



## ***Hazardous Materials Work (Removal) & Management Plan***

QANTAS Car Park Development  
Engineering Store (SYDES2) &  
Guardhouse King St Nth (SYDKN)  
297 King Street  
Mascot NSW 2020

Prepared for:  
Arcadis / APP

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5 February 2019

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ABBREVIATIONS	
ACM	Asbestos Containing Materials
ANZECC	Australian and New Zealand Environment Conservation Council
AS	Australian Standards
EBG	Edwards Blasche Group
EDBs	Electrical Distribution Boards
EPA (NSW)	Environmental Protection Agency (NSW)
HBSIL	Health Based Soil Investigation Levels
HMA	Hazardous Materials Audit
LCP	Lead Containing Paint
NEHF	National Environment Health Forum
NOHSC	National Occupational Health and Safety
Pb	Lead
ODS	Ozone Deleting Substances
OH&S	Occupational Health & Safety
PCBs	Polychlorinated Biphenyls
SMF	Synthetic Mineral Fibre

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<b>Issued</b>	5 February 2018

## SECTION 1: INTRODUCTION

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### 1.1 Authorization

This Hazardous Materials Work (Removal) & Management Plan was authorized by:

- Arcadis (Caitlain Regena)
- APP (Michael Terrett)

### 1.2 Scope of Work - Consultants Brief

This *Hazardous Materials Work (Removal) & Management Plan (HMWMP)* was requested by Arcadis in January 2019. This *HMWMP* was based on the findings of two *Hazardous Building Materials Assessments* carried out by Prensa in February & November 2014.

Prensa was engaged to undertake these inspections and produce the reports by Jones Lang LaSalle (JLL).

The Prensa reports were provided to EBG Environmental by APP (Property & Infrastructure Specialists).

EBG Environmental was requested to produce this *HMWMP* solely based on the reports provided by APP. EBG was not authorised to undertake a site visit.

EBG Environmental was requested to provide a *Hazardous Materials Work (Removal) & Management Plan* based on the findings of the two Prensa reports cited below:

- Hazardous Building Materials Assessments, SYDES2 (Engineering Store), 297 King St, Mascot NSW 2020 (Prensa, Feb 2014 – AGH:J0013:February 2014);
- Hazardous Building Materials Assessments, Guardhouse King Street Nth (SYDGKN), Jet Base, Mascot NSW 2020 (Prensa, Nov 2014 – AGH:J0013:November 2014)

### 1.3 Limitations of the Work Management Plan

Within the guidelines set down for this plan, every effort has been made to give an accurate report of the property identified in this document.

This *Hazardous Materials Work & Management Plan* was based on the two Prensa reports provided by APP.

EBG Environmental does not accept any responsibility for the condition of any hazardous material that may exist in the building/s now or in the future, or for any hazardous materials found within the building or surrounds, and not identified in the reports provided.

EBG Environmental accepts no liability for the use of this document by any other person other than the client.

This report/plan must not be produced except in full and must not be amended in any way.

This report/plan is based on third party information provided to EBG Environmental.

## **SECTION 2: IDENTIFIED HAZARDOUS MATERIALS**

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### **2.1 Synthetic Mineral Fibre (SMF)**

Engineering Store (SYDES2): Prensa reported that *SMF sarking insulation was suspected to be present throughout the roof space (AGH:J0013:February 2014)*

Guardhouse King Street North (SYDGKN): Prensa reported that *SMF sarking insulation was present throughout the roof space (AGH:J0013:November 2014)*

### **2.2 Asbestos Containing Materials (ACM)**

No ACMs were identified in the Prensa reports for the Engineering Store (SYDES2) or the Guardhouse King Street North (SYDGKN).

### **2.3 Polychlorinated Biphenyls (PCB)**

No PCBs were identified in the Prensa reports for the Engineering Store (SYDES2) or the Guardhouse King Street North (SYDGKN).

### **2.4 Lead Containing Paint (LCP)**

No LCPs were identified in the Prensa reports for the Engineering Store (SYDES2) or the Guardhouse King Street North (SYDGKN).

