Figure 3: Types of asbestos

White asbestos was the most common form of asbestos used in New Zealand, followed by brown asbestos; and blue to a lesser extent.

Under a microscope, white asbestos looks different from brown and blue asbestos.

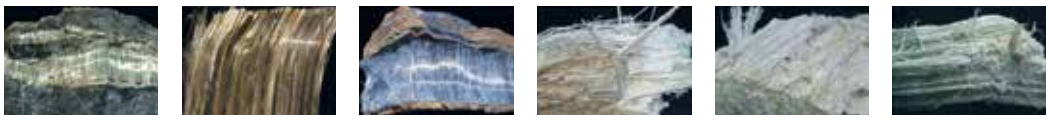
White asbestos has long, curly fibres, which are flexible enough to spin and weave into fabric. Its versatility made it the most common type of asbestos in building and household products.

Brown asbestos has harsh, spiky fibres. It was mostly mined in Africa, and was often used in asbestos cement sheet and pipe insulation. It was also used in insulating board, ceiling tiles and thermal insulation.

Blue asbestos is known for its excellent heat resistance and ability to repel water. It was mostly mined in South Africa, Bolivia and Australia. In South Africa it was called 'woolly stone.' It has straight, thin, blue fibres.

Blue asbestos was used to insulate steam engines, and is also found in some spray-on coatings, pipe insulation and cement products. It is brittle, and products containing blue asbestos often malfunction. This increases the potential of airborne asbestos exposure for people doing maintenance, repair and replacement work.

Blue asbestos is claimed to be the 'most dangerous asbestos' because its fibres are so thin. This makes them easy to inhale and lodge in the linings of a person's lungs. However, all types of asbestos should be treated with equal caution, because all of their fibres can be inhaled into the lungs.



Chrysotile (white) | Amosite (brown) | Crocidolite (blue) | Anthophyllite | Tremolite | Actinolite

Figure 4: *Asbestos Awareness Minerals* images courtesy of Asbestosrama

2.3 A BRIEF HISTORY OF ASBESTOS

Asbestos has been used for thousands of years. Archaeologists believe people living in the Stone Age (about 750,000 years ago) used asbestos in candle and lamp wicks.

Approximately two and a half thousand years ago in Finland, people used asbestos to strengthen clay pots and make them heat-resistant. Ancient Greeks and Romans wove asbestos into material for shrouds, tablecloths and napkins.

Even then, they knew asbestos was harmful. Greek geographer Strabo noticed slaves weaving asbestos into cloth had 'sickness in the lungs'. Pliny the Elder wrote about a crude respirator, made from goats' or lambs' bladders, that asbestos miners wore over their faces to try and protect themselves from airborne fibres.

During the Industrial Revolution, asbestos was mined and manufactured in massive amounts. People liked it because it was 'flameproof', waterproof and resistant to chemicals and electricity. Most importantly, it was malleable – an excellent product for insulating boilers and engines, and for building and binding things.

Once asbestos mining became mechanised, it became a cheap and widespread product. However, the link between asbestos and ill health was not thoroughly investigated until the early 20th century.

2.3.1 NELLIE KERSHAW'S LEGACY

The European medical profession and the United Kingdom's safety 'watchdog' helped raise awareness about asbestos and its link to health problems in the late 19th and early 20th centuries.

In 1924, Englishwoman Nellie Kershaw died at age 33 from pulmonary asbestosis. She worked in an asbestos mill until she was 31, unable to continue. Her doctor diagnosed her with 'asbestos poisoning'.

Figure 5: Nellie Kershaw Photograph courtesy of wikipedia.com

She was not eligible for state sickness benefits, so it was suggested that her employer, Turner Brothers Asbestos, should compensate her. They denied that asbestos was harmful and refused to pay her compensation.

After her death there was an inquest, and pathologist Dr Cooke said her lungs showed extensive fibrosis, and had mineral particles with sharp angles lodged in the tissue. He compared these particles with asbestos dust samples, and they matched. The coroner ruled that despite her employer's belief, Miss Kershaw died as a direct result of exposure to asbestos.

Dr Cooke wrote a paper on Miss Kershaw, and parliament set up an inquiry into the effects of asbestos dust on health. Cooke published *Occurrence of Pulmonary Fibrosis and other Pulmonary Affections in Asbestos Workers*, which concluded there was a definite link between asbestos-related disease and asbestos dust. In 1931, parliament passed the first Asbestos Industry Regulations.

2.4 ASBESTOS AND NEW ZEALAND

Officially, asbestos awareness in New Zealand started in the 1930s. In 1938, the *Report of the Interdepartmental Committee on Silicosis* linked asbestos with deadly lung conditions.

The government report said asbestosis is a disease similar to silicosis, and asbestos is capable of producing a 'deadly pulmonary disease.'

2.4.1 ASBESTOS USE

Many New Zealand workers were exposed to asbestos in railway workshops, in the building industry, shipping, sawmilling and asbestos cement industries. Wharf workers unloading asbestos from ships, fitters, electricians, boiler workers, carpenters, brake repairers and others were also exposed to asbestos.

Raw asbestos was first imported into New Zealand in the late 1930s. It was used to make products that comprised of asbestos mixed with cement. These products were manufactured until the mid-1980s.

In 1938, a factory opened in Auckland's Penrose that produced asbestos cement products. It continued running until 1987. At its peak production time (the mid-1970s), the factory employed up to 600 workers at any one time. They worked with white, brown and blue asbestos.

A factory that manufactured ACMs opened in Riccarton, Christchurch in 1943 and closed in 1974. It is estimated that between 900 and 2,000 workers were employed over the factory's lifetime.

New Zealand's first Asbestos Regulations did not come into effect until 1978.

2.4.2 ASBESTOS BAN

It became illegal to import blue and brown asbestos into the country in its raw form from 1984.[1] Asbestos-containing products (also known as ACMs) in New Zealand at the time were used until supplies ran out.

On 1 October 2016, it became illegal to import asbestos-containing products into New Zealand.[2]

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[1] Customs Import Prohibition (Asbestos) Order 1984.

[2] New Zealand Government. *Govt moves on asbestos-containing products*. Retrieved from: www.beehive.govt.nz/release/govt-moves-asbestos-containing-products

2.4.3 ROBIN MCKENZIE VS THE CROWN

Robin McKenzie, an electrical engineer with the New Zealand Electricity Department (NZED), was regularly exposed to asbestos at work.

He was diagnosed with mesothelioma in 1990, and was the first person to take legal action against the Crown in relation to his disease. He sued for two million dollars, settling out of court.

His plight attracted considerable media and public attention. He supported the introduction of a national database to assess the extent of asbestos-induced health problems in people who worked in asbestos environments. This was established in 1992.

He died in 1994.

Today, the Accident Compensation Act 2001 provides cover for lung cancer or mesothelioma caused by asbestos. This means people cannot initiate common law claims in court for asbestos-related diseases.

Figure 6: Robin McKenzie at Wellington Hospital with his wife Shirley on 17 April 1990[3]

The original photo caption read: '*Robin McKenzie, whose fatal asbestos-induced condition has sparked concern about the health of hundreds of other power station workers, entered Wellington Hospital today. Mr McKenzie, 70, of Karori, is to have an operation to drain and remove a tumour in his chest*.'

2.4.4 ASBESTOS IN BUILDING MATERIALS

Buildings built, altered or refurbished from 1940 until the mid-1980s are likely to contain ACMs.

Post-war production and the beginnings of local manufacturing created a significant increase in raw asbestos imports. Over 2,000 tonnes were imported every year in the late 1940s. This increased to 5,000 tonnes in the 1960s and 1970s, with the largest amount recorded at 12,500 tonnes in 1975.[4]

Buildings built after 1 January 2000 are less likely to contain ACMs, but some buildings built after this time may contain ACMs.

2.4.5 ASBESTOS IN THE WORKPLACE

Until the mid-1980s, asbestos was often used as a fire retardant and insulation. Examples are:

> insulating board
> friction linings
> fire doors
> gas or electric heaters
> fuse boxes
> gaskets
> lagging around pipes
> sprayed insulation
> brake linings.

[3] Photograph taken by Mark Round. Dominion Post (Newspaper): Photographic negatives and prints of the Evening Post and Dominion newspapers. Ref: EP/1990/1381/13-F. Alexander Turnbull Library, Wellington, New Zealand. http://natlib.govt.nz/records/22863334

[4] *Guide to Managing Asbestos in Soil* (2016) Wellington, BRANZ Ltd.

2.5 ASBESTOS-RELATED DISEASES

In 2010, an estimated 600-900 people died of work-related diseases in New Zealand. Of that number, around 170 people died of asbestos-related diseases, which made asbestos the single biggest cause of work-related disease deaths.[5]

Breathing in airborne asbestos fibres is a serious risk to health. Once the fibres are breathed in, they lodge in the lungs and may cause diseases like asbestosis, lung cancer and mesothelioma.

Based on studies so far, asbestos is not harmful to unborn children.

Most asbestos-related diseases take around 20 years before their symptoms start to show.

The health risks increase when:

> people inhale more fibres

> exposure is more frequent

> exposure occurs over a long period of time.

All types of asbestos can cause asbestos-related disease.

2.5.1 RELATIONSHIP BETWEEN ASBESTOS-RELATED DISEASES AND SMOKING

People who smoke are at risk of developing lung diseases, including lung cancer. For people who work with asbestos and smoke, the risk of developing lung cancer is much greater than from asbestos exposure alone. This means smokers who work with asbestos are more likely to develop an asbestos-related illness than non-smokers.

2.5.2 PLEURAL PLAQUES

Pleural plaques show as fibrous thickenings on the lungs' linings, called the pleura, or on the diaphragm. They take around 20 to 30 years to develop after a person's exposure to asbestos. While the plaques might harden (or calcify) over time, they do not usually cause health problems. However, people may experience pain or discomfort when they breathe.

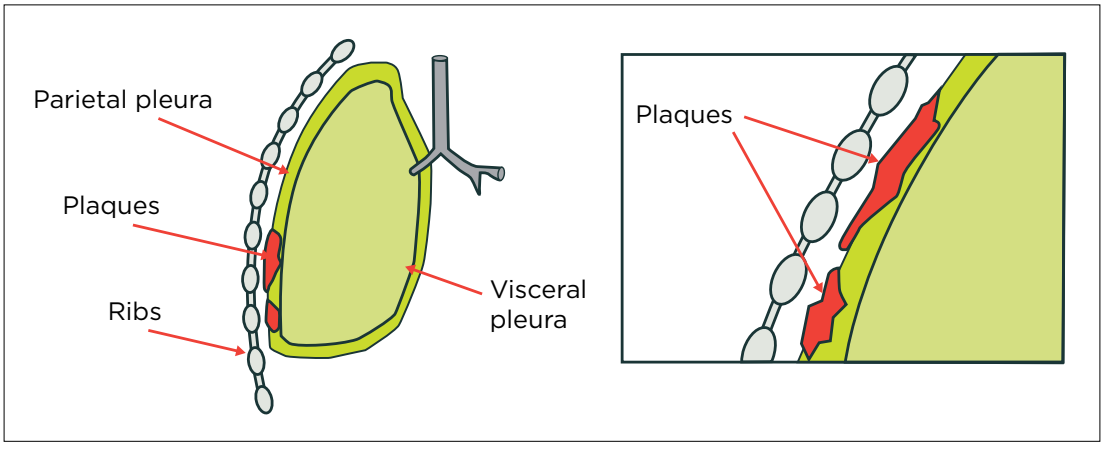


Figure 7: Pleural plaques between the ribs and parietal pleura

[5] Ministry of Business, Innovation and Employment. (2013). *Work-Related Disease in New Zealand. The State of Play in 2010*. Wellington, New Zealand.

2.5.3 PLEURAL THICKENING

Pleural thickening happens when the pleura scars, and as the scar tissue grows, it covers the lungs and closes off the space between the lungs and pleura. This causes difficulty in breathing and chest pain, but it is not a fatal disease.

Like pleural plaques, pleural thickening is caused by breathing in asbestos fibres. Over time, the fibres irritate their environment, causing the thickening or plaques to grow.

Pleural thickening can begin as little as a year after exposure to asbestos, but normally it takes 15 to 20 years to identify the disease.

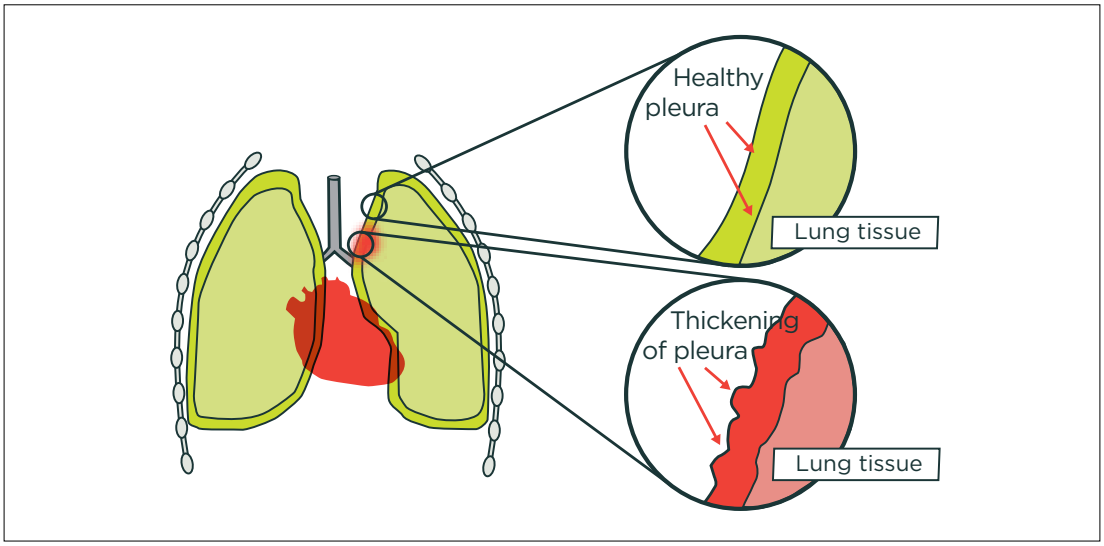


Figure 8: Comparison of healthy and thickened pleura

2.5.4 ASBESTOSIS

Asbestosis is a restrictive lung disease that can be fatal.

Asbestos fibres scar the lung tissue and cause pain and long-term breathing problems. As the disease progresses, the lungs progressively contract until they cannot expand fully for breathing. It takes many years to develop, and there is no known cure.

Another symptom is clubbed fingers, where the fingernail beds soften, the fingernails become misshapen and the fingernail ends bulge. This happens when there is a reduction of oxygenated blood to the fingers.

The lungs of people with asbestosis usually show a high asbestos fibre count, which is associated with high occupational exposure to asbestos.

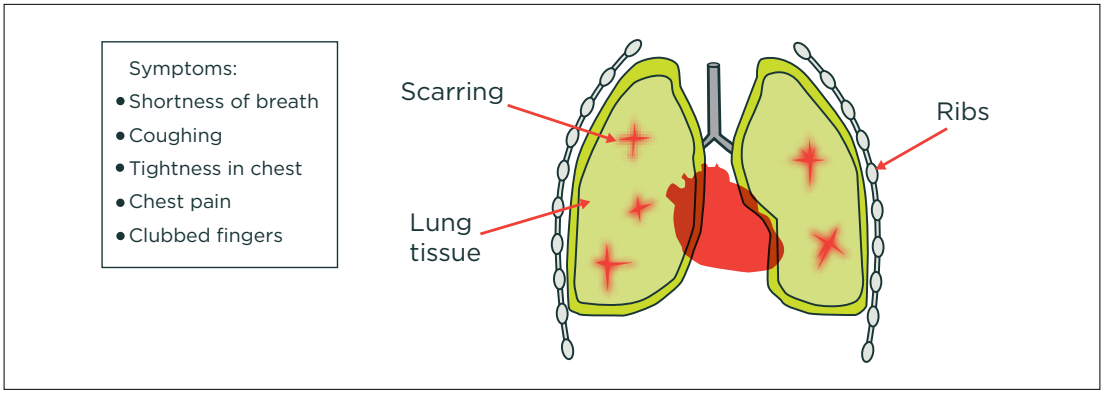


Figure 9: Asbestosis scarring on lung tissue

2.5.5 MESOTHELIOMA

Malignant mesothelioma is a fatal asbestos-related cancer. It affects the thin membranes around the lungs, abdominal cavities, heart and abdominal organs. When someone breathes in asbestos, the fibres lodge in the tissue surrounding the lungs. Over the years, the fibres damage the tissue at a cellular level, creating tumours.

It can take from 20 to 50 years before the signs of mesothelioma start to show. The early symptoms are so mild, most people do not seek medical attention until the disease is in its later stages. After diagnosis, most patients usually only have up to one year left to live. The survival rate for mesothelioma is low, but improves if people with a history of asbestos exposure seek early medical attention.

This disease has been found in people with relatively low exposure to asbestos, and so it is considered the most sensitive indicator of asbestos exposure in populations.[6]

[6] Office of the Prime Minister's Chief Science Advisor, Royal Society of New Zealand. (2015). *Asbestos exposure in New Zealand: Review of the scientific evidence of non-occupational risks*. Wellington, New Zealand.

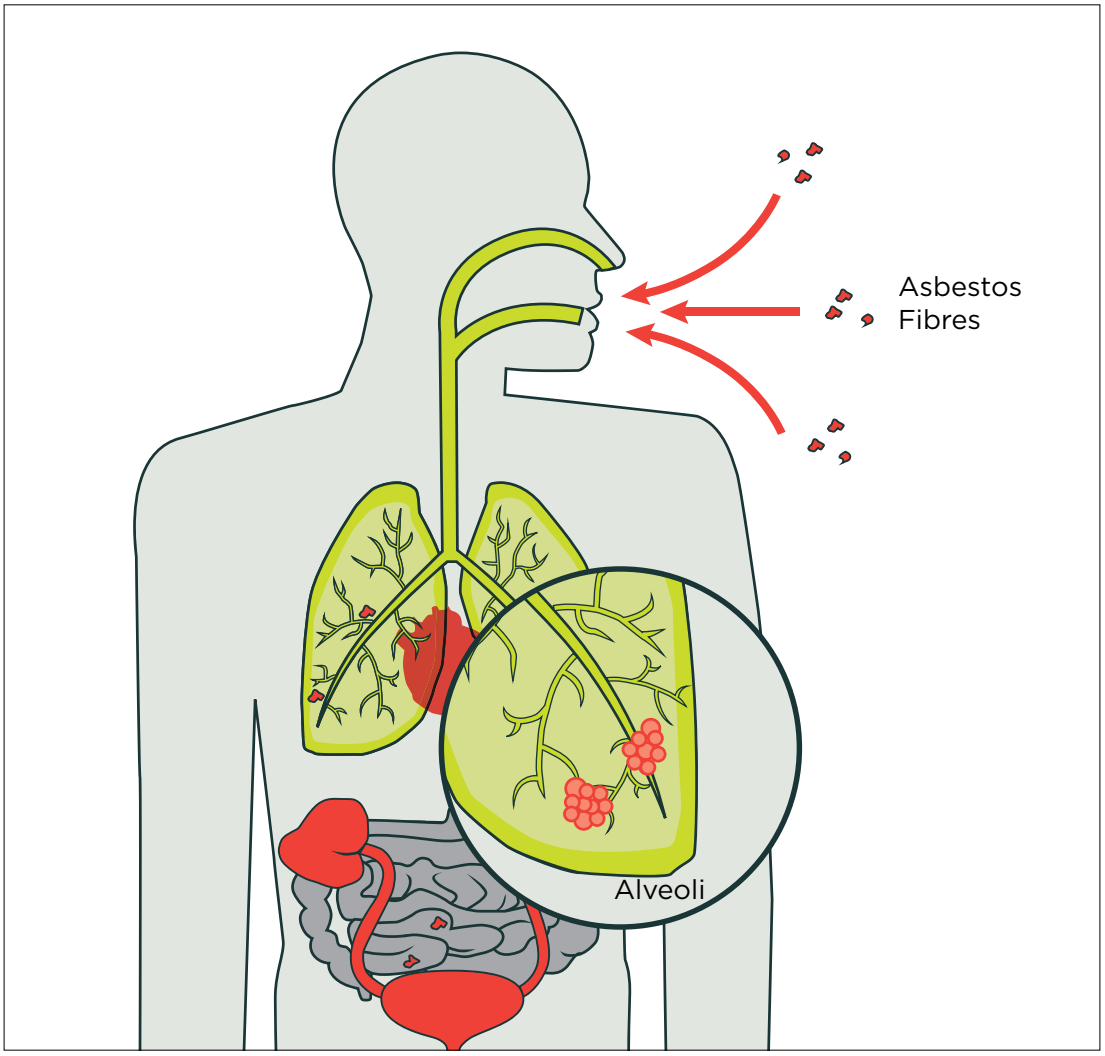


Figure 10: Asbestos lodged in the lining of lungs

2.5.6 LUNG CANCER

Asbestos-related lung cancer is a fatal disease. It takes many years to develop, but only months to spread to other organs. Developing asbestos-related lung cancer depends on the duration of the patient's asbestos exposure and the amount of asbestos fibres inhaled.

Smoking adds to the effects of asbestos on the lungs. Patients with a history of smoking and exposure to asbestos have a greater chance of developing lung cancer than either smoking or asbestos on its own.[7]

The size of the asbestos fibres influences where they lodge in the body and where tumours may develop.

Patients may also develop clubbed fingers (see section 2.5.4 of this code).

[7] Office of the Prime Minister's Chief Science Advisor, Royal Society of New Zealand. (2015). *Asbestos exposure in New Zealand: Review of the scientific evidence of non-occupational risks*. Wellington, New Zealand.

2.6 WORKSAFE'S NATIONAL ASBESTOS REGISTERS

The former Occupational Safety and Health Service of the Department of Labour set up the National Asbestos Registers in 1992 after recommendations from the Asbestos Advisory Committee to the Department of Labour.

The Committee recommended a medical register for people who were significantly exposed to asbestos. The first part of the register contains details of people who were exposed to asbestos. The second part holds the details of people who were diagnosed with an asbestos-related disease.

People on the second register are interviewed by WorkSafe staff to gather information that helps the Regulator learn more about how asbestos-related diseases are caused. As nearly all asbestos-related diseases take many years to develop, the person's occupational history is very important.

Anyone who believes they were exposed to asbestos, or were diagnosed with an asbestos-related disease, is welcome to join the register by completing a Notifiable Occupational Disease System (NODS) form: www.worksafe.govt.nz

Medical practitioners (with the patient's consent) can forward a NODS form to WorkSafe.

[8] See **Appendix B** for information.

PART A

03/

HOW THE LEGISLATION APPLIES TO ASBESTOS

IN THIS SECTION:

3.1 Managing asbestos under the Act

3.2 Asbestos Regulations objectives

The legislation that applies in this section of the code is:

Health and Safety at Work Act 2015

***Section 3** Purpose*

***Section 30** Management of risks*

***Section 33** More than 1 person may have same duty*

***Section 34** PCBU must consult with other PCBUs with the same duty*

***Section 36** Primary duty of care*

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 9** Duty relating to exposure to airborne asbestos at workplace*

3.1 MANAGING ASBESTOS UNDER THE ACT

One purpose of the Act is to provide a framework to secure worker and workplace health and safety by protecting workers and other people against harm to their health, safety and welfare. This is done by eliminating risks that arise from work or prescribed high-risk plant.

Workers and other people must receive the highest level of protection from workplace hazards and risks, or specified types of plant, so far as is reasonably practicable.

Asbestos is a workplace hazard that can cause great harm to workers and other people who are exposed to airborne asbestos fibres. All PCBUs who conduct work involving asbestos, and all workplace PCBUs with workplaces where asbestos is situated, must manage asbestos risks so they do not harm anyone.

3.2 ASBESTOS REGULATIONS OBJECTIVES

The Asbestos Regulations specify how to manage asbestos risks. Complying with regulations made under the Act is mandatory. Penalties apply for failing to comply with their requirements.

Airborne asbestos is the most dangerous form of asbestos. Fibres can enter the body on breathing and settle in the lungs, causing the damage described in section 2.5 of this code. It is present, in some capacity, in many workplaces in New Zealand.

Workplace PCBUs must make sure that exposure to airborne asbestos is eliminated, so far as is reasonably practicable. If it is not reasonably practicable, they must minimise exposure so far as is reasonably practicable.

Workplace PCBUs must also make sure the airborne contamination standard for asbestos is not exceeded at the workplace.[9]

The duties under the Asbestos Regulations may fall on more than one PCBU. If this happens, the PCBUs must consult, co-operate and co-ordinate with each other, so far as is reasonably practicable, to make sure the legal duties are met and asbestos risks are properly controlled.

A summary of the Asbestos Regulations is available in **Appendix A**.

[9] Not applicable to enclosed asbestos removal areas with negative pressure.

PART A

04/

PERMITTED TYPES OF ASBESTOS WORK

IN THIS SECTION:

4.1 Introduction

4.2 Working with asbestos and ACM is prohibited

4.3 Permitted work involving asbestos

The legislation that applies in this section of the code is:

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 7** Prohibition on carrying out, directing, or allowing work involving asbestos or ACM*

4.1 INTRODUCTION

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).

4.2 WORKING WITH ASBESTOS AND ACM IS PROHIBITED

Generally, working with asbestos in New Zealand is prohibited.

Prohibited work includes:

> manufacturing products containing asbestos
> supplying products containing asbestos or ACM
> storing asbestos or ACM
> using asbestos or ACM
> installing asbestos or ACM
> re-using and recycling asbestos or ACM
> transporting asbestos or ACM (except for disposal).

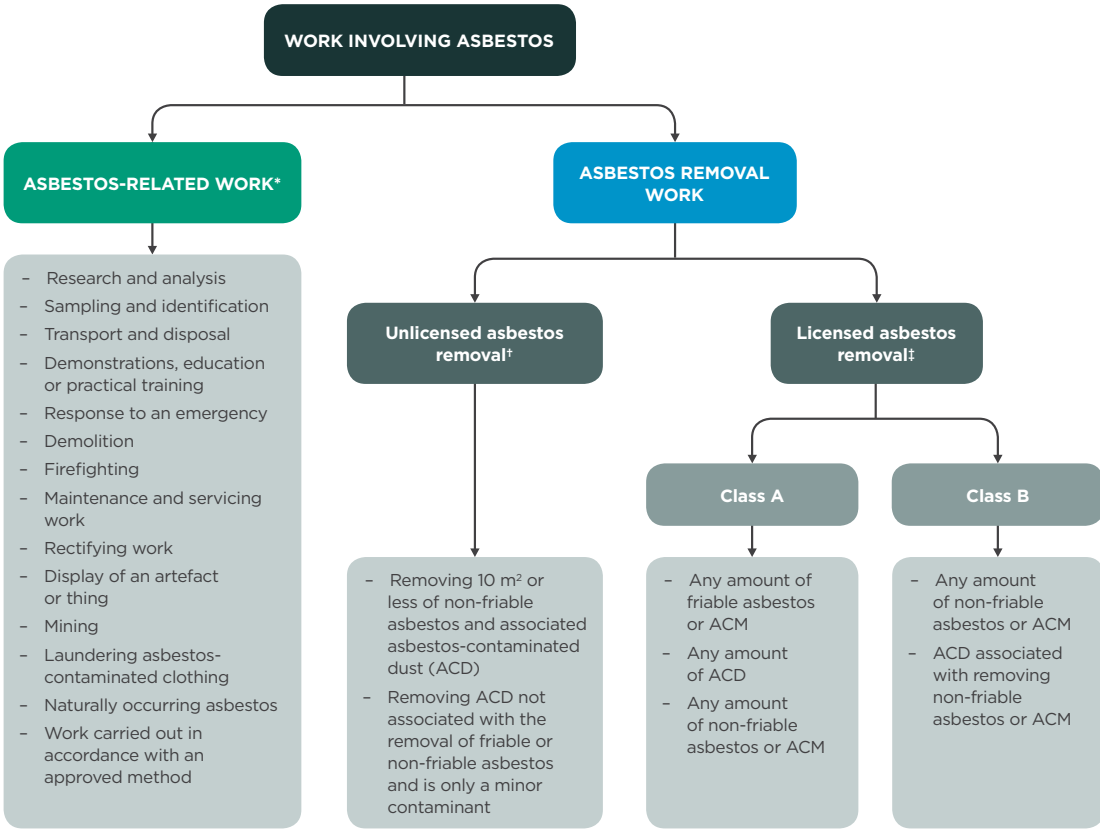
Note: The prohibition on supplying asbestos or ACM also prohibits the sale of asbestos or ACM.

4.3 PERMITTED WORK INVOLVING ASBESTOS

Specified types of work permitted under the Asbestos Regulations are:

1. genuine research and analysis
2. sampling and identifying asbestos in accordance with the Asbestos Regulations
3. removing or disposing of asbestos or ACM, including demolition, in accordance with the Asbestos Regulations
4. transporting and disposing of asbestos and asbestos waste in accordance with the Asbestos Regulations
5. demonstrations, education or practical training involving asbestos or ACM
6. fire-fighting
7. responding to an emergency
8. maintenance and servicing work involving ACM in accordance with the Asbestos Regulations
9. rectifying work to ACM in accordance with the Asbestos Regulations
10. displaying, or preparing or maintaining for display, asbestos artefacts or things that include asbestos or ACM

11. work that disturbs asbestos during mining operations that extract or explore for minerals other than asbestos
12. laundering asbestos-contaminated clothing in accordance with the Asbestos Regulations
13. asbestos-related work that is subject to a method approved by WorkSafe
14. work involving naturally occurring asbestos that is managed with an asbestos management plan
15. work involving asbestos-contaminated soil, where the soil doesn't contain a quantity of ACM or friable asbestos likely to lead to airborne asbestos contamination that exceeds trace level.



Note: this diagram excludes work involving asbestos-contaminated soil.

* See Part E for more information.

† See section 29.3 for more information.

‡ See section 24 for more information.

Figure 11: Overview of work involving asbestos

4.3.1 APPROVED METHODS FOR MANAGING ASBESTOS RISKS

WorkSafe may approve a method for managing risks associated with asbestos. Work carried out under an approved method is permitted as asbestos-related work, even though it will not be specifically mentioned in the Asbestos Regulations.

See section 21.3 of this code for further information.

4.3.2 NATURALLY OCCURRING ASBESTOS

Managing naturally occurring asbestos with an asbestos management plan is permitted by the Asbestos Regulations. See section 20 of this code for further information.

4.3.3 ASBESTOS-CONTAMINATED SOIL

Work involving asbestos-contaminated soil is permitted either as asbestos-related work or asbestos removal work. However, asbestos-related work is only permitted if a competent person (usually a suitably qualified and experienced practitioner (SQEP)) has determined the soil does not contain enough asbestos or ACM to lead to airborne asbestos contamination above trace level.

If the amount of ACM or friable asbestos in the soil is likely to lead to airborne asbestos contamination above trace level, the only work that may be carried out is asbestos removal work. See section 19 of this code for further information.

PART A

05/

AIRBORNE CONTAMINATION STANDARD FOR ASBESTOS AND TRACE LEVEL

IN THIS SECTION:

5.1 Introduction

5.2 What is the airborne contamination standard for asbestos?

5.3 What is ‘trace level’?

5.4 Applying the airborne contamination standard for asbestos and trace level

The legislation that applies in this section of the code is:

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 4** Airborne contamination standard for asbestos*

***Regulation 9** Duty relating to exposure to airborne asbestos at workplace*

***Regulation 23** Emergency procedure: workplace*

***Regulation 24** Emergency procedure: homes*

5.1 INTRODUCTION

All PCBUs must make sure the airborne contamination standard for asbestos is not exceeded at the workplace.

Note: The airborne contamination standard for asbestos is **not** a workplace exposure standard.[10]

5.2 WHAT IS THE AIRBORNE CONTAMINATION STANDARD FOR ASBESTOS?

The **airborne contamination standard** for asbestos is an average concentration over any eight-hour period of 0.1 respirable asbestos fibres per millilitre of air.

Its purpose is to identify a limit on the amount of respirable asbestos fibres permitted in a workplace's air.

The airborne contamination standard for asbestos does not replace the requirement to make sure anyone's personal exposure to airborne asbestos at the workplace is eliminated, so far as is reasonably practicable. If it is not reasonably practicable to eliminate personal exposure to airborne asbestos, exposure must be minimised, so far as is reasonably practicable.

In other words, the airborne contamination standard for asbestos is a control limit for the workplace. It does not set an acceptable limit for personal exposure. This means that people who are at risk of exposure to airborne asbestos above trace level must wear suitable personal protective equipment (PPE).

5.3 WHAT IS 'TRACE LEVEL'?

Trace level means an average concentration over any eight-hour period of less than 0.01 asbestos fibres per millilitre of air.

5.4 APPLYING THE AIRBORNE CONTAMINATION STANDARD FOR ASBESTOS AND TRACE LEVEL

The airborne contamination standard for asbestos sets a level of respirable asbestos fibres in the air that cannot be exceeded at any workplace, unless it is inside an asbestos removal enclosure using negative pressure.

[10] For information on workplace exposure standards, refer to *Workplace Exposure Standards and Biological Exposure Indices*: www.worksafe.govt.nz

Trace level applies to asbestos removal work and asbestos-contaminated soil.

For asbestos removal, 'trace level' means the limit on the amount of respirable asbestos fibres in the air that is permitted, for example:

> when determining whether air monitoring must be carried out immediately before asbestos removal work starts

> before action needs to be taken to prevent exposure to asbestos in an asbestos removal area.

Trace level is also used to determine when work involving soil that contains asbestos can be carried out as asbestos-related work or asbestos removal work. See section 19 of this code for further information.

Example

An asbestos worker needs to work in an area where airborne asbestos may be present at levels that come close to, but do not exceed, the airborne contamination standard for asbestos.

AS/NZS 1716[11] states correctly fitted and worn respiratory protective equipment (RPE) with a P2 filter should reduce airborne contaminant exposure to 6% of what is in the air. The same RPE with a P3 filter should reduce airborne contaminant exposure to 0.05%.

The airborne contaminant concentration in the air is close to the airborne contamination standard for asbestos. A P2 filter will only barely reduce the worker's exposure to trace level (in ideal circumstances). To account for the potential for less than ideal circumstances, the worker's PCBU requires the worker to use RPE with a P3 filter.

5.4.1 EXCEPTION FOR ENCLOSURES

In asbestos removal enclosures, the licensed asbestos removalist still has a duty to eliminate asbestos exposure, or to minimise exposure, so far as is reasonably practicable, even if the airborne asbestos contamination standard does not apply.

[11] AS/NZS 1716 *Respiratory protective devices*. See **Appendix B** for a list of standards referred to in this code.

PART B

INFORMATION FOR WORKPLACE PCBUs

IN THIS PART:

Section 6: Identifying asbestos or ACM in the workplace

Section7: Asbestos records

Section 8: Managing asbestos risks

Section 9: Asbestos management plans

PART B

06/

IDENTIFYING ASBESTOS OR ACM IN THE WORKPLACE

IN THIS SECTION:

6.1 Introduction

6.2 Responsibilities for identifying asbestos or ACM in the workplace

6.3 Types of ACM

6.4 ACM condition

6.5 Tips for identifying asbestos in buildings where there is a risk of exposure to airborne asbestos

6.6 Competencies for people identifying asbestos

6.7 Assuming asbestos or ACM is present

6.8 When there are reasonable grounds to believe asbestos is not present in the workplace

6.9 Inaccessible areas

6.10 Arranging a sample to identify asbestos

6.11 Testing laboratories

6.12 Indicating where asbestos is in the workplace

The legislation that applies in this section of the code is:

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 10** Duty to ensure asbestos identified at workplace*

***Regulation 11** Duty to analyse samples*

***Regulation 12** Duty to ensure presence and location of asbestos indicated*

6.1 INTRODUCTION

For workplace PCBUs, identifying asbestos or ACM in the workplace is the first step for managing asbestos exposure risks.

Figure 12 shows the asbestos management process. The first step is 'identify asbestos and ACMs and identify ways to control them'.

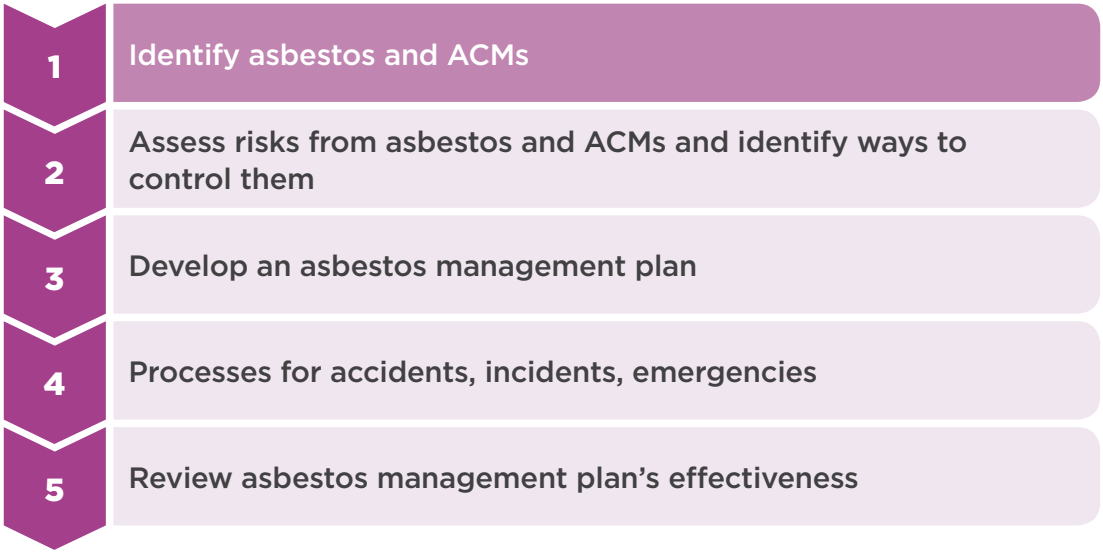


Figure 12: Asbestos management process – identify ACMs

Identifying asbestos will help those people in the workplace who do not need to work in asbestos-containing areas to avoid exposure to asbestos. People working in these areas will know what to expect and what precautions to take to keep safe.

6.2 RESPONSIBILITIES FOR IDENTIFYING ASBESTOS OR ACM IN THE WORKPLACE

If a workplace PCBU knows, or ought to reasonably know, there is a risk of exposure to respirable asbestos fibres in their workplace, it must make sure, so far as is reasonably practicable, that all asbestos or ACM in the workplace relating to the risk is identified.

If a workplace has more than one PCBU, all PCBUs must, so far as is practicable, consult, co-operate with and co-ordinate activities with one another to make sure they meet their legal duties.

6.2.1 EXCLUSION FOR ASBESTOS-CONTAMINATED SOIL

This does not apply to soil in the workplace unless there is reasonable cause for the PCBU to suspect asbestos-contaminated soil is present. For more information about what 'reasonable cause' means, see section 6.8 of this code.

6.3 TYPES OF ACM

Read WorkSafe's *Conducting Asbestos Surveys* to find examples of the different types of ACM that may be present in New Zealand. This is available from WorkSafe: www.worksafe.govt.nz

6.4 ACM CONDITION

Most ACM should not cause a health risk unless it is abraded or machined. These processes release ACD.

ACM degrades with age, chemical exposure, the weather, water damage, lichen growth or moving construction materials. Birds and rodents may also disturb ACM. This can make asbestos and ACM **friable**.

Friable asbestos or ACM is asbestos or ACM in powder form, or able to be crumbled, pulverised, or reduced to a powder by hand pressure when it is dry. This is the riskiest condition for asbestos or ACM to be in.

Non-friable asbestos or ACM is, as the phrase suggests, not friable. Non-friable asbestos or ACM is usually safer than friable asbestos or ACM, because asbestos fibres bond into the product. However, non-friable ACM is likely to release fibres if it is disturbed or manipulated.

A competent person should determine whether ACM is friable or non-friable.

When deciding if asbestos or ACM is present in soil, and therefore whether work involving the soil is asbestos-related or asbestos removal work, a competent person must make the determination. This is likely to be a SQEP.

The condition of identified asbestos should be recorded in the asbestos management plan and reviewed.

The terms 'friable' and 'non-friable' apply to the asbestos or ACM's condition before work is conducted on it. Conducting work on asbestos or ACM does not change its friability state but may reveal previously hidden friable asbestos.

6.5 TIPS FOR IDENTIFYING ASBESTOS IN BUILDINGS WHERE THERE IS A RISK OF EXPOSURE TO AIRBORNE ASBESTOS

The following table may be useful for workplace PCBUs who know, or ought reasonably to know, if there is a risk of exposure to respirable asbestos fibres in their workplace. It could be used to gather preliminary information before deciding if it is necessary to engage a person to conduct a more in-depth identification exercise.

TIPS	
When was the building built?	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.
Were refurbishments or additions made to the building before 2000?	Any refurbishment or extensions to the original building before 2000 may have building materials containing asbestos. Even if the original parts of the building did not have asbestos, be aware that later additions may have it.
What was used to build the building?	If cement sheet was installed in the building before 2000, it is likely to contain asbestos. For example, a corrugated cement sheet roof is likely to contain asbestos. Areas of buildings prone to wet conditions may contain asbestos in the walls and floors, because it is hardy and has good waterproofing qualities. For example, bathrooms, toilets and laundries may have asbestos sheeting or vinyl tiles. Pipes that carry water and sewage may also contain asbestos.
Talk to designers, manufacturers or suppliers of plant, or refer to design plans	Asbestos may be present in specific parts of workplace plant because it was used in gasket and friction brake products. Despite a large decrease in its use, white asbestos was still used in specific plant, including rotary vane vacuum pumps and gaskets for certain equipment. If plant was designed, built and installed before 2000, consult the plant supplier, manufacturer or designer to find out if asbestos is present. Preferably get this advice in writing. If this is not possible, review the design plans and seek advice from an experienced engineer or plant designer. Quality assurance systems or checks should confirm if asbestos is present.
Talk to experienced workers	Talking to experienced workers may help because they may know about the plant or building's history, including age, construction, renovation or repairs, or where asbestos may be found.
Visually inspect the workplace to identify asbestos, ACM and inaccessible areas	The person identifying the asbestos should conduct a thorough visual inspection of all areas of the workplace, including all buildings, ceiling spaces, cellars, shafts, storage areas and wall cavities. Otherwise, assume asbestos is present. The building or plant's design plans may help identify inaccessible areas. Talk to builders, architects, plant manufacturers and maintenance workers. Knowledge of the materials used in the building or plant's construction, or experience and findings from inspecting similar sections of the building or plant (or similar ones) may also help.
Take notes and photographs	Taking notes and photographs while conducting the inspection will help with producing asbestos records.
Previous records	Previous asbestos records, including from asbestos removal jobs (such as clearance certificates), can help with identifying all asbestos and ACM in the workplace.

