



# GUIDANCE NOTE

## WORKING WITH ASBESTOS IN THE MOTOR VEHICLE REPAIR INDUSTRY

### BACKGROUND

This publication provides guidance for employers and employees in the automotive repair industry to eliminate or minimise the risk of exposure to asbestos during repairs to brakes, clutches and high temperature gaskets in motor vehicles.

While other forms of asbestos such as crocidolite (blue asbestos) and amosite (brown asbestos) had been banned from the early 1980s, chrysotile (white asbestos) has only been banned since 31 December 2003. This ban does not extend to parts containing asbestos already in place (*in situ*) at the time the ban came into effect.

Chrysotile had been used almost exclusively in the manufacture of packing and friction material such as gaskets, brake and clutch linings. However, installed brake components are the major source of asbestos in the automotive industry.

Chrysotile is a hazardous substance and a known human carcinogen, and employers must meet the risk assessment requirements under the occupational health and safety legislation.

This guide will assist in developing a comprehensive asbestos management plan for the motor vehicle repair industry.

### HEALTH EFFECTS OF ASBESTOS EXPOSURE

The inhalation of asbestos fibres may result in mesothelioma, lung cancer and asbestosis. The onset of these diseases is extremely slow and health effects from inhalation may not become apparent for many years (typically 20 to 40 years). These diseases are life threatening.

Asbestosis is the scarring of lung tissue that results from inhaling substantial amounts of asbestos over a number of years. This results in breathlessness, which may lead to disability, and in some cases early death. Lung cancer risk is related to the amount of fibre inhaled and is greatly increased in persons who smoke. No safe level of asbestos for lung cancer has been identified.

Mesothelioma is a cancer of the pleura (outer lung lining) or the peritoneum (the lining of the abdominal cavity).

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## **DEALING WITH ASBESTOS**

The NSW Occupational Health and Safety legislation imposes obligations on an employer to identify foreseeable hazards that may arise at the workplace, assess the risks of those hazards and eliminate the risks or, if not reasonably practicable to do so, control the risks.

The management of asbestos in motor vehicle repair industry requires:

- identification of asbestos containing components
- assessment of health risks from asbestos exposure
- control of health risks from asbestos exposure
- regular review of the risk assessment process
- consultation and the provision of information, training and record keeping.

### **Identification**

Identification of asbestos-containing components in many vehicles may be difficult due to the absence of any identifying marks, service records or supplier details. If you are unsure whether the components are asbestos free then you should:

- treat it as though it contains asbestos
- apply protective measures (see section on practical methods).

If you need to have a sample of material tested for asbestos, ensure that the person who undertakes the analysis is approved by the National Association of Testing Authorities (NATA) and can issue endorsed reports under the authority of a NATA accredited laboratory.

### **Risk assessment**

Inspecting the work activity to establish how employees might be exposed, the level of exposure and the adequacy of any control measures in place can identify the risk of exposure. Information on health hazards, precautions for use and safe handling information can be obtained from an appropriate material safety data sheet, where available, or from the National Occupational Health and Safety Commission (NOHSC) codes of practice.

If you are unsure of the risk, then you should engage a consultant such as an occupational hygienist to assist with your risk assessment (see Workplace Monitoring).

### **Control**

Asbestos-containing brake pads, brake shoes and clutch plates suffer wear during use, leaving a coating of dust possibly containing asbestos fibre on the component and surrounding parts.

Asbestos-containing heat shields, including packing material around exhaust manifolds, can become friable (powdery) with heat and readily release dust and fibres when disturbed.

Inappropriate handling such as dry brushing can release large quantities of asbestos fibres into the air.

Asbestos fibres can remain airborne for many hours allowing them to spread to other areas of the workplace posing a risk to office/supervisory staff as well as the mechanics working in the workshop. It is, therefore, essential to prevent dust and fibres from spreading into the workshop air and into any person's breathing zone.

### **Review of assessments**

The risk assessment should be reviewed regularly and in particular when:

- the process and/or plant is modified
- monitoring of asbestos indicates inadequate exposure control
- new or improved control measures are put in place.

### **OTHER REQUIREMENTS**

#### **Consultation, information, training and record keeping**

Employers must consult with employees on health and safety matters. Consultation must occur when risks to health and safety are assessed, when the assessments are reviewed and when decisions are made to eliminate or control those risks. Further practical guidance can be obtained from *WorkCover's Code of Practice for OHS Consultation*.

