

## ASBESTOS INSPECTION AND MATERIAL REGISTER



<b>Client:</b>	<b>SAILWOOL PTY LTD</b>
<b>Contact:</b>	<b>LLOYD EVERIST</b>
<b>Site:</b>	<b>2 DESMA COURT, BOHLE TOWNSVILLE</b>
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## 1. SCOPE OF WORKS

### 1.1 REQUEST FOR REPORT

The Request for Inspection and Report originated from Lloyd Everist, acting for and on behalf of Sailwool Pty Ltd, as the owner of the property located at 2 Desma Court, Bohle Townsville. The report was commissioned, such that an accurate and up to date Register of the property was available and maintained.

### 1.2 PROPERTY DETAILS

The inspection has been conducted on the structures that comprise the facility located at 2 Desma Court, Bohle Townsville, and known as the 'Townsville Office and workshop' facilities of Dawsons Engineerings (NQ) Pty Ltd' Townsville operations complex. The complex in question is a working facility that comprises the offices; administration and workshop facilities for the Townsville area. The facility is comprised of a single building structure, along with concrete and earth hardstand areas, and temporary type container storage facilities. Build date of the structure is given as 2007.

### 1.3 INSPECTION DETAILS

Dawsons were requested to issue a report that is deemed to be current and reflective of the current material status of unknown, known or tested materials within the confines of the nominated building, and on the identified property as a whole. This inspection was undertaken on Tuesday 14th March 2017 to confirm and or identify the presence of Asbestos Containing Materials (ACM's) by means of collection of representative sampling and or visual identification, and to subsequently prepare an updated Asbestos Register. This Register will be the compilation of all collected samples and information (photo's / material usage / supplied information) during the course of this inspection and or those of any previous inspection, along with the sample analysis results, that bear relevance to the identified structure and facilities.

***Asbestos containing material (ACM) means any material or thing that, as part of its design, contains asbestos.***

**Per – "How to Manage and Control Asbestos in the Workplace" - Code of Practice 2011.**

Whilst the nominated building only in its entirety is to be determined as included in this audit scope, it cannot be deemed to be absolute. Inspections undertaken were non-invasive, and were undertaken in good faith based upon information supplied by the Client and what was visible at time of inspection.

The information compiled in this report is believed to be representative of the building complex in question. Should there be any product revealed that is thought to be suspect in nature, and not

clearly identified as being similar in nature / location to that of any samples that form part of this report, it is to be understood that they too are to be treated as suspect, until testing or some means of identification provides conclusive evidence as to their nature.

This subsequent evidence and or documentation, or any other amendments should then be annexed to this report, so as to accurately represent the present state of the building / property and / or structures that are located on the property at any given time. No underground / underslab services; internal wall or ceiling cavities were accessed for inspection as part of this audit.

#### **1.4 AREA'S NOT ACCESSED**

The areas not accessed as part of this Inspection and Report, are identified as being:

- Any underground / underslab services / complete sub-floor areas.
- Wall or ceiling cavities.
- Internal of any 'vessel'; item of plant or equipment (unless specifically detailed) etc.

#### **1.5 REPORT FOR CLIENT ONLY**

This Report has been produced solely for the use and information of the Client; staff; subcontractors; tenants and or their nominated representatives. The intent is to determine the presence of any ACM's within the designated building complex on the site, along with the compilation of all documents associated with the inspection into a single source of reference.

Whilst no single section of this report, or sub-section thereof, should be taken as being representative of the overall report, it has been structured in such a way as to be a comprehensive document within itself in relation to each individual area, as designated by the client.

## **2. METHODOLOGY**

### **2.1 SAMPLE COLLECTION**

The identification of ACM's can only be undertaken by means of a visual inspection, undertaken by experienced personnel, in order to determine what samples are to be submitted for analysis. There is no instrument or process currently available that will afford the on-site testing and or recognition of any ACM's. Given the requirement for samples to be analysed in a laboratory, any restrictions imposed upon the amount of samples collected for analysis, will in turn, limit or reduce the prospect of the concluded results as being 'complete'.

The collection of samples to determine the presence of ACM's within the identified confines of this property, was undertaken by trained, experienced auditors. All accessible areas (see 1.2) within the property confines were inspected, and small representative samples were taken for analysis. Processes are established for the management of contamination of the collected samples i.e.

individually sealed collection bags, along with procedures to ensure elimination of any cross-contamination, by regular cleaning of sample collection utensils & tools / re-use of bags etc.

In the instance of identification of visually similar suspected materials in a single location, a visual confirmation may have been concluded, rather than the collection of additional samples. In most instances however, sample collection was undertaken on all suspected materials.

Upon collection, a number of observations are recorded, which then compile the body of the 'Asbestos Audit Sample Sheet' (Per Section 2.4). These observations include:

- Location – Building / Floor / Level / Room / Wall / Ceiling / Floor / Soffit etc.
- Internal / External.
- Type of Material – Bonded / Friable / FC Sheet etc.
- Condition Assessment – Good / Fair / Poor / Bare / Damaged etc.
- Estimated Quantity of sampled material.

## 2.2 SAMPLE ANALYSIS

***NO samples were collected and submitted for analysis as a part of this inspection.***

The Analysis of all samples collected as part of this Inspection and Report have been analysed by an independent, NATA accredited laboratory – SGS Australia Pty. Ltd. This company has no relationship to Dawsons Engineering (NQ), other than being a trading partner engaged in a commercial transaction.

Laboratory analysis was undertaken by qualified staff using Polarised Light Microscopy (PLM), in conjunction with Dispersion Staining Techniques, and was undertaken as required in accordance with the guidelines and standards as described by the National Association of Testing Authorities (NATA), and Standards Australia.

## 2.3 SAMPLE IDENTIFICATION

Any samples collected are catalogued and identified by Dawsons' staff, and all numerical or alphabetical designations used within the scope of this document were established and formatted by them, to coincide as closely as possible with the supplied building / structure / area identification as designated by the Client, or their nominated representative at time of commencement of the Audit process.

## 2.4 ASBESTOS AUDIT SAMPLE / ACTION PLAN REGISTER

*Per Following Table*



Dawsons Engineering (N.Q.) Pty Ltd - Asbestos Audit and Report

### 3. SUMMARY

#### 3.1 GENERAL

Given the build date of the property, and after a visual inspection of the facility, **NO** samples were collected and analysed as part of the inspection process. All results are documented in the Register, along with suggested Control measures as required.

As part of the inspection process, all other materials associated with the complex / structure were determined as not being suspect of being an ACM, and therefore, not tested.

A comprehensive list of all materials that returned a positive result to the presence of asbestos (ACM), is detailed in register.

[Asbestos Audit Sample/ Action Register](#)

#### 3.2 PRIORITIES

Whilst all identified asbestos containing substances are detailed within the Register, If a sample is marked as "Priority" it represents identified ACM's, that by nature of their type; condition; location and or quantity, are seen to be the ACM's that require urgent to immediate attention in order to reduce or minimise the risk of potential for exposure.

This list is based upon the findings of the personnel undertaking the inspection, and all associated information collected during the course of that inspection, be that as supplied in written or verbal communication from the Client of property users at time of the inspection, or that information as being quantified at the site.

Some items maybe detailed as being removed as a Priority, whilst other items may be suggested as receiving some form of repair or treatment in the short-term. In all instances, suggested control measures are identified for each individual ACM, and it should be highlighted, that wherever possible 'Removal' is determined as being the most desired measure possible, but not necessarily determined to be undertaken immediately or as a high priority.

#### 3.3 LOW DENSITY BOARD

"Low-density" asbestos fibre board is a lightly compressed board, similar in outward appearance to asbestos-cement sheeting or plasterboard. It can also sometimes be referred to as asbestos insulating board. Generally, "Low-density" board (LDB) was manufactured as a flat sheet product although some perforated sheeting types (typically used in an acoustic ceiling application) have also been manufactured and are quite common. The most common form of low-density asbestos fibre board is recognised as the "Asbestolux" trade-name, manufactured by James Hardie Pty Ltd.

Sample analysis of low density asbestos fibre board has revealed contents by volume of up to 70% (and beyond in some instances) of asbestos fibre, and is generally composed of 'brown' asbestos (amosite) and white asbestos (chrysotile) in a calcium silicate plaster compound.



The board is often 'soft' to the touch and pressure by a fingernail or similar, will leave an indentation on the product. This physical characteristic, allows the material to be easily 'crumbled' if disturbed.

**When in a good condition, and left undisturbed, it presents little or low risk to building occupants.**

However, release of airborne fibres can occur with even minor or physical disturbance or contact. During maintenance activities the potential for release of airborne asbestos fibres to be released is high, if the low density fibre board is broken or disturbed without the necessary precautions. Given the high concentration of asbestos fibres present within the board, and the 'soft' nature of the product, low density fibre board is regarded as a "Friable" material. As such, this product can only be removed by persons holding an "A" Class Asbestos Removal License and all such works must be conducted in accordance with the relevant legislative guidelines.

The inspection of premises and all structures that combine to be the Cairns Depot Main Office/Freight Receival Shed as part of this audit, and the subsequent analysis of samples presented as a result of that inspection, have revealed no instances of identified 'LDB's.

