

APAC

Asbestos Management Procedure

S3[APAC]-109-PR1

1. Purpose and Scope

- a. The purpose of this procedure is to ensure that the risk of occupational exposure to asbestos is effectively managed to the lowest level practicable. Effective management of asbestos exposure is essential for the protection of personnel health and safety.
- b. This procedure requires the utilisation of hazard identification and risk assessment processes to identify potential asbestos-containing materials, determination of the processes for the management of any asbestos-containing material, and implementation of controls that are consistent with the Hierarchy of Control.
- c. This procedure applies to all AECOM controlled operations in Asia Pacific (APAC) and all work activities carried out by AECOM APAC employees, contractors and subcontractors.
- d. The procedure considers work involving all material identified as, or suspected to be, asbestos-containing. AECOM operational activities associated with the potential for asbestos exposure may include, but is not limited to:
 - i. Building, facility and production line renovation, refurbishment and maintenance;
 - ii. Asbestos surveying and sampling;
 - iii. Demolition;
 - iv. Field geotechnical activities;
 - v. Excavation, drilling and general soil sampling / handling; and
 - vi. Remediation activities.

2. Procedure

2.1 Identification of Asbestos

- a. Persons with control of the workplace shall ensure that, as far as is practicable, all ACM in the workplace is identified by a competent person, as per Appendix 1. If the workplace is likely to contain asbestos, all relevant records and information should be reviewed and the presence, or suspected presence, of asbestos should be determined and documented within the Asbestos Register. A formal asbestos survey may be required to assess any asbestos impacts within the workplace. If known or suspected ACM is identified in a workplace, a risk assessment shall be undertaken by a competent person. The risk assessment should identify any additional control measures required to mitigate the risk of exposure (see Hazard Recognition and Risk Management Procedure).

2.2 Asbestos Register

- a. All ACM in the workplace shall be documented in an Asbestos Register. At minimum, the Register shall contain:
 - i. Records of all ACM (confirmed and suspected) at the workplace;
 - ii. Location and condition of the material;
 - iii. Details of the competent person who assessed / sampled the material;
 - iv. Date(s) of assessment / sampling;
 - v. Analysis results of any material sampling; and
 - vi. Details of any maintenance or other work undertaken on the ACM.

- b. Persons in control of the workplace shall ensure that personnel are informed about the Asbestos Register. The Register shall be made available to all persons who may be exposed as a result of any potential asbestos disturbance activities. The Asbestos Register should be reviewed annually and/or following any identification or removal of ACM.

2.3 Material Sampling and Analysis

- a. Any material inspection or sampling shall be conducted by a competent person. All samples selected must be representative of the material condition and makeup. Where necessary, any damage caused by the sampling of a suspected ACM should be repaired as soon as is practicable. Samples shall be analysed only by accredited laboratories (e.g. NATA, IANZ).
- b. Any suspected ACM that is not able to be confirmed by laboratory analysis shall be assumed to contain asbestos and be treated and handled accordingly.

2.4 Labelling

- a. All identified ACM shall, where practicable, be labelled as per local regulatory requirements.
- b. Labelling shall be clearly visible to persons working in the area.

2.5 Asbestos Management Plan

- a. An Asbestos Management Plan shall be developed for all AECOM controlled sites where suspected or confirmed ACM are present. The Plan shall include:
 - i. The Asbestos Register;
 - ii. Methods for communicating the Asbestos Register and Management Plan to all relevant parties;
 - iii. Asbestos management decisions (e.g. to leave asbestos in situ or to remove during planned maintenance);
 - iv. Action planning (including actions to be taken in event of incidents or emergencies involving asbestos in the workplace);
 - v. Roles and responsibilities; and
 - vi. Safe work methods (including, as applicable, information and training, health and air monitoring, timetable for removal, documentation, etc.).
- b. Personnel interacting with ACM at the AECOM controlled site shall receive training in this management plan. The plan should be reviewed in conjunction with the asbestos register.
- c. The Asbestos Management Plan shall be reviewed and approved by the Project Manager and competent person (assumed to be a Specialist Asbestos / Occupational Hygiene Contractor).