Employers have a duty to provide information and keep records at the workplace in the form of material safety data sheets (MSDS), labels where appropriate, registers (of hazardous substances) and documented risk assessments.

Employers are also required to provide training on asbestos hazards, its likely presence and the safe work procedures that must be followed.

Records of training, risk assessments, register of employees exposed to asbestos, workplace monitoring and health surveillance must be kept for a minimum of 30 years.

#### **Workplace monitoring**

As part of the risk assessment, workplace monitoring may be required. Monitoring evaluates the level of exposure so the level of risk can be assessed, or determines the effectiveness of measures introduced to control exposure. It may be determined from the risk assessment that a workplace monitoring program be put in place as part of an ongoing review of the risk.

An occupational hygienist, who uses scientific equipment to measure airborne asbestos fibres in the workers' breathing zone, can measure the amount of fibre in the air. Exposure standards exist for asbestos and set out the airborne concentrations of asbestos that should not damage the health of workers.

## **Health surveillance**

As asbestos can cause cancer then, where there is a risk to health from asbestos exposure, an authorised medical officer at the expense of the employer should undertake any health surveillance.

The employer is required to keep records of the results of health surveillance for at least 30 years from the date of the last entry made in the records.

The NOHSC *Guidelines for Health Surveillance [NOHSC: 7039 (1995)]* set out in a practical way the requirements for health surveillance for persons who have been exposed to asbestos.

## **Practical methods of controlling the risk of exposure to asbestos**

If the following simple controls are applied carefully it should not be necessary to carry out workplace monitoring in the workshop while servicing vehicle brakes, clutches and cylinder head/exhaust gaskets (see Workplace Monitoring).

Compressed air, aerosol cans and water hoses should **not** be used to clean asbestos dust off components in the open workshop, as these methods will disperse large numbers of fibres into the air.

## **Isolation of asbestos-handling area**

To minimise risks to other people, the area where asbestos components are cleaned and removed should be segregated and in a location where undue air movement such as wind or cooling fans will not disturb any dust.

## **Wet methods<sup>1</sup>**

A fine spray of water on the dust will dampen it and prevent it from being dispersed. The component and parts in the immediate vicinity can then be wiped down with a damp rag. Use of a wetting agent is recommended for wiping down greasy surfaces. A fresh rag should be used for each vehicle being serviced, then placed in a plastic bag and then into an asbestos waste disposal bin. Any spillage onto the workshop floor should be wiped up and disposed of in the same way. It is important that only a gentle misting spray is used, as a coarse spray will disperse the asbestos fibres into the air.

## **Using an industrial vacuum cleaner**

Any vacuum cleaner used for asbestos must be fitted with a High Efficiency Particulate Air (HEPA) filter and comply with *AS3544 Industrial vacuum cleaners for particulates hazardous to health*. This type of vacuum cleaner can be used to clean all asbestos dust from the components and other parts in the immediate vicinity. It may be necessary to purchase or fabricate special nozzles to

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<sup>1</sup> Wet methods means sufficiently dampened, preferably with a wetting agent (such as detergent) in order to suppress the dust. It does not mean saturated and dripping with water.

reach difficult areas to ensure components are effectively cleaned. Any remaining dust should be removed with a damp rag. Domestic or standard vacuum cleaners are not suitable.

### **Respiratory protection**

A respirator complying with Australian Standard *AS/NZS1716 Respiratory protective devices* suitable for dust, eg a P1 or P2 filter, should be worn during the cleaning processes. These need to be selected, used and maintained in accordance with Australian Standard *AS/NZS1715 Selection, use and maintenance of respiratory protective devices* or refer to manufacturer's instructions.

Workers must be clean-shaven daily where respirators rely on a good facial seal. If there is any leakage of asbestos contaminated air around the sides of the respirator, including the bridge of the nose, because of an ineffective seal, the wearer is NOT PROTECTED.

Used disposable respirators should be considered to be asbestos contaminated waste and disposed of accordingly (see Storage and Disposal). Non-disposable respirators must be cleaned after each use and stored according to the manufacturer's instruction.

### **HOW TO APPLY THESE CONTROLS TO TYPICAL WORKSHOP JOBS**

Note: These work procedures are based on a generic assessment of the task. The risk assessment must be applied to individual workplaces to ensure that risk is adequately controlled by the following procedures.