Table 5: Tips for identifying or assuming asbestos in a workplace

For further information about identifying asbestos in the workplace, refer to *Conducting Asbestos Surveys*, available from WorkSafe's website: www.worksafe.govt.nz

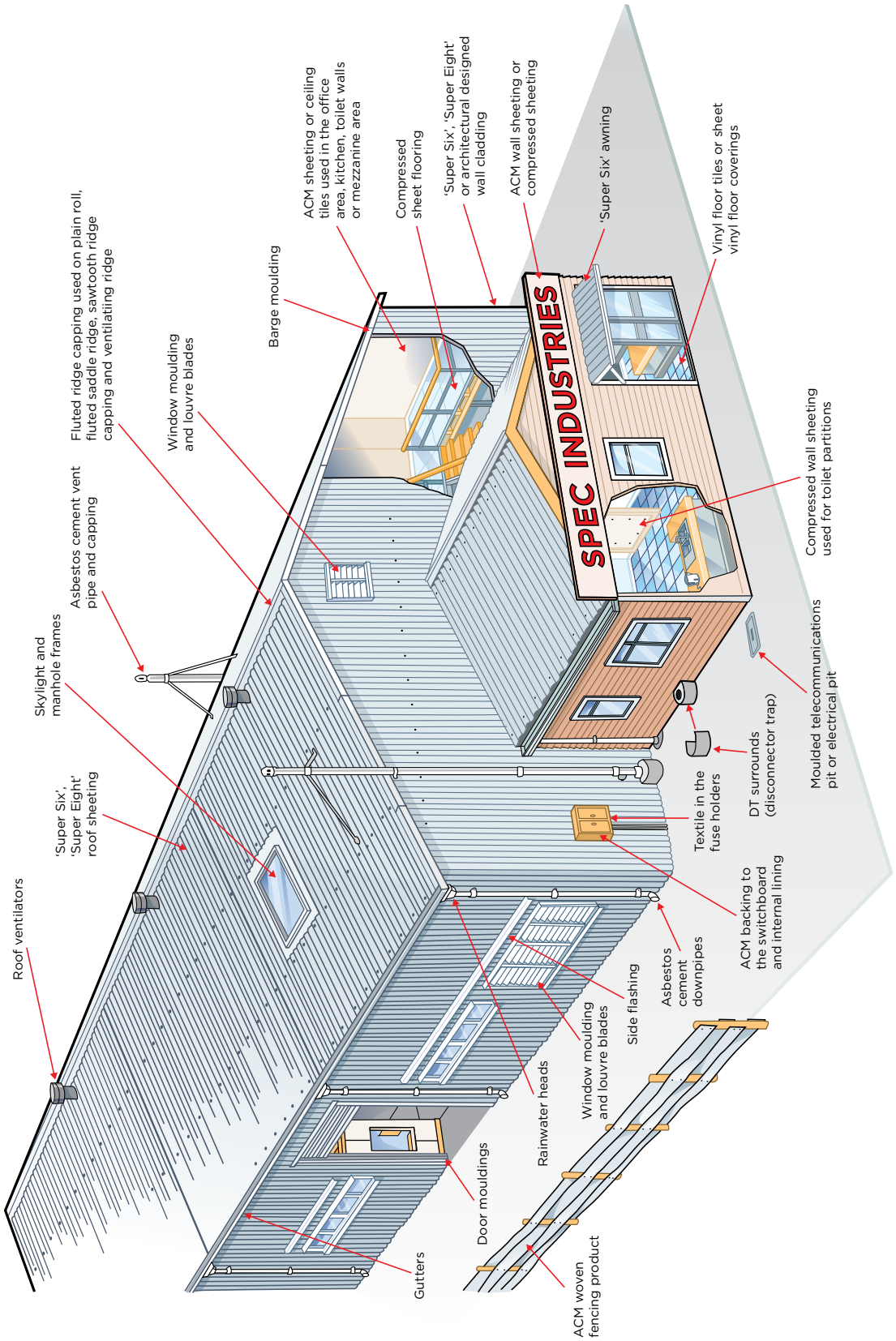


Figure 13: Potential asbestos locations in a commercial building

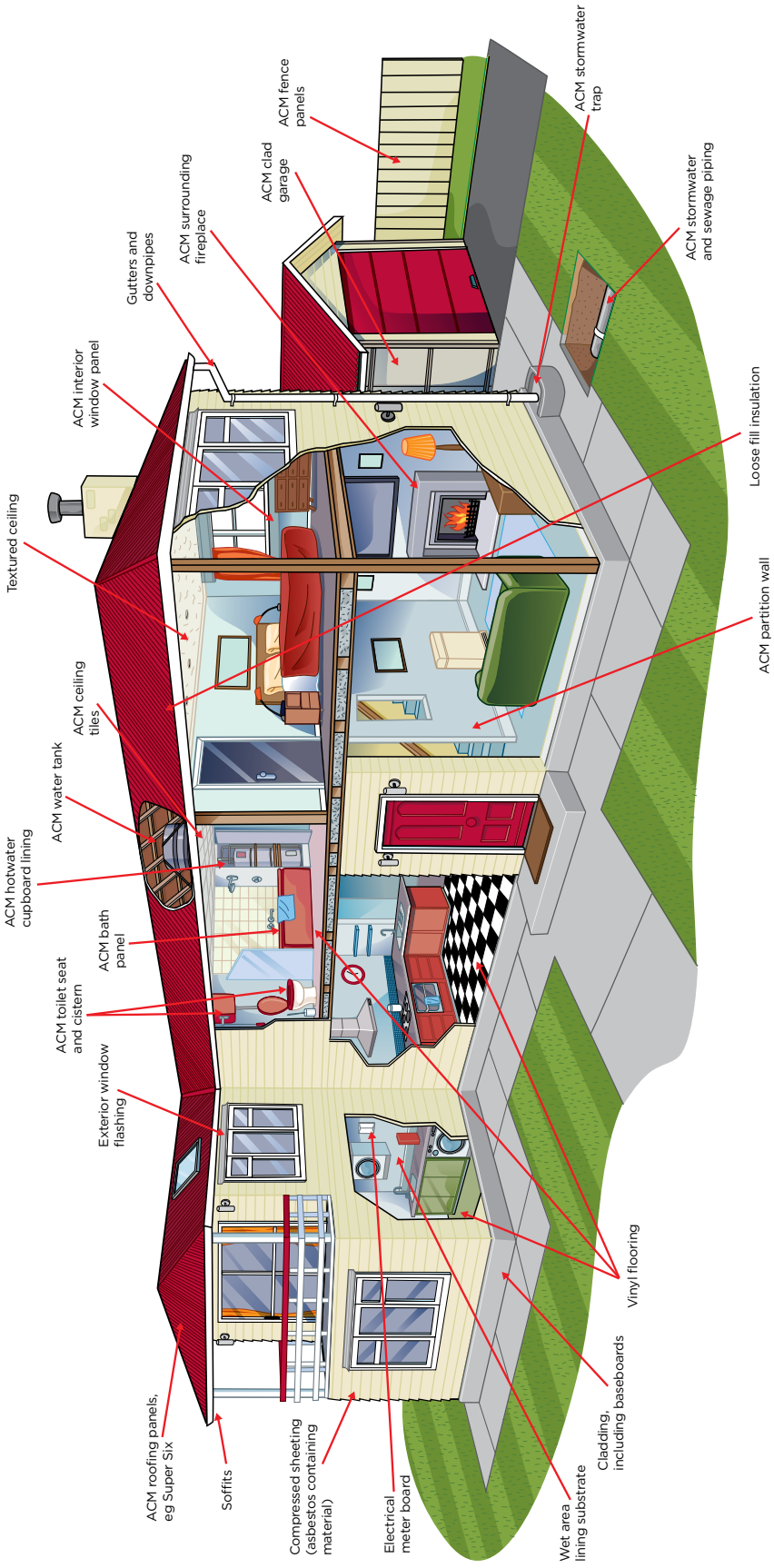


Figure 14: Potential asbestos locations in a pre-2000 house

6.6 COMPETENCIES FOR PEOPLE IDENTIFYING ASBESTOS

This subsection does not apply to demolition or refurbishment, or determining whether ACM or friable asbestos is present in soil.

A competent person with experience in identifying where asbestos is or may be present may be helpful for workplace PCBUs who do not have the experience.

This person should have the knowledge and skills to identify or assume the presence of asbestos through training, qualifications and experience.

Someone in the PCBU's business may have the knowledge and experience to do this task. If no-one is available, the PCBU should engage an external person.

For further information, refer to WorkSafe's *Conducting Asbestos Surveys*, available from WorkSafe: www.worksafe.govt.nz

A PCBU might wish to approach the following people to find out if they are suitably experienced to identify asbestos:

> an occupational hygienist with asbestos experience
> a licensed asbestos assessor
> an asbestos removal supervisor
> someone who has passed the unit of competency for asbestos assessors
> a person nominated by an accredited laboratory.

6.7 ASSUMING ASBESTOS OR ACM IS PRESENT

Workplace PCBUs can assume asbestos is present in their workplace instead of identifying it.

If the workplace PCBU cannot identify material at the workplace, but it reasonably believes the material is asbestos or an ACM, it must assume the material is asbestos.

If the workplace PCBU assumes asbestos is present, it is taken to be identified. This means the requirements in the Asbestos Regulations on 'identified' asbestos also apply to parts of the workplace where asbestos is assumed to be present.

The workplace PCBU must:

> follow the requirements for managing asbestos until it is removed or there are reasonable grounds to believe the workplace does not contain asbestos (eg by testing)
> record information about its assumptions in the asbestos management plan (eg 'roof sheeting assumed to contain asbestos' or 'all underground conduits assumed to contain asbestos.')

6.8 WHEN THERE ARE REASONABLE GROUNDS TO BELIEVE ASBESTOS IS NOT PRESENT IN THE WORKPLACE

The requirement to identify asbestos does not apply if the workplace PCBU believes, on reasonable grounds, that asbestos is not present.

These grounds may include, for example:

> recorded evidence, such as an asbestos management plan, confirming all asbestos was removed from the workplace

> a previous survey by a person suitably qualified and experienced in asbestos identification did not find any asbestos.

6.9 INACCESSIBLE AREAS

If the workplace has inaccessible areas that are likely to contain asbestos or ACM, the workplace PCBU must assume they contain asbestos.

An inaccessible area is usually an area people cannot access during normal daily activities or routine maintenance.

Examples of inaccessible areas that might contain asbestos or ACM:

> a building cavity completely enclosed, and access is only possible through destroying part of the cavity walls

> the inner lining of an old boiler pressure vessel - the boiler's design and operation prevents access to the inner lining, and access is only possible by partially destroying the outer layer

> vinyl tiles that may contain asbestos which had layers of non-ACM material placed over them and secured; the layers are well-secured and need to be partially destroyed to access the vinyl

> enclosed riser shafts in multi-storey buildings, where cables may be insulated with ACM, or pipes may be lagged with asbestos or have ACM gaskets

> air conditioning ducts that may contain asbestos gaskets and linings.

6.10 ARRANGING A SAMPLE TO IDENTIFY ASBESTOS

It is impossible to tell if material contains asbestos simply by looking at it, unless it is marked to indicate the presence of asbestos. Therefore, the workplace PCBU should have samples analysed unless they assume it is asbestos.

Only a competent person should take the samples for analysis because asbestos fibres could be released during the process, increasing the health risk. A poorly-conducted sampling process can be more risky than leaving the material alone, and may give invalid results if the samples are not taken from representative areas.

If the suspected asbestos is stable, non-friable and will not be disturbed, it may be more practicable to assume it is asbestos, rather than test it.

If no-one can identify the material but the workplace PCBU reasonably believes it contains asbestos, the workplace PCBU must assume it contains asbestos.

WorkSafe's *Conducting Asbestos Surveys* describes good practice for surveys and taking samples. This is available on WorkSafe's website: www.worksafe.govt.nz

6.11 TESTING LABORATORIES

The workplace PCBU must arrange for samples to be analysed at an accredited laboratory.

Once the results are confirmed, the workplace PCBU should update the workplace's asbestos records, including the asbestos management plan.

6.12 INDICATING WHERE ASBESTOS IS IN THE WORKPLACE

The workplace PCBU must clearly indicate the presence and location of identified or assumed asbestos or ACM in the workplace, including places where asbestos is not accessible.

The workplace PCBU must indicate the asbestos or ACM in a way that complies with the requirements of any applicable safe work instrument.

In there is no applicable safe work instrument, the workplace PCBU can use other ways to indicate the presence of asbestos, such as:

> asbestos records
> asbestos management plans
> placing colour-coded labels on ACM (if it is safe to do so) and informing all workers of the presence of these labels and their meaning
> placing a sign at the entrance to the workplace or the work area
> identifying its presence and location on site plans, making them accessible to all workers, and making sure workers are aware of the presence, meaning and purpose of the plans.

6.12.1 LABELS

If using labels, a suitably knowledgeable and experienced person should work out their number and positions. The labels' location should be consistent with the location listed in the workplace's asbestos records or asbestos management plan.

If a risk assessment suggests asbestos may be disturbed or people are likely to be exposed, and it is not reasonably practicable to directly label the asbestos, the workplace PCBU should post a warning sign in its immediate vicinity.

The workplace PCBU must comply with the requirements of any applicable safe work instrument, including any requirements for labels.

PART B

07/

ASBESTOS RECORDS

IN THIS SECTION:

7.1 Introduction

7.2 What should asbestos records look like?

7.3 Workplaces with existing asbestos records

7.4 When asbestos is only in the workplace temporarily

7.5 Workplaces without records but where asbestos has been identified

7.6 Reviewing and revising asbestos records

7.7 Accessing asbestos records

7.8 Transferring asbestos records

7.9 Requirements for homes

7.1 INTRODUCTION

All workplace PCBUs that have identified or assumed asbestos or ACMs are present in the workplace should keep records of their location and condition.

Keeping records of identified asbestos helps workplace PCBUs comply with the requirement to make sure, so far as is reasonably practicable, the workplace does not contain risks to anyone's health and safety from asbestos.

7.2 WHAT SHOULD ASBESTOS RECORDS LOOK LIKE?

Asbestos records should list all identified or assumed asbestos in a workplace that presents, or is likely to present, a risk of exposure to respirable asbestos fibres.

Records should describe all identified asbestos or ACM in the workplace, or likely to be in the workplace occasionally, including:

> the date the workplace PCBU identified or assumed the presence of asbestos or ACM
> the location, type and condition of the asbestos
> an estimate of the area or quantity of asbestos
> analysis results confirming whether a material at the workplace is or is not asbestos
> dates when the identification occurred
> details of inaccessible areas.

It will be useful to attach photographs or drawings that show the location of asbestos or ACMs.

7.3 WORKPLACES WITH EXISTING ASBESTOS RECORDS

The workplace PCBU should review and revise existing asbestos records to make sure they remain up to date.

If a workplace PCBU knows asbestos is present that could put their workers', or another PCBU's workers' health at risk, it must advise the workers or the PCBU of the risk. If the PCBU has asbestos records, it should make the records available to the affected workers or PCBUs.

PCBUs working or intending to work at such a workplace should view the workplace's asbestos records and identify any asbestos or ACM they have, or will have, management or control of (for example, asbestos inside machinery).

The PCBU working or intending to work should advise the workplace PCBU if they identify any asbestos or ACM not included in the workplace asbestos records.

7.4 WHEN ASBESTOS IS ONLY IN THE WORKPLACE TEMPORARILY

It may not be necessary to include asbestos or ACM that is only in the workplace temporarily.

For example: the PCBU does not need to record plant that contains asbestos in the record if it is being repaired in the workplace and will only be there for a short time.

However, if asbestos-containing plant is often in the workplace (for example, a company specialising in repairing plant that typically contains asbestos) it should be included in the asbestos record.

7.5 WORKPLACES WITHOUT RECORDS BUT WHERE ASBESTOS HAS BEEN IDENTIFIED

If the workplace does not have an asbestos record, but asbestos is identified through work activities, the workplace PCBU must be advised. The workplace PCBU must identify it (or make sure a competent person identifies it) and should create an asbestos record.

7.6 REVIEWING AND REVISING ASBESTOS RECORDS

The workplace PCBU should review asbestos records at least once every five years to keep them up to date.

The records should also be reviewed if:

> more asbestos is identified in the workplace
> asbestos is removed, disturbed, sealed or enclosed.

When reviewing asbestos records, the workplace PCBU should:

> visually inspect the identified asbestos and ACM to confirm its condition
> revise the asbestos records if necessary.

7.7 ACCESSING ASBESTOS RECORDS

The workplace PCBU where asbestos is located should make asbestos records available to all:

> workers that carried out work at the workplace in the past
> workers currently working at the workplace
> workers intending to do work at the workplace
> people representing workers that worked, are currently working or intend to work at the workplace.

'Worker' includes the workplace PCBU's employees, contractors, subcontractors, their employees, trainee workers, people doing work experience, volunteers or PCBUs with a Class A or Class B asbestos removal licence.

If a PCBU carried out, carries out, or intends to carry out work out at the workplace, and that work involves a risk of airborne asbestos exposure, the workplace PCBU should provide a copy of the asbestos records to that PCBU.

The workplace PCBU should keep a copy of the asbestos records at the workplace for accessibility.

7.8 TRANSFERRING ASBESTOS RECORDS

If the PCBU plans to relinquish management or control (for instance, sell the workplace or the business or undertaking), they should give a copy of the asbestos records to the PCBU assuming management or control of the workplace.

7.9 REQUIREMENTS FOR HOMES

Asbestos records are not needed for homes.

If a PCBU carrying out demolition, refurbishment or removal, or intending to carry out this work in a home identifies asbestos, the PCBU must tell the homeowner, landlord (if applicable) and occupant about the asbestos so they can keep themselves and others safe.

PART B

08/

MANAGING ASBESTOS RISKS

IN THIS SECTION:

8.1 Introduction

8.2 Process for controlling asbestos risks

8.3 Managing asbestos-related risks

8.4 Enclosing asbestos

8.5 Encapsulating and sealing asbestos

The legislation that applies in this section of the code is:

Health and Safety at Work Act 2015

***Section 30** Management of risks*

8.1 INTRODUCTION

If the workplace PCBU has identified asbestos in the workplace and generates an asbestos management plan, 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. This information will form a key part of the workplace's asbestos management plan.

This section includes:

> how to manage asbestos-related risks

> options for managing asbestos.

Controlling asbestos risks fits in to the asbestos management process as follows:

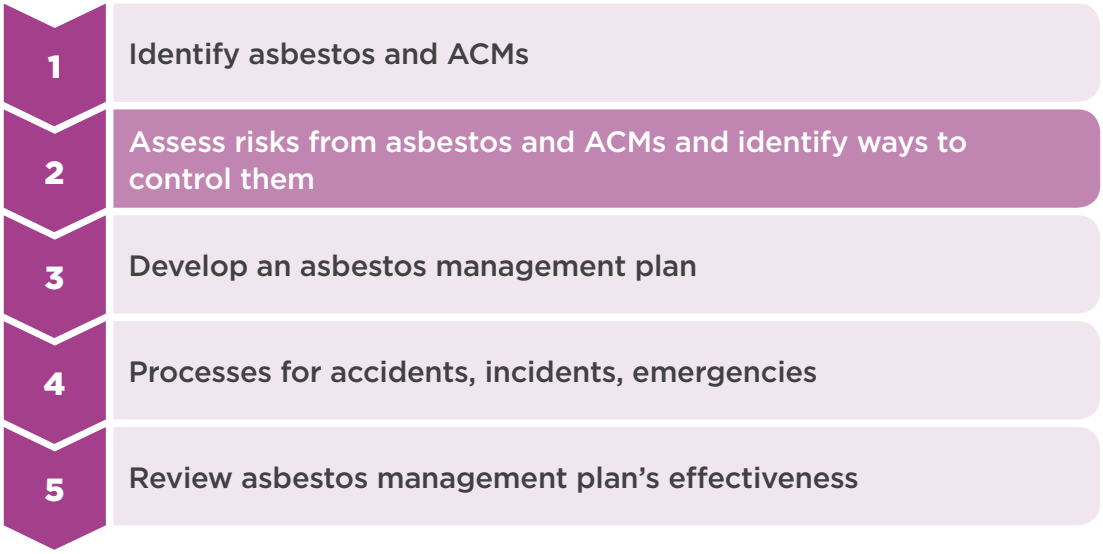


Figure 15: Asbestos management process – risk assessment

8.2 PROCESS FOR CONTROLLING ASBESTOS RISKS

When managing asbestos-related risks, the workplace PCBU must:

> identify or assume the presence of asbestos and ACM at the workplace that the PCBU knows or ought reasonably to know about

> assess the likelihood of exposure to airborne asbestos from the identified or assumed asbestos

> eliminate or minimise the risks by putting control measures in place

> review the control measures to make sure they are effective.

The PCBU must first consider eliminating asbestos from the workplace. If that is not reasonably practicable, it must then minimise the asbestos risks.

The workplace PCBU may have to apply a combination of controls to adequately manage and control the risks.

8.3 MANAGING ASBESTOS-RELATED RISKS

If the workplace PCBU is not sure whether asbestos is present or used in a certain activity at the workplace, they must assume asbestos is present and treat the activity as asbestos-related work, or have a sample analysed to confirm if asbestos is present.

The workplace PCBU must put control measures in place to minimise any exposure if it is not reasonably practicable to remove the asbestos.

The workplace PCBU always needs to make sure the airborne contamination standard for asbestos is not exceeded.

Specific situations where removal may be the best control include:

> asbestos lagging on pipes
> asbestos in plant
> ACD
> loose fibre insulation
> cracked or damaged fibreboard containing asbestos.

If it is not reasonably practicable to remove asbestos, the workplace PCBU must put other control measures in place to make sure people are not exposed to airborne asbestos. These control measures include enclosing, encapsulating or sealing the asbestos.

When the workplace PCBU decides on the control measures, it must record them in the workplace's asbestos management plan.

8.4 ENCLOSING ASBESTOS

If it is not reasonably practicable to remove asbestos because, for example, the asbestos is in good condition, the preferred control measure is enclosure.

The workplace PCBU should only enclose non-friable asbestos if it is not reasonably practicable to remove it, and if the asbestos could be damaged from work activities.

Enclosure should be an interim control measure, and should be regularly inspected by a competent person to decide if the asbestos needs to be removed due to damage or deterioration.

8.4.1 WHAT IS ENCLOSURE?

Enclosing asbestos is done by creating a separate physical barrier that prevents access to the asbestos. This minimises the potential for exposure to airborne fibres. The workplace PCBU needs to make sure the enclosure can provide access to the asbestos so it can be regularly inspected, as part of the asbestos management plan.

Example of enclosing asbestos as a control measure:

A large dockside warehouse used for temporarily storing grain and stockfeed has walls made from various materials, including asbestos cement sheets. Apart from the driver of a large front-end loader that goes into the warehouse to load or unload the feed, there are no other workers in the warehouse.

An inspection of the asbestos cement sheets shows they are in good condition. Areas of previous minor damage (broken sheets) were repaired. Therefore, there is minimal risk of asbestos fibre release. However, the workplace PCBU decides there is a chance the sheets could be damaged again and if so, a risk to health may occur if asbestos fibres are released.

The workplace PCBU builds a solid false wall to enclose the asbestos cement sheets, and erects bollards in front of the new wall to prevent possible collisions when the front-end loader is operating inside the warehouse. These changes are included in the site's asbestos records. The condition of the asbestos cement sheets is monitored as well as the newly-installed control measures.

8.5 ENCAPSULATING AND SEALING ASBESTOS

Encapsulation or sealing asbestos is another type of control measure.

8.5.1 ENCAPSULATION

The workplace PCBU may use encapsulation if the original asbestos bond is still intact and it would create a greater risk to remove the asbestos.

Asbestos is usually encapsulated in a resilient matrix, for example: reinforced plastics, vinyls, resins, mastics, bitumen, flexible plasters and cements. There is little opportunity for asbestos fibres to become airborne unless the matrix is damaged.

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

Workers encapsulating asbestos should:

> be trained and experienced in working with asbestos
> isolate the area
> use suitable respiratory protection (RPE) that complies with AS/NZS 1716 *Respiratory protective devices*
> wear suitable protective clothing
> follow a safe work system that reduces the risk of creating airborne asbestos fibres
> follow a decontamination procedure when the job is completed.

8.5.2 SEALING

Sealing covers the ACM's surface with a protective coating to prevent asbestos fibres from becoming airborne. Sealing asbestos is the least effective method for controlling airborne asbestos fibre release (see Table 6). The workplace PCBU should only use sealing as an interim control until a more effective control, such as removing or enclosing, can be put in place.

It is commonly used for pipe, furnace and boiler insulation. However, asbestos should not be sealed if it is likely to suffer mechanical damage (for example, drilling or sanding).

The method of treating the ACM should not disturb the asbestos.

PCBUs carrying out asbestos-related work must never water-blast, nor should they dry-sand ACM in preparation for sealing, because asbestos fibres will be released by using these methods.

Clean the surface that the sealant will be applied to with a vacuum cleaner used for asbestos work and fitted with a high efficiency particulate air (HEPA) filter. This will help capture loose dust or debris from the surface and help the sealant to adhere. Do not disturb the surface during application because this releases asbestos dust.

Use an airless sprayer at low pressure instead of rollers or brushes on exposed (and unsealed) asbestos, because rollers and brushes may cause abrasion or damage and release fibres from the material's surface. When using a spray brush, do not use a high pressure spray to apply the paint. Apply it with a dry airless spray using low pressure to avoid generating levels of asbestos dust. Several coatings may be needed for full protection.

The workplace PCBU should consider using a different-coloured sealant to the ACM to help monitor its condition over time. A date-stamped photograph of the sealed surface is also a good way of helping record its condition.

Example of sealing asbestos as a control measure:

The extensive water pipes in a large industrial workplace consist of asbestos cement piping and conduits. Some of the pipes are underground, some within inaccessible areas like walls, and others run above ground and are exposed throughout the workplace. Connected to some of these pipes are control valves that need to be accessed occasionally.

Over time, sections of some of the asbestos cement pipes were removed as they had deteriorated or were damaged. Where risks still remained, the pipes were enclosed so far as is reasonably practicable to further reduce the risk.

Where control valves were connected and the asbestos cement pipe was in good condition, the workplace PCBU decided it was not practicable to remove the asbestos because replacement parts were not available. Nor was it practicable to enclose the asbestos because access was occasionally required. In this case, the appropriate option was to seal the surface of the asbestos cement pipes near control valves with paint to protect the material from deterioration and reduce the risk of airborne asbestos fibre generation.

ASBESTOS MANAGEMENT OPTION	OPTION INVOLVES	APPROPRIATE WHEN	NOT APPROPRIATE WHEN	ADVANTAGES	DISADVANTAGES
Removal	Complete removal of asbestos or ACM from building	> surface is friable or asbestos is poorly bonded > asbestos is severely water-damaged or liable to damage or deterioration > there is lichen growth or lichen-related damage > asbestos is located in air conditioning ducts > airborne asbestos levels exceed trace level > other control techniques are inappropriate	> asbestos is located on complex or inaccessible surfaces > removal would be extremely difficult and other techniques are satisfactory	> hazard and risk is eliminated > no further action required	> increase in immediate risk of exposure, particularly to removal workers > creates significant disruption to building occupants > may be the most costly, complex and time-consuming option > removal may increase fire risk in a building, requiring substitute material > potential to contaminate building if removal not carried out correctly
Encapsulation[12]	Coating ACM with a product that penetrates into and hardens the material	> asbestos removal is difficult or not feasible > minimal likelihood of asbestos being damaged > building has a short life expectancy > asbestos is visible for regular assessment	> asbestos is deteriorating or is water-damaged > applying the sealant may damage the asbestos > area of damaged asbestos is large	> quick and cost-effective > asbestos dust is contained	> hazard is not eliminated > if the area of asbestos is large, it may be similar in cost to removal > eventual removal may be more difficult and costly > enclosure and clearance procedures are still required

[12] If the enclosure, encapsulation or sealing options are used in commercial buildings, the location of the asbestos must be clearly indicated to note the presence of asbestos and recorded on asbestos records and asbestos management plans.

ASBESTOS MANAGEMENT OPTION	OPTION INVOLVES	APPROPRIATE WHEN	NOT APPROPRIATE WHEN	ADVANTAGES	DISADVANTAGES
Sealing	Applying a protective coating that creates an impermeable seal for the asbestos	> asbestos removal is difficult or not feasible > minimal likelihood of asbestos being damaged > building has a short life expectancy > asbestos is readily visible for regular assessment	> asbestos is deteriorating or has been water-damaged > applying the sealant may damage the asbestos > area of damaged asbestos is large	> quick and cost-effective > asbestos dust is contained	> hazard is not eliminated if the area of asbestos is large, it may be similar in cost to removal > eventual removal may be more difficult and costly > enclosure and clearance procedures are still required
Enclosure[13]	Placing a barrier between ACM and the surrounding environment	> asbestos removal is extremely difficult > fibres can be fully contained within the enclosure > most of the surface is inaccessible (enclosed) > disturbance to, or entry into the enclosure is unlikely	> enclosure is liable to be damaged or water damage may occur > asbestos cannot be fully enclosed	> minimal disruption to occupants > provides an adequate method of asbestos control for some situations	> asbestos hazard remains > ongoing maintenance of enclosure required > asbestos management programme required > enclosure has to be removed before removing asbestos > entry into the enclosure prohibited
Deferral	No action taken at the present time	> risk of asbestos exposure is negligible, and > asbestos is inaccessible and fully contained, or asbestos is stable and unlikely to be damaged	> there is a possibility of asbestos damage or deterioration > airborne asbestos dust levels exceed trace level	> no initial cost > cost of removal is deferred	> asbestos hazard remains > ongoing assessment and monitoring is required > asbestos management programme required

Table 6: Summary of asbestos management options

[13] Only acceptable if ACM is in good condition and the barrier is designed to protect against mechanical damage.

PART B

09/

ASBESTOS MANAGEMENT PLANS

IN THIS SECTION:

9.1 Introduction

9.2 What is an asbestos management plan?

9.3 Asbestos management plan format

9.4 Responsibility for the asbestos management plan

9.5 Assessing the exposure risk

9.6 Accessing the asbestos management plan

9.7 Reviewing the asbestos management plan

9.8 Transitional provisions for asbestos management plans

The legislation that applies in this section of the code is:

Health and Safety at Work Act 2015

***Section 34** PCBUs must consult other PCBUs with same duty*

***Section 168** Powers of entry and inspection*

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 13** Duty to prepare asbestos management plan*

***Regulation 14** Duty to review asbestos management plan*

9.1 INTRODUCTION

Workplace PCBUs with identified asbestos in their workplaces, including in soil or naturally occurring asbestos, must have an asbestos management plan in place.

This also applies to workplace PCBUs that are likely to have asbestos in their workplace from time to time.

The final three parts of this diagram are covered in this section:

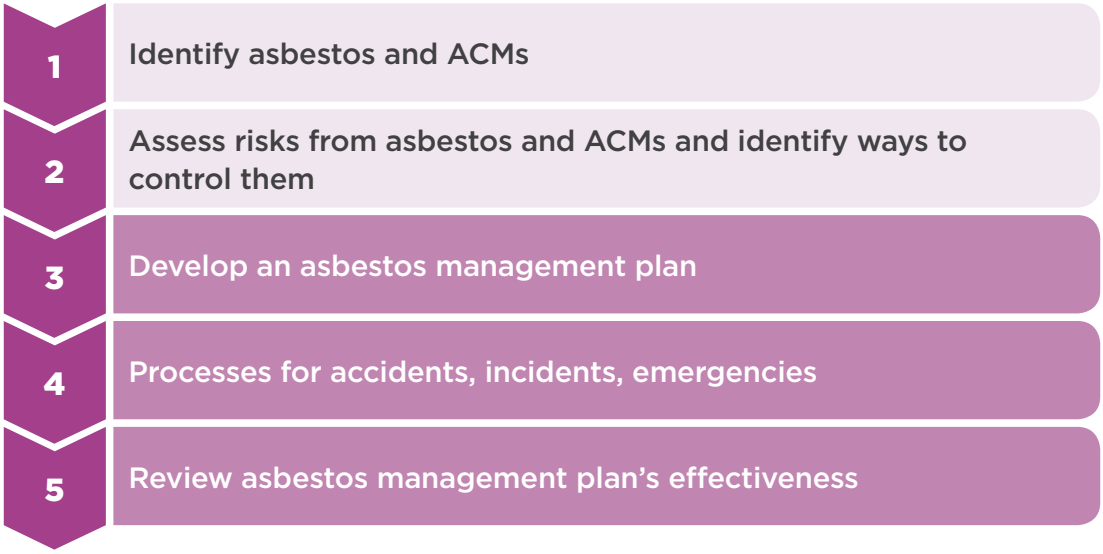


Figure 16: Asbestos management process – asbestos management plans

9.2 WHAT IS AN ASBESTOS MANAGEMENT PLAN?

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

An asbestos management plan must include information about:

> the identification of asbestos and ACM (eg where any signs and labels are located)

> decisions, and reasons for the decisions, about how the asbestos risks are managed (eg safe work procedures and control measures)

- procedures for recording incidents or emergencies involving asbestos in the workplace
- information about the workers carrying out work involving asbestos, including
  - information and training that has been or will be provided
  - their roles and responsibilities
  - any health monitoring that has been or will be conducted.

Other information may be included in the asbestos management plan, such as:

- a timetable for managing asbestos exposure risks (eg priorities and dates for removal, reviews, circumstances and activities that could affect the timing of action)
- procedures, including a timetable for reviewing and (if necessary) revising the asbestos management plan and asbestos documentation
- air monitoring procedures, if required.

Appendix C contains a list of content headings workplace PCBUs can use to generate an asbestos management plan.

9.3 ASBESTOS MANAGEMENT PLAN FORMAT

Asbestos management plans must be in writing. It is acceptable for plans to be in hard copy or electronic form, as long as the legally required information outlined in section 9.2 of this code is included. The plan must also be readily accessible to the people described in section 9.6 of this code.

Asbestos management plans also need to be made available to a health and safety inspector requiring this information under section 168 of the Act.

9.4 RESPONSIBILITY FOR THE ASBESTOS MANAGEMENT PLAN

The workplace PCBU is responsible for making sure an asbestos management plan is prepared for the workplace.

They are also responsible for making sure the asbestos management plan is kept up to date. See section 9.7 of this code for more information.

9.4.1 WORKING OUT THE EXTENT OF EACH PCBU'S DUTY IN THE CASE OF SHARED DUTIES

The extent of the duty to manage asbestos risks depends on the ability of each PCBU to influence and control the matter.

It will depend on what ability each PCBU has to influence and control the asbestos risks. The more influence and control a PCBU has over an asbestos risk, the more responsibility it is likely to have.

All PCBUs should:

- discuss what work activities are being, or going to be, carried out
- agree on the degree of influence and control each PCBU has
- agree on who will manage what and how it will be managed

> agree on the use of shared facilities, if applicable
> monitor and check how things are going on an ongoing basis.

A multi-level building owner cannot contract out of its duty to prepare or review an asbestos management plan by requiring each tenant to assume sole responsibility for the part of the building they occupy.

Every PCBU must, so far as is reasonably practicable, work together to determine what each party is responsible for, and monitor the arrangement to ensure it remains effective.

9.5 ASSESSING THE EXPOSURE RISK

This section does not apply to naturally occurring asbestos.

If the asbestos or ACM is in good condition and undisturbed, it is unlikely that airborne asbestos fibres will be released. In this situation, the risk to health is low. It is usually safer to leave it and review its condition over time.

However, if the asbestos or ACM deteriorates, is disturbed, or if ACD is present, there is an increased likelihood airborne asbestos will be released.

The material binding the asbestos fibres will have an impact on the potential for airborne asbestos to release. For example, a loosely-bound sprayed coating is more likely to release fibres if it is disturbed, compared to asbestos cement with firmly bound fibres.

The workplace PCBU or a PCBU carrying out work involving asbestos should decide if there is a risk of exposure to airborne asbestos. Things to consider include:

> the asbestos or ACM's condition
> whether it is likely to be damaged or will deteriorate
> the potential quantity of airborne asbestos fibres that could be released, based on its existing condition
> whether it is likely to be disturbed through routine work
> whether it is in an area where workers are exposed to the material
> potential exposure routes
> maximum potential human exposure periods.

Visually inspecting the asbestos, its location and understanding the work practices will help with this determination.

Asbestos-related work activities, as well as infrequent activities (like emergency response) need consideration.

The proximity of the asbestos or ACM is to work areas needs to be considered, because this can impact on the potential for exposure if the asbestos fibres become airborne.

Examples of activities that could pose a risk to health:

> Forklifts driving alongside asbestos cement sheet walls may damage these sheets if the forklifts accidentally collide with the walls.

> Plumbers working on a section of long pipe that does not have asbestos insulation, but the work may disturb asbestos-containing insulation on another section of the pipe some metres away.

> Electricians conducting wiring may disturb ceilings sprayed with material containing friable asbestos.

> Vapours, mists and splashes from an acid bath sitting next to an asbestos cement wall and below an asbestos cement roof.

9.6 ACCESSING THE ASBESTOS MANAGEMENT PLAN

The workplace PCBU must make sure a copy of the asbestos management plan is readily accessible, and should keep one at the workplace.

In particular, the PCBU must make a copy of the asbestos management plan available to:

> workers who have worked, are working, or plan to work at the workplace, and their representatives

> any PCBU who has worked, is working, or plans to work at the workplace

> any PCBU who required, requires or intends to require work to be carried out at the workplace.

9.7 REVIEWING THE ASBESTOS MANAGEMENT PLAN

The workplace PCBU must review and (if necessary) revise the asbestos management plan every five years, or when:

> asbestos controls are reviewed

> asbestos is removed, disturbed, sealed or enclosed

> the plan is no longer adequate for managing the asbestos risks, for example: if new asbestos is identified, or if a previous inaccessible area is now accessible.

In addition, a representative for workers at a workplace may request a review of an asbestos management plan if the representative reasonably believes that:

> any of the previously noted situations affects, or may affect, the health and safety of a member of the work group being represented, and

> the workplace PCBU has not adequately reviewed the asbestos management plan in relation to the situation.

9.8 TRANSITIONAL PROVISIONS FOR ASBESTOS MANAGEMENT PLANS

Workplace PCBUs have until 4 April 2018 to have prepared or reviewed asbestos management plans.

PART C

ALL PCBUs CARRYING OUT WORK INVOLVING ASBESTOS

IN THIS PART:

Section 10: Safe work instruments

Section 11: Safe Work Practices

Section 12: Training for workers doing work involving asbestos (excluding licensed asbestos removal workers)

Section 13: Tools and equipment

Section 14: Personal protective equipment (PPE)

Section 15: Laundering protective clothing

Section 16: Health monitoring

Section 17: Decontamination

Section 18: Waste containment and disposal

PART C

10/

SAFE WORK INSTRUMENTS

IN THIS SECTION:

10.1 Introduction
10.2 Safe work instruments

The legislation that applies in this section is:

Health and Safety at Work Act 2015

***Section 227** Minister may approve safe work instruments*

***Section 228** Legal effect of safe work instruments*

10.1 INTRODUCTION

As well as this code, WorkSafe produces other resources that will help duty holders comply with the law.

10.2 SAFE WORK INSTRUMENTS

The Minister for Workplace Relations and Safety can approve safe work instruments. These are developed by WorkSafe.

They may be used to:

> define terms
> prescribe matters
> make other provisions, such as:
  - standards
  - how substances are controlled
  - defining competency requirements.

If safe work instruments exist, they must be complied with.

Safe work instruments are provided for in the Asbestos Regulations. They may be written for the following topics:

> requirements for a certified safety management system
> competent person
> relevant courses in relation to a particular type of asbestos removal work or asbestos-related work
> indicating the presence and location of asbestos and ACM
> signs for asbestos removal work
> prescribing a membrane filter method for air monitoring.

Safe work instruments are published on WorkSafe's website: www.worksafe.govt.nz

PART C

11/

SAFE WORK PRACTICES

IN THIS SECTION:

11.1 Introduction
11.2 Techniques

11.1 INTRODUCTION

It is important that PCBUs carrying out work involving asbestos use safe work practices to minimise asbestos fibre generation.

11.1 TECHNIQUES

Wherever possible, do not conduct work on dry asbestos.

Techniques that minimise airborne asbestos fibre generation include:

> **wetting asbestos**, using surfactants or wetting agents
> using **thickened substances**, pastes or gels to cover the surfaces of the asbestos being worked on
  – (they should be compatible with the conditions of use, including temperature, and not pose a risk to health)
> **shadow vacuuming** (using a narrow nozzle of a vacuum cleaner used for asbestos work to 'shadow' the work to collect debris as it is generated)
> doing the task in a **controlled environment** (for instance, an enclosure).

Before starting, the PCBU intending to conduct work involving asbestos should assess the risk of airborne asbestos fibre generation and put appropriate control measures in place.

When selecting the best technique, the PCBU conducting the work involving asbestos should first assess the work area for additional workplace hazards and put appropriate control measures in place. One example is electrical hazards that could present a risk if the asbestos work practice involves water.

PCBUs and workers must not use power tools, including angle grinders, sanders, saws and drills, except if they are:

> used with dust suppression or extraction controls
> used in an enclosure.

Refer to section 13 of this code for further information about tools and equipment.

Appendix F contains Safe Work Practices for asbestos-related work tasks likely to disturb asbestos, with recommended control measures for minimising asbestos fibre generation.

Appendix G contains Safe Work Practices for a range of asbestos removal tasks, with recommended control measures for minimising asbestos fibre generation.

Note 1: The Safe Work Practices link to Parts of this code. They should not be read on their own.

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.

PART C

12/

TRAINING FOR WORKERS DOING WORK INVOLVING ASBESTOS (EXCLUDING LICENSED REMOVAL WORKERS)

IN THIS SECTION:

12.1 Introduction

12.2 Requirement to train workers

12.3 What should workers receive training on?

12.4 Supervision

12.5 Training and supervision in multiple PCBU situations

12.6 Training records

The legislation that applies in this section is:

Health and Safety at Work Act 2015

***Section 34** PCBUs must consult with other PCBUs on the same duty*

***Section 36(3)(f)** Primary duty of care (provision of information, training, instruction or supervision)*

***Section 168** Powers of entry and inspection*

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 17** Duty to train workers about asbestos*

Health and Safety at Work (General Risk and Workplace Management) Regulations 2016

***Regulation 9** Duty to provide information, supervision, training and instruction*

12.1 INTRODUCTION

Worker training is an essential part of safe asbestos practice.

Workplace PCBUs must do what is reasonably practicable to eliminate exposure to airborne asbestos. However, it may not always be able to meet this standard when carrying out licensed asbestos removal work and asbestos-related work. In these situations, exposure must be minimised, so far as is reasonably practicable.

The workers' risk of exposure can further reduce when they receive training on the safe procedures for working with asbestos.

This section of the code will cover:

> training requirements for workers involved in unlicensed asbestos removal and asbestos-related work
> what workers should receive training on
> supervision
> multiple PCBU situations
> training records.

12.2 REQUIREMENT TO TRAIN WORKERS

PCBUs must make sure, so far as is reasonably practicable, every worker who works with asbestos:

> is knowledgeable about and experienced with asbestos and other risks the work may present so they are not likely to harm themselves or other people, **or**
> is supervised by someone with that knowledge and experience, **and**
> is adequately trained in how to safely use everything they need to work with, including the protective clothing they may need to wear.

Figure 17 shows how competency requirements for workers increase with the risk of the work. The first two 'steps'[14] describe the type of training applicable to asbestos-related work and unlicensed asbestos removal.

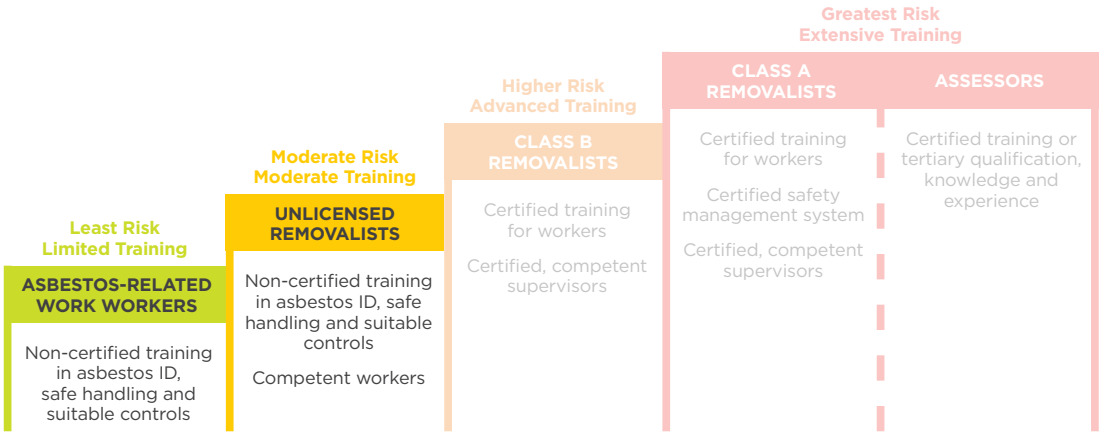


Figure 17: Competency requirements for asbestos-related work and unlicensed asbestos removal

The training covered in this section is more general than the training a worker doing licensed asbestos removal work requires. See section 25 of this code for information about training for licensed removal workers.

