

ASBESTOS

LEARNING OUTCOME

Identify the hazards associated with asbestos, the legislative requirements for managing related risk to people and the environment and appropriate control strategies for reducing or removing the risk.

ASSESSMENT CRITERIA

- Identify common uses and locations of asbestos containing material at commercial and domestic premises.
- Identify the legislative requirements for managing asbestos related risk to people and the environment.
- Identify the health effects associated with exposure to asbestos fibres.
- Identify where guidance on minimising or removing the risks associated with exposure to asbestos can be found.

REFERENCES

- Work Health and Safety Act 2011
- Work Health and Safety Regulation 2011 Part 8 – Asbestos
- How to Manage and Control Asbestos in the Workplace Code of Practice 2011
- How to Safely Remove Asbestos Code of Practice 2011
- Queensland Office of Industrial Relations website – www.worksafe.qld.gov.au
- The Public Health Act 2005
- The Public Health Regulation 2005
- Environmental Protection Regulation 2008 for transporting regulated waste (asbestos waste)

ASBESTOS

WHAT IS ASBESTOS?

Asbestos is a naturally occurring mineral found in the ground. It contains strong fibres that have excellent durability, fire resistance and insulating properties. Three types of asbestos were used in Australia: white (chrysotile), blue (crocidolite) and brown (amosite) asbestos. Large deposits were mined in Western Australia and New South Wales, and there were smaller operations in Tasmania and South Australia. Asbestos mining was completely stopped in Australia by 1983, but it is still mined in large quantities at many locations worldwide. Mined asbestos only represented a small proportion of the asbestos used in Australia (about 5%) and the bulk was imported. The majority of asbestos (90%) used throughout the world, including Australia, was white (chrysotile) asbestos. Australia banned the use or import of blue and brown asbestos or asbestos products in the mid-1980s, and banned all manufacture or import of white asbestos products in December 2003.

Asbestos fibres can be found in the air from the breakdown of natural asbestos deposits and disturbance of manufactured asbestos products. Once airborne, small fibres may remain suspended in the air for some time and can be carried long distances by wind before settling down. Larger fibres and particles tend to settle more quickly. Asbestos fibres do not dissolve in water or move through soil. They are generally not broken down to other compounds and remain virtually unchanged over long periods.

HEALTH HAZARDS

Asbestos fibres are 50–200 times thinner than a human hair, can float in the air for a long time, can be invisible to the naked eye and can be breathed into the lungs. Asbestos can affect your health if fibres are breathed into the lungs. Most fibres are removed by your body's natural defences, however, some fibres can remain in the lungs.

The possible health effects of asbestos are:

- asbestosis (progressive and irreversible scarring of lung tissue that impairs breathing)
- lung cancer
- mesothelioma, a cancer of the linings around the lungs and abdomen
- non-cancerous diseases that affect the linings around the lungs and abdomen (commonly called 'benign pleural diseases').

Some of these health effects can take up to 50 years to develop, but others can also develop in much less time than that. While there are some treatments for asbestos related diseases, there are no known cures. All types of asbestos can cause these health effects.

COMMON USES AND LOCATIONS OF ASBESTOS CONTAINING MATERIALS

Asbestos fibres are strong, heat resistant and have insulating properties. Clumps of mined asbestos were broken down into loose fibres or fibre bundles, and mixed with other materials, such as cement, to produce a variety of building products. Up to 90% of the asbestos produced in or imported into Australia was used for the manufacture of building products, especially asbestos cement materials.

Asbestos-containing building products are classified as either 'friable' (soft, crumbly) or 'non friable' (solid, rigid, non-friable). Non-friable products when bonded with other materials such as cement are also commonly referred to as 'bonded'.

Friable asbestos

Friable asbestos products are generally quite soft and loose and can be crumbled into fine material or dust with very light pressure, such as crushing with your hand. Such products usually contain high levels of asbestos (up to 100% in some instances), which is loosely held in the product and therefore the asbestos fibres are easily released into the air.

Friable asbestos products were primarily used in commercial and industrial settings since the late 1800s for fireproofing, soundproofing and insulation. Sometimes, small amounts of friable asbestos were used in domestic buildings, including:

- in old domestic heaters, stoves, hot water systems and pipe lagging
- in the backing of sheet vinyl floor coverings
- inside fireplaces
- within fire doors in the main entry doors of units and
- stairwells
- sprayed on vermiculite insulation material in some common areas of unit blocks.