#### **1. Brake assembly repairs – vacuum method (preferred method)**

- Segregate the vehicle from surrounding work areas; try to have 3 metres separation and avoid undue air movements such as windy locations and cooling fans.
- Use warning signs to indicate that asbestos work is in progress.
- A respirator complying with Australian Standard *AS/NZS1716 Respiratory protective devices* suitable for dust, eg a P1 or P2 filter should be worn during the processes (see Respiratory protection).
- Use a vacuum cleaner that complies with *AS3544 Industrial vacuum cleaners for particulates hazardous to health* (see Using an industrial vacuum cleaner).
- Use a dampened rag to clean wheel prior to undoing the wheel nuts (see wet methods).
- Remove the wheel and vacuum any remaining dust on the wheel.
- Vacuum all dust off the brake assembly.
- Use a dampened rag to wipe down all parts and remove final traces of dust.
- Vacuum any additional dust that is exposed during disassembly.
- Place the component and contaminated material such as rags into a plastic bag, seal it and then place it into a marked plastic-lined disposal bin/skip (see Storage and Disposal).

- If the component is to be sent to a specialist brake remanufacturer rather than dumped, then double-sealed bags are a suitable method of containing dust during transport. The outer bag should be appropriately labelled (see section on Storage and Disposal).

Commercial systems, if available, can replace all of the above.

## 2. Brake assembly repairs – wet method

- Segregate the vehicle from surrounding work areas, try to have three metres separation and avoid undue air movement such as windy locations and cooling fans.
- Use warning signs to indicate that asbestos work is in progress.
- A respirator complying with Australian Standard *AS/NZS1716 Respiratory protective devices* suitable for dust, eg a P1 or P2 filter should be worn during the process (see Respiratory Protection).
- Place a tray or tape plastic sheeting to the floor under the removal area to catch spillage and to make clean up easier.
- Use a dampened rag to clean the wheel prior to removing the wheel nuts (see Wet methods section).
- Remove the wheel and clean off any remaining dust with the dampened rag.
- Use a dampened rag and gentle water mist to thoroughly damp down any dust on the brake assembly.
- Use a dampened rag to wipe off exposed dust and dust exposed during disassembly. Wipe up any spillage on the floor.
- Place the component and contaminated material such as rags into a plastic bag, seal it and then place it into a plastic-lined disposal bin/skip (see Storage and Disposal section below).
- If the component is to be sent to a specialist brake remanufacturer rather than dumped, then double-sealed bags are a suitable method of containing dust during transport. The outer bag should be appropriately labelled (see Storage and Disposal).

## 3. Clutch repairs

- Segregate the vehicle from surrounding work areas, try to have three metres separation and avoid undue air movement such as windy locations and cooling fans.
- Use warning signs to indicate that asbestos work is in progress.
- A respirator complying with Australian Standard *AS/NZS1716 Respiratory protective devices* suitable for dust, eg a P1 or P2 filter should be worn during the process (see Respiratory protection).
- On separation of the gearbox from the engine, vacuum or use a dampened rag to clean inside the bell housing and around pressure plate (see Wet method).
- On removal of pressure plate and clutch plate vacuum or use a dampened rag to clean the flywheel, housing and components.

- Place contaminated material such as used rags and removed components in a plastic bag and seal it. Place this plastic bag into a labelled plastic lined bin (see Storage and Disposal).

#### **4. Heat shields including cylinder head and exhaust gaskets**

- Segregate the vehicle from surrounding work areas, try to have three metres separation and avoid undue air movements such as windy locations and cooling fans.
- Use warning signs to indicate that asbestos removal is in progress.
- A respirator complying with Australian Standard *AS/NZS1716 Respiratory protective devices* suitable for dust, eg a P1 or P2 filter should be worn during the process (see Respiratory protection).
- If the asbestos containing material is damaged during separation of the components, wet it with a fine mist spray of water (see Wet methods).
- Keep the asbestos containing material damp and carefully remove it without using power tools.
- Wipe down the joint faces and immediate area with a dampened rag.
- Place the asbestos contaminated material such as rags and removed components into a plastic bag and seal it. Place this plastic bag into a labelled plastic lined disposal bin (see Storage and Disposal).

