

# LDB approved method

## Minor repairs and minor damage to low density asbestos fibre board (LDB)

### Work covered by this LDB approved method

All persons conducting a business or undertaking (PCBUs) and their workers performing minor repairs<sup>1</sup> to LDB or making small areas of damaged LDB safe (small holes<sup>2</sup>, broken corners or scratches) must comply with this LDB approved method. Alternatively, they can follow a method that provides an equivalent or higher standard of work health and safety to the standard outlined in this LDB approved method.

### Risks of working with LDB

LDB<sup>3</sup> is an asbestos containing material (ACM) with a high percentage of asbestos content loosely bound in a calcium silicate matrix. It was sometimes used as a sheeting for walls and ceilings in buildings constructed between 1950 and the early 1980s. Due to the softness of LDB and the high asbestos content, work on LDB must be performed carefully. If it is broken, removed or disturbed during maintenance and service work activities without adequate controls, there is a greater potential for asbestos fibres to be released into living or working areas than there is for non-friable or bonded asbestos cement products. LDB is classed as a friable ACM and must only be removed by a class A licensed asbestos removalist.

Section 419(3)(c) of the Queensland Work Health and Safety Regulation 2011 (the Regulation) only allows for maintenance and service work to be performed on non-friable asbestos or ACM. To allow for restricted maintenance and service work to be performed on friable LDB, this LDB approved method has been approved by the regulator under section 419(4) of the Regulation.

This LDB approved method must only be used where the maintenance and service work on LDB takes:

- less than one hour for one worker in a seven-day period; or
- less than two hours for two or more workers in a seven-day period.

**Note:** These times exclude time to set up, glue/sealant drying time, and time taken to dismantle and decontaminate. If damage to the LDB is such that the work will take longer, a class A licensed asbestos removalist must be engaged to remove the damaged LDB.

The use of sandpaper or other abrasive methods are not permitted on painted or unpainted LDB. If LDB requires painting, strict adherence with [LDB approved method \*Painting undamaged low density asbestos fibre board \(LDB\)\*](#) is required.

<sup>1</sup> After repairing the LDB, update the asbestos register/management plan.

<sup>2</sup> For the purposes of this approved method, a small hole is defined as a hole that does not have a diameter in any direction of more than 50mm.

<sup>3</sup> LDB has very similar physical properties to asbestos insulating board (AIB).

## Competency requirements

The work outlined in this LDB approved method is defined as asbestos-related work under the Regulation. The Regulation requires that workers carrying out asbestos-related work are trained in the identification and safe handling of, and suitable control measures for, asbestos and ACMs. Training in relation to asbestos control procedures outlined in this LDB approved method must include:

- identifying LDB
- donning and removing the relevant personal protective equipment
- decontaminating self, equipment and the work environment
- transport and disposal of asbestos waste.

Guidance on the minimum mandatory performance criteria for these training elements and training materials can be found at [www.asbestos.qld.gov.au](http://www.asbestos.qld.gov.au).

Workers can complete the training independently by accessing the specified training materials online, or the content can be incorporated within other training programs or packages, and provided directly by an employer, a training provider engaged by an employer or a registered training organisation, as long as it meets the training elements and performance criteria.

Evidence of completion of this training must be documented, kept, and provided to Workplace Health and Safety Queensland inspectors on request. Workers must complete LDB training at least every five years and must be competent in each of the training elements, as well as competent to perform the trade related skills relevant to each of the approved methods.

## Required equipment

### Essential equipment for minor repairs to LDB

- 200 micrometre ( $\mu\text{m}$ ) thick plastic drop sheets
- Duct or fabric tape
- Large disposable multipurpose cleaning wipes (e.g. 23cm x 29cm)
- 200 $\mu\text{m}$  thick plastic waste bags labelled 'asbestos'
- Spray bottle containing water and PVA glue mixed in a 5:1 ratio
- Spray bottle containing water
- Barrier tape, barricade mesh, temporary fencing etc.
- Asbestos warning signage
- Small paint brushes
- Glue
- Permanent sealant
- Non-asbestos replacement panel for covering gaps
- Breast drill, hand drill or battery powered drill set at the lowest speed (at or below 650rpm)
- 42mm x 19mm timber offcut approximately 100mm longer than the hole
- Wire coat hanger (or similar wire)
- Liquid construction adhesive
- Gyprock sheet screws or bugle head screws
- Hand trowel
- Plaster filler
- Plasterers sanding block and fine grade sandpaper
- Paint.

