WORKSAFE
Mahi Haumaru Aotearoa

Conducting asbestos surveys

Good practice guidelines for asbestos surveyors

Consultation draft

March 2025

When reviewing this draft guidance please note the following:

- This draft guidance forms part of a wider suite of asbestos related guidance currently under development. You can find more information here: We are updating our asbestos guidance | WorkSafe
- This draft does not necessarily present WorkSafe's final position on any matters contained within it.
- Until otherwise announced, the existing Approved Code of Practice: Management and Removal of Asbestos (ACOP) will remain the primary point of reference for enforceable good practice in asbestos management and removal. The Regulations that underpin the ACOP and the redeveloped guidance documents remain unchanged.
- Please use a submission feedback form provided on WorkSafe's Consultation webpage to provide your feedback

Submissions close Monday 7 April 2025

Completed submission forms can be sent to:

guidanceandeducationdevelopment@worksafe.govt.nz

Key points

- Buildings built before 1 January 2000 are likely to contain asbestos containing materials (ACMs). For buildings built after 1 January 2000, the risk of asbestos material being present is lower.

- Asbestos surveys are designed to identify asbestos material in buildings and workplaces and provide information on the types of asbestos present, the quantity, and the condition of the asbestos.

- Asbestos surveyors have a duty to make sure the work they do does not create a risk to other people – this means providing thorough and accurate survey reports that will allow for the appropriate management or removal of asbestos.

- Only a 'competent person', someone with the right qualifications and experience, should conduct asbestos surveys.

Note to readers

Use of 'must' and 'should'

The words 'must' and 'should' indicate whether:

- an action is required by law, or
- is a recommended practice or approach.

Term	Meaning
Must	Legal requirement that must be complied with.
Should	Recommended practice or approach. Where the word 'should' is used it means that it is a recommended practice or approach, but it is not mandatory. Alternative approaches may be adopted, including those which provide for equivalent or greater levels of safety.

Key terms

A list of technical words, terms, and abbreviations used in these guidelines can be found in the glossary at the end of these guidelines. The glossary explains the meaning of each technical word, term, or abbreviation.

Lists

Lists of examples used in these guidelines are not complete lists. They may list some examples, but not all possible examples.

Images

Images used in these guidelines are a guide only. Images are not intended to provide technical specifications.

Contents

1.0 Introduction

These guidelines provide good practice advice for persons conducting a business or undertaking (PCBUs) that carry our asbestos surveys.

1.1 What are these guidelines about?

These guidelines provide good practice advice for how to plan, carry out, and report the results of an asbestos survey.

These guidelines will help PCBUs that conduct asbestos surveys to comply with the requirements of the Health and Safety at Work Act 2015 (HSWA) and The Health and Safety at Work (Asbestos) Regulations 2016 (Regulations).

An asbestos survey is where a competent person (referred to as a surveyor in these guidelines) inspects a building or workplace to:

- identify asbestos material or asbestos containing material (ACM)
- provide information on the location and quantity of asbestos present
- report on the condition of the asbestos.

This information may then be used to create a plan on how to manage the asbestos in-situ, or safely remove it prior to renovation or demolition work, depending on the type of survey being done.

See Section 3.0 Asbestos surveys for more information on the different types of asbestos surveys.

See Section 2.0 Experience and qualifications for surveying for more information on what qualifications and experience are needed to qualify as a competent person for the purposes of providing asbestos survey.

These guidelines do not cover surveying contaminated land. See New Zealand Guidelines for Assessing and Managing Asbestos in Soil for more information.

1.2 Who should read these guidelines?

These guidelines are for PCBUs that carry out asbestos surveys (referred to as surveyors in these guidelines). Section 2.0 Experience and qualifications for surveying provides information on what qualifications and experience are needed to qualify as a competent person for the purposes of providing asbestos surveys.

These guidelines may also be useful for PBCUs that commission asbestos surveys or are otherwise involved in work that can disturb asbestos material, including:

- PCBUs that own, lease, or manage a building that has or could have asbestos in it
- PCBUs that carry out refurbishment and demolition work
- asbestos removalists

- asbestos assessors
- architects
- designers
- building surveyors.

1.3 Where to find other information about asbestos and asbestos management

This guide focusses specifically on good practice for conducting asbestos surveys. There is guidance available for other aspects of the management or removal of asbestos. This guide should be read in conjunction with the below guidance:

- Asbestos in New Zealand – information about what asbestos is, the risks of asbestos and why it must be managed.
- Managing asbestos in your building or workplace – guidelines for PCBUs about how to manage asbestos in their building or workplace (including when to engage an asbestos surveyor to assist with this).
- Protective clothing and equipment for working with or near asbestos - guidance for PCBUs that carry out any work where there is a risk of exposure to asbestos fibres.
- Asbestos Removal [placeholder] – good practice guidelines for asbestos removalists.
- Asbestos assessments [placeholder] – good practice guidelines for asbestos assessors.
- Asbestos in the home – information for homeowners about how to manage asbestos in their home and how to engage asbestos professionals for the safe management and removal of asbestos.

1.4 The Health and Safety at Work Act 2015 (HSWA)

HSWA is the primary work health and safety legislation in New Zealand. HSWA applies to all work and workplaces unless specifically excluded.

All PCBUs (including self-employed surveyors and those who employ surveyors) have a primary duty of care under HSWA. The primary duty of care means that a PCBU must ensure, so far as is reasonably practicable, the health and safety of:

- its workers (for example, employees, contractors, subcontractors, apprentices), and
- any other workers who are influenced or directed by the PCBU, (for example, workers of other PCBUs on the same site).

A PCBU must also ensure that the health and safety of other persons is not put at risk by its work (for example, tenants, visitors, customers, and passers-by).

For surveying this would include:

- anyone that may be nearby when a survey or sampling is being done
- the people or businesses who may rely on the information and advice provided in the surveys and reports they produce.

Surveyors should, so far as is reasonably practicable, make sure their survey findings and reports are thorough and accurate enough for other PCBUs to rely on when creating plans for how to safely manage or remove asbestos.

Self-employed persons are also considered PCBUs, and the primary duty of care applies. They must also ensure, so far as is reasonably practicable, their own health and safety while at work.

1.5 The Health and Safety at Work (Asbestos) Regulations 2016 (Regulations)

These Regulations outline specific legislative requirements for the safe management and removal of asbestos in New Zealand.

Surveyors do not have specific duties mentioned in the asbestos Regulations.

However, surveying for asbestos material is a key step in the asbestos management process. Accurately undertaking asbestos surveys is essential to the safe management and removal of asbestos.

2.0 Experience and qualifications for surveying

Competence can be demonstrated through a combination of relevant qualifications and practical experience.

2.1 Competence to carry out an asbestos survey

Before carrying out a survey of a building to identify asbestos, the surveyor should be able to demonstrate that they are a competent person.

Competence can be demonstrated through a combination of relevant qualifications **and** practical experience.

Competent person

A competent person means a person who has the knowledge, experience, skills, and qualifications to carry out a particular task under the Asbestos Regulations, including any knowledge, experience, skills, and qualifications prescribed in a safe work instrument.

Examples of individuals that may be described as a competent person for carrying out an asbestos inspection might include:

- an experienced asbestos surveyor that is registered with an inspection body
- a registered health and safety professional that has specialised in the identification and management of asbestos in buildings.

To carry out an asbestos survey, a competent person should be able to demonstrate that they are:

- qualified and experienced in all aspects of asbestos inspection work, including planning, risk assessment, asbestos material assessment, reporting, and quality control – as outlined in these guidelines
- knowledgeable about asbestos products, including their nature, uses, hazards, and sampling techniques
- knowledgeable about relevant building types (for example, industrial, commercial, and residential buildings)
- knowledgeable about building components and structures (for example, ducts, eaves, fascia, risers, soffits, and partitions) that may contain asbestos
- knowledgeable about relevant construction practices and building design, including past and present practices and design
- aware of the unexpected places asbestos may be located (and most likely not recorded on building plans). For example, being used in ad hoc ways such as for packing around columns and as spacers around windows and door frames
- knowledgeable about building systems that may contain asbestos material (for example, fire protection systems).

PCBUs providing surveying services should be able to provide the commissioning PCBU with evidence that the workers carrying out the work are competent. This may include a combination of:

- qualification records for the workers carrying out the work
- the status of any relevant accreditations and certifications for the workers carrying out the work
- information about the experience and capabilities of the workers carrying out the work
- evidence of recent similar work.

2.2 Qualifications

Asbestos surveyors should be suitably qualified in this subject area. Holding a suitable qualification is one part of demonstrating competence to identify asbestos material.

Qualifications should provide information on:

- methods of building construction and how asbestos was used
- identifying and taking samples of different asbestos materials
- methods of identifying asbestos
- carrying out adequate material and risk assessments
- using safety controls during asbestos inspections and sampling
- providing accurate and comprehensive survey reports.

Table 1 provides examples of some qualifications that WorkSafe New Zealand sees as suitable for individuals that carry out asbestos inspection work.

Qualification	**What the qualification is about**
British Occupational Hygiene Society Asbestos and Other Fibres (W504)	This course focuses on improving knowledge of asbestos and other fibrous dusts. This course may be suitable for individuals that work in asbestos consultancy and occupational hygiene.
British Occupational Hygiene Society Surveying and Sampling Strategies for Asbestos in Buildings (P402)	This course focuses on identifying and recording where asbestos is present and likely to be disturbed in premises. It also covers starting the assessment of asbestos material to determine how hazardous it is. This course may be suitable for: - individuals whose work involves the identification of asbestos materials (for example, asbestos surveyors and occupational hygienists)

	- individuals that need an understanding of the principles of asbestos identifications (for example, architects and building surveyors).
British Occupational Hygiene Society Surveying and Sampling Strategies for Asbestos in Buildings (RP402)	This course focuses on refreshing the knowledge of individuals that already hold a P402 qualification. The course provider recommends refresher training every year for individuals that hold a P402 qualification.
British Occupational Hygiene Society Report Writing for Asbestos Surveys (P402RPT)	This course focuses on improving report writing skills and provides formal recognition of these skills. This course is suitable for individuals that already hold a P402 qualification.
British Occupational Hygiene Society Surveying and Sampling Strategies for Asbestos in Buildings (IP402)	This course provides background and practical knowledge in the surveying of buildings for asbestos and to provide general guidance on management procedures necessary to minimise exposure to any identified asbestos.
Royal Society for Public Health (RSPH) Level 3 Award in Asbestos Surveying	This qualification allows for surveyors to understand: - asbestos types, uses, health effects, and legislation - asbestos surveying and management of asbestos in buildings bulk sampling of asbestos - use of decontamination units and Class H vacuum cleaners during asbestos surveys. This qualification will help organisations and companies meet the accreditation criteria for ISO 17020.

Table 1: Examples of qualifications that may be relevant for asbestos inspection work

A combination of qualifications may be needed to demonstrate competence, in addition to relevant experience.

2.3 Experience

Being trained to identify ACMs in real-world situations is also an important part of demonstrating competence.

Training to identify ACMs should be equivalent to at least six months full-time practical experience under the supervision of a competent person or persons. For example, this might be:

- six months working 40 hours per week alongside a competent asbestos surveyor
- 12 months working 20 hours per week alongside a team of competent personnel.

Training should cover:

- management surveys, refurbishment surveys, and demolition surveys
- buildings and building methods in different property sectors, including industrial, commercial, and domestic buildings
- methods of accessing cavities, walls, and different types of partitions
- areas of larger premises that need to be inspected (for example, voids, ducts, shafts, and risers)
- carrying out risk assessments
- methods of working safely, including the appropriate use of personal protective equipment (PPE) and personal decontamination.

2.4 Accreditation

WorkSafe strongly recommends the use of accredited survey providers for asbestos identification.

Accreditation with an inspection body (for example, International Accreditation New Zealand - IANZ) is one way that organisations or individuals may demonstrate their competence.

Accreditation provides assurance that an independent body has assessed the technical competence of an organisation or individual, including its methods, equipment, record, and personnel.

Technical competence to carry out asbestos surveys and sampling may be demonstrated through accreditation under ISO/IEC 17020:2012: Conformity assessment – Requirements for the operation of various types of bodies performing inspection.

More information about accreditation can be found on the IANZ website: IANZ: Inspection Bodies (ianz.govt.nz)

2.5 Demonstrating competence to commissioning PCBUs

Commissioning PCBUs may ask for evidence of competence to carry out asbestos identification. Be prepared to provide information that demonstrates competence and expertise.

Surveyors should be able to explain to the commissioning PCBU:

- why the survey is needed/being requested
- what type(s) of survey is(are) needed
- what information the survey will provide
- what format the report will be provided in (for example asbestos register, drawings, electronic, printed)
- what information the surveyor will require before commencing.

Some examples of information that could be provided are outlined in Table 2 below.

Information the surveyor should provide a commissioning PCBU	Details
Surveyor(s) identity, qualifications, accreditation, or certification status	This is to assure the commissioning PCBU that the surveyor is suitably qualified and certified, so the commissioning PCBU can review quality control procedures.
References from previous work	References that demonstrate the surveyor's experience and reliability.
Insurance (professional indemnity cover)	To confirm that the surveyor has appropriate professional indemnity insurance coverage.
Costs	Provide a clear breakdown of the expected costs for the survey.
Proposed scope of work	Clearly outline the exact areas and extent of the work to be conducted.
Plan of work	Detailed plans for sampling or any intended asbestos disturbance.
Timetable	An agreed, clear, and realistic schedule for completing the survey.
Details of caveats	Details of any limitations or conditions affecting the survey.
Report	The report should list areas not accessed or surveyed, with clear documentation.

Table 2: Information the surveyor should provide a commissioning PCBU

It is essential that both parties are fully aware of each other's expectations.

3.0 Asbestos surveys

There are two main types of asbestos surveys. Choosing which type to do depends on what the PCBU intends to do with the information.

3.1 What is the purpose of an asbestos survey?

The overall purpose of an asbestos survey is to help manage asbestos in a building or workplace. There are two different types of asbestos surveys depending on what the PCBU is intending to do with the information:

Asbestos management survey

The purpose of a management survey is to find and record the location, extent, and product type of any known or presumed ACM in a building or workplace.

It should include information about the accessibility, condition, and surface treatment of any known or presumed ACM.

The survey must provide sufficient information for an asbestos management plan to be prepared. This plan is then used to inform the safe management of asbestos during normal occupation and use of the building or workplace.

It will usually involve taking and testing samples of suspected ACM. In certain circumstances the presence of ACM can be presumed.

See Section 3.2 for more information about management surveys.

Refurbishment/demolition survey

The purpose of a refurbishment/demolition survey is to find and record the location, extent, and product type of all ACM in a building or workplace (or part of it).

It should provide enough detailed information to enable a suitable risk assessment to be carried out in preparation for refurbishment or demolition of the building or workplace (or part of it).

It typically requires more extensive and intrusive sampling than is required for a management survey.

Unlike a management survey, all suspected ACM must be confirmed by sample testing. The presence of ACM cannot be presumed.

See Section 3.3 for more information about refurbishment/demolition surveys.

Further details about the difference between the terms 'refurbishment' and 'maintenance' can be found at Asbestos - Refurbishment versus maintenance | WorkSafe.

For relocating buildings with asbestos, refer to: Asbestos approved methods | WorkSafe

3.2 What is an asbestos management survey?

An asbestos management survey is the standard survey carried out to identify asbestos in a building or workplace. It is typically used by PCBUs who own or manage a building or workplace to inform their asbestos management plan. The Regulations require all PCBUs to have an asbestos management plan for their building or workplace, if there is asbestos or ACM suspected to be present.

See Managing asbestos in your building or workplace – for PCBUs | WorkSafe for more information on the duties PCBUs have to manage asbestos in their building or workplace.

Management surveys are designed to assist with the management of asbestos in-situ. If a PCBU is planning to refurbish or demolish a building, or part of it, a refurbishment/demolition survey should be done - even if they already have a management survey. Section 3.3 covers demolition/refurbishment surveys in more detail.

Key information about asbestos management surveys is outlined in Table 3 below.