Non-friable asbestos (bonded)

Bonded asbestos products are made from a bonding compound (such as cement) mixed with a small proportion (range of 5% to 20%) of asbestos. Bonded asbestos products are solid, rigid and non-friable. The asbestos fibres are tightly bound in the product and are not normally released into the air. Common names for such products are 'fibro', 'asbestos cement' and 'AC sheeting'. In Australia, asbestos cement materials were first manufactured in the 1920s and were commonly used in the manufacture and renovation of residential building materials from the mid-1940s until the late 1980s. During the 1980s asbestos cement materials were phased out in favour of asbestos-free products. From 31 December 2003, the total ban on manufacture, use, reuse, import, transport, storage or sale of all forms of asbestos came into force.

Non-friable asbestos-containing materials were commonly used, in both domestic and non-domestic buildings for (this is not an exhaustive list):

- roof sheeting and capping
- guttering
- gables, eaves/soffits
- water pipes and flues

- DT surrounds (disconnecter trap surrounds)
- wall sheeting (flat or a weatherboard style)
- backing boards of electrical switchboards
- flexible building boards
- imitation brick cladding
- fencing
- car ports and sheds
- waterproofing membranes
- telecommunications pits
- some window putty
- expansion joints
- packing under beams
- concrete formwork.

Many houses built or renovated before 1990 therefore contain asbestos cement materials, especially in the eaves, soffits, internal and external wall cladding, ceilings (particularly in wet areas such as bathrooms and laundries) and fences.

It can be difficult to tell whether a building has asbestos containing materials, just by looking at it. As a general rule, if the building was built:

- before the mid-1980s, it is highly likely that it would have some materials containing asbestos
- between the mid-1980s and 1990, it is likely that it would have materials containing asbestos
- after 1990, it is highly unlikely it would have materials containing asbestos.

If you are not sure whether a building material contains asbestos, play it safe and assume that it does. Alternatively, seek advice from an asbestos consultant or other competent person experienced at working with asbestos or get the material tested by a NATA accredited laboratory.

Further information on types of, and common locations of, asbestos containing materials can be found at www.worksafe.qld.gov.au, click on 'asbestos'. A photo gallery of common asbestos products can also be found at: <http://www.deir.qld.gov.au/asbestos/know-where.htm>

LEGISLATIVE REQUIREMENTS IN RELATION TO ASBESTOS CONTAINING MATERIALS

Work Health and Safety Act 2011

The Work Health and Safety Act 2011 (the Act 2011) outlines a number of duties. One of these duties is that a PCBU must ensure, so far as is reasonably practicable, the health and safety of workers and others from work carried out as part of the conduct of the business or undertaking.

Chapter 8: Asbestos - Work Health and Safety Regulation 2011

Chapter 8 of the Work Health and Safety Regulation 2011 (the Regulation 2011) outlines a number of duties in relation to working with asbestos. Chapter 8 is divided into 10 parts under the following headings:

Part 8.1	Prohibitions and authorised conduct
Part 8.2	General duty
Part 8.3	Management of asbestos and associated risks
Part 8.4	Management of naturally occurring asbestos
Part 8.5	Asbestos at the workplace
Part 8.6	Demolition and refurbishment
Part 8.7	Asbestos removal work
Part 8.8	Asbestos removal requiring class A licence
Part 8.9	Asbestos-related work
Part 8.10	Licensing of asbestos removalists and asbestos assessors

Some of these duties are described in more detail below.

Asbestos removal work

If you are a tradesperson or other business operator removing more than 10 m² of non-friable asbestos materials you can only carry out this work under the authority of a class B or class A asbestos removal licence, issued by Workplace Health and Safety Queensland.

An asbestos removal licence is held by a person conducting a business or undertaking (PCBU). Workers carry out licensed asbestos removal work on behalf of or for the PCBU who holds the licence. Individual workers do not hold an asbestos licence but must meet certain training requirements. An asbestos removal licence issued by Workplace Health and Safety Queensland (WHSQ) is valid for five years.

If you are planning to remove friable asbestos-containing materials (loosely bound), you **MUST** use a business with a current class A asbestos removal licence to do the work.

Homeowners planning to remove more than 10 m² of non-friable asbestos-containing materials must either:

- use a business with a current class A or class B asbestos removal licence to do the work; or
- hold a certificate obtained under arrangements established by Queensland Health.

To conduct licensed asbestos removal work, other requirements include (not an exhaustive list):

- getting a copy of the asbestos register for the workplace
- preparing asbestos removal control plans and making them readily accessible

- informing people before asbestos removal work starts
- erecting signage and barricades
- limiting access to the asbestos removal work area
- having decontamination facilities available
- disposing of asbestos waste properly
- being aware of additional requirements for class A asbestos removal work, including air monitoring
- notifying Workplace Health and Safety Queensland five days prior to work commencing (for all A and B class removal work)
- ensuring a clearance inspection is completed before the asbestos removal area is reoccupied.

