

Asbestos Management Program

A program for controlling exposures to asbestos containing construction material and presumed asbestos containing construction material at San Diego State University

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SDSU Asbestos Management Program

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SDSU Asbestos Management Program

Overview and Objectives

Asbestos-containing construction materials (ACCM) have been used widely in the construction industry. While the use of ACCM in new building systems has ceased for most major applications, the presence of ACCM in older building systems is still widespread. ACCM is still present in numerous buildings at San Diego State University in the form of pipe insulation, sprayed-on fireproofing, sprayed-on acoustic insulation, and flooring materials. In most cases, this ACCM does not pose a health hazard if left undisturbed. Nevertheless, activities that have the potential to disturb ACCM must be carefully managed to prevent fibers from becoming airborne and creating an inhalation hazard.

The purpose of this plan is to describe a program for controlling exposure to asbestos in campus buildings. The principal elements of this program involve requirements and responsibilities for pre-construction/pre-demolition surveys, training and certification of workers, employee notifications, proper work procedures for activities that have the potential to disturb ACCM, and proper disposal of asbestos wastes.

Definitions

Asbestos-Containing Material (ACM) - any material containing more than one percent (>1%) asbestos. *note: this is a Federal OSHA specific definition.*

Asbestos-Containing Construction Material (ACCM) - any manufactured construction material that contains more than one tenth of one percent (>0.1%) asbestos by weight. *note: this is a Cal/OSHA specific definition.*

Presumed Asbestos-Containing Material (PACM) — thermal system insulation and surfacing material found in buildings constructed no later than 1980. These materials are assumed to contain asbestos unless data rebuts the classification.

Friable Asbestos Material — any material containing more than one percent asbestos that, when dry, can be crumbled, pulverized or reduced to a powder by hand pressure.

Non-Friable Asbestos-Containing Material — any material containing more than one percent asbestos, that, when dry, cannot be crumbled, pulverized or reduced to a powder by hand pressure.

Category I Non-Friable Asbestos-Containing Material — asbestos-containing packings, gaskets, resilient floor covering and asphalt roofing products containing more than one

percent asbestos, that, when dry, cannot be crumbled, pulverized or reduced to a powder by hand pressure.

Category II Non-Friable Asbestos-Containing Material — any material, excluding Category I Non-Friable Asbestos-Containing Material, containing more than one percent asbestos that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

Regulated Asbestos-Containing Material (RACM) — friable asbestos material; Category I Non-Friable Asbestos-Containing Material that has become friable or will be subjected to sanding, grinding, cutting or abrading; and Category II Non-Friable Asbestos-Containing Material that has a high probability of becoming crumbled, pulverized or reduced to a powder by the forces expected to act on the material in the course of demolition or renovation operations.

These definitions describe the types of asbestos-containing materials that are regulated under California Code of Regulations, Title 8, Sections 341.6 and 1529, and the National Emission Standard for Asbestos as implemented by the Air Pollution Control District, County of San Diego.

Responsibilities

A. Facilities Services is Responsible For:

1. Ensuring that building materials that may be disturbed as a part of construction, demolition, or repair activities are surveyed/tested to determine if asbestos is present (survey/testing can be performed only by AHERA certified individuals/consultants).
2. Coordinating with the Chancellor's Office the encumbrance of funds and the administration of contracts for asbestos abatement projects.
3. Developing removal and re-insulation specifications for asbestos abatement contracts.
4. Acting as the project manager for asbestos abatement contracts.
5. Soliciting technical assistance from a licensed Environmental Consultant or SDSU Environmental Health and Safety in regards to specification development, the planning phase of asbestos projects, and evaluating the credentials of prospective contractors.
6. Maintaining a cadre of trained personnel who are capable of performing Class III asbestos work (i.e.- small-scale/short duration emergency repair or planned renovation projects)

7. Transmitting records of all asbestos related project documents (e.g.- lab analysis results, survey report, etc.) to Environmental Health and Safety for evaluation and retention.

