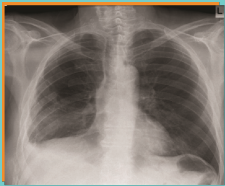


5-HEALTH EFFECTS

- Asbestos fibres enter the body by inhalation of airborne dust or by ingestion and can become embedded in the tissues of the respiratory or digestive systems.
- Exposure to asbestos dust can cause numerous disabling or fatal diseases.
- There are four main diseases associated with inhalation of asbestos fibres as follows:
 - i) Mesothelioma
 - ii) Asbestos-related lung cancer
 - iii) Asbestosis - a non-malignant scarring of the lung tissue
 - iv) Non-malignant pleural disease



Chest X-ray potentially behaviour of mesothelioma



Asbestosis-occupational history of exposure to asbestos

6-ASBESTOS REMOVAL PROCEDURE

- Asbestos removal involves hazards and risks either to the removal workers or other workers and the public who are exposed to the environment during the disposal.
- Therefore, the removal of asbestos should be carried out by well-trained workers using the right tools and equipment to perform such work.
- The processes involved in the work of asbestos removal are shown in figure 1.

2-PURPOSE

- To provide guidance on asbestos removal application procedure in compliance with the Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000 (USECHH Regulations) or as amended.

3-SCOPE AND APPLICATION

- Apply to any asbestos removal at the workplace.

4-SOURCES AND USES OF ASBESTOS

- Asbestos has, in the past, been widely used in a variety of building materials and automotive parts and present in piping system as heat insulation materials. Refer to Table 1 on example usage of asbestos.
- The potential for an asbestos-containing material (ACM) to release respirable fibres depends largely on its degree of friability.

No.	Product	Usage
1.	Asbestos-cement	Widely used in roofing and ceiling of buildings, especially in rural area houses, water tanks, sewerage pipes, supply water pipes, drainage, pipes, refuse chutes, and chimney hoods
2.	Air conditioner duct insulation	Insulation
3.	Adhesive	Industrial adhesive
4.	Bituminous membrane	Used for water-proofing rooftops (usually flat rooftop) and floorings
5.	Cooling towers	Asbestos material was once used on the outer surface of cooling towers
6.	Exhaust pipe insulation	Insulation
7.	Pipe	Water delivery and drainage
8.	Vinyl floor tiles and sheeting	A supporting layer to the surface of which is made of tile or vinyl
9.	Brake and clutch pad	Numerous vehicles
10.	Gasket	Industrial uses (e.g. sealant)
11.	Blackboard	Painted asbestos cement sheets
12.	Fire blanket	Fire and heat insulation
13.	Glove	Hand protection
14.	Shoes and helmet	Foot and head protection
15.	Fire curtain	Fire protector in cinema between the stage and seats
16.	Fire door	Fire protection
17.	Fire insulator	Bag used for fire protection

Table 1: The example of usage of asbestos in Malaysia.



Department Of Occupational Safety And Health Malaysia

ASBESTOS REMOVAL APPLICATION

1. Introduction
2. Purpose
3. Scope And Application
4. Sources And Uses of Asbestos
5. Health Effect
6. Asbestos Removal Procedure

1-INTRODUCTION

- Asbestos is a common name given to a group of naturally occurring mineral silicates that can be separated into flexible fibres.
- There are two main mineralogical classifications of asbestos—serpentine and amphiboles—based on the rock types which form the asbestos.
- Each classification is further sub-divided as **serpentine asbestos** (chrysotile) and **amphibole asbestos** (amosite, crocidolite, fibrous tremolite, fibrous anthophyllite, fibrous actinolite).
- Within the amphibole family, only amosite and crocidolite have significant commercial use.
- Special precautions are needed in the removal, repairing, dismantling, demolition, renovation, maintenance, and alteration of structures in buildings containing asbestos.