### **3.4 MANAGEMENT PLAN CONTROLS**

In accordance with the 'How to Manage and Control Asbestos in the Workplace' Code of Practice 2011, upon positive identification of an Asbestos Containing Material (ACM), a system is to be implemented and maintained, which effectively assists in the control of any potential risks associated with the presence of any ACM within the Workplace.

These Control Measures should be implemented in accordance with the following Hierarchy of Controls ('How to Manage and Control Asbestos in the Workplace' Code of Practice 2011):

- 1. Elimination / Removal (most preferred).**
- 2. Isolation / Encapsulation / Sealing.**
- 3. Engineering Controls.**
- 4. Safe Work Practices (Administrative controls).**
- 5. Personal Protective Equipment (PPE).**

A single Control or combination of more than one of these techniques may be required to adequately manage the identified ACM.

The Control Methods / Procedures detailed on the Management Plan Controls Sheet have been based upon information gathered during the Audit process. This data may have been offered by the Client; the Client's nominated representative; information gathered from representatives of the tenancy in question, or purely by observation of the Auditing personnel.

The Control methods suggested have been developed based upon the following criteria being considered:

- Visual Inspection of Material / Area at time of Audit.
- Nature / Condition of positively identified material.
- Location / Proximity to human activity / access.
- Susceptibility to (further) deterioration.
- Presence of any contributing factors that will promote deterioration.
- Nature of Business / Premises / Location.
- Information supplied by the Client (future works / demolition etc.)

In order to fully implement and develop the suggested (or any other) control methods that may be necessary as a result of a Risk Assessment, the changes or modifications that may be required to workplace can only be undertaken by the Owner or person in control of the business or undertaking. Given that the identification of an ACM may require that there may be access and / or procedural modifications necessary, naturally, the Owner or user of the business or undertaking can only manage any changes along these lines effectively, albeit with further advice and / or information that may be available through some extension of the consultative process.

### 3.5 ACTION SUMMARY

Specifically, the following list represents or identifies individual items needed to be addressed, in order to facilitate the overall process of management of asbestos within the complex:

- **Signage:** Erect suitable signage at all entrances / exits to the site and or individual buildings, to firstly identify that an asbestos audit has been undertaken; and secondly to identify where a copy of the register exists and who the contact person is in regarding any queries in relation top the register.
- **Identification:** Ensure that areas identified as containing ACM's are labelled (stickers) where appropriate, to visually identify the presence of asbestos.
- **Removal:** Determine the need for specific removal works of any identified ACM's that have been conditionally assessed as being poor; damaged; friable and or within a location or environ that would increase the risk of exposure to such a level, that airborne fibre release of personal contact might be such that it is unavoidable, during the course of a normal daily routine for staff or contractors.
- **Training:** Ensure all staff that may come in contact with ACM's during the course of their normal daily routines be familiar with their specific duties and requirements in relation to asbestos containing materials, as designated by current procedures and legislative guidelines. Staff should undertake some form of 'Asbestos Awareness' training, relevant to the identified ACM's at the complex. This may form a part of or be included within the induction procedure, or as a separate entity itself.

- **Procedures:** Review existing policies and procedures in relation to the working with or near ACM's, or establish procedures that detail sufficiently the requirements of staff and contractors whilst working on the site while working with or near ACM's.
- **Restrictions:** Determine (if necessary), any restrictions or access closures to particular areas or locations within the complex, based upon the identified presence of ACM's. Any such areas should be then identified with the appropriate signage or visual identification.
- **Permits:** Review (if necessary) existing permit procedures in relation to the working with or near ACM's, or establish (if necessary) a permit system that detail sufficiently the requirements of staff and contractors whilst working on the site while working with or near ACM's.
- **Staff Register:** Review existing staff register, or establish a staff register (to be signed and dated), identifying the acknowledgement of asbestos within the workplace.
- **Contractor Register:** Review existing contractor register, or establish a contractor's register (to be signed and dated), identifying the acknowledgement of asbestos within the workplace. Ensure procedures are in place identifying contractor requirements whilst working on the site, in relation to asbestos containing materials.
- **Work Plans / JSEA's:** Ensure all staff and Contractors have developed and prepared appropriate safety plans in relation to working with asbestos, in accordance with the procedural requirements, and all legislative guidelines.

## **4. ACTION SUMMARY**

### **4.1 DAWSONS MANAGEMENT BRIEF**

The effective Management and Control of Asbestos / Asbestos related Products within the community, and specifically the workplace, has been prescribed in changes to W.H.S. Regulations and reflected in the relevant Worksafe Codes of Practice, Advisory Standards and Standards Australia documentation.

The risk of exposure to Asbestos and any related products needs to be verified, highlighted, and correctly managed.

The staff at Dawsons Engineering aim to ensure that all facets of our Asbestos related work (Auditing / Sampling / Management / Removal) are ultimately directed at:

- Conforming to all current Regulatory standards and procedures.
- Supplying a cost-effective and manageable service to clients.
- To provide technical and consultative services in order to establish and implement effective Control Criteria.

Dawsons' Engineering remains committed to the development, maintenance and continual upgrade of our personnel and technical services, to ensure a quality service to our valued clients.

Sharon Dawson

Chief Executive Officer  
Dawsons Group of Companies

## 4.2 PROHIBITIONS ON ASBESTOS IN THE WORKPLACE

### WHAT ARE THE PROHIBITIONS ON ASBESTOS IN THE WORKPLACE ?

**R.419** A person conducting a business or undertaking must not carry out or direct or allow a worker to carry out work involving asbestos if that work involves manufacturing, supplying, transporting, storing, removing, using, installing, handling, treating, disposing of or disturbing asbestos or ACM, except in prescribed circumstances.

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

The final prohibition for asbestos in the workplace came into effect on 31st December 2003. These prohibitions do not apply if the work involving asbestos is any of the following:

- Genuine research or analysis;
- Sampling and identification in accordance with the WHS Regulations;
- Maintenance of, or service work on, non-friable asbestos or ACM, fixed or installed before 31st December 2003, in accordance with the WHS Regulations;
- Removal or disposal of asbestos or ACM, including demolition, in accordance with the WHS Regulations;
- Transport and disposal of asbestos and asbestos waste in accordance with jurisdictional legislation;
- Demonstrations, education or practical training in relation to asbestos or ACM;
- Display, or preparation or maintenance for display, of an artifact or thing that is, or includes, asbestos or ACM;
- Management in accordance with the WHS Regulations of in-situ asbestos that was installed or fixed before 31st December 2003;
- Work that disturbs asbestos during mining operations that involve the extraction of or exploration for a mineral other than asbestos;
- Laundering asbestos-contaminated clothing in accordance with WHS Regulations;
- Where the regulator approves the method adopted for managing the risk associated with asbestos.

Work involving asbestos-contaminated soil is not prohibited as long as a competent person has determined the soil does not contain any visible ACM or friable asbestos. If friable asbestos is visible, it should not contain more than trace levels of asbestos determined in accordance with AS4964:2004 Method for the Qualitative Identification of Asbestos in Bulk Samples.

The management of Naturally Occurring Asbestos (NOA) that stays in its natural state is not prohibited if managed in accordance with an asbestos management plan.

Although the ultimate goal of this prohibition is for all workplaces to be free of asbestos, it is only when these materials are being replaced or where they are present a health risk that non-asbestos alternatives must be used. Caution needs to be taken when working with buildings constructed prior to 1990 or newer buildings that may have used recycled materials and may have reinstated old plant containing ACM gaskets and / or linings.

If asbestos or ACM is identified in the workplace and demolition or refurbishment work is going to be carried out, the asbestos or ACM must be removed if it is likely to be disturbed before the work starts. If other maintenance or service work is to be carried out at the workplace, removal of asbestos should be considered as a control measure.

Where removal is not reasonable practicable, other control measures must be implemented to minimize exposure, including encapsulation or sealing.

In addition to the prohibition, there is also a restriction on who can remove asbestos. Asbestos removalists and their workers must be competent to carry out asbestos removal work and, except in limited circumstances, must be licensed. Further details on who can remove asbestos can be found in the WHS Regulations and the Code of Practice: "How to Safely Remove Asbestos".

***Prohibitions on the import of plant and other materials that contain asbestos.***

The importation of asbestos or materials containing asbestos into Australia is generally prohibited under the Customs (Prohibited Imports) Regulations 1956 (Customs PI Regulations).

To complement the ban on the importation, manufacture and use of all forms of asbestos and asbestos-containing products from 31st December 2003, the import prohibition on asbestos under the Customs PI Regulations was also introduced.

If plant or other materials are imported from countries where asbestos is not yet prohibited, a quality assurance system should be put in place to ensure they do not contain asbestos prior to supplying or using it in the workplace.