12.3 WHAT SHOULD WORKERS RECEIVE TRAINING ON?

If the PCBU has engaged workers it reasonably believes may be doing either asbestos-related work or unlicensed asbestos removal, the workers must receive task-specific training on:

> how to recognise material that may contain asbestos or is an ACM

> how to handle and work with asbestos and ACM safely

> suitable control measures for the specific tasks required for conducting asbestos-related work or unlicensed asbestos removal.

External training providers may deliver the training, or the PCBU can deliver it in-house. The PCBU should consult with workers and their representatives (if applicable) to develop a suitable training programme.

The training must be suitable and adequate for the workers, considering:

> the nature of the work the workers carry out

> the nature of the risks associated with the work at the time the training is provided

> the control measures for managing the risks of the work the workers conduct.

The training could include topics like:

> all types of asbestos and ACM the workers are likely to work with

> every step of the safe work procedures for working with or removing asbestos or ACMs

[14] The remaining three steps relate to training requirements for licensed asbestos removal workers and assessors.

> decontamination, waste and transportation requirements
> what to do if something goes wrong
> the PCBU's PPE and respiratory protection programme (see section 14.12.2 of this code for more information)
> health monitoring requirements
> air monitoring processes
> any other matters the PCBU (and workers or representatives) considers relevant.

The PCBU must, so far as is reasonably practicable, make sure the people receiving the training can readily understand it. This should involve factors that consider worker abilities, such as:

> literacy
> written and spoken language preferences
> learning preferences
> shift patterns (eg it may be preferable to train night shift workers at night).

12.4 SUPERVISION

Inexperienced workers must be supervised by an experienced and knowledgeable worker until they have gained the knowledge and experience needed to do the job safely.

The supervision must be suitable and adequate for the workers, considering:

> the nature of the work the workers carry out
> the nature of the risks associated with the work
> the control measures for managing the risks of the work the workers conduct.

The level of supervision will vary, according to:

> the nature of the work the worker does
> the risks associated with the work being carried out
> the control measures for managing the risks of the work the workers conduct.

Supervising workers until they can do the work safely is an active task. Workers should be monitored appropriately to make sure they are working safely and effectively.

12.5 TRAINING AND SUPERVISION IN MULTIPLE PCBU SITUATIONS

Usually, the most suitable PCBU to provide training to workers in unlicensed asbestos removal work and asbestos-related work is the workers' employer (PCBU).

However, if workers work on sites with multiple PCBUs, the PCBUs should discuss and confirm:

> what training has already taken place
> if extra training is required
> whether workers from other PCBUs need more training
> who is best placed to organise and deliver the training.

Examples:

> site induction training may be best delivered by the PCBU with overall charge of the site

> specialist equipment training may be best delivered by the PCBU who is responsible for the equipment

> temporary worker training may be best delivered by the PCBU(s) that requested or are allocated the workers.

12.6 TRAINING RECORDS

The workers' PCBU must keep records of the training each worker does:

> while the worker is carrying out the work, and

> for five years from the day the worker stops working for that PCBU.

The records must be made available for inspection under the Act by a health and safety inspector.

PART C

13/

TOOLS AND EQUIPMENT

IN THIS SECTION:

13.1 Introduction

13.2 Duties of PCBUs who design, manufacture, import, supply, install, construct or commission tools and equipment

13.3 Prohibited tools and equipment

13.4 Controlled tools and equipment

13.5 Vacuum cleaners

The legislation that applies in this section of the code is:

Health and Safety at Work Act 2015

***Section 39** Duty of PCBU who designs plant, substances, or structures*

***Section 40** Duty of PCBU who manufactures plant, substances, or structures*

***Section 41** Duty of PCBU who imports plant, substances, or structures*

***Section 42** Duty of PCBU who supplies plant, substances or structures*

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 18** Duty to limit use of equipment on asbestos or ACM*

***Regulation 39** Duty to make decontamination facilities available (for asbestos removal)*

***Regulation 52** Duty to make decontaminaton facilities available (for asbestos-related work)*

13.1 INTRODUCTION

Certain tools and equipment must not be used on asbestos because they generate asbestos fibres. It is important to select the correct equipment to minimise airborne asbestos generation.

Some tools and equipment are prohibited for asbestos use because they increase the chances of asbestos fibres becoming airborne, risking human health. Other tools and equipment that generate dust may be used, but under strict controls.

13.2 DUTIES OF PCBUS WHO DESIGN, MANUFACTURE, IMPORT, SUPPLY, INSTALL, CONSTRUCT OR COMMISSION TOOLS AND EQUIPMENT

These PCBUs, known as 'upstream' PCBUs, can influence, and sometimes eliminate health and safety risks through designing or manufacturing products that are safe for the end user.

Upstream PCBUs must also consider the potential health effects of products before they are used in a workplace by other PCBUs (known as 'downstream' PCBUs).

Upstream PCBUs must, so far as is reasonably practicable, make sure designed, manufactured, imported or supplied tools and equipment do not present health and safety risks when used for their intended purpose in a workplace.

Importers must make sure imported tools and equipment meet all New Zealand regulatory requirements.

13.2.1 SUPPLYING SECOND-HAND TOOLS AND EQUIPMENT

These duties do not apply to PCBUs selling second-hand tools and equipment 'as is, where is'.

13.3 PROHIBITED TOOLS AND EQUIPMENT

PCBUs and workers are prohibited from using some tools and equipment on asbestos and ACMs. These include:

> high-pressure water spray

> compressed air.

13.3.1 HIGH-PRESSURE WATER SPRAY

PCBUs and workers are prohibited from using high-pressure water spray on asbestos, ACM or ACD, because it increases the chances of asbestos fibres becoming airborne.

> High-pressure water spray means any equipment that generates water pressure at 350 kPa (50 psi) or over.

However, high-pressure water spray is appropriate for fire-fighting or fire protection. It can also be used if WorkSafe has approved a method for managing the risk associated with this equipment.

13.3.2 COMPRESSED AIR

Using compressed air on asbestos is prohibited because it increases the chances of asbestos fibres becoming airborne.

PCBUs and workers must use alternative methods to remove the asbestos, including low water pressure sprays, or a vacuum cleaner used only for asbestos work.

13.4 CONTROLLED TOOLS AND EQUIPMENT

Tools and other equipment that release asbestos fibres, including power tools, brushes and brooms, may be used on asbestos if:

> the equipment is enclosed, or

> the equipment is designed to capture or suppress asbestos fibres and is used in accordance with its design, or

> the equipment is used in a way designed to capture or suppress asbestos fibres safely, for example:

  - engineering controls like extraction ventilation
  - using the tools and instruments within an enclosed removal area.

PCBUs must make sure workers use manually-operated (non-powered) hand tools wherever possible. If the tools will not provide enough physical force to perform the task, the asbestos worker should use low-speed, battery-powered tools that can be used with wet methods for dust control.

Fit battery-powered tools with local exhaust ventilation (LEV) dust control hoods wherever possible. If LEV cannot be attached and other dust control methods are unsuitable, the asbestos worker should use shadow vacuuming techniques.

13.4.1 AIR MONITORING

When using power tools with dust suppression or extraction, the PCBU should carry out air monitoring to make sure the controls effectively reduce fibre generation.

See section 29 of this code for further information on air monitoring.

13.4.2 EQUIPMENT INSPECTION AND MAINTENANCE

Inspect all equipment used for removing asbestos:

> before work involving asbestos starts

> after any repairs

> at least once every seven days when it is continually used.

PCBUs should keep records with details of these inspections, the state of the equipment and any repairs made.

Tools must be either decontaminated after the work involving asbestos is finished, or sealed in a container, the outside of which is decontaminated and labelled to indicate the presence of asbestos.

See section 17 of this code for more information on decontamination.

13.5 VACUUM CLEANERS

Vacuum cleaners used for asbestos work need to comply with the Class H (high hazard) requirements in AS/NZS 60335.2.69 *Household and similar electrical appliances – Safety – Part 2.69 - Particular requirements for wet and dry vacuum cleaners, including power brush, for commercial use* or its equivalent.

Class H vacuum cleaners used for asbestos work should not be used on wet materials or surfaces.

13.5.1 ATTACHMENTS WITH BRUSHES

Attachments with brushes are difficult to decontaminate. After use, they should be sealed in a container, the outside of which is decontaminated, and labelled to indicate the presence of asbestos.

13.5.2 FILTERS

Filters for class H vacuum cleaners used for asbestos work should conform to the requirements of AS 4260 *High efficiency particulate air (HEPA filters) – Classification, construction and performance* or its equivalent for pre-filter design; and *BS EN 1822 High efficiency air filters (EPA, HEPA and ULPA)*.

Never use household vacuum cleaners if asbestos is or may be present, even if they have a HEPA filter.

13.5.3 USE

Only use vacuum cleaners for collecting small pieces of asbestos dust and debris. Pick up larger pieces by hand and place them in suitable waste containers. Never break them into smaller sizes to vacuum them up.

13.5.4 MAINTENANCE

The person changing the vacuum cleaner's bag, filter, or performing some other maintenance should wear PPE during these tasks. See section 14 of this code for more information on PPE.

PCBUs conducting work involving asbestos should make sure there are procedures for general maintenance, including emptying, of vacuum cleaners used for asbestos work in a controlled environment. Clean the vacuum cleaner externally with a wet cloth after each job. Store the hose and attachments in a labelled impervious bag. Place a cap over the opening to the vacuum cleaner when the attachments are removed.

Emptying class H vacuum cleaners used for asbestos work can create asbestos risks if the correct procedures are not followed. These vacuum cleaners should only be emptied by a competent person wearing the correct PPE, in a controlled environment and in compliance with the manufacturer's instructions.

13.5.5 OBLIGATIONS FOR VACUUM CLEANER HIRERS

Wherever possible, PCBUs should not hire vacuum cleaners for asbestos work, because they can be difficult to fully decontaminate.

However, hiring may be more viable in some circumstances, such as when a one-off maintenance task is required for asbestos or an ACM.

Any PCBU intending to hire a class H vacuum cleaner for asbestos work should inform the hiring company representative that it will be used in an asbestos environment.

Only hire class H vacuum cleaners from organisations that provide vacuum cleaners specifically for work involving asbestos, and only if the class H vacuum cleaner has been decontaminated.

The PCBU for which the asbestos-related work is done, or the asbestos removalist, must make sure decontamination facilities are available to decontaminate plant, such as vacuum cleaners used for asbestos work.

13.5.6 OBLIGATIONS FOR THE COMPANY SUPPLYING VACUUM CLEANERS FOR HIRE

PCBUs that hire out class H vacuum cleaners for asbestos work must, so far as is reasonably practicable, make sure the vacuum cleaner does not risk the health and safety of those who will use it in the workplace, or any other person at or in the vicinity of the workplace.

The hire company has a similar duty in relation to the vacuum cleaner and its workers at its own workplace.

PCBUs hiring out class H vacuum cleaners for asbestos work need to make sure they are decontaminated, kept in good working order and that the hirers are competent in how to use them safely.

The PCBU hiring out class H vacuum cleaners should make sure its workers ask the person or PCBU intending to hire a class H vacuum cleaner with a HEPA filter if the vacuum cleaner is going to be used for asbestos work. If that is the case, the PCBU hiring out the vacuum cleaner must give the hirer information on how to use it safely, and should determine the hirer's competence to use it safely (ie by asking the hirer questions about how to safely use it).

Although the hirer needs to return the vacuum cleaner decontaminated, it is likely some ACD may remain inside it. WorkSafe recommends that the PCBU hiring out vacuum cleaners used for asbestos work should store them in a separate area, in sealed containers that prevent ACD from escaping.

WorkSafe also recommends that class H vacuum cleaners used for asbestos work should only be hired out for work involving asbestos (ie do not hire out vacuum cleaners used in asbestos work to other people or PCBUs not doing asbestos work).

PART C

14/

PERSONAL PROTECTIVE EQUIPMENT (PPE)

IN THIS SECTION:

14.1 Introduction

14.2 What is PPE?

14.3 Decontamination compatibility

14.4 How PPE reduces exposure to asbestos

14.5 Supplying and paying for PPE

14.6 Workers' responsibilities for PPE

14.7 PPE for other people at the workplace

14.8 Other PPE duties for PCBUs

14.9 Coveralls

14.10 Gloves

14.11 Footwear

14.12 Respiratory protective equipment (RPE)

The legislation that applies in this section is:

Health and Safety at Work Act 2015

***Section 27** PCBU must not levy workers*

Health and Safety at Work (General Risk and Workplace Management) Regulations 2016

***Regulation 15** General duty of PCBU to provide personal protective equipment*

***Regulation 16** Worker may choose to provide personal protective equipment*

***Regulation 17** Other duties of PCBU relating to personal protective equipment*

***Regulation 18** Duties of worker to wear or use personal protective equipment*

***Regulation 19** Duty of PCBU to ensure personal protective equipment is used by other persons*

***Regulation 20** Duty of other persons to use or wear personal protective equipment*

14.1 INTRODUCTION

People carrying out work involving asbestos will need to use PPE in combination with other effective controls to minimise exposure to airborne asbestos fibres.

The PCBU should base their PPE selection and use on a risk assessment. Other data may also be useful. For example, air monitoring results are useful for working out RPE requirements.

If the asbestos work involves using other hazardous substances, the PCBU should perform a further risk assessment and take those risks into consideration.

If using other hazardous substances, the PCBU should refer to safety data sheets[15] (SDS) for information on the appropriate PPE to use and any other precautions to take.

14.2 WHAT IS PPE?

Generally, PPE is anything a person uses to minimise risks to their health and safety. It also includes anything that a worker can wear, including clothing, to minimise those risks.

It usually includes clothing such as coveralls, gloves and safety footwear, as well as RPE.

14.3 DECONTAMINATION COMPATIBILITY

When selecting PPE, PCBUs and workers should consider if reusable PPE can be decontaminated.

PPE that is not clothing must be disposed of as asbestos waste, or decontaminated and kept in a sealed container until it is re-used for asbestos work.

Clothing should be made from material that provides protection against fibre penetration; not wool or other materials that attract fibrous dusts. See section 14.9 of this code for an example.

[15] The manufacturer, importer or seller of a hazardous substance must supply a SDS on request.

14.4 HOW PPE REDUCES EXPOSURE TO ASBESTOS

PCBUs must eliminate the risk to airborne asbestos, so far as is reasonably practicable. If it is not reasonably practicable to eliminate risks, PCBUs must minimise exposure.

If everything has been done to eliminate or minimise the risks but a risk to health still remains, PCBUs must supply PPE to workers and make sure they use it.

PPE is not meant to be the sole method of reducing risk. It must be used alongside other controls.

PPE for asbestos is designed to reduce the number of asbestos fibres entering the respiratory system. For example, RPE protects the breathing zone by trapping the fibres and letting clean air pass through.

It is very important that workers do not carry asbestos fibres off the worksite that may be stuck or attached to their clothing. Instead, workers should ideally wear disposable protective clothing that they remove in a safe zone.

Workers may wear reusable protective clothing, laundered at a laundry equipped for asbestos-contaminated clothing. Refer to section 15 of this code for more information.

14.5 SUPPLYING AND PAYING FOR PPE

The PCBU directing the work must supply PPE to workers.

Potentially there may be more than one PCBU with a duty to supply the PPE. If this is the case, the PCBUs need to consult with each other to make sure suitable arrangements are made.

PCBUs must not charge workers for PPE.

PCBUs cannot require workers to provide their own PPE as a pre-condition of employment or write it as a condition into employment agreements.

14.5.1 WORKERS WHO WANT TO SUPPLY THEIR OWN PPE

Workers may wish to provide their own PPE for comfort or convenience. This is acceptable, as long as the PCBU is satisfied the PPE is suitable. This means the PPE sufficiently minimises risks to health and safety and is clean, hygienic, and in good condition.

In this situation, workers can change their minds and ask the PCBU to supply the PPE instead, provided they give the PCBU reasonable notice.

14.6 WORKERS' RESPONSIBILITIES FOR PPE

Workers must:

> use or wear PPE in accordance with any information, training or reasonable instruction from the PCBU

> not intentionally misuse or damage the PPE

> tell the PCBU about damage, defects or the need to clean or decontaminate PPE.

Workers must take reasonable care for their own health and safety, and make sure what they do or fail to do will not adversely affect the health and safety of others. This includes complying, as far as they are reasonably able, with any reasonable instruction the PCBU gives them. One example is using and wearing the PPE the PCBU supplies them with, or they have chosen to provide themselves.

If workers need to wear negative-pressure RPE, they should be clean-shaven, so the RPE forms a proper seal around their face and will not let fibres enter their breathing zone.

14.7 PPE FOR OTHER PEOPLE AT THE WORKPLACE

PCBUs must make sure other people in their workplace, such as visitors, wear PPE if their health and safety may be affected by the work occurring in the PCBU's workplace.

The people who need to wear PPE to keep safe at the PCBU's workplace must wear the PPE. They are likely to require instruction or training in how to wear the PPE correctly.

14.8 OTHER PPE DUTIES FOR PCBUS

PCBUs must make sure the PPE they provide workers is:

> selected with the purpose of minimising workers' risks to their health and safety:
  - the PPE must be suitable for the type of work they do and the hazards they face
  - the PPE must be a suitable size and fit for the workers, and it must be reasonably comfortable for them to wear or use
> maintained, repaired or replaced so it continues to minimise the workers' risks to their health and safety:
  - the PPE must also be clean and hygienic and kept in good working order
> worn by the workers, so far as is reasonably practicable
> compatible with other PPE workers have to use or wear.

The PCBU must provide information, training and instruction to workers in how to properly wear, use, store and maintain the PPE.

14.9 COVERALLS

14.9.1 DISPOSABLE COVERALLS

Disposable coveralls should be:

> of a suitable standard to prevent tearing or asbestos fibre penetration
  - disposable coveralls rated type 5, category 3 (EN ISO 13982–1) or equivalent meet this standard
> one size too big, to help prevent ripping at the seams
> fitted with a hood and cuffs, making sure:
  - coverall legs are worn over footwear, because tucking them in lets the dust in
  - loose cuffs are sealed with tape
  - the fitted hood is worn over the respirator straps.

Disposable coveralls should:

> not be made of easily torn material, have external pockets or velcro fastenings because they are difficult to decontaminate

> never be taken home

> never be re-used

> (so far as is reasonably practicable) be disposed of as asbestos waste after a single use.

14.9.2 REUSABLE COVERALLS

If reusable coveralls are used and it is not reasonably practicable to dispose of them, they must be laundered at a laundry equipped to launder asbestos-contaminated clothing.

Laundering asbestos-contaminated protective clothing is not preferred because their decontamination cannot be guaranteed. Reusable coveralls should be reserved for limited situations. An example is emergency services that need protective clothing to protect against fire as well as asbestos hazards, and their continual disposal and replacement is not practicable.

In some cases (particularly dusty jobs), workers should wear double coveralls, removing the outer coverall a pre-determined distance from the final decontamination area.

14.10 GLOVES

If large amounts of asbestos fibres may be present, workers should wear single-use disposable gloves.

The purpose of wearing gloves is to minimise the risk of asbestos fibres catching under the workers' fingernails, or in cuts or grazes that may be hard to decontaminate.

If workers wear fitted gloves, the PCBU should provide low protein (powder free) gloves to reduce the risk of workers developing a latex allergy, asthma or dermatitis from latex gloves. Disposable nitrile gloves are an alternative.

Dispose of used gloves as asbestos waste. However, as with coveralls, if it is not reasonably practicable to dispose of the gloves, they must be laundered in a laundry equipped to launder asbestos-contaminated clothing.

Workers should clean their hands and fingernails thoroughly when they have finished asbestos work.

14.11 FOOTWEAR

The PCBU should provide safety footwear (eg steel-capped, rubber-soled work shoes or gumboots) for asbestos workers. Footwear should not have laces, because laces and eyelets can become contaminated and are difficult to clean. Laceless boots such as gumboots are preferred where practicable.

Disposable overshoes should not be worn unless they have an anti-slip sole design.

When the workers are not wearing their safety footwear, they should be stored upside down to minimise asbestos contaminating the inside. The PCBU should provide footwear storage that can store footwear this way.

The workers' footwear should stay inside the work area or dirty decontamination area for the duration of the asbestos work.

They should not be shared for hygiene reasons.

At the end of the asbestos work, and each time a worker leaves the asbestos work area, the PCBU must make sure the footwear is:

> decontaminated, or
> sealed in a container that is decontaminated and marked to indicate the presence of asbestos (for re-use), or
> disposed of as asbestos waste.

14.12 RESPIRATORY PROTECTIVE EQUIPMENT (RPE)

When selecting RPE, refer to the latest versions of:

> AS/NZS 1715 *Selection, use and maintenance of respiratory protective devices* and
> AS/NZS 1716 *Respiratory protective devices*.

The PCBU or asbestos removal supervisor(s) should decide the level of respiratory protection required for the asbestos work.

Selecting suitable RPE depends on:

> what asbestos work will be conducted
> the probable maximum concentrations of asbestos fibres expected (see **Appendix J** for guidance)
> the wearer's personal characteristics that may affect the RPE's facial fit (for example, facial hair and glasses).

Workers should wear RPE if respirable asbestos fibres are above trace levels.

Reusable RPE is preferred when working with asbestos. However, if there is a need for disposable RPE that cannot be met by reusable RPE, the PCBU should make sure it is stored in a suitable and clean location before use, and that workers dispose of it after a single use.

If a worker has a medical condition that prevents them from using negative-pressure RPE, they should wear a continuous-flow, positive-pressure respirator wherever possible.

At every asbestos job, the PCBU or asbestos removal supervisor(s) should re-instruct the workers in the necessity of wearing their RPE correctly, to guard against complacency.

The PCBU or asbestos removal supervisor(s) may change the level of RPE during the asbestos work if their assessment of asbestos fibre levels inside the asbestos work area indicates they have changed. For example, this may occur during the final clean-up after removing friable asbestos and it may no longer be necessary to use air-line RPE.

RPE should be worn until all contaminated disposable coveralls and clothing have been vacuum-cleaned and/or removed and bagged for disposal, and personal washing has been completed.

14.12.1 STORING RPE

RPE should be properly stored when not in use.

This may involve:

> keeping RPE clean and dry
> storing RPE away from workplace airborne contaminants
> clearly identifying clean RPE and separating it from contaminated RPE
> storing RPE face-pieces so they are not bent out of shape
> storing filters in a sealed container with the date of their last inspection.

14.12.2 RESPIRATORY PROTECTION PROGRAMME[16]

If workers are required to wear RPE, the PCBU should put a respiratory protection programme in place. The programme involves:

> appointing a programme administrator
> selecting RPE
> health monitoring workers using RPE
> training
> issuing RPE
> fitting the RPE
> wearing RPE
> RPE maintenance
> disposing of RPE and equipment
> record-keeping
> programme evaluation.

PROGRAMME ADMINISTRATOR

The PCBU should appoint a person to take responsibility for running the programme. They should have an understanding of workplace hazards and be able to make RPE decisions based on them. In large companies, this would ideally be a person with occupational safety and health experience. In smaller companies, it may be the PCBU or someone the PCBU nominates.

SELECTING RPE

When the programme administrator selects RPE, they should consider:

> whether the RPE conforms with AS/NZS 1716
> health monitoring or medical factors for workers wearing RPE
> the hazards the workers are exposed to (in this case, airborne asbestos fibres)
> wearer factors such as comfort, wearing other PPE, communication etc
> job factors such as mobility, confined spaces, hot or cold environments etc
> RPE maintenance requirements, including cleaning and decontamination.

[16] For further information, refer to AS/NZS 1715.

14.12.3 MEDICAL ASSESSMENT BEFORE BEING ISSUED WITH RPE

Workers who wear RPE regularly should be encouraged to have a medical assessment before they start work where RPE is required. The medical assessment will help determine if they are fit to wear RPE long-term, and/or for long hours at a time.

It is important to consider worker medical factors when deciding on the most appropriate RPE. When the worker breathes through negative-pressure RPE they meet a resistance, which requires them to breathe harder. Workers with the following conditions may find it difficult to wear negative-pressure RPE:

> workers with asthma or chronic lung conditions
> workers who feel anxious or claustrophobic when wearing RPE, particularly in combination with other PPE
> workers with injuries or medical conditions that make wearing RPE difficult (eg chronic sinusitis (blocked or stuffy nose)).

It may be more suitable for these workers to wear positive-pressure RPE, if the work does not have any space restrictions.

See section 16 of this code for further information on health monitoring.

14.12.4 TRAINING WORKERS IN USING RPE

Workers must receive training from their PCBU in how to do their job safely, including in the use of PPE and RPE. Workers should be trained in:

> how the RPE works
> why and when the workers should wear it
> what hazards they are exposed to
> making sure the RPE fits properly, including issues with facial hair, glasses, changing face shape, etc
> how to look after it, including cleaning, storage, when to change filters, etc
> when to stop work and leave the asbestos area if they think their RPE is not working properly.

Workers should receive this training before they start working with asbestos, and on regular occasions afterward.

14.12.5 ISSUING RPE

Each worker should have their own RPE where practicable. They should be individually marked for identification purposes. For RPE that might not be issued individually, for example, Self Contained Breathing Apparatus (SCBA), they need to be cleaned and disinfected after each use.

14.12.6 FIT TESTING RPE

It is important that workers wearing face-fitting (negative-pressure) RPE achieve a good facial seal. This means the RPE should be properly fitted. This is usually achieved with a fit test.

There are two types of fit test – qualitative and quantitative. The tests are conducted by specialists with occupational health or hygiene experience. The RPE supplier may be able to help locate a specialist who performs this service.

Workers should also have a fit test:

> if they have significantly gained or lost weight

> if a different size or model of respirator is required

> annually (or another time frame determined by a risk assessment).

FACIAL HAIR AND/OR GLASSES

Facial hair (beard, stubble growth, moustaches or sideburns) or glasses affect the RPE's ability to form a tight seal around the face. Workers should be clean-shaven if they have to wear RPE for work; otherwise they are likely to inhale airborne asbestos fibres.

Glasses may prevent an effective seal around the face of a full-face-piece respirator. If the worker cannot wear contact lenses or modified glasses, they will have to wear a positive-pressure air supply hood instead.

14.12.7 FIT-CHECKING RPE

Before using the RPE, workers should inspect it in accordance with the manufacturer's instructions to make sure it is not damaged and is in good working order. They should report respirator defects immediately to the PCBU or supervisor.

The RPE pre-use check should include:

> inspecting the condition of the straps and face piece, including the seal and the nose piece

> inspecting the condition of the exhalation valve

> a fit check.

Workers should fit check their RPE every time they put one on.

The checks are:

1. Place hands over the mask or filters and breathe in. The mask should pull more firmly onto the face.
2. Block the exhalation (breathing out) valves and breathe out hard. A bulging effect should be noticed, but it should not leak air.
3. If the RPE leaks air, readjust the straps and try again.
4. If it still leaks, change to a different respirator size or model and perform another fit check.

Figure 18: Conducting a fit check

14.12.8 WEARING RPE

Workers are expected to wear RPE in accordance with the manufacturer's instructions, and to put their coverall hood over the RPE straps.

Asbestos workers need to wear RPE all the time in the asbestos work area and until the appropriate stage of personal decontamination.

At the end of a shift or at a break, as part of the decontamination process, workers should take the RPE off only when it is safe to do so.

14.12.9 RECORD KEEPING

The RPE programme administrator should keep good records of the RPE programme.

The records should include:

> RPE issue date, identifying marks
> records of training and fit testing
> maintenance:
  - filter replacement schedule
  - RPE maintenance schedule
  - supplied air RPE maintenance records
> programme records:
  - procedures
  - audits
  - atmospheric monitoring
  - health monitoring.

PROGRAMME EVALUATION

The RPE programme administrator should evaluate the RPE programme at least annually to make sure it is working effectively.

14.12.10 EXAMPLES OF RPE

The following figures are examples of RPE. The protection each device affords depends not only on the RPE's design and facial fit but also on the efficiency of the filters' filtration capacity.

These drawings are indicative only. In order to show the correct facial fit, they do not show coverall hoods. Always wear RPE with the straps under the coverall's hood.

POSITIVE-PRESSURE AND NEGATIVE-PRESSURE RPE

Some respirators are negative-pressure respirators; others are positive-pressure respirators. Negative-pressure respirators require the wearer to draw air through a filter or filters to their nose and mouth. This makes the air pressure inside the RPE negative when compared to the ambient air pressure outside the RPE. Filtering facepiece and air-purifying respirators use negative pressure.

Figure 19: P2 half-face particulate respirator

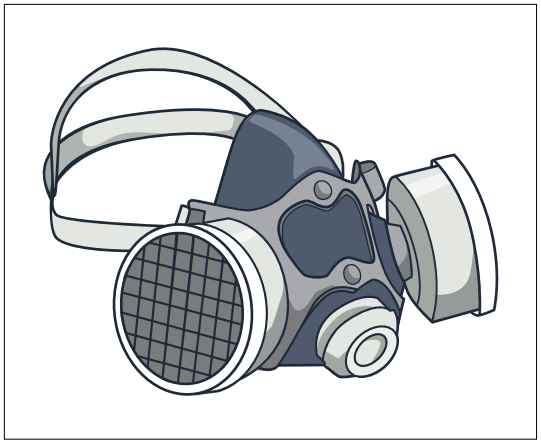


Figure 20: Half-face, particulate cartridge respirator (not shown with pre-filters)

Positive-pressure respirators have a higher pressure within the respiratory inlet covering (facepiece, hood or helmet) than ambient pressure by providing a flow of filtered air. This causes any air movement to be outward, and air will not leak in. Positive-pressure respirators provide high levels of protection from airborne contaminants. Examples are powered, air-purifying respirators (PAPR).

Figure 21: PAPR

Figure 22: Full-face, particulate filter (cartridge) respirator

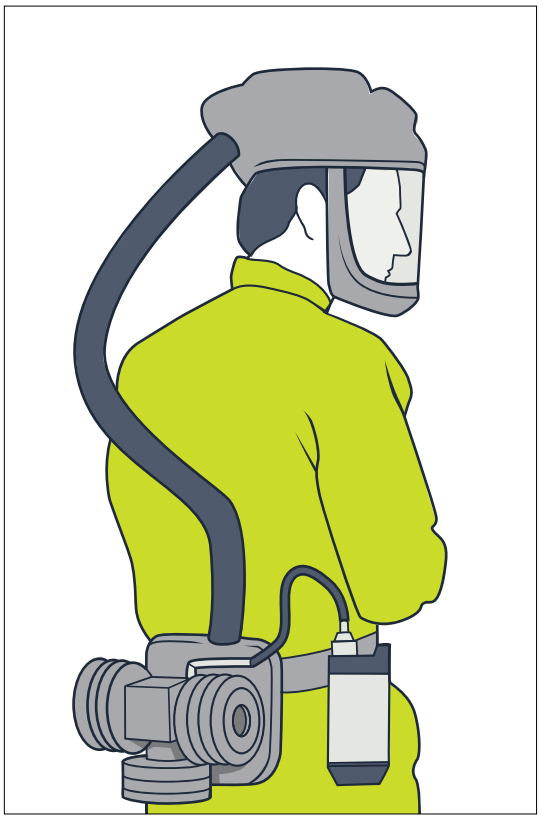


Figure 23: Full-face PAPR

14.12.11 AIR-LINE RESPIRATORS

Air-line respirators are used when removing friable asbestos. When in use, the air-line should incorporate a belt-mounted back-up filter. If the air-line's air supply system fails, workers should leave the asbestos removal area using normal decontamination procedures. The back-up belt-mounted filter will provide adequate respiratory protection during this process.

If the number of workers wearing air-line respirators inside an enclosure might result in the lines getting tangled, the licensed asbestos removalist should provide manifolds to minimise the tangling and help workers move around.

The compressor's capacity should be adequate for the number of air lines in use, and the compressor's air intake location should provide good air quality without contamination. Compressed air has to be filtered before it is supplied to a respirator.

The air quality needs to match what is specified in Appendix A of AS/NZS 1715.

Figure 24: Full-face, positive-pressure demand air-line respirator

14.12.12 DISPOSING OF SINGLE-USE RPE

The PCBU must make sure the RPE is sealed in a container that is decontaminated and marked to indicate the presence of asbestos, then disposed of as asbestos waste when the asbestos work is completed.

14.12.13 MAINTENANCE OF REUSABLE RPE

If re-using RPE, the PCBU must make sure it is:

> decontaminated, or

> sealed in a container that is decontaminated and marked to indicate the presence of asbestos.

The RPE should be cleaned, disinfected (if necessary) and stored in a safe place away from asbestos-contaminated areas.

The length of time a particulate filter can be used for asbestos work depends on the resistance to breathing and damage to the filter. Workers should replace filters if they are damaged, or when breathing resistance increases. A damaged filter needs to be replaced before resistance begins to increase, and according to the manufacturer's instructions.

Certain brands of filters may not be usable after being exposed to conditions like a decontamination shower. The PCBU should seek advice from the supplier about the effectiveness of a filter after being subjected to certain conditions.

PART C

15/

LAUNDERING PROTECTIVE CLOTHING

IN THIS SECTION:

15.1 Introduction

15.2 General requirements

15.3 Responsibilities for laundering clothing

15.4 On-site laundering

15.5 Removing asbestos-contaminated clothing

15.6 Laundry requirements

15.7 If laundering reusable clothing is not practicable

The legislation that applies in this section is:

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 40(3)** Disposing of asbestos waste and contaminated personal protective equipment (asbestos removal)*

***Regulation 53(3)** Disposing of asbestos waste and contaminated personal protective equipment (asbestos-related work)*

15.1 INTRODUCTION

This section provides information about:

> who is responsible for laundering asbestos-contaminated clothing

> how to remove contaminated clothing for laundering

> safety processes for laundries handling asbestos-contaminated clothing

> an alternative for workers wearing reusable clothing that cannot be laundered.

15.2 GENERAL REQUIREMENTS

As section 14 of this code states, if everything has been done to eliminate or minimise exposure to airborne asbestos, but a risk to health still remains, PCBUs must supply PPE to workers and make sure that they use it.

Asbestos removalists and PCBUs for which asbestos-related work is carried out must make sure, so far as is reasonably practicable, that protective clothing is disposed of when work is completed.

If it is not reasonably practicable to dispose of protective clothing, it must be washed in a laundering facility that is equipped to launder asbestos-contaminated clothing. Otherwise, the contaminated clothing must be kept in a sealed container, marked clearly to indicate the presence of asbestos until it is re-used for asbestos work.

PCBUs engaged in work involving asbestos need to make sure workers do not take contaminated protective clothing home. They must dispose of any clothing worn under coveralls, or suitably contain it for laundering as asbestos-contaminated clothing (see section 15.5).

15.3 RESPONSIBILITIES FOR LAUNDERING CLOTHING

For **asbestos removal work**, the asbestos removalist is responsible for making sure contaminated personal protective clothing is laundered at laundry equipped to launder asbestos-contaminated clothing.

For **asbestos-related work**, the PCBU for which asbestos-related work is carried out must make sure the contaminated clothing is laundered at laundry equipped to launder asbestos-contaminated clothing.

This may not necessarily mean that the PCBU for which asbestos-related work is carried out must take the clothing to the laundry itself; the PCBU doing the asbestos-related work may do it. However, as with all shared duties, the PCBU for which asbestos-related work is carried out must make sure this happens.

15.4 ON-SITE LAUNDERING

In some situations, it may be beneficial for some PCBUs to set up their own on-site laundering facility. This is permitted, as long as the facility is set up inside an asbestos removal area.

15.5 REMOVING ASBESTOS-CONTAMINATED CLOTHING

Workers should:

> remove the contaminated clothing while it is damp from the decontamination process, then thoroughly wet the clothing before placing them in impermeable containers or bags

> decontaminate and label the outside of the bags to indicate the presence of asbestos before transporting to the laundering facility

> not let the contaminated clothing dry out before washing.

15.6 LAUNDRY REQUIREMENTS

At the laundry:

> The containers and bags holding the asbestos-contaminated clothing should be opened in the washing machine while being further saturated with water.

> Workers should wear P2 respiratory protection while unloading clothes into the washing machine.

> Workers should dispose of the empty containers or bags as asbestos waste.

> The PCBU must filter the waste water and dispose of the filter as asbestos waste.

The laundry:

> should be told the clothing is contaminated with asbestos by the person delivering the contaminated clothing

> should have a management plan in place to control the release of respirable asbestos fibres

> should have smooth surfaces that can be lined with polythene sheeting (200 μm) or easily wiped clean

> may use conventional washing machines as long as they are not used to wash other clothing

> may need to have a laundry room operate under negative pressure to eliminate or minimise airborne asbestos fibre release during the laundering process – this can be determined with a risk assessment

> should have procedures for cleaning up spills and to prevent flooding neighbouring areas

> should make sure non-asbestos-contaminated laundry does not become contaminated with asbestos (if the facility launders other items).

15.6 IF LAUNDERING REUSABLE CLOTHING IS NOT PRACTICABLE

If workers need to wear reusable clothing to work with asbestos, but it is not practicable for the clothing to be laundered, the PCBU needs to make sure the workers follow this process:

1. put a sealable container storing the contaminated clothing in the dirty decontamination area while the work area is being set up
2. while wearing RPE, workers enter the dirty decontamination area and put the contaminated clothing on
3. workers use the clothing exclusively for work involving asbestos
4. workers keep their RPE on while removing the clothing in the dirty decontamination area
5. workers return the contaminated clothing in the container, which is marked with their name and clearly marked to indicate asbestos is present
6. workers decontaminate the container's exterior before removing it from the asbestos work area
7. workers follow the process for personal decontamination (see section 17.7 of this code).

PART C

16/

HEALTH MONITORING

IN THIS SECTION:

16.1 Introduction

16.2 Who does health monitoring apply to?

16.3 Who is responsible for making sure health monitoring is conducted?

16.4 Informing workers about health monitoring

16.5 Components of health monitoring

16.6 When health monitoring occurs

16.7 The people carrying out health monitoring

16.8 Paying for health monitoring

16.9 Information for the occupational health practitioner

16.10 Health monitoring report

16.11 Health monitoring records

The legislation that applies in this section is:

Health and Safety at Work Act 2015

***Section 36** Primary duty of care*

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 15** Duty to provide health monitoring*

***Regulation 16** Duty to ensure appropriate health monitoring is provided*

Health and Safety at Work (General Risk and Workplace Management) Regulations 2016

***Regulation 33** Duty to inform worker of health monitoring*

***Regulation 34** Duty to ensure appropriate health monitoring is provided*

***Regulation 35** Duty to ensure health monitoring is supervised*

***Regulation 36** Duty to pay costs of health monitoring*

***Regulation 37** Information that must be provided to occupational health practitioner*

***Regulation 38** Duty to obtain health monitoring report*

***Regulation 39** Duty to give health monitoring report to worker*

***Regulation 40** Duty to give health molnitoring report to relevant PCBUs*

***Regulation 41** Duty to give health monitoring report to regulator*

***Regulation 42** Health monitoring records*

16.1 INTRODUCTION

Asbestos-related disease takes many years to develop, but there are some tests that medical professionals can conduct to monitor an asbestos worker's continuing health.

PCBUs should not rely on results from asbestos-related health monitoring to determine how effective their asbestos risk management processes are. This is because there is a long period of time between asbestos exposure and identifying asbestos-related disease. Air monitoring is significantly more effective at assessing the effectiveness of asbestos controls. See section 30 for further information on air monitoring.

This section will explain the requirements for health monitoring specified by the Asbestos Regulations and the GRWM Regulations.

16.2 WHO DOES HEALTH MONITORING APPLY TO?

Health monitoring must be provided to workers if they are at risk of exposure to asbestos when carrying out any of the following work for a PCBU:

> Class A licensed asbestos removal work

> Class B licensed asbestos removal, where it involves more than four weeks work in any twelve-month period

> licensed asbestos assessor work
> workers carrying out other ongoing asbestos-related work or unlicensed asbestos removal work and are at risk of exposure to airborne asbestos when doing that work.

16.2.1 SELF-EMPLOYED AND HEALTH MONITORING

If any of the people referred to in section 16.2 of this code are self-employed PCBUs, they should monitor their own health as part of complying with section 36(6) of the Act.

16.3 WHO IS RESPONSIBLE FOR MAKING SURE HEALTH MONITORING IS CONDUCTED?

The duty to provide health monitoring is a shared duty between relevant PCBUs. In terms of asbestos-related work, the PCBU engaging the workers to conduct the asbestos-related work may have the most influence and control to provide health monitoring to its workers. In any case, PCBUs for which asbestos-related work is carried out must make sure that health monitoring is provided for the workers involved.

For asbestos removal work, the asbestos removalist (PCBU) engaging the workers to conduct asbestos removal work may have the most influence and control to provide health monitoring to its workers. In any case, PCBUs that commission the removal of asbestos must make sure that health monitoring is provided for the workers involved.

It is recommended that PCBUs monitor their worker participation rates in health monitoring at regular periods, to determine that they are fulfilling their duty to provide it.

16.4 INFORMING WORKERS ABOUT HEALTH MONITORING

The PCBU must tell its workers about any asbestos-related health monitoring requirements before they start any work that may expose them to asbestos.

The PCBUs must give those workers the following information:

> that the PCBU has a duty to carry out health monitoring
> what health hazard triggered the requirements for the health monitoring (in this case, asbestos)
> what the health monitoring will consist of and how it will be carried out
> the information that has to be given to the occupational health practitioner
> that the PCBU has a duty to obtain a health monitoring report from the occupational health practitioner
> that the PCBU has a duty to notify other relevant PCBUs
> how health monitoring reports will be kept, stored, and shared, including keeping confidentiality
> the purposes of health monitoring, which are:
  - to help the PCBU to reduce the risk of exposure to health hazards in the workplace
  - to enable the PCBU and other PCBUs in the workplace to take remedial action within the workplace to manage the health risk
  - to help with treating and protecting workers who are or were exposed to health hazards

> that it will inform WorkSafe if test results indicate a worker may have a disease, illness or injury as a result of carrying out the work that triggered the requirement for health monitoring. This will help WorkSafe carry out its functions under the Act and the WorkSafe New Zealand Act 2013.

16.5 COMPONENTS OF HEALTH MONITORING

Unless a medical practitioner recommends another type of health monitoring, the health monitoring must include:

> a physical examination
  - this should emphasise the respiratory system, and include a chest x-ray (PA and lateral) and lung function test (FEV1 and FVC)
> the worker's demographic, medical and occupational history
> records of the worker's personal exposure to asbestos, for example:
  - relevant risk assessment reports
  - air monitoring results
  - investigation reports if the airborne contamination standard for asbestos was exceeded.

Together, this is known in the code as a 'full asbestos medical.'

16.6 WHEN HEALTH MONITORING OCCURS

Health monitoring for workers doing licensed asbestos removal work must start within four weeks of the worker starting to carry out the work.

16.6.1 ONGOING MONITORING

Workers referred to in section 16.2 of this code should continue to have their health monitored according to the following regime:

YEARS AFTER STARTING EMPLOYMENT WITH THE PCBU	PROCEDURE
1	Full asbestos medical
5	Full asbestos medical
10	Full asbestos medical
15	Full asbestos medical
18	Full asbestos medical
20	Full asbestos medical
Every two years thereafter	Full asbestos medical

Table 7: Health monitoring frequency

16.7 THE PEOPLE CARRYING OUT HEALTH MONITORING

An occupational health practitioner with experience in health monitoring must conduct or supervise the health monitoring.