#### **5. Brake lining and clutch facing removal**

The process of removing asbestos-containing linings from brake shoes and clutch parts has the potential to release asbestos fibres. Because of this, the control measures have to be more stringent. Work should be in a designated area with effective local exhaust ventilation, extraction and filtration system that will prevent the release of asbestos fibres into the workplace and the environment (advice should be obtained from an industrial ventilation engineer). If components are to be hand worked:

- Carry out the work in a separate area away from other workers preferably in a purpose built enclosure.
- Ensure that the components are pre-cleaned of dust or dampened down.
- Wear an appropriate respirator and overalls.
- Use local extraction to minimise the spread of dust/fibres (see above).
- Risk assessment should include workplace monitoring to determine breathing zone asbestos fibre levels and the suitability of protective equipment (note: a workplace monitoring program may be considered as part the ongoing risk assessment process).
- Clean up after work with local exhaust ventilation with vacuum attachment and dampened rag.
- Place waste asbestos into a plastic bag and seal it.
- Place this plastic bag into a marked disposal bag, tie or seal it and place the bag into the disposal bin or skip (see Storage and Disposal).

- Used personal protective equipment should not be worn away from the work area.
- Disposable respirators and overalls should be disposed of the same way as asbestos waste

Removal of brake linings using heat treatment method requires additional precautions particularly in the containing and handling of waste.

### **LAUNDERING OF CONTAMINATED CLOTHES**

Place contaminated protective clothing in a heavy-duty plastic disposable bag, clearly marked to indicate that the clothing is contaminated with asbestos, and have it laundered at an industrial laundry. Contaminated disposable protective clothing should be treated as items for disposal below. Protective clothing should be changed daily.

### **STORAGE AND DISPOSAL**

Individual components and contaminated material such as wiping rags should be placed in plastic bags and sealed, taking care to avoid displacing air from the bag. The sealed bags should be stored in suitable containers for disposal. Plastic disposal bags should be heavy duty (200 micron) clear plastic and clearly labelled. The label should carry an appropriate warning statement identifying that the bag contains asbestos and that dust creation and inhalation should be avoided. Statements such as **Caution – Asbestos, Avoid Creating Dust, Cancer and Lung Disease Hazard** are appropriate. (Refer also to the asbestos warning signs and labels in the NOHSC *Code of Practice for the Safe Removal of Asbestos* and *Code of Practice for the Management and Control of Asbestos in Workplaces*.)

Only unused bags marked for asbestos waste should be used for removal of asbestos waste and should not be used for any other purpose.

In order to minimise the risk of bag damage, hard and sharp asbestos waste requires preliminary sealing or protective covering prior to placement in asbestos waste bags.

An asbestos waste storage area should be designated to store asbestos wastes, which must be removed from the site by an approved or licensed carrier.

Asbestos waste awaiting disposal at the workshop must be stored in closed containers eg 60 or 200 litre steel drums with removable lids, sealed skip, etc.

### **Transport**

Asbestos waste in any form must be transported and disposed of in a manner – and at a site – approved by the NSW Department of Environment and Conservation (DEC) or an appropriate disposal authority.

- Vehicles and their containers must be cleaned before leaving the landfill site.



- Contact the DEC and local council for transport requirements of asbestos waste and approved waste facilities. Most local councils and WorkCover NSW require tipping receipts for proof of proper disposal.

## ASBESTOS DO'S AND DON'TS FOR MOTOR REPAIR TRADE

✓ DO	✗ DON'T
✓ Ensure that everyone understands the hazardous nature of asbestos.	✗ Don't assume that workers are already aware of the dangers of asbestos.
✓ Develop and implement safe work procedures for brake, clutch and gasket work.	✗ Don't use generic work method statements without checking whether it is applicable to the workplace.
✓ Ensure that everyone potentially exposed to asbestos has been trained in safe work procedures.	✗ Don't assume that employees will understand everything covered in the training. Verify by feedback.
✓ Ensure that the work is adequately supervised.	✗ Don't assume that unmarked friction components & gaskets are asbestos free. ALWAYS use safe work procedures.
✓ Regularly review the safe work procedures with employees.	✗ Don't forget about consulting with employees on OHS issues.
✓ Only use vacuum cleaners that comply with AS3544.	✗ Don't use domestic vacuum cleaners, even if fitted with a HEPA filter.
✓ Select respirators that comply with Australian Standard AS1716	✗ Don't wear respirators that have not been face fitted and leak tested.
✓ Wear respirators in accordance with the manufacturer's recommendations.	✗ Don't wear a particulate or cartridge respirator with facial hair. Use a positive pressure or airline respirator instead.
✓ Provide a designated, segregated area for asbestos tasks to be undertaken.	✗ Don't loosen brake drums by hitting them with a hammer, as this may release asbestos fibres.
✓ Practice good personal hygiene. Always wash your hands before eating or smoking.	✗ Don't eat, drink or smoke in work areas.
✓ Ensure that contaminated rags are disposed of after each job.	✗ Don't let contaminated rags lie around to dry out.
✓ Add a wetting agent, such as detergent, when wetting down components.	✗ Don't use too much water when wetting down in-situ brake dust.
✓ Place contaminated protective clothing in a labelled plastic bag and have this laundered at an industrial laundry.	✗ Don't take contaminated clothing home for laundering.
✓ Obtain the advice of a competent person when designing, installing or maintaining local exhaust ventilation systems.	✗ Don't use compressed air to blow out brake drums or remove dust from surfaces.