### **2.5 Ozone Depleting Substances (ODS)**

No ODSs were identified in the Prensa reports for the Engineering Store (SYDES2) or the Guardhouse King Street North (SYDGKN)

## **SECTION 3 : SYNTHETIC MINERAL FIBRE – WORK MANAGEMENT STRATEGIES**

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### **3.1 Regulations and Code of Practice**

These specifications, where applicable are based on:

- National Occupational Health and Safety (NOHSC:2006, 1990) Code of Practice for the Safe Use of Synthetic Mineral Fibres;
- *National Environment Protection (Assessment of Site Contamination) Measure (NEPM)*, 1999 amended 2013.
- *Waste Classification Guidelines (Part 1 : Classifying Waste – Department of Environment & Climate Change (EPA) NSW (Nov 2014)*
- *NSW Contaminated Land Management Act 2008 No.11.*
- *Managing Land Contamination – Planning Guidelines SEPP 55 – Remediation of Land – Dept. of Urban Affairs & Planning and EPA NSW 1998.*
- *Work Health and Safety Regulation 2011 (WHS Regulation)*
- *AS 1319 – 1994 Safety Signs for the Occupational Environment.*
- *AS 1715 – 1994 Selection, Use and Maintenance of Respiratory Protective Devices.*
- *AS 1716 – 2003 Respiratory Protective Devices.*
- *Worksafe Australia Guidance Note on the Membrane Filter Method for the Estimation of Airborne Synthetic Mineral Fibre [NOHSC: 3006-1989]*
- *NSW Occupational Health and Safety Act 2000.*
- *NSW Occupational Health and Safety Regulation 2001.*
- *Work Health and Safety Regulation 2017.*
- *Amendments to the NSW Work Health Safety Act (March 2018)*

Copies of all these codes, regulations and acts shall be in the possession of the appropriate management personnel.

### **3.2 Removal Licence**

A licence to remove synthetic mineral fibre is not required by WorkCover NSW. However adherence to the relevant guideline (*Synthetic Mineral Fibres - National Standard and National Code of Practice - May 1990*) is a requirement.

### **3.3 On Site Removal Supervisor**

The on site removal supervisor shall have detailed knowledge of the legislation, codes of practice and this specification. The on site removal supervisor shall be responsible for the day to day running of the removal operations.

### **3.4 Training**

All workers removing synthetic mineral fibre shall be made familiar with the: use and maintenance of respirators, use of protective clothing, correct method of decontamination procedures, proper handling of material, health risk associated with airborne synthetic mineral fibre. Supervisors or employees of workers removing synthetic mineral fibre shall be familiar with the relevant code of practice, ie:

- National Occupational Health and Safety (NOHSC:2006, 1990) Code of Practice for the Safe Use of Synthetic Mineral Fibres;

### **3.5 Scope of Works**

In accordance with instructions, these technical specifications are for the specific use in the removal of synthetic mineral fibre at the site in question.

The contractor shall remove all synthetic mineral fibre and debris as per 4.3 Procedure for the Removal of Synthetic Mineral Fibre and in accordance with the specifications set out in this document.

### **3.6 Contractors Brief**

Tenderers for the removal of the synthetic mineral fibre shall use this management plan as their minimum requirement in their tender application. The contractor's tender shall be for the removal of the synthetic mineral fibre as outlined in the Scope of Works.

A variation on the removal procedure, or an alternative removal procedure, may be proposed by the contractor. Approval of any variation from these specifications shall be at the discretion of the client. This approval shall be of written form. It is the contractors responsibility to ensure correct written approval to any variation on the removal procedure or an alternative removal procedure, has been received before the commencement the particular work and/or works.

Synthetic mineral fibres (SMF) is a generic term used to collectively describe a number of amorphous (non - crystalline) fibrous materials including glass fibre, mineral wool and ceramic fibre.

### **3.7 General Safety and Security**

The contractor will be responsible for the security and safety of the work area and the removal area. The contractor shall make himself aware of any emergency procedures and safety requirements. The contractor should provide, for the duration of the synthetic mineral fibre removal contract, an employee to be stationed outside the work area. The responsibilities of this employee should include: general security of the work area, communication with those personnel inside the work area, and responsibility for instigating emergency/evacuation procedures.

Emergency and fire exit arrangements should be prepared before any removal work begins.

Sufficient suitable fire extinguishers and hoses should be placed at strategic locations inside the work area.

In the event of a fire or aid for seriously injured or sick personnel, decontamination procedures can be waived.

Consuming food or drink and smoking is not permitted in the removal area at any time.

