

Temporarily moving a low density asbestos fibre board (LDB) ceiling tile

Work covered by this LDB approved method

All persons conducting a business or undertaking (PCBUs) and their workers performing the maintenance/service work of temporarily moving LDB ceiling tile/s (eg. in order to run a data cable, inspect the ceiling cavity for vermin or inspect plant or equipment within the ceiling cavity) 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

LDB¹ 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 task activities without adequate controls, there is a greater potential for asbestos fibres to be released 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 work involves LDB that is in good condition and is undamaged
- the work is limited to temporarily moving a ceiling tile made of LDB from a metal ceiling grid to gain access to the ceiling cavity
- 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, dismantle and decontaminate items.

Note: If the ceiling tile needs to be removed, for example it is in poor condition and cannot be repaired, it must be removed and disposed of by a class A licensed asbestos removalist.

¹ 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
- using and maintaining a H-Class vacuum cleaner
- shadow vacuuming
- 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.

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 completing 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 moving a LDB ceiling tile

- 200 micrometre (μm) thick plastic drop sheets
- Duct tape
- H-Class vacuum cleaner compliant with *AS/NZS 60335.2.69 Household and similar electrical appliances – safety particular requirements for wet and dry vacuum cleaners, including power brush, for commercial use* and fitted with a HEPA filter compliant with *AS4260-1997 High efficiency particulate air (HEPA) filters – classification, construction and performance*
- H-Class vacuum cleaner attachments, including a vacuum brush attachment that is only used for personal decontamination
- Large disposable multipurpose cleaning wipes (e.g. 23cm x 29cm)
- 200 μm thick plastic waste bags labelled 'asbestos'
- Glue or acrylic paint to seal the exposed edges
- 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
- Warning tape and notices
- Double sided tape
- Work platform, platform ladder or step ladder as appropriate for height and nature of task
- Sealant such as polyvinyl acetate (PVA).

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 negative pressure P3 full face particulate respirator, compliant to *AS/NZS 1716 Respiratory protective devices*. Workers must be clean shaven, have been fit tested to the make and model of 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.
- 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 person²:

- Condition of the LDB—whether in good condition or likely to deteriorate/break up when moving the tile and if the LDB has been previously sealed.
- 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.
- Other hazards that may impact the work (e.g. live electric cables in wall cavities, working at height, confined spaces, heat stress, etc).

It must be assumed that asbestos contaminated dust (ACD) exists on the upper surface of the ceiling tiles and metal support grids and appropriate control measures must be implemented.

Step 2: Planning your work

- If possible, perform the work outside the 'normal' facility operating hours and only when the room is unoccupied.
- Isolate the electricity supply to the ceiling cavity and supply adequate task lighting.
- 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). The AWA is where decontamination of equipment and first stage of personal decontamination occurs.
- 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 and is where final personal decontamination occurs.
- 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.

² 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 less³.

Conducting the work

Step 3: Set up work area

- Prepare the actual work area in the AWA. Under the area where the tile is to be moved protect all surfaces in a three-metre radius with two single 200µm plastic sheets (one on top of the other) taped individually and securely to the floor.
- Prepare a dirty decontamination area inside the AWA near the exit point of the AWA (this will be adjacent to the clean decontamination area in the buffer zone). Use two single 200µm plastic sheets (one on top of the other) large enough to fit all tools and equipment and to allow adequate room for first stage of personal decontamination. Tape each sheet individually and secure to the floor. Ensure there is a waste bag and a clean vacuum brush attachment available in this area.
- Prepare a clean decontamination area in the buffer zone adjacent to the dirty decontamination area/exit point of the AWA. Use one 200µm plastic sheet (drop sheet) large enough to fit all decontaminated items and allow for second stage of personal decontamination. Tape the sheet 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.
- 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.
- Wear the appropriate PPE and RPE before commencing the task.

Step 4: Remove the ceiling tile

- Position the work platform/stepladder⁴ and position equipment required for the task within easy reach.
- Prepare for shadow vacuuming. To perform shadow vacuuming, the nozzle of the H-Class HEPA filter vacuum cleaner must be no more than 30mm from edge of the tile. Hint: a spacer rod attached to the nozzle is a useful means of maintaining set distance.
- Commence moving the ceiling tile in conjunction with shadow vacuuming by:
 - Lifting one edge of the tile to about 30° or enough room for the vacuum hose to access the ceiling grid.
 - Vacuum the upper surface of the exposed ledge of the ceiling grid and any debris visible on that end of the lifted tile.
 - Pivot the tile to allow access to vacuum the remaining three ledges of the ceiling grid in turn and vacuum any debris visible on each end of the lifted tile.
 - Gently lift the tile upwards into the ceiling space, invert the tile so that the upper face of the tile faces downwards and place the tile, upper face downwards onto nearby ceiling tiles (doing this ensures the clean side of the tile that is normally facing into the room does not become contaminated with asbestos dust in the ceiling cavity).