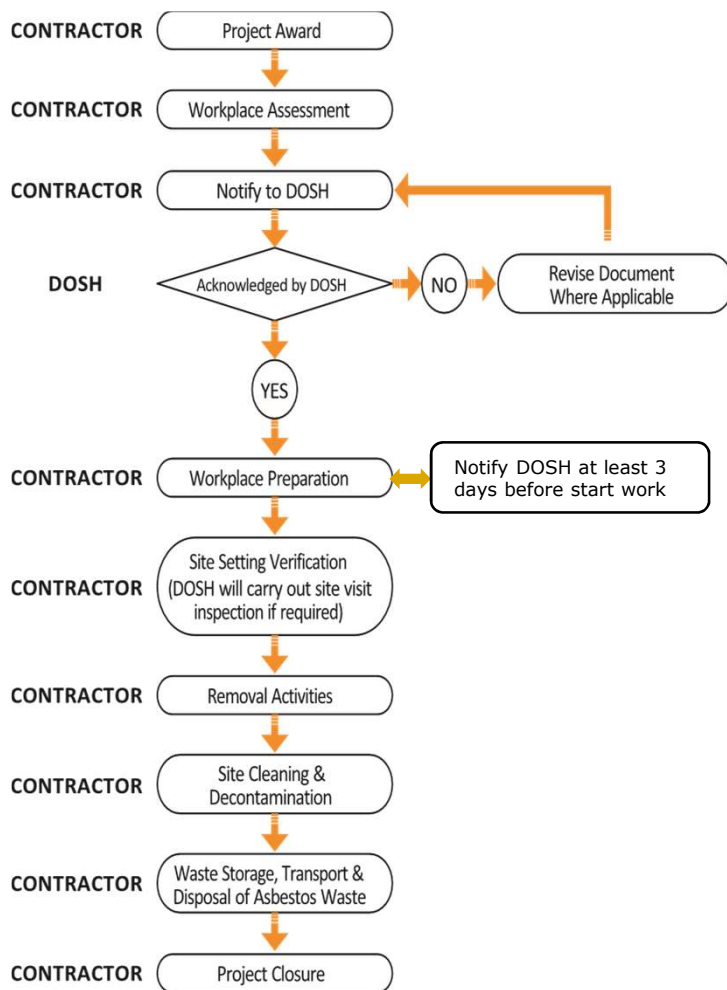


Figure 1 : Asbestos Removal Process Flow

6.1 Preliminary Process

- The employer who needs to carry out asbestos removal work will award the project to a suitable selected contractor. The selection of the contractor is based on the capability of the contractor to do the job, experience, and availability of equipment.

6.2 Workplace Assessment

- Before any activities relating to asbestos removal can begin, a workplace assessment must be conducted.
- The assessment includes:
 - a) Hazard identification, risk assessment and risk control (HIRARC)#; and
 - b) Chemical health risk assessment (CHRA)*.

Note: # For HIRARC, the assessment needs to follow the Guidelines for Hazard Identification, Risk Assessment and Risk Control (HIRARC) established by DOSH

* For CHRA, the assessment needs to be conducted by a registered assessor. As asbestos is categorised as a chemical hazardous to health, the CHRA is to be conducted according to the USECHH Regulations 2000 or as amended.

6.3 Acknowledgement from DOSH

- The asbestos remover or appointed contractor have submit a number of documents for DOSH's acknowledgement at least two (2) weeks before the workplace preparation activity.
- The documents which need to be submitted include:
 - a) Cover letter / Application letter;
 - b) Project background;
 - c) Work flow;
 - d) Method of identifying asbestos (if any);
 - e) HIRARC and CHRA reports;
 - f) Safe operating procedure;
 - g) Information on ACM disposal;
 - h) Latest annual medical surveillance record for workers;
 - i) Training records; and
 - j) Information on trained persons.

Note: # Workers involved in asbestos removal should be adequately trained before they can be deemed as a trained person. Training must be reviewed periodically at least once every two years.

6.4 Workplace Preparation or Site Set-up

- Workplace preparation or site set-up includes preparation of work practice control, isolation of asbestos removal area, and changing facilities.
- Warning signs should be displayed and give warning of the hazards, written in national and English languages, and printed in dark red against white background as shown in Figure 2.

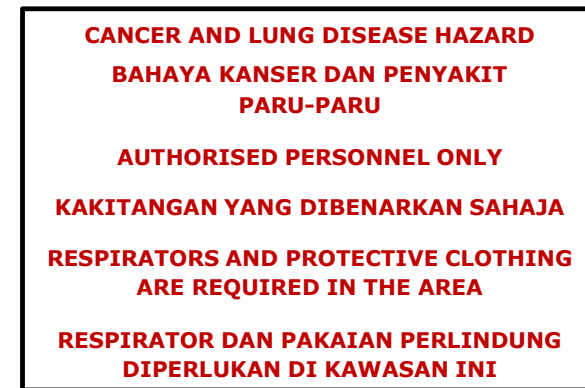


Figure 2: Example of a warning sign

6.5 Site Setting Verification by Contractor

- Verification must be conducted to ensure that there is no release of asbestos fibre and possibility of cross-contamination at the site.
- DOSH will carry out site visit inspection if required.

6.6 Removal Activities

- Workers must comply with all procedures relating to safety and health at the workplace including in the aspect of:
 - a) Tools and equipment;
 - b) Removal methods;
 - c) Personal protective equipment;
 - d) Site cleaning and decontamination; and
 - e) Storage, transport, and disposal of asbestos waste.
- Safe operating procedure must be followed and suitable personal protective equipment must be worn to prevent exposure from any accidental release of airborne asbestos including:



For details please refer our Guidelines For Asbestos Removal 2017

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