



**HAZMAT  
SERVICES**

## **Asbestos Survey of Tamworth Depot Goonoo Goonoo Road, Tamworth NSW**

2 June 2010

Prepared for:

**TransGrid**

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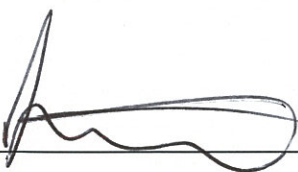
**Asbestos Survey of  
Tamworth Depot  
Goonoo Goonoo Road, Tamworth NSW**  
2 June 2010

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1	<b>Hazmat Services</b> Project File

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By

**Hazmat Services Pty Ltd**  
PO Box 36, Wickham NSW 2293



**Derek Kingdon**  
Occupational Hygienist

**Technical Peer Reviewer: Date:**

	25/05/11
<b>Andrew Russell</b> Managing Director	



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## **APPENDICES**

**Appendix 1:** ACM Register & Asbestos Risk Assessment

**Appendix 2:** Asbestos Information



## **EXECUTIVE SUMMARY**

*On the 2<sup>nd</sup> June 2010, Hazmat Services Pty Limited conducted a survey of the condition and location of asbestos-containing construction materials on site at TransGrid's Tamworth Depot located at Goonoo Goonoo Road, Tamworth NSW.*

*Potential issues identified within this survey have been divided into two groups, those considered significant compliance or liability items, and minor compliance or liability items that require attention to maintain a low risk to site occupants.*

### ***Significant Issue:***

- There were no significant issues identified to the site.*

### ***Minor Issue:***

- The paintwork to the eave and ceiling linings throughout the site has deteriorated and is peeling from the surface. There are numerous cracks appearing in the eave linings. These areas should be resealed if the ACM is to remain in situ.*
- There is a large crack to the western entry verandah ceiling lining of the Control Building. This should be removed under controlled asbestos conditions and replaced with a non-asbestos alternative.*
- The floor coverings containing asbestos to the battery room (Control Building) and plant section office (Workshop Building) have numerous amounts of damage to the surface. These should be removed under controlled asbestos conditions and replaced with a non-asbestos alternative.*
- The Galbestos coatings throughout the site are starting to peel and deteriorate due to weathering. This should be rectified when capital allows.*
- The flat AC sheet wall cladding to the Pump House Building has sustained some damage to the surface exposing fibres. This cladding should be sealed with paint or removed under controlled asbestos conditions replaced with a non-asbestos alternative.*
- A check of the air conditioning systems in each building should be undertaken to assess if asbestos millboard is present within the air conditioning as there are no records of removal being undertaken.*
- Some ACM requires labelling as identified in the Asbestos Register.*



# **1 INTRODUCTION**

At the request of Graham Francis from TransGrid, Hazmat services Pty Limited (Hazmat) conducted an asbestos survey of the Tamworth Depot site located at Goonoo Goonoo Road, Tamworth NSW (the Site).

The purpose of the survey, which is required prior to the commencement of demolition or refurbishment works, and which is also intended to meet owner/employer obligations under the NSW Occupational Health & Safety Regulation 2001 was to identify the location, extent and condition of accessible asbestos-containing materials (ACM) present throughout the buildings, and also determine the likely impact of these materials on persons accessing the Site or on any proposed building works.

This report presents the findings of a survey undertaken on the 2<sup>nd</sup> June 2010 and includes a register of ACM and an asbestos risk assessment (**Appendix 1**).

Photographic records of ACM were collected during the survey and are presented in the **Photographs** section of this report and in **Appendix 1: Asbestos Register**.

The previous Site Asbestos Register was produced in 2001 by Hyder Consulting Australia Pty Ltd (Hyder-2001) and subsequent Asbestos Register produced by HLA-Envirosciences Pty Ltd in 2007 (HLA-2007). The HLA-2007 Asbestos Register was located on Site. ACM previously analysed and identified in the Hyder-2001 report and HLA-2007 report are referred in this report.

This report should be read in its entirety and with reference to the survey limitations outlined in **Section 8: Limitations & Disclaimer**.

For the purpose of this survey report north is defined as true north.

The following areas were generally inaccessible during the survey:

- Sub-floor voids of buildings;
- Wall cavities of buildings;
- Roof spaces of buildings;
- Restricted areas;
- Locked areas for which no keys were available;
- Live electrical equipment;
- Switchyard equipment; and
- Sub-surface concrete and soil layers of the Site.



## **2 NATURE OF SURVEY**

The survey was undertaken by way of a non-destructive visual inspection of construction materials located within accessible areas of the Site.

Asbestos identification analysis results obtained from the HLA-2007 report were referred to for the purposes of identifying ACM.

If sampling was required to verify the presence of asbestos, samples were collected and sent for analysis to Australian Safer Environment and Technology (ASET) Pty Ltd's NATA registered laboratory. The samples were examined using a stereo microscope and selected fibres were further examined using polarised light microscopy supplemented with dispersion staining.

Not all surfaces and suspected ACM were sampled due to the prohibitive cost and physical damage associated with the sampling process or were unable to be sampled due to their lack of accessibility (height), good condition (without causing damage), possibility of causing contamination, etc. Where materials appear to be identical to those physically sampled during this survey or in previous surveys, and confirmed by analysis to contain asbestos or presumed to contain asbestos based on their age, physical appearance or fixing types (i.e. nail and screw heads, cover strips or cover battens), the term "presumed asbestos" will be used in this report and thus indicates that it is highly likely that the material contains asbestos and should be treated as such unless positively confirmed otherwise.