What is the purpose of an asbestos management survey?	- To identify, as far as is reasonably practicable, the presence, location, and extent of any suspected ACM in a building or workplace that could pose a risk of exposure to asbestos fibres. - This includes ACM that could be damaged or disturbed during normal occupancy, such as foreseeable maintenance, repairs, installation or other minor works.
What are the aims of an asbestos management survey?	An asbestos management survey has two main aims: - To find and record the location, extent, and type of ACM or suspected ACM in a building or workplace. - To assess the risk posed by the present, or presumed to be present, ACMs.
What does an asbestos management survey involve?	- An asbestos management survey often involves minor intrusive work and some disturbance to collect samples to test to confirm the presence of ACM. - The extent of intrusion will vary between premises and depend on what is reasonably practicable for each property. - Factors such as the type of building, nature of construction, and accessibility can influence this. - Management surveys do allow for the presence of asbestos to be presumed in some situations. See Section 7.0 for more information on when it is appropriate to presume the presence of asbestos, and how this must be recorded and communicated.
What is a material assessment?	- Management surveys should include a 'material assessment'. - This is an assessment of the condition of the various ACMs or suspected ACMs and their ability to release fibres into the air if they are disturbed (for example, during a natural disaster, or while doing maintenance such as cleaning or painting). - The material assessment information can provide a good initial guide to PCBUs when prioritising any future work they want to do to further manage or remove the ACMs. - See Section 8.0 for more detail on carrying out material assessments.

Table 3: Key information about asbestos management surveys

3.3 What is a refurbishment/demolition survey?

A refurbishment/demolition survey is used to identify all asbestos material in a building or workplace (or part of it), so it can be safely removed before refurbishment or demolition work begins.

See [placeholder for removalists GPG also under development] for more information on the safe removal of asbestos.

Refurbishment/demolition surveys are intrusive. This means that parts of the building's structure may need to be disturbed (for example, breaking through walls, lifting carpets, replacing vinyl, or removing tiles).

Key information about refurbishment/demolition surveys is outlined in Table 4 below.

What is the purpose of a refurbishment/ demolition survey?	- To locate and describe, as far as reasonably practicable, all ACMs in the area where the refurbishment work will take place, or in the whole building if demolition is planned. - A refurbishment/demolition survey may also be required in other circumstances, for example when more intrusive maintenance and repair work will be carried out, or for plant removal or dismantling.
What are the aims of a refurbishment/demolition survey?	- A refurbishment/demolition survey aims to find, confirm and record the location, extent, and type of all ACMs present in a building or workplace (or part of). - This information will inform a risk management plan for minimising the risk of asbestos fibres being released while refurbishment or demolition is taking place.
What does a refurbishment/demolition survey involve?	- A refurbishment/demolition survey is disruptive, intrusive, and may need to penetrate parts of the building structure. Aggressive inspection techniques are used, for example: - lifting carpets and tiles - breaking through walls, ceilings, cladding, and partitions - opening up floors and false ceilings. - In these situations, controls must be put in place to prevent the spread of debris, which may contain asbestos, while inspection and sampling is taking place. See Section 7.3 for more information.

Table 4: Key information about refurbishment/demolition surveys

3.4 Choosing the right type of survey

Most buildings/workplaces will require an asbestos management survey. The Regulations require all PCBUs to have an asbestos management plan for their building or workplace if

asbestos or ACM is suspected to be present. A management survey is a key tool used to assist PCBUs to manage the risk of asbestos fibre exposure during the normal occupation and use of the building. Normal occupation activities include standard maintenance and minor works. Examples of standard maintenance and minor works include:

- painting
- cleaning
- changing a light fitting
- removing a single panel
- drilling a hole
- cleaning of debris in the air conditioning gutters.

A refurbishment/demolition survey is required when a building (or part of it) is to be upgraded, refurbished, or demolished. It is likely that at larger premises a mixture of survey types may be needed. For example, a boiler house due for demolition will require a refurbishment/demolition survey, while offices at the same site undergoing repairs, maintenance or minor works may only need a management survey.

It is important that the right type of survey is carried out based on the intended actions (such as manage the asbestos in-situ, or disturb or remove the asbestos).

All PCBUs involved should have a clear understanding of what type of survey will be done, why, and where. There should be a clear statement and record of:

- the type of survey that will be done
- the reasons for choosing that type of survey
- the specific locations where the survey will be carried out.

3.5 Survey restrictions and caveats

The value and usefulness of a survey depends on how thoroughly the surveyor can access all areas of the building and obtain test samples. Surveys can be undermined if restrictions are imposed on the survey scope or on the techniques/methods used by the surveyor to confirm the presence of ACM. For management surveys, incorrectly presuming the presence or absence of asbestos can also negatively affect the reliability of the survey (see Section 7.0 for more information).

Reliable information on the location of all ACMs, so as far as is reasonably practicable, is crucial to the reliability of the resulting management plan. Making sure a survey is executed as thoroughly as possible can be achieved through good planning and communication with the building owner or commissioning PCBU before the survey takes place. See Section 4.0 Planning an asbestos survey for more information on how to plan for a thorough and effective survey.

For refurbishment/demolition surveys there should be no restrictions on access unless the site is unsafe (for example fire damaged premises), or access is physically impractical.

4.0 Planning and preparation

Thorough planning is essential to make sure surveys are carried out as fully and comprehensively as possible.

4.1 Five steps for planning and preparation

The level of planning and preparation for an asbestos survey will depend on the complexity and size of the workplace. For example, a small primary school will have different requirements compared to a large hospital complex. Surveys on sites with a variety of building types may need a lot of planning.

A thorough survey is crucial to avoid missing obvious or hidden ACMs. Using checklists and a structured approach can help minimise oversights. Make sure adequate time is allocated for an effective inspection.

It is the responsibility of the commissioning PCBU to make sure that adequate time and resources are made available to allow for a thorough identification of ACMs in the workplace.

This section divides planning an asbestos survey into five steps:

1. Collect relevant information
2. Do a preliminary site visit/walkthrough
3. Consider all the information
4. Prepare a survey plan
5. Carry out a risk assessment for the survey

These steps are listed separately, but in practice there may be some overlap or they may run at the same time. There may be some situations where all the steps are not necessary or possible (for example small or simple premises, fire-damaged premises and pre-purchase surveys).

There should be an initial exchange of information between the commissioning PCBU and the surveyor. This is so the surveyor can establish the type of survey(s) that is required, and so both parties have a clear understanding of what will be required.

It may be that more than one survey type will be required, for example a management survey for most of the premises, but a refurbishment survey in one building or part of a building. Establishing the survey type should be done in consultation with the commissioning PCBU before any planning begins.

1 Collect relevant information

STEP 1: COLLECT RELEVANT INFORMATION ABOUT THE BUILDING OR WORKPLACE TO BE SURVEYED

After confirming with the commissioning PCBU what type of survey or surveys are required, the surveyor should ask the commissioning PCBU or building owner for the following information:

- Details of buildings or parts of buildings to be surveyed and survey type(s) for which area.
- Details of building(s) use, processes, hazards, and priority areas.
- Plans, documents, reports and surveys on design, structure and construction.
- Safety and security information: fire alarm testing, special clothing areas (for example food production).
- Access arrangements and permits.
- Contacts for operational or health and safety issues.
- Accurate plans of the building(s) and the floor layout that include:
    - the main features of each room, corridors, stairs, and other areas
    - unique floor and room numbers to help identify individual locations.

More specific examples of information that a surveyor should aim to collect when planning an asbestos survey are shown in Table 5 below.

Category	**Information to collect**
Property description and use	- Description of how the property is used (for example, industrial, office, retail, domestic). - Number of buildings, including age, type, and construction details. - Number of rooms. - Any unusual features or underground sections.
Building modifications	- Details of any extensions, adaptations, or refurbishments, including dates of work.
Installed equipment	- Details of installed plant or equipment. - Location of all services, heating and ventilation ducts, plant rooms, riser shafts, and lift shafts.
Historical and regulatory details	- Whether the site is a listed building or in a conservation area. - Site history, including any previously demolished buildings, presence of old/disused underground ducts or shafts.
Survey scope	- Extent or scope of the survey, marked on a site plan or architect's drawings. - Whether surrounding grounds and associated buildings or structures are included in the survey scope.
Plans and drawings	- Current site plans or drawings. - Previous plans, including original architect's drawings and specifications, and any plans for major changes and

	refurbishment.
	- For complex premises, the asbestos surveyor should ask for building plans that:
	  ○ show the main features of each room, corridors, and stairs
	  ○ are marked with unique floor and room numbers to help identify individual locations.
	If plans are not available, then the surveyor should make an accurate drawing of the premises during the preliminary site visit/walkthrough, before starting the survey (see Step 2 below).

Occupancy status	- Whether the premises are vacant or occupied.
Access and safety	- Presence of underground ducts or shafts. - Any restrictions, special requirements, or instructions for access. - Responsibility and arrangements for access. - Site-specific risks or hazards (mechanical, electrical, chemical). - Responsibility for isolating services such as power, gas, and chemicals. - Working machinery or plant (including lifts) to be made safe.
Previous asbestos information	- Details of previous asbestos surveys, current asbestos records, and records of asbestos removal or repairs. - Information on possible repairs to ACMs, for example pipe/thermal insulation.
If there are any areas where the use of a phone and/or taking photos is not allowed	- High security, high risk areas at petroleum/gas installations or prisons may restrict the use of phones or cameras. - In hospitals or other medical settings sensitive equipment may be affected. There may also be a need to protect the privacy of patients.
Additional considerations	- Whether sampling damage needs to be repaired (made good).

Table 5: Examples of information to collect to plan an asbestos survey

2 Do a preliminary site visit/walkthrough

STEP 2: PRELIMINARY SITE VISIT/WALK-THROUGH

Surveyors should arrange a preliminary site meeting and carry out a walk-through inspection, especially for large and complex premises.

If it is not possible to carry out a preliminary site meeting (for example small surveys where the cost of a second visit outweighs the advantages, or where there are multiple premises and it is not practical to visit them all), gather the necessary information by other means such as through email/correspondence with the site owner or manager, or by carrying out a walk-through immediately before the survey.

A walk-through inspection can help surveyors to:

- gather additional information needed to plan the survey that could not be obtained during step 1
- become familiar with the layout of the premises, including the location of equipment or obstacles that may cause a problem for access or sampling
- understand the size of the project and estimate the extent of sampling required
- identify specific risks
- verify the accuracy of building plans or, if plans were not available, allow an opportunity for the surveyor to make an accurate drawing of the premises' layout (this is very important to have when the actual survey is taking place).

Examples of information that should be collected during a walk-through inspection are outlined in Table 6 below.

Category	**Information that should be collected by a walk-through inspection**
Entry or access restrictions	- Identify any restrictions such as ceiling voids, high areas, and crawl spaces that may be difficult to access.
Sampling issues	- Determine if sampling should be conducted only when the area is unoccupied. - Determine if there are materials or decorations that cannot be disturbed. - Determine where sample locations should be labelled.
Dust release and clean-up	- Plan how to reduce dust release and manage clean-up efficiently.
Need for a licensed asbestos removalist	- Assess whether a licensed asbestos removalist is required (for example, to gain access through ceiling tiles).
Access to high areas	- Determine if arrangements need to be made for a safe way of accessing high areas.

Table 6: Examples of information that should be collected during a walk-through inspection

3 Consider all the information

STEP 3: CONSIDER THE INFORMATION (DESKTOP STUDY)

This step involves the careful review of all the information collected during steps 1 and 2 and to use it to plan the survey in step 4.

Use this as a 'desktop' exercise to review the information, plan the survey strategy, consider if there are any gaps in the information, and work out the resources and equipment that will be necessary to complete the work.

Many premises will be relatively simple and straightforward to plan for. For example, one or two buildings with no additional land, machinery, or outbuildings and no previous refurbishment or demolition. However, more complex sites with buildings of various ages and conditions will require more consideration and a more tailored approach.

Generally, refurbishment/demolition surveys will require more intensive planning than asbestos management surveys will.

The factors the surveyor will need to consider will vary for each survey carried out. However, the surveyor should always consider the things listed in Table 6.

Category	**Things for the surveyor to think about**
Type of survey	- Consider whether the proposed survey type is still appropriate. If it looks like a different survey may be needed this should be raised with the commissioning PCBU.
The surveyor's competency to carry out the survey	- Assess your competency to undertake the work. - How complex is the survey likely to be? Do you have enough experience to manage it, or will you likely need assistance? - Refurbishment/demolition surveys are more challenging than management surveys: o Management surveys typically do not access structural locations like behind concrete or between floors and walls, such as cavity walls. o Refurbishment/demolition surveys require a higher level of competency and knowledge, particularly in construction and building techniques. The intrusive nature of these surveys also presents additional risks to health and safety.
Available resources	- Evaluate the resources available, including personnel. Consider whether you have the resources to carry out the survey accurately and safely.
The equipment that may be need to ensure access	- Determine the equipment you will need to access different areas of the building. For example: o into the structure

	○ to high levels ○ into contaminated areas or confined spaces ○ through known ACMs.
The need for additional trades	- Think about whether additional tradespeople (such as a joiner, electrician, or builder) are required to gain access to areas during the survey, or to repair areas (make good) after the survey has been completed.
Bulk sampling needs	- Think about your bulk sampling strategy. Consider the expected number of samples that will be collected and what sampling strategies will be used - with reference to the site plan.
Gaps in information collected	- Consider whether there is any key information missing from the information you have collected and how you might find out this information.

Table 6: Example of things to consider when planning an asbestos survey

4 Prepare a survey plan

STEP 4: PREPARE A SURVEY PLAN (INCLUDING HOW DATA WILL BE RECORDED)

After collecting relevant information and completing the preliminary site inspection, prepare a written plan for the survey.

This plan should outline the content of the survey and can form the basis of the contract with the commissioning PCBU.

The plan should typically include the information outlined in Table 7 below.

Category	**Information to include in the survey plan**
Scope of the survey	- Type of survey. - Areas that will be included in the survey. - Areas that will be excluded from the survey. - Whether any areas will be presumed to contain or not contain asbestos. - Possible or known ACM that will not be included in the survey.
Survey procedure/Sampling strategy	- Sampling methods to be used and expected number of samples to be taken. - Expected number and types of photographs to be taken. - Survey start and completion dates. - Survey times and work schedule. - Procedures for making good any areas that were disturbed during accessing or taking samples.

	- Material assessment method and parameters for assessment, including the ACM:
	  o type
	  o location
	  o extent
	  o condition
	  o accessibility.
	- Quality assurance checks and procedures.
	- The information to be recorded and the method/format to be used.

Access arrangements	- Plan with the commissioning PCBU to make sure that (for example):
	  o locked rooms are unlocked, or someone is available to unlock them when needed
	  o height access equipment is available for accessing areas at height (such as roofs and raised ceilings)
	  o any movable obstructions from hallways/corridors are removed.

Personnel and safety	- Names of the people carrying out the survey. - Safety precautions, including steps to minimise asbestos disturbance and minimise the spread of asbestos fibres. - Agreed control measures for high-risk work such as working at height or work in confined places. - Site safety procedures for emergencies. Procedures for decontamination. See step 5 below for more information.
Reporting	- What data will be reported and with headings. - How the data will be presented (each room/area should be individually recorded). - The way the survey data will be stored, accessed and updated (for example a physical paper copy or digitally). - The way photographic or video records and marked-up plans will be stored and reported. - How to record materials similar in appearance to asbestos (if not sampled). - Other information required by the commissioning PCBU that may have been agreed, for example detailing fixings. - Storage and reporting of photographic or video records and marked-up plans. See Section 8 for more information

Table 7: Information to include in an asbestos survey plan.

SURVEY STRATEGY

A survey strategy is an approach used to effectively identify the presence and location of asbestos material in a building.

As each building and workplace is likely to be different, a survey strategy will need to be developed for each asbestos survey carried out. Thinking about the survey strategy early in the planning process can help avoid challenges and make sure the survey is comprehensive and reliable.

In premises where there are large numbers of similar or near-identical rooms (for example offices or hotels) a survey strategy can be adopted which reflects the scale and nature of the buildings. All rooms should be visually inspected, as there can be differences due to location (for example presence of risers or services) or function/facilities.

Rooms with similar locations or facilities rooms can be placed into groups, such as next to lifts or containing risers. There is likely to be greater uniformity in these groups for the presence of asbestos and ACM. Within these groups, there may be less need for sampling in all rooms. Sampling can be conducted in a representative number of rooms and, if ACM is identified, the same items in other rooms in this group can be presumed to contain asbestos. See Section 7.0 for more information on presuming the presence of asbestos.

5 Carry out a risk assessment for the survey

STEP 5: CONDUCT A HEALTH AND SAFETY RISK ASSESSMENT

Surveying will present health and safety risks for surveyors and others present at the workplace. As a PCBU, the surveyor must, so far as is reasonably practicable, manage the risks their survey work creates or may create. They will need to consult, cooperate and coordinate with the commissioning PCBU when working out how to best manage the risks.