### **3.8 Air Monitoring**

WorkCover NSW do not require air monitoring during the removal of synthetic mineral fibre. However it is recommended that prior to allowing general access to the synthetic mineral fibre removal area where a major synthetic mineral fibre removal has taken place, a NATA registered company shall be appointed to conduct clearance air monitoring for airborne synthetic mineral fibre as per Section 6. In more sensitive areas, however, air monitoring may be conducted during the removal. This shall be detailed in the tender documents.

Clearance air monitoring may be performed inside the removal area after completion of the removal and/or PVA application, and successful inspection at the discretion of Client.

### **3.9 Restricting Access to Work Area**

The work area shall be defined by warning signs and physical barriers such as fences, ropes and other temporary structures.

For internal removal areas, all doors other than fire doors shall be locked, unless required for emergency exit. Where other workers or the public may have direct access to the removal area a barrier made of plywood or similar material shall be constructed.

The removal area is defined by temporary rope barriers. Warning signs at the entrance to the work area should be labelled "SYNTHETIC MINERAL FIBRE WORKING AREA - NO UNAUTHORISED ENTRY".

The signs at entry points to a synthetic mineral fibre removal area should contain the additional words "RESPIRATORY PROTECTION ESSENTIAL".

Signs should conform with the Australian Standard 1319 - 1983 - *Safety Signs for the Occupational Environment*.

### **3.10 Equipment and Electrical Installations**

During the removal process, where there is a possibility of fibre release, hand tools may only be used. Where power tools are used, these should be fitted with exhaust extraction at the point of dust generation, or other effective local exhaust ventilation supplied.

The use of high pressure water blasting is not permitted during the removal process.

Aluminium scaffolding and ladders should be used where practicable.

Only approved vacuum cleaners shall be used.

All portable electrical tools and equipment, including flexible leads and any temporary electrical installations, shall be in accordance with the Code of Practice for Temporary Electrical Installations on Building and Construction Sites.

## **SECTION 4 : REMOVAL OF SYNTHETIC MINERAL FIBRE**

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### **4.1 Regulations and Code of Practice – Working at Heights**

Where appropriate removal and disposal of synthetic mineral fibre shall be in accordance with all codes of practice and regulations stated in 3.1 of this document.

The NSW Construction Safety Regulations regarding safe work practices when working at heights shall be strictly followed. The following are extracts from the regulations regarding working at heights:

*73.3 Provide means by fencing or otherwise for securing the safety of any person working at a place from which he would be liable to fall a distance of more than 1.8m.*

*74 Provision of safety nets or belts and life lines*

*(1) Where there is a risk that a person engaged in construction work may fall because there is no adequate hand hold or foot hold, the person in charge of the construction work shall provide:*

- (a) a safety belt and safety line or safety harness and safety line complying with the requirements of AS 1891 for the use of that person, or*
- (b) a safety net complying with the requirements of BS 3913,*  
*while the work is being carried out.*

### **4.2 Designation of Work Area**

Ropes, barriers and signs shall be used to designate the work area at a distance of ten (10) metres from the removal area or the maximum achievable distance if ten metres is not practicable.

Warning signs at the entrance to the work area should be labelled "SYNTHETIC MINERAL FIBRE WORKING AREA - NO UNAUTHORISED ENTRY". The signs at entry points should contain the additional words "RESPIRATORY PROTECTION ESSENTIAL".

Signs should conform to the *Australian Standard 1319 - 1983 - Safety Signs for the Occupational Environment*.

### **4.3 Procedure for the Removal of Synthetic mineral fibre Products**

Barriers should be constructed at the entrance to the removal area. The area shall be made clean prior to work proceeding.

If the synthetic mineral fibre sheeting is brittle and easily airborne, it should be thoroughly wetted down with a fine spray of water and PVA before commencing removal, this shall be at the discretion of the Supervisor and shall not affect worker safety.

Where the synthetic mineral fibre is in sheets, it shall be rolled up and wrapped in plastic and taped. If the synthetic mineral fibre is in the form of batts, then a number of batts may be wrapped together in plastic and taped.

In some circumstances the synthetic mineral fibre may be placed directly into the appropriate plastic bag as described below. This may be the case for loose fill ceiling space insulation and small pieces of pipe lagging.

Where a plastic lined skip is within the removal area the synthetic mineral fibre may be placed directly into that skip. Synthetic mineral fibre may not be taken outside the removal area unwrapped.