### **3 EXTENT OF SURVEY**

Fundamental to the entire basis of an inspection of this type, where the constraints of a "non-destructive" survey are imposed, is the fact that no matter how thorough or professionally it is conducted, not all ACM might be found and recorded.

Hence, the presence of ACM can therefore be reported only within the constraints of these methods.

Whilst one can be reasonably confident that all ACM that might be routinely encountered in the normal day-to-day activities of the Site can be identified and assessed, no guarantees can be made that all ACMs have been identified since refurbishment and demolition activities may well reveal ACMs in areas inaccessible to this inspection.

This report is confined to reporting the discovery (or non-discovery as the case may be) and presence of ACMs by visual inspection and non-destructive method of those areas of the Site accessible to and inspected by Hazmat at the date of the inspection. Hazmat will not be liable in the event the report fails to notify the presence of any ACMs in any area of the Site (or property) which was on the date of inspection physically inaccessible for inspection using the methods employed or which was not otherwise inspected on that day. Nothing herein contained implies that any inaccessible or uninspected area of the Site reveals or does not reveal ACMs.

The survey was limited to the Site's building structures and associated building elements. ACM which may be present in the ground or associated with former occupancies are generally not included in this report.



## 4 ASBESTOS RISK ASSESSMENT

Asbestos is hazardous when it is airborne. The health risks posed by ACM or products in premises are due to a number of risk factors including:

- Accessibility of the material
- Condition of the material
- Friability of the material
- Location of the material

A hazard level for ACM can be determined by multiplying the hazard level for the given asbestos type by the product of the risk factor hazard levels. The risk assessment methodology used in our assessment is based on the Australian Standard AS4360-2004 *Risk Management*. The hazard levels for this assessment have been assessed according to the following:

**Table 1: Risk Factor/Hazard Level**

RISK FACTOR			HAZARD LEVEL
ASBESTOS TYPE	Bonded		2
	Friable		3
CONDITION	<i>Good</i>	No sign of damage or deterioration due to weather, non friable.	1
	<i>Fair</i>	Only mild damage or deterioration by weathering, friable with force	2
	<i>Poor</i>	Severe damage or deterioration by weathering, very friable	3
ACCESSIBILITY	<i>Low</i>	Totally enclosed behind a false ceiling or wall, sealed or painted, inaccessible due to height, minimal exposure to weathering, people and maintenance.	1
	<i>Medium</i>	Partially protected by encapsulation, low activity area, low exposure to weathering, people and maintenance.	2
	<i>High</i>	No encapsulation, high activity area, exposed to weathering, people and maintenance.	3
AIRBORNE POTENTIAL	<i>Low</i>	Not present in return air plenum.	1
	<i>Medium</i>	Exposed to natural ventilation	2
	<i>High</i>	Exposed to forced ventilation (i.e. intakes/vents, air conditioners, fans)	3
EXPOSURE	<i>Low</i>	No exposure likely in current condition.	1
	<i>Medium</i>	Exposure limited to maintenance personnel only.	2
	<i>High</i>	Likely exposure to employees & public.	3

The product of the hazard level from each risk factor can be then used to determine the recommended health risk/action priority rating as presented in **Table 2**.

**Table 2: Health Risk/Action Priority Rating**

Health Risk	Hazard Level	Action Priority
High	>50	Priority 1 – P1
Medium	20-49	Priority 2 – P2
Low	4-19	Priority 3 – P3
Negligible	0-3	Priority 4 – P4

The health risk/action priority ratings are defined as follows:

**HIGH/P1** - Materials that pose an immediate or elevated health risk to employees or the public. The level of risk is applicable to the presence of friable material such as limpet asbestos insulation and asbestos ropes. The materials are readily accessible, in poor or friable condition. Immediate actions should be taken. Removal by licensed asbestos removal contractor recommended.

**MEDIUM/P2** - Products or materials that pose a potential health risk to employees and the public in their current state. This level of risk is applicable to damage or unstable material that is friable with force, accessible within an activity area such as broken or deteriorated cement sheeting, which presents a potential immediate health risk if disturbed. Control measures to stabilise the material should be initiated immediately and regular monitoring of the material is recommended for these materials. Formal abatement should be considered when capital allows or where planned maintenance, refurbishment or demolition works will disturb these materials. Removal, when required should be undertaken by licensed asbestos removal contractors.

**LOW/P3** - Products or materials that pose little health risk to employees and the general public. They consist of materials that currently are in a stable, non-friable condition or have a low accessibility. The material does not present a health risk unless further disturbed. Maintenance work should be carried out to stabilise or repair the damaged area. Control must be implemented to protect these materials from further damage including materials identified by warning signs. Reassessment of the priority rating will be required if any planned maintenance, refurbishment or demolition works impact on their condition. If any damage is present, maintenance work should be carried out to stabilise and repair the damaged area.

**NEGLECTIBLE/P4** - Products or Bonded Asbestos Materials that pose negligible health risk to employees and the general public, such as painted cement sheeting, vinyl floor tiles etc. They consist of materials that currently are in an undamaged, stable, non-friable condition within a low accessible area. The material does not present a health risk unless disturbed by intrusive work such as drilling, cutting, breaking or sanding. Control must be implemented to protect these materials from damage including materials identified by warning signs. Reassessment of the priority rating will be required if any planned maintenance, refurbishment or demolition works impact on their condition. If damaged, maintenance work should be carried out to stabilise and repair the damaged area.