16.8 PAYING FOR HEALTH MONITORING

The PCBU must pay all health monitoring expenses for the workers undergoing the monitoring.

If two or more PCBUs have a duty to provide health monitoring to a worker, they may jointly agree one PCBU organises the health monitoring. However, each PCBU must share costs equally unless they agree otherwise.

16.9 INFORMATION FOR THE OCCUPATIONAL HEALTH PRACTITIONER

The PCBU who commissions health monitoring must give the following information to the occupational health practitioner:

> the PCBU's name and address
> each worker's name and date of birth
> a description of the type of work the workers are, or will be, doing that triggered the requirement for health monitoring
> if the workers have started the work involving asbestos, how long this has been going on for.

16.10 HEALTH MONITORING REPORT

The PCBU who commissions health monitoring must take all reasonable steps to obtain a report from the occupational health practitioner as soon as practicable after the monitoring is finished.

The health monitoring report must include the following information:

> the worker's name and date of birth
> the name of the occupational health practitioner
> the name and address of the PCBU who commissioned the health monitoring
> the date the health monitoring took place
> any test results that indicate whether the worker was exposed to a health hazard
> any advice that test results indicate the worker may have a disease, an illness or injury as a result of carrying out the work that triggered the requirement for health monitoring
> any recommendation that the PCBU takes remedial measures, including whether the worker is able to continue to carry out the type of work that triggered the requirement for health monitoring.

16.10.1 WHO IS ENTITLED TO THE HEALTH MONITORING REPORT?

The PCBU who commissions health monitoring must give a copy of the report, as soon as reasonably possible after getting it from the occupational health practitioner, to:

> the worker

> all other PCBUs with a duty to provide health monitoring for that worker.

Workers are entitled to receive a copy of their health monitoring report as soon as practicable after the PCBU receives it.

The PCBU for whom the worker is carrying out work must give a copy of the report, as soon as reasonably possible after getting it from the medical practitioner, to WorkSafe, if the report has:

> test results indicating the worker may have a disease, injury or illness as a result of working with asbestos

> recommended remedial measures, including whether the worker can continue to work with asbestos.

PCBUs may wish to use relevant information from health monitoring results to monitor worker harm rates as part of standard health and safety performance reporting.

16.11 HEALTH MONITORING RECORDS

The PCBU must keep each worker's health monitoring reports confidential, and for at least 40 years after the report was generated.

When a worker leaves the PCBU's business or organisation, the PCBU must give the worker a copy of their health monitoring records. This also applies if the PCBU stops trading.

The PCBU must not disclose health monitoring records to anyone without the worker's written consent. However, the PCBU is exempted from this requirement if:

> the PCBU is required to give a copy of the health monitoring records to a relevant PCBU (eg in a principal-contractor relationship)

> the PCBU is required to give a copy of the health monitoring records to WorkSafe or another Regulator.

PART C

17/

DECONTAMINATION

IN THIS SECTION:

17.1 Introduction

17.2 Responsibilities for decontamination

17.3 Decontaminating the work area

17.4 Decontaminating tools

17.5 Decontaminating vehicles or machinery

17.6 Decontaminating waste containers removed from the asbestos work area

17.7 Personal decontamination procedures

17.8 Setting up personal decontamination areas outside the asbestos work area

17.9 Decontamination units attached to an enclosure

17.10 Remote decontamination units for friable asbestos removal

The legislation that applies in this section is:

Health and Safety at Work Act 2015

***Section 168** Powers of entry and inspection*

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 39** Duty to make decontamination facilities available (for asbestos removal)*

***Regulation 52** Duty to make decontamination facilities available (for asbestos-related work)*

17.1 INTRODUCTION

Facilities must be available to decontaminate the work area, tools and workers, and asbestos waste must be disposed of properly.

Decontaminating the work area, workers, PPE and tools used in asbestos removal work is vital to eliminate or minimise exposure to airborne asbestos fibres.

To work out the most appropriate decontamination procedure, the PCBU carrying out asbestos-related work or the asbestos removalist needs to assess the risks of each individual asbestos job.

17.2 RESPONSIBILITIES FOR DECONTAMINATION

17.2.1 ASBESTOS REMOVAL WORK

For Class A and B asbestos removal work, a clearance certificate is required before the asbestos removal area can be reoccupied for ordinary use. As part of obtaining a clearance certificate, the asbestos removal area needs to be decontaminated.

The asbestos removalist must provide facilities to decontaminate:

> the asbestos removal area
> any plant used in the asbestos removal area (including any hired plant)
> workers doing asbestos removal work
> other people with access to the asbestos removal area as permitted by the Asbestos Regulations or other legislation.

The asbestos removalist must make sure nothing leaves the asbestos removal area unless it:

> is decontaminated before being removed, or
> is sealed in a container, the container's exterior is decontaminated and marked clearly to indicate the presence of asbestos.

17.2.2 ASBESTOS-RELATED WORK

The PCBU for which asbestos-related work is being carried out must make sure decontamination facilities are available.

The PCBU carrying out the asbestos-related work may provide the decontamination facilities, but the PCBU for which the work is being carried out is still required to make sure they are available.

The facilities must decontaminate the following:

> the asbestos-related work area

> any plant used in the asbestos-related work area (including any hired plant)
> workers doing asbestos-related work.

The PCBU for which asbestos-related work is carried out must make sure nothing likely to be contaminated with asbestos leaves the asbestos-related work area unless it:

> is decontaminated, or
> is sealed in a container, and the container's exterior is decontaminated and marked clearly to indicate the presence of asbestos.

17.3 DECONTAMINATING THE WORK AREA

There are two types of decontamination methods:

> **Wet decontamination**, or wet wiping, is the preferred method. It involves using damp rags to wipe down contaminated areas. Rags should only be used once, although they may be refolded to expose a clean surface. The rags should be used flat, and not wadded. If using a bucket of water, do not re-wet the rags in the bucket as this will contaminate the water. If the water gets contaminated, it must be treated as asbestos waste. Avoid potential electrical and slip hazards when using this method.
> **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.

Contaminated items, including tools, equipment and clothing, must not be removed from the asbestos work area unless they have been decontaminated or stored in a sealable container that is labelled to indicate the presence of asbestos.

If an item cannot be decontaminated, or is not suitable for decontamination, it must be placed in a sealed container and marked clearly to indicate the presence of asbestos. The exterior of the sealed container must be decontaminated before it is removed from the asbestos work area. Items that cannot be decontaminated must, so far as is reasonably practicable, be disposed of as asbestos waste in accordance with the Asbestos Regulations.

If asbestos work involves friable asbestos, the decontamination process may include decontamination units. Glove bag and wrap-and-cut methods are exceptions if personal decontamination methods are likely to be satisfactory. Mini-enclosure removals may require a combination of personal decontamination and decontamination units.

17.4 DECONTAMINATING TOOLS

All tools used during asbestos work need to be fully dismantled, cleaned under controlled conditions and decontaminated using either wet or dry decontamination procedures before they are removed from the asbestos work area.

The appropriate method will depend on its practicality, the level of contamination and electrical hazards.

If tools cannot be decontaminated, they must be placed in a sealed container and marked clearly to indicate the presence of asbestos. To do this, they should be:

> tagged to indicate they are contaminated with asbestos, and
> double-bagged with a gooseneck tie in asbestos-labelled bags before removing them from the asbestos work area.

The bags containing the tools must remain sealed until decontamination or the start of the next asbestos task, when the equipment can be taken into the asbestos work area and re-used under full control conditions.

Workers should wear PPE when opening the bag to clean or re-use the equipment or tools.

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.

17.5 DECONTAMINATING VEHICLES OR MACHINERY

The asbestos removalist should conduct a risk assessment to determine the extent or necessity of vehicle decontamination procedures.

17.5.1 DECONTAMINATING MACHINERY, INCLUDING VEHICLES

To decontaminate machinery:

> make sure the machine is thoroughly washed down using water hose pressure when leaving the removal area
> make sure the cab, tracks or tyres, undercarriage, boom and body are thoroughly doused with water to remove any asbestos dust on the machine and
> leave the machine in the decontamination unit.

Once the machine has been thoroughly washed and the decontamination unit has been washed down, another operator in clean PPE and RPE can enter the decontamination unit from the clean side to take the machine from the decontamination unit to the clean area.

Note: Workers should not exit the asbestos working area through the vehicle decontamination unit.

Example of vehicle contamination:

1. Locate the vehicle decontamination unit away from the personal decontamination unit but next to the asbestos removal area. It can be purpose-built with suitable heavy-duty timbers and plywood. It should be lined internally and externally with heavy-duty plastic sheeting (200 µm thickness).
2. The unit should be watertight to prevent excess water run-off during wash-down procedures.
3. Use spring-loaded doors on either side of the unit to provide an airlock when the vehicle or machine passes through the unit. Only open one set of doors at a time during entry and exit to prevent airborne fibres from escaping the enclosure.
4. After each vehicle or machine has been thoroughly washed, douse the decontamination unit with water to keep any fibres remaining inside.
5. Once the decontamination unit is dismantled, dispose of the materials used in building the decontamination unit as asbestos waste.

17.5.2 MANAGING WASTE WATER

Build the vehicle or machinery decontamination unit so water cannot escape its confines, except to where it will be collected for filtration or disposal.

If not using filtration, collect the water from the decontamination process in a sump and dispose of it as contaminated waste.

Do not dump unfiltered water in council catchments. Talk to the local or territorial authority about their waste water requirements.

17.6 DECONTAMINATING WASTE CONTAINERS REMOVED FROM THE ASBESTOS WORK AREA

Asbestos waste containers must be decontaminated before leaving the asbestos work area.

17.7 PERSONAL DECONTAMINATION PROCEDURES

Personal decontamination involves removing all visible asbestos dust or residue from the worker, their PPE and RPE. Workers need to undergo personal decontamination each time they leave the asbestos work area, and when asbestos work is completed.

Personal decontamination still needs to be carried out even when a decontamination unit is not needed.

Before removing clothing and footwear worn during work involving asbestos, they should be thoroughly vacuumed with a vacuum cleaner used for asbestos work to remove any asbestos fibres. Footwear should also be wet-wiped.

The workers doing work involving asbestos should wear RPE until all contaminated coveralls and clothing have been vacuum-cleaned and/or removed and bagged for disposal, and personal washing has been completed. See section 17.8 of this code for more information about decontaminating clothing.

Personal hygiene and careful washing are essential. Pay particular attention to the hands, fingernails, face and head.

17.8 SETTING UP PERSONAL DECONTAMINATION AREAS OUTSIDE THE ASBESTOS WORK AREA

The PCBU doing work involving asbestos must set up particular areas for people to personally decontaminate themselves and any tools and equipment when they enter and leave the asbestos work area. This should eliminate or minimise the release of airborne asbestos from the asbestos work area.

These decontamination areas require:

1. a dirty decontamination area that includes:
   - > a suitable rack for air-line respirators to be stored on, at the entrance of the area
   - > equipment for vacuum cleaning or hosing down (using a fine mist) contaminated clothing and footwear

- storage for contaminated clothing and footwear
- labelled waste bags/bins for disposing of protective clothing
- shower area with an adequate supply of hot and cold water and toiletries.

2. a clean decontamination area that includes:
   - storage for individual RPE in containers or lockers
   - airflow directed towards the dirty decontamination area
   - shower area with an adequate supply of hot and cold water and toiletries
   - a clean changing area that includes:
     - storage for clean clothing
     - separate storage for clean and dirty towels
     - airflow directed towards the clean decontamination area.

Example process for entering and leaving an asbestos work area

ENTERING THE ASBESTOS WORK AREA

1. Clean change area: Change into clean work clothes and put on clean protective clothing. Store removed clothing in a dust-proof container. Move to the clean decontamination area.
2. Clean decontamination area: Put on RPE. Check it is working properly and conduct a fit check. Move to the dirty decontamination area.
3. Dirty decontamination area: Put on any additional PPE that has been stored in the dirty decontamination area, such as footwear. Connect to the RPE air supply if required. Move from the decontamination unit to the asbestos work area.

LEAVING THE ASBESTOS WORK AREA

1. **Asbestos work area**: Use a vacuum cleaner used for asbestos work to remove any obvious signs of asbestos dust from protective clothing. Remove footwear and leave them inside the asbestos work area next to the decontamination unit. Move to the dirty decontamination area.
2. **Dirty decontamination area**: Disconnect the air-line respirator if used. Shower while wearing protective clothing and RPE. Leaving the RPE on, remove protective clothing and place in labelled waste bags. Remove wet underclothing while showering and place in the storage unit in the dirty decontamination area. Pass through the airlock into the clean decontamination area.
3. **Clean decontamination area**: Shower and remove RPE. Thoroughly wash hands, fingernails, face, head and respirator. Store the RPE in a suitable container in the clean decontamination area. Move to the clean change area.
4. **Clean change area**: Change into clean clothing.

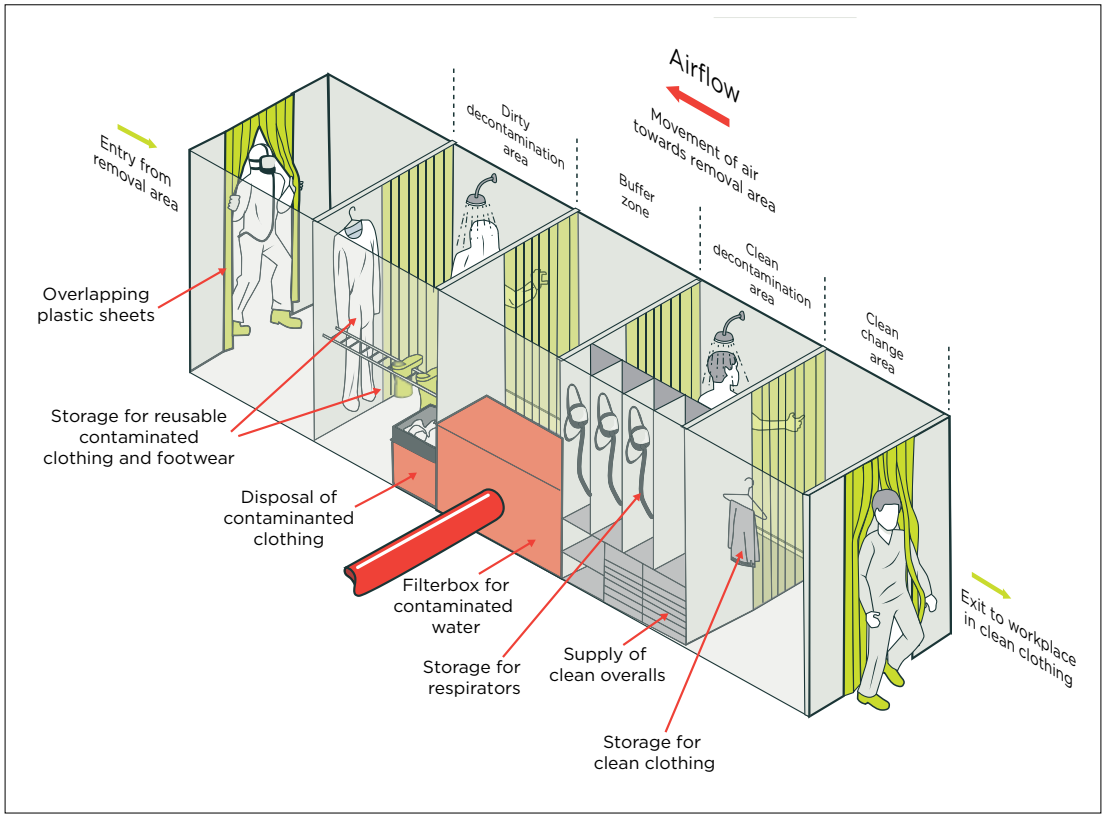


Figure 25: Example of a decontamination unit

17.9 DECONTAMINATION UNITS ATTACHED TO AN ENCLOSURE

The licensed asbestos removalist should conduct a risk assessment to work out the number of units required based on the number of workers in the asbestos removal area.

As a guide, one decontamination unit should be provided for every six asbestos workers.

If men and women have to use the same decontamination unit, work out a system to let them access the unit separately. Alternatively, provide a separate mobile or specially constructed on-site decontamination unit with male and female facilities.

The decontamination unit should be immediately next to and directly connected with the enclosed asbestos removal area. It should be located as far away as practicable from workplace facilities like lunchrooms.

The decontamination unit should include a dirty decontamination area, a clean decontamination area and a clean changing area. These areas need to:

> be large enough to let workers adequately decontaminate themselves

> be separated by suitable airlocks or buffer zones

> have doors with large openings with a hinged flap operating as a one-way valve to provide sufficient airflow through the decontamination unit.

Provide towels and soap so workers can appropriately decontaminate themselves.

All water from the decontamination facility should pass through a particulate filter or other trap before it passes into sewer mains. The filter or trap should be capable of capturing particles down to 5 µm. Alternatively, the waste water should be collected in a sump and disposed of as asbestos waste.

Workers should not smoke, eat or drink in any part of the decontamination unit.

The licensed asbestos removalist may consider stationing a worker outside an enclosure for the duration of the asbestos work to liaise with the supervisor, communicate with personnel inside the work enclosure and start emergency/evacuation procedures if necessary.

The licensed asbestos removalist should keep records of decontamination on a daily basis.

17.10 REMOTE DECONTAMINATION UNITS FOR FRIABLE ASBESTOS REMOVAL

Remote decontamination units are units that are not attached to an enclosure when workers remove asbestos. Remote units are not located next to the asbestos removal area and should only be used if a decontamination unit cannot be located immediately next to the asbestos removal area.

The licensed asbestos removalist using a remote decontamination unit needs to put extra procedures in place to minimise contaminating the pathways leading from the enclosure to the decontamination unit. This involves the use of 'transiting' PPE and extra facilities to let the workers carry out preliminary decontamination before moving to the decontamination unit.

This may include a three-stage airlock isolated changing area, which should be specially constructed with 200 µm thick polythene sheeting. The area should be attached to the enclosure and should consist of three compartments separated by weighted sheets to minimise the spread of dust between the compartments.

Before workers enter the changing area, they need to remove all obvious signs of asbestos dust from their protective clothing with a vacuum cleaner used for asbestos work. The workers then move to the isolated changing area to remove outer garments, including coveralls and overshoes, before they put on fresh protective clothing for the walk to the decontamination unit. The workers should wear RPE until they reach the appropriate phase in the decontamination unit.

The route of access from the asbestos removal area to the decontamination unit should be suitably signposted and isolated to restrict public access.

The licensed asbestos removalist should conduct air monitoring adjacent to this access route and at other suitable locations outside the asbestos removal area. See section 29 of this code for more information on air monitoring.

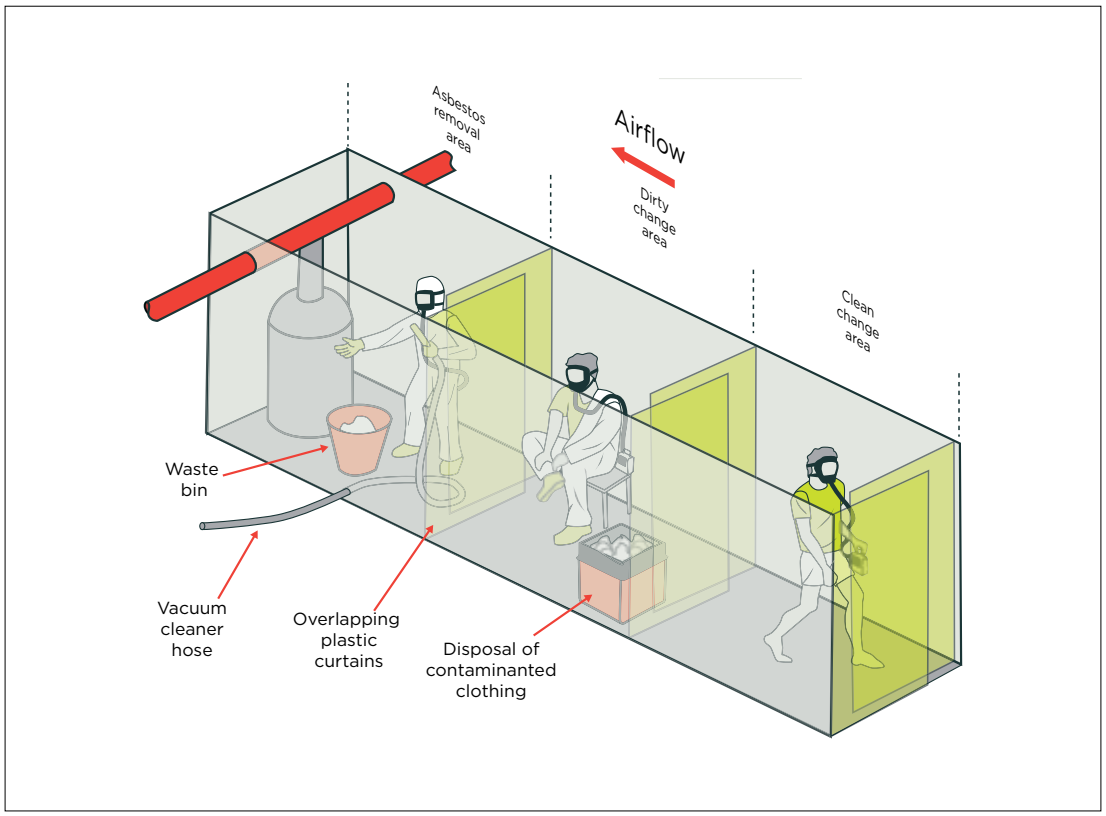


Figure 26: Example of a decontamination area

PART C

18/

WASTE CONTAINMENT AND DISPOSAL

IN THIS SECTION:

18.1 Introduction

18.2 Waste disposal following work involving asbestos

The legislation that applies in this section is:

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 40** Duties relating to disposal of asbestos waste and contaminated personal protective equipment (for asbestos removal work)*

***Regulation 53** Duties relating to disposal of asbestos waste and contaminated personal protective equipment (for asbestos-related work)*

18.1 INTRODUCTION

Having good waste containment and disposal processes is just as important as having safe processes for working with asbestos.

This stage is also important for minimising problems associated with asbestos-contaminated land.

This section contains information about:

> procedures when work is completed
> asbestos waste bags
> sheeting for containing asbestos waste
> removing waste from the work area
> asbestos waste drums or bins
> asbestos waste skips, trays and similar
> transport and disposal.

18.2 WASTE DISPOSAL FOLLOWING WORK INVOLVING ASBESTOS

The PCBU for which asbestos-related work is carried out, or the asbestos removalist, must make sure asbestos waste is appropriately contained and marked clearly to indicate the presence of asbestos before removing it from the work area.

For asbestos removal work: dispose of asbestos waste as soon as reasonably practicable.

For asbestos-related work: dispose of asbestos waste safely and regularly.

18.2.1 COMPLETING WORK

When work involving asbestos is completed, the PCBU doing asbestos-related work or the asbestos removalist must make sure tools and equipment are decontaminated, or placed in an asbestos-labelled container and sealed, before being removed from the asbestos work area.

The PCBU doing asbestos-related work or the asbestos removalist should make sure individual components and wiping rags are placed in plastic bags and each bag gooseneck-tied separately before being placed in a container.

The PCBU doing asbestos-related work or the asbestos removalist must make sure asbestos waste awaiting disposal is stored in closed containers (eg 60 or 200 litre steel drums with removable lids, or a sealed skip).

Asbestos waste must be disposed of at a landfill site approved for the purpose by a territorial local or territorial authority under the Resource Management Act 1991.

18.2.2 ASBESTOS WASTE BAGS

All asbestos waste, friable asbestos and small pieces of non-friable asbestos must be contained to minimise airborne asbestos fibre exposure. They should be contained in new heavy-duty 200 µm (minimum thickness) polythene bags (with a maximum size of 1200 mm long and 900mm wide to reduce manual handling injuries).

Controlled wetting of the asbestos waste should be carried out to minimise asbestos dust emissions during bag or polythene sealing, or if the bag or wrapped bundles rupture. Close the bags with a gooseneck tie.

To minimise the risk of a bag tearing or splitting, and to help with manual handling, asbestos waste bags should not be more than half-filled (depending on the weight of the items). Gently remove excess air from the waste bag in a way that does not cause dust to release.

Mark the bags clearly '*Caution Asbestos – Do not open or damage bag. Do not inhale dust*'.

Clean the external surface of each bag to remove any dust before removing the bags from the asbestos work area. Double-bag them outside the asbestos work area immediately following the decontamination process.

18.2.3 POLYTHENE SHEETING FOR CONTAINING ASBESTOS WASTE

Asbestos sheeting, asbestos-lagged pipes and similar long or large items should be wrapped in heavy-duty 200 µm (minimum thickness) polythene sheeting.

Polythene sheeting should be new (not recycled, because recycled sheeting is a lower grade than new and can have flaws in it). Once wrapped, label the bundles to indicate the presence of asbestos.

Double-wrap the waste in polythene sheeting and apply adhesive tape to the entire length of every overlap to minimise the risk of the sheeting tearing or splitting.

18.2.4 ASBESTOS WASTE DRUMS OR BINS

The PCBU doing asbestos-related work, or asbestos removalist, should make sure all drums or bins used for storing and disposing of asbestos waste are in good condition, with lids and rims in good working order, and with no hazardous residue.

The drums or bins should:

> be placed in the asbestos work area or located as close to the asbestos work area as possible before asbestos work starts
> be lined with polythene (minimum 200 µm thickness)
> be clearly marked to indicate the presence of asbestos
> be wetted down while being filled to minimise dust emissions
> have their rims sealed and their outer surfaces wet-wiped and inspected before they are removed from the asbestos work area.

Store asbestos waste drums or bins in a secure location when they are not in use. They should not be moved manually once they have been filled; use trolleys or drum lifters instead.

If the drum or bin is to be re-used, pack and seal the existing asbestos waste so when the drum or bin is emptied there is no residual asbestos contamination. Inspect the drum or bin after use to make sure there is no asbestos residue.

MARKING WASTE DRUMS AND BINS

All drums and bins containing asbestos must be sealed and marked clearly to indicate the presence of asbestos before they are removed from the asbestos work area.

18.2.5 ASBESTOS WASTE SKIPS, VEHICLE TRAYS AND SIMILAR CONTAINERS

If the volume or size of asbestos waste cannot be contained in asbestos waste bags, drums or bins, use a waste skip, vehicle tray or similar container in good condition.

The PCBU doing asbestos-related work, or asbestos removalist, should seal the asbestos in double-lined, heavy-duty plastic sheeting (200 µm minimum thickness), or double-bag it before placing it in the container. Non-friable asbestos waste may be placed directly into a skip or vehicle tray double-lined with heavy-duty plastic sheeting, if it is kept damp to minimise airborne asbestos dust.

Once the skip is full, its contents should be completely sealed with plastic sheeting. If the skip will be emptied at a waste disposal site, the PCBU doing asbestos-related work or asbestos removalist should have a procedure to prevent the plastic lining from tearing.

If the PCBU doing asbestos-related work or asbestos removalist cannot dispose of asbestos waste immediately, the skip may be used for storing the asbestos waste on-site, as long as the contents are secured (eg using a lockable lid or by locating the skip in a secure area) to prevent unauthorised access.

18.2.6 REMOVING WASTE FROM THE ASBESTOS REMOVAL AREA

Once the waste has been removed from the asbestos work area, it should be:

> placed in an appropriate container for secure storage and eventual disposal, or

> immediately removed from the site for transporting asbestos to the disposal site.

18.2.7 TRANSPORT AND DISPOSAL OF ASBESTOS WASTE

Disposing of asbestos waste is the final step in the work process. Therefore, it is the last point at which exposure to asbestos risks is likely to occur. The asbestos waste must be disposed of at a local or territorial authority landfill authorised under the Resource Management Act 1991 to accept asbestos waste.

Visit the asbestos webpage: www.worksafe.govt.nz to find a list of landfill sites across New Zealand that accept asbestos waste.

ASBESTOS REMOVAL CONTROL PLAN

When asbestos waste is being transported from one place to another, the following details are required in the asbestos waste disposal plan:

> the name of the asbestos waste transporter

> how the waste is contained

- the quantity (amount and dimensions) of waste
- where the waste will be stored on-site before disposal
- how the waste will be transported
- approval requirements from the local or territorial authority (including any permits and paperwork required)
- local or territorial authority requirements such as the quantity of asbestos and dimensions of containers
- where the waste will be transported to
- how correct disposal shall be verified, such as tip dockets.

See **Appendix H** for an asbestos removal control plan template.

Different PCBUs will be responsible for the different stages covered during the disposal.

The following PCBUs are likely to have responsibility for some aspect of the asbestos waste disposal:

- the PCBU for which asbestos-related work is carried out
- the PCBU carrying out asbestos-related work
- the asbestos removalist
- the PCBU responsible for transporting asbestos waste.

Disposal sites are regulated by the Resource Management Act 1991 and local government regulations.

PART D

ASBESTOS IN THE GROUND

IN THIS PART:

Section 19: Asbestos-contaminated sites

Section 20: Naturally occurring asbestos

PART D

19/

ASBESTOS-CONTAMINATED SITES

IN THIS SECTION:

19.1 Introduction

19.2 Identifying asbestos-contaminated soil

19.3 Asbestos management plans

19.4 Work involving asbestos-contaminated soil

19.5 Removing asbestos from soil

19.6 Guidance for managing asbestos-contaminated soil

The legislation that applies in this section is:

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 7** Prohibition on carrying out, directing, or allowing work involving asbestos or ACM*

***Regulation 10** Duty to ensure asbestos is identified at workplace*

***Regulation 13** Duty to prepare asbestos management plan*

19.1 INTRODUCTION

Under the Asbestos Regulations, if asbestos is identified at a workplace, the workplace requires an asbestos management plan (this requirement is effective from 4 April 2018). This includes asbestos-contaminated sites where work is being carried out, or where workers are likely to be while working.

Managing sites contaminated with asbestos is a specialised activity. The workplace PCBU should engage a competent person (who may be a suitably qualified and experienced practitioner (SQEP)) for advice for all but the most minor of asbestos contaminations.

This section includes the following topics:

> identifying asbestos-contaminated soil
> asbestos management plans
> work involving asbestos-contaminated soil
> removing asbestos from soil
> guidance for managing asbestos-contaminated soil.

19.2 IDENTIFYING ASBESTOS-CONTAMINATED SOIL

Work involving soil containing asbestos is permitted as asbestos-related work if it does not contain ACM or friable asbestos in a quantity likely to lead to airborne contamination above trace level during the work. This determination must be made by a competent person.

19.3 ASBESTOS MANAGEMENT PLANS

If asbestos or ACM giving rise to the risk of exposure to respirable asbestos fibres is identified in soil at a workplace, the workplace PCBU must develop an asbestos management plan.

See section 9 of this code for information about asbestos management plans, and **Appendix C** for suggested content headers for an asbestos management plan.

19.4 WORK INVOLVING ASBESTOS-CONTAMINATED SOIL

The work must be carried out in accordance with the Asbestos Regulations.

If the work involves soil that does not contain ACM or friable asbestos in a quantity likely to lead to airborne contamination that exceeds trace level, the work may be conducted as asbestos-related work.

Asbestos removal work is also permitted in this case.

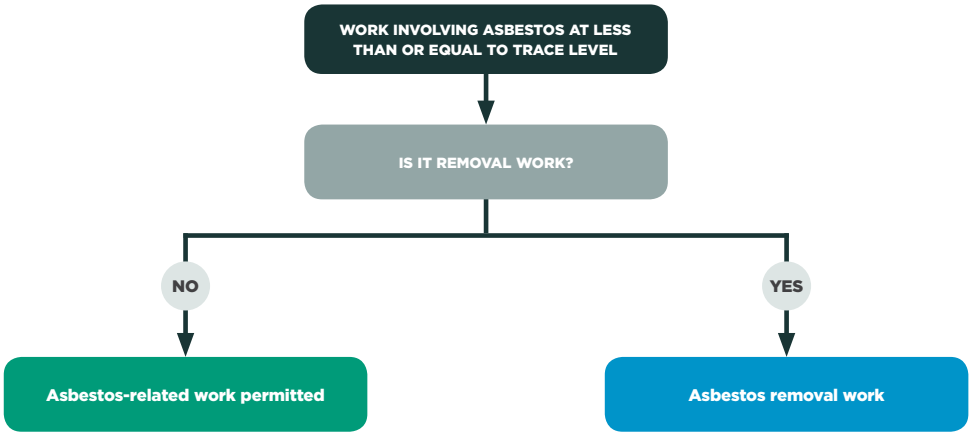


Figure 27: Work that can be conducted with asbestos in soil at less than trace level

If the work involving the soil is likely to lead to airborne contamination exceeding trace level, the asbestos, ACM or ACD must be removed. This may need a licensed asbestos removalist, depending on the quantity and type of asbestos.

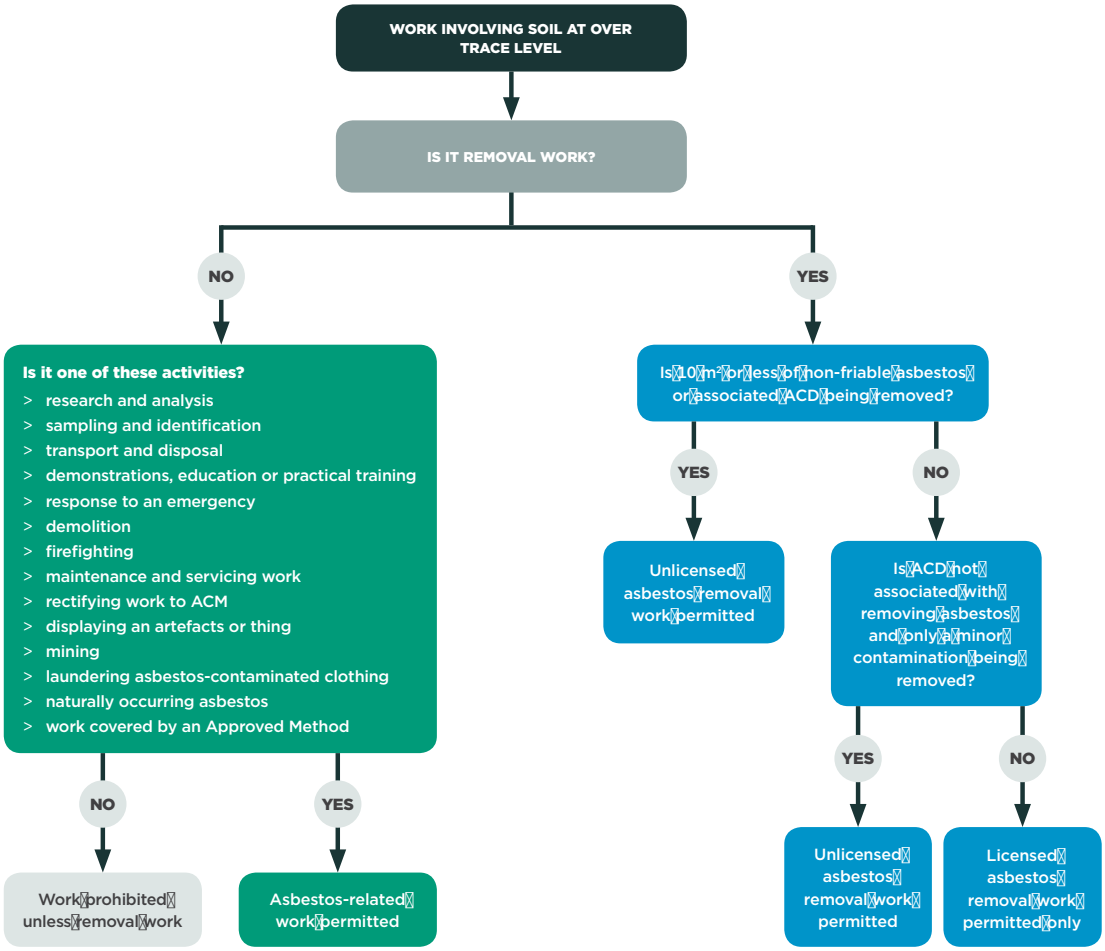


Figure 28: Work that can be conducted with asbestos in soil above trace level

19.5 REMOVING ASBESTOS FROM SOIL

Removing asbestos, ACM or ACD from soil may require a licensed asbestos removalist. The type of licence required will depend on the type and amount of asbestos to be removed (refer to section 24.2 of this code). The removal may need to be supervised by a SQEP.

All asbestos waste and contaminated soil removed must be disposed of as asbestos waste in a place approved for the purpose by a local or territorial authority under section 73 of the Resource Management Act 1991.

19.6 GUIDANCE FOR MANAGING ASBESTOS-CONTAMINATED SOIL

Refer to the *New Zealand Guidelines for Assessing and Managing Asbestos in Soil* for further information about managing asbestos-contaminated soil. This is available from BRANZ Ltd (Building Research Association of New Zealand): www.branz.co.nz

PART D

20/

NATURALLY OCCURRING ASBESTOS

IN THIS SECTION:

20.1 Introduction

20.2 Encountering naturally occurring asbestos

20.3 Requirements to manage naturally occurring asbestos

20.4 Preparing an asbestos management plan for naturally occurring asbestos

20.5 Ongoing management

20.6 Training workers

The legislation that applies in this section is:

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 7** Prohibition on carrying out, directing, or allowing work involving asbestos or ACM*

***Regulation 10** Duty to ensure asbestos identified at the workplace*

***Regulation 13** Duty to prepare asbestos management plan*

20.1 INTRODUCTION

Naturally occurring asbestos is an asbestos mineral that forms naturally in association with geological deposits, including rock, sediment or soil. It may be found in mines or quarries, or inside rock formations around New Zealand.

This section includes:

> requirements to manage naturally occurring asbestos
> preparing an asbestos management plan for naturally occurring asbestos
> ongoing management
> training.

20.2 ENCOUNTERING NATURALLY OCCURRING ASBESTOS

The mining and quarrying industries may encounter veins of naturally occurring asbestos when excavating or exploring for other minerals. Work that disturbs naturally occurring asbestos during mining operations is permitted under the Asbestos Regulations, but the workplace PCBU must make sure exposure to airborne asbestos fibres is minimised so far as is practicable.

20.3 REQUIREMENTS TO MANAGE NATURALLY OCCURRING ASBESTOS

Any naturally occurring asbestos identified or assumed at a workplace must either be included in the workplace's asbestos management plan, or have its own asbestos management plan.

The asbestos management plan confirms that steps are in place to make sure asbestos exposure risks from naturally occurring asbestos are assessed and managed.

20.4 PREPARING AN ASBESTOS MANAGEMENT PLAN FOR NATURALLY OCCURRING ASBESTOS

The workplace PCBU should take the following matters into account when preparing an asbestos management plan:

> isolating the workplace or relevant part of the workplace until controls are in place
> deviating excavation to avoid the asbestos deposit, where possible
> using sealed excavation or mining equipment (air-conditioned cabins with filtered air)

- regular surveillance by a competent person to make sure suspected fibrous materials are disturbed as little as practicable
- developing procedures to safely dispose of asbestos waste, if required
- training the workers in safe work practices.

See section 9 of this code for information about asbestos management plans, and **Appendix C** for suggested content headers for an asbestos management plan.

20.5 ONGOING MANAGEMENT

The workplace PCBU must make sure exposure to airborne asbestos fibres is minimised. This can be done by:

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

Workplace PCBUs can manage naturally occurring asbestos on an ongoing basis with an air monitoring program. This can be used to assess asbestos exposure levels and work out control measures.

20.6 TRAINING WORKERS

The workplace PCBU must train workers who work in the area or areas where it is located about the hazards and risks associated with naturally occurring asbestos. Section 10 of this code provides further information about training workers (excluding licensed removal workers) about asbestos.

PART E

ASBESTOS-RELATED WORK

IN THIS PART:

Section 21: Asbestos-related work

PART E

21/

ASBESTOS-RELATED WORK

IN THIS SECTION:

21.1 Introduction

21.2 Permitted asbestos-related work

21.3 Approved methods for managing work-related asbestos risks

21.4 Roles and responsibilities

21.5 Control measures for asbestos-related work

21.6 Safe Work Practices

The legislation that applies in this section is:

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 8** WorkSafe may approve method for managing risk associated with asbestos*

***Part 2** Work involving asbestos*

***Part 4** Asbestos-related work*

21.1 INTRODUCTION

There are many ways to conduct asbestos-related work safely, and it is not possible to describe them all in this code. Instead, this section covers generic requirements and information for:

> approved methods

> asbestos-related work control measures

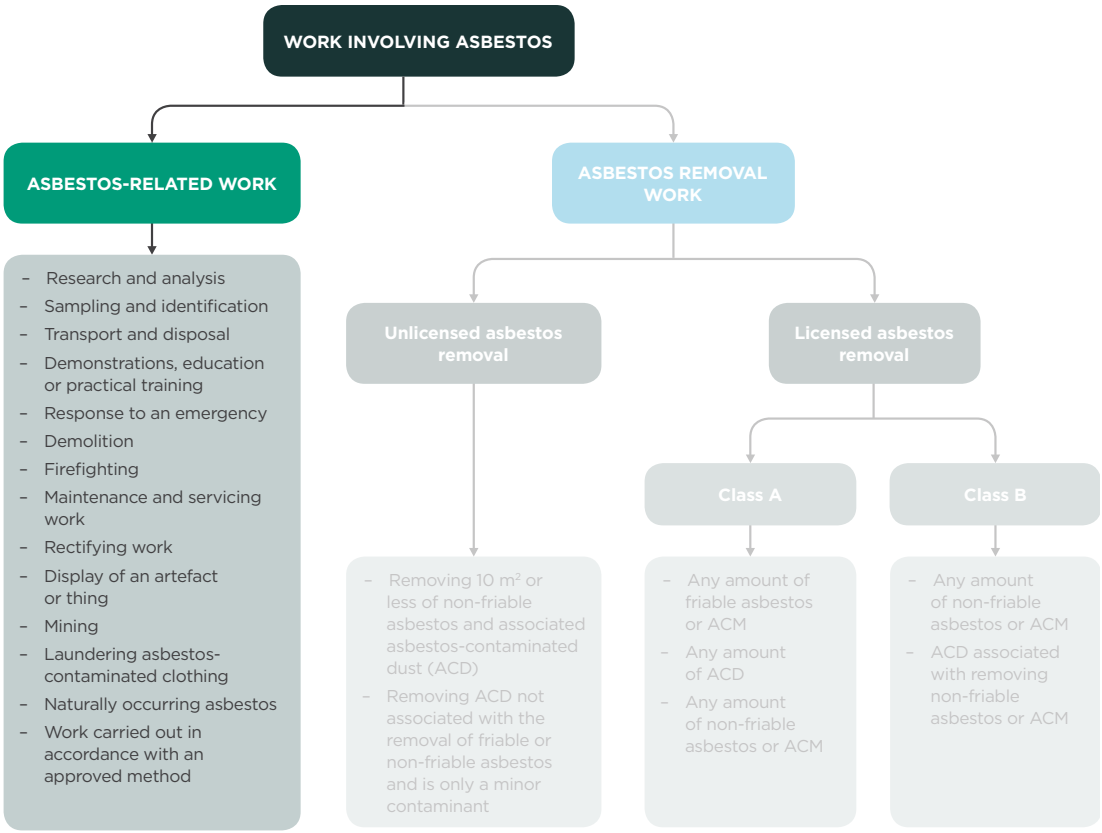
> Safe Work Practices.

Note: Read this section in conjunction with the following Parts of the code (as applicable):

A B C D

21.2 PERMITTED ASBESTOS-RELATED WORK

Asbestos-related work is work permitted by the Asbestos Regulations, involving the work types seen in Figure 29 under 'Asbestos-Related Work':



Note: this diagram excludes work involving asbestos-contaminated soil.