#### **4.3 DUTIES TO MANAGE AND CONTROL ASBESTOS IN THE WORKPLACE**

The WHS Act requires all persons who conduct a business or undertaking to ensure, so far as reasonable practicable, that workers and other persons are not put at risk from work carried out as part of the business or undertaking. The WHS Regulations include specific obligations to manage and control asbestos and ACM at the workplace. These are summarized in the table below:

Duty Holder	Responsibilities
<b>Person conducting a business or undertaking (PCBU)</b>	<p><b>Control risk of exposure</b></p> <p>Must ensure, so far as reasonable practicable, that exposure of a person at the workplace to airborne asbestos is eliminated, except in an area that is enclosed to prevent the release of respirable asbestos fibres and negative pressure is used. If this is not reasonably practicable, the exposure must be minimised so far as reasonable practicable.</p> <p>Must ensure the exposure standard for asbestos is not exceeded at the workplace.</p> <p><b>Health Monitoring</b></p> <p>Must ensure health monitoring is provided to a worker who is carrying out licensed removal work, other than ongoing asbestos removal work or asbestos-related work, and there is a risk of exposure when carrying out that work.</p> <p>Must ensure the health monitoring is carried out under the supervision of a registered medical practitioner and information as specified in the WHS Regulations is provided to that medical practitioner.</p> <p>Must pay all expenses for health monitoring, obtain report, and keep records of all health monitoring.</p> <p><b>Training and use of equipment</b></p> <p>Must ensure that information, training and instruction provided to a worker is suitable and adequate and that it is provided in a way that is readily understandable by any person to whom it is provided.</p> <p>Must ensure that, if a worker is either carrying out asbestos-related work or may be involved in asbestos removal work, they are trained in the identification and safe handling of asbestos and ACM and the suitable control measures.</p> <p>For workers who carry out work where NOA is likely to be found, training must be provided on hazards and risks associated with NOA.</p> <p><b>Controlling the use of equipment</b></p> <p>Must not use, or direct or allow a worker to use, certain equipment on asbestos and ACM.</p> <p><b>Asbestos-related work</b></p> <p>Must, if there is uncertainty as to whether work is asbestos-related work, assume asbestos is present or arrange for an analysis of a sample to be undertaken to determine if asbestos is present.</p> <p>Must give information as specified in regulation 480 of the WHS Regulations to a person who is likely to be engaged to carry out asbestos-related work.</p> <p>Must ensure the asbestos-related work area is separated from the other work areas at the workplace, signs are used to indicate where the asbestos-related work is being carried out and barricades are used to delineate the asbestos-related work area.</p> <p>Must ensure that a competent person carries out air monitoring of the work area if there is uncertainty as to whether the exposure standard is likely to be exceeded.</p> <p>Must ensure that decontamination facilities (including containers and labels in accordance with the GHS) are available when asbestos-related work is being carried out.</p> <p>Must ensure that asbestos waste is contained and labelled in accordance with GHS before it is removed, and is disposed of as soon as practicable.</p> <p>Must ensure, where personal protective equipment (PPE) is used and contaminated with asbestos, such PPE is sealed, decontaminated, labelled and disposed of in accordance with the WHS Regulations. If this is not reasonable practicable, the PPE must be laundered in accordance with the WHS Regulations. PPE that is not clothing and cannot be disposed of must be decontaminated and kept in a sealed container until it is reused for the purposes of asbestos-related work.</p>

Duty Holder	Responsibilities
<b>PCBU with management or control of a workplace</b>	<p><b>Identifying or assuming asbestos or ACM</b> Must ensure, so far as reasonable practicable, that all asbestos or ACM at the workplace is identified by a competent person or assume its presence. May identify asbestos or ACM by arranging a sample of the material to be analysed.</p> <p><b>Indicating presence and location</b> Must ensure the presence and location of asbestos or ACM identified (or assumed to be identified) at the workplace is clearly indicated (by a label if reasonable practicable).</p> <p><b>Asbestos sample register</b> Must ensure an asbestos register is prepared, maintained, reviewed and kept at the workplace. It must be readily available to workers, their health and safety representatives and other persons. Must ensure, when management or control of the workplace is relinquished, a copy of the asbestos register is given to the person assuming management or control.</p> <p><b>Asbestos management plan</b> Where asbestos has been identified at the workplace, ensure an asbestos management plan is prepared, maintained and reviewed. It must be accessible to workers, their health and safety representatives and other persons.</p> <p><b>Naturally occurring asbestos (NOA)</b> Must manage the risks associated with NOA at the workplace and, where identified at the workplace or likely to be present, ensure that a written asbestos management plan is prepared, maintained and reviewed.</p>
<b>PCBU carrying out demolition or refurbishment work</b>	<p><b>Demolition and Refurbishment Work</b> Prior to demolition or refurbishment work starting, must review the asbestos register and ensure all asbestos that is likely to be disturbed is identified and removed so far as is reasonably practicable. Must provide a copy of the asbestos register to the person carrying out the demolition or refurbishment work before the work commences. Must, if an emergency occurs and a structure or plant is to be demolished, ensure that before the demolition occurs there is a procedure to reduce the risk of exposure to asbestos to below the exposure standard, and notify the regulator about the emergency.</p> <p><b>Demolition and Refurbishment Work</b> Must, prior to the demolition or refurbishment work being carried out: Obtain a copy of the asbestos register for the workplace from the person with management or control before the work commences. If an asbestos register is not available, ensure that the structure or plant to be demolished or refurbished has been inspected by a competent person to determine if any asbestos or ACM is fixed to or installed (or assume its presence). Where asbestos is determined to be fixed to or installed, tell the occupier, owner (if at a domestic premises) or the person with management or control in any other case. Ensure asbestos at domestic premises that is likely to be disturbed by the demolition or refurbishment is identified and, if reasonably practicable, removed before the work starts. If an emergency occurs at a domestic premises where asbestos is identified (or assumed) and it must be demolished, ensure there is a procedure to reduce the risk of the exposure to asbestos to below the exposure standard and to notify the regulator about the emergency.</p>



In some cases, there may be more than one person with management or control of a workplace.

For example:

- A person with management of a workplace is a tenant;
- A person with control of a workplace has the power to make decisions and changes to the structure and use of the workplace;
- This person will usually be the owner of the workplace or a representative of the owner and may:
  - Own the workplace and engage workers to carry out work there;
  - Own the workplace but lease it to another person conducting a business or undertaking at the workplace;
  - Have management or control over the workplace, for example a property management group or agent.

#### **4.4 WHAT IS INVOLVED IN MANAGING THE RISKS?**

**R.420      A person conducting a business or undertaking must ensure, so far as reasonably practicable, exposure of a person at the workplace to airborne asbestos is eliminated. If this is not reasonable practicable, the exposure must be minimised so far as reasonable practicable. The exposure standard for asbestos must not be exceeded at the workplace.**

Managing the risks associated with asbestos involves:

- identifying asbestos and ACM at the workplace and recording this in the asbestos register;
- assessing the risk of exposure to airborne asbestos;
- eliminating or minimizing the risks by implementing control measures;
- reviewing control measures to ensure they are effective.

When choosing the most appropriate control measure, the following Hierarchy of Controls must be considered:

- eliminating the risk (for example – removing the asbestos or ACM);
- substituting the risk, isolating the risk or applying certain engineering controls (for example – enclosing;
- encapsulation; sealing or using certain tools);
- using administrative controls (for example – safe work practices);
- using PPE.

A combination of these controls may be required in order to adequately manage and control asbestos or ACM.

#### 4.5 IDENTIFYING ASBESTOS OR ACM'S AT THE WORKPLACE

**R.422      A person with management or control of a workplace must ensure asbestos or ACM at the workplace is identified by a competent person.**

Identifying asbestos or ACM is the first step in managing the risk of exposure to asbestos in the workplace. As there may be more than one person in the workplace responsible for this duty, it is important that all duty holders consult, cooperate and coordinate with each other as well as consulting with workers and health and safety representatives.

If the person with management or control of the workplace assumes that asbestos or ACM is present, or if they have reasonable grounds to believe that asbestos is not present, a competent person does not need to be engaged to make this decision.

##### ***Who can be a competent person ?***

The WHS Regulations define a competent person to be someone who has acquired knowledge and skills necessary to carry out the task through training, a qualification or experience. This may mean that the competent person who can identify asbestos is:

- Trained to handle and take asbestos samples, have the knowledge and experience to identify suspected asbestos and be able to determine risks and control measures;
- Familiar with building and construction practices to determine where asbestos is likely to be present;
- Able to determine that material may be friable or non-friable asbestos and evaluate its condition.

There may be a competent person within the business that is competent to identify asbestos. If there is not, an external competent person should be engaged. Persons who may be considered competent in the identification of asbestos include:

- Occupational Hygienists who have experience with asbestos;
- Licensed asbestos assessors;
- Asbestos removal supervisors;
- Individuals who have gained a Statement of Attainment in the unit - 'Competency for Asbestos Assessors';
- a person working for an organisation accredited by NATA under AS/NZS ISO/IEC 17020:2000 'General criteria for the operation of various types of bodies performing inspection for surveying asbestos'.

##### ***Factors to consider when identifying asbestos -***

The person who is carrying out the task of identifying asbestos should have all the relevant information so they can correctly identify where asbestos is located in the workplace. For example – obtaining information on the products used in making the building, structure or plant, including all building plans; design specifications; and correspondence with builders and plant manufacturers. Consulting workers in the workplace may also assist the person with this task.

There are a number of factors that may be taken into account to identify or assume that asbestos is present in the workplace. These include:

***When was the building constructed ?***

Asbestos was widely used as construction and insulation material in buildings until the late 1980's, when bans on its manufacture and use were put in place within Australia. However, the use of asbestos was only completely prohibited on 31st December 2003.