Before conducting a survey, an assessment of the risks to the health and safety of surveyors, sampling personnel, and building occupants should be carried out. This must include non-asbestos related risks as well as asbestos related risks. The surveyor should ask the commissioning PCBU for information relating to any hazards specific to the site at Step 1 of the planning stages.

General health and safety risks to consider

The risk assessment should address any relevant hazards that may be present. It should include what control measures will be used to eliminate or minimise the risk of potential harm. For example:

- working at heights, in ceiling voids or on a fragile roof
- working on operable machinery or plant
- working in confined spaces
- exposure to:
    - chemical hazards
    - electrical hazards

    - biological hazards
    - radiological hazards
    - noise hazards
- lone working.

For more general information about managing risk see: Managing risks | WorkSafe

Asbestos specific health and safety risks to consider

The risk assessment should also specifically address asbestos-related issues, including:

- how to prevent the disturbance of asbestos material as much as possible
- how to prevent the spread of asbestos fibres. Safe work procedures (for example, controls that will be used while taking samples and arrangements for entering contaminated areas)
- what personal protective equipment surveyors will use during the survey. For more information see: Protective clothing and equipment for working with or near asbestos | WorkSafe
- decontamination procedures
- arrangements for the disposal of asbestos waste.

The risk assessment should be prepared by a competent person (normally the surveyor), and it should be written down. It should establish all the hazards at the particular premises and go on to identify precautions and procedures in a plan of work for the survey.

Where the surveyor has not been able to do a preliminary visit, they will only see the site for the first time at the time of the survey. In this case it is important that the information gathered at Step 1 is thorough enough to base the risk assessment on.

Consider specific risks for refurbishment/demolition surveys

Refurbishment/demolition surveys are likely to present additional hazards due to the intrusive and destructive nature of the work. This may include:

- hidden electrical cables or pipes
- unstable buildings.

These hazards need to be properly addressed with procedures in place to deal with emergencies.

Safe work procedures – avoid working alone if possible

Ideally a survey should be conducted by a team of at least two people. This has a number of advantages:

- assistance with carrying equipment such as step ladders
- labelling of sample bags and documentation
- having help on hand if there is an incident – in cases of remote or dangerous locations (for example fire damaged or derelict buildings) this is especially important
- allows field training of new surveyors to be carried out in a supervised practical environment and gives a better chance of finding ACMs.

5.0 Carrying out an asbestos survey

Using a methodical and systematic approach to carrying out asbestos surveys will help make sure that no areas are accidentally missed.

5.1 Introduction

This section explains how to carry out an asbestos survey. It covers both management and refurbishment/demolition surveys. It provides detailed information on ACMs in buildings including their types, uses, and locations in building fabric and fixed installations.

The locations of many of these products in buildings are shown in Appendix 2 together with pictures of many asbestos products.

5.2 Methodical approach to surveying

Using a methodical and systematic approach to carry out an asbestos survey will help make sure that:

- all ACMs are identified
- all areas of the premises are inspected.

Use building plans to prepare the survey strategy and check progress through the premises.

Check plans to make sure building features and services are included (for example, voids, cavities, risers, ducting, and undercrofts).

The survey should be conducted in a way to make sure that asbestos materials are not missed and that all areas of the premises are thoroughly inspected.

Always allow enough time to carry out the survey.

One way to carry out an asbestos survey is outlined in Table 8 below.

Area	**How to carry out the survey**
Outside	Work downwards from high to low. Work from the outside inwards.
Inside	Work upwards from the basement to the roof. Inspect each area individually. Work around each area clockwise from the door of entry. Inspect each component inside each compartment in the following order: - ceiling - walls - floors

	- fixtures and fittings - equipment - services. Look at each item individually.
General	Check and inspect everything. Sample and take photographs. Re-check areas that are complex or that have a lot of items. Do a final walk-through and check your notes against the building plans.

Table 8: Methodical approach for carrying out an asbestos survey

Use initiative when carrying out a survey

Being inquisitive and using initiative is important when carrying out the survey. Materials should be tapped and prodded. Everything should be checked and inspected. Do not presume that an item is the same as another just because it looks similar. This is particularly relevant when assuming items are non-asbestos.

Sample and take photographs as the survey progresses. Look out for unusual potential sources such as overspray or packers.

It is good practice to survey 'in pairs' (two people) working together, with both inspecting one area at the same time.

Recheck areas which have many items (for example plant rooms). ACMs will be missed where surveyors are tired, rushed or make assumptions.

Large premises will require more detailed survey procedures, particularly if several surveyors are involved. For example, it may be appropriate to carry out a separate survey on the building services, machinery and any large floor and ceiling voids. Reviews should be carried out frequently.

5.3 What to assess and record

During a management survey, assess the condition of the ACMs and their ability to release fibres. This information will inform the 'material assessment'. Material assessment is discussed in Section 6. Obtain and record the information described in Table 9 below for:

- confirmed ACM
- presumed or suspected ACM (see Section 7.0 for more information about presuming the presence of asbestos).

Refurbishment/demolition surveys normally require less information as details of the ACM condition are not required.

The final report should be accurate, comprehensive and clearly present all findings.

Survey type	Information required:
Management survey	- asbestos product type(s) - location of the material(s) - extent (or quantity) of the material(s) asbestos type(s) - accessibility and/or vulnerability (risk of damage) - amount of damage or deterioration - surface treatment (if any).
Refurbishment/demolition survey	- asbestos product type(s) - location of the material(s) - extent (or quantity) of the material(s) - asbestos type(s). The surveyor will need to obtain additional information if the survey will take place a significant time before the demolition/refurbishment starts (by more than 3 months). If this is the case, the surveyor should also obtain information about the: - accessibility and/or vulnerability (risk of damage) - amount of damage or deterioration - surface treatment (if any).

Table 9: Information required for a management survey and refurbishment/demolition survey

5.4 Asbestos type

To carry out a material assessment, you need to know the type of asbestos.

If the material has not been tested, and there are no similar products identified in the survey, assign a likely asbestos type. This is based on the product type and age.

It may be possible to obtain information on the type of asbestos from close inspection of the material. For example, if fibres are visible in the product, these can give some additional clues to the type of asbestos (for example, by the colour of fibre bundles, or if they have sharp or curly bundles).

Unless there is evidence to show otherwise, assume the asbestos type is crocidolite asbestos (blue/green asbestos). This is in line with the precautionary principle in risk management.

5.5 Presumed ACMs

A PCBU who knows, or should reasonably know, about the risk of exposure to asbestos fibres must ensure, as far as possible, that all asbestos or asbestos-containing materials (ACM) causing the risk are identified.

If a material cannot be identified but is likely to be asbestos or ACM, the PCBU must assume it is asbestos. If any part of the workplace is inaccessible, but likely to contain asbestos, it must also be assumed to be present. This does not apply if the PCBU already assumes asbestos is present or has good reason to believe it is not.

This also does not apply to soil unless there is a reason to suspect it is contaminated with asbestos. If asbestos or ACM is assumed to be present, it is treated as being identified.

If a sample is not taken, you will need to judge whether the material is likely to contain asbestos. You may visually assess the edges and damaged areas of suspect materials, and record:

- whether visible fibres are present on close inspection
- the colour of the fibres, if visible
- whether fibres are visually consistent with asbestos (for example, form bundles with split ends).

Some materials, like textured plasters, paints and vinyl floor tiles, may contain very fine dispersed chrysotile asbestos which may not be seen by eye or with a magnifying glass.

An accredited laboratory, following a recognised test method, should not miss the fine asbestos (unless a poor sample was provided).

You should assume that these products contain asbestos, unless they have been tested by a competent laboratory. Imported materials may have contained chrysotile asbestos until 2000 and can sometimes be missed during laboratory testing, some additional checks may be necessary with these types of materials.

Experienced surveyors may use certain characteristics to compare with other materials they know contain asbestos:

- surface texture
- sound when knocked
- warmth to the touch
- surface hardness/deformation with a probe.

Unless the surveyor is convinced that there is adequate evidence to conclude that the material is asbestos-free (for example in the plaster, plasterboard, wood etc), a presumption or strong presumption should be made that it is an ACM.

See Section 7.0 for more information on presuming the presence or absence of ACM.

5.6 Where you might find asbestos in a building or workplace

Many buildings in New Zealand have asbestos in them. If a building or workplace was built before 1 January 2000, it probably contains some asbestos materials. Even buildings built after 2000 may have asbestos because ACMs were still able to be imported into New Zealand up until 2016.

Asbestos can also be found in some products that were manufactured before 2000. It was used to make products like brake linings, filters, and fireproof textiles.

For buildings and products that were built or manufactured after 1 January 2000, the risk of asbestos material being present is lower. Figures 1 and 2 show examples of where asbestos can be found.

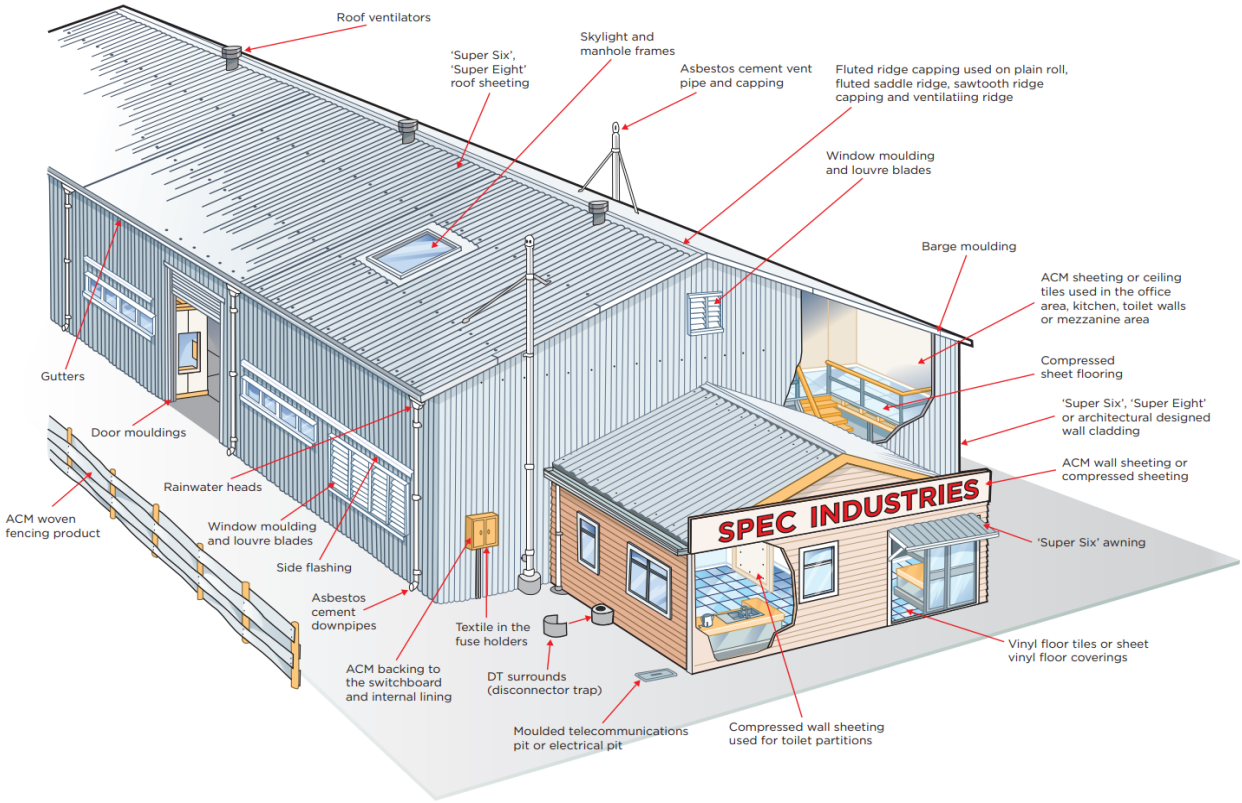


Figure 1: Areas where asbestos is commonly found in commercial buildings

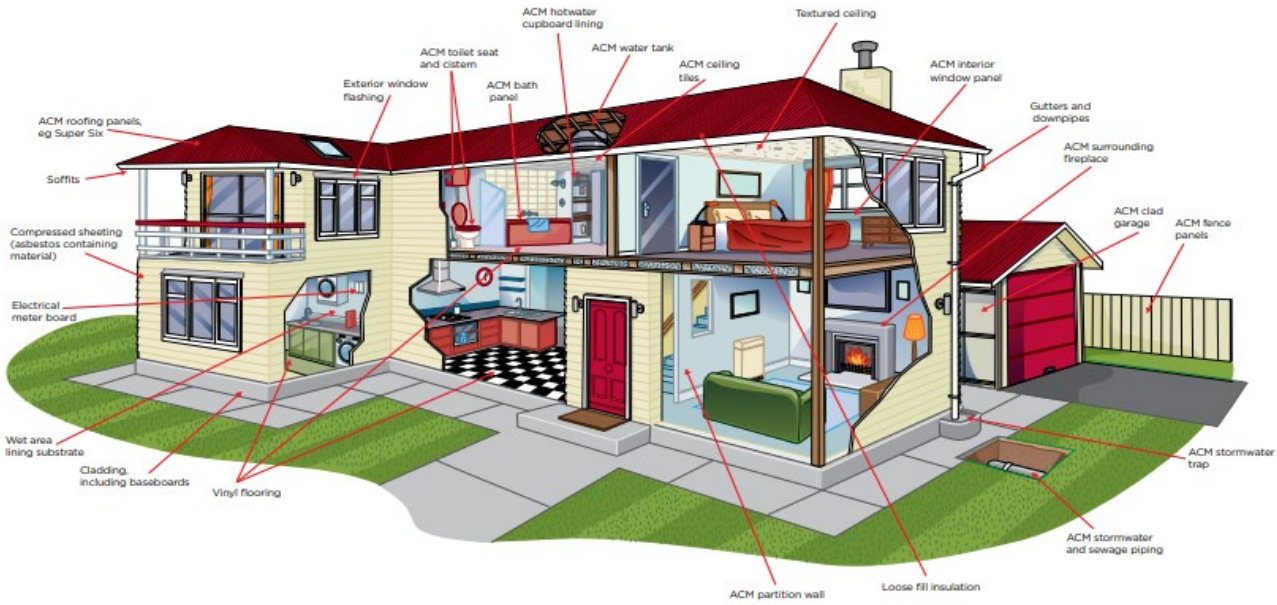


Figure 2: Areas where asbestos is commonly found in residential buildings

See Appendix 2 for photographic examples of what asbestos can look like.

Detailed areas, where asbestos might be found, include:

LOOSE INSULATION

Uses	Bulk loose fill insulation. DIY loft insulation. Firestop packing around cables. Loose asbestos in fire doors. Insulation for industrial boilers. Electrical cable packing (sometimes using chicken wire). Loft insulation.
Locations	Lofts. Fire doors. Industrial boilers. Under floors. In walls. Around electrical cables.
Types of asbestos material	Usually pure asbestos except for lining/bag. Acoustic insulation: crocidolite or chrysotile.
Potential for fibre release	High potential for fibre release if disturbed, especially if dry. Covers may deteriorate or be damaged easily.
Inspection	Inspect wall cavities with an endoscope for loose asbestos materials or debris. Examine walls where insulated pipes pass through for insulation or residues.

Table 10: Loose insultation

SPRAYED COATINGS

Uses	Fire protection on reinforced concrete or steel columns or beams. Acoustic and decorative purposes in large spaces.
Locations	Walls and ceilings in theatres, cinemas, studios, halls, and industrial buildings.
Types of asbestos material	Typically contains 55%–85% asbestos with a Portland cement binder.

	Crocidolite until 1962, mixture of types until mid-1971, used until 1974.
Potential for fibre release	High potential for fibre release if unsealed, especially if knocked or abraded. Dust may accumulate on false ceilings, wiring, and ventilation systems.
Inspection	Inspect columns, ceiling voids, and any encapsulated areas. Different mixtures may have been used, so inspect for repairs or patches.