## **5 ASBESTOS IDENTIFICATION ANALYSIS**

There was no sampling undertaken during the asbestos survey conducted by Hazmat on the 2<sup>nd</sup> June 2010. Sampling was previously carried out by Hyder in 2001 and HLA in 2007 with the results forming part of this report.

No other suspected ACM was located or accessible during the Site survey.



## **6 RESULTS OF SURVEY**



***Tamworth Depot***

The Tamworth Depot was constructed in 1961 and consists of an Office & Administration Building, Workshop Buildings, Stores Buildings, Staff Accommodation Building and several smaller isolated buildings.

### **6.1 Office & Administration Building**

The Office and Administration Building is constructed with brick walls and a gable pitched colourbond metal roof. The gutters are zincalume and the eaves are flat AC sheet with the windows being aluminium.

The interior is comprised of offices, amenities and lunchroom.

The walls are a combination of rendered brick and plasterboard with the ceilings being a combination of plasterboard and plywood.

The floors are concrete and covered with sheet vinyl and carpet to most areas while the amenities have ceramic tiles.



## **6.2 Control & Store Building**

The Control & Store building is connected to the Office & Administration via a covered walkway and is constructed with brick walls with a gable pitched metal roof. The gutters are metal and the eaves are flat fibre cement sheet with the windows being aluminium.

The floor is concrete.

There are some wall sections that have metal cladding with a Galbestos coating applied containing asbestos.

The interior comprises Main Store Room, Communication Room, Plant Room and Control Room.

The walls are rendered brick and the ceilings are a combination of plasterboard and Masonite.

The floors are covered with sheet vinyl.

## **6.3 Staff Accommodation Building**

The Staff Accommodation building is constructed brick walls with a gable pitched metal roof. The gutters are metal and the eaves are flat fibre cement sheet with the windows being aluminium.

The floor is concrete. The interior comprises Locker Room, Amenities, Medical Room and Conference Room.

The walls are rendered brick with the ceilings having plasterboard linings.

The floors have a combination of vinyl tile, painted concrete and carpet.

## **6.4 Workshop Building**

The Workshop Building is constructed brick walls with a gable pitched Galbestos metal roof. The gutters are zincalume and the eaves are flat AC sheet with the windows being aluminium.

The interior comprises various workshops, offices and amenities.

The walls are a combination of rendered brick, masonite and flat AC sheet with the ceilings having a combination of plasterboard linings.

The floors are concrete and have a combination of vinyl tile, painted concrete and carpet.



## **6.5 Storage Area**

The Storage Area has metal framed carport structure installed with metal sheeting to the roof and walls with a Galbestos coating.

## **6.6 Other Structures**

There are various other structures throughout the site that were constructed with brick and concrete or metal.

These structures contain some ACM as detailed within the Asbestos Register.



## **7 RECOMMENDATIONS**

### **7.1 Office & Administration Building**

The flat AC sheet ceiling and eave linings require repainting and repair if they are to remain insitu as the current paintwork has deteriorated and peeling badly.

There is a large crack to the western entry verandah ceiling lining. This should be removed under controlled asbestos conditions and replaced with a non-asbestos alternative.

A check of the air conditioning system should be undertaken to asses if asbestos millboard is present within the air conditioning as there are no records of removal being undertaken.

### **7.2 Control & Stores Building**

The bituminous type floor covering to the Battery Charge Room that contain asbestos is in poor condition with damage to the surface. This should be removed under controlled asbestos conditions and replaced with a non-asbestos alternative.

A check of the air conditioning system should be undertaken to asses if asbestos millboard is present within the air conditioning as there are no records of removal being undertaken.

### **7.3 Staff Accommodation Building**

A check of the air conditioning system should be undertaken to asses if asbestos millboard is present within the air conditioning as there are no records of removal being undertaken.

### **7.4 Workshop Building**

The vinyl tiles to the office of the plant section room that contain asbestos are in a poor condition with damage to the surface. These should be removed under controlled asbestos conditions and replaced with a non-asbestos alternative.

There are numerous electrical distribution panels and combination fuse boxes to the workshop building which should be analysed for ACM before any works are commenced.

### **7.5 Storage Area**

The Galbestos coatings of the Storage Area are starting to peel and deteriorate due to weathering. This should be rectified when capital allows.



## **7.6 Other Structures**

### **7.6.1 Flammable Liquids**

The Galbestos coatings of the Storage Area are starting to peel and deteriorate due to weathering. This should be rectified when capital allows.

### **7.6.2 Oil Stores**

The seal to the combination fuse switch is in poor condition and is easily damaged on opening. The seal should be removed under controlled asbestos conditions as soon as possible and replace with a non-asbestos alternative.

### **7.6.3 Main Staff Carport**

The Galbestos coatings of the Storage Area are starting to peel and deteriorate due to weathering. This should be rectified when capital allows.

### **7.6.4 Pump House Building**

The flat AC sheet wall cladding to this building has sustained some damage to the surface exposing fibres. This cladding should be sealed with paint or removed under controlled asbestos conditions replaced with a non-asbestos alternative under controlled conditions.