Homeowners or tradespeople seeking a business that removes asbestos materials should search the OIR website for the list of businesses holding such licences. Check the business holds the appropriate asbestos removal licence (class A or B) issued by Workplace Health and Safety Queensland.

The removal of less than ten square metres of non-friable asbestos containing material (ACM), or removal of asbestos-contaminated dust or debris (ACD) associated with that work, does not have to be done by a business holding one of these licences, however the work must be done in accordance with the 'How to Safely Remove Asbestos Code of Practice 2011' or equal standard.

For any asbestos removal carried out a workplace which is not domestic premises, the asbestos removalist must obtain a copy of the asbestos register before the removal work is carried out.

More information on legislative duties can be found in the:

- Work Health and Safety Regulation 2011
- How to Manage and Control Asbestos in the Workplace Code of Practice 2011
- How to Safely Remove Asbestos Code of Practice 2011

Asbestos related work

Asbestos-related work means work involving asbestos other than asbestos removal work, for example, drilling into ACM. Asbestos-related work that is also high risk construction work (i.e. construction work that involves the disturbance of asbestos) requires a documented safe work method statement. For work other than removal (for example preparing a non-friable asbestos wall for painting or drilling a hole for piping or electrical cabling) you do not require a licence or certificate. However safety precautions to minimise asbestos fibres getting into the air must be taken.

If a PCBU carries out asbestos related or removal work at a domestic premises then those parts of the domestic premises are a workplace and the Act 2011 and the Regulation 2011 apply.

Control on use of particular equipment

There are restrictions on high risk activities (and substantial penalties apply) when working with asbestos containing material, as these activities will release extensive amounts of asbestos fibres and will also contaminate the equipment:

- Never use power tools such as angle grinders, circular saws and electric sanders on surfaces that contain asbestos unless the equipment is designed and/or used in a manner that captures or suppresses airborne asbestos fibres, such as dust extraction devices connected to an a H class industrial asbestos vacuum cleaner that complies with AS/NZS 60335.2.69 fitted with a HEPA filter and that complies with AS4260-1997.
- Never use high pressure water spray to clean an asbestos containing material
- Never use domestic vacuum cleaners (even if they have a HEPA filter) to clean up asbestos dust.

Identifying asbestos or ACM at the workplace

A person with management or control of a workplace must ensure, so far as is reasonably practicable, that all asbestos or asbestos-containing materials (ACM) at the workplace is identified by a competent person who has acquired through training, qualification or experience the knowledge and skills to carry out this task. Where a sample of suspected ACM is taken, this does not have to be carried out by a licensed asbestos removalist.

The requirement to ensure asbestos or ACM at the workplace is identified by a competent person does not apply:

- to naturally occurring asbestos(e.g. asbestos encountered during mining or quarrying)
- if the duty holder assumes asbestos or ACM is present
- if the duty holder has reasonable grounds to believe that asbestos or ACM is not present.
- If asbestos or ACM is assumed to be present at a workplace, it is taken to be identified at the workplace.

Persons who may be considered to be competent in the identification of asbestos and ACM include (but not limited to):

- occupational hygienists who have experience with asbestos and ACM
- licensed asbestos assessors
- asbestos removal supervisors
- individuals who have a statement of attainment in the VET course for asbestos assessors
- a person working for an organisation accredited by the National Association of Testing Authorities (NATA) under ISO 17020 for surveying asbestos.

If there is not a competent person within the organisation, an external competent person should be engaged. The steps a competent person should follow to take a sample of suspected ACM are outlined in Appendix A of the 'How to Manage and Control Asbestos in the Workplace Code of Practice 2011'.

Register of asbestos or ACM at a workplace

A person with management or control of a workplace must ensure an asbestos register is prepared and kept at the workplace. The asbestos register must record any asbestos or ACM identified at the workplace or likely to be present from time to time.

An asbestos register is not required if:

- the workplace is a building that was constructed after 31 December 1989, and
- no asbestos has been identified at the workplace, and
- no asbestos is likely to be present from time to time.

It is important to note that even if no asbestos is identified, or is determined not to be present based on reasonable grounds, the register must state that no asbestos or ACM is identified or present at the workplace. All asbestos that is identified and recorded in the register must then be included in the asbestos management plan.

More information about asbestos registers and asbestos management plans can be found in the 'How to Manage and Control Asbestos in the Workplace Code of Practice 2011'.