Table 11: Sprayed coatings

THERMAL INSULATION

Uses	Hand-applied thermal lagging. Pre-formed pipe sections. Slabs, blocks, tape, rope, corrugated paper, quilts, felts, and blankets. Thermal insulation of pipes, boilers, pressure vessels, and calorifiers.
Locations	Pipes. Boilers. Pressure vessels. Calorifiers.
Types of asbestos material	All types of asbestos used. Crocidolite used until 1970, amosite phased out in the 1970s. Asbestos content varies from 6%–85%.
Potential for fibre release	Depends on the type of lagging and surface treatment. Often encapsulated with calico and painted.
Inspection	Inspect pipes, boilers, and heat exchangers, paying attention to bends, valves, and repairs. Examine different layers and functional items such as valves.
Sampling	Take one sample per 3m run of pipe, more for long runs. Fully wet the area before sampling. Use core samplers to penetrate the full depth of insulation.

Table 12: Thermal insulation

ASBESTOS BOARDS

Uses	General heat insulation and fire protection.
Locations	Service ducts. Firebreaks. Infill panels. Partitions. Ceilings. Roof underlay. Wall linings. Soffits. External canopies. Porch linings.
Types of asbestos material	Crocidolite used until 1965, amosite until 1980. Usually 15%–25% amosite or a mixture of amosite and chrysotile in calcium silicate.
Potential for fibre release	High asbestos content and low density, easy to break. Surface subject to abrasion and wear.
Inspection	Inspect walls, partitions, and ceilings for variations and replacements. Look for asbestos rope fire seals in joints between partition panels.
Sampling	Take a small sample from a discrete location at the corner or edge of the panel. One sample per room or every 25m² is usually adequate.

Table 13: Asbestos boards

INSULATING BOARD

Uses	Fire protection. Thermal and acoustic insulation. Resistance to moisture movement. General building board.
Locations	Service ducts. Firebreaks.

	Infill panels. Partitions. Ceilings. Roof underlay. Wall linings. Soffits. External canopies. Porch linings. Internal partition walls. Suspended ceiling tiles.
Types of asbestos material	Crocidolite used until 1965, amosite until 1980. Usually 15%–25% amosite or a mixture of amosite and chrysotile in calcium silicate.
Potential for fibre release	Readily broken, giving significant fibre release. Surface release possible by abrasion, usually painted or plastered.
Inspection	Walls may not be uniform and may have undergone partial replacement. Examine all sections of partition walls unless documentary evidence confirms no asbestos. Joints between partition panels may contain asbestos rope fire seals. Inspect ceilings and walls thoroughly for variation and differences. Inspect hidden side of boards or tiles for trade names or colour differences indicating variations.
Sampling	Take a small sample from a discrete location at the corner or edge of the panel. One sample per room or every 25m² is usually adequate.

Table 14: Insulating board

FURTHER AREAS

Older industrial machinery and plant

Older equipment may contain asbestos due to its age or performance requirements and often requires maintenance. Surveyors should inspect accessible parts, such as heat and electrical insulation, seals, and friction components (for example, belts, clutches, brakes, and

bearings). They should avoid sampling or working on machinery unless qualified. Seek help from engineers or maintenance personnel if needed. If sampling is not done, the equipment should be presumed to contain asbestos unless proven otherwise.

Older consumer electrical products

Older consumer and industrial electrical products, such as hairdryers, irons, and dishwashers, may contain ACMs.

Equipment requiring significant heat insulation, like simmering mats, iron stands, fire blankets, heaters, and cooker door seals, should be inspected during surveys.

5.7 Additional areas to consider during refurbishment/demolition surveys

Many buildings have unique designs, layouts, and materials, and may have undergone numerous refurbishments and modifications over the years. These changes can lead to concealed and hidden areas such as false floors, ceilings, walls, and surface treatments that are not apparent in original or updated building drawings.

Access will be required into the fabric of the building and various items, such as brickwork, timber, boards, and panels, may have to be removed or broken into. In these circumstances, it may be helpful to seek professional help on such activities/work from a joiner, builder, maintenance worker, engineer or other appropriate person. Where concrete is to be sampled or brickwork removed, advice may have to be sought from a competent person, such as a structural engineer.

The areas listed in Table 15 below are of common and/or frequently found locations which should be examined and how best to examine. As this list is not exhaustive or exclusive, each type of structure must be examined on its own merits.

Area to be Examined	**Details and procedure**
'No access' areas from previous survey	– All previous 'no access' areas must be accessed using suitable access equipment and procedures.
Suspended ceilings	– Suspended ceilings (such as Asbestos Insulating Board tiles screwed to wooden battens) must be entered using an enclosure and airlock system constructed by a licensed asbestos-removal contractor. – Voids may contain asbestos debris, sprayed coatings, older ceilings, pipe insulation, and damaged fire breaks.
Partition walls (Plasterboard/AIB sandwich)	– Partition walls may have undergone partial replacement and must be examined thoroughly. – Documentary evidence is required to confirm no ACMs were used during construction.

	– If no such evidence exists, inspect all sections visually and physically. – Joints may contain asbestos rope fire seals, which may only be seen after removing the outer trim (such as aluminium).
Cavity walls	– Inspect cavity walls with an endoscope for asbestos materials or debris (such as AIB). – Entry points should be agreed with a competent person (such as a builder, joiner, or structural engineer). – Examine walls where insulated heating pipes pass through brick or breeze block walls for insulation or residues.
Apertures (such as doors and windows)	– Examine cavity closers (for example asbestos cement) around air bricks, windows, and apertures. – Window frames may contain AIB packers or spacers and asbestos rope seals as fire breaks. – Inspect door frames, especially fire doors, for AIB packers. Architraves need to be removed to inspect thoroughly.
Floors	– Carpets and tiles must be lifted, as floor tile adhesives often contained asbestos. – Inspect floor ducts/trenches for shuttering, services, pipe insulation, fire stops, and debris. Check duct covers for asbestos cement or AIB shuttering. – Floor boards must be lifted to inspect voids for loose asbestos, AIB debris, fire protection, packers, and cables. Make sure joist ends are inspected. – Slab floors may contain AIB/AC expansion joints or shuttering, requiring core sampling. – AC sleeves for cables/pipes may be visible at the surface.
Ducts	– Inspect service risers (including fire stops), lift shafts (including pits), and ventilation ducts. – Ventilation systems may contain asbestos attenuators or debris from ACMs.
Cladding	– Inspect columns or stanchions for concealed fire protection (such as AIB or sprayed coatings). – External cladding (such as tiles/slates) may hide bituminous ACM moisture membranes or AIB panels.

Debris in Boiler Room Areas	– Inspect where pipes pass through walls, sumps, and gullies. – Check behind and underneath tanks, walls, and floors for insulation debris (may be painted over). – Investigate plant and electrical equipment (must be in a certified safe condition). – Cast iron Sectional boilers containing asbestos need to be disassembled under controlled conditions.
Debris Under Non-Asbestos Reinsulation	– If asbestos insulation was stripped and replaced, remove portions of new insulation to check for asbestos debris on pipes, bolt-heads, and flanges. – Frequent debris occurrence may require treating entire pipes as ACMs.
Roof Voids	– Inspect areas under Rockwool or vermiculite insulation for ACMs (e.g., AIB fire breaks). – Loose asbestos is rarely found as loft insulation but may occur near old asbestos factories or dockyards.
Previously Demolished Areas	– Use a desk-top study to identify structures (including underground) that may have released asbestos into the soil. – Visually inspect the site for demolition debris. – Treat external areas as potentially contaminated sites, excavation (e.g., trenches, pits) may be necessary. – Desk-top studies should include historical plans (e.g., from archives).
Overspray Debris from Sprayed Coatings	– Inspect areas where sprayed asbestos coating is present, or previously existed, for debris and overspray.
Damp-Proof Course (DPC)	– ACM damp-proof courses should have been detected during previous surveys. – Normally, removal of DPC is unnecessary during demolition.

Table 15: Other examples of where asbestos may be found

5.8 Further knowledge for surveyors

As outlined in Section 2, surveyors are expected to have knowledge on a range of building types and material.

Surveyors should also have knowledge of the use of ACMs in fire protection systems and the effect of building services on the distribution and location of ACMs. For example:

- fire protection in steel-framed buildings around columns and beams
- fire protection around electrical and heating systems
- fire protection separating multi-occupancy buildings
- fire protection in lift shafts and risers
- building services in voids, ducts, cavities, and risers.

Surveyors should be aware of the range of building components and structures which contain asbestos. For example:

- barge boards
- chimney cowls
- ducts
- eaves
- fascia
- fire dampers
- flue terminals and risers
- gables
- plenums
- soffits
- stud partitions
- sandwich partitions.

Knowledge of building construction techniques and design is relevant for refurbishment/demolition surveys, to understand where (and why) ACMs may have been used in a structure.

Surveyors should recognise that ACMs were often used informally in buildings. Examples include AIB panels and offcuts used for shuttering, column packers, window and door spacers, and cavity closers.

Other ACMs may have caused contamination in buildings from the way they were applied, poor work practices or later disturbance, producing for example:

- overspray and spread of dust from sprayed coatings
- residues from thermal insulation on brickwork and in ducts
- debris from AIB fire breaks in ceiling voids and in cavity walls.

These ACMs are often hidden and unrecorded in building plans.

5.9 Managing risk while doing a refurbishment/demolition survey and taking samples

Controls should be put in place to prevent the spread of debris, which may contain asbestos. Refurbishment/demolition surveys should only be conducted in unoccupied areas to minimise

risks to the public or workers on the premises. Ideally, the building should not be in service, and all furnishings should be removed.

For minor refurbishment, this would only apply to the room involved or even part of the room where the work is small and the room large. In these situations, there should be effective isolation of the survey area (for example full floor-to-ceiling partition), and furnishings should be removed as far as possible or protected using sheeting.

The 'surveyed' area must be shown to be fit for reoccupation before people move back in. This will require a thorough visual inspection and, if appropriate (for example where there has been significant destruction), reassurance air sampling.

Under no circumstances should staff remain in rooms or areas of buildings when intrusive sampling is performed.

A demolition survey may be conducted while a building is still in use. For instance, in schools or colleges, these surveys might take place during holidays, with actual work delayed until a later closure. Demolition surveys can also assess a building's economic viability if there is asbestos and how this will change any part of the building. In these situations, the survey will need extremely careful managing with equipment/furnishings being removed or protected (as necessary), while the survey progresses through the building. Surveyed areas should be isolated, and reoccupation only allowed once the area is confirmed safe.

5.10 Bulk sampling strategy

The most convenient and efficient approach is to take samples during the survey. However, in cases involving large premises or inaccessible areas, sampling may be carried out later when the area becomes available.

Carry out a thorough visual inspection of each room and area to identify materials and locations to take samples from.

During the inspection, carefully assess the material for differences and variations in appearance.

Take samples of 3-5cm^2 surface area and through the entire depth of the assumed ACM. This includes any backing paper. By doing this, you should collect one or more samples that represent the whole material.

Do not take samples where there is an electrical hazard or if the sampling will/could damage the critical integrity of a roof, gutter, or pipe.

An equipment checklist for sampling is given in Appendix 3.

The sampling strategy will be based on several factors as listed in Table 16:

Factor	**Details**
Basis for sampling strategy	The sampling strategy will consider factors such as: – Size and number of premises/rooms. – Extent, types, and variation in materials present.

Material inspection method	– Visual inspection and checking (such as tapping and prodding) of each material will determine sample numbers and locations.
Homogeneous manufactured products	– Assumed to have uniform asbestos distribution throughout the material. – Typically, one or two samples will suffice for the following materials: o boards o sheets o cement products o textiles o ropes o friction products o plastics o vinyl o mastics o sealant o bitumen roofing felt o gaskets.
Non-homogeneous materials	– Insulation materials are generally less homogeneous because they were applied on-site, with composition varying based on supply availability. – Repairs and patching may further increase variability, requiring a higher number of samples. – Repaired and replaced materials should always be sampled in addition to original items.
Contamination and debris	– Substantial contamination and debris may have been produced during installation, for example, overspray, insulation debris, or off-cuts (such as AIB off-cuts). – Debris may have been swept into voids, lift shafts, and other risers. – Asbestos debris and visible contamination should also be sampled.
Single sample for homogeneous material	– A single sample may often suffice to confirm asbestos suspicion in homogeneous material.

Non-homogeneous materials (some presumed non-asbestos materials)	– For non-homogeneous materials and certain presumed non-asbestos materials, additional sampling is often required. – This reduces the risk of false negatives and avoids incorrect conclusions.
Recommended sample numbers	– Suggested sample numbers are provided for each room or defined area. – These recommendations may be adapted depending on site conditions and prevailing circumstances.

Table 16: Bulk sampling strategy considerations

In addition, substantial contamination and debris may have been produced at the time of installation (for example, overspray, other insulation debris, or AIB off-cuts). A common practice is to drop off-cuts into voids and sweep debris into lift shafts and other risers. Any asbestos debris and other suspect visible contamination should be sampled.

NUMBER OF SAMPLES TAKEN

The following sampling guidelines are suggested for each room or defined area, but may be adapted depending on the site and the circumstances:

Material Type	**Details**	**Sampling Guidelines**
Spray coatings, encapsulated sprays, and bulk materials	– Usually, but not always, homogeneous (even under encapsulation). – Different mixtures may have been used, and material may have been removed, repaired, or patched at various times. – Variability can occur within large installations.	– If the material appears uniform and consistent, take two samples (e.g., at either end of the sprayed surface). – For large installations (>100m²), take one sample every 25–30m². – Sample all patches of repairs or alterations.
Pipe/Thermal Insulation	– Composition is often highly variable, especially where there are changes in colour, size, texture, or visible repairs/modifications. – Asbestos may have been removed in some areas	– Take one sample per 3m run of pipe, focusing on different layers and functional items (e.g., valves). – For long runs (>20m), take one sample per 6m.

	but retained around elbows, taps, and valves. – Demonstrating pipes are asbestos-free can be difficult.	– All pipes should be sampled even if they appear similar. – Sample all repairs or alterations.
Insulating Board (AIB)	– Typically homogeneous, but repairs, replacement boards, or tiles may exist. – Boards/tiles may be painted. – Tiles may have been replaced as part of improvement programs. – Variations can exist based on colour, pattern, design, size, or hidden trade names. – Some boards/tiles may have asbestos paper.	– Take one sample per room or every 25m². – Inspect ceilings/walls for variations. – If there are multiple tile types, take representative samples of each. – For large installations completed at the same time, fewer samples may suffice. – Check hidden sides for trade names.
Asbestos Cement Materials	– Homogeneous material commonly found as corrugated and flat sheets or moulded products. – Used in low-cost housing, schools, fireproofing, and office partitions. – Exterior cement sheets in older buildings are often presumed to contain asbestos. – Asbestos cement sheets resemble non-asbestos fibre cement.	– Limited sampling is usually enough to confirm asbestos presence. – Take one sample per type of sheet or product (e.g., gutters, downpipes). – Sampling may be restricted due to risks from falls (e.g., asbestos cement roofs). – Fibre-cement replacements have the 'NT' code, while asbestos sheets may have 'AT'.
Other Materials (Debris and Contamination)	– For distinct types of materials, one or two samples are usually sufficient. – Larger areas may require more sampling for accuracy.	– Take one or two samples from each separate source. – If the material covers several square metres, two samples are recommended.

Table 17: Sampling guidelines

5.11 Bulk sampling procedures

Before sampling begins a comprehensive risk assessment of the survey site must be done. Safe procedures identified in the risk assessment must be adhered to, ensuring minimal disruption to the commissioning PCBU's operations and maximum protection for the health and safety of everyone at risk.

All sampling personnel must wear adequate personal protective equipment (PPE). See Protective clothing and equipment for working with or near asbestos | WorkSafe for more information.

GENERAL PRECAUTIONS DURING SAMPLING

Unoccupied Areas:

- Sampling should be carried out in unoccupied areas whenever possible.
- For normally occupied areas, sampling should occur during periods of minimal occupation.

Dust Control and Safety Measures:

- The nature of the area, likelihood of dust release, and potential for future work dictate the precautions needed to prevent asbestos spread.
- Entry to sampling areas should be restricted, with clear warnings posted. Example notice: *"Asbestos sampling in progress: Keep out."*
- Surfaces where asbestos debris might fall should be protected using impervious material such as polythene, which can be easily cleaned using wet-wiping or a Class H vacuum cleaner.

CONTROL OF AIRBORNE EMISSIONS

Airborne asbestos emissions should be controlled by pre-wetting the material to be sampled using water and/or a suitable wetting agent.