***Whilst bans were not absolute prior to 2003, recent (June 2014) legislative changes have determined that buildings constructed after 31st December 1989 do not need to be surveyed for the presences of asbestos.***

***What type of material was used to construct the building ?***

The main construction materials used were made from concrete; timber; brick; block; steel and many various forms of cement sheet products. If cement sheet is present in a building or structure, and was installed up to or prior to 1<sup>st</sup> January 1990, it is deemed likely to have contained asbestos fibres bonded within the cement based materials. For example – a roof made from corrugated cement sheeting is likely to contain asbestos.

Areas of buildings that are prone to wet conditions may contain asbestos in the walls and floors due to its hardness and waterproofing qualities, as compared to other materials. For example – bathrooms; toilets and laundries may have asbestos sheeting or vinyl tiles. Likewise, pipes throughout the building that carry water and sewage may also contain asbestos.

***Talk to designers, manufacturers or suppliers of plant, or refer to design plans***

Asbestos may be present in specific parts of the plant in a workplace, as it was used in many gasket and friction brake products. Despite a large reduction in its use, Chrysotile asbestos was still being used in some specific applications until recent years, including rotary vane vacuum pumps and in gaskets for certain types of equipment. If there is plant that was designed, built and installed prior to 1st January 2004, the supplier, manufacturer or designer of the plant should be consulted to find out if asbestos is present, and if possible, obtain this advice in writing. If this is not possible, review the design plans and seek advice from an experienced engineer or plant designer. Quality assurance systems or checks should be in place to confirm whether asbestos is present – i.e. representative sampling of the suspected products.

***Talk to workers who have worked at the workplace for a long time***

Speaking with experienced workers will assist in the identification process as they may be aware of the history of the building, including its age; construction; renovation or repairs, and may know exactly where asbestos is, or maybe suspected or located within the workplace.

***Visually inspect the workplace to identify asbestos, ACM and inaccessible areas***

A thorough inspection of all areas of the workplace, including specific items of plant & equipment, must be conducted, including all buildings; structures; ceiling spaces; cellars; shafts; storage areas and wall cavities.

Material needs to be considered to contain asbestos unless proven otherwise if:

- it cannot be identified;
- there is uncertainty as to whether it contains asbestos;
- it is inaccessible.

The design plans for the building; structure; ship; vessel or item of plant may assist in identifying inaccessible areas, as would discussion with builders; architects; manufacturers of plant and maintenance workers. Knowledge of materials used in the construction of the building or experience and findings from inspections of similar sections of the building (or similar buildings) may also assist.

***Take notes and photographs***

Taking notes and photographs while the inspection is being conducted can assist in producing the asbestos register.

## **4.6 ASSUMING ASBESTOS OR ACM IS PRESENT**

**R.422**

**A person with management or control of a workplace must:**

- assume the material is asbestos or ACM if it cannot be identified but a competent person reasonably believes it is asbestos or ACM;
- assume asbestos is present if part of the workplace is inaccessible and is likely to contain asbestos or ACM.

**It is not necessary to engage a competent person to identify asbestos if the person with management or control of the workplace assumes that asbestos is present or if that person has reasonable grounds to believe that asbestos is not present.**

If there is uncertainty as to whether asbestos is present in any part of the structure or plant, the person with management or control of the workplace can either assume asbestos is present and treat it with appropriate caution based on the level of risk or have a sample analysed. If it is assumed to be asbestos, it is considered to be asbestos for legal purposes. There is no need to take a sample for analysis and identification in all circumstances. This means the suspect material can remain undisturbed and the time and cost of sampling and analysis is avoided.

The person with management and control of a workplace can assume asbestos or ACM is not present as long as this assumption is based on reasonable grounds, which may include:

- a workplace is constructed post 1990 and there is no plant or equipment made prior to 2004;
- pre-1990 buildings where the building is constructed (including the roof) wholly of metal, brick or concrete, and has no internal walls that are made of fibro; gyprock or similar cladding. For instance – a corrugated iron shed or a colorbond type warehouse building constructed of double brick with bare brick internally. Flooring (vinyl tiles / sheet vinyl); switchboard materials and under eaves linings should also be considered;
- where a register indicates that all identified and assumed asbestos has been removed.

Once the presence and location of asbestos has been assumed:

- all requirements for managing asbestos must be followed until the material is removed or testing has confirmed that it is not or does not contain asbestos;
- the workplace asbestos register must include all the presumptions made about the materials in the workplace with a simple, generic statement such as – “*roof sheeting is presumed to contain asbestos*” or “*all underground conduits are presumed to contain asbestos*”.

#### 4.7 ARRANGING A SAMPLE TO IDENTIFY ASBESTOS

**R.423 A person with management or control of a workplace may identify asbestos or ACM by arranging for a sample of material at the workplace to be analysed for the presence of asbestos or ACM.**

**A sample must only be analysed by:**

- a NATA-accredited laboratory accredited for the relevant test method;
- a laboratory approved by the regulator;
- a laboratory operated by the regulator.

It can be difficult to tell whether a material contains asbestos simply by looking at it, unless it is labelled. If a material is imported from overseas, it may not be labelled as containing asbestos or it may only be labelled if the materials contain more than 10% asbestos. Therefore, a sample should be taken and analysed unless the decision was made to assume that it is asbestos.

Only a competent person may take the sample for analysis because of the increased health risk of fibres being released during the process. If the sampling process is conducted incorrectly, it can be more hazardous than leaving the material alone. All asbestos samples must be analysed by a NATA-accredited laboratory or one that is approved by the relevant regulator. Any sample taken should be sealed within a container, or a 200µm polythene bag, and appropriately labelled.

Once the results of the sampling are known, the person with management or control of the workplace must ensure the asbestos register is updated to indicate that the material is asbestos, or is assumed to be.

If asbestos is stable, non-friable and will not be disturbed, it should be left alone. Only material that is damaged or will be disturbed should be sampled. If the material may contain asbestos, and it is decided not to take samples, an assumption must be made that the material contains asbestos.

#### 4.8 INDICATING THE PRESENCE OF ASBESTOS IN THE WORKPLACE

**R.424** A person with management or control of a workplace must ensure the presence and location of asbestos or ACM identified at the workplace is clearly indicated. If reasonably practicable, the asbestos or ACM must be indicated by a label.

All identified or assumed asbestos, including where the asbestos is inaccessible, must be clearly indicated. If it is reasonably practicable, labels must be used to identify the material as containing asbestos. However, signs may be more appropriate to use.

##### ***Labels***

If labels can be used, a competent person should determine the number and positions of the labels required. The location of labels should be consistent with the location listed in the asbestos register.

If a risk assessment suggests asbestos may be disturbed or people are likely to be exposed and it is not reasonably practicable to label asbestos directly, a prominent warning sign must be posted in its immediate vicinity. For example – if floor tiles have been identified as containing asbestos, an appropriate warning sign may be displayed on an adjacent wall.

##### ***Warning Signs***

All warning signs should comply with AS 1319 “Safety Signs for the Occupational Environment”. Any areas of a workplace that contain asbestos, including plant; equipment and components, should be signposted with warning signs to ensure the asbestos is not unknowingly disturbed without the correct precautions being taken. These signs should be weatherproof, constructed of light-weight material and be adequately secured. Signs should be placed at all the main entrances to the work areas where asbestos is present.

Where direct marking of asbestos is not possible, identifying the presence and location of asbestos to workers such as plumbers; electricians and carpenters before they commence work may be achieved by implementing a permit-to-work system. The presence and location of the asbestos should be entered on site plans and the asbestos register, and be accessible to all workers to ensure they are aware of the presence of asbestos.