## **7.7 General Recommendations**

The following general recommendations have been made following observations made on the day of our Site inspection:

### **7.7.1 ACM Generally**

- The ACM identified on Site pose negligible to low risk to employees and visitors in their current state. These ACMs only pose an increased health risk to employees and/or maintenance personnel if damaged or disturbed by natural weathering or intrusive work such as drilling, cutting or sanding which are not permitted unless undertaken in accordance with the NSW Government and the Safe Work Australia Asbestos Codes of Practice.
- The ACM are not labelled in some cases. Asbestos warning labels are required to be affixed to the ACM listed in the Site Asbestos Register in accordance with the *NSW Occupational Health & Safety Regulation 2001* which refers to the *Code of Practice for the Management & Control of Asbestos in Workplaces* [NOHSC:2018(2005)].



All ACM should be labelled to warn of the presence of asbestos in accordance with the *Code of Practice for the Safe Removal of Asbestos 2<sup>nd</sup> Edition* [NOHSC:2002 (2005)].

Any demolition, refurbishment or earthworks undertaken at the Site should allow for the removal and disposal of the ACM identified in this survey and further investigations of areas inaccessible during this survey. The ACM should be removed prior to any other demolition, refurbishment or earthworks and visual and air clearances provided by competent persons to validate that the ACM have been removed.

Removal of ACM is to be undertaken in accordance with the regulations and requirements of the NSW Government and the NOHSC, these being:

- Code of Practice for the Safe Removal of Asbestos 2<sup>nd</sup> Edition [NOHSC:2002(2005)];
- Code of Practice for the Management & Control of Asbestos in Workplaces [NOHSC:2018(2005)];
- Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2<sup>nd</sup> Edition [NOHSC:3003(2005)] ; and
- TransGrid's Corporate Asbestos Management Plan.

The Time Weighted Average (TWA) airborne concentrations for asbestos shall not exceed the legislated exposure standard of 0.1 fibres per millilitre for Chrysotile, Amosite and Crocidolite. Any mixture of these, or where the composition is unknown - 0.1 fibres per millilitre.

Air monitoring should be carried out during the removal of ACM and a visual clearance provided by a competent person to validate that the ACM has indeed been removed.

Asbestos waste is to be disposed at an approved waste collection facility and dumping dockets provided to record that the asbestos is disposed of in the appropriate manner.

In addition, and as required under the NSW Occupational Health & Safety Regulation 2001, an asbestos management plan (TransGrid's Corporate Asbestos Management Plan) should be made available to tradespersons undertaking works at the Site are made aware of the presence and location of all ACM.

### **7.7.2 AC Sheeting**

The AC sheeting on Site poses negligible to low risk to employees and visitors in its current condition. With AC sheeting in general, some ongoing maintenance is required to ensure the risks are kept to a minimum. This includes periodic monitoring of the condition of the ACM to ensure that:

- The AC sheet materials identified in the survey are regularly maintained and painted or sealed to maximise surface stability and should not be sawn, drilled or abraded.
- Any work involving the disturbance or penetration of these materials is undertaken under controlled conditions.
- The AC sheeting is labelled where practical to warn of the presence of asbestos. This labelling should be in accordance with the current legislative requirements.



- Broken or damaged sections of AC sheet materials are removed and replaced with suitable non-asbestos alternatives.
- Broken pieces of AC sheeting are removed and disposed of appropriately and broken surfaces sealed using a PVA solution/paint or alternatively replaced with a suitable non-asbestos alternative.
- The AC sheeting is removed prior to refurbishment or demolition.

### **7.7.3 Galbestos Sheeting**

Typically, Galbestos sheeting is a product that consists of a solid steel core protected by a multi-layer protective coating. The multi-layer protective coating consists firstly of a molten zinc coating, which acts as a rust inhibitor for the steel core and as a bonding agent for the asphalt layer containing Chrysotile asbestos. The asbestos asphalt layer is then sealed by a resin coating to provide a tough and pliable layer to further protect the product against weather and corrosive influences. Because of this construction, the asbestos is in a bound matrix, which inhibits the ready release of asbestos fibres until deterioration due to ultra violet light exposure causes the matrix to break down. The Galbestos cladding located at this Site was observed to be slightly damaged, bonded, non-friable and in good to fair condition.

Galbestos on Site presently poses a negligible to low risk to employees and visitors in its current location and condition however the risk is likely to continue to increase with time as the material further deteriorates with exposure to ultraviolet light and further weathering of the outer resin layer. Treatment or removal of all Galbestos sheeting is therefore recommended when capital allows.

Galbestos should be treated similar to AC sheeting. This includes periodic monitoring of the condition of the Galbestos materials to ensure that:

- All exposed asphalt linings remain painted or sealed to maximise surface stability and prolong product life. Galbestos materials should not be sawn, drilled or abraded.
- Any work involving the disturbance or penetration of these materials is undertaken under controlled conditions.
- The Galbestos is labelled where practical to warn of the presence of asbestos. This labelling should be in accordance with the current legislative requirements.
- Broken or damaged sections of Galbestos sheet materials should be removed and replaced with suitable non-asbestos alternatives.
- Broken pieces and flakes of Galbestos coatings are removed and disposed of appropriately and broken surfaces sealed using a PVA solution/paint or alternatively replaced with a suitable non-asbestos alternative.
- The Galbestos is removed prior to refurbishment or demolition.