Techniques include:

- Spraying surfaces (such as boards and sheets).
- Injecting material (such as lagging and sprays).
- Shadow vacuuming (if wetting is incomplete or unsafe, such as where material might drip into electrical installations)
    - This involves holding the suction inlet close to the area where dust is generated using a Class H vacuum cleaner (See Section 10).
    - Examples of materials requiring shadow vacuuming include AC sheets, AIB boards, ropes, and gaskets.

SAMPLE COLLECTION AND SEALING

Each sample must be:

- Individually sealed in its own container or a sealable polythene bag.

- Placed in a second sealed container or bag for added security.
- The sample area must be left clean, with no evidence of debris, and all sampling points sealed to prevent fibre release.
- Methods for resealing sampling points include tapes and fillers.

SAMPLE AND SITE LABELLING

Each collected sample must be labelled with a unique identifier. The identifier must also be recorded in the survey documentation, records, and site plans to ensure traceability of the sample origin.

Sampling positions at the site may also be labelled with the same identifier for clarity.

Visual tools such as marked-up plans or photographic records are effective for documenting:

- the location of the sample
- the extent of sampling and the ACMs (asbestos-containing materials) identified.

5.12 Bulk sampling techniques

Table 18 below lists common material types or processes and their recommended sampling procedures.

Material Type/process	**Sampling Procedure**
Spray coatings and bulk materials	- If encapsulated, pre-inject liquid around the sampling area. - Use a sharp knife or scalpel to lift a small flap and retrieve a sample. - If not encapsulated, wetting (surface spraying and injection) and shadow vacuuming may be required to minimize airborne emissions. - As spray coatings are homogeneous, a surface sample usually suffices.
Pipe insulation	- Fully wet the area using injection techniques: Use a core sampler to penetrate the full depth of the pipe insulation: 1. Push a wet wipe inside the borer to form a plug. 2. Wrap a wet wipe around the outside of the borer. 3. Take the sample and use the inner wipe to seal the surface where the borer enters.

	4. Clean the borer using the outer wet wipe as it is withdrawn. - Remove the sample using a plunger and place it, along with the contaminated wipes, into a polythene bag. - Seal the sampling hole (e.g., with tape or inert filler). - Clean the sampling equipment thoroughly between samples. - Alternative: use core sampling tubes, cap both ends, and place in a bag for transport to the lab. Make sure new insulation doesn't hide earlier asbestos debris.
Insulating board	- Inspect for existing damage to collect samples more easily. - If no damage, take a small sample from a discrete location (e.g., corner or edge) using a sharp knife or chisel blade. - Make sure any paper layers on one or both sides are included.
Asbestos cement	- Usually identifiable through visual inspection. - If sampling is necessary (e.g., to distinguish between AC and AIB), look for damaged portions. - Remove a small 5cm² sample from an edge or corner using pliers or a screwdriver blade. - Sampling from roofs requires special safety precautions to prevent falls. - If analysis is inconclusive, conduct a water absorption test: o AC absorbs <30% water. - If new sheets are detected, make sure no asbestos debris remains from previous installations.
Gaskets, rope, seals, paper, felts, textiles	- Use a sharp knife to cut a representative portion of the material.
Floor and wall Coverings	- Cut samples out using a sharp knife. - Take one sample for each type or colour of tiles present. - Clean the area after sampling.

	- Fibre release is minimal unless asbestos is present in a lining or backing material.
Textured coatings	- Use a screwdriver or narrow scraper to carefully scrape the coating. - Direct the scraped material into a sample container held below the sampling point.
Air sampling	- Personal Air Sampling: Measures exposure for survey and sampling personnel. - Background Air Sampling: Conducted in areas where asbestos sensitivity exists, but pre-existing contamination must be considered. - Reassurance Air Sampling: Required for intrusive sampling (e.g., refurbishment/demolition surveys) when areas/buildings are to be reoccupied before work begins. The procedures for reassurance air sampling as described in the [placeholder for Assessors GPG].

Table 18: Common materials and their recommended sampling procedures

5.13 Sample analysis and reporting

The lab report must include:

- Clear confirmation of whether asbestos is present.
- Types of asbestos identified.
- Attached laboratory results.

Record materials tested as 'asbestos not detected' if asbestos is absent. This prevents future ambiguity or re-testing.

Reports or abstracts must be formatted to support the creation of a register or log of ACMs.

Conduct analysis in accredited laboratories.

The Asbestos Regulations indicate that the laboratory may be accredited under another accreditation regime recognised by WorkSafe, which is International Accreditation New Zealand (IANZ) or National Association of Testing Authorities (NATA).

See Section 8 for more detailed information on survey reports.

Note: ISO 17025 accreditations for sampling only covers the techniques to collect the samples and records of where they were taken. It does not cover the entire survey process.

6.0 Material and priority assessment

Material and priority assessments are an important tool for PCBUs to use when prioritising actions as part of managing asbestos.

6.1 Material assessment

A material assessment identifies the materials that will most readily release airborne fibres if disturbed. A material assessment allows the PCBU with management or control of a workplace to assess the potential for fibre release for each ACM, and then go on to prioritise the need for action as part of the plan for managing asbestos.

See Managing asbestos in your building or workplace – for PCBUs | WorkSafe for more information on creating asbestos management plans for PCBUs.

The material assessment should be carried out as part of the management survey using a standardised material assessment equation. It is based on an additive algorithm. The tool can be used to numerically assess the potential for fibre release. The tool is not designed to calculate absolute differences in potency or fibre release/hazard potential between ACMs. It does, however, let you rank ACMs in a numerical order.

The material assessment focuses on identifying "high-hazard" materials—those most likely to release airborne fibres if disturbed. However, a high score in the material assessment does not automatically indicate the need for immediate remedial action.

The priority for action must be determined through a risk assessment known as a *priority assessment*, which considers various additional factors, including:

- **Location of the material**: Where the material is situated.
- **Extent of the material**: The size or spread of the material.
- **Purpose of the location**: The functions or activities conducted in the area.
- **Occupancy of the area**: The number and frequency of people present in the space.
- **Activities in the area**: The nature of work or processes carried out in the vicinity.
- **Likelihood of maintenance**: The probability and frequency of maintenance activities in the area.

See Section 6.4 for more information on priority assessment

6.2 How to carry out a material assessment

In a material assessment process, the main factors influencing fibre release are given a score that can be added together to obtain a material assessment rating.

The four main parameters that determine the amount of fibre released from an ACM, when subject to disturbance, are:

- product type
- extent of damage or deterioration
- surface treatment
- asbestos type.

Each parameter is scored between 1 and 3, where a score of:

- 1 indicates a low potential for fibre release
- 2 indicates a medium potential for fibre release, and
- 3 indicates a high potential for fibre release.

Any two of the parameters can also be given a score of zero (equivalent to a very low potential for fibre release).

The values assigned to each parameter are added together to give a total score of between 2 and 12 (see Table 19 for more information).

Presumed or strongly presumed ACMs are scored as crocidolite (score = 3) unless there is strong evidence to show otherwise.

Non-asbestos materials are not scored.

Score	**Potential to release asbestos fibres**
4 or less	Very low potential to release fibres if disturbed.
5 or 6	Low potential to release fibres if disturbed.
7, 8, or 9	Medium potential to release fibres if disturbed.
10 or more	High potential to release fibres if disturbed.

Table 19: Material assessment scoring system

6.3 Material assessment algorithm

Table 20 shows the scores for asbestos materials commonly found in buildings or workplaces.

Sample variable	Score	Examples
Product type	1	Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, and asbestos cement).
	2	Asbestos insulating board, millboards, other low-density insulation boards, asbestos textiles, gaskets, ropes and woven textiles, asbestos paper, and felt.
	3	Thermal insulation (for example, pipe and boiler lagging), sprayed asbestos, loose asbestos, asbestos mattresses, and packing.

Extent of damage or deterioration	0	Good condition: no visible damage.
	1	Low damage: a few scratches or surface marks, broken edges on boards or tiles.
	2	Medium damage: significant breakage of materials or several small areas where material has been damaged revealing loose asbestos fibres.
	3	High damage or delamination of materials, sprays, and thermal insulation. Visible asbestos debris.
Surface treatment	0	Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles.
	1	Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets.
	2	Unsealed asbestos insulating board, or encapsulated lagging and sprays.
	3	Unsealed lagging and sprays.
Asbestos type	1	Chrysotile.
	2	Amphibole asbestos excluding crocidolite.
	3	Crocidolite.

Table 20: Material assessment algorithm

6.4. Priority assessment

The material assessment identifies the materials that will most readily release airborne fibres if disturbed. However, the highest scoring materials in the material assessment are not necessarily the priority for remedial action.

Priority should be determined by carrying out a risk assessment (priority assessment) which considers factors listed in Section 6.1.

The priority assessment can only be carried out with detailed knowledge of these factors.

It is the duty of the PCBU that owns or manages the building or workplace to carry out a priority assessment, however you can help them to complete this.

A priority assessment is normally not needed for refurbishment/demolition surveys. But where the length of time between the survey and the refurbishment or demolition is significant (for example more than three months) then a priority assessment should be conducted and interim management arrangements put in place.

For more information on the role of PCBUs who own or manage buildings or workplaces see: Managing asbestos in your building or workplace – for PCBUs | WorkSafe

Priority assessment algorithm can be viewed in the table below:

Assessment Factor	Score	Examples of Score Variables
Normal Occupant Activity		
Type of activity	0	Rare disturbance activity (e.g., little used store room).
	1	Low disturbance activities (e.g., office-type activity).
	2	Periodic disturbance (e.g., industrial or vehicular activity which may contact ACMs).
	3	High levels of disturbance (e.g., fire door with asbestos insulating board sheet in constant use).
Secondary activities for area	As above	As above.
Likelihood of Disturbance		
Main type of activity in area	0	Rare disturbance activity (e.g., little used store room)
	1	Low disturbance activities (e.g., office-type activity)
	2	Periodic disturbance (e.g., industrial or vehicular activity which may contact ACMs)
	3	High levels of disturbance (e.g., fire door with asbestos insulating board sheet in constant use)
Secondary activities for area	As above	As above
Likelihood of Disturbance		
Location	0	Outdoors
	1	Large rooms or well-ventilated areas
	2	Rooms up to 100m²
	3	Confined spaces
Accessibility	0	Usually inaccessible or unlikely to be disturbed
	1	Occasionally likely to be disturbed

	2	Easily disturbed
Extent/Amount	0	Routinely disturbed
	1	Small amounts or items (e.g., strings, gaskets)
	2	10m² to ≤50m² or 10m to ≤50m pipe run
	3	>50m² or >50m pipe run
Human Exposure Potential		
Number of occupants	0	None
	1	1 to 3
	2	4 to 10
	3	>10
Frequency of use of area	0	Infrequent
	1	Monthly
	2	Weekly
	3	Daily
Average time area is in use	0	<1 hour
	1	>1 to ≤3 hours
	2	>3 to ≤6 hours
	3	>6 hours
Maintenance Activity		
Type of maintenance activity	0	Minor disturbance (e.g., possibility of contact when gaining access)
	1	Low disturbance (e.g., changing light bulbs in asbestos insulating board ceiling)
	2	Medium disturbance (e.g., lifting one or two asbestos insulating board ceiling tiles to replace a valve)
	3	High levels of disturbance (e.g., removing a number of asbestos insulating board ceiling tiles to replace a valve)
Frequency of maintenance activity	0	ACM unlikely to be disturbed for maintenance
	1	1 per year

	2	>1 per year
	3	>1 per month

Table 21: Priority assessment algorithm

6.5 Combined material and priority assessment

Combining the material and priority assessments helps to evaluate and manage asbestos materials by assessing both the potential for fibre release and the priority for remedial action.

This method helps to make sure that an effective plan is developed for managing asbestos in the workplace. PCBUs must determine individual action plans based on combined material and priority assessment, reflective of their specific risk profile (for example schools or healthcare settings).

The combined material and priority assessment results should be used to establish the priority for those ACMs needing remedial action, and the type of action that will be taken. There are various remedial options available. Where removal is not reasonably practicable, the ACMs can be protected or enclosed, sealed or encapsulated, or repaired.

7.0 Making presumptions about the presence or absence of asbestos material in a management survey

Presuming the presence or absence of asbestos can only be done in certain situations.

7.1 Presuming that asbestos is present

Presuming the presence or absence of asbestos can only be done in certain situations and only for management surveys. For refurbishment/demolition surveys, all asbestos must be confirmed through sampling and testing prior to demolition or refurbishment.

Management surveys do allow for the presence of asbestos to be presumed in certain situations. In some circumstances, it may be appropriate to presume that a material is asbestos instead of confirming the presence of asbestos by sampling.

Surveyors should always attempt to positively identify ACMs. Assuming the presence of asbestos should not be a default practice. Surveyors should only make such assumptions if they are suitably experienced and familiar with various asbestos products.

Examples of situations where it may be appropriate to presume the presence of asbestos includes:

- if ACM is confirmed in one area of the building and there is a second area with similar materials used in the same way, it may be acceptable to presume that the material in the second area is also ACM
- if there is an area that cannot be accessed for sampling (for example the roof of a building), but building records and a visual inspection indicate it is ACM, it can be recorded as presumed to be ACM
- if there is an area or product that cannot be accessed for sampling (for example water heater insulation), but it is known that asbestos was commonly used in that product at the time it was installed, it can be recorded as presumed to contain asbestos
- if there is an area or product that would require significant disturbance to access and sample (for example lift breaks), but it is known that asbestos was commonly used in that product at the time it was installed, it can be recorded as presumed to contain asbestos.

The surveyor should assume that any area that is not accessed or inspected contains asbestos unless there is strong evidence it does not (see Section 7.3 below).

Presuming the presence of asbestos should only be done when the commissioning PCBU has agreed or where access genuinely cannot be obtained**.** Commissioning PCBUs should be aware of the disadvantages as well as advantages of presuming the presence of asbestos in their management surveys, as well as risks of exposure when taking samples and over-sampling.

Table 22 below, may be helpful when discussing with the commissioning PCBUs the advantages and disadvantages of presuming the presence of asbestos in their management survey.

Advantages	**Disadvantages**
- Reduces the amount of disturbance required. - Can allow a survey to continue/be completed despite there being areas inaccessible for sampling. - Allows for sampling and analysis to be deferred until a later time (for example before any work is carried out and asbestos refurbishment/demolition survey is undertaken). - Allows for a similar looking building material to one that has been confirmed as ACM to be presumed to be ACM elsewhere at the site - reducing sampling time and costs.	- Can lead to a less rigorous overall assessment. - Can leave grey areas for the building owner that may have to be resurveyed later – potentially creating additional costs and delays to future routine maintenance, while areas are sampled/tested. - Non-ACM that is incorrectly presumed to be ACM could be managed as if it is ACM causing unnecessary expense for the building owner or manager. For example, unnecessary encapsulation may be done. - Some non-ACM waste may be disposed of as asbestos waste (causing unnecessary costs).

Table 22: The advantages and disadvantages of presuming the presence of asbestos

7.2 Presuming that asbestos is not present

Surveyors should take reasonably practicable steps to make sure that asbestos material is not present before recording it as such. Surveyors cannot presume that a material does not contain asbestos unless there is a strong reason to believe so.

Reasons to presume that a material does not contain asbestos include:

- non-asbestos substitute materials are specified in the original architect's or quantity surveyor's plans or in subsequent refurbishments
- the material is very unlikely to contain asbestos or to have had asbestos added (for example, wood, glass, metal, or stone).

Avoiding making false assumptions

Asbestos material may be hidden, even if a building or workplace has detailed records of previous work.

Original building specifications may not have included asbestos, but workers may have used asbestos material for convenience.

For example:

- asbestos-containing material off-cuts may have been used as filler or packing in places and their use not recorded
- asbestos containing paint may have been applied to non-asbestos roofing material at a later date (so not recorded in the original building records).

7.3 Areas that have previously been inspected

Surveyors should not presume an area is free of asbestos just because a removal has occurred previously.

Poor asbestos removal practices can leave behind asbestos-containing debris (for example, asbestos-contaminated dust).

Always reinspect areas where asbestos has been removed previously. This helps to make sure that any leftover asbestos material is identified.

08 Survey report

Survey reports should be clear, and easy to understand and interpret by the intended recipient.

8.1 What is an asbestos survey report?

The survey report is a record of the information collected at a particular time on the presence and condition of ACMs. It will contain information and data that will be used by other PCBUs to undertake an asbestos risk assessment and prepare an asbestos management or removal plan. Errors in the report could lead to incorrect conclusions and inappropriate decisions.