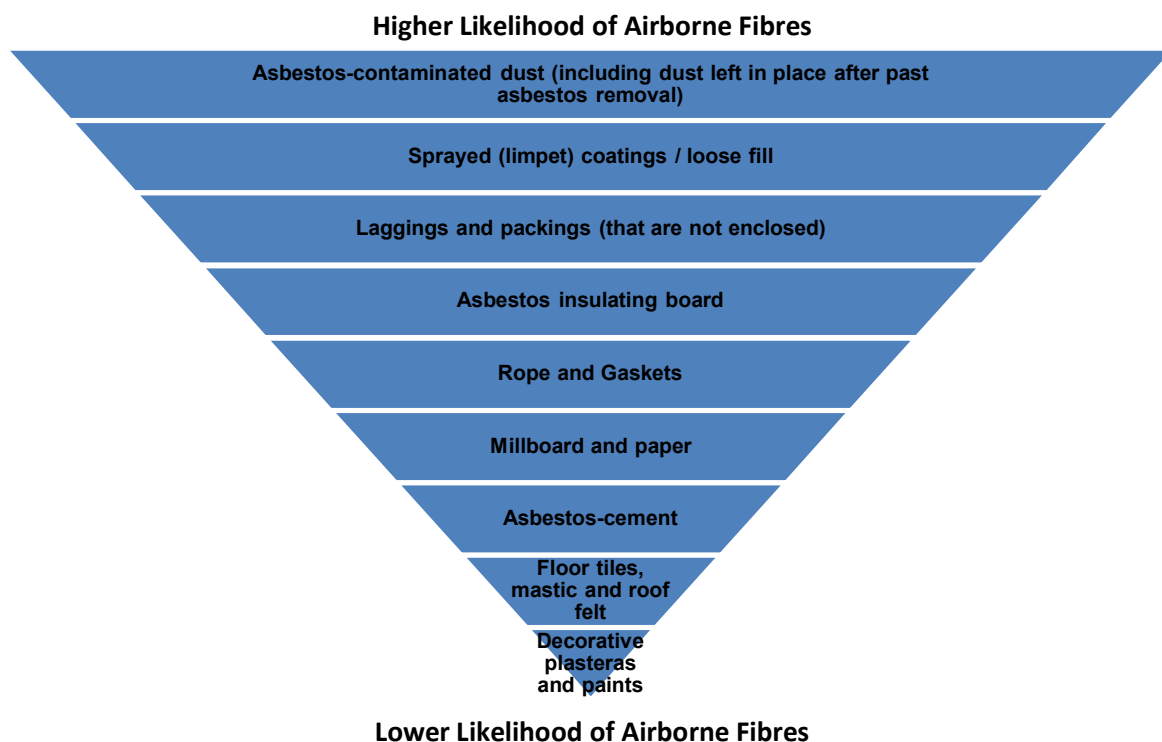
#### 4.9 ASSESSING THE RISK OF EXPOSURE

If asbestos or ACM is in good condition and left undisturbed, it is unlikely that airborne asbestos will be released into the air, and the subsequent risk to health is extremely low. It is usually safer to leave it and review its condition over time. However, if the asbestos or ACM has deteriorated, has

been disturbed, or if asbestos-contaminated dust is present, the likelihood that airborne asbestos will be released into the air is increased.

The type of material that binds asbestos fibres will influence the potential for airborne asbestos to be released into the air from different asbestos or ACM. For example – a loosely bound sprayed (or limpet) coating is more likely to release fibres when disturbed, than asbestos-cement in which fibres are firmly bound.

The following list ranks different types of asbestos according to the likelihood that airborne asbestos can be released into the air if it has deteriorated or been disturbed. The potential risk to health is greater for items higher up the list if people exposed to airborne asbestos, but any of the materials listed can produce asbestos fibres if they are disturbed.



When deciding if there is a risk to health from asbestos, consider whether the asbestos or ACM is:

- in poor condition;
- likely to be further damaged or deteriorate;
- likely to be disturbed due to work practices carried out in the workplace (for example – routine and maintenance activities and their frequency);
- in an area where workers are exposed to the material.

A visual inspection of the material, its location and an understanding of the work practices at the workplace will assist this decision.

Asbestos-related work activities (including maintenance) plus unusual and infrequent activities (such as emergency activities) need to be considered. Also take into account the proximity of the

asbestos or ACM to where employees work, as this can affect the potential for exposure if asbestos fibres become airborne.

The following are examples of activities that could pose a health risk:

- Forklifts driving adjacent to asbestos-cement (AC) sheet walls may damage these sheets from accidental impact during the course of work.
- Plumbers working on a long pipe that does not have asbestos insulation where the work is being done may cause disturbance to asbestos-containing insulation on the pipe some metres away.
- Electricians wiring in a ceiling sprayed with material containing friable asbestos may disturb this material.
- Acid fumes from an acid bath located next to an asbestos-cement wall and below an asbestos-cement roof may cause deterioration of the asbestos material over time.

#### 4.10 ASBESTOS CONTAINING MATERIAL

##### R.425

**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 be maintained, to ensure the information in the register is up-to-date.**

***Note: An asbestos register is not required to be prepared when:***

- The workplace is a building was constructed after 31st December 1989;
- No asbestos has been identified at the workplace;
- No asbestos is likely to be present at the workplace from time to time.

The asbestos register is a document that lists all identified (or assumed) asbestos in a workplace. The register must:

- record any asbestos or ACM that has been identified or is likely to be present at the workplace from time to time. This would include:
  - The date on which the asbestos or ACM was identified;
  - The location, type and condition of the asbestos; or
- state that no asbestos or ACM is identified at the workplace if the person knows that no asbestos or ACM is identified or is likely to be present from time to time at the workplace.

A comprehensive asbestos register may also include:

- details of any asbestos assumed to be in the workplace;
- results of any analysis that confirms a material at the workplace is or is not asbestos;
- dates when the identification was carried out;
- details of inaccessible areas.



### ***What if an asbestos register already exists at the workplace?***

If an asbestos register already exists at the workplace there is no need to create another one. The existing register can be reviewed and revised.

Persons conducting a business or undertaking who are carrying out or intend to carry out work at a workplace, should obtain the current asbestos register and identify any asbestos or ACM that they have management or control of (for example, asbestos in items of plant).

The person with management or control of the workplace should be advised if any asbestos or ACM is identified and not included in the asbestos register for the workplace.

If workers consider that the work that they are about to do will disturb asbestos, they should talk to the person with management and control of the workplace or their health and safety representative.

### ***Where asbestos is only temporarily in the workplace?***

In some cases it may not be necessary to include asbestos or ACM that is only temporarily present in the workplace. For example, if plant that contains asbestos is being repaired at the workplace but is only there for a short period while being repaired, it does not need to be recorded in the asbestos register. However, if plant is often at the workplace (for example, where the company specializes in repairing plant that typically contains asbestos) it would be important to include this in the asbestos register. Note that where work involving asbestos is carried out, there are requirements to ensure the safety of the worker.

### ***Where there is no asbestos register at the workplace?***

An asbestos register is not required if a workplace has been constructed after 31st December 2003 or if no asbestos has been identified.

If there is no asbestos register at the workplace but asbestos is identified during the course of any works being carried out, the person with management or control of the workplace should be advised who then must identify it (or ensure a competent person identifies it) and prepare a register.

As there will be no asbestos register at a domestic premise, the homeowner or landlord must be advised if asbestos is identified and appropriate action taken.

### ***Reviewing and Revising an Asbestos Register***

#### **R.426**

**A person with management or control of a workplace must ensure an asbestos register is reviewed and where necessary, revised by a competent person if:**

- the asbestos management plan is reviewed.
- further asbestos or ACM is identified at the workplace.
- is removed from or disturbed, sealed or enclosed at the workplace.

***The register should be reviewed at least once in every five years to ensure that it is kept up to date.***

*The Asbestos Management Plan may highlight the need or requirement for this review to be undertaken more frequently on specific areas of asbestos or ACM, should it be deemed necessary.*

When reviewing the asbestos register, the person should carry out a visual inspection of the asbestos and ACM listed to determine its condition and revise the asbestos register as appropriate.

Previous asbestos registers and records relating to asbestos removal jobs, for instance Clearance Certificates, can assist in identifying all asbestos and ACM in the workplace.

#### ***Accessing an Asbestos Register***

##### **R.427**

The person with management or control of a workplace must ensure the asbestos register is readily accessible to:

- a worker who has carried out, carries out or intends to carry out work at the Workplace
- a Health and Safety representative who represents workers that carry out or intend to carry out work at the workplace
- a person conducting a business or undertaking who has carried out, carries out or intends to carry out work at the workplace
- a person conducting a business or undertaking who has required, requires or intends to require work to be carried out at the workplace.

Where work is being carried out or is about to be carried out at the workplace by a person conducting a business or undertaking and that work involves the risk of exposure to airborne asbestos, the person with management or control of the workplace must provide a copy of the asbestos register to that person.

*A copy of the asbestos register should be kept at the workplace to ensure it is accessible.*

#### ***Transferring an Asbestos Register***

##### **R.428**

If the person with management or control of a workplace plans to relinquish management or control (for instance – selling the workplace or the business or undertaking), they must ensure, so far as is reasonable practicable, that a copy of the asbestos register is given to the person who is assuming management or control of the workplace.

## **4.11 ASBESTOS MANAGEMENT PLAN**

##### **R.429**

A person with management or control of a workplace must ensure a written asbestos management plan is prepared for the workplace if asbestos or ACM has been identified or assumed present, or is likely to be present from time to time at the workplace.

The asbestos management plan must be maintained to ensure the information is up-to-date.

*This requirement does not apply to domestic residences.*

### ***What is an Asbestos Management Plan?***

An asbestos management plan sets out how asbestos or ACM that is identified at the workplace will be managed, for example – what, when and how it is going to be done.

An asbestos management plan must include:

- the identification of asbestos and ACM, for example – a reference or link to the asbestos register for the workplace, and the locations of signs and labels;
- decisions, and reasons for the decisions, about the management of asbestos at the workplace, for example – safe work procedures and control measures;
- procedures for detailing accidents, incidents or emergencies of asbestos at the workplace;
- workers carrying out work involving asbestos, for example – consultation, information and training responsibilities.

Other information that may be included in the asbestos management plan is:

- an outline of how asbestos risks will be controlled, including consideration of appropriate control measures;
- a timetable for managing risks of exposure, for example – priorities and dates for any reviews, circumstances and activities that could affect the timing of action
- identification of each person with responsibilities under the asbestos management plan and the persons responsibilities
- procedures, including a timetable for reviewing and, if necessary, revising the asbestos management plan and asbestos register
- air monitoring procedures at the workplace, if required.