The storage bags shall be heavy duty polythene bags approximately 0.2mm thick, or other approved containers. It is recommended that a maximum bag size of 1200mm (length) x 900mm (width) be observed. Bags should be filled to no more than 50% capacity. Where possible the bags shall be marked, "*Caution - Synthetic mineral fibre: Do Not Inhale Dust, Do Not Open Bag*". The top of the bag when full shall be twisted, folded down and taped. The bag shall then be placed in the plastic lined skip bin.

Once the wrapping and bagging of synthetic mineral fibre sheets and debris has been completed, the work area, with particular emphasis to the timbers from which the synthetic mineral fibre sheets have been removed, should be thoroughly wet wiped, cleaned and/or vacuumed in order to remove any residual traces of synthetic mineral fibre debris and contaminated dust.

Where the synthetic mineral fibre products are placed in a plastic lined skip, enough plastic shall be made available as a cover to the bin. The synthetic mineral fibre in the bin shall be covered with the plastic at all times during work (except when placing sheets into the bin), between shifts and overnight.

After removal and inspection the removal area is to be sprayed with a PVA seal using airless spray equipment. This final PVA spray and the extent of the spraying shall be at the discretion of the client.

#### **4.4 Personal Protective Equipment for Synthetic mineral fibre Removal**

The removalist workers shall wear disposable overalls of 100% synthetic material or a mixed natural/synthetic fabric capable of providing adequate protection against fibre penetration. These overalls shall be discarded after use.

Gloves and goggles shall be used to avoid any unnecessary irritation. A hard hat head covering shall be used in the event of overhead work.

A half face respirator fitted with a Class P1 filter, or an equivalent half face disposable respirator shall be used.

Respirators should be issued for personal use only and shall be kept in a clean condition. Any respirator defects should be reported for subsequent repair. They should be maintained in a clean and safe working condition.

Employees must receive instruction in the correct method of using the respirator and on the importance of correct facial fit and maintenance.

All personnel involved in synthetic mineral fibre removal should be clean shaven.

#### **4.5 Cleaning Up and Making Good**

When the synthetic mineral fibre material has been removed, the contractor shall perform a final clean of all surfaces from which synthetic mineral fibre has been removed.

All synthetic mineral fibre material chips and settled dust shall be cleaned using vacuums and wet mops, paying particular attention to horizontal and flat surfaces.

A PVA sealant shall then be applied where applicable, using an airless sprayer.

Where air monitoring is conducted, the job will not be considered completed until a fibre level of <0.01 fibres/mL has been achieved. When a satisfactory airborne fibre level has been achieved, the protective screening and barriers may be removed by the contractor to enable a final clean-up of the area.

The barriers can then be dismantled and all other equipment removed from the site.

The contractor shall make good any marred surfaces, and fixtures due to the removal programme. Any ropes, barriers or signs between the work area and public area should remain intact until completion of all works.

## **SECTION 5 : WASTE DISPOSAL OF SYNTHETIC MINERAL FIBRE PRODUCTS**

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### **5.1 Waste Classification**

Synthetic mineral fibre is pre-classified as General Solid Waste as per *Waste Classification Guidelines (Part 1 : Classifying Waste – Department of Environment & Climate Change (EPA) NSW (Nov 2014):*

- *synthetic fibre waste (from materials such as fibreglass, polyesters and other plastics) being waste that is packaged securely to prevent dust emissions, but excluding asbestos waste*

### **5.2 Fibre/Dust Suppression**

Synthetic mineral fibre waste should not be allowed to accumulate excessively within the work area. Waste shall be wetted to reduce synthetic mineral fibre dust emission during wrapping or placing within the plastic lined skip.

All waste bags should be labelled with an appropriate warning statement to the effect:

*WARNING*

*POSSIBLE RESPIRATORY HAZARD*

*DO NOT DAMAGE OR OPEN BAGS*

### **5.3 Wrapping / Bagging**

Synthetic mineral fibre waste bags should not be filled more than half full. Bags marked for synthetic mineral fibre waste should not be used for any other purpose. Bags should be twisted tightly, folded over and the neck secured in the folded position with wire ties, adhesive tape or any other effective method. The external surface should be cleaned to remove any adhering dust before the wrapped sheets and bags are removed from the working area.

Hard and sharp synthetic mineral fibre waste will require preliminary sealing or protective covering prior to placement in synthetic mineral fibre waste bags, in order to minimise the risk of bag damage. The bags and wrapped sheets are to be placed in the designated plastic lined waste bin. This should be secured at the completion of each day's work or removed from the site by an approved transporter.