## Personal protective equipment (PPE)

- Disposable coveralls fitted with a hood (type 5/6).
- Consider using dedicated, non-porous boots without laces for asbestos work only.
- If not using dedicated boots, then use boot covers over the top of non-porous boots without laces.
- Respiratory protective equipment (RPE) that has been fit tested to the user, and at a minimum is a P2 disposable particulate respirator and compliant to *AS/NZS 1716 Respiratory protective devices*. Workers must be clean shaven, have been fit tested to the make and model respirator being used and must conduct a fit check to ensure correct fit and seal prior to the work commencing. A current fit-test record must be available.
- A full-face shield if work is being performed overhead.
- Gloves are optional (see further information in decontamination section).
- Other PPE as necessary e.g. hearing protection.

## Before work begins

### Step 1: Conduct a risk assessment

Prior to commencing work under this LDB approved method, a risk assessment that includes the following must be performed and documented by a competent person<sup>4</sup>:

- Condition of the LDB—whether in sound condition or likely to deteriorate or break up when the minor repairs are made.
- Likelihood of asbestos exposure to workers and workplace occupants and contamination of the workplace.
- Job-specific control measures as outlined in this LDB approved method, including measures to be implemented to control the risk associated with using sandpaper to sand the plaster filler, adjacent to painted or un-painted LDB and the likelihood of releasing airborne asbestos.
- Other hazards that may impact the work (e.g. live electrical cables in wall cavities, working at height, working on brittle roofs, confined spaces, heat stress, etc).

### Step 2: Planning your work

- If possible, perform the work outside the 'normal' facility operating hours and only when the room is unoccupied.
- Restrict access to the immediate area where work on the LDB is carried out, known as the asbestos work area (AWA) by erecting barriers (plastic hazard warning tape is an acceptable barrier in most cases).
- Establish a buffer zone to separate the public access areas and the AWA by erecting barriers.
- The buffer zone includes all entrance and exit points to the asbestos work area.
- Prominently display appropriate asbestos warning signage at the boundaries of the AWA and the buffer zone e.g. 'Asbestos work in progress'.
- Arrange with the person who engaged the PCBU to be available to perform a visual inspection of the work area after the work and area decontamination is completed.
- If air monitoring is being performed, arrange for an occupational hygienist or licensed asbestos assessor to commence the air monitoring. Air sampling filters must be counted by a laboratory with NATA accreditation for the method.

---

<sup>4</sup> A person who has acquired through training, qualification or experience, the knowledge and skills to carry out the task.

Note: Air monitoring is not mandatory if this LDB approved method is followed, because air monitoring conducted during validation of the controls demonstrates airborne asbestos fibre concentrations were controlled to 0.01 fibres/mL or less<sup>5</sup>.

## Conducting the work

### Approved methods for repairing minor damage to LDB

There are three alternative methods approved for repairing minor damage to LDB outlined in step 4 below. The procedures for setup and decontamination (of work area, equipment and people) are the same for each method.

#### Step 3: Set up work area

- Prepare the actual work area in the AWA. Under the damaged LDB, protect all surfaces in a three-metre radius with a 200µm plastic sheet taped securely to the floor.
- Protect nearby surfaces from contamination. Remove items from the area if possible and cover remaining items with 200µm thick plastic sheeting, and secure with duct tape to non-asbestos surfaces.
- Prepare a personal and equipment decontamination area in the buffer zone adjacent to the entry point of the AWA<sup>6</sup>. Use one 200µm plastic sheet (drop sheet) large enough to fit all decontaminated items and allow for personal decontamination. Tape the sheet securely to the floor.
- Close doors and windows etc.
- Shut down air conditioning and ventilation systems, if safe to do so.
- Seal ducts and vents with 200µm plastic sheeting and tape.
- Identify other hazards e.g. electrical cabling in the wall cavity.
- Inspect the area around the damaged LDB for any minor contamination from asbestos debris. Prior to commencing LDB repairs, this debris must be removed by:
  - Wearing the PPE and respirator before commencing the task.
  - Spraying the debris with the water/PVA glue mixture.
  - Collecting large pieces by gloved hands and placing into a waste bag.
  - Cleaning any debris under or adjacent to damaged panel by wet wiping. Use the wet wipe only once and dispose of into a waste bag.
- Ensure you have prepared an appropriately sized non-asbestos replacement panel prior to entering the asbestos work area.
- Wear the appropriate PPE and RPE before commencing the task.

#### Step 4A: Glue a patch over damaged LDB using a non-asbestos panel (preferred method)

- Ensure PPE and respirator are still being worn.
- Paint the damaged area with sealant by brush or gentle spraying.
- After drying, cover the damaged area by gluing the non-asbestos panel over the damaged area.
- Place paint/glue brushes into a waste bag.