Figure 29: Asbestos-related work

21.3 APPROVED METHODS FOR MANAGING WORK-RELATED ASBESTOS RISKS

WorkSafe-approved methods provide for asbestos-related work to be carried out that would otherwise be prohibited by the Asbestos Regulations.

PCBUs must apply to WorkSafe to approve a work method if they want to conduct asbestos-related work in a way that falls outside the Asbestos Regulations.

The applicant is responsible for proving the proposed work method will be effective at safely managing asbestos-related risks.

Approved methods that are not commercially sensitive are published on WorkSafe's website: www.worksafe.govt.nz

For further information on how to apply for approval for a work method, email WorkSafe: info@worksafe.govt.nz

21.4 ROLES AND RESPONSIBILITIES

Since a variety of PCBUs may be involved in asbestos-related work, this section identifies which PCBUs have responsibilities for each duty.

The **PCBU for which asbestos-related work is being carried out** must:

> make sure decontamination facilities are available
> make sure things contaminated with asbestos are decontaminated or safely contained before they leave the work area
> make sure asbestos waste is disposed of safely and regularly.

See section 17 of this code for more information on decontamination, and section 18 for more information on waste containment and disposal.

The **PCBU carrying out asbestos-related work** must:

> make sure the asbestos work area is separated from the rest of the workplace
> make sure the asbestos work area is sign-posted and barriers put in place to make sure other workers and people do not enter the area.

A PCBU is responsible for making sure these duties are fulfilled:

> to identify any asbestos that workers may encounter when doing asbestos-related work, and if it is not possible to identify, they must assume asbestos is present (see section 6 of this code)
> to tell workers doing ongoing asbestos-related work about the health risks of asbestos exposure and provide health monitoring if they are at risk of exposure to asbestos (see section 16 of this code for information about health monitoring)
> to make sure, if there is uncertainty about whether the airborne contamination standard for asbestos might be exceeded, a competent person carries out air monitoring of the area where asbestos-related work is being carried out (see section 29 of this code for more information).

These duties may be shared among PCBUs. In this case, the PCBUs must consult, co-operate and co-ordinate their activities with each other.

21.5 CONTROL MEASURES FOR ASBESTOS-RELATED WORK

The PCBU where asbestos-related work is to occur needs to select control methods that are effective at making all people doing the asbestos-related work aware of the presence of asbestos, and prevent any work activity that might expose them, or others nearby, to airborne asbestos.

They should pay particular attention to controlling work activities that affect inaccessible areas likely to contain asbestos or assumed to contain it, such as wall cavities and ceiling spaces.

The PCBU should consider the following control measures:

> eliminate the risk by not doing the work
> if elimination is not practicable, minimise the risk by using isolation controls, engineering controls or a combination of these.

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

This approach is described for removing and replacing the lock parts from an asbestos-containing fire door. A purpose-built adjustable Perspex box is fitted to the door, surrounding the lock and handles on both sides of the door. Adjustments can be made to make sure the enclosure securely fits to the door. Tape can be used to seal any possible gaps between the enclosure and the door. The box has access points for the worker's arms to work on the lock, as well as an entry point for a vacuum hose. The vacuum creates a negative pressure inside the enclosure to prevent fibres from escaping, and can also be held directly at the source to capture any airborne fibres when the lock is removed from the door.

When the task is completed, the vacuum can clean and decontaminate the enclosure as well as the worker's arms (before removing them from the enclosure).

PCBUs should put **administrative controls** in place if they have tried to minimise the risk to health through elimination, isolation and engineering controls but the risk still exists.

Administrative controls are work procedures designed to minimise health and safety risks. These controls are less effective than engineering controls because they rely on human behaviour and can easily fail.

Workers must understand, put in place and maintain administrative controls. This requires training, information and supervision for workers, but the controls may still fail if they are not followed or understood.

For some activities, administrative controls are the only practicable controls that can be put in place.

An example of an **administrative control** for asbestos-related work is a procedure for collecting samples for analysis. Collecting the samples may involve breaking or dislodging asbestos or ACM, which can release airborne asbestos fibres and consequently pose a risk to health.

A safe procedure for this task may include (in general terms):

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

For the administrative control measure to be effective and reduce risk, the person conducting the sampling must understand the risk and implement all of the procedure. If the procedure is not followed, the health of the person conducting the sampling and others in the workplace may be at risk.

See WorkSafe's *Conducting Asbestos Surveys* for more information on how to take asbestos or ACM samples safely. This is available on WorkSafe's website: www.worksafe.govt.nz

If a risk to health still remains, PPE must be used and further minimisation controls may still be needed.

21.6 SAFE WORK PRACTICES

Appendix F contains examples of asbestos-related work (service and maintenance) tasks likely to disturb asbestos, along with recommended control measures for minimising asbestos fibre generation.

Note 1: The Safe Work Practices link to Parts of this code. They should not be read on their own.

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.

PART F

DEMOLITION AND REFURBISHMENT

IN THIS PART:

Section 22: Demolition and refurbishment work

PART F

22/

DEMOLITION AND REFURBISHMENT WORK

IN THIS SECTION:

22.1 Introduction

22.2 Examples of demolition and refurbishment

22.3 Planning demolition or refurbishment work at a workplace

22.4 Demolition and refurbishment at homes

22.5 Home owner/occupant duties

22.6 Emergency procedures for demolishing plant or structures containing asbestos

22.7 Link to the asbestos management plan

The legislation that applies in this section is:

Health and Safety at Work Act 2015

***Section 24(1)(m)** Meaning of notifiable incident*

***Section 56** Duty to notify notifiable event*

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 6(a)** Declaration of notifiable incident*

***Part 2, subpart 4** Demolition and refurbishment of structures and plant*

This section applies to the demolition or refurbishment of structures or plant:

(a) that were constructed or installed before 1 January 2000; or

(b) in which asbestos has been identified; or

(c) in which asbestos is likely to be present from time to time.

For the purposes of this section, **demolition or refurbishment does not include minor or routine maintenance work, or other minor work**.

Refer to **Appendix E** of this code for information about minor or routine maintenance work, or other minor work.

22.1 INTRODUCTION

When demolishing or refurbishing a workplace or home, it is important to determine whether asbestos or ACM is present, and to identify and remove asbestos before the work begins.

This section covers:

> examples of demolition and refurbishment
> planning work
> demolition and refurbishment in homes
> emergency procedures
> link to asbestos management plans.

22.2 EXAMPLES OF DEMOLITION AND REFURBISHMENT

Examples of demolition are:

> completely dismantling decommissioned industrial plant
> total destruction of a building or part of a building that is load bearing or otherwise related to the physical integrity of the structure
> total destruction of an old boiler for disposal.

Examples of **refurbishment** are the partial dismantling of:

> a boiler for cleaning and repairing

- large plant to access and remove asbestos-containing gaskets for replacing with non-asbestos-containing gaskets
- an asbestos cement roof by removing sections of it
- part of a building for renovation, as long as it is not related to the physical integrity of the building.

22.3 PLANNING DEMOLITION OR REFURBISHMENT WORK AT A WORKPLACE

22.3.1 CONSIDERATIONS

If a structure or plant at a workplace is going to be refurbished or demolished, the PCBU intending to carry out the work must make sure the structure or plant is inspected to determine the presence of asbestos or ACM. The PCBU should also consider the following questions:

- Are there inaccessible areas that are likely to be disturbed during the demolition or refurbishment?
- What is the type and condition of the asbestos or ACM?
- What is the quantity of asbestos or ACM?
- What is the method of demolition or refurbishment, and how will it affect the asbestos or ACM?
- If asbestos is likely to be disturbed during demolition or refurbishment, can it be removed safely before work starts; if so, how can this be done?

22.3.2 IDENTIFYING ASBESTOS

Demolition or refurbishment must not start until a competent person confirms whether or not asbestos or ACM is either fixed to, or installed, in the structure or plant.

If a competent person is not sure, on reasonable grounds, whether asbestos is present, or the structure or plant is inaccessible, the PCBU carrying out the demolition or refurbishment work must assume asbestos is present.

The PCBU who intends to carry out the demolition or refurbishment work must inform the workplace PCBU (or the occupier and owner of a home, if the workplace is a home) if a competent person confirms or the PCBU assumes asbestos is present.

22.3.3 DEMOLITION

The workplace PCBU or the PCBU with management or control of the structure or plant must make sure all asbestos likely to be disturbed by the demolition work is identified and, so far as is reasonably practicable, removed before the work starts.

The PCBU may demolish part of a structure or plant in order to access the asbestos. For example, the PCBU may demolish part of a wall to access asbestos located in the wall cavity so it can be removed before further demolition starts.

22.3.4 REFURBISHMENT

The workplace PCBU or the PCBU with management or control of the structure or plant must make sure all asbestos likely to be disturbed by the work is identified and, so far as is reasonably practicable, removed before refurbishment starts.

Asbestos should be removed rather than using other control measures such as enclosure or sealing.

22.4 DEMOLITION AND REFURBISHMENT AT HOMES

When a PCBU is going to demolish or refurbish a home, the home becomes the PCBU's workplace. They must not start demolition or removal work until a competent person has inspected the relevant area or areas for asbestos or ACM.

If the competent person has identified asbestos or ACM in the part of the home that will be demolished or refurbished, or the PCBU assumes it is present, the PCBU must inform the home owner and occupant that asbestos or ACM is present so they can take appropriate action.

22.4.1 DEMOLITION

A PCBU planning to do demolition work at a home must identify all asbestos likely to be disturbed by the demolition work. They must, so far as is reasonably practicable, make sure the asbestos is removed before the work starts.

22.4.2 REFURBISHMENT

A PCBU planning to do refurbishment work in a home must identify all asbestos likely to be disturbed by the refurbishment work. They must make sure, so far as is reasonably practicable, that the asbestos is removed before work starts.

22.5 HOME OWNER/OCCUPANT DUTIES

If a PCBU conducts demolition or refurbishment in a person's home, the owners or occupants must take reasonable care to protect their own health and safety while work is going on in their home. They must make sure whatever they do or fail to do does not adversely affect the health and safety of others, including the PCBU and the PCBU's workers.

They must comply with the PCBU's reasonable instructions, as far as they are reasonably able, that will allow the PCBU to comply with the Act and the Regulations.

22.6 EMERGENCY PROCEDURES FOR DEMOLISHING PLANT OR STRUCTURES CONTAINING ASBESTOS

22.6.1 DEFINITION OF EMERGENCY

For the purposes of this section, an emergency occurs if:

> a structure or plant is structurally unsound, or

> the plant or structure's collapse is about to occur.

22.6.2 EMERGENCY PROCEDURES FOR DEMOLITION IN A WORKPLACE

The workplace PCBU must, so far as is reasonably practicable, make sure an emergency procedure is developed before the demolition starts, which will reduce the risk of workers and others in the vicinity being exposed to asbestos in amounts that exceed the airborne contamination standard for asbestos.

22.6.3 EMERGENCY PROCEDURES FOR DEMOLITION IN A HOME

The PCBU carrying out demolition in a home must, so far as is reasonably practicable, develop an emergency procedure that must, so far as is reasonably practicable, minimise the risk of exceeding asbestos contamination standard.

22.6.4 DEVELOPING AN EMERGENCY PROCEDURE

When developing the emergency procedure, the PCBU should consider:

> the work being done in the workplace or home
> hazards in the workplace or home
> the workplace or home's size and location (eg remote location, multi-level site with shared services)
> the number of workers and other people who might be at the work site (eg workers on shifts, maintenance and cleaning personnel, customers, people working alone).

The procedure should include:

> how to respond effectively to an emergency
> evacuation procedures
> notifying emergency services
> getting help, including medical treatment
> effective communication between the person the PCBU authorises to co-ordinate the emergency response and the people at the work site
> provisions for regularly testing the procedure
> what information, training and instruction will be given to relevant workers about how to put the emergency procedure into effect.

The emergency procedure must be carried out if there is an emergency.

22.6.5 NOTIFYING WORKSAFE FOR DEMOLITION EMERGENCIES

If:

(a) an emergency occurs at a workplace (including a workplace that is a home); and

(b) a structure or plant at the workplace has to be demolished; and

(c) asbestos is fixed to or installed in the structure or plant before the emergency occurs,

WorkSafe must be notified as soon as possible and before demolition starts.

The notification may be given by telephone or in writing (including by email). If WorkSafe requires it, and the notice has been given by telephone, it must be followed up in writing within 48 hours either on the *Notifiable Event notification form* or in another format with details approved by WorkSafe.

The *Notifiable Event notification form* is available on WorkSafe's website: www.worksafe.govt.nz

22.7 LINK TO THE ASBESTOS MANAGEMENT PLAN

The workplace PCBU must make sure procedures for detailing emergencies are included in the worksite's asbestos management plan.

Refer to section 9 of this code for more information about asbestos management plans.

PART

G

LICENSED ASBESTOS ASSESSORS AND LICENSED ASBESTOS REMOVALISTS

IN THIS PART:

Section 23: Licensed asbestos assessors

Section 24: Licensed asbestos removalists

Section 25: Training licensed asbestos removal workers

Section 26: Duties for licensed asbestos removal work

Section 27: Enclosures for asbestos removal work

Section 28: Clearance inspections

PART G

23/

LICENSED ASBESTOS ASSESSORS

IN THIS SECTION:

23.1 Introduction

23.2 Duties for asbestos assessors

23.3 Independence

23.4 Competency requirements

23.5 Applying for an asbestos assessor's licence

23.6 Asbestos assessor register

23.7 Duration of licences

23.8 The licence document

23.9 Transitional provisions for asbestos assessors

The legislation that applies in this section is:

Health and Safety at Work Act 2015

***Section 168** Powers of entry and inspection*

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 41** Clearance inspection*

***Regulation 42** Clearance certificates*

***Regulation 43** Air monitoring for Class A asbestos removal work*

***Regulation 57** Requirement to hold asbestos assessor licence*

***Regulation 58** Who may apply for licence*

***Regulation 70** Duration of licence*

***Regulation 71** Licence document*

***Regulation 72** Licence document to be available*

23.1 INTRODUCTION

People who want to perform clearance inspections, issue clearance certificates and air monitoring for Class A asbestos removal work must be licensed.

The licensing regime is administered by WorkSafe.

23.2 DUTIES FOR ASBESTOS ASSESSORS

Licensed asbestos assessors may conduct the following tasks:

> air monitoring during asbestos removal work

> clearance inspections for asbestos removal work

> issuing clearance certificates for asbestos removal work

Asbestos assessor licences are granted to individual people, not to PCBUs.

Until 4 April 2018, either a licensed asbestos assessor or a competent person may carry out licensed asbestos assessor work for Class A asbestos removal work.

From 4 April 2018, only licensed assessors are permitted to carry out asbestos assessor work for Class A asbestos removal work.

23.3 INDEPENDENCE

Clearance inspections must be conducted by:

> an independent licensed asbestos assessor, or

> an independent competent person (for Class B asbestos removal work only).

To be independent, the licensed asbestos assessor or competent person must be free from any conflict of interest when carrying out their assessor work. This is to make sure the process remains objective and the interests of the removalist or PCBU that commissioned them does not unduly influence the outcome.

They must not be involved in a business or undertaking involved in removing asbestos for that specific job.

The licensed asbestos assessor or competent person should be alert to any attempts to exert an undue influence on them that may interfere with their ability to carry out their work independently and to an adequate standard.

23.4 COMPETENCY REQUIREMENTS

A licensed asbestos assessor needs to have acquired, through training and experience, the knowledge and skills of relevant asbestos removal industry practice and who holds:

> a certificate in relation to a training course specified by WorkSafe for asbestos assessor work, or

> a tertiary qualification in occupational health and safety, occupational hygiene, science or environmental health.

23.4.1 SPECIFIED TRAINING COURSES FOR ASBESTOS ASSESSOR WORK

Refer to WorkSafe's website for information on courses specified by WorkSafe for asbestos assessor work.

23.5 APPLYING FOR AN ASBESTOS ASSESSOR'S LICENCE

Asbestos assessor licences are administered by WorkSafe. Refer to WorkSafe's *Asbestos Assessor Licensing Guide for Applicants* for further information on criteria and how to apply: www.worksafe.govt.nz

23.5.1 RECOGNISING ASBESTOS ASSESSOR LICENCES FROM AUSTRALIA

If an asbestos assessor has an equivalent asbestos assessor licence from Australia, the assessor may be entitled to a licence in New Zealand if the requirements in the Trans-Tasman Mutual Recognition Act 1997 are met.

This does not apply to asbestos assessor licenses suspended, cancelled or expired in Australia.

23.6 ASBESTOS ASSESSOR REGISTER

WorkSafe keeps a register of every person holding a current asbestos assessor's licence on their website: www.worksafe.govt.nz

23.7 DURATION OF LICENCES

Asbestos assessor licences last for five years unless they are cancelled earlier.

23.8 THE LICENCE DOCUMENT

The licensed asbestos assessor must keep their licence document available for inspection. This does not apply if the licence holder has returned the licence to WorkSafe.

23.9 TRANSITIONAL PROVISIONS FOR ASBESTOS ASSESSORS

Until 4 April 2018 a competent person is taken to be a licensed asbestos assessor.

From 4 April 2018 competent persons need to hold an asbestos assessor licence if they wish to continue to carry out air monitoring and clearance inspections for Class A removal work.

PART G

24/

LICENSED ASBESTOS REMOVALISTS

IN THIS SECTION:

24.1 Introduction

24.2 Licensed asbestos removalists

24.3 Asbestos-contaminated dust or debris (ACD)

24.4 Applying for a Class A or B licence

24.5 Asbestos removal licence register

The legislation that applies in this section is:

Health and Safety at Work Act 2015

***Section 168** Powers of entry and inspection*

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 55** Exception to requirement to hold Class A asbestos removal licence*

***Regulation 56** Requirement to hold Class B asbestos removal licence*

***Regulation 58** Who may apply for licence*

***Regulation 70** Duration of licence*

***Regulation 71** Licence document*

***Regulation 72** Licence document to be available*

24.1 INTRODUCTION

Two licences are available for conducting licensed asbestos removal work. They are:

> Class A licence for asbestos removal
> Class B licence for asbestos removal.

This section covers:

> Class A and Class B licenses
> unlicensed asbestos removal
> what types and quantities of asbestos can be removed with and without a licence
> applying for a licence
> licensed asbestos removalists requirements
> asbestos removal licence register
> duration of licences
> the licence document.

24.2 LICENSED ASBESTOS REMOVALISTS

A PCBU commissioning licensed asbestos removal at a workplace must make sure an asbestos removalist with the appropriate licence carries out the work.

Two types of licences apply to asbestos removal: Class A and Class B. The licence depends on the type and quantity of asbestos or ACM undergoing removal.

24.2.1 CLASS A AND B LICENCE HOLDERS

PCBUs are the only entities that can apply for, and hold, a Class A or B asbestos removal licence.

24.2.2 WHAT TYPES OF ASBESTOS LICENCE HOLDERS CAN REMOVE

TYPE OF LICENCE	WHAT ASBESTOS CAN BE REMOVED?
Class A	Any type or quantity of asbestos or ACM, including: > any amount of friable asbestos or ACM > any amount of ACD > any amount of non-friable asbestos or ACM
Class B	> any amount of non-friable asbestos or ACM > ACD associated with removing any amount of non-friable asbestos or ACM
No licence required	> up to and including 10 m^2 of non-friable asbestos or ACM, cumulatively over the whole course of the removal project for the site > ACD that is: – associated with removing 10 m^2 or less of non-friable asbestos or ACM – not associated with the removal of friable or non-friable asbestos and is only a minor contamination[17]

Table 8: Summary of what work can be done with or without a type of licence

24.2.3 EXAMPLES

EXAMPLE	CLASS OF LICENCE REQUIRED
Removing 12 m^2 of non-friable asbestos cement sheets from factory toilet block	Class A or B licence: because the area exceeds 10 m^2
Removing 0.5 m^3 friable asbestos lagging from a pipe	Class A licence: because the asbestos is friable

Table 9: Examples of when a Class A or B licence may be required

24.3 ASBESTOS-CONTAMINATED DUST OR DEBRIS (ACD)

ACD is dust or debris that has settled within a workplace and it is, or assumed to be, contaminated with asbestos. Examples of ACD include:

> dust or debris that was accidentally dislodged from a wall or ceiling following a collision

> dust or debris that has accumulated over time:

- in an ACM pipeline or conduit, surrounding an ACM cement flue
- in an electrical switchboard with an ACM electrical mounting board or conduit box
- on a horizontal surface covered by an ACM roof in the guttering from an ACM roof.

ACD must be removed by a licensed removalist unless it is associated with the removal of 10 m^2 or less of non-friable asbestos, or is not associated with the removal of asbestos and is only a minor contamination.

In other cases, the removal must be carried out by a competent person.

[17] See **Appendix D** for examples of 'minor contamination'.

For the purposes of the Asbestos Regulations, ACD is not friable asbestos. It is treated differently under the Asbestos Regulations than friable and non-friable asbestos or ACM.

ACD that is generated as part of the asbestos removal work being conducted can be removed by the same asbestos removalist.

24.4 APPLYING FOR A CLASS A OR B LICENCE

Class A and B asbestos removal licences are administered by WorkSafe. Refer to the *Asbestos Removal Licensing Guide for Applicants* for further information on criteria and how to apply. This is available from WorkSafe: www.worksafe.govt.nz

24.4.1 SUPERVISORS FOR CLASS A AND B REMOVAL LICENCES

The PCBU licence applicant must provide the names of one or more competent people that the PCBU has nominated to supervise asbestos removal work.

From 4 April 2018, supervisors must have received a certificate from a relevant training course. See section 25 of this code for further information.

24.4.2 CERTIFIED SAFETY MANAGEMENT SYSTEM

From 4 April 2018, Class A licensed removalists and applicants must provide evidence to WorkSafe that the organisation has a certified safety management system in place.

'Certified safety management system' means a safety management system that:

> an auditor accredited by JAS-ANZ or NATA has certified as being compliant with:
  - AS/NZS 4801 *Occupational health and safety management systems* or
  - another international standard recognised by WorkSafe and
> meets any requirements prescribed in a safe work instrument.

24.5 ASBESTOS REMOVAL LICENCE REGISTER

WorkSafe keeps a register of every currently licensed asbestos removalist on its website: www.worksafe.govt.nz

The register also identifies the supervisors listed on a particular licence.

PART G

25/

TRAINING LICENSED ASBESTOS REMOVAL WORKERS

IN THIS SECTION:

25.1 Introduction

25.2 Training workers

25.3 Appropriate instruction

25.4 Training records

25.5 Transitional provisions for licensed asbestos removal training and training records

The legislation that applies in this section is:

Health and Safety at Work Act 2015

***Section 168** Powers of entry and inspection*

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 29** Duty to ensure asbestos removal worker is trained and receives appropriate instruction*

***Regulation 30** Duty of licensed asbestos removalist to keep training record*

25.1 INTRODUCTION

Licensed asbestos removalists must not direct or allow a worker to carry out licensed asbestos removal work unless they are satisfied the worker holds a certification relevant to the Class of licensed asbestos removal work they will be carrying out.

There is also a legal requirement to keep training records.

25.2 TRAINING WORKERS

A licensed asbestos removalist must provide appropriate training and instruction to workers carrying out licensed asbestos removal work.

25.2.1 GENERAL TRAINING REQUIREMENT

Licensed asbestos removalists must make sure, so far as is reasonably practicable, every worker who works with asbestos:

> is knowledgeable and experienced of similar places, work, plant or substances to make sure they are not likely to harm themselves or other people, or

> is supervised by someone with the knowledge and experience, and

> is adequately trained in how to safely use everything they need to work with, including the PPE they may need to wear.

25.2.2 EXTERNAL TRAINING COURSES

The licensed asbestos removalist must not let any worker carry out licensed asbestos removal unless the removalist is satisfied that the worker holds a certificate in relation to a relevant course for the class of licensed asbestos removal work the worker carries out.

Relevant courses are specified by safe work instrument and are published on WorkSafe's website. In-house training is not considered a relevant course on its own, but it should form part of the workers' training regime.

Note: The requirement for workers to attend a relevant course does not come into effect until 4 April 2018.

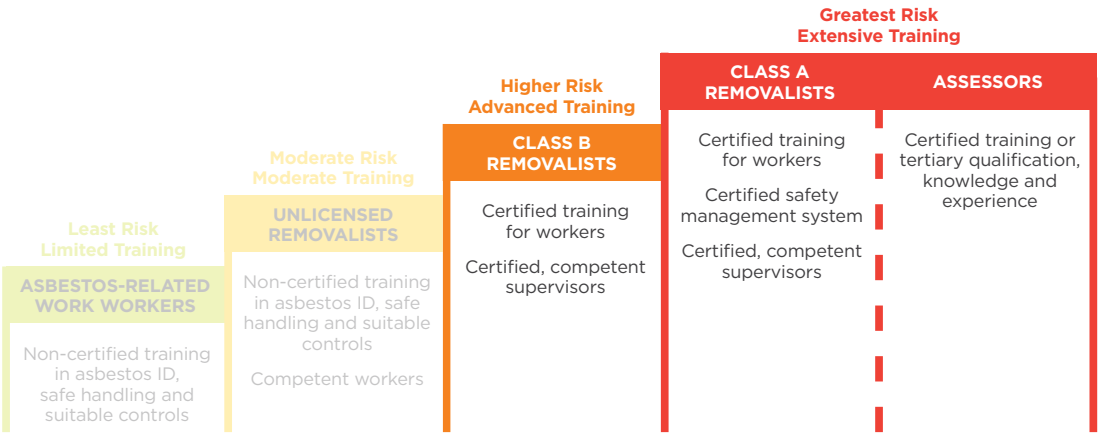


Figure 30: Competency requirements for licensed asbestos removal and asbestos assessors

Figure 30 shows how worker competency requirements increase with the risk of the work. 'Steps' three and four describe the type of training applicable to licensed asbestos removal workers.

Workers (including supervisors) carrying out licensed asbestos removal work must hold a certificate for the licensed asbestos removal work they will be doing. The certificate confirms what Class of licensed asbestos removal work they can carry out.

See the *Asbestos Removal Licensing Guide for Applicants* for further information about training criteria, qualifications and training providers for licensed asbestos removal.

25.2.3 TRAINING SUPERVISORS

In addition to the training for licensed asbestos removal workers, supervisors will have to complete extra training in supervision skills.

25.3 APPROPRIATE INSTRUCTION

Licensed asbestos removalists must make sure workers carrying out licensed asbestos removal work receive appropriate instruction specific to the work and the place where the work is being or is to be carried out. The relevant information should be obtained from the site's asbestos removal control plan (see **Appendix H** for a template).

This instruction should take place before the start of each asbestos removal job, and should include:

> the nature of the hazards and risks of asbestos

> how asbestos can affect a person's health

> the risk from exposure to airborne asbestos

> the control measures in place and maintenance of the asbestos removal control plan for that job

- the methods and equipment that will be used to do the job
- choosing, using and caring for PPE and RPE
- decontamination procedures
- waste disposal procedures
- emergency procedures
- any other requirements from other laws, if applicable
- the importance of health monitoring.

25.4 TRAINING RECORDS

The licensed asbestos removalist must keep a written record of the training workers carrying out licensed asbestos removal work have completed.

The records must be kept:

- while each particular worker is carrying out licensed asbestos removal work, and
- for five years after the day the worker stopped carrying out licensed asbestos removal work for the removalist.

The workers' and supervisors' training records must be readily accessible at the asbestos removal area, and be available for inspection by a health and safety inspector.

25.5 TRANSITIONAL PROVISIONS FOR LICENSED ASBESTOS REMOVAL TRAINING AND TRAINING RECORDS

Licensed asbestos removalists have until 4 April 2018 to comply with the requirement for licensed asbestos removal workers to attend a relevant course, and to keep training records.

PART G

26/

DUTIES FOR LICENSED ASBESTOS REMOVAL WORK

IN THIS SECTION:

26.1 Introduction

26.2 Duties for PCBUs commissioning asbestos removal

26.3 Duties for licensed asbestos removalists

26.4 Supervision for licensed asbestos removal work

26.5 Informing parties about licensed asbestos removal

26.6 Preparing an asbestos removal control plan

26.7 Notifying WorkSafe about licensed asbestos removal work

The legislation that applies in this section is:

Health and Safety at Work Act 2015

***Section 56** Duty to notify notifiable event*

***Section 57** Requirement to keep records*

***Section 168** Powers of entry and inspection*

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 31** Duty to give information about health risks of licensed asbestos removal work*

***Regulation 32** Duty to prepare asbestos removal control plan*

***Regulation 33** Asbestos removal control plan to be kept and available*

***Regulation 34** Duty to notify WorkSafe of asbestos removal*

***Regulation 35** Duty of licensed removalist to inform certain persons about intended asbestos removal work*

***Regulation 36** Duty of PCBU to inform certain persons about asbestos removal work*

26.1 INTRODUCTION

Licensed asbestos removal work is work permitted by the Asbestos Regulations (refer to Figure 31).

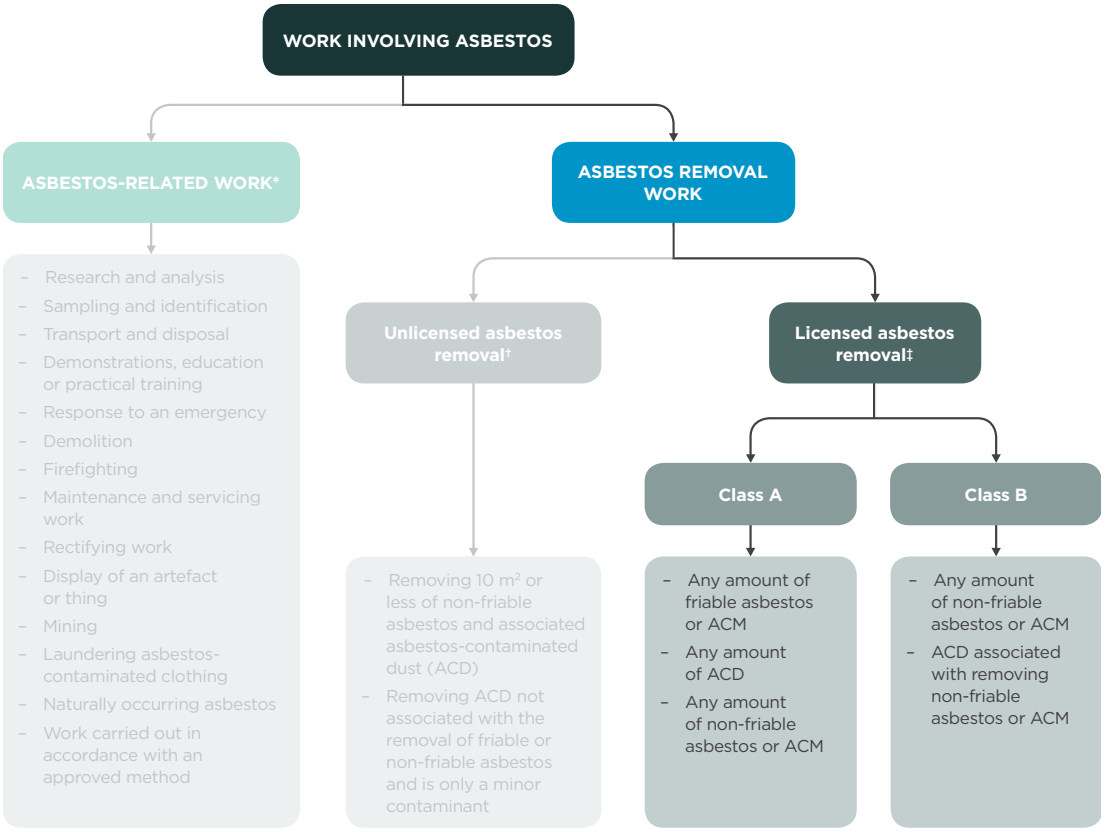
This section will cover:

> duties for PCBUs commissioning asbestos removal
> duties for licensed asbestos removalists
> duties for asbestos removal supervisors
> requirements for worker training and certification
> informing parties about licensed asbestos removal
> preparing an asbestos removal control plan
> notifying WorkSafe about licensed asbestos removal.

Note 1: For the purposes of this section, 'asbestos removal work' means **licensed** asbestos removal work only.

Note 2: Read this section in conjunction with the following Parts of the code (as applicable):

A B C D



Note: this diagram excludes work involving asbestos-contaminated soil.

Figure 31: Asbestos removal work

26.2 DUTIES FOR PCBUS COMMISSIONING ASBESTOS REMOVAL

The PCBU that commissions an asbestos removal must:

> make sure the asbestos removal work is carried out by a licensed asbestos removalist who is licensed for that type of work

> limit access to the asbestos removal area

> make sure clearance inspections are conducted

> make sure air monitoring is conducted where work requiring a Class A licence is being carried out.

The workplace PCBU who knows licensed asbestos removal work is being carried out at the workplace must:

> make sure people at the workplace are informed about the asbestos removal and provide them with appropriate information (eg tenants, workers, others as applicable)

> take reasonable steps to make sure people in the immediate vicinity are informed about the asbestos removal (eg neighbours, the public)

> limit access to the asbestos work area.

26.3 DUTIES FOR LICENSED ASBESTOS REMOVALISTS

The licensed asbestos removalist must:

> restrict access to the asbestos removal area to:
  - workers involved in removing asbestos
  - other people associated with the removal work
  - anyone permitted under the Asbestos Regulations or other legislation to be in the asbestos removal area
> make sure a supervisor is present or readily available (see section 26.4 of this code for more information)
> provide appropriate training and make sure the asbestos removal workers have been trained to the relevant units of competencies associated with the class of asbestos removal
> tell relevant parties about the asbestos removal and provide them with appropriate information
> read the workplace's asbestos documentation, if available
> prepare an asbestos removal control plan
> notify WorkSafe about the work before work starts (see section 26.7 of this code)
> display signs at the asbestos work area to warn people about the presence of asbestos and that work is being carried out
> make sure barriers delineate the asbestos removal area
> notify WorkSafe if respirable asbestos fibres meet or exceed 0.02 fibres/ml during the work
> make sure appropriate decontamination facilities are in place
> make sure waste containment and disposal procedures are in place
> (if the workplace is a home, and for Class A asbestos removal work) make sure air monitoring is conducted
> make sure clearance inspections are conducted.

26.4 SUPERVISION FOR LICENSED ASBESTOS REMOVAL WORK

When licensed asbestos removal work is being carried out at a workplace, it must be supervised by a supervisor. The supervisor must be a nominated supervisor under an asbestos removal licence of the appropriate type for the work.

26.4.1 CLASS A SUPERVISION

If the asbestos removal work requires a Class A licence, the nominated supervisor must be present at the asbestos removal area whenever the work is being carried out.

26.4.2 CLASS B SUPERVISION

If the asbestos removal work requires a Class B licence, the nominated supervisor may decide whether they need to be present at any particular time. They must still be in the vicinity and readily available, and the work still needs to be effectively supervised.

The decision about whether to be present should consider factors such as:

> the workers' competence and experience
> the work being carried out and the risks involved
> what might go wrong, and the ability of the workers to immediately recognise and remedy this
> how the supervisor can be contacted and be readily available to return to the removal area.

Class B supervision example 1:

The supervisor is supervising workers that are competent, reliable and experienced in the type of removal being carried out. The supervisor decides he/she needs to check on the workers periodically during the day, but otherwise they will be working in a different part of the building. The workers are instructed to contact the supervisor by phone immediately if anything unexpected occurs, or if removal is not going according to plan. In these cases, the supervisor will return to the removal area.

Class B supervision example 2:

The supervisor is supervising workers that are still training, and are inexperienced. In this case, direct supervision is needed at all times.

26.5 INFORMING PARTIES ABOUT LICENSED ASBESTOS REMOVAL

26.5.1 LICENSED ASBESTOS REMOVALIST

The licensed asbestos removalist must inform the workplace PCBU about the work and start date before carrying out the licensed asbestos removal work.

If the workplace is a home, before starting the licensed asbestos removal work, the licensed asbestos removalist must, so far as is reasonably practicable, tell the following people about the asbestos removal work and its start date:

> the person who commissioned the asbestos removal work
> any PCBU at the workplace
> the home occupier
> the home owner
> anyone occupying workplaces or homes in the immediate vicinity of the asbestos removal area (this should be determined as part of a risk assessment).

26.5.2 PROVIDING INFORMATION TO WORKERS THAT MAY CONDUCT LICENSED ASBESTOS REMOVAL WORK

The licensed asbestos removalist must give the following information to workers likely to be engaged to carry out the work:

> the health risks and health effects associated with asbestos exposure
> the need for and details of health monitoring for workers carrying out licensed asbestos removal work.

See section 16 of this code for more information on health monitoring.

26.5.3 WORKPLACE PCBU

The workplace PCBU must make sure the following people are told that asbestos removal work will be carried out, and its start date:

> the PCBU's workers and any other people at the workplace
> the person who commissioned the asbestos removal work
> any PCBU at or in the immediate vicinity of the workplace
> anyone occupying premises in the immediate vicinity of the workplace.

26.6 PREPARING AN ASBESTOS REMOVAL CONTROL PLAN

The licensed asbestos removalist must prepare an asbestos removal control plan for any licensed asbestos removal work they are commissioned to do.

26.6.1 PURPOSE OF AN ASBESTOS REMOVAL CONTROL PLAN

An asbestos removal control plan is a document that identifies the specific control measures the licensed asbestos removalist will use to make sure workers and other people are not put at risk when carrying out the work.

An asbestos removal control plan helps plan the job well and helps makes sure the asbestos is removed safely.

These plans are only required for licensed asbestos removal work. However, they can be used to help plan unlicensed asbestos removal work.

The structure of the asbestos removal control plan may be generic, but each plan must address the specific situation requirements for each job.

26.6.2 WHEN MUST AN ASBESTOS CONTROL REMOVAL PLAN BE PREPARED?

The licensed asbestos removalist must prepare the asbestos removal control plan before the licensed asbestos removal work starts.

26.6.3 WHAT IS IN AN ASBESTOS REMOVAL CONTROL PLAN?

The asbestos removal control plan must include:

> details of how the asbestos removal will be carried out, including the method to be used and the tools, equipment, and PPE to be used
> details of the asbestos to be removed, including the location, type, and condition of the asbestos
> a detailed description of the asbestos removal area for the work and any air monitoring points
> details of the means of transport and disposal of the asbestos waste.

A work area plan is recommended. It should include:

> demarcation of asbestos removal areas
> entrances and exits
> locations of warning signage and means to prevent unauthorised access
> locations of decontamination units where relevant

> locations of enclosures where relevant
> locations of extraction units
> the location where asbestos waste is contained
> other requirements from other jurisdictions (where required).

Specifications or drawings relevant to the asbestos removal can also be attached to the plan.

Appendix H provides more information about what can be in a comprehensive asbestos removal control plan.

26.6.4 PREPARING THE ASBESTOS REMOVAL CONTROL PLAN

When preparing the asbestos removal control plan, the licensed asbestos removalist should consult with:

> the PCBU who commissioned the work
> the PCBU who manages or controls the workplace (if not the same PCBU)
> workers and their representatives.

If licensed asbestos removal work is being carried out at a home, the licensed asbestos removalist should consult with the person who commissioned the removal work and the owner or occupier (if not the same person).

26.6.5 ACCESS TO THE ASBESTOS REMOVAL CONTROL PLAN

Once the asbestos removal control plan is prepared, the licensed asbestos removalist must:

> make sure a copy is kept for two years after the work is completed, unless there is an incident that has to be notified to WorkSafe
  - in this case, it must be kept for five years
> give a copy to the person who commissioned the licensed asbestos removal work
> have it readily accessible on site for the duration of the licensed asbestos removal work for the following people to read:
  - any PCBU at the workplace
  - workers and their representatives
  - the occupants of the premises (if a home).

The asbestos removal control plan must also be made available for inspection under the Act.

26.7 NOTIFYING WORKSAFE ABOUT LICENSED ASBESTOS REMOVAL WORK

The licensed asbestos removalist must notify WorkSafe in writing at least five days before the licensed asbestos removal work starts.

This information must be included in the notification:

1. the name, licence number, and business contact details of the licensed asbestos removalist
2. the name and business contact details of the supervisor or supervisors of the licensed asbestos removal work
3. the name of the competent person or licensed asbestos assessor engaged to carry out a clearance inspection and issue a clearance certificate for the work
4. the name and contact details of the person for whom the work is to be carried out
5. the name (including registered business or company name) of the PCBU with management or control of the workplace where the asbestos is to be removed, including its address and the kind of workplace
6. if the workplace is large, the specific location of the asbestos removal
7. the date of the notice
8. the date on which the asbestos removal work is to start and the estimated duration of the work
9. whether the asbestos to be removed is friable or non-friable
10. if the asbestos to be removed is friable, how the area of removal will be enclosed
11. the estimated quantity of asbestos to be removed and the means of transport and disposal of the asbestos waste
12. the number of workers who are to carry out the asbestos removal work, and a summary of the training record for that worker.

The *Notification of Licensed Asbestos Removal form* is available from WorkSafe's website: www.worksafe.govt.nz

26.7.1 *LIMITED CIRCUMSTANCES* WHERE REMOVAL WORK MAY START IMMEDIATELY

Removal work may start immediately in the following **limited** circumstances:

> a sudden unexpected event that may lead to a situation where there is a risk of exposure, for example a burst pipe lagged with asbestos, or

> an unexpected breakdown of an essential service that needs immediate rectification, for example gas, water, sewage or telecommunications services.

If this is the case, the licensed asbestos removalist must notify WorkSafe immediately by telephone and in writing within 24 hours after the verbal notice was provided.

PART G

27/

ENCLOSURES FOR ASBESTOS REMOVAL WORK

IN THIS SECTION:

27.1 Introduction

27.2 Designing and installing an enclosure

27.3 Negative pressure units (NPUs)

27.4 Testing an enclosure

27.5 Security and checks when using an enclosure

27.6 After asbestos removal

27.7 Mini-enclosures

27.8 Glove bag asbestos removal work

27.9 Wrap-and-cut asbestos removal method

The legislation that applies in this section is:

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 9** Duty relating to exposure to airborne asbestos at workplace*

***Regulation 45** Action if respirable asbestos fibre level too high*

***Regulation 46** Duties relating to removal of friable asbestos*

27.1 INTRODUCTION

An asbestos removalist who holds a Class A licence must be engaged to remove friable asbestos. The licensed asbestos removalist must make sure, so far as is reasonably practicable, the asbestos removal area is enclosed to prevent respirable asbestos fibres from releasing into the air.

The licensed asbestos removalist must, so far as is reasonably practicable, enclose the asbestos removal areas under negative pressure, using negative air pressure units (NPUs), unless the work involves glove bags.

When removing non-friable asbestos that requires a Class B licence, the licensed asbestos removalist needs to conduct a risk assessment to determine if an enclosure is needed. Factors such as proximity to other work areas, weather conditions if outdoors and the amount of material to be removed should be considered.

27.2 DESIGNING AND INSTALLING AN ENCLOSURE

When designing and installing an enclosure, the licensed asbestos removalist should consider:

- the methods used to contain the asbestos removal area
- provision and locations of decontamination/changing facilities and NPUs
- precautions to eliminate or minimise the spread of asbestos contamination outside the asbestos removal area
- air quality within the enclosure
  - diesel-operating plant or other carbon monoxide-generating equipment should not be operated inside the enclosure
- types of lighting, whether natural or artificial
- temperature within the enclosure to avoid heat stress for workers
- any other hazards in the enclosure (these must be identified and the risks controlled before starting any asbestos removal work).

The enclosure should:

- be built from heavy-duty plastic sheeting (200 µm minimum thickness) and enclose all the walls, windows and doors; wooden cleats may be used to anchor the plastic sheeting to walls
- not use recycled plastic sheeting

- have viewing panels placed in appropriate locations so the asbestos removal area can be seen from outside the enclosure
- have adequate lighting within the enclosure, either:
  - naturally, using clear plastic or Perspex panels in the enclosure walls
  - artificially, preferably from outside the enclosure.