## **8 LIMITATIONS OF REPORT**

The survey we conducted for you was undertaken by visual inspection and through non-destructive means of those areas of the Site (being the building structures and associated building elements) that were accessible to us at the time of our inspection. This means, therefore, that we cannot guarantee that each and every asbestos-containing material that exists at the Site has been located, identified and documented by us in this report.

Hazmat prepared this report for the purpose set out in **Section 1** and because this report has been prepared for that purpose, it is not appropriate for this report to be used for any other purpose, without prior written consent. It is also not appropriate for this report to be released to any other party (either in whole or in part) without Hazmat's prior written consent. Should you wish to use this report for a purpose other than the purpose for which it was prepared, or to release this report (either in whole or in part) to any other party, please contact Hazmat so that we may discuss your wishes in further detail with you.

Please note, however, that in the event that this report is used for a purpose for which it was not prepared, and you have not obtained Hazmat's prior written consent to use the report for that purpose, then neither Hazmat, nor any member or employee of Hazmat, accept responsibility or liability for the use of this report for that purpose.

Hazmat has relied upon information identified in this report and previous reports (Hyder-2001 and HLA-2007) and has assumed this information to be both adequate and accurate for the purpose of preparing this report for you. Hazmat have not, therefore, verified or audited any of the information you, or others, have supplied to us. If there is further information that becomes available, Hazmat may need to amend the information contained in this report. Hazmat reserves their right to do so should this become necessary.

In addition, this report does not, and does not purport to, give legal advice as to your actual or potential asbestos or hazardous material liabilities, or draw conclusions as to whether any particular circumstances constitute a breach of relevant legislation. You will appreciate that this advice can only be given by qualified legal practitioners.

Finally, Hazmat does not make any other warranty, expressed or implied, as to the professional advice contained in this report.



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## **Photographs**



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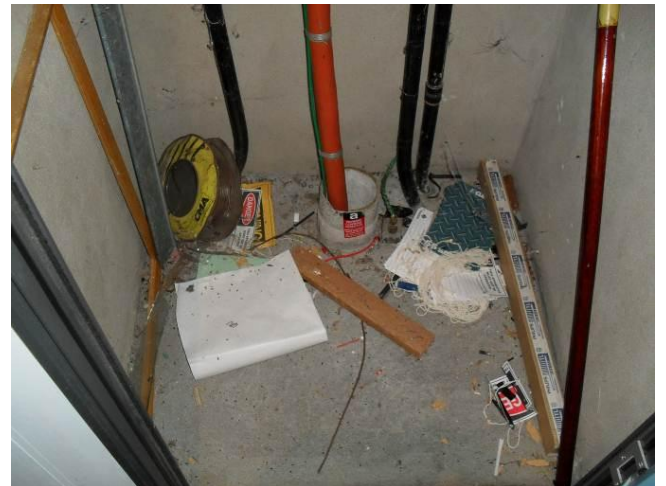
***Photo 1: Flat AC sheet linings to eaves of Administration Building (Chrysotile Asbestos).***



***Photo 2: Mastic containing asbestos to windows – Typical (Chrysotile Asbestos).***



***Photo 3: Galbestos cladding to south/eastern entry to Control / Mains Building.***



***Photo 4: Conduit to distribution cupboard of Administration Building (Chrysotile, Crocidolite & Amosite Asbestos).***



***Photo 5: Galbestos coating to all walkways.***



***Photo 6: Malthoid to floor of Battery Charge Room. (Chrysotile Asbestos).***

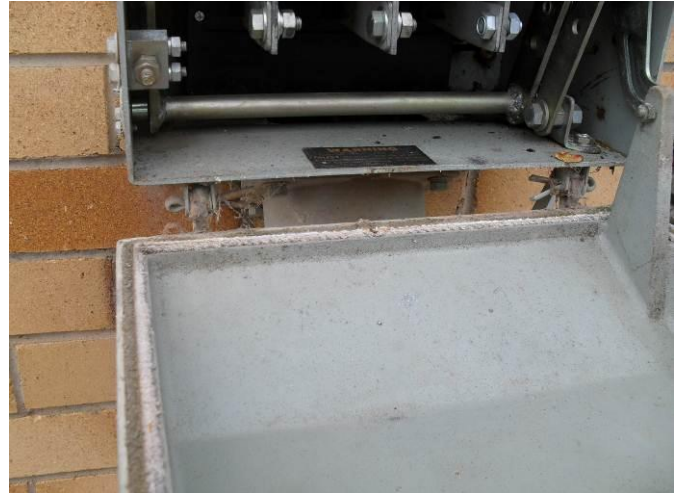


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***Photo 7: Galbestos coating to Workshop walls  
(Chrysotile Asbestos).***



***Photo 8: Seal to combination fuse switches  
containing asbestos (Chrysotile Asbestos).***



***Photo 9: Flat AC sheet linings to Technical  
Services Amenities (Chrysotile, Crocidolite &  
Amosite Asbestos).***



***Photo 10: Vinyl tiles to Plant Section Office  
containing asbestos  
(Chrysotile Asbestos).***



***Photo 11: Vinyl tile to Sub Station Office  
containing asbestos (Chrysotile Asbestos).***



***Photo 12: Yard Stores Area Storage Shed  
Galbestos coating (Presumed to contain  
asbestos).***



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***Photo 13: Yard Stores Area Storage Shed with Galbestos coating (Presumed to contain asbestos).***