When the bin is filled to 75% capacity, the plastic shall be lapped over the top of the bin and the plastic taped.

The means of movement of waste bags or wrapped sheets through the building may be restricted. The contractor or removalist personnel shall make themselves aware of these restrictions and design the work programme appropriately.

The wrapped synthetic mineral fibre sheets after being placed in the plastic lined skips will be removed by the appropriate contractor and disposed of in accordance to the regulations.

#### **5.4 Waste Water / Laundering**

Liquid contaminated with synthetic mineral fibre shall be passed through an approved filter prior to being discharged into the normal sewerage system.

When laundering protective clothing, the waste water shall be passed through an approved filter prior to being discharged into the normal sewerage service.

The filters shall be changed regularly and disposed of as synthetic mineral fibre waste after use.

#### **5.5 Transportation / Tipping**

Synthetic mineral fibre waste must be transported to an approved disposal site and disposed of in a manner which will prevent the liberation of synthetic mineral fibre into the atmosphere.

All transportation and disposal procedures should be supervised by a representative of the synthetic mineral fibre removal contractor.

The contractor shall ensure that the synthetic mineral fibre waste is transported in a safe manner, and that all personnel and members of the public are not exposed to airborne synthetic mineral fibre.

Copies of tipping receipts should be provided to the Client.

## **SECTION 6 : AIR MONITORING - SYNTHETIC MINERAL FIBRE PRODUCTS**

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### **6.1 Introduction**

**It is not required by Workcover to conduct monitoring for airborne synthetic mineral fibre fibres during synthetic mineral fibre removal activities.** It may be prudent however to conduct air monitoring in sensitive residential areas or workplaces. The results of air monitoring can be used: to identify failures in containment; to identify poor work practices; to provide proof of containment for occupiers and regulatory authorities and to provide evidence of good work practices for both present and future needs.

The monitoring shall be conducted as per the *Worksafe Australia Guidance Note on the Membrane Filter Method for the Estimation of Airborne Synthetic Mineral Fibre* [NOHSC: 3006-1989]

### **6.2 Definitions**

One monitoring shift is defined as collection of a set of one or more samples in accordance with the Worksafe Australia membrane filter method over a period less than 8 hours and preferably greater than 4 hours.

Clearance monitoring is defined as a collection of a set of one or more samples in accordance with the Worksafe Australia membrane filter method over a short period of between 1 and 4 hours after synthetic mineral fibre removal has been completed and prior to removal of the containment used to isolate the area.

### **6.3 Method**

Monitoring shall be conducted in accordance with the Worksafe Australia Membrane Filter Method. The laboratory conducting air monitoring for airborne synthetic mineral fibre shall be accredited by the National Association of Testing Authorities (NATA):

#### 7.82 Workplace Environment and Hazards

01 Asbestos: Estimation of airborne asbestos dust by the membrane filter method described in the National Occupational Health and Safety Commission Guidance Note (1988).

The air samples are collected by drawing a measured quantity of air through a membrane filter via a sampling pump. The filters are transformed in the laboratory into transparent specimen slides. The fibres are then sized and counted using a phase contrast microscope and eyepiece graticule. The result is expressed as fibres per millilitre of air, calculated from the number of fibres on the filter and the measured volume of air sampled.

Each sample filter is examined in accordance with the 1988 NOHSC Guidance Note on the Membrane Filter Method and NATA requirements.

## **6.4 Action Levels**

Action levels are defined as a course of action taken where the air monitoring level is higher than background levels.

If airborne fibre levels reach 1 fibre/mL or greater the synthetic mineral fibre removal methods need to be reviewed and corrected to reduce the production of airborne synthetic mineral fibre. If two succeeding shifts of levels reach 1 fibre/mL or greater work in the area shall cease until work methods are reviewed and the excessive generation of synthetic mineral fibre rectified.

## **6.5 Frequency of Air Monitoring**

Air monitoring tests shall normally be of less than eight hour duration and greater than 4 hours. Extra shifts may be required if the contractor elects to work longer hours.

An additional shift may be conducted during bag or bin removal.

## **6.6 Clearance Monitoring**

Clearance monitoring will be conducted within the removal area after the removal of synthetic mineral fibre materials.