Demolition and refurbishment

A person with management or control of a workplace must ensure the asbestos register is reviewed and revised if it is not adequate before demolition or refurbishment of:

- a building constructed before 31 December 1989
- a non-building structure constructed or installed before 31 December 2003 if there are reasonable grounds to believe asbestos is installed in the structure
- plant constructed or installed before 31 December 2003 if there are reasonable grounds to believe asbestos is installed in the plant.

A copy of the register must be given to the business that will be carrying out the demolition or refurbishment before the work starts.

The business carrying out demolition or refurbishment at a workplace must obtain a copy of the register before demolition or refurbishment work starts. If there is no register for the structure or plant, the business carrying out the demolition or refurbishment must not start the work until the structure or plant has been inspected to determine whether asbestos or ACM is present.

The asbestos in the structure or plant must be removed, as far as reasonably practicable, before the demolition commences.

The Public Health Act 2005 and the Public Health Regulation 2005

The asbestos provisions of the public health legislation apply to non-workplace areas and place duties on persons such as *homeowners* in relation to asbestos related and removal work being conducted by the homeowner.

WORKING SAFELY WITH ASBESTOS CONTAINING MATERIALS

Safe work methods and principles in relation to asbestos related and removal work can be found at:

- How to Manage and Control Asbestos in the Workplace Code of Practice 2011
- How to Safely Remove Asbestos Code of Practice 2011

Some of the main safe work principles include:

- thoroughly wet down the material before you start work and regularly during the work by lightly spraying surfaces with water or a 1:5 polyvinyl acetate (PVA) water solution
- use non powered or battery operated hand tools, for example cordless drills can be used if on low speed below 650rpm
- minimise cutting or breaking of the asbestos product
- isolate the area you are working on from the rest of the building by closing and sealing internal doors
- cover the floor with heavy-duty plastic sheeting to catch dust, debris and offcuts
- disposable coveralls (Type 5 or 6) should be used to prevent the contamination of clothing and footwear. An attached hood, and suitable disposable gloves should also be worn. The coveralls should have no external pockets or velcro fastenings, and the gloves should be sufficiently robust for the work to be done. Smooth, nonslip footwear without laces or top fasteners are preferable to plastic overshoes where there is a risk of slipping
- wear an appropriate respirator. Ordinary dust masks are not effective in preventing the inhalation of asbestos fibres and dust. You should wear either a half-face filter respirator fitted with a class P1 or P2 filter cartridge, or a class P1 or P2 disposable respirator appropriate for asbestos. Respiratory protection devices should comply with Australian/New Zealand Standard 1716. The respirator must be fit-tested to the individual
- carefully package asbestos waste, including any offcuts, in two layers of 0.2 mm thick polythene sheeting
- Use an H class industrial asbestos vacuum cleaner that complies with AS/NZS 60335.2.69 fitted with a HEPA filter and that complies with AS4260-1997.

TRANSPORT AND DISPOSAL OF ASBESTOS WASTE

The Queensland Environmental Protection Regulation 2008

Asbestos waste must be disposed of correctly. There are legal requirements, under the Queensland Environmental Protection Regulation 2008 for transporting regulated waste (asbestos waste), including the requirement to hold an environmental authority for regulated waste transport in certain circumstances.

Contractors and businesses with less than 250 kg of asbestos waste

An environmental authority to transport regulated waste and the completion of waste transport certificates is not required for the non-commercial transportation of less than 250 kg of asbestos waste. Therefore, if the main purpose of your commercial operation is not transporting regulated waste, but you transport asbestos waste as an *incidental* part of carrying out your main business, you do not need to hold an environmental

authority for regulated waste transport or complete waste transport certificates when transporting less than 250 kg of asbestos waste.

For example, if you are a plumber and you are carrying out plumbing work that results in the production of asbestos waste, you do not need an environmental authority to take the asbestos waste to the landfill if the load is less than 250 kg (because transporting asbestos waste is not the main purpose of your business).

Contractors and businesses with 250 kg or more of asbestos waste

The regulated waste transport laws apply if you are transporting 250 kg or more of asbestos waste in a vehicle on a non-commercial basis, and you will therefore need to:

- engage a commercial contractor to undertake the transport and dispose of the asbestos; or
- obtain an environmental authority for regulated waste transport

Transporting asbestos waste on a commercial basis

The regulated waste transport laws apply if you are transporting any quantity of asbestos in a vehicle on a commercial basis. Commercial basis means that the *primary objective* of the operator is to transport regulated waste. When the business's primary objective is to provide other services (for example, plumbing or electrical services) and the transport of regulated waste (asbestos waste) is incidental to the day-to-day business, then the transport is not considered to be on a commercial basis.

Application for environmental authority to transport regulated waste is made to the Department of Environment and Science on 13QGOV (13 74 68).

Version	Date	Author
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