---

<sup>5</sup> In the unlikely event that air monitoring results are > 0.01 fibres/mL of air, the person who performed the work related to this LDB approved method must immediately phone Workplace Health and Safety Queensland and seek advice regarding decontamination of the work area.

<sup>6</sup> N.B. as this method does not involve disturbance of the LDB, one decontamination area is sufficient.

## Step 4B: Glue a patch behind damaged LDB and fill cavity with filler

- Ensure PPE and respirator are still being worn.



**Photo 1:** Some of the equipment required.

- Cut the non-asbestos sheet (patch) to the same width of the widest part of the hole, so it can still be inserted into the cavity to bridge the hole.
- Drill a hole in the middle of the patch the same size as the diameter of the coat hanger wire.
- Drill a hole in the middle of the piece of scrap timber for the coat hanger wire to pass through.
- Cut the coat hanger wire to a length of 300mm and bend one end of the coat hanger wire to form a right angle about 50mm long.



**Photos 2 and 3:** Coat hanger wire inserted through the patch, note right angle of the wire.

- Place construction adhesive on each corner of the patch, insert the wire through the patch so the 50mm part is behind the patch and hold the longer end of the wire.
- Insert the patch through the hole and then pull the patch against the internal face of the LDB sheet using the wire. This will allow the glue to spread and adhere to the rear of the LDB sheet.



**Photo 4:** Pulling the sheet against the internal face of the LDB sheet using the wire.

- Thread the timber offcut onto the protruding coat hanger wire until the timber is hard up against the existing LDB sheeting, pull the wire tight and bend the wire at right angles over the timber. This will hold the internal non-asbestos patch in position until the glue dries.



**Photo 5:** Pulling the wire tight and bending the wire at right angles over the timber.

- Allow 24 hours for the glue to dry, remove the timber and wire and then the gap above the patch can be filled with a suitable filler. It is important to leave all protective coverings, repair tools and materials in place in the AWA during drying time. The area is to remain an exclusion zone while the glue is drying.



**Photo 6:** Gap above the patch awaiting filling with a suitable filler.

- Using a hand trowel, trowel the filler level with the surface of the LDB sheet and leave until it is dry.
- Hand sand down the filler using a fine grade sandpaper while using a spray bottle to lightly spray water on the surface to suppress dust.
- Take care not to abrade the LDB sheeting. Care must be taken to not breach the paint barrier which may release airborne asbestos fibres.
- Wipe work area and adjacent surfaces with wet wipes. Use the wet wipe only once and dispose of into a waste bag.
- When finished, apply a sealer coat of paint. Where LDB requires painting, strict adherence with *Painting undamaged low density asbestos fibre board (LDB)* is required.

#### **Step 4C: Fill a crack or shallow dent in LDB using a filler**

- Ensure PPE and respirator are still being worn.
- Patch the crack or dent with a suitable filler.
- Using a hand trowel, trowel the filler level with the surface of the LDB sheet and leave until it is dry.
- Hand sand down the filler using a fine grade sandpaper while using a spray bottle to lightly spray water on the surface to suppress dust.
- Take care not to abrade the LDB sheeting. Care must be taken to not breach the paint barrier which may release airborne asbestos fibres.
- Wipe work area and adjacent surfaces with wet wipes. Use the wet wipe only once and dispose of into a waste bag.
- When finished, apply a sealer coat of paint. Where LDB requires painting, strict adherence with LDB approved method *Painting undamaged low density asbestos fibre board (LDB)* is required.

## Step 5: Decontamination of work area and equipment

Workers must wear PPE and a respirator during clean up and decontamination.

Decontaminating the asbestos work area:

- Do a preliminary clean of tools and equipment by using a spray bottle with water and wet wipes. Then transfer tools and equipment onto the decontamination drop sheet for further cleaning.
- Return to the work area and ensure all work is completed and any debris on the floor drop sheet and plastic covering the furniture and surrounding items is removed by wet wiping.
- Place paint brushes used to seal the damaged LDB in a waste bag.
- Wipe work area and adjacent surfaces with wet wipes. Use the wet wipe only once and dispose of into a waste bag.
- Spray the water/PVA glue mixture to wet down the work area drop sheets and the drop sheets covering surfaces and furniture within the AWA. Fold the drop sheet in on itself a number of times, standing on the clean face of the freshly folded drop sheet when each fold is completed and place into a waste bag.
- Transfer all waste bags after being sprayed with water/PVA glue mixture to the personal/equipment decontamination area.
- Reinspect the work area to ensure work is complete and free of debris.