***Photo 14: Flammable Liquids Shed – Galbestos coating to roof presumed to contain asbestos and presumed flat AC sheet eave lining.***



***Photo 15: Oil Stores Building - Galbestos coating to roof and gable ends presumed to contain asbestos.***



***Photo 16: Flat AC sheet ceiling lining to Oil Store Building (Chrysotile, Crocidolite & Amosite Asbestos).***



***Photo 17: Main Staff Carport with Galbestos coating (Presumed to contain asbestos).***



***Photo 18: Flat AC sheet wall cladding to Pump House Building (Chrysotile Asbestos).***



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## **Appendix 1**

### **ACM Register & Asbestos Risk Assessment**

# ASBESTOS REGISTER FOR TAMWORTH DEPOT







ID	Site	Building	Exterior/ Interior	Item	Description	Sample Number	Type	Condition	Hazard Level	Priority Level	Labelled	Photograph	Photograph No	Recommendation	Date Raised	Raised By (Competent Person)	Owner	Target Date	Risk Response	Residual Risk	Status	Progress	Reference	Close Date	Comments
	Tamworth Depot	Office and Administration	Exterior	Eave linings	Flat AC sheet	Hyder 2001 (85-15)	Chrysotile, Amosite & Crocidolite	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	Yes		1	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Office and Administration	Exterior	Coating to staff carport roof sheeting	Presumed Galbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No	-	-	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Office and Administration	Exterior	Ceiling lining to staff carport	Presumed flat AC sheet	-	Presumed asbestos	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Office and Administration	Exterior	Mastic to windows	Mastic containing asbestos	HLA (2007-1)	Chrysotile	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No		2	Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Office and Administration	Exterior	Coating to Western entry verandah	Galbestos	HLA (2007-2)	Chrysotile	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No	-	-	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Office and Administration	Exterior	Ceiling lining to Western entry verandah	Flat AC sheet	HLA (2007-3)	Chrysotile, Amosite & Crocidolite	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Office and Administration	Exterior	Coating to South-Eastern entry Verandah roof sheeting and fascia panel	Presumes Galbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No		3	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Office and Administration	Exterior	Ceiling lining to South-Eastern entry verandah	Presumed flat AC sheet	-	Presumed asbestos	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Office and Administration	Interior	Distribution board to cupboard in hallway	Backing board presumed to contain asbestos	-	Presumed asbestos	Good condition	2 = 2(2x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Office and Administration	Interior	Conduits to distribution board to cupboard in hallway	Moulded AC	HLA (2007-5)	Chrysotile, Amosite & Crocidolite	Fair condition, unpainted	8 = 2(2x2x1x1)	P3 - Low	Yes		4	Seal with paint. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Office and Administration	Interior	Heater banks to AC	Presumed ACM	-	Presumed asbestos	Un sighted	Not Classified	Not Classified	No	-	-	Assess prior to any maintenance works.	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Control and Stores	Exterior	Mastic to windows	Mastic containing asbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No	-	-	Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Control and Stores	Exterior	Facia above entry foyer between the Control and Administration Buildings	Presumed Galbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No	-	-	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Control and Stores	Exterior	Coating to walkway roof sheeting	Presumed Galbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No		5	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Control and Stores	Interior	Conduits to control room	Presumed moulded AC	-	Presumed asbestos	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	No	-	-	Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Control and Stores	Interior	Distribution board to cupboard in hallway	Backing board presumed to contain asbestos	-	Presumed asbestos	Good condition	2 = 2(2x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Control and Stores	Interior	Conduits to distribution cupboard in hallway	Presumed moulded AC	-	Presumed asbestos	Fair condition, minor damage, unpainted	8 = 2(2x2x1x1)	P3 - Low	Yes	-	-	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Control and Stores	Interior	Electrical components to main control panels in Plant Room	Presumed ACM	-	Presumed asbestos	Good condition	2 = 2(2x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									