The survey report should contain a summary of the results in a format that can be used as the basis for an updatable register of ACMs (for example the asbestos register) and a diagram (for example building drawings) indicating the locations of ACMs. This register will need to be readily accessible to all involved in initiating maintenance or other work on the fabric of the building.

See Managing asbestos in your building or workplace – for PCBUs | WorkSafe for more information.

The report should be completed in a written format, supplied either as a hard copy or as an electronic document, or both. It should be presented in a way that is easily understandable by the commissioning PCBU. In particular, the information in the survey report should be easy for the commissioning PCBU to extract and to use to prepare an asbestos register, for example by presenting the results in a manner or format that can be directly lifted or employed to form the asbestos register. The report should contain the results of sample analyses.

8.2 What should an asbestos survey report include?

Asbestos survey reports should contain the following sections:

- executive summary
- introduction covering the scope of work
- general site and survey information
- survey results (including material assessment results)
- bulk analysis results, and
- conclusions and actions.

The design, layout, content, and size of the report are very important. Large reports can be unwieldy and even intimidating. Commissioning PCBUs are generally most interested in the summary, results, conclusions and actions. In hard-copy documents, it can be useful to separate the report into different parts, with the bulk analysis results and the individual survey results, particularly if displayed with accompanying photographs, contained in separate detachable appendices.

8.3 Asbestos survey report: Executive summary section

The executive summary should provide an overview of the survey, highlighting the scope, type, and extent of the work conducted.

This section should summarise the most important findings and recommended actions.

Key points in the executive summary should include:

- locations with identified or presumed ACMs
- areas that were not accessed (specific to the survey – no generic information or disclaimers).
- ACMs with high material assessment scores
- clear and comprehensible notes on any conclusions, actions and priorities.

8.4 Asbestos survey report: Introduction section

The introduction should explain the scope of the work and the purpose, aims and objectives of the survey. It should also contain a description of the nature and age of the building(s) (or other structures) plus construction type.

8.5 Asbestos survey report: General site and survey information section

The general site and survey information section provides detailed information about the site and the survey that was carried out.

Key points in the general site and survey information section should include:

- name and address of the organisation
- names of the surveyors
- name and address of the person who commissioned the survey
- name and address of the premises surveyed
- date of the report
- date of the survey
- description of the areas included and excluded in the survey
- survey method used and type of survey undertaken
- variations or deviations from the method
- agreed exclusions and inaccessible areas (specific to the survey)
- the type of survey undertaken (management or refurbishment/demolition) and, if more than one type is used, where they apply within the premises.

8.6 Asbestos survey report: Survey results section

The survey results section is the main part of the report. It should present the findings of the survey in a clear and organised manner.

This section should include a summary table and marked-up plans showing the location of any confirmed and presumed asbestos materials (see Table 23 and Figure 3).

Key points in the survey results section should include:

- location of the ACM (building identifier, floor number or level, room identifier, and position)
- extent of the ACM (area, length, thickness, and volume)
- product type
- level of identification (presumed, strongly presumed, or identified)
- asbestos type (for example chrysotile, amosite, crocidolite).

For management surveys (and refurbishment/demolition surveys where work is not imminent), the following additional information should be included:

- accessibility of ACM
- amount of damage or deterioration
- surface treatment (if any)
- material assessment score or category
- any required actions from the material assessment

Asbestos survey results should be clear and easy to understand

Remember that the survey results will be used by the PCBU that owns or manages the building or workplace that was surveyed. They will not necessarily have an in-depth understanding of asbestos.

Make sure the survey results are easy to understand by summarising results in table format (see Table 23).

Include marked-up building plans (Figure 3).

Present information on an individual room basis.

Record any non-asbestos materials in a separate table.

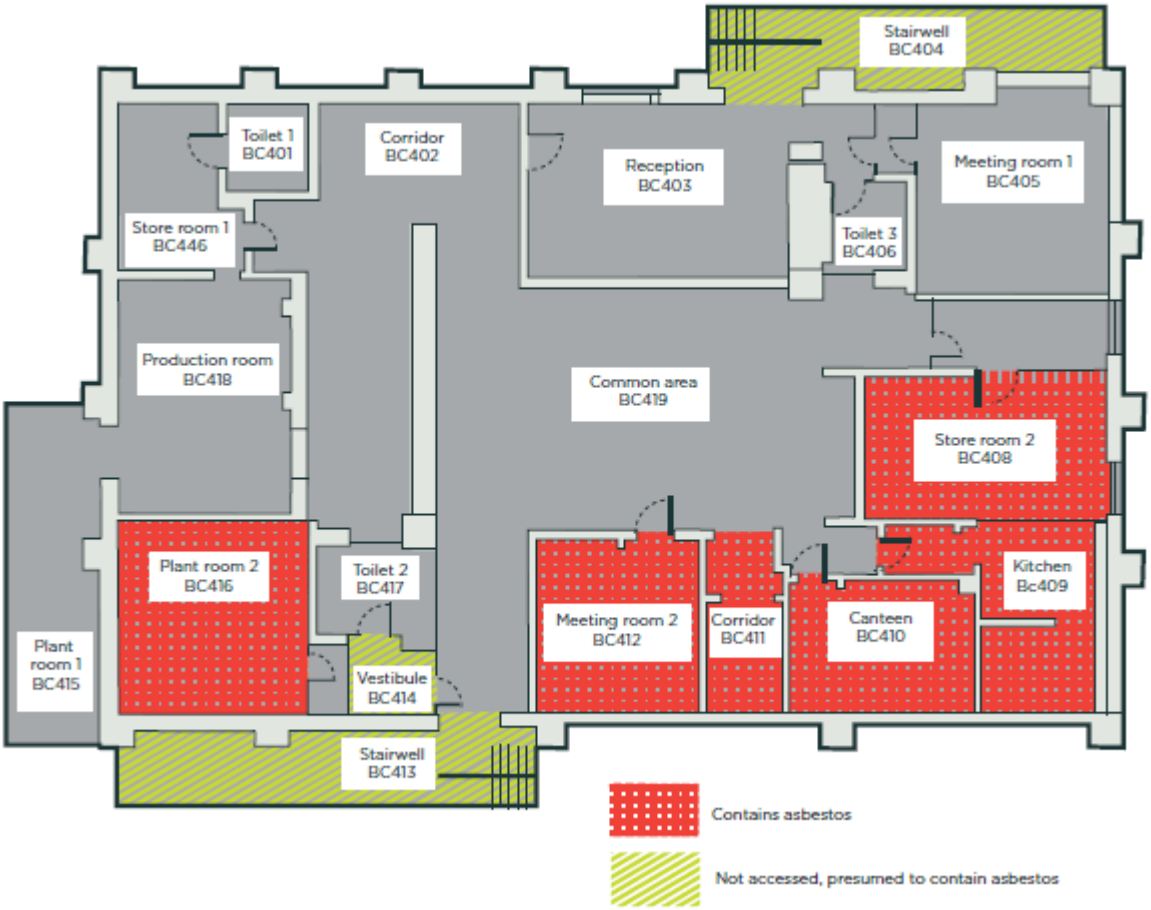


Figure 3: Example of asbestos building plan

Building identifier	Floor level	Room identifier	Location	Extent	Product type	Identification	Sample number	Asbestos type	Accessibility	Condition	Surface treatment	Material assessment score	Priority score
Building A	Ground floor	Room 101	Whole ceiling	120m^2	Asbestos insulation board	Sampled	1	Amosite	Medium	Good	Painted (one face only)	5	12
Building A	Ground floor	Storeroom 142	Ceiling	5m^2	Asbestos ceiling tiles	Sampled	2	Amosite	Medium	Good	Painted (one face only)	5	13
Building B	First floor	Plant room 2, B613	Lift motor	2items	Brake shoes	Presumed	3	Chrysotile	Difficult	Medium	Unsealed	4	10

Table 23: Example of asbestos survey results

8.7 Asbestos survey report: Bulk analysis results

The survey report should also include the certificate of analysis showing the results of the samples taken. This data can be listed in an appendix with the following information:

- the name and address of the laboratory carrying out the bulk identification
- a reference to the method used
- the laboratory's current accreditation for bulk asbestos analysis/sampling and accreditation number
- a table or appendix summarising the results of the bulk analysis, including asbestos found or not found and types identified, by sample identifier
- dates the bulk analysis was carried out and reported by the laboratory
- the names and signatures of the analyst and any countersigning person.

USE OF PHOTOGRAPHS

Photographs can be very informative to the commissioning PCBU and should be included in the report. Photographs can show the material sampled, its condition and location and its surrounding environment. Photographs can also be used to identify the actual sampling points.

Photographs provide a context for the sample and can assist the commissioning PCBU in managing asbestos for example by providing a benchmark for the comparison of condition over time.

8.8 Asbestos survey report: Conclusions and actions

The conclusions and actions section should provide a summary of the findings of the asbestos survey.

It should also outline the recommended steps to manage any identified asbestos material. This should be based on the material and priority assessments conducted during the survey.

Key points in the bulk analysis section should include:

- summary of survey findings
- recommended actions based on assessment results
- priorities for remedial actions.

8.9 Checking the survey report

Every report produced should be carefully checked before being issued to the commissioning PCBU. Ideally, this check should be completed by a competent person that was not involved with that particular asbestos survey.

Checking the survey report can help to make sure that the report contents are technically consistent, accurate, and complete.

Table 24 outlines examples of keys things to check when checking a survey report.

Re-inspection checklist	
	Make sure that the commissioning PBCU's instructions for the survey and report have been followed.
	Confirm that all site notes agree with the final report.
	Verify that no observed asbestos materials have been left out of the report.
	Make sure that all appendices are included as required.
	Check that all titles, reference numbers, and descriptions are correct.
	Verify that the assessments and recommendations for any remedial work are appropriate.
	Confirm that the report summary is included and is a fair statement.

Table 24: Examples of keys things to check when checking a survey report

09 Managing survey quality

Regular re-inspection of a portion of surveys should be done to make sure that surveys are accurate and of a good quality.

9.1 Introduction

To make sure high standards are maintained, all organisations (including sole traders) should implement a quality management system.

Quality management systems should include quality control measures for survey work.

What is a quality management system?

A quality management system is a structured framework that sets out the procedures, processes, and responsibilities for achieving quality objectives.

An effective quality management system helps an organisation to consistently deliver high-quality services that meet commissioning PCBUs' and regulatory requirements.

All PCBUs that carry out asbestos surveys (including sole traders) should maintain written quality management procedures and keep records of audits and checks.

To manage the quality of asbestos surveys, the quality management system should include measures to make sure that surveys are accurate and reliable. Consider engaging an independent organisation for an annual audit of completed surveys.

9.2 Quality assurance for asbestos surveys

A portion of surveys should be reinspected during the survey process to make sure that the survey is accurate.

Aiming to reinspect around 5% of surveys is recommended. When selecting sites to reinspect, make sure that the chosen sites are representative of the different types of surveys performed by the business.

Surveys completed by new or recently employed surveyors should be reinspected more frequently.

In cases where it is not practical to carry out a reinspection of an entire site, a representative part of the site should be reinspected.

9.3 Managing quality by re-inspection

One way to manage the quality of your asbestos surveys is by carrying out re-inspections of sites that have had completed surveys.

Key areas to check during a survey re-inspection are outlined in Table 25.

Where errors are identified following a re-inspection, arrangements should be in place to rectify the situation, including retraining and supervision of workers where needed.

Re-inspection checklist	
	Verify that no asbestos materials or suspected asbestos materials were omitted from the recorded data.
	Make sure that all recorded asbestos material and suspected asbestos material were valid.
	Confirm that assumptions about asbestos type are valid where asbestos material has been presumed.
	Check that all identifiers for records, sample numbers, and photograph numbers correspond and are unique.
	Confirm all inspected areas were correctly and clearly identified.
	Confirm all 'no access' areas and make sure they were correctly and clearly identified.
	Confirm that all material types for asbestos material and suspected asbestos material were correctly listed.
	Make sure all recorded asbestos material and suspect asbestos material were correctly and uniquely located.
	Verify that the quantities of asbestos material and suspected asbestos material were correctly assessed.
	Make sure that correct assessments were made and recorded for: - asbestos product type - surface treatment - damage - accessibility.
	Confirm that adequate numbers and sizes of samples were collected, correctly labelled, and individually double bagged.
	Verify that adequate cleaning was carried out after sampling.
	Make sure that sampling sites were made good in the agreed manner and in accordance with the plan of work.

Table 25: Checklist for asbestos survey re-inspections

9.4 Auditing completed asbestos surveys

An audit of the quality management system should be conducted at least annually. This audit should review:

- the format of asbestos survey reports (for example, their structure and content)

- how data about surveys is gathered and reported (for example, ensuring the data gathered about survey quality is accurate)
- who is authorised or approved to check survey reports (for example, their experience and any relevant certifications or qualifications)
- how the commissioning PCBUs' instructions are followed
- how data is stored, including site logs and compiled reports.

10 Tools and Equipment

Asbestos surveyors should select the correct tools and equipment for any work on asbestos material.

10.1 Introduction

This section covers requirements regarding tools and equipment used by surveyors.

Care should be taken when choosing the appropriate tool for surveying and sampling.

Some tools and equipment are prohibited for use on asbestos material because they increase the chances of asbestos fibres becoming airborne.

Other tools and equipment that generate dust may be used, but under strict controls. These are referred to as restricted tools and equipment.

Appendix 3 contains a list of tools and equipment commonly used in surveying and sampling.

10.2 Prohibited tools and equipment

The following equipment **must not be** used on asbestos material:

- High-pressure water spray

Using high-pressure water spray on asbestos, ACM, or asbestos-contaminated dust is prohibited because it increases the chances of asbestos fibres becoming airborne.

High-pressure water spray may be used for firefighting or fire protection. It can also be used if WorkSafe has approved a method for managing the associated risks.

- Compressed air

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

Instead, workers must use alternative methods such as industrial vacuum cleaners with the appropriate filters, specifically designed for asbestos work.

10.3 Controlled tools and equipment

Power tools and other equipment (including angle grinders, sanders, saws, drills, brushes, and brooms) may only be used on asbestos material if:

- the equipment is enclosed while being used
- the equipment is designed to capture or suppress airborne asbestos and is used according to its design
- the equipment is used in a way designed to capture or suppress airborne asbestos safely, such as through engineering control measures like dust suppression or extraction ventilation, or
- a combination of the above.

Where possible, use non-powered hand tools. If more force is needed, consider using low-speed, battery-powered tools that can be used with wetting methods to minimise the release of dust.

When using power tools with dust suppression or extraction, air monitoring must be carried out to ensure the controls in place are effective in reducing the release of fibres.

For more information see [placeholder for assessors GPG also currently under development].

10.4 Contamination of tools

There is a risk of cross-contamination when tools are used for surveying and sampling.

All tools and equipment used for sampling suspected ACMs must be thoroughly decontaminated. If thorough cleaning is not possible due to hard-to-reach areas like hollows, grooves, or dust reservoirs, the tools should be cleaned as much as possible.

The tools should then be sealed in a marked bag or container and clearly labelled to indicate asbestos contamination.

More details about decontamination can be found in the [placeholder for removalist GPG also currently under development].

10.5 Industrial vacuum cleaners

Vacuum cleaners used for hazardous dusts, such as asbestos, must be fit for purpose to make sure the dust is safely captured and contained.

Domestic or standard commercial vacuums are not suitable for this purpose, regardless of the filter used.

Industrial vacuums rated for use with hazardous dusts are classified as L, M, or H, which refer to the hazard rating: light, medium, or high hazard.

The commonly used vacuum by Surveyor's is the H-type. This is used to shadow vacuum when taking a sample to capture fugitive dust at a particular source and used at the early stages of decontamination.

Licensed asbestos assessors and licensed asbestos removalists use the H-type vacuum to control the risk of exposure.

Asbestos is classified as a high hazard, so only H-class industrial vacuums should be used with for work involving asbestos material (including asbestos-contaminated dust).

High-efficiency particulate air (HEPA) filter **does not** mean H-class.

10.6 Vacuum cleaner filters

Filters used in vacuum cleaners for hazardous dusts must:

- be designed to fit the specific model of the vacuum cleaner being used
- achieve the same or higher filtration efficiency that the vacuum cleaner is rated for.

Class H14 vacuum cleaners used for asbestos work should not be used on wet materials or surfaces unless designed for that type of work.

For more information on how to select the right industrial vacuum or filter, or how to maintain a vacuum, see our guidance Industrial vacuums and portable extractors for hazardous dust | WorkSafe.