## **NSW LEGAL REQUIREMENTS**

Breaches to any part of the *Occupational Health and Safety Act 2000* (the Act) and the *Occupational Health and Safety Regulation 2001* (the Regulation) may result in penalty notices and possible prosecutions. The Act states that everyone is entitled to safe working conditions.

The Regulation outlines requirements for:

- consultation with employees on health and safety matters (Chapter 3)
- risk assessment, personal protective equipment, supervision and training provisions (Chapter 2)
- controller of premises in relation to asbestos-containing product and exposure standards for asbestos (Chapter 4)
- employers in relation to hazardous substances and carcinogenic substances (all forms of asbestos are carcinogenic substances) including a register of employees, letter of termination and health surveillance (Chapter 6)
- use of asbestos in the form of chrysotile, crocidolite, amosite, fibrous anthophyllite, tremolite or actinolite is prohibited except for the purpose of sampling or analysis, maintenance, removal, disposal, encapsulation or enclosure (Chapter 6)

**Copies of the *Occupational Health and Safety Act 2000* and *Occupational Health and Safety Regulation 2001* can be obtained from the WorkCover NSW website**

**[www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au)**

## **FURTHER INFORMATION**

### **Guidance**

#### ***Your guide to working with asbestos* (WorkCover NSW)**

Safety guidelines and requirements for work involving asbestos including safe disposal. This publication is available for download from [www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au)

#### ***Asbestos: Code of practice and guidance notes* (NOHSC)**

Being reviewed during 2004/5 it outlines the methods, procedures and work practices recommended for the identification, evaluation and control of hazards for in-situ asbestos in the working environment.

#### ***Code of practice for the management and control of asbestos in workplaces* (NOHSC)**

Due for release in 2005 this national code of practice has been developed to enable persons in control of premises to control the risk of *in situ* asbestos-containing material (ACM). It provides the steps to be taken to eliminate or minimise the risk of exposure to airborne asbestos fibres by identifying *in situ* ACM, performing a risk assessment of the *in situ* ACM and implementing control measures.

**Code of practice for the safe removal of asbestos (NOHSC)**

Due for release in 2005, the purpose of the code of practice is to provide advice for the safe removal of asbestos and asbestos-containing materials (ACM) found in buildings, plant and equipment including friction materials.

**Guidance note for the assessment of health risks arising from the use of hazardous substances in the workplace (NOHSC)**

Provides detailed practical guidance to persons performing health risk assessments.

Copies of the NOHSC documents can be found at [www.nohsc.gov.au](http://www.nohsc.gov.au)

**Australian standards**

**Australian standard AS1715 - Selection, use and maintenance of respiratory protective devices**

Sets out the principles of respiratory protection and provides information on the correct selection, use and maintenance of respirators.

**Australian standard AS1716 - Respiratory protective devices**

Sets out requirements for respiratory protective devices (respirators) intended to provide, according to type, varying degrees of protection against atmospheres containing substances which may be harmful if breathed; also, with certain types, to provide protection against atmospheres which may be deficient in oxygen.

**Australian standard AS3544 - Industrial vacuum cleaners for particulates hazardous to health**

This standard specifies the requirements for industrial vacuum cleaners designed for the collection of particulates defined as hazardous to health.

These documents are available from the Standards Association of Australia (fee involved) by phoning **1300 654 646** or visiting their website [www.standards.com.au](http://www.standards.com.au)

**Department of Environment and Conservation (NSW)**

**Protection of the Environment Operations (Waste) Regulation 1996 (DEC)**

This Regulation (in PDF format – Acrobat Reader required) outlines the storage, transport and disposal requirements relating to asbestos waste (Part 7 – Clause 29).

[www.dec.nsw.gov.au](http://www.dec.nsw.gov.au)

**National Association of Testing Authorities (NATA)**

National authority for accreditation of laboratories conducting tests, calibrations and measurements in a wide spectrum of technical fields. Website: [www.nata.asn.au](http://www.nata.asn.au)

7 Leeds Street, Rhodes NSW 2138

Phone: 02 9736 8222

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