### ***Reviewing an Asbestos Management plan***

#### **R.430**

The person with management or control of a workplace must ensure the asbestos management plan is reviewed and, if necessary, revised at least once every five years or when:

- there is a review of the asbestos register or a control measure.
- asbestos is removed from or disturbed, sealed or enclosed at the workplace.
- the plan is no longer adequate for managing asbestos or ACM at the workplace.
- a health and safety representative requests a review if they reasonably believe that any of the matters listed in the above points affects or may affect the health and safety of a member of their workgroup and the asbestos management plan was not adequately reviewed.

### ***Accessing an Asbestos Management Plan***

#### **R.429**

The person with management or control of a workplace must ensure the asbestos management plan is readily accessible to:

- a worker who has carried out, carries out or intends to carry out work at the Workplace;

- health and safety representatives who represent workers that carry out or intend to carry out work at the workplace;
- a person conducting a business or undertaking who has carried out, carries out or intends to carry out work at the workplace;
- a person conducting a business or undertaking who has required, requires or intends to require work to be carried out at the workplace.

The asbestos management plan should be kept at the workplace to ensure it is accessible.

## 5. ASBESTOS

### 5.1 BACKGROUND INFORMATION

Asbestos is the generic term used to describe the group of naturally occurring mineral silicates, belonging to the serpentine and amphibole groups of rock-forming minerals. The most significant forms of the product include:

**Amosite** - commonly referred to as 'Brown' asbestos.

**Crocidolite** - commonly referred to as 'Blue' asbestos.

**Chrysotile** - commonly referred to as 'White' asbestos.

**Others** - Actinolite / Anthophyllite / Tremolite.

**Or** - Any combination of any of the above.

Primarily, asbestos fibres are known for their high thermal stability and resistance; chemical and abrasion resistance; high tensile strength; low electrical and thermal conductivity; low biodegradability; and good sound absorption qualities.

Asbestos fibres were known to mankind as early as early as 400BC, and given their abovementioned properties, were seen to be virtually indestructible. As a result of these properties, asbestos products have been used as a component in over 3000 known, commercially manufactured products.

### 5.2. FREQUENCY AND USES

Asbestos was used extensively in structures such as buildings (commercial and residential), factories and processing plants; as well as in ships, trains, motor vehicles and items of equipment and plant during the 1940's, 1950's, 1960's, 1970's and even into the 1980's. Information relating to the dangers associated with the use of asbestos was becoming more widespread during the late 1970's and into the 1980's, such that manufacture of asbestos-cement products was essentially terminated by the end of the 1980's.

Some other products containing asbestos may have been available after this date, but legislative changes in early 2000's, saw the prohibition of both the manufacture and or importation of such products.

In the construction and building industries, asbestos is known to be contained in products such as cement pipe / sheet / moulding products for pipes and sheet; floor tiles and seamless vinyl; some adhesives associated with floor product placement; tar-based type sealants; roofing felts; shingles; pipe and boiler insulation materials; lagging; ceiling tiles; fire resistant drywall products; acoustic materials; putty and others.

The following list, details some of the known forms of asbestos containing materials:

- Air-Conditioning duct – exterior or interior acoustic and thermal insulation;
- Arc shields in lift motor rooms or large electrical cabinets;
- Asbestos felts;
- Asbestos blankets / mattresses covering hot equipment in power stations / boilers;
- Asbestos paper used variously for insulation, filtering & production of fire resistant laminates;
- Asbestos textile gussets in air-conditioning ducting systems;
- Asbestos textiles;
- Asbestos yarn;
- Autoclave / Steriliser insulation;
- Bitumenised adhesives / sealants;
- Boiler / Steam piping gaskets;
- Boiler insulation – formed and castible (wet-mix);
- Cable penetration insulation bags;
- Calorifier insulation;
- Electric heat banks – block insulation;
- Electric light fittings (high wattage) – insulation around fitting (usually bitumenised);
- Fire blankets;
- Fire curtains;
- Fire door insulation;
- Fire-rated wall rendering containing asbestos with mortar;
- Fire-resistant plasterboard;
- Fire-retardant material on steelwork supporting reactors on columns in the petro / chemical industries;
- Fuse blankets;
- Header (manifold) insulation;
- Insulation blocks;
- Insulation in electric reheat units for air-conditioner systems;
- Lagged exhaust pipes on power generators;
- Lagging in penetrations in fire-proof walls;
- Lift shafts – penetration packing;

- Limpet – sprayed asbestos insulation;
- Millboard – heating unit isolation board;
- Millboard – lining in switchboxes / switchgear;
- Packing materials – gauges / valves etc. May be square or round form;
- Penetrations through concrete slabs in high-rise / multi-storey buildings;
- Pipe insulation – moulded / rope / braided / sheet;
- Pitch-based electrical backing boards (Zelemite);
- Refractory linings in furnaces & boilers
- Refractory tiles;
- Sealant between floor slab & walls in boiler rooms / risers / shafts;
- Sealant or mastic on windows (putty);
- Sealants & mastics in air-conditioning ducting joints;
- ‘Spackle’ or plasterboard wall jointing compounds;
- Sprayed insulation – acoustic wall & ceiling;
- Sprayed insulation – beams & ceiling slabs;
- Sprayed insulation – fire retardant on external slab wall fastening systems;
- Tapes and ropes – lagging and jointing compounds;
- Tapered ends of pipe lagging – where lagging is not necessarily asbestos;
- Valve / pump packings and insulations.

Other uses of asbestos, not necessarily associated with the building or construction industry, include heat resistant textiles; insulation associated with fire-door / furnaces / boilers etc; heater-bank insulation in air-conditioning ductwork; laboratory equipment – ovens / incubators / autoclaves and warmers; filters for industrial chemicals; friction materials in clutch and brake pads; lift brake shoes; electrical cable sheaths; electrical switchboards / arc shields / electrical switching equipment; gaskets; paints and some protective papers.

Smaller quantities may also be found mixed with a wide variety of substances, some of which may include: magnesite; calcium silicate; diatomaceous earths; talc; clay; chalk; sand; cement; paper; pitch; rubber and a wide range of resins.

### 5.3 HEALTH EFFECTS

#### ***SIGNIFICANT HEALTH RISKS MAY ARISE FROM THE INHALATION OF AIRBORNE ASBESTOS FIBRES, AND THEIR POTENTIAL PASSAGE INTO THE LUNGS***

Small fibrous asbestos particles may become airborne, enabling them to become inhaled or ‘respired’. Fibres that are below 3 microns in diameter and greater than 5 microns in length are referred to as being ‘respirable’ – meaning that they may enter the deepest part of the lungs. A greater number of the larger fibres and particles, would normally be deposited in the nose and major airways, and are generally cleared from the body by the normal physiological processes. It is, however, the smaller fibres that have the potential to be deposited within the minor airways and airspaces (alveoli).

Inhalation of asbestos fibres has been linked to three respiratory diseases:

- ***Asbestosis***
- ***Mesothelioma***
- ***Lung cancer***

***Asbestosis*** is a chronic lung disease that can lead to respiratory impairment, and to diseases such as lung cancer. It results from the inhalation of asbestos fibres, which are deposited in the lungs causing scar tissue. The pulmonary changes resulting from the scar tissue are irreversible. Asbestosis has been found to occur in workers exposed to prolonged periods, and heavy concentrations of airborne asbestos fibres.

***ASBESTOSIS CANNOT BE EFFECTIVELY TREATED***

***Mesothelioma*** is a rare cancer. There are 2 types of mesothelioma:

*Pleural* - which is a tumor of the lung.

*Peritoneal*- which is a cancer of the abdominal cavity.

A greater risk of developing mesothelioma is incurred, when subjected to higher levels of exposure. However, the level of exposure does not affect the length of the latency period, which is usually between 30 and 40 years before the disease is identified.

Exposure to Crocidolite and Amosite have the most potent, documented effects in producing the highly malignant mesothelioma tumour.

***MESOTHELIOMA CANNOT BE EFFECTIVELY TREATED***

***Lung cancer*** is not specifically associated with asbestos. Individual lung cancers caused by asbestos cannot be distinguished from those cancers that are caused by other agents, such as tobacco smoke. While persons who have been exposed to asbestos and who then develop lung cancer, are usually tobacco smokers, it is generally accepted that asbestos is capable of causing lung cancer, and the tumour may develop where there is no co-existing asbestosis.

Lung cancer related to asbestos exposure usually has a latency period of 20 to 40 years, before the first exposure and the onset of the cancer. Whilst other cancers, such as that of the larynx, oesophagus, stomach, bowel, rectum and kidneys have been identified in heavily exposed asbestos workers, there has been no conclusive medical evidence to suggest that the asbestos exposure is singularly responsible for the medical condition.

***Asbestos has the potential to kill if handled without the correct precautions. Repeated exposure increases the risk of contracting an asbestos related disease. Asbestos related diseases are trademarked by the long latency periods – usually 20 to 40 years. Due to the extensive use of asbestos during the greater part of the 20th century, it is highly likely that nearly all workers will encounter some form of the product within their working life.***

#### 5.4 RISK FACTORS / MANAGEMENT

Today, current legislative controls prohibit the use of asbestos (other than for purposes of study / testing / research and science), being utilised within industry at all. Consequently, the majority of most asbestos exposures now occur during the removal of asbestos containing materials during renovation and building works, and tasks associated with the undertaking of maintenance works in buildings / factories / plants and structures. These exposures are highlighted, particularly during the course of any 'dust-forming' operations, such as grinding / sanding / drilling / sawing / cutting / turning or similar type operations. Strict controls have been implemented to limit these type operations in any asbestos containing material.