## **6.7 Air Monitoring Locations**

Routine monitoring may be conducted in the following areas:

1. Clean side of barrier to the removal area
2. Change room
3. Lunch room

Subject to the works defining the position of barriers and occupancy of adjacent areas additional monitoring shall be conducted at:

4. All approaches to the work area
5. Any other areas requested by the Client.

## **SECTION 7 : UNEXPECTED FINDS – MANAGEMENT & REMOVAL STRATEGIES**

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### **7.1 Specifications for the Removal of Friable Asbestos Material (ACM)**

**IMPORTANT NOTE: Asbestos containing materials were not identified within the buildings.**

Friable Asbestos Materials: Removal required if material is to be disturbed during refurbishment or demolition or it poses a health risk.

In accordance with the *WorkCover NSW, How to Safely Remove Asbestos – Code of Practice, Work Health and Safety Act 2011 (WHS Act) and Work Health and Safety Regulation 2011 (WHS Regulation)* removal of friable asbestos shall be by a Asbestos Removalist who holds a *Friable (Class A) Asbestos Removal Licence*.

**NOTE:** Under WorkCover NSW licensing, removalists working under a *Class A Friable Asbestos Licence* are responsible to ensure all WorkCover NSW requirements and legislations are strictly followed.

Under these regulations, “Friable Asbestos Material is defined as asbestos material that can be crushed by hand pressure when in a dry state. Bonded Asbestos Material is any asbestos containing material other than friable asbestos material”.

The regulation requires the licensed removalist to apply for, and obtain a work permit before any friable asbestos removal work is carried out.

The removal area shall be isolated from all other areas with plastic sheeting and barriers. A decontamination unit for changing clothes shall be provided for the workers.

The removalist shall wear disposable overalls of 100% synthetic material or a mixed natural/synthetic fabric capable of providing adequate protection against fibre penetration. Goggles and a head covering shall be used in the event of overhead work. A minimum of a half face respirator fitted with a P1 filter shall be used.

During lifting and removal of the vinyl sheeting, the asbestos millboard backing should be sprayed regularly with a fibre bonding agent (PVA).

The removed vinyl sheeting should be rolled into manageable sections and wrapped in black 'forticon' plastic.

Any debris shall be placed into special asbestos bags. It is recommended that a maximum bag size of 1200mm (length) x 900mm (width) be observed. Bags should be filled to no more than 50% capacity. The bags shall be marked, "Caution - Asbestos: Do Not Inhale Dust, Do Not Open Bag". The top of the bag when full shall be twisted, folded down and taped. The bag shall then be placed in the plastic lined skip bin at the Central Waste Depot.

After the works, the removal area should be vacuumed with a HEPA filtered vacuum cleaner and when deemed clean sprayed with a PVA and water sealant solution as per regulations.

During removal procedures air monitoring shall be carried out by a company/or person registered with the National Association of Testing Authorities, Australia - NATA for:

#### *7.82 Workplace Environment and Hazards*

*.01 Asbestos: Estimation of airborne asbestos dust by the membrane filter method described in the National Occupational Health and Safety Commission Guidance Note (1988).*

Air monitoring involves sampling airborne asbestos fibres to assist in assessing exposure to asbestos and the effectiveness of implemented control measures. It must be conducted in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust*, 2nd Edition [NOHSC: 3003 (2005)].

A clearance inspection shall be carried out and a clearance certificate issued before the workplace can be re-occupied. This must be carried out by an independent **licensed asbestos assessor**, for work carried out by a Class A licensed asbestos removalist (for example, if the removal work involved friable asbestos). The **independent licensed assessor** must not issue a clearance certificate unless they are satisfied that the asbestos removal area and the area immediately surrounding it are free from visible asbestos contamination or evidence of asbestos dust and debris. The air monitoring results also must show that asbestos is below 0.01 fibres/ml.

The work shall be in accordance with *WorkCover NSW, How to Safely Remove Asbestos – Code of Practice*.

Asbestos is classified as a special waste and shall be tipped at approved sites. Copies of the tipping receipts should be provided to the project manager.

All work carried out shall be in accordance with:

- *WorkCover NSW, How to Safely Remove Asbestos – Code of Practice, Work Health and Safety Act 2011 (WHS Act)*
- National Occupational Health and Safety (NOHSC:2002, 1998) Code of practice for the safe removal of asbestos;
- EPA NSW (1999) Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-liquid Wastes;
- Protection of the Environment Operations (Waste) Regulations 1996;
- Protection of the Environment Operations Act 1997;
- Occupational Health and Safety Act, 2000; and
- Occupational Health and Safety Regulation, 2001.