During the masking up and later removal of the sheeting, all asbestos workers must wear appropriate PPE, and (as a minimum) RPE with P2 filters.

If the asbestos removal area connects either to the outside environment or to the rest of the building, it should be enclosed to maintain an airtight seal for the duration of the asbestos removal work (for example, windows, ducts, wall cavities and lift entrances).

All moveable items should be removed from the asbestos removal area. If this is not possible, the items should be moved from the immediate asbestos removal area and covered with two layers of plastic sheeting, with a minimum overlap of 300 mm between the layers. Both layers should be double-taped.

Cover all non-moveable items such as fixtures and fittings with plastic sheeting and seal the joints.

Place airlocks at the entry points to the change area. They should be built using double sets of overlapping plastic with suitable provisions for ensuring a seal.

Protect floors with at least one layer of woven plastic to prevent penetration during the asbestos removal work. The joints should be lapped by 300 mm and sealed with double-sided tape and duct tape.

If the asbestos removal area is next to areas occupied by unprotected people, give priority to:

- greater isolation of the asbestos removal area (this is the preferable option)
- doing the asbestos removal work during periods when these areas are unoccupied.

The licensed asbestos removalist should:

- consider using a hoarding to form a barrier between the asbestos removal area and the adjoining occupied areas
- erect a plastic-lined barrier within this hoarding and reserve a buffer area between the hoarding and occupied areas
- erect platforms and fixed scaffolding during the early stages of the work
- erect these structures on the outside of the enclosure.

Decontaminate any platforms or fixed scaffolding within the enclosed area and visually inspect them at the end of the asbestos removal work for obvious signs of dust.

All tools and equipment used for asbestos removal work, including vacuum cleaners used for asbestos work, must remain within the asbestos removal area until the job is completed.

Dispose of all the plastic and tape used for the enclosure as asbestos waste. Dispose of any temporary structures as asbestos waste if they cannot be decontaminated. A competent person should inspect them to confirm if the structures are free of visible asbestos.

Adapt work methods for the work environment within the enclosure. For example, base rest breaks on a risk assessment, taking into account factors such as the weather, the nature of the work and heating/cooling requirements.

See sections 17 and 18 of this code for more information about decontamination, and waste containment and disposal respectively.

27.3 NEGATIVE PRESSURE UNITS (NPUs)

To prevent airborne asbestos fibres escaping from an enclosed removal area, the licensed asbestos removalist should install one or more NPUs to create a negative air pressure of approximately 12 pascals (Pa) within the enclosed removal area.

NPUs should comply with BS 8520-2 *Equipment used in the controlled removal of asbestos-containing materials – Part 2: Negative pressure units – Specification* or equivalent standard.

NPUs should incorporate warning devices for filter integrity/overload and power failure, and should have a particle size meter, manometer or magnehelic gauge, and an audible and visual alarm system.

27.3.1 POSITIONING

The licensed asbestos removalist should position the NPU to remove air from opposite the decontamination unit.

The NPU should normally be located outside the enclosure with only the pre-filter visible from the inside.

The air entering the asbestos removal area should pass through the decontamination unit or point-of-entry while the extracted air passes through a HEPA filter to remove any asbestos before it is discharged to the outside.

If this is not possible, the licensed asbestos removalist should consider how to set up the enclosure, decontamination unit and NPU to enable the optimum smooth flow of air through the enclosure that minimises dead air pockets. The air discharge from the enclosure should be at a location away from other working areas, air conditioning inlets or breathing air compressors. If this is not possible, tests should be carried out on the exhaust air.

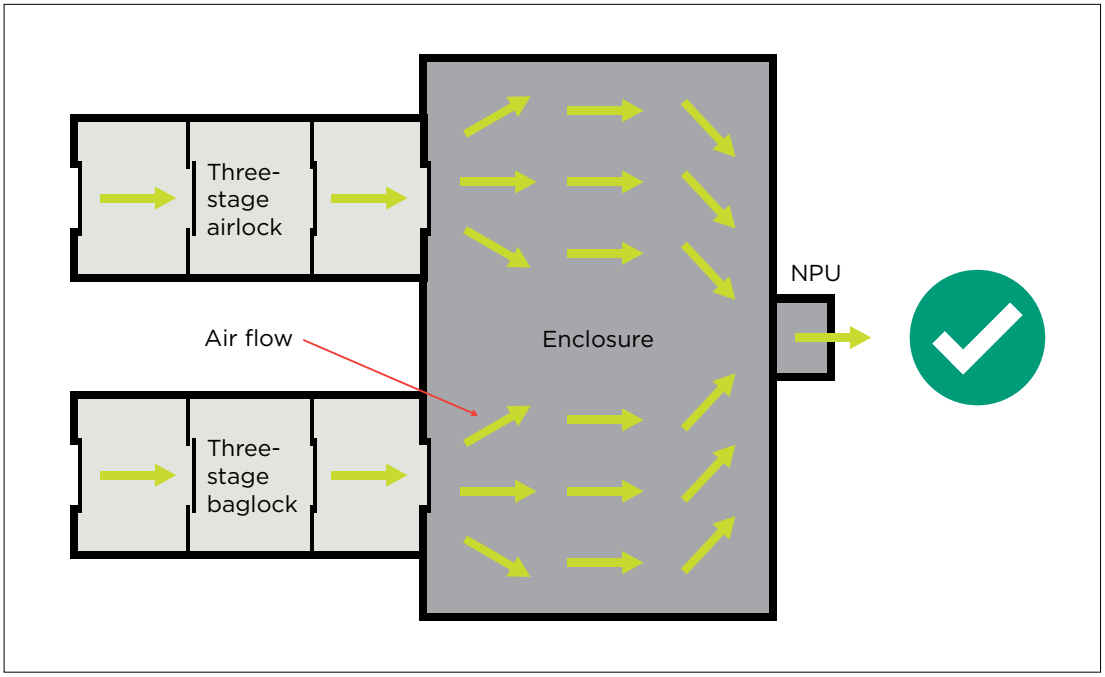


Figure 32: Example of an ideal NPU position for an enclosure

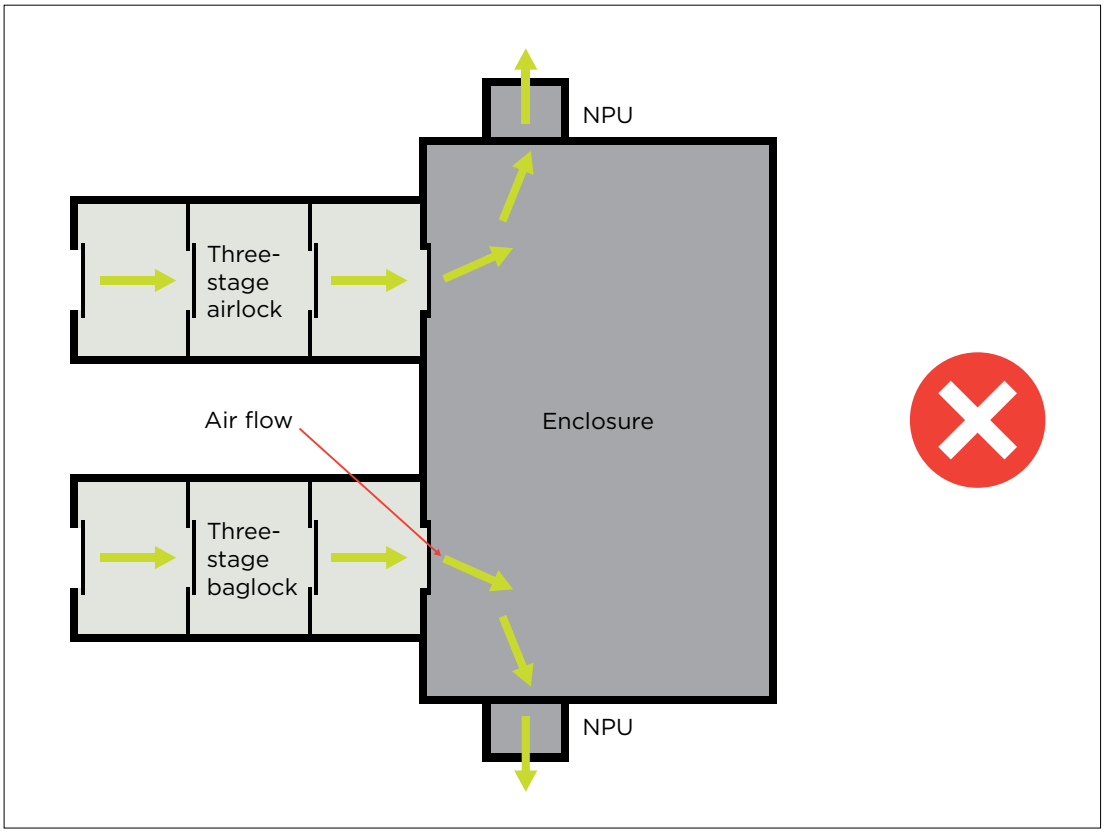


Figure 33: Example of poor airflow management for an enclosure

27.3.2 FILTERS

HEPA filters should comply with BS EN 1822 *High efficiency air filters (EPA, HEPA and ULPA)*.

The licensed asbestos removalist may install a coarse pre-filter on the air intake side of the NPU to prolong the useful life of the HEPA filter.

The pre-filters may need to be changed once per work shift or more frequently, depending on dust loads.

The licensed asbestos removalist must dispose of used filters as asbestos waste.

The licensed asbestos removalist should regularly inspect the integrity of the HEPA filter and seal fittings. An installed static pressure alarm should indicate failures in the system.

When tested for filtration efficiency in accordance with AS/NZS 60335-2.69 (or equivalent standard), the HEPA filter should allow a maximum penetration of 0.005% when fully assembled in a NPU.

27.3.3 OPERATION

So far as is practicable, NPUs should operate continuously (24 hours a day) until all asbestos removal work and decontamination within the enclosure has been completed, a clearance certificate issued and the enclosure dismantled.

Note: NPUs need to be switched off during clearance air monitoring. See section 30.4 of this code for further information.

If the NPUs stop during removal work, the licensed asbestos removalist must make sure all removal work stops immediately until the problem is rectified and the required number of NPUs are in operation.

To minimise the risk of airborne asbestos fibres escaping the enclosure, the delay should be as short as possible to avoid interruption. The licensed asbestos removalist should consider providing back-up NPUs and a generator.

27.3.4 MAINTENANCE

Maintenance work on NPUs should only be performed by a competent person after they have been thoroughly decontaminated. Alternatively, the work may be carried out under controlled conditions, such as in an asbestos removal enclosure while the person doing the work wears appropriate PPE.

27.4 TESTING AN ENCLOSURE

Before Class A asbestos removal work starts, the licensed asbestos removalist must make sure the enclosure is tested for leaks.

This can be done by visually inspecting and smoke testing the enclosure before the asbestos removal work starts.

> While smoke is generated within the enclosure, position a worker outside the enclosure to check for leaks.

> Only use smoke-generating devices incorporating non-oil-based, non-toxic smoke fluids. Do not use flares.
> Isolate smoke (fire) detection devices in the immediate vicinity of the asbestos removal area for the duration of the smoke test.
> Document the results of the smoke test and provide a copy to the workplace PCBU if necessary.

The licensed asbestos removalist should not use NPUs while the smoke test is being conducted.

27.4.1 DETECTING ASBESTOS LEAKS

If the licensed asbestos removalist finds leaks or deficiencies during the enclosure's initial testing, these need to be fixed (an expandable foam sealant, tape or equivalent may be used). Perform another smoke test until no leaks or deficiencies are found.

The licensed asbestos removalist needs to:

> identify the source of the leak/s
> seal the leaks in the enclosure
> re-test the enclosure by smoke testing until the enclosure is effective again
> clean any contaminated areas
> conduct visual inspections
> re-assess the boundaries of the asbestos removal area and site.

Keep a supply of expandable foam sealant or equivalent on site for sealing leaks.

27.5 SECURITY AND CHECKS WHEN USING AN ENCLOSURE

The licensed asbestos removalist should regularly monitor the enclosure's effectiveness while asbestos removal work is underway (for example, visual examinations, air monitoring results and negative-pressure readings).

Where practicable, the licensed asbestos removalist should make sure an asbestos removal worker is stationed outside the asbestos work area for the duration of the asbestos removal work to:

> liaise with the project supervisor or workplace PCBU
> check and maintain negative air units, compressor units, decontamination units and hot water service
> maintain the area's security
> communicate with personnel inside the work enclosure
> initiate emergency or evacuation procedures if necessary.

Daily records of these checks should be kept.

27.6 AFTER ASBESTOS REMOVAL

Once the asbestos removal is completed, the licensed asbestos removalist (or if the workplace is a home, the PCBU who commissioned the removal of the friable asbestos) must make sure a clearance inspection process is carried out. See section 30.4 of this code for more information.

The licensed asbestos removalist must not dismantle an enclosure for a friable asbestos removal area until authorised to do so by a licensed asbestos assessor.

The plastic that formed the enclosure is considered to be asbestos waste and must be disposed of by the licensed asbestos removalist, along with any other contaminated disposable material that helped form the enclosure. In some cases, structures used to build the enclosure (other than the plastic that formed the enclosure) may be wrapped and sealed in plastic and not opened until in a similar controlled environment, such as another asbestos removal enclosure. An example might be collapsible rods used to form an enclosure frame.

The licensed asbestos removalist should make sure the area where the enclosure was dismantled is thoroughly cleaned and inspected.

After the enclosure for the friable asbestos removal area has been dismantled, the licensed asbestos removalist (or if the workplace is a home, the PCBU who commissioned the removal of the friable asbestos) must obtain a clearance certificate from a licensed asbestos assessor.

The licensed asbestos removalist must not remove warning signs and protective plastic isolating public areas until:

> the enclosure is dismantled and removed as asbestos waste
> satisfactory air monitoring results have been achieved
> a licensed assessor has issued a clearance certificate indicating the area is safe for normal use.

27.7 MINI-ENCLOSURES

Mini-enclosures are suitable for asbestos removal work in areas with restricted access like ceiling spaces, and for emergency asbestos removal.

27.7.1 BUILDING A MINI-ENCLOSURE

To build a mini-enclosure, the licensed asbestos removalist should follow this process:

> Use off-the-shelf mini-enclosures or use timber or other materials to build a frame. Mini-enclosure frames can be made from a variety of materials, but have to be strong enough to support the plastic sheeting that forms the enclosure.
> Use heavy-duty polythene sheeting (200 µm minimum thickness) for making the enclosure. Do not use recycled plastic.
> Make sure the enclosure is large enough to do the work safely, allowing for movement and all the equipment needed for the removal work. This includes tools for the task, including a bucket of water, rags, sprayer, vacuum cleaner nozzle and hose.
> Do not place machinery that emits carbon monoxide in a mini-enclosure.

> Tape the polythene sheeting inside the frame.
> Attach the polythene sheeting to the ceiling and non-asbestos surfaces with tape. The tape used to connect the plastic to the frame should be strong enough to securely hold the plastic to the frame.
> Make an entry slit in one wall of the enclosure and reinforce this with tape from inside the enclosure. Attach a polythene sheet above the entry slit to cover it.
> Check all enclosure seals for leaks with a smoke test.

27.7.2 DISMANTLING THE MINI-ENCLOSURE

To eliminate or minimise airborne asbestos fibres escaping when dismantling the mini-enclosure, the asbestos removalist should follow this process:

> Put the asbestos waste in a clear bag labelled to indicate it contains asbestos.
> Clean the enclosed area with a vacuum cleaner used for asbestos work.
> Clean the equipment and polythene sheeting with damp rags.
> Make sure workers leaving a mini-enclosure follow personal decontamination procedures.
> Inspect the enclosure visually for cleanliness.
> For Class A work, make sure a licensed asbestos assessor conducts a clearance inspection of the asbestos removal area and issues a clearance certificate.
> Remove the sheeting from the framework and put it in the labelled asbestos waste container.
> Remove PPE and put it in the labelled asbestos waste container, taping the container closed.

If the framework was fully protected and was decontaminated and inspected by the licensed asbestos removalist, it can be re-used.

27.8 GLOVE BAG ASBESTOS REMOVAL WORK

The glove bag technique is suitable for removing (among other things) asbestos lagging from individual valves, joints and piping. Glove bags are designed to isolate small removal jobs from the general working environment and provide a flexible, easily-installed and quickly-dismantled temporary enclosure for small removal work project.

Glove bags:

> are single-use bags constructed from transparent, heavy-duty polyethylene with built-in arms and access ports
> are about 1 m wide and 1.5 m deep
> contain all waste and contamination within them
> are limited in the volume of waste material they can contain; take care to prevent overfilling the bag with waste
> should not be used for hot pipe work due to difficulties in sealing the glove bag to the pipe, or maintaining a seal.

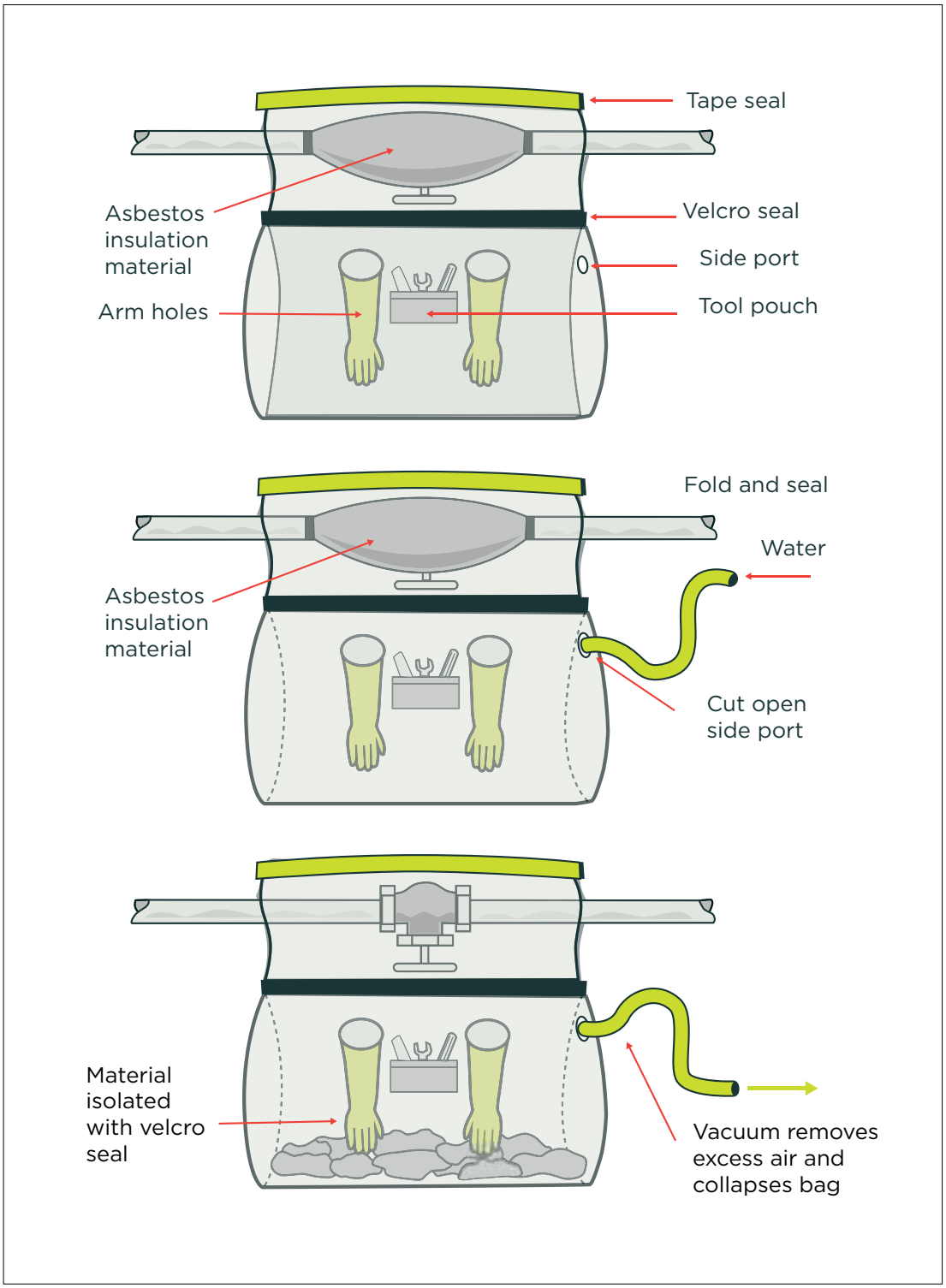


Figure 34: Example of a glove bag in use

27.8.1 GLOVE BAG TECHNIQUE

Asbestos workers should follow this process when using the glove bag removal technique:

> Place equipment and removal tools into the glove bag at the start of the job.

> As a minimum, wear a P2 filter RPE and disposable coveralls while using glove bags, in case the bag ruptures or leaks.

> The glove bag should completely cover the object.

> Cut the sides of the glove bag to fit the size of the object from which asbestos will be removed. Attach the glove bag to the object by folding the open edges together and securely sealing them with tape.

> Seal all openings in the glove bag with tape, including the bottom and side seams to prevent leakage if there is a defect in a seam.

> Saturate the asbestos with a wetting agent and remove it from the object. Apply the wetting agent with an airless sprayer through a pre-cut port, (provided in most glove bags), or through a small hole cut in the bag. Asbestos or ACM that has fallen into the bag should be thoroughly saturated.

> Seal the edges of exposed asbestos to make sure the edges do not release respirable asbestos fibres after removing the glove bag.

> After removing and sealing the asbestos, insert a hose from a vacuum cleaner used for asbestos work into the glove bag through the access port to remove any air in the bag that might contain respirable asbestos fibres. When the air has been evacuated, squeeze it tightly (as close to the top as possible), gooseneck-twist and seal it with tape, keeping the asbestos safely in the bottom of the bag.

> Remove the vacuum hose from the bag and then remove the glove bag from the workplace for disposal as asbestos waste.

> When the removal is complete, asbestos workers must follow the procedures to decontaminate themselves and their tools. The asbestos waste must be disposed of according to the waste disposal procedures.

27.9 WRAP-AND-CUT ASBESTOS REMOVAL METHOD

The ‘wrap-and-cut’ technique of removal produces the lowest levels of respirable asbestos fibres, and is used instead of full containment when the asbestos is a small amount of undamaged non-friable asbestos in good condition.

Asbestos workers should follow this process using the wrap-and-cut removal technique:

> Vacuum the plant or equipment undergoing removal with a HEPA-fitted vacuum cleaner used for asbestos work and/or wipe with damp rags (which should be disposed of as asbestos waste).

> Double-wrap the plant or equipment with 200 µm thick plastic and tape it so the asbestos is totally sealed within the plastic. Cut the wrapped plant or equipment from the rest of the plant or equipment using mechanical shears or oxy-cutting tools.

> Only exposed metal can be cut. Take care to make sure the plastic wrapping is not punctured or melted. Then remove the cut section as asbestos waste.

> If lagging has to be removed to allow a pipe to be cut, first use the glove bag removal method to expose the metal at the point to be cut and for a sufficient length on either side. Cut the pipe at the centre of the exposed section.

> As a minimum, wear P2 filter RPE and disposable coveralls while doing wrap-and-cut removal work. If the lagging is in very poor condition, and significant airborne asbestos fibres may be generated, workers may require a higher level of respiratory protection or determine if another asbestos removal is required.

When the removal is complete, workers must follow the personal decontamination procedures and dispose of asbestos waste.

PART G

28/

CLEARANCE INSPECTIONS

IN THIS SECTION:

28.1 Introduction

28.2 People conducting clearance inspections

28.3 Responsibilities for licensed asbestos removalists

28.4 Clearance inspection process

28.5 Surface testing

28.6 Air monitoring

28.7 Issues that may be encountered during clearance inspections

28.8 Contents of the clearance certificate

The legislation that applies in this section is:

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 41** Clearance inspection*

***Regulation 42** Clearance certificates*

28.1 INTRODUCTION

After the licensed asbestos removalist has completed asbestos removal work, the person who commissioned the asbestos removal work at a workplace must make sure a clearance inspection is carried out and a clearance certificate is issued before the workplace can be reoccupied.

28.2 PEOPLE CONDUCTING CLEARANCE INSPECTIONS

Clearance inspections can be conducted by:

> an independent licensed asbestos assessor, or

> an independent competent person.

This also includes when the work requiring clearance is being carried out in homes.

From 4 April 2018, only an independent licensed assessor may carry out clearance inspections for Class A asbestos removal work.

In this case, a competent person is a person who, through training or experience, has the skills and knowledge of asbestos removal industry practice, and holds:

> a certificate in relation to a training course specified by WorkSafe for asbestos assessor work, or

> a tertiary qualification in occupational health and safety, occupational hygiene, science, or environmental health.

A safe work instrument may prescribe a particular training course or qualification.

28.3 RESPONSIBILITIES FOR LICENSED ASBESTOS REMOVALISTS

A clearance certificate must be issued before the area can be reoccupied for demolition, other work activities or normal use.

If the licensed asbestos removalist or the person who commissioned the asbestos removal work has not obtained a clearance certificate for the asbestos removal area, the asbestos removal area must not be reoccupied for normal use or other work activities.

Unauthorised people must not enter the asbestos removal area before the clearance certificate is issued. Signage and barriers must remain in place until the clearance certificate is issued.

28.4 CLEARANCE INSPECTION PROCESS

The person who commissioned the licensed asbestos removal work in a workplace, or the licensed asbestos removalist doing licensed asbestos removal in a home, must make sure an independent licensed asbestos assessor or competent person carries out a clearance inspection.

The four-stage clearance inspection process[18] is as follows:

> Stage 1: preliminary check of site condition and job completeness

> Stage 2: thorough visual inspection inside the enclosure/work area

> Stage 3: air monitoring

> Stage 4: final assessment post-enclosure/work area dismantling.

28.4.1 STAGE 1

The licensed asbestos assessor or competent person should establish the scope of the work that was carried out, and inspect the asbestos removal control plan.

The licensed asbestos assessor or competent person should check that decontamination facilities are still intact, operational and clean. The purpose is to inspect the area for obvious signs of contamination, such as leaks, burst waste bags, or debris from inadequate decontamination procedures.

The licensed asbestos assessor or competent person should check the enclosure's integrity. If they find debris, it should be cleaned up by the licensed asbestos removalist or its workers. Any breaches of the enclosure should be fixed before the clearance process continues.

28.4.2 STAGE 2

The visual inspection is a key part of the clearance inspection.

A thorough inspection should take some time to complete. It should begin after the removal area has been thoroughly cleaned and dry. If the cleaning aspect of the removal process is thoroughly conducted, airborne asbestos contamination may not be a problem.

The licensed asbestos assessor or competent person should check:

> the completeness of the asbestos/ACM removal from underlying surfaces

> the presence of any visible ACD left inside the enclosure, airlocks or work area

> the presence of fine settled dust.

The asbestos removalist should accompany the licensed asbestos assessor or competent person to correct minor problems and to clear small amounts of debris or dust if they are found during the inspection.

28.4.3 STAGE 3

The licensed asbestos assessor or competent person should conduct air monitoring with dust disturbance for Class A asbestos removal work. See section 28.6 for further information.

The licensed asbestos assessor or competent person may conduct air monitoring for Class B removal work if the results of the visual inspection determine it is necessary.

NPUs should be turned off and capped while clearance air monitoring is being undertaken.

If surface testing is required or recommended, it should be conducted during this stage. See section 28.5 of this code for information about surface testing.

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[18] Based on the four-stage site certification for reoccupation procedure from HSG248 *Asbestos: The analyst's guide for sampling, analysis and clearance procedures*, available from the Health and Safety Executive (UK).

28.4.4 STAGE 4

When the enclosure or work area has passed the visual inspection and/or air monitoring, the licensed asbestos removalist can dismantle the enclosure.

28.5 SURFACE TESTING

Surface testing is mandatory for Class A asbestos removal work and optional for Class B asbestos removal work.

Current surface testing methods are insufficient for determining whether an asbestos removal area is safe for normal use. The licensed asbestos assessor or competent person should give greater weight to the visual inspection and clearance air monitoring results to determine if the asbestos removal area poses a risk to health and safety from asbestos exposure.

Surface testing results may be useful for clarifying the identity of materials detected during a visual inspection, or to track down sources of contamination that may cause trace level to be exceeded during clearance air monitoring.

28.5.1 SAMPLING

The licensed asbestos assessor or competent person usually collects samples by:

> swabbing a surface with clean fabric or filter-paper

> applying adhesive tape to a surface

> (less commonly) vacuuming a surface with a micro-vacuum.

28.5.2 ANALYSIS

Some laboratories analyse the samples in accordance with AS 4964* *Method for the qualitative identification of asbestos in bulk samples*.

Other methods for surface testing include a standard sampling methodology and can estimate the surface concentration of asbestos fibres as the number of asbestos structures per unit area of sampled surface. Examples of these methods include:

> ASTM D6480-5 *Standard Test Method for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos Structure Number Concentration by Transmission Electron Microscopy*

> ASTM D5755-9 *Standard Test Method for Microvacuum Sampling and Indirect Analysis of Dust by Transmission Electron Microscopy for Asbestos Structure Number Surface Loading*

> ASTM D5756-02 *Standard Test Method for Microvacuum Sampling and Indirect Analysis of Dust by Transmission Electron Microscopy for Asbestos Mass Surface Loading*.

28.5.3 DECISION-MAKING

When the licensed asbestos assessor or competent person decides whether to issue a clearance certificate, they should take the following into account:

> asbestos fibres are only hazardous when airborne

> regardless of air monitoring results, asbestos fibres on surfaces may be disturbed later and lead to a rise in airborne asbestos fibres

> the Asbestos Regulations permit personal exposure to airborne asbestos fibres at concentrations that do not exceed 0.01 fibres/ml.

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* Paragraph 28.5.2 was amended on 7 December 2016 by Amendment 1 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.

If the results of surface testing do not reveal any significant potential for this level to be exceeded, the assessor may be satisfied that the asbestos removal area does not pose a risk to health and safety, and may issue a clearance certificate. This assumes the other matters the assessor also needs to be satisfied of have also been met.

If asbestos is detected by surface testing but there is no information about its concentration, it is not possible to draw reliable conclusions about the risk that the respirable asbestos fibre level does not exceed 0.01 fibres/ml.

Note: The assessor is not required to refuse to issue a clearance certificate merely because asbestos has been detected.

28.6 AIR MONITORING

Air monitoring is mandatory for Class A asbestos removal work, and optional for Class B asbestos removal work.

28.6.1 SAMPLE NUMBER

The numbers of air samples for conducting air monitoring should be determined on a risk assessment basis. Table 10 recommends sample numbers for air monitoring. It may be necessary to take more samples if the area is subdivided, for example.

ENCLOSURE AREA (m^2)	ENCLOSURE VOLUME (m^3)	NUMBER OF SAMPLES
50	150	2[19]
200	600	4
500	1,500	6
1,000	3,000	9
5,000	15,000	16
10,000	30,000	20

Table 10: Recommended sample numbers for clearance monitoring

If the enclosure is less than three metres high, or where exposure is only likely to be at ground level, use the area for calculating the number of samples. In other cases use the volume as the basis for determining the number of samples. If there are large items in the enclosure, subtract their volume from the total before estimating the number of required samples.

28.6.2 INTERPRETING RESULTS

The person conducting the clearance monitoring can issue a clearance if all results do not exceed 0.01 fibres/ml, unless it is confirmed the fibre present is unlikely to be asbestos.[20]

[19] Even with small areas, a minimum of two samples is recommended to mitigate the risk of one pump failing.

[20] This normally requires confirmation by an alternative method such as Scanning Electronic Microscopy with Energy Dispersive X-ray Analysis. **Note**: This method requires making arrangements with the testing laboratory to use special filters.

28.7 ISSUES THAT MAY BE ENCOUNTERED DURING CLEARANCE INSPECTIONS

28.7.1 WET ENCLOSURES OR WORK AREAS

Where practicable, the enclosure or work area should be clean and dry before the inspection begins. Not only is it hazardous for licensed asbestos assessors/competent people to conduct their inspections in a wet environment, it is also difficult, if not impossible, to inspect for the presence of fine dust.

28.7.2 SPRAYING SEALANT

Sealants, including PVA, may be used in limited circumstances. For example, where the enclosure also contains significant amounts of non-asbestos (eg brick or wood) dust that may interfere with the air monitoring readings.

It should not be used to replace the need for thoroughly cleaning the enclosure.

Sealants should not be applied inside the enclosure before the visual inspection begins.

If a licensed asbestos assessor or competent person finds a sealant-sprayed enclosure, the asbestos removalist may be instructed to clean and dry the enclosure before the visual inspection starts.

If the licensed asbestos removalist is considering applying sealant before the visual inspection phase begins, it should seek advice from the licensed asbestos assessor/competent person first.

If the licensed asbestos removalist has used a sealant in the asbestos removal area, it should notify the client and advise them that the sealant may break down over time.

28.8 CONTENTS OF THE CLEARANCE CERTIFICATE

Clearance certificates must be in writing, and contain all of the following information:

- the name, qualifications, and contact details of the licensed assessor or competent person issuing the certificate
- the address and location of the asbestos removal area and the date and time the inspection occurred
- that the assessor or competent person did not find any visible asbestos residue from the asbestos removal work in the work area, or in the immediate vicinity of where the work was carried out
- if air monitoring was carried out, the results must show the respirable asbestos fibre level did not exceed 0.01 fibres/ml
- as far as the assessor or competent person can tell from the clearance inspection, the asbestos removal area does not pose a risk to health and safety from exposure to asbestos.

Appendix I contains an example of a clearance certificate template.

PART H

ASBESTOS REMOVAL WORK

IN THIS PART:

Section 29: Controls that apply to licensed and unlicensed asbestos removal work

Section 30: Air monitoring and sampling

PART H

29/

CONTROLS THAT APPLY TO LICENSED AND UNLICENSED ASBESTOS REMOVAL WORK

IN THIS SECTION:

29.1 Introduction

29.2 Licensed asbestos removal

29.3 Unlicensed asbestos removal

29.4 Identifying non-asbestos-related hazards

29.5 Indicating the asbestos removal areas

The legislation that applies in this section is:

Health and Safety at Work (Asbestos) Regulations 2016

***Part 3** Asbestos removal*

***Part 4** Class A licences and related air monitoring requirements*

29.1 INTRODUCTION

This code is dedicated to informing duty holders about asbestos risks. However, in every working environment, other risks – not directly related to asbestos – will be present.

This section provides a short summary of some other risks PCBUs must take into consideration when planning their work.

It also provides guidance for unlicensed asbestos removal work, and highlights duties that are applicable to all PCBUs removing asbestos.

This section applies to all types of asbestos removal work, including:

> Class A and Class B licensed asbestos removal work, and
> unlicensed asbestos removal work.

29.2 LICENSED ASBESTOS REMOVAL

For information on the type and quantity of asbestos that can be removed with a Class A or Class B licence; see section 24.2.2 of this code.

29.3 UNLICENSED ASBESTOS REMOVAL

Asbestos removalists or other people (eg plumbers, electricians) may remove up to and including 10 m^2 of non-friable asbestos, but the following conditions apply:

> only non-friable asbestos, or ACD associated with removing that amount of non-friable asbestos, may be removed
> ACD not associated with the removal of friable or non-friable asbestos and is only a minor contamination may be removed (see **Appendix D** for examples of 'minor contamination')
> the 10 m^2 restriction applies cumulatively to the whole asbestos removal project for the site.

The licence requirements cannot be avoided by dividing a large site into 10 m^2 or less sectors and removing asbestos from each one.

Sites where over 10 m^2 of asbestos needs to be removed must be conducted by licensed asbestos removalists.

Asbestos removalists must still follow all other applicable regulations, and remove the asbestos in accordance with safe practices.

Note: The asbestos removalist should measure the area of asbestos or ACM involved if it is unclear if the area is over or under 10 m^2.

29.3.1 MEASURING NON-FLAT SURFACES

Many objects containing asbestos are not flat. For these objects, it is acceptable to calculate the overall dimensions of the object's surface (ie it is acceptable to ignore surface texture and holes when measuring ACM).

29.3.2 EXAMPLES OF UNLICENSED ASBESTOS REMOVAL WORK

EXAMPLE	CLASS OF LICENCE REQUIRED
Removing a single non-friable asbestos cement sheet (area 2 m^2) to install an air conditioner	Licence is not required because the area of ACM is 10 m^2 or less
Self-employed person has been engaged to remove a non-friable asbestos cement eave (1.6 m^2 in total) to provide access for pipes	Licence is not required because the area of ACM is 10 m^2 or less

Table 11: Examples of unlicensed asbestos removal work

29.4 IDENTIFYING NON-ASBESTOS-RELATED HAZARDS

The asbestos removalist should consider not only the hazards associated with asbestos removal, but also the hazards related to the work and work environment.

Examples include:

> confined spaces
> falls from heights
> heat stress
> electrical equipment
> noise.

Refer to WorkSafe's website for advice on how to identify these and other hazards and control the potential risks they pose: www.worksafe.govt.nz

29.5 INDICATING THE ASBESTOS REMOVAL AREAS

Responsibilities for the security and safety of the asbestos removal site and asbestos removal area should be specified in the asbestos removal control plan (where required). This includes inaccessible areas likely to contain asbestos.

29.5.1 WARNING SIGNS

Warning signs must be placed so they clearly indicate asbestos removal work is taking place in the area. Signs should be placed at all of the main entry points to the asbestos removal area where asbestos is present.

These signs should be weatherproof, constructed of light-weight material and adequately secured so they remain in prominent locations. The signs should comply with NZS/*AS 1319 Safety signs for the occupational environment* for size, illumination, location and maintenance.

The signs must comply with any applicable safe work instrument.

29.5.2 BARRIERS

Barriers can help with traffic control and prevent access to the asbestos removal area.

Appropriately placed barriers delineate and isolate the asbestos removal area. Barriers can take various forms, from tape to solid hoarding. The type of barrier should reflect the level of risk. For friable asbestos removal work, solid barriers should be used. Tape may be sufficient for non-friable asbestos removal work of short duration.

The location of barriers will depend on the physical environment and the level of risk. An assessment of the asbestos removal work site should determine the appropriate placement of barriers.

For example, a non-friable ACM removal job where the ACM is in good condition may use a wall located three metres from the asbestos removal area as the barrier.

A friable sprayed asbestos removal job being performed dry due to electrical restrictions may require a barricade 15 metres from the asbestos removal area.

In determining the distance between barriers and the asbestos removal area, consider the following:

- whether the asbestos is friable or non-friable
- activity around the asbestos removal area (for example, other workers, visitors, neighbours, the public) to determine the risk of exposure to other people
- the method of asbestos removal
- any existing barriers (walls, doors)
- the quantity of asbestos to be removed
- the type of barrier available for use (for example, hoarding or tape).

29.5.3 WET AND DRY METHODS OF ASBESTOS REMOVAL

The asbestos removalist must use asbestos removal techniques that eliminate or minimise asbestos fibre dust generation so far as is reasonably practicable. They must choose the most effective method of asbestos removal that minimises asbestos fibre from releasing at the source.

The removal methods are:

- **Wet spray method**: this significantly suppresses asbestos fibres, but they are not entirely eliminated, so RPE must be used.
- **Saturation and water injection method**: use during friable removal. RPE is also needed for this work.
- **Dry method**: only use this method if the wet spray method is not suitable, for example, live electrical conductors or equipment that could be permanently damaged or made dangerous upon contact with water. RPE is required.

29.5.4 WET SPRAY METHOD

The wet spray method is the preferred asbestos removal method. The asbestos removalist should use this to remove asbestos from structures and plant. This method uses a low-pressure water supply for wetting down asbestos and related items to suppress asbestos fibres. The asbestos removalist can achieve this with a mains-supplied garden hose fitted with a pistol grip. If a water supply is not readily available, a portable pressurised vessel (for example, a pump-up garden sprayer) may be used.

The type of spraying equipment will depend on the availability of water and access to the area to be sprayed.

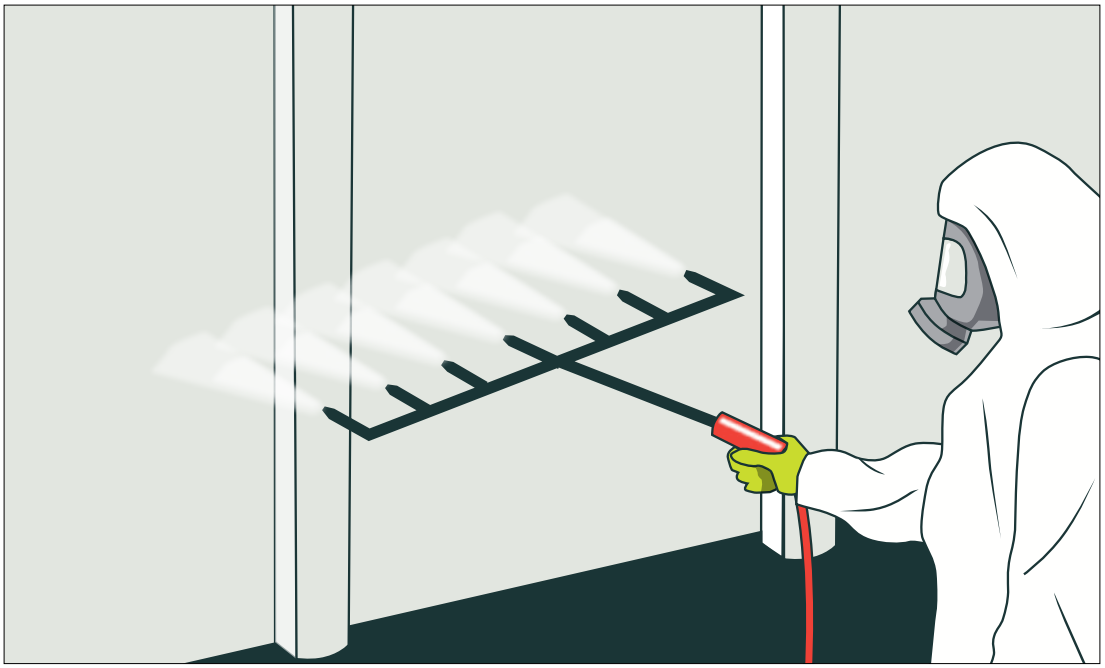

Figure 35: Wet spray method, using a hose fitted with a mutli-nozzle sprayer

The wet spray method involves applying a fine water spray to the asbestos so the entire surface of the asbestos is saturated and run-off is minimised. Keep the asbestos in a wet condition throughout the removal.

The asbestos removalist may add a wetting agent (surfactant), such as detergent, to the water to encourage a more rapid wetting process.

For very small areas, a small spray water bottle may be sufficient.

Wet the asbestos through to its full depth and direct the water spray at the site of the cut. Remove the wet material as the cut progresses.

Immediately after removing the asbestos, direct the spray on sides that were previously not exposed.

The asbestos removalist should remove the asbestos in sections and immediately place it in suitably marked and properly sealed asbestos waste containers, along with any small sections dislodged when the asbestos was cut.

Wherever reasonably practicable, the asbestos removalist should use a vacuum cleaner used for asbestos work in conjunction with the wet spray method. The vacuum cleaner should be used before spraying asbestos with water, and to collect any dust spread over a large area.

Refer to section 13.5 of this code for information about vacuum cleaners used for asbestos work.

Airborne asbestos fibres are significantly suppressed with the wet spray method, but they are not entirely eliminated, so effective PPE, including RPE, is required.

Refer to section 14.12 of this code for information on RPE.

Consider applying a PVA emulsion as it may be more effective than water (with a wetting agent) for minimising fibre release. For example, apply PVA and allow it to dry on asbestos cement roofing before removing it to prevent slip hazards generated by water.