2.6 Disturbance, Removal & Remediation

- a. Measures should be taken to establish an asbestos-free workplace where practicable. Accordingly, consideration should be given to the removal of ACM during renovation, refurbishment and/or maintenance, in preference to other control measures such as encapsulation or sealing. However, if ACM is not friable and in good condition, minimising disturbance and leaving the material in situ may be most appropriate noting some regulators require a specific plan for the removal of all ACM over a specified time period and an associated budget to achieve this.
- b. When relinquishing management or control of a workplace to a third party, a copy of the site asbestos register will be supplied to the new occupier.

2.7 Notifications, Approvals & Permits

- a. When undertaking removal, disturbance or maintenance of confirmed or suspected ACM, local regulatory requirements shall be adhered to, including any requirements to give written notice to the regulator in advance of planned removals.

- b. The Regional SH&E Manager shall be notified of the intention to remove or disturb ACM at least 72 hours prior to the commencement of work to ensure appropriate time for planning.
- c. AECOM employees, contractors and subcontractors may be required to complete client issued permits prior to commencing asbestos removal or disturbance activities.

2.8 Asbestos Disturbance/Removal Plan

- a. Where asbestos disturbance activities are to take place, work methods shall be clearly defined in an Asbestos Disturbance/Removal Plan. The Plan shall be approved by the Regional SH&E Manager prior to implementation and shall be acknowledged by all workers involved in the asbestos disturbance activity.
- b. The Asbestos Removal Plan shall be developed by a competent person to manage the safe removal of the asbestos-containing material, including mandatory or jurisdictional notification requirements, packaging, handling, transport and disposal of the asbestos as well as liaison with stakeholders that may be affected by the removal (e.g. regulator, client, workers and other affected parties).
- c. The plan shall consider, at minimum:
 - i. Engagement of a licensed removalist (ensuring any business and workers removing asbestos materials are qualified, licensed and formally trained in accordance with the relevant legislation, codes of practice and standards);
 - ii. Supervision of works;
 - iii. Work methods;
 - iv. Exposure controls, including:
 - Designation of the asbestos work area;
 - Suppression methods;
 - Personal Protective Equipment (PPE) (as per the requirements of Personal Protective Equipment Procedure);
 - Personal decontamination; and
 - Decontamination of tools and equipment.
 - v. Atmospheric monitoring requirements;
 - vi. Waste management, labelling and disposal;
 - vii. Clearance monitoring and inspection; and
 - viii. Emergency planning and spill response (site-specific emergency procedures to manage potential emergencies associated with the removal of asbestos-containing materials)
- d. The Plan must specify:
 - i. That the work area is designated with signage and barricading
 - ii. That a nominated asbestos disturbance / removal supervisor is:
 - Present at the work area for any disturbance / removal of friable asbestos
 - Readily available to workers carrying out the work for any disturbance / removal of non-friable asbestos > 10m²

2.8.1 Respiratory Protection Controls

- a. The Plan may specify respiratory protection requirements for the planned activity. Each employee using respiratory protection shall:
 - i. Be medically cleared for the use of the specified respiratory protection
 - ii. Complete respirator training and fit testing

- iii. Be assigned an appropriate respirator for use during field operations.
- b. The appropriate respiratory protection shall be established and approved in the Asbestos Removal Plan.

2.9 Storage and Disposal of Asbestos Waste

- a. Asbestos waste shall be placed in a designated hazardous waste storage area and shall be clearly labelled in accordance with local regulatory requirements. Asbestos waste shall not be mixed with other construction debris, industrial waste, or soil.
- b. Where a risk of exposure to airborne asbestos fibres exists from any reasonably foreseeable waste activity (handling, storage, processing, disposal, or transportation), waste shall be collected and disposed of in labelled double-sealed impermeable polyethylene bags or other closed, impermeable containers.
- c. Collection shall be completed prior to the end of each work shift. An approved contracted waste disposal company will be responsible for transporting the waste to a licensed landfill, and obtaining the appropriate waste disposal receipts. AECOM shall obtain copies of all waste disposal receipts.

2.10 Clearance Monitoring & Re-Inspection

- a. The need for clearance monitoring shall be assessed by a competent person and documented within the Asbestos Removal Plan. Clearance to de-classify an asbestos work area is determined by a detailed visual inspection performed by a competent person and must be undertaken prior to re-occupancy of that area. All exclusion zones shall remain in place until the clearance to de-classify the work area has been granted.
- b. All monitoring (e.g. atmospheric monitoring, swab samples) completed during and/or following the asbestos removal shall be in accordance with jurisdictional requirements and relevant legislation, code of practices and standards, including the issue of a clearance certificate supported by accredited laboratory testing regime.