## **7.2 Specification for the Removal of Bonded Asbestos Material (ACM)**

**IMPORTANT NOTE: Asbestos containing materials were not identified within the buildings.**

Bonded Asbestos Materials: Removal required if material is to be disturbed during refurbishment or demolition or it poses a health risk.

In accordance with the *Work Health and Safety Act 2011 (WHS Act)* and *Work Health and Safety Regulation 2011 (WHS Regulation)* removal shall be by a Asbestos Removalist who holds a *Bonded (Class B) Asbestos Removal Licence*. Note: A licence is required where the surface area of bonded asbestos removed, is greater than 10m<sup>2</sup> (as of January 1 2008).

Where practicable, plastic barriers should be constructed at the entrance to the removal area.

The removalist shall wear disposable overalls of 100% synthetic material or a mixed natural/synthetic fabric capable of providing adequate protection against fibre penetration.

Goggles and a head covering shall be used in the event of overhead work. A half face respirator fitted with a P1 filter shall be used.

Following this removal process, the asbestos material is to be wrapped in plastic sheeting and taped.

Smaller pieces of asbestos debris when removed shall be placed in heavy-duty polythene bags approximately 0.2mm thick, or other approved containers.

It is recommended that a maximum bag size of 1200mm (length) x 900mm (width) be observed. Bags should be filled to no more than 50% capacity. The bags shall be marked, "Caution - Asbestos: Do Not Inhale Dust, Do Not Open Bag". The top of the bag when full shall be twisted, folded down and taped. The bag shall then be placed in the plastic lined skip bin.

The work shall be in accordance with *WorkCover NSW, How to Safely Remove Asbestos – Code of Practice*.

Asbestos is classified as a special waste and shall be tipped at approved sites. Copies of the tipping receipts should be provided to the project manager.

All work carried out shall be in accordance with:

- *WorkCover NSW, How to Safely Remove Asbestos – Code of Practice, Work Health and Safety Act 2011 (WHS Act)*
- *Work Health and Safety Regulation 2011 (WHS Regulation)*
- National Occupational Health and Safety (NOHSC:2002, 1998) Code of practice for the safe removal of asbestos;
- EPA NSW (1999) Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-liquid Wastes;
- Protection of the Environment Operations (Waste) Regulations 1996;
- Protection of the Environment Operations Act 1997;
- Occupational Health and Safety Act, 2000; and
- Occupational Health and Safety Regulation, 2001.

### **7.3 Asbestos Waste (Special Waste)**

Asbestos is classified as a special waste and shall be tipped at approved sites. Asbestos waste must be transported to an approved disposal site and disposed of in a manner, which will prevent the liberation of asbestos fibre into the atmosphere. All transportation and disposal procedures should be supervised by a representative of the asbestos removal contractor. The contractor shall ensure asbestos waste is transported by a holder of a current permit. Copies of tipping receipts should be provided to the Client.

### **7.4 Air Monitoring for Airborne Asbestos Fibre**

- It is required by WorkCover to conduct monitoring for airborne asbestos fibres during friable asbestos or in sensitive areas where asbestos is being removed. The results of air monitoring can be used: to identify failures in containment; to identify poor work practices; to provide proof of containment for occupiers and regulatory authorities and to provide evidence of good work practices for both present and future needs.
- One monitoring shift is defined as collection of a set of one or more samples in accordance with the Worksafe Australia membrane filter method over a period less than 8 hours.
- Clearance monitoring is defined as a collection of a set of one or more samples in accordance with the Worksafe Australia membrane filter method over a short period of between 1 and 4 hours after asbestos removal has been completed and prior to removal of the containment used to isolate the area.
- Monitoring shall be conducted in accordance with the Worksafe Australia Membrane Filter Method. The laboratory conducting air monitoring for airborne asbestos fibre shall be registered with the National Association of Testing Authorities (NATA) to perform this test.
- The air samples are collected by drawing a measured quantity of air through a membrane filter via a sampling pump. The filters are transformed in the laboratory into transparent specimen slides. The fibres are then sized and counted using a phase contrast microscope and eyepiece graticule. The result is expressed as fibres per

millilitre of air, calculated from the number of fibres on the filter and the measured volume of air sampled.