# ASBESTOS REGISTER FOR TAMWORTH DEPOT

ID	Site	Building	Exterior/ Interior	Item	Description	Sample Number	Type	Condition	Hazard Level	Priority Level	Labelled	Photograph	Photograph No	Recommendation	Date Raised	Raised By (Competent Person)	Owner	Target Date	Risk Response	Residual Risk	Status	Progress	Reference	Close Date	Comments
	Tamworth Depot	Control and Stores	Interior	Distribution board to Battery Room	Backing board presumed to contain asbestos	-	Presumed asbestos	Good condition	2 = 2(2x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Control and Stores	Interior	Conduits to Battery Room	Presumed moulded AC	-	Presumed asbestos	Fair condition, minor damage, unpainted	8 = 2(2x2x1x1)	P3 - Low	Yes	-	-	Seal with paint. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Control and Stores	Interior	Floor covering to Battery Room	Bitumous floor covering	Hyder 2001 (85-4)	Chrysotile	Poor condition, extensive damage	48 = 2(3x2x2x2)	P2 - Medium	No		6	Remove and replace with non-asbestos alternative as soon as possible	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Control and Stores	Interior	Link boards to Battery Room	Backing board presumed to contain asbestos	Hyder 2001 (85-3)	Presumed asbestos	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Control and Stores	Interior	Distribution board to Store Room	Backing board presumed to contain asbestos	-	Presumed asbestos	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	No	-	-	Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Staff Accommodation	Exterior	Mastic to windows	Mastic containing asbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No	-	-	Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Staff Accommodation	Interior	Distribution board to hot water heater room	Backing board presumed to contain asbestos	-	Presumed asbestos	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Workshop	Exterior	Coating to metal wall cladding	Galbestos	HLA (2007-9)	Chrysotile	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No		7	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Workshop	Exterior	Coating to roof sheeting	Presumed Galbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No	-	-	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Workshop	Exterior	Eave linings	Flat AC sheet	HLA (2007-10)	Chrysotile, Amosite & Crocidolite	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Workshop	Exterior	Seal to combination fuse switch boxes	Asbestos rope	HLA (2007-11)	Chrysotile	Fair condition, easily damaged on opening.	48 = 3(2x2x2x2)	P2 - Medium	No		8	Remove and replace with non-asbestos alternative as soon as possible	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Workshop	Exterior	Mastic to windows	Mastic containing asbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No	-	-	Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Workshop	Interior	Seal to combination fuse switch boxes	Presumed Asbestos rope	-	Presumed asbestos	Fair condition, easily damaged on opening.	48 = 3(2x2x2x2)	P2 - Medium	No	-	-	Remove and replace with non-asbestos alternative as soon as possible	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Workshop	Interior	Distribution boards throughout	Backing board presumed to contain asbestos	-	Presumed asbestos	Fair condition, slight damage	8 = 2(2x2x1x1)	P3 - Low	No	-	-	Seal with paint, Affix label. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Workshop	Interior	Wall lining to Technical Services Amenities	Flat AC sheet	HLA (2007-14)	Chrysotile, Amosite & Crocidolite	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	No		9	Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Workshop	Interior	Floor covering to Plant Section Office	Vinyl tile containing asbestos	HLA (2007-16)	Chrysotile	Fair condition, some damage	16 = 2(2x2x2x1)	P3 - Low	No		10	Remove and replace with non-asbestos alternative when capital allows. Affix labels, maintain and review in 2012.	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Workshop	Interior	Floor covering to Sub Station Workshop Office	Vinyl tile containing asbestos	HLA (2007-17)	Chrysotile	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	No		11	Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Stores Area (Yard)	Exterior	Coating to metal cladding of sheds (2 of)	Presumed Galbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No		12	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									



# ASBESTOS REGISTER FOR TAMWORTH DEPOT

ID	Site	Building	Exterior/ Interior	Item	Description	Sample Number	Type	Condition	Hazard Level	Priority Level	Labelled	Photograph	Photograph No	Recommendation	Date Raised	Raised By (Competent Person)	Owner	Target Date	Risk Response	Residual Risk	Status	Progress	Reference	Close Date	Comments
	Tamworth Depot	Stores Area (Yard)	Exterior	Coating to roof sheeting of sheds (2 of)	Presumed Galbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No		13	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Flammable Liquids	Exterior	Coating to roof sheeting	Presumed Galbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No	-	-	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Flammable Liquids	Exterior	Eave lining	Presumed flat AC sheet	-	Presumed asbestos	Good condition	4 = 2(1x1x1x1)	P4 - Negligible	Yes		14	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Flammable Liquids	Exterior	Mastic to windows	Mastic containing asbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No	-	-	Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Flammable Liquids	Interior	Ceiling lining	Flat AC sheet	Hyder 2001 (85-13)	Chrysotile, Amosite & Crocidolite	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Oil Stores	Exterior	Coating to roof sheeting and gables	Presumed Galbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No		15	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Oil Stores	Exterior	Eave lining	Presumed flat AC sheet	-	Presumed asbestos	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Oil Stores	Exterior	Mastic to windows	Mastic containing asbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No	-	-	Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Oil Stores	Interior	Ceiling lining	Flat AC sheet	HLA (2007-18)	Chrysotile, Amosite & Crocidolite	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	No		16	Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Oil Stores	Interior	Distribution board to wall	Backing board presumed to contain asbestos	-	Presumed asbestos	Good condition	2 = 2(1x1x1x1)	P4 - Negligible	Yes	-	-	Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Oil Stores	Interior	Seal to combination fuse switch	Presumed asbestos rope	-	Presumed asbestos	Fair condition, easily damaged on opening	48 = 3(2x2x2x2)	P2 - Medium	No	-	-	Remove and replace with non- asbestos alternative as soon as possible	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Main Staff Carport	Exterior	Coating to metal cladding	Presumed Galbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No		17	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Main Staff Carport	Exterior	Coating to roof sheeting	Presumed Galbestos	-	Presumed asbestos	Fair condition, some weathering	16 = 2(2x2x2x1)	P3 - Low	No	-	-	Seal with paint. Affix labels. Maintain and review in 2012	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									
	Tamworth Depot	Pump house	Exterior	Cladding to walls	Flat AC sheet	Hyder- 2001 (85-14)	Chrysotile	Fair condition, areas of damage, Exposed edges	32 = 2(2x2x2x2)	P2 - Medium	Yes		18	Sealed damaged areas with paint or remove under controlled conditions. Maintain and review in 20112	2-Jun-10	Glenn Watterson - Hazmat Services Pty Ltd									