10.7 Maintaining and transporting vacuum cleaners used for asbestos

When vacuum cleaners have been used with asbestos, removal and disposal of the contents must be performed by a competent person. Vacuum cleaners should be maintained according to the manufacturer's guidance, which can include DOP (Dispersed Oil Particulate) testing.

DOP testing ensures HEPA filters in H-class vacuums and negative pressure units work properly by detecting particle leaks, ensuring no harmful fibres are released. It is required every six months for asbestos-related equipment.

Competent person

A competent person is someone who has the appropriate skills, training, knowledge, and experience to perform the task or role.

The competent person should:

- wear personal protective equipment (PPE), including appropriate Respiratory Protective Equipment(RPE) (which has been fit-tested)
- seal or cordon off an appropriate area to prevent unnecessary dust exposure to others
- make sure the dust bag has been removed and disposed of first
- use a damp cloth to clean the dust off the outside of the vacuum, and any inside parts that can be accessed
- dispose of dust and containment bags and contaminated damp cloths as asbestos waste in tightly sealed and labelled bags or containers
- only dispose of asbestos waste at authorised asbestos disposal sites.

For a more thorough clean, it can also be cleaned using another industrial vacuum cleaner.

Only use this method if the other vacuum cleaner is rated at the same class, or higher. A licensed asbestos assessor could perform this function in a controlled environment.

Dry brushing or using compressed air should never be used to clean vacuums. These methods cause the hazardous dust to spread and become airborne. Compressed air can also damage the filters, making them ineffective.

Treat vacuum cleaners used for asbestos work as asbestos waste during transportation. This means double bagging the vacuum cleaners and any hoses and attachments in suitable asbestos waste bags, clearly identified as containing asbestos.

Appendix 1: Glossary

TERM	DEFINITION
Accredited laboratory	A laboratory that is accredited by International Accreditation New Zealand (IANZ) or National Association of Testing Authorities (NATA). A laboratory may also be approved by WorkSafe to analyse samples for the presence of asbestos or asbestos-containing material (ACM) for up to 12 months while obtaining accreditation.
Air monitoring	Measuring airborne asbestos fibres by sampling and analysing them.
Airborne contamination standard for asbestos	The average concentration of 0.1 respirable fibres per millilitre of air over any eight-hour period.
Asbestos	A naturally occurring fibrous silicate mineral (rock-forming mineral). There are two groups of asbestos, and six common types: - chrysotile asbestos (white) - crocidolite asbestos (blue) - grunerite (or amosite) asbestos (brown) - actinolite asbestos - anthophyllite asbestos - tremolite asbestos.
Asbestos assessors	Asbestos assessors are authorised by WorkSafe to assess if asbestos removal work has been completed to the required standard and that the area where asbestos removal took place is safe for reoccupation. Only an **independent** licensed asbestos assessor can carry out regulated activities for Class A removal work. This includes: - air monitoring - clearance inspection - issuing Clearance certificate. An independent licensed asbestos assessor may also carry out other activities as part of contractual obligations, for example:

	Review a work plan made by an asbestos removalist prior to removal work to make sure it is safe and suitable before work starts.
Asbestos Management Plan (AMP)	A document that sets out where any identified asbestos material is present and how it will be managed.
Asbestos identification and management process	A process that can be followed, which sets out how to manage asbestos material in a building or workplace. Its steps include information about how to: - identify asbestos material in a building or workplace - prioritise and manage the risks of asbestos - keep up-to-date records of the asbestos management approach.
Asbestos management survey	An assessment of a building or workplace undertaken by an asbestos surveyor to: - identify and record the location, amount, and type of asbestos material readily accessible during normal occupancy of the building (including maintenance) - inspect and record information about the condition of asbestos material present - confirm whether material suspected to be asbestos material is asbestos material.
Asbestos refurbishment or demolition survey	An assessment of a building undertaken by an asbestos surveyor when a building or workplace (or part of it) is going to be refurbished or demolished. The purpose of a refurbishment/demolition survey is to locate all the asbestos material in a building or workplace (or part of it) before refurbishment or demolition work starts.
Asbestos register	A document that lists all identified or presumed asbestos in a building or workplace.
Asbestos Regulations	The Health and Safety at Work (Asbestos) Regulations 2016.
Asbestos Removal Control Plan (ARCP)	A document prepared by a licensed asbestos removalist that includes information about: - how the asbestos removal will be carried out (including the method, tools, equipment, and PPE that will be used)

	- the asbestos material that will be removed (including its location, type, and condition) - the asbestos removal area for the work and any air monitoring points - how asbestos waste will be transported and disposed of.
Asbestos removal licence	A Class A or Class B asbestos removal licence.
Asbestos removal work	Work involving the removal of asbestos, asbestos-contaminated soil, or asbestos-containing material.
Asbestos removalist	A PCBU that carries out asbestos removal work.
Asbestos surveyor	A PCBU that carries out asbestos survey work.
Asbestos waste	Asbestos material, asbestos-contaminated soil, or asbestos-containing material that has been removed. Asbestos waste also includes items used during work with or on asbestos material (for example, plastic sheeting and disposable PPE) that needs to be disposed of.
Asbestos Containing Material (ACM)	Any material or thing that, by its design, contains asbestos.
Asbestos Contaminated Dust (ACD)	Dust or debris that has settled within a workplace and is (or is presumed to be) contaminated with asbestos.
Asbestos contaminated soil	Soil that is contaminated with asbestos material.
Asbestos related work	Work involving asbestos other than asbestos removal work.
Business or undertaking	The usual meanings are: - business: an activity usually carried out with the intention of making a profit or gain - undertaking: an activity that is non-commercial in nature (for example, certain activities of a local authority or a not-for-profit group).
Certified (training)	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	A licence that authorises the holder to carry out Class A asbestos removal work. 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 A asbestos removal work	Asbestos removal work for which a Class A asbestos removal licence is required for friable asbestos.
Class B asbestos removal licence	A licence that authorises the holder to carry out Class B asbestos removal work, including: - any amount of non-friable asbestos or ACM - ACD associated with removing any amount of non-friable asbestos or ACM.
Class B asbestos removal work	Asbestos removal work for which a Class B asbestos removal licence is required for non-friable asbestos.
Clearance inspection	An inspection of an asbestos removal area after asbestos removal work has been completed to verify that the area is safe for normal use.
Competent person	Competent person means a person who has the knowledge, experience, skills, and qualifications to carry out a particular task under the Asbestos Regulations, including any knowledge, experience, skills, and qualifications prescribed in a safe work instrument.
Control measure	A way of eliminating or minimising risks to health and safety.
Demolition	Demolishing or dismantling a structure, or part of a structure, or equipment that is loadbearing or otherwise related to the physical integrity of the structure.
Duty	A legal obligation to act responsibly according to the law.
Duty holder	A person who has a duty under HSWA. There are four types of duty holders – PCBUs, officers, workers and other persons at workplaces.
Eliminate	To remove the sources of harm (for example, equipment, substances, or work processes).
Emergency	An uncontrolled event that has caused, or could cause: - loss of life - injury - serious property damage.

	It can include declarations of civil defence emergencies, fires, or other significant incidents. It does not include delays unless these are the result of one of the above situations.
Friable	In a powder form or able to be crumbled, pulverised, or reduced to a powder by hand pressure when dry.
Good Practice Guidelines (GPG)	Describes current 'good practice' to help duty holders understand and apply their duties under HSWA.
GRWM Regulations	Health and Safety at Work (General Risk and Workplace Management) Regulations 2016.
Hazard	A potential source of harm. It could include an object, situation, or behaviour.
Health monitoring	Monitoring a person to identify any changes in their health status because of exposure to certain health hazards arising from the conduct of the business or undertaking. Health monitoring is a way to check if the health of workers is being harmed from exposure to hazards while carrying out work. It aims to detect early signs of ill-health or disease.
Homogeneous materials	Material that is like in colour and texture, and uniform in nature.
HSWA	Health and Safety at Work Act 2015. The key work health and safety legislation in New Zealand. HSWA applies to all work and workplaces unless specifically excluded. For the full text of the Act go to: New Zealand Legislation website.
IANZ	International Accreditation New Zealand.
Licensed asbestos assessor	A competent person licensed by WorkSafe to carry out clearance inspections for Class A asbestos removal work.
Licensed asbestos removal work	Removal work for which a Class A or Class B asbestos removal licence is required.
Licensed asbestos removalist	A PCBU that holds a Class A or Class B asbestos removal licence.

Material Assessment	The process of identifying and evaluating materials in a building that may contain asbestos. It includes inspecting, sampling, and assessing the condition of these materials to determine the potential risk of exposure and how to manage or remove them safely.
Minimise	To take steps that protect the health and safety of people by reducing the likelihood of an event occurring, reducing the level of harm to people if it does occur, or both.
NATA	National Association of Testing Authorities (Australia)
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).
Other persons at the workplace	Includes workplace visitors and casual volunteers (who are not volunteer workers). These people have their own health and safety duties to take reasonable care to keep themselves safe and to not harm others at a workplace.
Overlapping duties	When a PCBU shares duties with other PCBUs. When two or more PCBUs are working together at the same location or through a contracting chain, they must work together to fulfil their duties of care and manage risks. Where those duties overlap, the PCBUs must consult, cooperate and coordinate with each other to meet their health and safety responsibilities to workers and others.
PCBU	Person conducting a business or undertaking. In most cases a PCBU will be a business entity, such as a company. However, an individual carrying out business as a sole trader or self-employed person is also a PCBU. A PCBU does not include workers or officers of a PCBU, volunteer associations with no employees, or home occupiers that employ or engage a tradesperson to carry out residential work.
Plant	Includes: - any machinery, vehicle, vessel, aircraft, equipment (including personal protective equipment), appliance, container, implement, or tool - any component of any of those things

	- anything fitted or connected to any of those things.
Policy clarification	Aims to 'clear things up' – by clarifying WorkSafe's approach on a specific issue.
Position	Outlines how WorkSafe interprets key concepts in law.
PPE	Personal protective equipment. Anything used or worn by a person (including clothing) to minimise risks to the person's health and safety. This may include – but is not limited to: - respiratory protective equipment - protective helmets - protective eyewear - protective boots - protective gloves - hearing protection - high-vis clothing - sunhats - sunscreen and lip protection - safety harness systems.
Primary duty of care	A PCBU must ensure, so far as is reasonably practicable, the health and safety of workers, and that other persons are not put at risk by its work. This is called the 'primary duty of care'.
Readily accessible	The document can be accessed without difficulty in hard copy, electronic form, or any other form.
Reasonably practicable	What is or was reasonably able to be done to ensure health and safety taking into account and weighing up relevant matters including: - the likelihood of the risk concerned occurring or workers being exposed to the hazard - the degree of harm that might result - what the person concerned knows, or ought reasonably to know, about: o the hazard or risk o ways of eliminating or minimising the risk - the availability and suitability of ways to eliminate or minimise the risk

	- 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. For more information, see WorkSafe's fact sheet: Reasonably practicable.
Refurbishment	Carrying out work in a building or structure with an emphasis on changing or upgrading it.
Risk	Risks arise from people being exposed to a hazard (a source of harm).
Safe work instrument (SWI)	A type of subordinate instrument (sometimes called tertiary legislation) under HSWA. SWIs can be used for almost any purpose, however, they only have legal effect where specifically referred to in relevant regulations. SWIs can be used to: - prescribe detailed or technical matters or standards that change relatively frequently and will often be industry-specific - set additional or modified control measures for hazardous substances approved or reassessed by the Environmental Protection Authority - provide an alternative means of complying with regulations - support the effective operation of the health and safety regulatory framework, for instance by setting exposure monitoring standards or stipulating requirements for training, competence, or safety management systems.
Safety data sheet (SDS)	Describes the properties and uses of a substance, that is, its identity, chemical and physical properties, health hazard information, precautions for use, and safe handling information.
Sample analysis	Methods used to identify and quantify asbestos in materials or soils.
Shadow vacuuming	Holding a vacuum cleaner nozzle close to the task being performed and sucking the dust and debris away as it is created. In work involving asbestos this should be via a H-Type vacuum that has been recently DOP tested,

	otherwise there is a risk of mobilising asbestos fibres and creating a contamination scenario.
Trace level	An average concentration over any 8-hour period of less than 0.01 respirable asbestos fibres per millilitre of air.
WEPR Regulations	Health and Safety at Work (Worker Engagement, Participation, and Representation) Regulations 2016.
Worker	An individual who carries out work in any capacity for a PCBU. A worker may be: - an employee - a contractor or subcontractor - an employee of a contractor or subcontractor - an employee of a labour hire company - an outworker (including a homeworker) - an apprentice or a trainee, a person gaining work experience or on a work trial - a volunteer worker. Workers can be at any level (for example, managers are workers too). A PCBU is also a worker if the PCBU is an individual who carries out work in that business or undertaking.
Workplace	Any place where a worker goes or is likely to be while at work, or where work is being carried out or is customarily carried out. Most duties under HSWA relate to the conduct of work. However, some duties are linked to workplaces.
WorkSafe/WorkSafe New Zealand	The government agency that is the primary work health and safety regulator. Other government agencies can be designated to carry out certain health and safety functions, for example, Maritime New Zealand and the Civil Aviation Authority. Previous work health and safety regulators include OSH, Department of Labour, and MBIE.

Appendix 2: Examples of what ACMs can look like and where they might be found.

This appendix describes the most common forms of asbestos products. It gives examples of common uses, locations, their composition, and information on their ability to release fibre. This list is not exhaustive, and asbestos may be found in many other locations and situations.

Loose insulation

loose-fill asbestos was used particularly as insulation material in homes and buildings during the mid-20th century. It was typically used in wall cavities, ceilings, and attics as a form of thermal and acoustic insulation. This loose-fill asbestos insulation was made from small fibres of asbestos, which were blown or poured into spaces within buildings. Loose asbestos insulation presents a very high risk for asbestos exposure/contamination.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
Bulk loose fill (sometimes called asbestos wool) Loose asbestos filled mattresses, quilts and blankets 'jiffy bag' type bags/sacks stuffed with loose asbestos	Wall cavities, between floors, ceilings and attics Packed around electrical cables. Sometimes using chicken wire to contain it Mattresses and quilts used for thermal insulation of industrial boilers. Paper bags/sacks used for sound insulation under floors and in walls. Some fire doors contained loose asbestos insulation sandwiched between the wooden or metal facings	Usually pure asbestos except for lining/bags Mattresses and quilts usually contain crocidolite or chrysotile Acoustic insulation may contain crocidolite or chrysotile Common brand names include: Vermiculite	Loose asbestos may become easily airborne if disturbed. Dry materials have an even greater exposure risk Covers/bags may deteriorate or be easily damaged by repair work or accidental contact

Loose asbestos used as loft insulation

Sprayed coatings

These are typically coatings sprayed or trowelled onto surfaces. Often used for fire protection and insulation in larger scale commercial and industrial buildings.

The depth of the spray usually varies from 10 to 150 mm thick. Dry sprayed coatings may have a candyfloss appearance if left untamped. Wet sprayed/trowelled coatings are usually denser. Coatings with higher proportions of Portland cement that have been well tamped can be quite hard.