It should be noted, that in situations where the asbestos has been incorporated into a material that is well 'bound', or has a very stable matrix, and airborne dust is not generated then the asbestos-related health risk is subsequently relatively negligible.

Given the extent and volume of usage of asbestos containing materials over a prolonged period of time, and particularly through the greater part of the twentieth century, it would seem virtually inevitable that the great majority of people will come into contact with an asbestos containing material, in some way, shape or form at some stage in their life. Indeed, it is more than likely that for those working in the construction, building, maintenance, milling, mining and manufacturing industries that this contact with asbestos containing materials could in fact become a daily occurrence. Given this scenario, it is essential that asbestos containing materials are identified; contained; maintained and or removed in accordance with the relevant regulations and guidelines, such that these exposures are limited and controlled to the extent of becoming a negligible risk.

***Simply put - eliminate the creation and or release of asbestos fibres from becoming airborne, and eliminate the possibility of the potential for risk of an exposure.***

The primary objective in any asbestos management plan is to eliminate where possible, the potential for exposure to airborne asbestos fibres, or as a minimum, ensure that workers are not exposed to airborne fibre concentrations greater than the National Occupational Health and Safety Commission's occupational exposure standards for asbestos – *Guidance Note on the Membrane Filter method for Estimating Airborne Asbestos Fibres (2nd Edition) – [NOHSC:3003(2005)]*.



## 6. ASBESTOS – RELATED WORK

### 6.1 GENERAL

#### R.478-484

**While work with asbestos is generally prohibited, the WHS Regulations allow work to occur on asbestos in certain circumstances: this is referred to as ‘asbestos-related work’.**

Under the WHS Regulations, asbestos-related work includes:

- genuine research and analysis;
- sampling and identification in accordance with the WHS Regulations;
- maintenance of, or service work on, non-friable asbestos or ACM, fixed or installed before 31st December 2003, in accordance with the WHS Regulations;
- the transport and disposal of asbestos and asbestos waste in accordance with jurisdictional legislation;
- demonstrations, education or practical training in relation to asbestos or ACM;
- display, or preparation or maintenance for display, of an artifact or thing that is, or includes, asbestos or ACM;
- management in accordance with the WHS Regulations of in-situ asbestos that was installed or fixed before 31st December 2003;
- work that disturbs asbestos during mining operations that involve the extraction of or exploration for a mineral other than asbestos;
- laundering asbestos-contaminated clothing in accordance with the WHS Regulations;
- where the regulator approves the method adopted for managing risks associated with asbestos;
- soil that a competent person has determined;
- does not contain any visible asbestos;
- does not contain more than trace levels of asbestos determined in accordance with AS4964:2004 ‘Method for the Qualitative Identification of Asbestos in Bulk Samples’;
- Naturally Occurring Asbestos (NOA) managed in accordance with an asbestos management plan.

When undertaking asbestos-related work activities, the WHS Regulations require that the work only be performed in accordance with the following requirements:

- any worker undertaking asbestos-related work must be informed of the health risks of exposure to asbestos and that they will need to undergo health monitoring;
- a competent person carries out air monitoring of the work area where asbestos-related work is being carried out if there is uncertainty as to whether the exposure standard is likely to be exceeded;
- any asbestos that may be encountered by workers undertaking asbestos-related work must be identified, and if it is not possible to identify, it must be assumed asbestos is present;

- the area in which asbestos-related work is undertaken is separate from the rest of the workplace, so far as is possible;
- the asbestos work area must be signed and barricaded to ensure that other workers do not enter the area;
- facilities must be provided to allow for the decontamination of workers, equipment and the items worked upon;
- anything removed from the work area must be decontaminated before it is removed from the work area;
- if material contaminated with asbestos is to be removed from the work area, it must be sealed within a container, which is decontaminated and labeled to indicate the presence of the asbestos and disposed of at a licensed disposal facility as soon as is practicable.
- if personal protective equipment used in the asbestos-related work is to be removed from the work area for disposal, it must also be sealed within a container, which is decontaminated and labeled to indicate the presence of the asbestos in accordance with the WHS Regulations and disposed of at a licensed waste facility as soon as reasonable practicable.

## 6.2 MANAGING RISKS ASSOCIATED WITH ASBESTOS-RELATED WORK

If there is uncertainty as to whether asbestos is present or used in a certain activity at the workplace, the person with management or control of the workplace must assume asbestos is present and treat the activity as asbestos-related work or arrange for a sample to be analysed to determine if asbestos is present.

If asbestos is identified or assumed to be present, it is essential that the asbestos register be obtained and a decision made as to whether work can be done without disturbing the asbestos.

It is also essential to ensure all people carrying out the work have the appropriate training, correct tools, PPE (including clothing), decontamination materials, labels and signs ready at the workplace before any work commences that may disturb the asbestos and to minimize the number of people in the area. For example:

**Consultation and Training** – Consultation with a person who may be affected by any maintenance and service work must receive all necessary training and access to the asbestos Register, and the work should be documented and supervised;

**Access to Asbestos work area** – The asbestos work area should be isolated and access restricted to those people carrying out the asbestos work. Barriers and warning signs should be used.

**PPE** – PPE needs to be selected to prevent the contamination of clothing and provide adequate respiratory protection.

**Replacing Asbestos** – Under the asbestos prohibition, wherever an asbestos component requires replacement, the replacement product is to be non-asbestos. It is illegal to reinstall or use any asbestos. Where an access hatch or panel that contains non-friable asbestos in good condition is moved in order to gain access, it may be replaced in its original position without modification.

**Disposing of Asbestos** – All asbestos must be disposed of correctly. Single-use PPE used during maintenance and service work must also be disposed of.

Before commencing any asbestos-related work, plastic sheeting may need to be placed on the floor and any other surface that may become contaminated with asbestos dust. At a minimum, heavy-duty 200µm (micron) plastic sheeting should be used for this purpose.

### **6.3 CONTROL MEASURE FOR ASBESTOS-RELATED WORK**

Whatever the control method used, it should be effective in making all maintenance workers aware of the presence of asbestos and preventing any work activity that might expose them, or others nearby, to airborne asbestos. Particular attention should be paid to controlling work activities that affect inaccessible areas listed in the asbestos register, such as wall cavities and ceiling spaces.

Such Control measures include the following:

- Eliminate the risk by not conducting the work.
- Minimise the risk by using either an isolation control, engineering control or a combination of these.

An example of isolation by barrier is applying a small amount of substance, such as silicon or paste, to the surface of an asbestos-cement sheet where a hole will be drilled. When the drill bit is drilled through the paste into the sheet and is removed, any loose fibres are collected in the paste, preventing them from becoming airborne. After drilling, the paste can be wiped clean with a rag and disposed of as asbestos waste.

An example of isolation by distance is used in the automotive industry for the removal of asbestos-containing brake mechanisms from vehicles. A designated area in the workshop is isolated by distance from other work areas. Signs and barriers are used to communicate that access to the area is restricted during the activity. The activity also requires safe work procedures but the isolation control ensures that other workers are not at risk due to their distance from the activity. All workers must be provided with instruction and training so that they understand the reason for the control measure and the relevant procedures.

An example of an engineering control is the use of a mini-enclosure to isolate the source of asbestos fibres combined with the use of extraction to capture and remove airborne asbestos fibres from the air in the work environment. This approach could be used for the task of removing and replacing lock mechanisms from an asbestos-containing fire door.

If the risk is still present and attempts have been made to minimize the risk to health, so far as is reasonable practicable, through elimination, isolation and engineering controls, administrative controls can be implemented.

Administrative controls are systems of work or work procedures designed to eliminate or minimise risk. These controls are lower order controls that cannot be relied upon to be as effective as the higher order controls such as elimination, isolation and engineering. This is because administrative

controls are systems or procedures that rely on human behavior to be effective and as such, can easily fail. Administrative control measures must be understood, implemented and maintained. This requires training, information and supervision for workers, but the control measure can still fail if procedures are not followed or understood.

For some activities, administrative controls are the only practicable controls that can be implemented. An example of an administrative control for asbestos-related work is a procedure for collecting samples of ACM for the purpose of analysis. Collecting the samples may involve breaking or dislodging ACM, which can lead to the release of airborne asbestos fibres and consequently, a risk to health.

If a risk to health still remains after the higher order control measures have been implemented, PPE must be used to supplement the higher order controls.

Although PPE can be effective in controlling the risk from airborne asbestos fibres, the successful implementation and maintenance of this control measure requires further action and resources, including:

- the correct selection of appropriate PPE, including respirator, cartridge and coveralls;
- the issuing of PPE to each individual;
- training and supervision – all employees who are required to conduct asbestos-related activities and wear PPE must be given adequate training and supervision to enable them to sit and use the equipment correctly and conduct the task in a safe manner;
- maintenance of PPE – non disposable respirators must be checked before and after use to ensure the components are in good working order and are not damaged;
- employee compliance and support for the system – it is essential that employees use PPE when it is required. An understanding of the risk to health from asbestos, the higher order controls measures already in place and the need to use PPE to further reduce the risk to health all contribute to employees' willingness to use PPE.
- Disposable coveralls need to be of a suitable standard to prevent penetration of asbestos fibres, so far as is practicable. Disposable coveralls rated to a Type 5, Category 3 (prEN ISO 13982-1) or equivalent would meet this standard. Any clothing worn under coveralls must be disposed of or suitably bagged for laundering of as asbestos-contaminated clothing.