- Each sample filter is examined in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2<sup>nd</sup> Edition [NOHSC:3003 (2005)]* and NATA requirements.
- Action levels are defined as a course of action taken where the air monitoring level is higher than background levels.
  - If airborne fibre levels reach 0.01 fibres/mL the source of fibre escape is to be found and rectified. Work in the removal area does not have to stop.
  - If airborne fibre levels reach 0.02 fibres/mL work in the removal area should stop. The affected area should be cleaned and clearance monitoring conducted if required.
- Considering proximity of residential buildings, air monitoring shall be conducted each day during removal of the asbestos material and once as a Clearance Monitoring shift after all asbestos material has been removed from site.
- Air monitoring tests shall normally be of less than an eight hour duration. Extra shifts may be required if the contractor elects to work longer hours. An additional shift may be conducted during bag or bin removal.

## **7.5 Polychlorinated Biphenyls (PCB in light fittings and capacitors)**

**IMPORTANT NOTE: Fittings containing PCBs as a dielectric oil were not identified within the buildings.**

All identified PCB capacitors as per *PCB - Containing Capacitors PCB (ANZECC, 1997)*, any old aluminium capacitors, or suspect electrical components, shall be removed from the light fittings and electrical boxes and placed in an appropriate sealed drum. Appropriate PPE shall be employed (See 3.4).

The containers containing the PCB components shall be approved for the transport of dangerous goods and labelled with words to the effect:

ENVIRONMENTAL CONTAMINANT - CLASS 6.1(A) CAUTION - CONTAINS  
POLYCHLORINATED BIPHENYL (PCB) A TOXIC ENVIRONMENTAL CONTAMINANT  
UN NUMBER 2315

All work carried out shall be in accordance with:

- Polychlorinated Biphenyl (PCB) Wastes Chemical Control Order June 1997 (PCB CCO 1997);
- National Strategy for the Management of Scheduled Waste, Polychlorinated Biphenyls Management Plan - November 1996;
- NSW Waste Disposal Act;
- NSW Occupational Health and Safety Act and Regulations
- NSW Construction Safety Act and Regulations 84a-84j.

## 7.6 Lead Contaminated Ceiling Dust

**IMPORTANT NOTE: Lead contaminated ceiling dust was not identified within the buildings.**

Environmental concerns arising from the lead concentrations within ceiling space dust may be an issue if the material comes in contact with the occupants of the building or the soil.

Prior to refurbishment or demolition, vacuuming of the dust located on the upper surface of the ceiling in the above areas using a vacuum cleaner fitted with a HEPA filter is recommended. Dust suppression during the works is also recommended prior to demolition. After removal all ceiling space surfaces are to be sprayed with a PVA (10%) solution.

All work carried out shall be in accordance with the *Australian Standard: Guide to lead paint management, Part 2: Residential and commercial buildings (AS 4361.2 - 1998)* and *Work Cover NSW Guidance Note for Ceiling Dust Containing Lead*.

Contractors and employees directly involved in the demolition of the buildings should wear appropriate Personal Protective Equipment (PPE) including the use of:

- Disposable overalls within the work area, which are to be removed prior to leaving the work area
- Particulate dust respirators conforming to Australian Standard AS1715 (1994 and 1996 Amendment) 'respiratory protective devices'.

## 7.7 Lead Containing Paint (LCP)

**IMPORTANT NOTE: Lead containing paint was not identified within the buildings.**

Paint with a lead content may be located on the older external timbers and internal walls of the older buildings.

During demolition or refurbishment, care should be taken that the ground and surrounds are not impacted by paint flakes loosened from the timbers. Drop sheets and barriers should be used to ensure that the Australian Standards below are followed.

Any demolition or maintenance shall be in accordance with the following:

- *Australian Standard: Guide to lead paint management, Part 2: Residential and commercial buildings (AS 4361.2 - 1998);*

All work shall proceed in a way as to minimise dust generation. If dust becomes an issue, a fine mesh dust proof screen shall be erected around the demolition work area. Contractors and employees directly involved in the demolition of the buildings should wear appropriate Personal Protective Equipment (PPE) including the use of:

- Disposable overalls within the work area, which are to be removed prior to leaving the work area;
- Particulate dust respirators conforming to Australian Standard AS1715 (1994 and 1996 Amendment) 'respiratory protective devices'.