29.5.5 SATURATION

Use the soaking method with total saturation if the asbestos is so thick the spray method will not significantly suppress the asbestos fibres. This method involves injecting water or a water-based solution directly into the asbestos. It is a process requiring specific training in the equipment and the process.

The asbestos is soaked by introducing water or other wetting agents through an appropriate applicator. The applicator should consist of an injection head with numerous side holes or outlets through which the water or wetting agent is fed to the asbestos.

To encourage more rapid wetting of the asbestos, make holes or cuts in the outer covering to let the water or wetting agent to be injected in such a way as to make sure the asbestos is saturated, not just washed out through a liquid passage.

The soaking should be done before removing the asbestos. The amount of water or wetting agent and the time to soak will depend on the thickness of the asbestos, access to the asbestos and location of the holes.

Remove the saturated asbestos in sections, place them in a properly marked container, the seal and dispose of as with the spray method.

29.5.6 WATER INJECTION METHOD

The licensed asbestos removalist should wet-spray or inject asbestos thoroughly using a fine water spray. Aim to achieve maximum saturation with minimum run-off to reduce clean-up and slip hazards.

Use wetting, scraping and vacuuming methods wherever reasonably practicable.

29.5.7 DRY METHOD

The dry method is not preferred, because there is a much greater potential for generating airborne asbestos fibres. Only use the dry removal method if the wet spray or soaking methods are not suitable (eg if there are live electrical conductors, or if major electrical equipment could be permanently damaged or made dangerous by contact with water).

The asbestos removalist, if using dry removal methods, should put the following controls in place:

> **Non-friable removal:** enclose the asbestos removal area so far as is reasonably practicable.

> **Friable removal**: fully enclose the asbestos removal area with plastic sheeting (minimum 200 µm thickness) and maintain at negative pressure (approximately 12 Pa). Make sure all workers involved in the removal operation wear full-face positive-pressure supplied air-line respirators.

> **Friable and non-friable removal**: remove the asbestos in small, pre-cut sections with minimal disturbance to minimise generating airborne asbestos fibres as much as possible. Wherever reasonably practicable, use a HEPA-fitted vacuum cleaner used for asbestos work.

> Immediately place all waste material in appropriate containers which are wetted to suppress asbestos dust and airborne fibres.

See **Appendix G** for a selection of Safe Work Practices for removing asbestos or ACM.

Note 1: The Safe Work Practices link to Parts of this code. They should not be read on their own.

Note 2: The Safe Work Practices reflect good practice. PCBUs can conduct asbestos-related work using different practices, but they must achieve the same or a higher level of safety than what is specified in the code.

PART H

30/

AIR MONITORING AND SAMPLING

IN THIS SECTION:

30.1 Introduction

30.2 How asbestos is monitored in the working environment

30.3 When is air monitoring required?

30.4 Who can conduct air monitoring?

30.5 Communicating air monitoring results

30.6 Quality control monitoring for removing or encapsulating asbestos

The legislation that applies in this section is:

Health and Safety at Work Act 2015

***Section 24 (1)(m)** Meaning of notifiable incident*

***Section 57** Requirement to keep records*

Health and Safety at Work (Asbestos) Regulations 2016

***Regulation 6(b)** Declaration of notifiable incident*

***Regulation 43** Air monitoring for Class A asbestos removal work*

***Regulation 45** Action if respirable fibre level too high*

***Regulation 51** Duty to carry out air monitoring*

30.1 INTRODUCTION

Measuring airborne fibre levels can confirm the airborne asbestos contamination standard has not been exceeded, and determine whether control measures are effective.

The type of monitoring will depend on the circumstances.

There is a difference between air monitoring and quality control monitoring for asbestos removal or encapsulation work. Both relate to safeguarding the health of individuals, but quality control monitoring places the emphasis on confirming that the job has been completed to a satisfactory standard.

Air monitoring must be carried out using a membrane filter method. This duty rests with the licensed asbestos assessor or the competent person engaged to carry out the air monitoring.

30.2 HOW ASBESTOS IS MONITORED IN THE WORKING ENVIRONMENT

Air monitoring is used to measure how much airborne asbestos fibre is present in the work atmosphere.

People conducting the monitoring must use a membrane filter method. WorkSafe recognises the following as membrane filter methods:

COUNTRY	CODE	TITLE
Australia	NOHSC:3003 (2005)	Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres (2nd Ed)
United Kingdom	HSG 248	Asbestos: The Analyst's Guide for Sampling, Analysis and Clearance Procedures
	ISO-8672-2014	Air quality. Determination of the number concentration of airborne inorganic fibres by phase-contrast optical microscopy. Membrane filter method.
	WHO, Geneva 1997 ISBN 92 4 154496 1	Determination of airborne fibre concentrations. A recommended method, by phase-contrast microscopy (membrane filter method)
USA	ASTM STP834	Membrane Filter Method for Estimating Asbestos Fiber Exposure

Table 12: Membrane filter methods

However, if a safe work instrument prescribes a specific membrane filter method, that method must be used.

30.3 WHEN IS AIR MONITORING REQUIRED?

Air monitoring requirements will vary depending on:

> the type and condition of the asbestos

> if the person or people working on the asbestos is or are in an enclosure

> whether the asbestos work is done inside or outside a building.

Aside from the requirements for Class A air monitoring (see section 29.3.1), the need for air monitoring should be determined in consultation with a licensed asbestos assessor or competent person.

30.3.1 CLASS A ASBESTOS REMOVAL

Air monitoring must be conducted:

> before Class A asbestos removal work starts (if the licensed asbestos assessor determines it is likely the air contains respirable asbestos fibres in concentrations greater than trace level), and

> during Class A asbestos removal work.

If the air monitoring results show that respirable asbestos fibre levels exceed the action levels outlined in Table 13, the licensed asbestos removalist must take immediate action.

ACTION LEVEL	CONTROL	ACTION
< 0.01 fibres/ml (trace level)	No new control measures are necessary	Continue with existing control measures
≥ 0.01 fibres/ml but < 0.02 fibres/ml	1. Investigate	Investigate the cause
	2. Implement	Put controls in place to prevent exposure
	3. Prevent	Prevent further fibre release
≥ 0.02 fibres/ml	1. Stop	Stop Class A asbestos removal work
	2. Notify	Notify WorkSafe as soon as possible as a notifiable incident. Include the results of the air monitoring.
	3. Investigate	Conduct a thorough visual inspection of the enclosure (if used) and associated equipment in consultation with all asbestos workers. Review controls.
	4. Put controls in place to prevent exposure and further asbestos fibre release	1. Extend the isolated/barricaded area around the work area/enclosure so far as reasonably practicable (until fibre levels are at or below 0.01 fibres/ml) 2. Wet-wipe and vacuum the surrounding area, seal any identified leaks (eg with expandable foam or tape) 3 Smoke test the enclosure until it is satisfactorily sealed

ACTION LEVEL	CONTROL	ACTION
	5. Conduct further air monitoring	Do not re-start until fibre levels are at or below 0.01 fibres/ml
	6. Retain records for five years	

Class A asbestos removal air monitoring action levels

Any information gathered from these actions should be referred to during future asbestos jobs (where applicable).

30.3.2 CLASS B ASBESTOS REMOVAL AND UNLICENSED ASBESTOS REMOVAL

Air monitoring is not required, but it may be carried out by a licensed asbestos assessor or competent person to check if the asbestos removalist is complying with the duty to eliminate or minimise exposure to airborne asbestos, and to make sure they do not exceed the airborne contamination standard for asbestos.

Air monitoring should be considered if the asbestos removal work is being done in, or next to a public location.

30.3.3 ASBESTOS-RELATED WORK

Monitoring must be carried out if there is uncertainty about whether the airborne contamination standard for asbestos is likely to be exceeded.

Air monitoring may be required when:

> it is not clear if new or existing control measures are effective
> there is evidence (for example, dust deposits outside the work area) that control measures have deteriorated
> modifications or changes in work methods have occurred that may adversely affect worker exposure
> there has been an uncontrolled disturbance of asbestos at the workplace.

30.4 WHO CAN CONDUCT AIR MONITORING?

If air monitoring is required, an independent licensed asbestos assessor or independent competent person may carry it out.

The licensed asbestos assessor or competent person will determine air monitoring variables such as sample duration time and monitoring locations in consultation with the asbestos removalist or PCBU conducting asbestos-related work.

In this case, a competent person is a person who, through training or experience, has the skills and knowledge of asbestos removal industry practice, and holds:

> a certificate in relation to a training course specified by WorkSafe for asbestos assessor work, or
> a tertiary qualification in occupational health and safety, occupational hygiene, science, or environmental health.

From 4 April 2018, only an independent licensed assessor may carry out air monitoring for Class A asbestos removal work.

30.5 COMMUNICATING AIR MONITORING RESULTS

30.5.1 ASBESTOS REMOVAL IN WORKPLACES

The PCBU who commissions the Class A licensed asbestos removal work must make sure the results of the air monitoring are given to:

> workers at the workplace
> representatives of the workers at the workplace
> PCBUs at the workplace
> other people at the workplace
> (so far as is reasonably practicable), other people living or working in the vicinity of the workplace if it is likely they may be affected by contamination.

30.5.2 ASBESTOS REMOVAL IN HOMES

If the workplace is a home, the licensed asbestos removalist must make sure the results are given to:

> the PCBU who commissioned the work, for example, the landlord or property management company
> workers (if the home is a workplace)
> representatives for workers at the workplace (if applicable)
> PCBUs at the workplace (if applicable)
> the occupier of the home
> the owner of the home
> other people at the home.

30.5.3 ASBESTOS-RELATED WORK

For asbestos-related work, if the airborne contamination standard for asbestos has been exceeded, the workplace PCBU must:

> determine which workers and other people were in the work area during that time
> warn those workers about possible exposure to respirable asbestos fibres
> warn other people about possible exposure to respirable asbestos fibres.

The workplace PCBU must make sure information about exposure to respirable asbestos fibres is readily available to these workers and other people.

This information must include the results of air monitoring and the determination by the competent person or licensed asbestos assessor who carried out the air monitoring.

30.6 QUALITY CONTROL MONITORING FOR REMOVING OR ENCAPSULATING ASBESTOS

Quality control monitoring to check asbestos levels in buildings or other structures should be conducted by a competent person or licensed asbestos assessor.

Clearance air monitoring is the most popular form of quality control monitoring, but it may also be useful to perform:

> **baseline sampling** to establish existing conditions before work starts

> **leak testing** to check an enclosure's integrity

> **reassurance sampling** to test the environment after an enclosure is removed.

APPENDICES

IN THIS PART:

Appendix A: The law

Appendix B: References

Appendix C: Content headers for an asbestos management plan

Appendix D: 'Minor contamination' of asbestos-containing dust or debris

Appendix E: Exception to requirements for demolishing and refurbishing structures or plant

Appendix F: Recommended Safe Work Practices for asbestos-related work

Appendix G: Recommended Safe Work Practices for asbestos removal work

Appendix H: Asbestos removal control plan template

Appendix I: Clearance certificate template

Appendix J: Asbestos levels associated with asbestos activities

Appendix K: Glossary

APPENDICES

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Appendix A: The law

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Appendix I: Clearance certificate template

Appendix J: Asbestos levels associated with asbestos activities

Appendix K: Glossary

APPENDIX A: THE LAW

This Appendix summarises the relevant sections of the Health and Safety at Work Act 2015 (the Act) and the Asbestos Regulations. It explains the legal requirements for duty holders.

View and download the Act and the Regulations: www.legislation.govt.nz

HEALTH AND SAFETY AT WORK ACT 2015

Many people have health and safety responsibilities in workplaces. The intention of the Health and Safety at Work Act 2015 is for workplaces to be without health and safety risk so far as is reasonably practicable, so everyone who goes to work comes home healthy and safe.

For further information, refer to WorkSafe's Special Guide *Introduction to the Health and Safety at Work Act 2015*, available from: www.worksafe.govt.nz

In addition to the Act's requirements, workplaces need to comply with the Regulations. Some apply to all workplaces. Others only apply to workplaces that carry out certain activities (eg asbestos).

HEALTH AND SAFETY AT WORK (ASBESTOS) REGULATIONS 2016

The Asbestos Regulations list specific duties for PCBUs and others to manage and control asbestos and ACM at the workplace. These are summarised in Table 14.

THE BUILDING ACT 2004

The Building Act 2004 regulates building work, has a licensing regime for building practitioners, and sets performance standards for building so that:

> people can use buildings safely and without endangering their health
> buildings have features that contribute to the health, physical independence and well-being of the people who use them
> people can escape from a building fire
> people design, build and use buildings in ways that promote sustainable development.

The Building Act is relevant for asbestos because many buildings were built with ACMs, but it is against the law to build or renovate buildings with ACM now.

THE NEW ZEALAND BUILDING CODE (BUILDING CODE)

The Building Code explains how the Building Act should be complied with. It sets out performance criteria that buildings must comply with for their intended use.

The Ministry of Business, Innovation and Employment (MBIE) prepares compliance documents, which people use to work out if the building complies with the Building Code.

ACCEPTABLE SOLUTIONS AND VERIFICATION METHODS

Acceptable Solutions and Verification Methods are ways to comply with the Building Code. The Acceptable Solutions give specific construction details that comply with the Building Code. The Verification Methods test or calculate Building Code compliance.

Some of these documents specifically apply to asbestos, although they might not mention asbestos by name:

> Clause F2: hazardous building materials

> Clause F2.1 of the Building Code safeguards people from injury and illness caused by exposure to hazardous building materials, including asbestos

> Clause F2.2 states that if hazardous building materials must be used, they should not cause people risks

> Clause F2.3.3 states glass or other brittle materials (like asbestos) that people are likely to touch:
  - if they can break, should break in a way unlikely to injure someone, or
  - should resist a foreseeable impact without breaking, or
  - should have impact protection.

Acceptable Solution F2/AS1 states asbestos or ACM is an acceptable building material if it is bonded in a matrix or encapsulated with an appropriate coating.

DUTY HOLDER	RESPONSIBILITIES	CODE SECTION	REGULATION
A person	*Requirement to hold Class A asbestos removal licence* > Must not carry out the removal of the following at a workplace unless the person, or the person on whose behalf the work is carried out, holds a Class A asbestos removal licence: – friable asbestos – except as provided below, ACD	24	54
	> A Class A asbestos removal licence is not required for the removal of ACD that – – is associated with the removal of non-friable asbestos – is not associated with the removal of friable or non-friable asbestos and is only minor contamination		55
	Requirement to hold Class B asbestos removal licence > Must not carry out the removal of the following at a workplace unless the person, or the person on whose behalf the work is carried out, holds a Class B asbestos removal licence or a Class A asbestos removal licence: – more than 10 m^2 (cumulatively over the whole course of the removal project for the site) of non-friable asbestos or ACM. – ACD associated with the removal of more than 10 m^2 (cumulatively over the whole course of the removal project for the site) of non-friable asbestos or ACM.	24	56
PCBU	*Work involving asbestos or ACM* > Must not carry out, or direct or allow a worker to carry out, work involving asbestos unless it is permitted by the Asbestos Regulations.	4	7
	Health monitoring > Must make sure appropriate health monitoring is provided, in accordance with the Asbestos Regulations and the GRWM Regulations, to a worker carrying out work for the business or undertaking if the worker is carrying out work involving asbestos and is at risk of exposure to asbestos when carrying out the work > Must make sure health monitoring commences within four weeks of the worker commencing carrying out licensed asbestos removal work	16	15, 16
	Training (excluding licensed asbestos removal) > Must make sure workers who are engaged by the PCBU and who the PCBU reasonably believes may be involved in work involving asbestos are trained in the identification and safe handling of, and suitable control measures for, asbestos and ACM	12	17

DUTY HOLDER	RESPONSIBILITIES	CODE SECTION	REGULATION
	Limiting the use of equipment > Must not use, or direct or let a worker use, certain equipment on asbestos and ACM	13	18
	Asbestos-related work > must, if there is uncertainty about whether asbestos is present at the workplace, assume asbestos is present or arrange for a sample to be analysed to confirm if asbestos or ACM is present > must give information about the health risks of asbestos to a person likely to do asbestos-related work	21	48, 49
PCBU who manages or controls a workplace	*Control risk of exposure* > must make sure, so far as is reasonably practicable, that exposure of a person to airborne asbestos is eliminated, except, in relation to an asbestos removal area that is enclosed to prevent respirable asbestos fibres being released, and in which negative pressure is used > must minimise exposure, so far as is reasonably practicable, if it is not reasonably practicable to eliminate it > must make sure the airborne contamination standard for asbestos is not exceeded at the workplace; except, in relation to an asbestos removal area that is enclosed to prevent respirable asbestos fibres being released, and in which negative pressure is used	5	9
	Identifying or assuming asbestos or ACM > who knows or ought to reasonably know there is a risk of exposure to asbestos fibres in the workplace must make sure, so far as is reasonably practicable, all asbestos or ACM giving rise to the risk is identified or assumed to be present	6	10
	Indicating presence and location > must make sure the presence and location of asbestos or ACM identified (or assumed to be identified) at the workplace, is clearly indicated (and in a way that complies with a safe work instrument, if there is one)	6	12
	Asbestos management plan must, if asbestos is identified in the workplace or is likely to be present in the workplace from time to time, prepare, maintain and review an asbestos management plan. It must be accessible to workers, their representatives and other PCBUs	9	13, 14

DUTY HOLDER	RESPONSIBILITIES	CODE SECTION	REGULATION
	Demolition and refurbishment work > must, before starting demolition or refurbishment work, identify and remove all asbestos likely to be disturbed so far as is reasonably practicable > must, if an emergency occurs and a structure or plant to which asbestos is fixed or installed has to be demolished, make sure there is a procedure to minimise the risk of airborne asbestos exposure to below the airborne contamination standard for asbestos, and notify WorkSafe about the emergency before demolition occurs	22	21, 23, 25
	Removal work > must make sure certain persons are informed that asbestos removal work is to be carried out at the workplace and when the work is to commence, before the work commences > must make sure only people associated with the removal work or other authorised people have access to the asbestos removal area	26	36
PCBU at a workplace where asbestos-related work is being carried out	*Air monitoring* > must make sure a competent person carries out air monitoring of the work area where asbestos-related work is being carried out if there is uncertainty as to whether the airborne contamination standard for asbestos is likely to be exceeded	30	51
PCBU for which asbestos-related work is carried out	*Decontamination facilities* > must make sure decontamination facilities are available when asbestos-related work is carried out > must make sure nothing that is likely to be contaminated with asbestos is removed from the asbestos-related work area unless it is decontaminated or is in a sealed container, and the exterior of the container is decontaminated and marked clearly to indicate the presence of asbestos	17	52
	Disposing of asbestos waste > must make sure asbestos waste is placed in a sealed container, and marked clearly to indicate the presence of asbestos, and is disposed of safely and regularly in accordance with the Asbestos Regulations	18	53
	Disposing of contaminated equipment (including PPE) > must make sure, where equipment is used and contaminated with asbestos, the equipment is sealed, marked clearly to indicate the presence of asbestos, and disposed of in accordance with the Asbestos Regulations	18	53

DUTY HOLDER	RESPONSIBILITIES	CODE SECTION	REGULATION
	Laundering contaminated clothing > must, if it is not reasonably practicable to dispose of clothing, make sure it is laundered in accordance with the Asbestos Regulations	15	53
	Storing contaminated clothing > must, if it is not practicable to launder the clothing, keep it in a sealed container until it is re-used for the purposes of asbestos-related work)	14, 15	53
	Storing contaminated equipment (including PPE) > must decontaminate equipment that is not clothing and cannot be disposed, or keep it in a sealed container until it is re-used for the purposes of asbestos-related work	14	53
PCBU carrying out asbestos-related work	*Asbestos-related work areas* > must make sure the asbestos-related work area: – is separated from other work areas – has signs indicating where asbestos-related work is being carried out – has signs that comply with any applicable safe work instrument – has barriers to delineate the asbestos-related work area	21	50
PCBU carrying out demolition or refurbishment work	*Demolition and refurbishment work: at a workplace* > must, make sure the structure or plant being demolished or refurbished has been inspected by a competent person to find out if any asbestos or ACM is fixed or installed > must assume the presence of asbestos if the competent person is uncertain as to whether asbestos is fixed or installed > must (if it is confirmed asbestos is fixed or installed) tell the PCBU with management or control of the workplace	22	20
	Demolition and refurbishment work: at a home > must, make sure the home being demolished or refurbished has been inspected by a competent person to find out if any asbestos or ACM is fixed or installed > must assume the presence of asbestos if the competent person is uncertain as to whether asbestos is fixed or installed > must (if it is confirmed asbestos is fixed or installed) tell the occupier or owner	22	20

DUTY HOLDER	RESPONSIBILITIES	CODE SECTION	REGULATION
	> must make sure any asbestos likely to be disturbed by demolition or refurbishment is identified and, if reasonably practicable, removed before the work starts	22	22, 26
	> must, if an emergency occurs at a home and a structure or plant to which asbestos is fixed or installed must be demolished, make sure there is a procedure to minimise the risk of airborne asbestos exposure to below the airborne contamination standard for asbestos and notify WorkSafe about the emergency	22	24
PCBU that commissions the removal of asbestos	*Licensed asbestos removal work* > must make sure the asbestos removal work is carried out by a licensed asbestos removalist who is licensed to carry out the work	24	27
	> must make sure, so far as is reasonably practicable, that only certain people have access to the asbestos removal area	26	38
	Removing 10 m^2 or less of non-friable asbestos or ACD > must make sure the removal of 10 m^2 or less of non-friable asbestos or ACD associated with that amount of non-friable asbestos is carried out by a competent person	24, 29	27
	Air monitoring for Class A asbestos removal work > must make sure an independent licensed asbestos assessor undertakes air monitoring of the asbestos removal area where Class A asbestos removal work is carried out > must make sure the results of the air monitoring are given to certain people	30	43
	Clearance inspection > must make sure a clearance inspection of the asbestos removal area is carried out by an independent licensed asbestos assessor (Class A work) or an independent competent person (not Class A work)	28	41

DUTY HOLDER	RESPONSIBILITIES	CODE SECTION	REGULATION
Asbestos removalist	*Signs and barriers* > must make sure signs are posted or erected clearly indicating the presence and location of asbestos and the fact that asbestos removal is being carried out; and barriers are erected to delineate the asbestos removal area. > signs must comply with any applicable safe work instrument	26	37
	Decontamination facilities > must make sure decontamination facilities are available when asbestos removal work is carried out > must make sure nothing likely to be contaminated with asbestos is removed from the asbestos removal area unless it is decontaminated or is in a sealed container, and the exterior of the container is decontaminated marked clearly to indicate the presence of asbestos	17	39
	Disposing of asbestos waste > must make sure asbestos waste is placed in a sealed container and marked clearly to indicate the presence of asbestos and is disposed of safely and regularly in accordance with the Asbestos Regulations	18	40
	Disposing of contaminated equipment (including PPE) > must make sure, where equipment is used and contaminated with asbestos, the equipment is sealed, marked clearly to indicate the presence of asbestos and disposed of in accordance with the Asbestos Regulations	14, 18	40
	Laundering contaminated clothing > must, if it is not reasonably practicable to dispose of clothing, make sure it is laundered in accordance with the Asbestos Regulations	15	40
	Storing contaminated clothing > must, if it is not practicable to launder the clothing, keep it in a sealed container until it is re-used for the purposes of asbestos-related work)	14, 18	40
	Storing contaminated equipment (including PPE) > must decontaminate equipment that is not clothing and cannot be disposed or keep it in a sealed container until it is re-used for the purposes of asbestos-related work	14, 18	40

DUTY HOLDER	RESPONSIBILITIES	CODE SECTION	REGULATION
Licensed asbestos removalist	*Nominated asbestos removal supervisor* > must make sure asbestos removal work is supervised by a supervisor who has been nominated to WorkSafe by the licence holder	25	28
	Training > must, before the work starts, – be satisfied the worker holds a certificate in relation to a relevant course specified as such in a Safe Work Instrument for the Class of licensed asbestos removal work to be carried out by the worker – provide appropriate instruction to a worker who carries out licensed asbestos removal work at a workplace to make sure the work is carried out in accordance with the asbestos removal control plan for the workplace	25	29
	> must, in relation to each worker engaged by the removalist to carry out licensed asbestos removal work, keep a training record— – while the worker is carrying out licensed asbestos removal work; and – for 5 years after the day on which the worker ceases carrying out licensed asbestos removal work for the removalist	25	30
	Health risks > must give the information on health risks and health monitoring to a person likely to be engaged to carry out licensed asbestos removal work before the person is engaged to carry out the work	26	31
	Asbestos removal control plan > must prepare an asbestos removal control plan and give a copy of it to the person who commissioned the licensed asbestos removal work > must make sure a copy of the asbestos removal control plan prepared is kept for two years after the asbestos removal work to which it relates is completed > must make sure the asbestos removal control plan is available for inspection and is readily accessible to other PCBUs, workers and their representatives and occupants (if the workplace is a home) > must keep the asbestos removal control plan for at least five years after a notifiable incident occurs in connection with the asbestos removal work	26	33

DUTY HOLDER	RESPONSIBILITIES	CODE SECTION	REGULATION
	Notify WorkSafe and others > must notify WorkSafe about the work before it starts and tell various parties about the asbestos removal and give them appropriate information	26	34
	In a home > must, if the workplace is a home, make sure: – an independent licensed asbestos assessor undertakes air monitoring of Class A removal work	29	43
	– a clearance inspection of the asbestos removal area at the workplace is carried out by – • an independent licensed asbestos assessor (Class A removal work) or • an independent competent person in other cases	28	41
	– the results of the air monitoring are given to certain people: • the PCBU that commissioned the work • workers at the workplace • representatives of workers at the workplace • a PCBU in relation to the workplace • the occupier of the home • the owner of the home • other persons at the workplace		43
	Action if respirable asbestos fibre level too high > must, when carrying out the Class A removal work and respirable asbestos fibre levels recorded at the asbestos removal area are at or above 0.01 fibres/ml but below 0.02 fibres/ml, immediately investigate the cause of the fibre level and take action to prevent exposure and further release of respirable asbestos fibres > must, when carrying out the Class A removal work and respirable asbestos fibre levels recorded at the asbestos removal area are at or above 0.02 fibres/ml, immediately order the work stopped, notify WorkSafe, investigate the cause of the fibre level and take action to prevent exposure and further release of respirable asbestos fibres	30	45
	> must, if they stop Class A asbestos removal work because the fibre level is at or above 0.02 fibres/ml, make sure the asbestos removal work does not resume until air monitoring shows the recorded respirable asbestos fibre level is at or below 0.01 fibres/ml	30	

DUTY HOLDER	RESPONSIBILITIES	CODE SECTION	REGULATION
	Removing friable asbestos > must make sure, so far as is reasonably practicable, the asbestos removal area is enclosed to prevent the release of respirable asbestos fibres and the removal is carried out in accordance with the Asbestos Regulations	27	46
Licensed asbestos assessor	*Licensing* > must hold an asbestos assessor licence to conduct the following: • air monitoring for Class A asbestos removal work • clearance inspections for Class A asbestos removal work • issuing clearance certificates in relation to Class A asbestos removal work	24	57
	Air monitoring > must use a membrane filter method for any air monitoring > if a safe work instrument specifies a membrane filter method, that method must be used	30	43
	Clearance certificate > must not issue a clearance certificate unless satisfied: • the asbestos removal area and the area immediately surrounding it are free from visible asbestos contamination; and • if the assessor undertook air monitoring as part of the clearance inspection, the monitoring shows the respirable asbestos fibre level does not exceed 0.01 fibres/ml; and the asbestos removal area does not pose a risk to health and safety from exposure to asbestos	28	42
Competent person undertaking clearance inspections	*Clearance certificate* > must not issue a clearance certificate unless satisfied: • the asbestos removal area and the area immediately surrounding it are free from visible asbestos contamination; and • if the competent person undertook air monitoring as part of the clearance inspection, the monitoring shows the respirable asbestos fibre level does not exceed 0.01 fibres/ml; and the asbestos removal area does not pose a risk to health and safety from exposure to asbestos.	28	42

Table 14: Summary of duties of PCBUs and others relating to asbestos

APPENDIX B: REFERENCES

WORKSAFE GUIDANCE

WorkSafe guidance is available at: www.worksafe.govt.nz

The following publications are referenced in this code:

Special Guide *Introduction to the Health and Safety at Work Act 2015.*

Special Guide *Asbestos Removal Licensing Guide for Applicants.*

Special Guide *Asbestos Assessor Licensing Guide for Applicants.*

Fact sheet *Exposure Monitoring under the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016.*

Special Guide *Workplace Exposure Standards and Biological Exposure Indices.*

Good Practice Guide *Conducting Asbestos Surveys.*

STANDARDS

Note: The following standards are listed without their year of publication. When purchasing a standard, purchase the current version.

AS/NZS, NZS/AS, BS AND ISO STANDARDS

The following standards are available for purchase from: www.standards.co.nz:

AS/NZS 1715 *Selection, use and maintenance of respiratory protective device*s.

AS/NZS 1716 *Respiratory protective devices.*

AS/NZS 4801 *Occupational health and safety management syste*ms.

AS/NZS 60335.2.69 *Household and similar electrical appliances – Safety – Part 2.69 - Particular requirements for wet and dry vacuum cleaners, including power brush, for commercial use.*

NZS/AS 1319 *Safety signs for the occupational environmen*t.

BS EN 1822 (series) *High efficiency air filters (EPA, HEPA and ULPA).*

BS 8520-2 *Equipment used in the controlled removal of asbestos-containing materials – Part 2: Negative pressure units – Specification.*

ISO 13982-1 *Performance requirements for chemical protective clothing providing protection to the full body against airborne solid particulates (type 5 clothing).*

AS STANDARDS

The following standards are available for purchase from: http://infostore.saiglobal.com/store/default.aspx:

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

AS 4964 *Method for the qualitative identification of asbestos in bulk sample*s.

ASTM STANDARDS

The following standards are available from: www.astm.org:

ASTM D6480-05 *Standard Test Method for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos Structure Number Concentration by Transmission Electron Microscopy*

ASTM D5755-09 *Standard Test Method for Microvacuum Sampling and Indirect Analysis of Dust by Transmission Electron Microscopy for Asbestos Structure Number Surface Loading*

ASTM D5756-02 *Standard Test Method for Microvacuum Sampling and Indirect Analysis of Dust by Transmission Electron Microscopy for Asbestos Mass Surface Loading.*

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Health and Safety Executive (2002) *A comprehensive guide to Managing Asbestos in premises*. Merseyside, United Kingdom.

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Department of Scientific and Industrial Research. (1938). Bulletin No. 57. *Report of Interdepartmental Committee on Silicosis (April, 1937)*. Wellington, New Zealand.

BRANZ Ltd (2016) *New Zealand Guidelines for Assessing and Managing Asbestos in Soil*. Porirua, New Zealand.

Safe Work Australia (2013). *'Minor contamination' of asbestos-containing dust or debris*. Canberra, Australia.

Saracchi, R. (1977). Asbestos and Lung Cancer: An Analysis of the Epidemiological Evidence on the Asbestos-Smoking Interaction. *International Journal of Cancer*: 20, 323-331.

Erren, T., Jacobsen, M., Piekarski, C. (1999). Synergy between Asbestos and Smoking on Lung Cancer Risks. *Epidemiology*, 10(4).

Menvielle, G., Fayossé, A., Radoï, L., Guida, F., Sanchez, M., Carton, M., Cyr, D., Schmaus, A., Cénée, S., Fevotte, J., Delafosse, P., Stücker, I., Luce, D., and ICARE study group. The Joint Effect of Asbestos Exposure, Tobacco Smoking and Alcohol Drinking on Laryngeal Cancer Risk: Evidence from the French Population-Based Case-Control Study, ICARE. *Occup Environ Med* 2016 73:28-33 originally published online September 24, 2015. doi: 10.1136/oemed-2015-102954.

FURTHER READING

Health and Safety Executive. (2008). *Asbestos Essential*s. Merseyside, Great Britain.

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Safe Work Australia. (2011). *How to manage and control asbestos in the workplace*. Canberra, Australia.

Safe Work Australia (2011). *How to safely remove asbestos*. Canberra, Australia.

APPENDIX C: CONTENT HEADERS FOR AN ASBESTOS MANAGEMENT PLAN

Asbestos management plans can vary in length and detail, since they are dependent on factors like the size of the workplace, or the extent of asbestos contained within.

This Appendix provides content headers for workplace PCBUs who are required to develop and maintain asbestos management plans.

The first section contains headers for compulsory information. The second section contains headers PCBUs may include as appropriate for their situation. For example, PCBUs of larger organisations may find the information in the second section beneficial.

Refer to section 9 of this code for further information.

SECTION ONE

HEADER	MORE INFORMATION
Identification of asbestos or ACM	Describe the identified asbestos and ACM in the workplace. Include: > a reference or link to asbestos records > information about where asbestos identification signs and labels are located > how the asbestos was identified (eg by assumption, or by survey from a competent person, etc).
Decisions and reasons for the decisions for managing the asbestos in the workplace	Describe the decisions and reasons for making those decisions. Refer to Table 5 for further information.
Procedures for detailing incidents or emergencies involving asbestos or ACM in the workplace	Describe the procedures for recording incidents or emergencies involving asbestos ACM that might occur in the workplace.
Workers carrying out work involving asbestos	Include: > information and training that has been and will be provided to the workers > roles and responsibilities of the workers carrying out work involving asbestos > any health monitoring that has been or will be undertaken.

SECTION TWO

HEADER	MORE INFORMATION
Asbestos risks	Provide information about: > how asbestos and ACM risks will be controlled > how the control measures were decided upon
Processes	Include information about: > priorities > dates for asbestos/ACM removal > reviews > circumstances and activities that could affect the timing of planned actions
People with responsibilities under the plan	Include information about: > their identities > what their responsibilities are > who has oversight of the plan
Review	Timetables for reviewing asbestos records and the asbestos management plan
Air monitoring	Air monitoring results, if applicable

APPENDIX D: 'MINOR CONTAMINATION' OF ASBESTOS-CONTAINING DUST OR DEBRIS

This Appendix provides guidance[21] on what is mean by a 'minor contamination' of ACD.

ACD at a workplace must be cleaned up by a Class A asbestos removalist **unless** it is:

> associated with Class B asbestos removal work, including ACD that was present before the work started, or

> generated by a removal job of 10 m^2 or less of non-friable asbestos, or

> it is a 'minor contamination' not associated with asbestos removal.

WHAT IS A 'MINOR CONTAMINATION'?

There is no legal definition of 'minor contamination'. Therefore, to determine whether a contamination of ACD is a 'minor contamination', the asbestos removalist will need to carry out a risk assessment.

Relevant considerations include:

> the time it would take for a person to carry out the clean-up job

> the size, area and extent of the contamination

> the number of workers and persons who will be or are likely to be involved in or exposed to the work

> the complexity of the work being undertaken

> the knowledge and skills required to complete the work safely, and

> the risks associated with the work and the complexity of the risk control measures.

The amount of ACD cannot exceed that which would, in other circumstances, be associated with safely removing 10 m^2 or less of non-friable asbestos.

A competent person should be engaged to do the risk assessment if the removalist is unsure about what needs to be done or does not have the skills or knowledge to do the assessment.

The following examples are provided as a comparison point when conducting a risk assessment.

Example 1

Removing a minor ACD contamination from a small area, such as an electrical box	
Time	10 minutes for one worker
Area	Small
Distribution	No further spread of ACD to adjoining areas
Exposure	Possible release of asbestos fibres during clean-up is minimal, contamination can be removed with a vacuum cleaner used for asbestos work
Class A licensed removalist not required	

[21] Based on the fact sheet *'Minor contamination' of asbestos-containing dust or debris* from Safe Work Australia, published in June 2013.

Example 2

Minor contamination from drilling into a wall/ceiling with ACM	
Time	10 minutes for one worker
Area	Small
Distribution	No further spread of ACD to adjoining areas
Exposure	Possible release of asbestos fibres during clean-up is minimal, contamination easy to remove with wet wiping
Class A licensed removalist not required	

Example 3

Minor ACD contaminated generated by storm damage to a structure containing ACM	
Time	One hour for one worker
Area	Medium
Distribution	Minimal spread of ACD to adjoining areas
Exposure	Possible release of asbestos fibres during the clean-up is minimal; contamination easy to remove with wetting down and picking up bonded pieces
Class A licensed removalist not required	

Example 4

A warehouse has surfaces covered in ACD. The ACD has come from the asbestos cement roof which has since been enclosed with a false ceiling	
Time	Clean-up will take four hours for one person
Area	Medium to large area
Distribution	ACD on a number of different surfaces in adjoining areas
Exposure	Possible release of asbestos fibres is high
Class A licensed removalist required	

Example 5

A house roof has been cleaned illegally using high-pressure water, leaving dried ACD spread over a large area	
Time	Clean-up will take two days for one person
Area	Medium to large area
Distribution	ACD on a number of different surfaces in adjoining areas
Exposure	Possible release of asbestos fibres during the clean-up is high
Class A licensed removalist required	

ORGANISING A CLEAN-UP OF A 'MINOR CONTAMINATION'

Refer to the code for information on how to clean up contaminated areas.

In summary, the key steps are:

Step 1	Isolate the area and determine whether asbestos is present—the workplace PCBU may need to assume asbestos is present. Check asbestos records (if any) for the workplace.
Step 2	Determine whether the contamination is minor. A risk assessment is required for this; refer to the code. If unsure, hire a competent person to do the risk assessment or a licensed asbestos removalist for the clean-up job.
If the ACD contamination is minor:	
Step 3	Organise the clean-up by following the code and any additional guidance is provided by WorkSafe. This includes: > collecting all cleaning items, for example: disposable cleaning rags, a bucket of water, 200 µm plastic sheeting, waste disposal bags, spare PPE, warning signs and a vacuum cleaner used for asbestos work if required > establishing the removal area and moving all items out of the area, or covering them with 200 µm plastic sheeting if they could be contaminated during the clean-up > organising suitable PPE, and > organising RPE: suitable the respiratory protection for this task is P2 RPE if a proper fit can be assured.
Step 4	Clean up the minor contamination: > pick up any asbestos debris; use a vacuum cleaner used for asbestos work to collect the ACD and use damp cloths to wet wipe surfaces > place the waste into a 200 µm plastic waste bag or suitable alternate waste container dedicated for asbestos waste that is clearly labelled to indicate the presence of asbestos, and > after all the debris and contaminated dust, used rags and waste have been placed in waste containers and all tools have been cleaned, begin the personal decontamination process.
Step 5	Carry out personal decontamination in a designated area. The method of personal decontamination may vary. For example: > clean the PPE and RPE while it is still worn. Coveralls can be cleaned using a vacuum cleaner used for asbestos work, damp rag or fine water spray; the RPE can be cleaned with a wet rag or cloth > while the RPE is still being worn, remove coveralls, turning them inside out to entrap any remaining contamination and then place them into an asbestos waste bag. Remove the RPE and place it into an asbestos waste bag (if disposable) or waste container dedicated for asbestos waste.
Step 6	Visually inspect the area to make sure that all the ACD and debris is removed.
Step 7	Dispose of the waste lawfully: > make sure all waste bags are goose-neck tied, the exterior cleaned then double-bagged; all waste containers must be sealed and labelled > transport and dispose of the waste in accordance with local or territorial authority requirements.

APPENDIX E: EXCEPTION TO REQUIREMENTS FOR DEMOLISHING AND REFURBISHING STRUCTURES AND PLANT

MINOR OR ROUTINE MAINTENANCE WORK

If a PCBU intending to carry out demolition or refurbishment work is conducting 'minor or routine maintenance work', regulations 19 to 26 of the Asbestos Regulations do not apply (section 22 of this code).

However, the rest of the Asbestos Regulations continue to apply.

'Minor or routine maintenance work' may include routine work that might be unscheduled and short in duration.

The work may require partially dismantling a structure or plant.

WHEN IS MINOR OR ROUTINE MAINTENANCE WORK *NOT* MINOR OR ROUTINE WORK?

Even if the work itself is minor or routine, if the PCBU carrying it out is aware that asbestos has been identified, assumed or determined to be present where the work is to be conducted, the work must be conducted as asbestos-related work or, if removal is required, as asbestos removal work.

MINOR WORK

If a PCBU intending to carry out demolition or refurbishment work is conducting 'minor work', regulations 19 to 26 of the Asbestos Regulations do not apply.

However, the rest of the Asbestos Regulations continue to apply.

'Minor work' may include tasks such as cutting a small hole or hand-drilling a few holes in a cement sheet. It is generally not routine or regular, like planned maintenance.

It is incidental work that can be done quickly and safely within minimal control measures required to ensure safety.

Examples could include:

> cutting a small hole into an eave to install a cable
> removing a vinyl tile to install a plumbing fixture
> hand-drilling a few holes into a cement sheet to attach a fitting.

The sole focus of the activity is the installation, reconfiguration or repair of a service unrelated to asbestos removal.

Examples of minor work could include conducting the following tasks and similar activities:

> replacing cabling in cement conduits or boxes
> working on electrical mounting boards
> installing down lights, light switches or power points.

If one of the objectives of an activity is to remove asbestos or ACM from a premises (ie it is not an incidental activity), the removal must be carried out in accordance with the Asbestos Regulations.

This broadly includes:

> any demolition or refurbishment of a premises involving the removal, or partial removal, of a bathroom, kitchen, eaves, roof, garage, internal walls, external walls, fences etc – which contain asbestos or ACM

> doing any work on friable asbestos or ACM.

If the PCBU intending to conduct the work is uncertain whether or not the work is minor, they should seek advice from a licensed asbestos removalist.

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:

One	Sealing, painting, coating and cleaning ACMs
Two	Replacing cabling in asbestos cement conduits or boxes
Three	Working on electrical mounting boards (switchboards) containing asbestos
Four	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.

Information	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. 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. 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.
Equipment that may be required before starting work (in addition to what is needed for the task)	> disposable cleaning rags > a bucket of water, or more as appropriate, and/or a misting spray bottle > sealant > spare PPE > a suitable asbestos waste container > warning signs and/or barrier tape.
PPE	> protective clothing and RPE – 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 > if applying paint, use appropriate RPE to control the paint vapours/mist.
Preparing the asbestos work area	If the work will be conducted at height, use appropriate control measures to prevent falls. Assess the ACM for damage. 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 are restricted from entry (use warning signs and barrier tape at all entry points). Determine the distance for segregation with a risk assessment. If working at a height, segregate the area below. 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.

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

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):

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.

Equipment that may be required before starting work (in addition to what is needed for the task)	> disposable cleaning rags > a bucket of water, or more as appropriate, and/or a misting spray bottle > 200 µm thick plastic sheeting > cable slipping compound > appropriately marked asbestos waste disposal bags > spare PPE > tape > warning signs and/or barrier tape > vacuum cleaner used for asbestos work.
PPE	> Protective clothing and RPE – it is likely that P2 RPE will be adequate for this task, provided the worker follows the recommended Safe Work Practice.
Preparing the asbestos work area	If the work will be carried out in a confined space, put controls in place to prevent the risk of asphyxiation. 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 do not enter (eg use warning signs and barrier tape at all entry points). Determine the distance for segregation by a risk assessment. Use plastic sheeting secured with tape to cover any surface in the asbestos work area that could become contaminated. Place plastic sheeting below conduits before pulling any cables through. Have adequate lighting to do the job safely. 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.

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

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):

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.

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.

Work on electrical mounting panels	If the panel is not friable, maintenance and service work may include: > replacing asbestos-containing equipment with non-asbestos equipment > operating main switches and individual circuit devices > pulling/inserting service and circuit fuses > bridging supplies at meter bases > using testing equipment > accessing the neutral link > installing new components/equipment.
Decontaminating the asbestos work area and equipment	Use damp rags to clean the equipment. Consider electrical risks. Carefully roll or fold any plastic sheeting used to cover surfaces in the asbestos work area. Do not spill any collected dust or debris. 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. If there is no electrical hazard, wet-wipe with a damp rag to remove minor amounts of dust. Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container. Wet-wipe the external surfaces of the asbestos waste bags/container to remove any adhering dust before removing them from the asbestos work area.
Carry out personal decontamination in a designated area	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. 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. Remove RPE. 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. If disposable, cleaning is not required but RPE must be placed in a labelled asbestos waste bag or waste container.
Clearance procedure	Visually inspect the asbestos work area to make sure it is clean. Clearance air monitoring is not normally required for this task. Dispose of all waste as asbestos waste.