**HAZMAT  
SERVICES**

**Asbestos Survey of  
Tamworth Depot  
Goonoo Goonoo Road, Tamworth NSW**

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## **Appendix 2**

### **Asbestos Information**



## **TYPES AND USES OF ASBESTOS-CONTAINING MATERIALS**

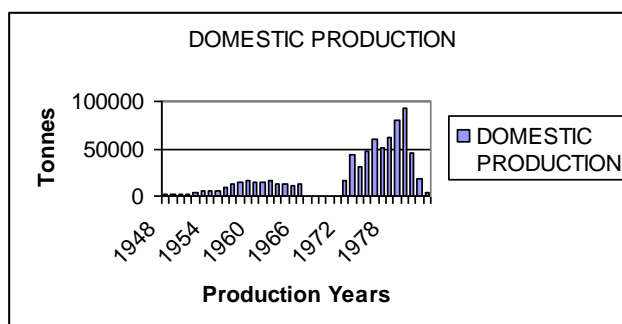
Asbestos is the fibrous form of mineral silicates belonging to the serpentine and amphibole groups of rock-forming materials. The most significant types include chrysotile, crocidolite and amosite (white, blue and brown or grey asbestos respectively). As a naturally occurring rock fibre, asbestos is mined, then broken down from mineral clumps into groups of loose fibres.

During the 1950s, 1960s and early 1970s it was common to use asbestos as fire insulation on structural members and as fire rating of penetration core holes. Its thermal energy conservation properties were used to insulate hot and cold water pipes and ducting. Asbestos was also used to a later date in products to increase their compressive and tensile strength. These products include asbestos cement (AC) sheeting, bituminous mastic and membrane, vinyl tiles, electrical backing boards and many other products.

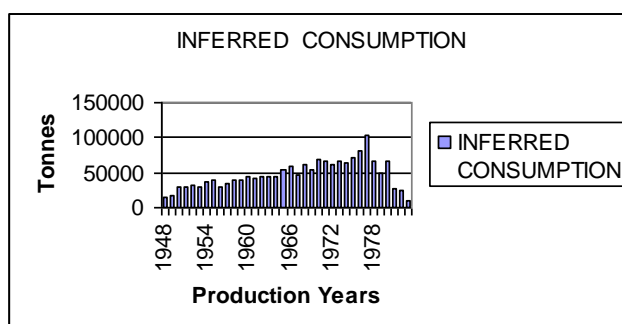
Asbestos has unique properties, and because of this was used up until the mid/late 1980's in a large number of applications (over 3000 have been identified).

Asbestos was mined within Australia up until 1983, and commonly used in manufacturing until the mid to late 1980's. The final asbestos containing product sold in Australia was car brake pads. The sale of these was discontinued at the end of 2003.

Statistics on Australian production and consumption of asbestos are shown in the tables below



Australian Domestic Production of Asbestos.



Inferred Australian Consumption of Asbestos.



The first recorded production of asbestos in Australia was at Gundagai in 1880, where small amounts of Amphibole asbestos were mined until 1921. In Australia, production peaked in 1980 when 92,418 tonnes were produced, mainly from the Woodsreef mine located near Barraba in northern New South Wales, but by 1983, only 3909 tonnes was produced, and production ceased entirely shortly after.

The primary use of asbestos was in asbestos cement sheeting, and production of this peaked in 1974 when about 44,000,000m<sup>2</sup> (44 km<sup>2</sup>) was produced. The year 1987 is generally regarded as the cutoff year for asbestos use. Asbestos containing materials are widespread in the community, and it can be expected that any building constructed prior to 1987 may contain asbestos products. This includes a significant percentage of the existing Australian housing stock.

### **NATURE OF THE POTENTIAL HAZARD FROM ASBESTOS**

Asbestos is a naturally occurring fibrous silicate mineral, one of the Serpentine group. It was mined extensively in Australia until the early 1980's.

These minerals were commonly used in the past because of their fibrous nature (providing structural strength in products such as asbestos cement sheeting), low heat conductivity (providing insulation on steel building structures, steam pipes etc), high electrical resistance (used in power boards, electrical fittings, etc.) and chemical inertness.

The primary types of asbestos used were chrysotile (white asbestos), crocidolite (blue asbestos) and amosite (brown asbestos). The risk to human health from asbestos arises primarily from the inhalation of asbestos fibre derived from the disturbance of asbestos-containing products. Because of its small fibre size, asbestos may penetrate deep into the lung, and because of its inert nature, body processes have difficulty expelling the material.

Exposure to asbestos fibre may result in an outcome of chronic adverse health effects. These may include asbestosis leading to the onset of mesothelioma, a painful, fatal cancer of the lining of the lung. The health effects of asbestos may take 20 – 40 years to manifest themselves. In Australia at the present time there is a high prevalence of asbestos related disease resulting from the widespread use of the material in the construction and shipping industries during the 1960's and 1970's.

Asbestos fibre may be held strongly in a matrix, for example cement (asbestos cement) and in this form is known as bonded. If the matrix does not hold the asbestos fibre strongly, and the fibre can be liberated easily, for example by crushing between the fingers, the form is known as friable. Friable asbestos is more of a health risk than bonded because exposure to fibres happens more easily.

Asbestos cement is a bonded asbestos product with the asbestos fibre contained within a stable matrix. Because asbestos cement is bonded, asbestos fibre is only liberated if the materials are degraded in some way, such as by sawing, drilling or grinding. Broken asbestos cement pieces are regarded as bonded by WorkCover NSW. Issues related to occupational exposure to asbestos are administered in NSW by WorkCover NSW under the Occupational Health and Safety Act and Regulations. WorkCover also licence asbestos removal contractors.