2.11 Exposure and Health Management

- a. Personal Exposure Monitoring
 - i. Where a risk of asbestos exposure is identified, personal exposure monitoring may be required. The need for personal exposure monitoring, and the preferred method for monitoring, shall be determined by the Regional SH&E Manager in accordance with the Exposure Monitoring and Management Procedure and documented within the Asbestos Removal Plan. All samples shall be analysed only by an accredited laboratory
 - ii. If laboratory analysis indicates an exposure in excess of the OEL or a fibre count of more than 10 fibres per field, scanning electron microscopy (SEM) analysis should be undertaken by an accredited laboratory to ascertain the type of fibres detected.
- b. Potential Exposure Response
 - i. Where it is suspected that personnel have had unprotected exposure to respirable asbestos in excess of the OEL, the following measures shall be undertaken in consultation with the Regional SH&E Manager:
 - Incident investigation;
 - Detailed record of the event;
 - Personnel communication and medical counselling; and
 - Consultation with an occupational physician and determination of any health surveillance monitoring required.
- c. Health Surveillance Program
 - i. Health surveillance of personnel performing asbestos operations shall be conducted in accordance with the requirements of the Employee Medical Surveillance Procedure. The type and frequency of health surveillance shall be based on an exposure assessment performed by a competent person.

- ii. Health surveillance/monitoring (including mandatory medical examinations) shall be undertaken or verified as undertaken for workers involved in asbestos removal with reporting to regulatory authorities completed in accordance with relevant legislation, codes of practice and standards.

2.12 Training

- a. All personnel who may be exposed to asbestos shall complete asbestos training (e.g. HAZWOPER, asbestos awareness) prior to commencing work that includes:
 - i. Health risks associated with asbestos exposure;
 - ii. The synergistic relationship between smoking and asbestos exposure;
 - iii. Areas where ACM may be present, or operations which could result in exposure to asbestos;
 - iv. How workers may become exposed, including route of exposure;
 - v. Existing asbestos management procedures;
 - vi. Risk management and control, including engineering controls, appropriate work practises, emergency and clean-up procedures, and PPE use and limitations;
 - vii. The nature of and reasons for, any monitoring required and access to the results of monitoring; and
 - viii. Legislated exposure standards.
- b. Retraining is required under the following conditions:
 - i. Legislative requirement changes for asbestos that render previous training obsolete; and
 - ii. Annually.
- c. No employee, contractor or subcontractor shall attempt to perform asbestos operations which they have not been trained and deemed competent to safely perform.

3. Responsibilities

3.1 Regional Safety, Health and Environmental (SH&E) Manager

The Regional SH&E Manager is responsible for:

- a. Providing technical assistance in the identification and interpretation of regulatory requirements as requested by project management personnel; and
- b. Reviewing and approving all Safe Work Method Statements (SWMS) prior to the start of work activities

3.2 Competent Person (assumed to be a Specialist Asbestos / Occupational Hygiene Contractor)

The Competent Person is responsible for:

- a. Reviewing and approving all Asbestos Management Plans prior to the start of work activities; and
- b. Reviewing and approving all asbestos removal plans and exposure monitoring activities to ensure compliance with federal, state and local regulations.

3.3 Facilities & Building Manager (AECOM Offices)

The Facilities and Building Manager is responsible for:

- a. Maintaining a current and accessible Asbestos Register if there is known or suspected Asbestos Containing Material (ACM) present; and

- b. Implementing a building Asbestos Management Plan if there is known or suspected ACM present.

3.4 Project Manager

The Project Manager is responsible for:

- a. Confirming that the presence of ACM at AECOM work sites is identified (where reasonably practicable) prior to commencing field activities, and prior to initiating any task involving disturbance of or contact with ACM (or immediately upon identification of previously unknown ACM);
- b. Ensuring an Asbestos Management Plan and SWMS is developed and approved by the SH&E Manager, and that the applicable requirements are observed for each task where there is a risk of personnel exposure to asbestos;
- c. Confirming that employees developing work procedures and/or conducting work activities involving ACM possess any required licenses or certifications;
- d. Confirming that employees assigned to perform any work activities involving ACM have been trained in the job-specific hazards of asbestos exposure, have received proper medical surveillance, and are trained and properly fit-tested in the use of any designated respiratory protection devices; and
- e. Ensure that the potential of asbestos exposure is managed as per this procedure.