B. Environmental Health and Safety (EH&S) is Responsible For:

1. Coordinating asbestos-related matters not directly associated with abatement projects. This includes employee annual notification efforts (Center for Human Resources), and handling inquiries from employees on potential exposure in the workplace or classroom.
2. Developing and maintaining the SDSU Asbestos Management Program, including a Standard Operating Procedure for Cal/OSHA Class III asbestos work and an Employee Notification Procedure.
3. Maintaining an Up-to-Date inventory of all known locations of friable and non-friable ACCM in SDSU buildings.
4. Attending project team meetings when Environmental Consultants, Abatement Contractors, and General/Subcontractors are discussing ACCM related activities.
5. Providing technical assistance to the project manager and Facilities Services as requested prior to and during asbestos abatement projects.
6. Performing bulk asbestos sampling, and evaluating, recording, and maintaining laboratory results for all surveys that are not associated with a specific abatement project.
7. Receiving, recording and evaluating laboratory results related to airborne asbestos surveys, including those performed during abatement projects.
8. In conjunction with the project manager, providing initial inspection of asbestos abatement project set-up, including the containment barrier, airlock assembly, decontamination facilities, and worker protection program unless a licensed third-party Environmental Consultant has been contracted to perform these services. In those instances, EH&S will be in contact with the Environmental Consultant before, during, and after the abatement to verify that the work was performed while following the appropriate ACCM abatement protocols.
9. Providing hazard awareness level training to workers who may encounter asbestos hazards in the workplace (i.e.- Class IV workers). This training will be provided either in-person or computer-based.
10. Providing training and consultation on the use of personal protective equipment (PPE) and equipment by SDSU Class III asbestos workers, such as respirator protection.

11. Coordinating the medical surveillance of SDSU Class III asbestos workers.
12. Verifying that asbestos contractors notify the appropriate regulatory agencies, e.g., APCD, EPA. Typically this verification will be performed by a licensed Environmental Consultant that has been contracted as part of the project. In these instances, EH&S must be copied on the notification submittals for recordkeeping purposes.
13. Coordinating with the project manager, environmental consultant, and/or the abatement contractor to ensure that ACM waste is handled and disposed of in accordance with applicable disposal regulations. EH&S is responsible for signing all ACM waste manifests before the waste leaves the campus.

C. Project Managers are Responsible For:

1. Ensuring that contractors whose work may involve disturbing or coming into contact with asbestos-containing construction materials in SDSU buildings are notified of the conditions that may be encountered before any such work is started. This may be done by referring the contractor to Environmental Health and Safety for consultation.
2. Notifying potentially impacted University staff (e.g.- Building occupants) of ACCM related project activities when applicable (e.g.- when the work is being performed in an occupied building during normal working hours).
3. Providing copies of all ACCM project related records to EH&S. Such records include, but are not limited to Asbestos Survey Reports and Asbestos Final Clearance Reports.

D. General Managers or Executive Directors of Auxiliaries are Responsible For:

1. Ensuring that all asbestos-related work performed on state-owned buildings is performed in accordance with this procedure.
2. Ensuring that personnel under their supervision are notified, in accordance with Section B.3 of this procedure, regarding the known existence of asbestos in buildings.
3. Notifying EH&S in the event of an asbestos emergency in their managed spaces (e.g. - unintentional disturbance of potential asbestos containing building materials).

Requirements

A. Monitoring and Inventory

1. EH&S AHERA certified staff can collect limited samples upon request by SDSU Facilities Services to determine the presence of asbestos in building materials

prior to Class III (e.g.- emergency repair) related disturbance or for building material disposal categorization purposes. In addition, personal and area air samples shall be collected as needed (e.g.- in the event of an unforeseen fiber release incident). The protocol that shall be followed for asbestos sampling and analysis is presented in Attachment A.

- a. Comprehensive (unlimited/building-wide) sampling for SDSU Project Management and SDSU Planning, Design, and Construction managed projects shall be performed by an AHERA certified Environmental Consultant.
2. EH&S shall maintain an inventory of all known locations of ACM in [SDSU buildings](#). This information will be disseminated to Facilities Services and Facilities Planning and Management, and should be consulted prior to scheduling work in buildings. Project Managers are also able to view asbestos sampling results in the Facilities Information System (FIS).
3. In the past, periodic ACM conditions surveys were performed at SDSU, although it was not required. Since most of the remaining friable ACM on campus is located in areas where primarily only Asbestos Awareness trained employees have access (i.e.- mechanical rooms, crawl spaces under buildings, etc.), condition assessments will only be performed by EH&S when observed ACM damage is reported. If damaged ACM is observed, notify Facilities Services - Work Control (facilitieservices@sdsu.edu or 619-594-4754) immediately for follow up by EH&S.

B. Personnel Notifications

1. Employees in buildings known to contain ACM shall be notified in compliance with Assembly Bill 3713 and modifying legislation (i.e., AB 1564). The “Asbestos Notification to Employees” will be performed by EH&S and the Center for Human Resources. A current Annual Asbestos Notification letter and summary of Asbestos Locations by Building is available on the [EH&S website](#).
2. Contractors shall be notified in writing by the SDSU Project Manager as to the known existence of ACM in buildings or areas where construction or demolition is scheduled to occur. This notification can be in the form of an Asbestos Survey/Report provided by an AHERA certified Environmental Consultant.
3. EH&S shall transmit copies of the “Asbestos Notification to Employees” to the management of all auxiliary organizations, who shall ensure that the information contained therein is distributed to personnel within their organizations.