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):

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.

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.

	WET METHOD: Use the misting spray bottle to wet down any visible dust. Use a damp rag to wipe down the wheel or automobile part before removing it. Keep the dust wet to prevent atmospheric contamination. Use hand tools instead of power tools to reduce generating airborne fibres. 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. Open the housing and clean all asbestos parts using a damp rag, capturing all run-off water in an asbestos waste container. DRY METHOD: 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. Use a vacuum cleaner used for asbestos work to remove asbestos from the brakes and rims or other materials before carrying out the inspection.
Decontaminating the asbestos work area and equipment	Use damp rags to clean the equipment, including the dust collection tray. 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. Place debris, used rags and other waste in the asbestos waste bags/container. Wet-wipe the external surfaces of the asbestos waste bags/container to remove any dust before removing them from the asbestos work area.
Carry out personal decontamination in a designated area	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. 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. Remove RPE. 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. If the RPE is disposable, place RPE in a labelled asbestos waste bag or waste container.
Clearance procedure	Visually inspect the asbestos work area to make sure it is clean. Clearance air monitoring is not normally required for this task. Dispose of all waste as asbestos waste.

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:

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

A C F G H

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

Information	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.
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. If possible, remove the ACM product whole. If some sections were damaged before removal, they can be strengthened with duct tape. Identify how the ACM is held in place, and use a method that will minimise airborne dust generation in removing the product. For example: > fasteners: dampen then carefully remove using a chisel > bolts: dampen then use bolt cutters (or an oxy torch) – do not use an angle grinder > screws: dampen then carefully unscrew with a screwdriver > nails: dampen then carefully lever the panel or punch through if absolutely necessary. Avoid breaking the ACM. If breakage is absolutely necessary to remove/dislodge the product, dampen the material and minimise breakage. Remove the ACM wet/damp by applying a fine water spray, unless this creates an electrical risk. 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.

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):

A C F G H

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

Information	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.
Equipment	> fall protection equipment > lifting devices > 200 µm thick plastic sheeting > tape > a bucket of water, or more as appropriate, and/or a misting spray bottle > sealant > warning signs and/or barrier tape > appropriately marked asbestos waste disposal bags available > vacuum cleaner used for asbestos work.
PPE	> protective clothing and RPE > spare PPE – it is likely P2 RPE will be adequate for this task if the person doing the work follows the recommended Safe Work Practice.
Preparing the removal area	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. If the work will be conducted at height, use appropriate control measures to prevent or arrest falls. Assess the asbestos cement for damage. Inspect the ceiling space for dust before work starts. Make sure people in the vicinity will be safe during and after the work. If it is warranted to control dust, use an enclosure. If working at a height, segregate the area below. Plastic sheeting needs to be appropriately fixed and taped beneath the roof to contain material that may enter the space below. 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. Make sure plastic drop sheets are used below any areas where unwrapped sheets are removed or handled.

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):

A C F G H

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

Information	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.
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. 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. When removing bituminous products: > seal access points (for example, skylights) with material like 200 µm plastic sheeting and tape > 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 > cut and remove manageable sections > place cut pieces in a lined skip or wrap in plastic sheeting > remove adhering material by dampening and gently scraping > keep the removed pieces as intact as possible > 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. > collect all debris and dispose of waste according to the waste disposal procedures.

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):

A C F G H

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):

A C F G H

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

Information*	Use this Safe Work Practice when removing gaskets and rope seals.
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. When removing gaskets and rope seals: > Shut down or isolate the plant or equipment. > Dismantle the equipment carefully. Protect any other components with plastic sheeting. > Confirm the plant and equipment has been made safe (pipework emptied, electrical supply isolated and equipment shutdown, etc). > Unbolt or unscrew the flange or dismantle the equipment. > Once accessible, dampen the asbestos with a fine water mist or similar. Continue dampening the asbestos as more of it is accessible. > 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. > Use a vacuum cleaner used for asbestos work while scraping.

* 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):

A C F G H

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):

A C F G H

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

Information	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. 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. 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. 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.
Removal	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 **a Class A licensed asbestos removalist must perform the asbestos removal wor**k. Develop an asbestos removal control plan. > 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. > 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. > Make sure all air conditioning equipment has been shut and isolated/blanked from this area. > Keep regular checks on the NPUs and decontamination unit. A licensed asbestos assessor must conduct/control air monitoring throughout the asbestos removal work. > Clearance monitoring and a clearance certificate is required before re-entry into the asbestos removal area.

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):

A C F G H

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 H: ASBESTOS REMOVAL CONTROL PLAN TEMPLATE

This Appendix is a template of an asbestos removal control plan. It is designed to incorporate the elements of the Asbestos Regulations.

It has two parts:

> complete part A when planning the asbestos removal work

> complete part B after the asbestos has been removed and clearance has been obtained.

PART A: TO BE COMPLETED BEFORE REMOVAL STARTS

Prepared by:	Date: DD / MM / YEAR
Asbestos removal licence holder (PCBU name):	
Licence number:	
Asbestos removal licence holder's contact details:	
For ACM removal at (address):	
On behalf of PCBU who commissioned asbestos removal (client):	

IDENTIFICATION

Have asbestos records been reviewed?	☐ Yes ☐ No

Complete the following table for the asbestos or ACM identified for removal:

LOCATION	DESCRIPTION OF ASBESTOS OR ACM	TYPE OF ASBESTOS OR ACM (REFER TO RECORDS)[22]	ESTIMATED VOLUME OR AREA	CONDITION (TICK)		DESCRIBE CONDITION:
				Friable	Non-friable	
Staff kitchen	Vinyl tiles with mastic backing	White (chrysotile)	2 m^2	☐	☐	10% chipped around the edges
				☐	☐	
				☐	☐	
				☐	☐	
				☐	☐	
				☐	☐	
				☐	☐	
				☐	☐	
				☐	☐	
				☐	☐	
				☐	☐	
				☐	☐	
				☐	☐	

[22] Choose from one or a combination of the following: Actinolite, Amosite (brown asbestos), Anthophyllite, Chrysotile (white asbestos), Crocidolite (blue asbestos), Tremolite, Not identified.

INFORMING PARTIES AND PEOPLE

The following people or parties will be informed about the upcoming asbestos removal and intended start date (keep consultation records):

ENTITY	NAME AND POSITION	ORGANISATION	ADDRESS	PHONE/EMAIL
Person who commissioned removal (client)	Humphrey Bogare, Store Manager	The Purple Shack of Sales Ltd	1 Troy Boulevard Wellington	04 555 1234
Client's workers & representatives	Bort Renault, site delegate, worker	The Union for Workers at the Purple Shack of Sales Inc	c/- 1 Troy Boulevard Wellington	025 852 963

People or parties who must be informed (where relevant) are:

- person who commissioned the removal (client)
- client's workers and/or representatives
- PCBU with management or control of the workplace
- PCBU's workers and/or representatives
- home owner
- home occupant
- neighbouring properties.

SUPERVISORS

Person or people who will supervise asbestos removal is/are:
Their direct contact number(s) is/are:

WORKERS

List the workers who will be working at the site, and, in the case of multiple supervisors, who they will be supervised by (attach extra pages if necessary):

WORKER NAME	DATE CERTIFIED TRAINING COMPLETED	SUPERVISOR

TIMING OF REMOVAL WORK

Planned start date: DD / MM / YEAR	Intended completion date: DD / MM / YEAR
Date of planned notification to WorkSafe: DD / MM / YEAR	

EMERGENCY PLANNING

Trained first aider(s) on site:

NAME	CONTACT PHONE

List of emergency contact details attached to plan:	Yes	No
All site workers are trained in emergency response:	Yes	No
Emergency response equipment is indicated on the site plan:	Yes	No

The following have been identified as potential emergency situations (attach further details if needed:

EMERGENCY	CONTROLS TO MANAGE THE EMERGENCY

SITE PLAN

Define the area or draw a site map indicating the areas. Include:

- asbestos removal area
- asbestos work site (including where enclosure is located)
- entrances and exits
- waste storage
- decontamination area(s)
- emergency equipment
- signage
- barriers or means to prevent unauthorised access
- monitoring points
- other information as needed.

CONTROL OF NON-ASBESTOS HAZARDS

The following risks have been identified during the planning stages of the asbestos or ACM removal: (provide additional pages if necessary)

RISKS	CONTROLS TO MANAGE THE RISKS

PERSONAL PROTECTIVE EQUIPMENT (PPE AND RPE)

The following PPE and RPE will be supplied and worn at all times throughout the asbestos removal process:		
Workers have received appropriate training for PPE and RPE use:	☐ Yes	☐ No
Workers have received information about the health risks of licensed asbestos removal work and health monitoring requirements:	☐ Yes	☐ No

REMOVAL

REMOVAL METHOD

Detail the planned methodology for removing the asbestos or ACM. This must comply with the Health and Safety at Work (Asbestos) Regulations 2016 and should comply with WorkSafe's *Approved Code of Practice: Management and Removal of Asbestos*. (Provide additional pages as necessary.)

TOOLS AND EQUIPMENT

Warning: high-speed abrasive power or pneumatic tools such as angle grinders, sanders, saws and high-speed drills must not be used when removing asbestos or ACM.

The following tools and equipment will be used when removing asbestos or ACM:

Hand tools (list):
Powered equipment (list):
Saturation equipment (list):

VACUUM CLEANER(S)

Make:	
Model:	Last test date: DD / MM / YEAR
Make:	
Model:	Last test date: DD / MM / YEAR

EQUIPMENT MAINTENANCE

All tools and equipment used in removing asbestos or ACM are inspected before all removal work:	☐ Yes	☐ No
All tools and equipment used in removing asbestos or ACM are inspected and cleaned following all removal work:	☐ Yes	☐ No
All tools and equipment used in removing asbestos or ACM are inspected and cleaned at least once every seven days when in continuous use:	☐ Yes	☐ No

ENCLOSURE

Complete enclosure of the work area will be required:	☐ Yes	☐ No
Enclosed area is displayed on site map/the location is described:	☐ Yes	☐ No

The enclosure will be constructed as follows: provide an overview of the size, shape and construction method to be used for the enclosure. (Provide additional pages as necessary.)

The following NPUs will be used in conjunction with the enclosure:

Make:	Model:	Rating:
Make:	Model:	Rating:

Other details:

Smoke testing should be conducted prior to use and at the following intervals to confirm the integrity of the enclosure. Keep records of these tests.

Frequency of testing:
Person(s) responsible for conducting and recording the tests:

DECONTAMINATION FACILITIES

Describe the decontamination facilities that will be interconnected or used with the enclosure (include decontamination of tools, plant or equipment, reusable PPE, people, removal area, contained waste):

OTHER CONTROL MEASURES

The following additional controls will be put in place to contain asbestos within the designated asbestos work area:

MANAGEMENT AND DISPOSAL OF ASBESTOS WASTE

ON-SITE CONTAINMENT OF REMOVED ACM

Removed (waste) asbestos or ACM will be held on-site for more than one working day:		☐ Yes	☐ No
Person responsible for safe asbestos waste storage on site:			
If yes, detail how the ACM will be stored, including the type of storage containers to be used and the dedicated location for stored waste within the removal area:			
Asbestos waste will be stored in a labelled, sealed container before removing it from the site:		☐ Yes	☐ No
All asbestos waste will be stored in the designated location for asbestos waste:		☐ Yes	☐ No
Used, disposable PPE and RPE will be stored in a labelled, sealed container before removing it from the site:		☐ Yes	☐ No
Used, reusable clothing will be stored in a labelled, sealed and decontaminated container before transporting it to a laundry equipped to launder asbestos-contaminated clothing, OR:	☐ N/A	☐ Yes	☐ No
stored in a labelled, sealed and decontaminated container before re-use in an asbestos work area:	☐ N/A	☐ Yes	☐ No

AIR MONITORING AND CLEARANCE

AIR MONITORING PROGRAMME

If NO air monitoring will be required, provide reasons:

Details of the licensed asbestos assessor or competent person engaged to plan and conduct air monitoring and clearance:

Name:
Assessor licence number (if applicable):
Contact details:

The following air monitoring will be conducted:

Before removal: number and frequency of testing:		
During removal (control monitoring): number and frequency of testing:		
Monitoring points identified on site map:	☐ Yes	☐ No
Air monitoring proposal attached to this control plan:	☐ Yes	☐ No

DECLARATION AND SIGN-OFF

I declare the information contained in Part A of this plan is accurate to the best of my knowledge	☐
Signed by:	Date: DD / MM / YEAR

Upon completion of this section, provide a copy of the plan and related documents to:

PCBU who commissioned the removal:	☐ Yes	☐ No
Other (state):	☐ Yes	☐ No

The plan should be made available to the PCBU with management or control of the workplace, workers and their representatives, and home occupants (as applicable).

PART B: TO BE COMPLETED AFTER REMOVAL AND CLEARANCE

TIMING OF REMOVAL WORK

Start date: DD / MM / YEAR	Completion date: DD / MM / YEAR	Date of notification to WorkSafe: DD / MM / YEAR

Copy of notification attached: ☐ Yes

INFORMING PARTIES AND PEOPLE

In addition to the information recorded in Part A, the following people or parties were also informed about the asbestos removal and start date:

ENTITY	NAME AND POSITION	ORGANISATION	ADDRESS	PHONE/EMAIL

RESPIRATORS (RPE)

All workers wearing a negative-pressure respirator (RPE) were clean-shaven:	☐ Yes	☐ No
(Where applicable): the following RPE was provided to workers who could not wear negative pressure RPE:		

DISPOSAL OF ASBESTOS WASTE

PCBU engaged to transport waste:		
Disposal site was:		
Total quantity and dimensions of asbestos waste removed:		
Copies of waste disposal dockets, permits or other paperwork received:	☐ Yes	☐ No

CLEARANCE

Did the asbestos removal area pass the clearance inspection?	☐ Yes	☐ N/A
Copy of clearance certificate received, with test results:	☐ Yes	☐ N/A

DECLARATION AND SIGN-OFF

I declare the information contained in Part B of this plan is accurate to the best of my knowledge	☐
Signed by:	Date: DD / MM / YEAR

Upon completion of this section, provide a copy of the plan and related documents to:

PCBU who commissioned the removal:	☐ Yes	☐ No
Other (state):	☐ Yes	☐ No

The plan should be made available to the PCBU with management or control of the workplace, workers and their representatives, and home occupants (as applicable).

APPENDIX I: CLEARANCE CERTIFICATE TEMPLATE

Note: When asbestos removal work requires a Class A licence, an independent licensed asbestos assessor[23] must carry out the clearance inspection and complete a clearance certificate if satisfied the area is safe to reoccupy.

An independent competent person can conduct clearance inspections for all other asbestos removal work that is not Class A work.

SECTION A: CLEARANCE INSPECTION DETAILS

Client details (either the PCBU who commissioned asbestos removal work in a workplace, or licensed asbestos removalist for work done in a home)
Name of client:
Client contact details:
Removal work details
Date(s) that removal work was carried out: DD / MM / YEAR DD / MM / YEAR
Site address where removal work was carried out:
Details of the specific asbestos removal area(s):
Name of licensed asbestos removalist:
Name and contact details of licensed asbestos removalist supervisor(s) (if different to removalist):
Inspection details
Date of clearance inspection: DD / MM / YEAR Time of clearance inspection: AM / PM

[23] Until 4 April 2018, an independent competent person can conduct clearance inspections and issue clearance certificates for Class A asbestos removal work.

SECTION B: ASBESTOS REMOVAL PAPERWORK

Do you have a copy of the asbestos removal control plan?	Yes	No
Do you have a copy of the WorkSafe notification form?	Yes	No
Is the removal work consistent with the control plan and the notification form? (eg use of enclosures, decontamination facilities, waste facilities)	Yes	No

SECTION C: ASBESTOS REMOVAL AREA

VISUAL INSPECTION

Inspection of the specific area detailed in Section A **found no visible asbestos** remaining as a result of the asbestos removal work carried out:	Yes	No
Is air monitoring required? (if not, proceed to section E)	Yes	No
Can the area be reoccupied?	Yes	No
Has additional information been attached? (eg photos, drawings, plans)	Yes	No

AIR MONITORING

Air monitoring was carried out as part of the clearance inspection. **The result did not exceed 0.01 fibres/ml.**	Yes	No
Has the air monitoring sample been analysed?	Yes	No
Is the air monitoring report attached?	Yes	No
Can the area be reoccupied?	Yes	No
Number of samples collected:		

	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4	SAMPLE 5
Results					

SECTION D: ENCLOSURES

BEFORE DISMANTLING THE ENCLOSURE

The area within the enclosure and the area immediately surrounding the enclosure was inspected and **no visible asbestos was found.**	Yes	No
Can the enclosure be dismantled?	Yes	No

After the enclosure is dismantled and removed:

An inspection of the area in which the enclosure was erected and the area immediately surrounding the area where the enclosure was erected was inspected and **no visible asbestos was found**.	Yes	No
Is the air monitoring report attached?	Yes	No
Can the area be reoccupied?	Yes	No

SECTION E: CLEARANCE DECLARATION

I, (name) declare that:

> I found no visible asbestos residue from asbestos removal work in the area, or in the vicinity of the area, where the work was carried out

> (if air monitoring was conducted as part of the clearance inspection): the monitoring shows the respirable fibre level does not exceed 0.01 fibres/ml and

> as far as can be determined from the clearance inspection, the asbestos removal area does not pose a risk to health and safety from exposure to asbestos.

Signature of licensed asbestos assessor or competent person:
Assessor licence number (if applicable):
Name of licensed asbestos assessor or competent person:
Qualifications of licensed asbestos assessor or competent person:

APPENDIX J: ASBESTOS LEVELS ASSOCIATED WITH ASBESTOS ACTIVITIES

Respirable dust testing gives some indication about dust levels normally found in common industrial situations. They may be useful for helping to determine RPE requirements for upcoming asbestos work.

The figures in the following tables are for guidance only.

All figures are expressed as respirable fibres per millilitre of air (fibres/ml).

Because the airborne fibre level cannot be accurately assessed in each case, and differences in operation may lead to higher levels than stated, always assess the level of required RPE on the high side or 'worst case' scenario.

	PRODUCT GROUP	CONTROLLED WET REMOVAL/GOOD PRACTICE (f/ml)	LIMITED CONTROLS/ DRY REMOVAL (f/ml)
ASBESTOS REMOVAL WORK	Controlled wet stripping of lagging and sprayed coatings using manual tools	Up to 1	1-100 (lagging) Up to 1,000 (coatings)
	Moulded plastics and battery cases	0.001	0.01
	Jointings (gaskets) and packing	0.05	0.2
	Asbestos cement sheeting	Up to 0.5	No information
	Flooring	0.01	0.05
	Fillers and reinforcements in a flexible matrix (incl. textured coatings)	0.02	0.08
	Spray and other insulation products	14.4	358
	Asbestos insulating board, including millboard	Up to 3	5-20

Table 15: Selected typical dust levels for asbestos removal work[24,25,26]

Table 16 shows the amount of asbestos typically involved in other asbestos-related work activities.

	PRODUCT GROUP	TYPICAL (f/ml)	EXTREMES LIKELY (f/ml)
ASBESTOS-RELATED WORK	Cleaning asbestos cement vertical cladding	1-2 (wet wire brushing)	5-8 (dry wire brushing)
	Cleaning asbestos cement roofing	1-3 (wet wire brushing)	3 (dry wire brushing)
	Stacking asbestos cement sheets	Up to 0.5	No information
	Machine sawing with LEV	Up to 2	No information
	Abrasive disc cutting without LEV	15-25	No information
	Circular saw cutting without LEV	10-20	No information

[24] Adapted from: *Asbestos exposure in New Zealand* (Office of the Prime Minister's Chief Advisor, 2015).

[25] From HSG227 *A comprehensive guide to Managing Asbestos in premises* (HSE UK, 2002).

[26] From HSG189-2 *Working with Asbestos Cement* (HSE UK, 1999).

	PRODUCT GROUP	TYPICAL (f/ml)	EXTREMES LIKELY (f/ml)
ASBESTOS-RELATED WORK	Drilling asbestos insulating board with shadow vacuuming or LEV	Up to 1	No information
	Drilling asbestos insulating board overhead without LEV	5-10	No information
	Drilling vertical columns without LEV	2-5	No information
	Using a jigsaw on asbestos insulating board	2-10 (with LEV)	5-20 (without LEV)
	Hand sawing asbestos insulating board	5-10	No information
	Ambient air below sprayed insulation	Usually 0.1	0.2-1
	Changing filter bags	10	No information
	Dry sweeping	0-2	No information
	Handling talc (may contain minor tremolite)	Up to 2	No information
	Handling/quarrying serpentine (with minor chrysotile)	Up to 2	Possibly up to 100 if conditions are very dusty
	Cutting ACM, etc dry with power tools	0-2	Up to 20
	Cutting ACM, etc wet with power tools	Up to 1	Up to 10
	Construction work (outside)	Up to 1	Up to 10
	Cutting ACM with hand tools	Up to 1	1
	Cutting, finishing, radius grinding, etc	Normally 1	No information
	Handling friction materials (pads, etc)	Up to 0.5	No information
	Cutting gaskets	Up to 2	No information
	Cutting greenstone (associated with tremolite)	Up to 2	No information

Table 16: Selected typical dust levels for asbestos-related work[27,28,29,30]

[27] From HSG227 *A comprehensive guide to Managing Asbestos in premises* (HSE UK, 2002).

[28] Adapted from *Asbestos levels associated with typical materials and activities* (MBIE, 2013).

[29] From HSG247 *Asbestos: The licensed contractor's guide* (HSE UK, 2006).

[30] From HSG189-2 *Working with Asbestos Cement* (HSE UK, 1999).

APPENDIX K: GLOSSARY

This glossary lists terms used in the code that either come from legislation, or benefit from an explanation.

In cases where there is a legal definition and a plain English explanation, the legal definition takes preference.

TERM	PLAIN ENGLISH EXPLANATION	LEGAL DEFINITION
Accredited laboratory		means a laboratory that is— (a) accredited by International Accreditation New Zealand (IANZ); or (b) accredited under another accreditation regime recognised by WorkSafe; or (c) approved by WorkSafe to test samples under these regulations for up to 12 months while the laboratory is in the process of obtaining accreditation under paragraph (a) or (b).
Act, the		means the Health and Safety at Work Act 2015.
Administrative control		(a) means a method of work, process, or procedure designed to minimise risk; but (b) does not include— (i) an engineering control; or (ii) the use of personal protective equipment.
Air monitoring	means measuring airborne asbestos fibres by sampling and analysing them in accordance with a method based on a membrane filter method (in air).	
Airborne contamination standard for asbestos		means an average concentration over any eight-hour period of 0.1 respirable asbestos fibres per millilitre of air.
AP and lateral chest X-ray	'AP' chest X-ray means anterior-posterior projection. X-rays penetrate through the front of the patient onto the film. A 'lateral chest X-ray' is an X-ray taken of the side of the chest.	
Appropriate instruction	means instruction designed and carried out specifically for workplaces where asbestos removal work is carried out. The training and instruction must be relevant and specific to the tasks so they can be carried out safely.	means instruction provided specifically – (a) for the type of workplace where the licensed asbestos removal work is carried out; and (b) for the work to be carried out at the workplace.

TERM	PLAIN ENGLISH EXPLANATION	LEGAL DEFINITION
Approved code of practice	in this code, means the Approved Code of Practice: Management and Removal of Asbestos (the code).	means a code of practice approved under section 222 [of the Act].
Asbestos	means a term describing naturally occurring fibrous silicate minerals (rock-forming minerals). There are two groups, and six common types: (a) actinolite (b) grunerite (or amosite) (brown) (c) anthophyllite asbestos (d) chrysotile asbestos (white) (e) crocidolite asbestos (blue) (f) tremolite asbestos.	means the asbestiform varieties of mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals, including the following: (a) actinolite asbestos: (b) grunerite (or amosite) asbestos (brown): (c) anthophyllite asbestos: (d) chrysotile asbestos (white): (e) crocidolite asbestos (blue): (f) tremolite asbestos: (g) a mixture that contains l or more of the minerals referred to paragraphs (a) to (f).
Asbestos-contaminated dust or debris (ACD)		means dust or debris that has settled within a workplace and is, or is assumed to be, contaminated with asbestos.
Asbestos-contaminated soil		means soil that is contaminated with asbestos or ACM.
Asbestos-containing material (ACM)		means any material or thing that, by its design, contains asbestos.
Asbestos management plan	means a written plan that has the following information: > where asbestos or ACM is identified and located within the workplace > decisions, with reasons, about how the asbestos is managed in the workplace > how incidents and emergencies involving asbestos will be managed in the workplace > about the workers who carry out work involving asbestos.	an asbestos management plan must include information about the following: (a) the identification of asbestos or ACM: (b) decisions, and reasons for decisions, about the management of the risk arising from asbestos at the workplace: (c) procedures for detailing incidents or emergencies involving asbestos or ACM at the workplace: (d) the workers who carry out work involving asbestos, including— (i) information and training that has been and will be provided to the workers: (ii) roles and responsibilities of the workers: (iii) any health monitoring of the workers that has been or will be undertaken.

TERM	PLAIN ENGLISH EXPLANATION	LEGAL DEFINITION
Asbestos Regulations	means the Health and Safety at Work (Asbestos) Regulations 2016.	
Asbestos removal area		(a) means an area in which asbestos removal work is carried out; and (b) includes – (i) any of the following related to the work: A. a decontamination facility B. an enclosure C. an area through which asbestos, asbestos-contaminated soil, or ACM is transported.
Asbestos removalist		means a PCBU who carries out asbestos removal work.
Asbestos removal licence		means a Class A or a Class B asbestos removal licence.
Asbestos removal supervisor	means someone who works for a licensed asbestos removalist as the supervisor of the asbestos removal work being done.	
Asbestos removal work		means- (a) except in Part 6 [of the Asbestos Regulations], work involving the removal of asbestos or asbestos-contaminated soil or asbestos-containing material; or (b) in Part 6 [of the Asbestos Regulations], Class A or Class B asbestos removal work.
Asbestos waste		means asbestos or asbestos-contaminated soil or asbestos-containing material removed, and disposable items used during asbestos removal work, including plastic sheeting and disposable tools.
Asbestos-related work	refer to section 21 of this code.	means work involving asbestos (other than asbestos removal work to which Part 3 applies) that is permitted under the exceptions set out in regulation 7(2), (3), and (4) [of the Asbestos Regulations].
Breathing zone	means a person's nose and mouth area where air is drawn into their lungs.	

TERM	PLAIN ENGLISH EXPLANATION	LEGAL DEFINITION
Building code	means a performance-based code that states how a building must perform in its intended use rather than describing how the building must be designed and constructed.	means the regulations made under section 400 (of the Building Act 2004).
Certified safety management system		means a safety management system that- (a) an auditor accredited by JAS-ANZ or NATA has certified as being compliant with - (i) Australia/New Zealand Standard AS/NZS 4801:2001 (Occupational Health and Safety Management Systems); or (ii) Another international standard recognised by WorkSafe; and (b) meets any requirements prescribed in a safe work instrument.
Certified (training)	means a certificate obtained from a training provider for undergoing training for either Class A or Class B licensed asbestos removal work.	
Class A asbestos removal licence		means a licence granted in accordance with regulation 64 authorising the holder to carry out Class A asbestos removal work.
Class A asbestos removal work		means work specified in regulation 54(1) and (2) [of the Asbestos Regulations] for which a Class A asbestos removal licence is required.
Class B asbestos removal licence		means a licence granted in accordance with regulation 64 [of the Asbestos Regulations] authorising the holder to carry out Class B asbestos removal work.
Class B asbestos removal work		means work specified in regulation 56(1) and (2) [of the Asbestos Regulations] for which a Class B asbestos removal licence is required.
Class P2/P3 particulate respirators	P2 respirators are intended for use against both mechanically and thermally generated particles. They filter at least 94% of airborne particles. P3 respirators are intended for use against all particulates, including highly toxic materials. They filter at least 99.95% of airborne particles.	

TERM	PLAIN ENGLISH EXPLANATION	LEGAL DEFINITION
Clearance inspection		means an inspection (including a visual inspection) of an asbestos removal area after asbestos removal work has been completed to verify that the area is safe for normal use, and- (a) in the case of Class A asbestos removal work, includes surface testing and air monitoring in a dry condition before the enclosure is dismantled and removed from the asbestos removal area: (b) in the case of Class B asbestos removal work, may include surface testing and air monitoring.
Competent person (excluding clearance inspections)	means a person who has the knowledge, experience, skills and qualifications to carry out a particular task under the regulations, including any knowledge, experience, skills and qualifications prescribed in a safe work instrument. The PCBU will need to seek assurance from the person about their competence to do the work. The assurance should cover the above matters, and should explain why they believe they are competent to do the work. The PCBU will need to judge whether the person is suitably competent. This should form part of, and does not replace, a good selection process.	means a person who has the knowledge, experience, skills, and qualifications to carry out a particular task under these regulations, including any knowledge, experience, skills, and qualifications prescribed in a safe work instrument.
Competent person (for clearance inspections)		means a person who has acquired, through training and experience, the knowledge and skills of relevant asbestos removal industry practice and who holds— (a) a certificate in relation to a training course specified by WorkSafe for asbestos assessor work; or (b) a tertiary qualification in occupational health and safety, occupational hygiene, science, or environmental health.
Construct		includes assemble, erect, reconstruct, re-assemble, and re-erect.

TERM	PLAIN ENGLISH EXPLANATION	LEGAL DEFINITION
Contaminant		means a substance that may be harmful to health or safety.
Control measure		in relation to a risk to health and safety, means a measure to eliminate or minimise the risk.
Control monitoring	means monitoring controls to make sure the controls continue to eliminate or minimise airborne asbestos as much as reasonably practicable.	
Decontamination facilities	means the equipment and materials the asbestos removalist or PCBU doing asbestos-related work needs to decontaminate: > the asbestos removal area > equipment used in the removal area > workers that worked in the removal area > the people that may have accessed the removal area.	
Demolition	means destroying or dismantling all or part of a building or plant.	(a) means work to demolish or dismantle a structure, or part of a structure that is loadbearing or otherwise related to the physical integrity of the structure; but (b) does not include – (i) the dismantling of formwork, falsework, or other structures designed or used to provide support, access, or containment during construction work; or (ii) the removal of power, light, or telecommunication poles. For the purposes of subpart 4 [of the Asbestos Regulations], **demolition** does not include minor or routine maintenance work, or other minor work.
Design		in relation to plant, a substance, or structure includes— (a) the design of part of the plant, substance, or structure; and (b) the redesign or modification of a design.

TERM	PLAIN ENGLISH EXPLANATION	LEGAL DEFINITION
Downstream PCBUs	in this code, means PCBUs who use tools and equipment that are designed, manufactured, imported, supplied, installed, constructed or commissioned by upstream PCBUs.	
Dry method	means a method of removing asbestos that does not use water or other liquid to damp down asbestos fibres.	
Emergency		an emergency occurs if— (a) a structure or plant is structurally unsound; and (b) the collapse of a structure or plant is imminent.
Engineering control	means a physical control of any kind that is designed to eliminate or reduce a risk, but does not include: (a) a system of work or procedure, or (b) the use of personal protective equipment.	(a) means a control measure that is physical in nature; and (b) includes a mechanical device or process.
Extraction ventilation (LEV)	means a fixed or portable system that captures airborne contaminants near the point where they are generated, and has: > a hood > a duct system > an air-cleaning device > an exhaust fan > a stack.	
FEV1	means forced expiratory volume. This is the maximum amount of air a person can forcefully exhale in one second.	
FVC	means forced vital capacity. This is the amount of air which can be forcibly inhaled from the lungs after taking the deepest breath possible.	
Friable		means, in relation to asbestos or ACM, in a powder form or able to crumbled, pulverised, or reduced to a powder by hand pressure when dry.

TERM	PLAIN ENGLISH EXPLANATION	LEGAL DEFINITION
Gooseneck tie	means a bag enclosure that should keep the material inside the bag enclosed. Twist the bag tightly, fold the neck over and secure it with adhesive tape.	
Handle		includes transport.
Hazard	means anything that could harm someone. Includes situations and the person's behaviour (eg an unguarded machine, chemicals, assault, etc).	includes a person's behaviour where that behaviour has the potential to cause death, injury, or illness to a person (whether or not that behaviour results from physical or mental fatigue, drugs, alcohol, traumatic shock, or another temporary condition that affects a person's behaviour).
Health		means physical and mental health.
Health monitoring		in relation to an individual, means monitoring of the individual to identify any changes in his or her health status because of exposure to certain health hazards.
HEPA	means High Efficiency Particulate Air, a highly efficient filter element. HEPA filters are also known as essential filters.	
High-pressure water spray		means water pressurised by positive displacement pumps that have an output capability of more than 350 kPa.
Home		(a) means a place occupied as a dwelling-house; and (b) includes any garden, yard, garage, outhouse or other appurtenance of a home.
Importation		has the same meaning as in section 2(1) of the Customs and Excise Act 1996, and **import** has a corresponding meaning.
Inspector		means an inspector appointed under section 163 (of the Act).
Isolation controls	means hazard controls that prevent workers or other people from accessing hazards.	
JAS-ANZ	means the Joint Accreditation System of Australia and New Zealand.	

TERM	PLAIN ENGLISH EXPLANATION	LEGAL DEFINITION
kPa	means kilopascal, a unit of pressure measurement. This term has mostly replaced the term 'psi.'	
Licensed asbestos assessor	means a competent person who is licensed by WorkSafe to conduct clearance inspections for Class A asbestos removal work.	
Licensed asbestos removal work		means asbestos removal work for which a Class A asbestos removal licence or a Class B asbestos removal licence is required.
Licensed asbestos removalist	means a PCBU with a Class A or Class B licence.	means a PCBU who is licensed under these regulations to carry out Class A asbestos removal work or Class B asbestos removal work.
Local authority		has the same meaning as in section 5(1) of the Local Government Act 2002.
Magnahelic gauge	means an instrument used to measure pressure. It can be used in negative-pressure atmospheres and to get the difference in pressures between two separate locations.	
Manometer	means an instrument to measure pressure differential.	
Medical practitioner		means a health practitioner who— (a) is, or is deemed to be, registered with the Medical Council of New Zealand continued by section 114(1)(a) of the Health Practitioners Competence Assurance Act 2003 as a practitioner of the profession of medicine; and (b) holds a current practising certificate.
Micrometre (µm)	means a measurement of one millionth of a metre, or 0.001 mm. Also commonly known as 'micron.'	
Mini-enclosure	means a purchased or purpose-built enclosure built or erected over the asbestos working area and sealed with heavy-duty plastic sheeting, used for asbestos removal work in areas with restricted access.	

TERM	PLAIN ENGLISH EXPLANATION	LEGAL DEFINITION
NATA	means the National Association of Testing Authorities, Australia.	
National Asbestos Registers, The	means registers that were formed by the health and safety Regulator in 1992 to record details of: > people who were exposed to asbestos > people who have an asbestos-related disease.	
Naturally occurring asbestos		means the natural geological occurrence of asbestos minerals found in association with geological deposits such as rock, sediment, or soil.
Non-friable asbestos		in relation to asbestos or ACM, means not friable (and, for the purposes of this definition, asbestos and ACM include material containing asbestos fibres reinforced with a bonding compound).
Occupational health practitioner		means an individual who— (a) is a medical practitioner, a nurse practitioner, or a registered nurse; and (b) has the knowledge, experience, and skills in occupational health to carry out a task required by regulations.
Occupy/reoccupy	in relation to clearance testing, an area that has undergone asbestos removal should/must undertake a clearance inspection if the area will be occupied or reoccupied by people afterwards.	
PCBU (person conducting a business or undertaking)	the relevant PCBU is identified or explained in the code each time it appears.	(a) means a person conducting a business or undertaking— (i) whether the person conducts a business or undertaking alone or with others; and (ii) whether or not the business or undertaking is conducted for profit or gain; but

TERM	PLAIN ENGLISH EXPLANATION	LEGAL DEFINITION
		(b) does not include— (i) a person to the extent that the person is employed or engaged solely as a worker in, or as an officer of, the business or undertaking: (ii) a volunteer association: (iii) an occupier of a home to the extent that the occupier employs or engages another person solely to do residential work: (iv) a statutory officer to the extent that the officer is a worker in, or an officer of, the business or undertaking: (v) a person, or Class of persons, that is declared by regulations not to be a PCBU for the purposes of this Act or any provision of this Act.
PCBU who manages or controls (the) workplace	in the case of this code, and in relation to duties, usually means the PCBU of the workplace where asbestos is located, or the PCBU doing asbestos removal. Otherwise known in this code as the 'workplace PCBU.'	(a) means a PCBU to the extent that the business or undertaking involves the management or control (in whole or in part) of the workplace; but (b) does not include— (i) the occupier of a residence, unless the residence is occupied for the purposes of, or as part of, the conduct of a business or undertaking; or (ii) a prescribed person.
Personal protective equipment (PPE)		(a) means anything used or worn by a person (including clothing) to minimise risks to the person's health and safety; and (b) includes air-supplied respiratory equipment.

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Plant		includes— (a) any machinery, vehicle, vessel, aircraft, equipment (including personal protective equipment), appliance, container, implement, or tool; and (b) any component of any of those things; and (c) anything fitted or connected to any of those things.
psi	means pounds per square inch, a unit of pressure measurement.	
Readily accessible (document)		in relation to a duty to provide a document, means that the document is capable of being accessed without difficulty in hard copy, electronic form, or any other form.
Reasonably practicable	means actions that are (or were at a particular time) reasonably able to be done to ensure health and safety. In deciding what actions to take, the PCBU must consider the hazards and associated risks, how serious the harm could be, what a person knows or ought reasonably to know about the risk and ways of controlling it, what measures exist to control the risk, and how available and suitable the controls are.	in relation to a duty of a PCBU set out in subpart 2 of Part 2 of the Act, means that which is, or was, at a particular time, reasonably able to be done in relation to ensuring health and safety, taking into account and weighing up all relevant matters, including— (a) the likelihood of the hazard or the risk concerned occurring; and (b) the degree of harm that might result from the hazard or risk; and (c) what the person concerned knows, or ought reasonably to know, about— (i) the hazard or risk; and (ii) ways of eliminating or minimising the risk; and (d) the availability and suitability of ways to eliminate or minimise the risk; and (e) after assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.

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Refurbishment work	means partially dismantling buildings or plant for renovation.	does not include minor or routine maintenance work, or other minor work.
Regulator		means, as the case requires,— (a) WorkSafe; or (b) the relevant designated agency.
Relevant course		in relation to a particular type of asbestos removal work or asbestos-related work, means a course prescribed as a relevant course for that type of work under a safe work instrument.
Representative		in relation to a worker, means— (a) the health and safety representative for the worker; or (b) a union representing the worker; or (c) any other person the worker authorises to represent the worker.
Residential work		means work done by a person employed or engaged by the occupier of a home of either or both of the following kinds: (a) domestic work done or to be done in the home: (b) work done or to be done in respect of the home.
Respirable asbestos fibre		means an asbestos fibre that— (a) is less than 3 micrometres wide; and (b) is more than 5 micrometres long; and (c) has a length-to-width ratio of more than 3:1.
Risk	means the possibility that death, injury or illness might occur when a person is exposed to a hazard.	
Safe work instrument	safe work instruments define terms, prescribe matters, or make other provision in relation to any activity or thing, including listing standards, control of substances, and competency requirements.	the purposes of safe work instruments are to define terms, prescribe matters, or make other provision in relation to any activity or thing, including (without limitation) listing standards, control of substances, and competency requirements.

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Safety data sheet (SDS)	means a document designed to protect the health and safety of people in the workplace. They provide information about the hazards of substances, and how they should be safely used, stored, transported and disposed of. They also describe emergency procedures, such as what to do in the event of a spill or fire.	
Shadow vacuuming	means holding a vacuum cleaner nozzle close to the task being performed (eg removing a screw from an asbestos-covered wall) and sucking the debris away as it is created.	
Structure		(a) means anything that is constructed, whether fixed, moveable, temporary, or permanent; and (b) includes— (i) buildings, masts, towers, frameworks, pipelines, quarries, bridges, and underground works (including shafts or tunnels); and (ii) any component of a structure; and (iii) part of a structure.
Suitably Qualified and Experienced Practitioner (SQEP)	a term found in the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (but not defined there). A SQEP is likely to be a senior scientists or engineer with a relevant tertiary qualification and many years of experience who adheres to good professional practice and specialises in the contaminated land.[31]	
Territorial authority		means a city council or a district council named in Part 2 of Schedule 2 of the Local Government Act 2002.
Trace level		means, in air, an average concentration over any 8-hour period of less than 0.01 respirable asbestos fibres per millilitre of air.

[31] From BRANZ *New Zealand Guidelines for Assessing and Managing Asbestos in Soil*.

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Training record		means a written record of the training undertaken by the worker that is relevant to asbestos removal, including details of the training provider and the dates on which the training took place.
Upstream PCBUs	in this code, means PCBUs who design, manufacture, import or supply plant, substances or structures, or who install, construct or commission plant or structures.	
Union		has the same meaning as in section 5 of the Employment Relations Act 2000.
Vacuum cleaner used for asbestos work	means a vacuum cleaner that complies with Class H requirements in AS/NZS 60335.2.69 and should be used exclusively for asbestos work.	
Volunteer worker		(a) means a volunteer who carries out work in any capacity for a PCBU— (i) with the knowledge or consent of the PCBU; and (ii) on an ongoing and regular basis; and (iii) that is an integral part of the business or undertaking; but (b) does not include a volunteer undertaking any of the following voluntary work activities: (i) participating in a fund-raising activity: (ii) assisting with sports or recreation for an educational institute, sports club, or recreation club: (iii) assisting with activities for an educational institute outside the premises of the educational institution: (iv) providing care for another person in the volunteer's home.
WorkSafe		means WorkSafe New Zealand established by section 5 of the WorkSafe New Zealand Act 2013.

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Worker		Unless the context otherwise requires, a **worker** means an individual who carries out work in any capacity for a PCBU, including work as— (a) an employee; or (b) a contractor or subcontractor; or (c) an employee of a contractor or subcontractor; or (d) an employee of a labour hire company who has been assigned to work in the business or undertaking; or (e) an outworker (including a homeworker); or (f) an apprentice or a trainee; or (g) a person gaining work experience or undertaking a work trial; or (h) a volunteer worker; or (i) a person of a prescribed Class. (2) For the purposes of subsection (1),— (a) a constable is— (i) a worker; and (ii) at work throughout the time when the constable is on duty or is lawfully performing the functions of a constable, but not otherwise: (b) a member of the Armed Forces is— (i) a worker; and (ii) at work throughout the time when the member is on duty or is lawfully performing the functions of a member of the Armed Forces, but not otherwise: (c) a PCBU is also a worker if the PCBU is an individual who carries out work in that business or undertaking.
Workplace		A workplace— (a) means a place where work is being carried out, or is customarily carried out, for a business or undertaking; and (b) includes any place where a worker goes, or is likely to be, while at work. (2) In this section, place includes— (a) a vehicle, vessel, aircraft, ship, or other mobile structure; and (b) any waters and any installation on land, on the bed of any waters, or floating on any waters.

Notes

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WorkSafe New Zealand
Level 6
86 Customhouse Quay
PO Box 165
Wellington 6140

Phone: +64 4 897 7699
Fax: +64 4 415 4015
0800 030 040
www.worksafe.govt.nz
@WorkSafeNZ

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