## **6.4 DISPOSAL OF ASBESTOS OR ACM**

There are additional responsibilities related to the removal and disposal of asbestos, which are detailed in the Code of Practice: How to Safely Remove Asbestos', for example the details relating to competency and licensing requirements.

Individual components; collected waste; wiping rags / cloths and all collected disposable PPE must be 'double-bagged' and placed in specific plastic bags, "goose-necking" each bag and taping or tying securely shut, prior to placing them in the disposal container or waste vehicle. The disposal bags are to be a heavy duty (200 µm or micron) clear plastic, and marked with the label – "CAUTION ASBESTOS – Do not open or damage bag. Do not Inhale dust."

Alternatively, larger sections of collected ACM's or 'whole' sheets of ACM, can be double-wrapped or bundled in heavy duty 200 µm (micron) plastic film, with all folds / ends and layers securely taped to ensure a complete seal.

Asbestos waste must be transported and disposed of in accordance with the relevant state or territory Environment Protection Authority (EPA) requirements. Asbestos waste can only be disposed of at a site licensed by the EPA, and must never be disposed of in the general waste system. Individual state or territory licensing requirements also detail the specifics required for the transport vehicles to be registered with the EPA.

## 7. KEY TERMS AND DEFINITIONS

**Airborne Asbestos** - means any fibres of asbestos small enough to be made airborne. For the purposes of monitoring airborne asbestos fibres, only respirable fibres are counted.

**Asbestos** - means the 'asbestiform' varieties of mineral silicates belonging to the serpentine or amphibole groups of rock forming minerals including actinolite asbestos; grunerite (or amosite) asbestos (brown); anthophyllite asbestos; chrysotile asbestos (white); crocidolite asbestos (blue) or tremolite asbestos.

**Asbestos Containing Material (ACM)** - means any material or thing that, as part of its design, contains asbestos

**Asbestos-contaminated dust or debris (ACD)** - dust or debris that has settled within a workplace and is (or assumed to be) contaminated with asbestos

**Asbestos-related work** - means work involving asbestos (other than asbestos removal work to which Part 8.7 of the WHS Regulations applies) that is permitted under the exceptions set out in Regulation 419 (3); (4) and (5).

**Asbestos Removalist** - means a person conducting a business or undertaking who carries out asbestos removal work.

**Asbestos removal work** - means work involving the removal of ACM, or Class A asbestos removal work or Class B asbestos removal work as outlined in Part 8.10 of the WHS Regulations.

**Competent Person** - means a person who has acquired through training, qualification or experience the knowledge and skills to carry out the task.

**Exposure Standard** - for asbestos is a respirable fibre level of 0.1 fibres /ml of air measured in a person's breathing zone and expressed in a time weighted average fibre concentration calculated over an eight- hour working day and measured over a minimum period of four hours in accordance with: the Membrane Filter Method, or a method determined by the relevant regulator.

**Friable Asbestos** - means a material that is in powder form or that can be crumbled, pulverized or reduced to a powder by hand pressure when dry, and contains asbestos.

**GHS** - means Globally Harmonised System of Classification and Labeling of Chemicals.

**Low Density Board (LDB)** - Low-density asbestos fibre board is a lightly compressed board, similar in outward appearance to asbestos-cement sheeting or plasterboard, but with much higher concentrations by volume of Asbestos.

**NATA accredited laboratory** - means a testing laboratory accredited by the National Association of Testing Authorities, Australia (NATA), or recognised by NATA either solely or with someone else.

**Naturally occurring asbestos** - means the natural geological occurrence of asbestos minerals (NOA) found in association with geological deposits including rock, sediment and soil.

**Non-friable asbestos** - means material containing asbestos that is not friable asbestos, including material containing asbestos fibres reinforced with a bonding compound.

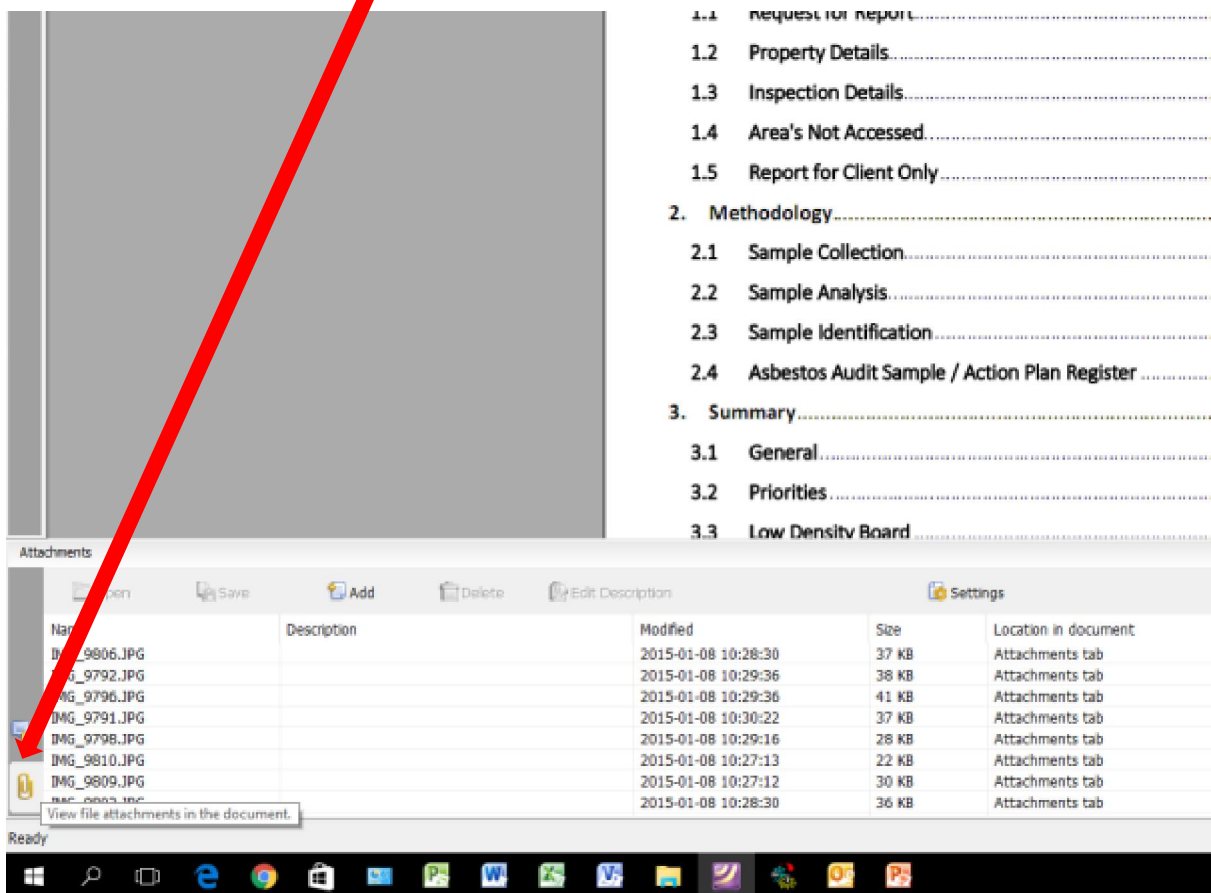
**Respirable asbestos** - means an asbestos fibre that: is less than 3 microns ( $\mu\text{m}$ ) wide; more than 5 microns ( $\mu\text{m}$ ) long; and has a length to width ratio of more than 3:1.

## 8. APPENDICES

### 8.1 SUPPORTING DOCUMENTATION (DATE CONFIRMATION)

### 8.2 PHOTO/s

Click Paper Clip Icon to view photo's



The screenshot displays a software interface with a table of attachments and a list of report sections. A red arrow points to the paper clip icon in the attachments table, which is used to view photos.

Name	Description	Modified	Size	Location in document
IMG_9806.JPG		2015-01-08 10:28:30	37 KB	Attachments tab
IMG_9792.JPG		2015-01-08 10:29:36	38 KB	Attachments tab
IMG_9796.JPG		2015-01-08 10:29:36	41 KB	Attachments tab
IMG_9791.JPG		2015-01-08 10:30:22	37 KB	Attachments tab
IMG_9798.JPG		2015-01-08 10:29:16	28 KB	Attachments tab
IMG_9810.JPG		2015-01-08 10:27:13	22 KB	Attachments tab
IMG_9809.JPG		2015-01-08 10:27:12	30 KB	Attachments tab
IMG_9805.JPG		2015-01-08 10:28:30	36 KB	Attachments tab

Report Sections:

- 1.1 request for report
- 1.2 Property Details
- 1.3 Inspection Details
- 1.4 Area's Not Accessed
- 1.5 Report for Client Only
- 2. Methodology
  - 2.1 Sample Collection
  - 2.2 Sample Analysis
  - 2.3 Sample Identification
  - 2.4 Asbestos Audit Sample / Action Plan Register
- 3. Summary
  - 3.1 General
  - 3.2 Priorities
  - 3.3 Low Density Board