3.5 Employees, Contractors and Subcontractors

Employees, Contractors and Subcontractors are responsible for:

- a. Not disturbing or handling any ACM or suspected ACM without appropriate personal protective equipment (PPE), training in the job-specific hazards of asbestos exposure, medical monitoring, and respirator fit test;
- b. Immediately notifying the Project Manager of the presence, or suspected presence, of previously unidentified ACM in the workplace, and cease all work activities involving disturbance or contact with the materials until further direction is received;
- c. Abiding by all warning signs and labels;
- d. Inspecting PPE prior to each use; and
- e. Reading, understanding and acknowledging the SWMS and emergency response plan developed for the task(s).

4. Terms and Definitions

Define only those terms mentioned within the document and list using 'Alpha List' option from the AECOM Procedure List dropdown on the Home tab.

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| a. | Asbestos | The fibrous form of mineral silicates belonging to the serpentine and amphibole groups of rock-forming minerals, including actinolite, amosite (brown asbestos), anthophyllite, chrysotile (white asbestos), crocidolite (blue asbestos), tremolite, or any mixture containing one or more of the mineral silicates belonging to the serpentine and amphibole groups. |
| b. | Asbestos bonded (non-friable) | An ACM that consists of asbestos fibres bonded with a bonding compound. |
| c. | Asbestos, friable | ACM which, when dry, is or may be crumbled, pulverised or reduced to powder by hand pressure. |
| d. | Asbestos-Containing Material (ACM) | Any material, object, product or debris that contains asbestos. |
| e. | Asbestos Removalist | A competent and/or licensed person who performs asbestos removal work. |
| f. | Asbestos Waste | All removed ACM and disposable items used during the asbestos removal work, such as plastic sheeting, disposable coveralls, disposable respirators and rags. |

- g. **Atmospheric monitoring** Airborne asbestos fibre sampling to assist in assessing exposures and the effectiveness of control measures. Monitoring may be either static (fixed location) or personal (affixed to a worker's breathing zone). Personal exposure monitoring is designed to reliably estimate the person's exposure, so that it may be compared with the Occupational Exposure Limit (OEL).
- h. **Breathing Zone** The zone within a 30cm radius of a worker's nose and mouth that is measured from the midpoint of a straight line joining the ears.
- i. **Competent Person** An employee or subcontractor who has received training and is capable of identifying existing and predictable asbestos hazards in the work place, and who can take prompt corrective measures to eliminate them.
- j. **Clearance Inspection** An inspection, carried out by a competent person, to verify that an asbestos work area is safe to be returned to normal use after work involving the disturbance of ACM has taken place. A clearance inspection must include a visual inspection, and may also include clearance monitoring and/or settled dust sampling.
- k. **In situ** Fixed or installed in its original position, not having been moved.
- l. **Occupational Exposure Limit (OEL)** An exposure limit is the airborne concentration of a particular substance in the employee's breathing zone which, according to current knowledge, should not cause adverse health effects nor cause undue discomfort to nearly all employees. Also referred to as **Workplace Exposure Standards (WES)**.

5. References

- a. Employee Medical Surveillance Procedure S3[APAC]-128-PR1
- b. Exposure Monitoring and Management Procedure S3[APAC]-127-PR1
- c. Hazard Recognition and Risk Management Procedure S3[APAC]-209-PR1
- d. Personal Protective Equipment Procedure S3[APAC]-208-PR1

6. Records

The following records must be retained:

- a. Asbestos Register
- b. Asbestos Management Plan
- c. Safe Work Method Statement
- d. Client Issued Permits
- e. Asbestos Removals Licenses
- f. Waste Disposal Receipts
- g. Personnel training, health surveillance and respirator face fit test records
- h. Where sampling or monitoring is undertaken, the following records shall be maintained:
 - i. Sample Record Sheet
 - ii. Chain of Custody (CoC)
 - iii. Laboratory Analysis Report
 - iv. Employee Monitoring Results Feedback Letter
 - v. Equipment Calibration Record

7. Appendices

- a. Appendix 1 - Asbestos Identification Flowchart

8. Change Log

List the change history pertaining to this document including if it was identified differently throughout its life-cycle:

Rev #	Change Date	Description of Change	Location of Change
0	May 8, 2018	Initial Release	All

Appendix 1 - Asbestos Identification Flowchart