³ 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.

⁴ To use ladders safely, always maintain three points of contact (two hands and one foot or two feet and one hand on the ladder) at the working position.

- Carefully conduct the work required in the ceiling cavity and avoid activities that generate dust. Do not rest tools or equipment on adjacent tiles. **Do not throw, drop or drag any items over tiles.**
- On completion of work, again vacuum the metal support grid with the H-Class HEPA filter vacuum cleaner and spray with water and PVA glue mixture.
- If the LDB ceiling tile remains in good condition, it can be reinstated to its original position within the ceiling grid. Spray the back of the tile with the water and PVA glue mixture to seal the unpainted side before returning tile to original position.
- Vacuum the external surface of the tile with the H-Class HEPA filter vacuum cleaner. If required, wet wipes can be used to clean the external surface of the tile, e.g. to remove dirty finger marks. Place wet wipes in waste bag.

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 using an H-Class HEPA filter vacuum cleaner and then place them onto the upper layer plastic drop sheet of the dirty decontamination area in the AWA.
- Ensure all work is completed and any debris on the upper layer drop sheet and plastic covering the furniture and surrounding items in the AWA is removed by vacuuming with a H-Class HEPA filter vacuum cleaner, followed by wet wiping.
- Remove the two layers of plastic drop sheets covering surfaces and furniture within the AWA
 - Spray the water/PVA glue mixture to wet down the upper layer drop sheet and fold the upper layer drop sheet in on itself a number of times and place into a waste bag.
 - Reinspect the work area to ensure it is free of debris. If not, vacuum with a H-Class HEPA filter vacuum cleaner and then wet wipe.
 - Spray the water/PVA glue mixture to wet down the lower layer drop sheet. Fold the lower layer 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.

Decontaminating equipment:

- Transfer waste bag/s to the dirty decontamination area.
- While standing on the upper layer of plastic of the dirty decontamination area
 - Complete the cleaning of any tools used in the ceiling cavity by wet wiping and then place these onto the nearby clean decontamination area drop sheet. Use the wet wipe only once and dispose of into a waste bag.
 - Wet wipe the exterior of the vacuum cleaner and the hosing.
 - Put the wet wipes into a waste bag.
 - Spray the water/PVA glue mixture to wet down the upper drop sheet. Fold the upper drop sheet in on itself a number of times and place into a waste bag.
- Then commence personal decontamination.

Step 6: Personal decontamination

- Personal decontamination is a two-stage process and must be performed each time a person leaves the AWA.
- A clean H-Class vacuum cleaner must be used for personal decontamination. This vacuum cleaner must have been decontaminated, as outlined above, before being used as part of personal decontamination
- Conduct the first stage of personal decontamination while standing on the lower layer drop sheet of the dirty decontamination area:

- Remove all visible dust from protective clothing (coveralls, boot covers and gumboots etc.) using a H-Class vacuum cleaner with a clean and previously unused brush attachment.
- Wet wipe the exterior of the vacuum cleaner and the hosing, screw in the caps to the vacuum cleaner inlet/outlet, seal each end of the flexible hosing and extension pipe using duct tape and place all into 200µm plastic bag/s labelled for use on asbestos work only.
- Dispose of the vacuum brush attachment into a waste bag, or bag and retain for use for non-personal decontamination.
- Remove the lower layer drop sheet by folding the drop sheet in on itself and put it into a waste bag.
- Remove boot covers and dispose of in a waste bag.
- If you did not use boot covers, then remove your boots, wipe down with wet wipes (place used wet wipes into the waste bag) and place boots in a 200µm plastic bag to be dedicated for use when working with asbestos materials only. Goose neck bag and tape closed with duct tape.
- Seal the waste bags containing the drop sheets and other waste by gathering the top of the waste bags 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.
- Then step onto the clean decontamination area in the adjacent buffer zone prior to commencing the second stage of personal decontamination.
- Conduct the second stage of personal decontamination while standing on the drop sheet in the clean decontamination area:
 - Where there are two workers, they can help to decontaminate each other.
 - Remove gloves (if used).
 - Use spray bottle with water to lightly spray over the disposable coveralls. Peel off disposable coveralls by rolling them outwards down to the ankles. They should be inside out when they have been removed. Put them in the waste bag.
 - If you used boot covers over your boots, then also clean your boots with wet wipes and place wet wipes in waste bag.

Step 7: Cleaning and storage of respirator

- Clean your hands with wet wipes paying attention to under the fingernails if gloves were not used and put wet wipes into waste bag.
- Wipe the outside of the respirator down, including the outside of the filter, with wet wipes while still wearing it. Use the wet wipe only once and place wet wipes into the waste bag.
- Spray the water/PVA glue mixture to wet down the clean 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 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 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 8: 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 demonstrates 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 licensed electrician to isolate and reconnect electricity supply if necessary.
- Manual handling—plan how to remove and handle heavy material and articles safely.
- There may be other hazards—you need to consider them all.



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