Surfaces may be sealed with an elasticised paint or proprietary encapsulant, reinforced with calico or man-made fibre mesh, or left completely unsealed.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
Normally homogeneous coatings sprayed or trowelled onto surfaces Used for: - fireproofing - thermal/anti condensation insulation - sound insulation	Underside of roofs and sides of industrial buildings On steel and reinforced concrete beams/columns and on underside of floors Sprayed onto walls and ceilings for acoustic and decorative purposes. For example: - theatres - cinemas - studios - halls Commonly found in other areas resulting from overspray of target areas	Sprayed coatings usually contain 55%–85% asbestos with a Portland cement binder Usually crocidolite, or a mixture of types including crocidolite	Spray coatings are vulnerable to accidental damage and delamination due to water leakage Damaged spray coatings may release debris onto the floor and other horizontal surfaces Dust released may accumulate on false ceilings, wiring and ventilation systems Unsealed surfaces have a higher risk of fibre release if disturbed

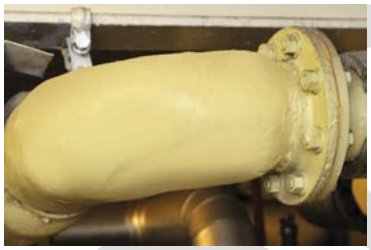
Sprayed limpet on car park roof

Sprayed coating on building

Thermal insulation

Asbestos was widely used to insulate pipes, boilers and heat exchangers. There are several types and forms of insulation, often with multi-layer construction.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
Hand-applied thermal lagging Pipe and boiler lagging Pre-formed pipe sections, slabs and blocks. These can be strapped on, calico-wrapped, and sometimes painted or sealed with a hard plaster (often also asbestos-containing) Very hard-wearing coatings may contain metal sheets and/or chicken wire reinforcement beneath a hard plaster finish External pipes may also be clad with sheet metal or painted with bitumen for additional weatherproofing	Thermal insulation of pipes, boilers, pressure vessels, and calorifiers Look out for variations on material used on the same pipe or boiler. Pay particular attention to bends and valves, or where repairs have been made.	All types of asbestos have been used, including Crocidolite and Amosite Content varied from 6-85%. Various ad hoc mixtures were hand-applied on joints and bends and pipe runs	The ease of fibre release often depends on the type of lagging used and the surface treatment


Pipe insulation with coating in a passageway


Lagged pipe in wall cavity


Amosite lagging in very poor condition on steam pipe

Lagging on large petrochemical plant

Amosite lagged boiler with vessel hard plastic coating

Millboard

Asbestos millboard was commonly used in industrial settings for insulation and fireproofing due to its heat-resistant properties.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
A thick, rigid material made from a combination of asbestos fibres and other substances. It was primarily used for its heat-resistant and insulating properties. Commonly used for fire protection, electrical insulation, and for wall and ceiling linings	Generally found in industrial buildings Exterior lining on ventilation ducts Inside fire doors	Usually chrysotile but crocidolite was also used Millboards may contain 37–97% asbestos, with a matrix of clay and starch Common brand names include: Asbestolux, Vermiculite, Transite	Asbestos 'Millboard' has a high asbestos content and low density so is quite easy to break and the surface vulnerable to abrasion and wear

Asbestos panels 'millboard' inside a fire door

Asbestos insulating board (AIB)

Widely used for internal partition walls and linings, and for fire protection, acoustic and thermal insulation. Insulating boards come in a range of densities and can be easily damaged. All kinds of combinations are found and surveyors should be alert to all possibilities.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
Fire protection Thermal and acoustic insulation Resistance to moisture movement General building board Suspended ceiling tiles	Facings around lift shafts, stairwells and service ducts Firebreaks Roof underlay and wall linings Areas around gas fires and central heating boilers Fire doors facing AIB is usually found indoors, but weather-protected outdoor areas, such as canopies, porches, and soffits, may contain AIB	Crocidolite and amosite Usually 15–25% amosite or a mixture of amosite and chrysotile in calcium silicate. Older boards and some marine boards contain up to 40% asbestos Common brand names include: Hardie branded products, Fibrolite, Durock, Versilux, Villaboard, Coverline, Mighty Board	AIB can be readily broken, giving significant fibre release Significant surface release is possible by abrasion, but surfaces are usually painted or plastered Sawing and drilling will also give significant releases


AIB exterior painted panel


AIB ceiling tiles


AIB exterior panel on open walkway


AIB behind school radiator unit


AIB panel between radiator and window

AIB offcuts used as packers around column in CLASP building

AIB in composite materials

AIB was used in composite materials and may be sandwiched between or surfaced with non-asbestos products.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
Insulating board in cores and linings of composite products May be sandwiched between or surfaced with non-asbestos products such as strawboard, plywood, metal mesh, sheet metal and plasterboard	Fire door cores Cladding infill panels Domestic boiler casings Partition and ceiling panels Suspended floor systems Oven linings	Amosite and Crocidolite 16–40% amosite or a mixture of amosite and chrysotile Common brand names include: Asbestolux, Harditherm, Fibrolite, Durock, Versilux, Villaboard, Monier, Coverline, Mighty Board	Can be broken by impact Significant surface release possible by abrasion, but usually painted or plastered Sawing and drilling will also give significant releases

AIB fascia panels with wood effect finish

Asbestos paper, cardboard, and felt

Asbestos-containing paper, cardboard, and felt was widely used in New Zealand due to their heat-resistant, fireproofing, and insulating properties.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
ASBESTOS PAPER Used in industrial and construction applications, including insulation, fireproofing, electrical insulation, and as gaskets and seals.	Around electrical equipment, such as transformers, switchboards, circuit breakers and electric motors As insulation around piping, walls, and ceilings	Chrysotile	Paper materials, if not encapsulated or combined within vinyl, bitumen, or bonded in some way, can easily be damaged and release fibres For example, a worn flooring surface with

As a reinforcer within bitumen and similar products As facing/lining to flooring products, combustible boards, and flame-resistant laminate	Around and within air-conditioning systems Old machinery, such as engines, pumps and turbines Around fireplaces Under flooring material		paper backing could release fibres
ASBESTOS CARDBOARD Used for insulation, fireproofing, and electrical applications. Often manufactured as a composite material with asbestos fibres bonded to a cardboard or fibreboard base.	Wall and ceiling linings Roof spaces Around electrical components Lining on high temperature machinery Boilers and furnaces Gaskets and seals	Most commonly chrysotile Amosite and crocidolite (less often)	Paper materials, if not encapsulated or combined within vinyl, bitumen, or bonded in some way, can easily be damaged and release fibres For example, a worn flooring surface with paper backing could release fibres
ASBESTOS FELT Used for insulating, fireproofing, and soundproofing	Under roofing materials As flooring insulation Wall and ceiling insulation Fireproof doors, partitions, curtains and screens Boilers and furnaces Brake linings, gaskets and seals Electrical installations	Most commonly chrysotile Amosite and crocidolite (less often)	

Chrysotile paper on fibreboard boxing

Chrysotile paper on strawboard ceiling panels

Textiles

Asbestos textiles were manufactured for heat or fire protection uses. Textiles were also used widely as a reinforcing material in friction products/composites.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
ROPES AND YARNS Used for: - lagging - jointing and packing materials - as heat/fire-resistant sealing. - Caulking in brickwork - plaited asbestos tubing in electric cable	Around pipes Around boiler, oven and flue seals Around brickwork Within electric cable	Typically crocidolite and chrysotile Asbestos content approaching 100% unless combined with other fibres	Weaving reduces fibre release from products, but abrading or cutting the materials will release fibres Likely to degrade if exposed, becoming more friable with age If used with caulking, fibres will be encapsulated and less likely to be released
CLOTH Used for: - Fire protection (fire blankets, fire curtains, fire-resistant clothing) - Lagging	Fire-resisting blankets Mattresses Protective curtains Gloves Aprons and overalls.	All types of asbestos were used but chrysotile was the most common Asbestos content approaching 100%	Fibres may be released if material is abraded or damaged
TEXTILE TAPES AND WEBBING Used for: - reinforcing wall joints before plastering - wall plugs and wall repair fillers	Plastered walls	Chrysotile	These are very difficult to locate as they are integrated into the plaster finish

Asbestos rope seal on drying oven

Amosite asbestos rope packing on riser door frame

Asbestos rope lagging to boiler thermometer


Chrysotile cloth on pipes


Amosite and chrysotile packing on waste pipes


Chrysotile 'scrim' tapes

Asbestos gaskets, washers and strings

A wide range of asbestos gaskets have been produced and used for sealing pipe and valve joints in industrial plant, but they may also be found in some older domestic boilers.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
GASKETS AND WASHERS	Domestic and industrial plant and pipe systems, such as: hot water boilers industrial power plant chemical plant	Variable but usually around 90% asbestos Crocidolite used for acid resistance and chrysotile for chlor-alkali Common brand names include: Klinger, Garlock, Durabla, James Walker, Bonded Seal	May be dry and damage easily when removed
STRINGS Used by plumbers to seal screw thread joints	Sealing on hot water radiators.	Approaching 100%	Fibres may be released when the string is damaged, disturbed, or worn down, causing tiny asbestos fibres to become airborne


Chrysotile string on skylights

Asbestos-reinforced plastic/resin composites and friction products

Asbestos-reinforced plastics and resin composite material were used for a range of products. The material is often black and has a high density and scratch resistance. Asbestos was widely used as a reinforcing material in friction products (such as conveyor and fan belts, brake and clutch linings). Older asbestos-containing components may still be in use in vehicle repair and maintenance workshops.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
ASBESTOS-REINFORCED PLASTICS AND RESIN COMPOSITE MATERIAL	Windowsills Capping for bannisters School and laboratory worktops/countertops Toilet cisterns	Plastics usually contained 1-10% chrysotile Resins were reinforced with woven chrysotile cloth usually containing 20–50% asbestos	Fibres unlikely to be released, limited emissions during cutting
RESIN-BASED MATERIALS. Used for brakes and clutch plates	Transport, machinery and lifts	30–70% chrysotile asbestos bound in phenolic resins. Banned in NZ from 2000	Normal handling will produce low emissions, but dust may build up with friction debris Grinding brake and clutch components and brushing or blowing clean can produce significant airborne levels
DRIVE BELTS/CONVEYOR BELTS	Engines, conveyors	Chrysotile textiles encapsulated in rubber	Low friability, except when worn to expose textile


Asbestos-reinforced toilet cistern

Asbestos brake linings for quarry vehicles

Asbestos brake lining on output shaft of AC motor

Cement products

Asbestos cement (AC) has been extensively used for roofing and exterior cladding and well as moulded to make products such as pipes and tanks.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
PROFILED SHEETS	Roofing Wall cladding Permanent shuttering Cooling tower elements Below windows on prefabricated buildngs	10–15% asbestos (some flexible sheets contain a proportion of cellulose) Chrysotile was most commonly used but crocidolite and amosite has also been used Common brand names include: Supersix, Fibrolite, Durock, Durotherm, Harditherm, Hardiplank, Coverline, Highline, Villaboard, Versilux, Tilux	Likely to release increasing levels of fibres if abraded, hand sawn or worked on with power tools Exposed surfaces and acid conditions will remove cement matrix and concentrate unbound fibres on surface and sheet laps Cleaning asbestos-containing roofs may also release fibres
SEMI-COMPRESSED FLAT SHEET AND PARTITION BOARD.	Partitioning in farm buildings Infill panels for housing Shuttering in industrial buildings Decorative panels for facings	Same as for profiled sheets above. Also 10–25% chrysotile and some amosite for asbestos wood used for fire doors etc.	Same as for profiled sheets above

	Bath panels Soffits Linings to walls and ceilings Portable buildings Propagation beds in horticulture Fire surrounds Weather boarding.	Composite panels contained ~ 4% chrysotile or crocidolite. Common brand names include: Fibrolite, Durock, Coverline, Highline, Villaboard, Versilux, Tilux	
FULLY COMPRESSED FLAT SHEET Used for tiles, slates, and board.	As above, but where stronger materials are required, and as slates, board cladding, decking and roof slates	Same as for profiled sheets above Up to 50% chrysotile. Common brand names include: Fibrolite, Durock, Hardiflex Hardiplank, Coverline, Highline, Villaboard, Versilux, Tilux,	Same as for profiled sheets above
PRE-FORMED MOULDED PRODUCTS AND EXTRUDED PRODUCTS.	Cable troughs and conduits Cisterns and tanks Drains and sewer pressure pipes Fencing Roofing components such as fascias and soffits Gutters, downpipes and flues Ventilators and ducts Weather boarding Windowsills and boxes Bath panels Draining boards Extraction hoods	Same as for profiled sheets above Common brand names include: Mighty Pipe, Mighty Board, Monier, Super Six, A.C Pipes, Durock, Coverline, Highline, Bristol, Fibrolite, Decramastic tile	Same as for profiled sheets above


Asbestos cement roof and cladding


Chrysotile pebble-dash exterior wall coating


Asbestos cement boiler flue


Asbestos cement downpipe

Textured coatings, paints and plasters used for decorative effects

These were often manufactured containing up to a few per cent of chrysotile asbestos.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
TEXTURED COATINGS. Sometimes described as popcorn ceilings, cottage cheese ceilings, shimmer ceilings, flock ceilings, or sack finish ceilings	Decorative/flexible coatings on walls and ceilings.	3–5% chrysotile asbestos. Common brand names include: Artex, Ribtex, Polytex	Generally fibres are well contained in the matrix but may be released when old coating is sanded down or scraped off.


Asbestos textured coating on ceiling


Asbestos textured coating on wall

Bitumen products

The combination of bitumen (a tar-like substance) and asbestos fibers provided a material that was resistant to heat, moisture, and wear, making it suitable for a variety of uses, particularly in the construction industry

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
Used in roofing products such as asphalt roofing felt, bitumen-based roofing membranes, roll roofing, roof coatings and shingles Waterproofing – used as flexible waterproofing layers Used as flooring material - vinyl tiles, mastic adhesives and bitumen based underlays	Roofs – flat roofs in particular Flooring – vinyl tiles, or in the adhesives or other layers beneath Waterproofed areas in basements and foundations Older asphalt road surfaces Pipes, seals and gaskets, older machinery, electrical installations	Usually about 8% chrysotile. Adhesives may contain up to a few per cent chrysotile asbestos.	Fibre release unlikely during normal use. Roofing felts and bitumen-based sealants must not be burnt after removal.

Chrysotile/bitumen coating under metal cladding

Flooring

Polyvinyl chloride (PVC or vinyl) tiles were manufactured with added asbestos. Sheet floor coverings were sometimes backed with a thin layer of chrysotile. Some underfelts for carpets and linoleum were also manufactured containing asbestos. The mastics which were used to bond the floor covering to the surface could also contain asbestos (see sections above)

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
Thermoplastic floor tiles. PVC vinyl floor tiles and unbacked PVC flooring. Asbestos paper-backed PVC floors. Magnesium oxychloride was a harder wearing flooring used in bathrooms, staircases	Floors – particularly in bathrooms, kitchens, hallways. Commonly used in schools, hospitals and other public buildings	Typically chrysotile PVC or vinyl tiles typically were 5-7% chrysotile Paper backing can be 100% chrysotile Magnesium oxychloride flooring may contain about 2% of mineral	Fibre release is unlikely under normal use, if it remains in good condition. Fibre may be released when material is cut, and there may be substantial release where flooring residue, particularly paper

and for industrial flooring.		fibres which could be asbestos. Common brand names include: Noddy, Kensington, Icopal, Polyflor, Solco, Tarkett, Forbo, Shaw Industries, Gerflor, Armstrong, Marmoleum	backing, is power-sanded.

Asbestos-containing vinyl floor tiles

Metal-asbestos composites

Metal-asbestos composites are materials made by combining asbestos fibres with metal components.

Product description/uses	Locations	Asbestos type / product name	Ease of fibre release
Used on metal flues where asbestos was added as insulation between the inner and outer layers of stainless steel to give a high degree of insulation when passing through floors and on the outside to prevent sudden cooling of the flue gases Used in fire doors, where a layer of asbestos was incorporated between steel panels	Flues connected to wood-burning stoves Fire doors	Chrysotile Common brand names include: Durasteel	

Metal clad gas flue containing chrysotile lining


Composite steel and asbestos fire door

Domestic appliances and products

Many older domestic appliances and products contained asbestos insulation materials for thermal or electrical insulation, for example:

- Ironing boards
- Hairdryers
- Oven seals
- Simmering plates
- Electric fires
- Storage radiators
- Gas fires with catalytic elements
- Coal or log effect gas fires.

Appendix 3: Example of a survey and sampling equipment checklist

Category	Item	✅
Survey Equipment	Site plan	☐
	Logbook, organiser, computer	☐
	Step ladder	☐
	Digital camera with flash	☐
	Torch	☐
	Access keys to rooms and covers	☐
	Screwdrivers	☐
PPE for Sampling	Disposable overalls (hooded)	☐
	Disposable overshoes or gum boots	☐
	Disposable gloves	☐
Bulk Sampling Equipment	Pliers	☐
	Screwdrivers	☐
	Core samplers or cork borers	☐
	Aluminium foil or cloth tape	☐
	Stanley knife with spare blades	☐
	Hand-spray with diluted PVA or surfactant	☐
	Sample bags (polythene self-seal bags)	☐
	Sample point labels	☐
	Type H vacuum	☐
	Asbestos waste bags of the approved type	☐

Category	Item	☑
	Warning signs: 'Asbestos sampling: Keep clear'	☐
	Wet wipes and tissues	☐
	Polythene sheeting	☐
	Non-serrated pliers	☐
	Chisels	☐
	Safety knife	☐
	Hammer	☐
	Crowbar	☐
	Flexible inspection camera (Endoscope)	☐
	Ladders	☐
RPE	As per risk assessment	☐