Decontaminating equipment:

- While standing on the layer of plastic in the personal/equipment decontamination area, complete the cleaning of the tools and equipment by wet wiping and move these off the decontamination drop sheet. Use the wet wipe only once and dispose of into a waste bag.
- Then commence personal decontamination.

## Step 6: Personal decontamination

- Personal decontamination must be done each time a person leaves the AWA.
- Conduct personal decontamination while standing on the drop sheet in the personal/equipment decontamination area:
  - Use a spray bottle with water to dampen coveralls and disposable wet wipes in a gentle 'patting' action, as rubbing can disturb asbestos fibres. Use the wet wipe only once and dispose of into the waste bag.
  - Where there are two workers, they can help to decontaminate each other.
  - Remove gloves (if used).
  - Peel off disposable overalls by rolling them outwards down to the ankles. They should be inside out when they have been removed.
  - If you used disposable boot covers, remove them while standing on the clean inner surface of the coveralls and put them in the asbestos waste bag, along with the coveralls. Clean your boots with wet wipes and place wet wipes in waste bag.
  - If you are using dedicated boots, then wet wipe the shoes (place used wipes into a waste bag) and bag the boots in a 200µm plastic bag to only be used for work on asbestos materials. Goose neck bag and tape closed with duct tape.
  - Spray the water/PVA glue mixture to wet down the decontamination area drop sheet. Fold the final drop sheet in on itself a number of times and place the folded final drop sheet into a waste bag.
  - Clean your hands with wet wipes and place the wet wipes in the waste bag.
  - Finally, remove your disposable respirator and place into the waste bag. If using a reusable respirator refer to the additional steps below.
  - Clean your hands again with wet wipes and place the wet wipes in the waste bag.
  - Gather the top of the waste bag shut to ensure that air from the bag is not expelled into your breathing zone. Duct tape the asbestos waste bag closed by goose necking the bag.

- Double bag all the asbestos waste bags placing each into an outer waste bag labelled 'asbestos waste' and seal by goose necking.
- Dispose of double bagged asbestos waste as regulated waste in accordance with the *Queensland Environmental Protection Act 1994*.

Additional steps for cleaning and storage of reusable respirator, if used:

- Clean your hands with a wet wipe paying attention to under the fingernails if gloves were not used and put wet wipe into waste bag.
- Wipe the outside of respirator down, including the outside of the filter, with wet wipes while still wearing it. Use each wet wipe only once and place into the waste bag.
- Clean your hands with wet wipes again and place the wet wipes in the waste bag.
- Remove the respirator.
- Separate and dispose of the prefilter pad.
- Clean the inside of the respirator with wet wipes.
- Remove the filter and finish cleaning the respirator.
- Place the respirator in a dedicated storage container.
- Check filter disposal date and place expired filters in waste bag.
- If filter cartridge is in date, wet wipe the inner and outer faces of the filter and store in a dedicated storage container.
- Clean your hands with wet wipes again and place the wet wipes in the waste bag.
- Seal the waste bag containing drop sheets and other waste by gathering the top of the waste bag/s shut to ensure that air from the bag is not expelled into your breathing zone. Duct tape the waste bag closed by goose necking the bag.
- Double bag all the asbestos waste bags placing each into an outer waste bag labelled 'asbestos waste' and seal by goose necking.
- Dispose of double bagged asbestos waste as regulated waste in accordance with the *Queensland Environmental Protection Act 1994*.

## Step 7: Clearance and checking off

- The person who performed the work must visually inspect the area to make sure that it has been cleaned properly.
- Clearance air sampling is not normally required. However, if air monitoring is being performed, it should only be conducted by an occupational hygienist or licensed asbestos assessor.  
Note: Air monitoring is not mandatory if this LDB approved method is followed because air monitoring conducted during validation of the controls outlined in this LDB approved method, demonstrated airborne asbestos fibre concentrations were controlled to 0.01 fibres/mL or less.
- Where a person has been engaged to perform the work, the person or PCBU engaged to do the work and the person who engaged the PCBU must both visually inspect the area to make sure it has been cleaned properly.

## Other hazards to consider

- Work at height—take precautions to avoid falls.
- Electrical hazards—get a licenced electrician to isolate and reconnect electricity supply if necessary.
- There may be other hazards—you need to consider them all.



Unless otherwise noted, this document is available under a Creative Commons Attribution 4.0 International Licence (<https://creativecommons.org/licenses>). You are free to copy and redistribute the work, so long as you attribute The State of Queensland. The material presented in this publication is distributed by the Queensland Government for information only and is subject to change without notice. The Queensland Government disclaims all responsibility and liability (including liability in negligence) for all expenses, losses, damages and costs incurred as a result of the information being inaccurate or incomplete in any way and for any reason.