C. Cal/OSHA Class III Asbestos Work

1. Cal/OSHA Class III asbestos work may be performed by Facilities Services personnel who meet the qualifications specified in Section E.
2. A detailed procedure for Class III asbestos work is presented as Attachment B.

D. Operations and Maintenance

1. Ensuring that all asbestos-related work performed on state-owned buildings is performed in accordance with this procedure.
2. Ensuring that personnel under their supervision are notified, in accordance with Section B.3 of this Procedure, regarding the known existence of asbestos in buildings.
3. Ensuring that unintentionally disturbed asbestos containing building materials are cleaned up immediately by Class III asbestos workers (or a licensed asbestos abatement contractor) and disposed of properly.

E. Training and Qualifications

1. *Inspector Training.* Any person engaged in the inspection of a facility for ACM shall have successfully completed an EPA-approved three-day inspector course of study. Certified inspectors for SDSU are:
 - o Industrial Hygiene Manager (Asbestos Coordinator), 619-594-6778
 - o Industrial Hygiene Specialist, 619-594-6778
 - o Facilities Services, Asbestos Team Lead, 619-594-4754
2. *Asbestos Worker Training and Qualifications.* Any person who performs Class III asbestos work shall be properly trained and protected. At a minimum, this protection entails:
 - o Successful completion of a 4-day EPA-approved training course for asbestos abatement workers.
 - o Enrollment in a program of medical surveillance.
 - o Being properly fitted and instructed in the use and care of a respirator.
 - o Refitting for the respirator annually or when a significant change in the face-to-mask fit is detected.

3. *Asbestos Awareness Training.* All Facilities Services personnel who contact but do not disturb ACCM (i.e.- Class IV workers) in the course of their work shall be provided with asbestos awareness training. The content of this training is presented in Attachment D.
4. *Hazard Communication.* All Facilities Services personnel are informed of the locations of asbestos and the presence of asbestos hazards on campus.

F. Medical Monitoring

All personnel who perform Class III asbestos work will receive medical surveillance in accordance with the [SDSU Medical Surveillance Program](#).

G. Reporting of Incidents

1. Any incident, accident, or emergency resulting in a known exposure of one or more employees must be immediately reported to EH&S (x4-6778 or ehsoffice@sdsu.edu), who will assess the case and determine whether notification of Cal/OSHA is required. In making its assessment, EH&S will use the reporting criteria specified by Title 8, CCR, Section 5208(3), which are summarized as follows:
 - The employee(s) is unprotected by an appropriate respirator
 - The employee(s) is exposed to asbestos fibers at the following time-weighted concentrations:
 - Eight-hour time-weighted average concentration of greater than 0.1 fibers/cc, or
 - Thirty-minute time-weighted average concentration of greater than 1 fiber/cc
2. If required, EH&S will report the incident to Cal/OSHA within fifteen days of the event. The items which shall be addressed in the report include:
 - Number of employees overexposed
 - Circumstances surrounding the overexposure
 - Results of any environmental analysis to monitor employee exposure or define the hazard
 - Steps taken to prevent recurrence or avoid future overexposure

- Type of structure repaired, constructed, or demolished, or product being manufactured
3. A copy of each report submitted to Cal/OSHA shall be posted by EH&S in the locations(s) where the incident occurred and in other locations where it will be conspicuous to other potentially affected employees.

H. Waste Management

All asbestos-containing waste materials are considered hazardous wastes and must be handled and disposed of in accordance with hazardous waste management procedures. This involves one of the following:

1. For asbestos abatement contracts, the SDSU Project Manager shall ensure that provisions for proper asbestos waste handling, storage and disposal are included in the contract specifications.
2. For asbestos waste generated by SDSU activities (“in-house” work), the job supervisor shall ensure that asbestos-containing wastes are delivered to EH&S, who will coordinate the proper disposal.

I. Emergency Response Assistance

When emergency assistance is needed to recover from an asbestos-related event outside of normal business hours, contact the SDSU EH&S Industrial Hygiene Manager at 858-699-4556 or the SDSU EH&S Industrial Hygiene Specialist at 619-832-3947.

J. Record Keeping

Departments with specific asbestos-related responsibilities shall prepare and maintain appropriate records to document that prescribed activities are conducted in accordance with this procedure. These records include, but are not limited to, those presented in the following table:

Record	Required Minimum Retention Time
Medical examinations	Duration of employment plus thirty (30) years
Training Records	Three (3) years
Respirator fit test records	Three (3) years
Exposure measurement results	Duration of employment plus thirty (30) years

Required notification records (Bulk and air samples)	Duration of ownership of the building/property
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K. Demolition and Renovation

Demolition and renovation operations that involve the presence of RACM in excess of specified amounts must be conducted in accordance with the notification requirements and procedures for asbestos emission control of the National Emission Standard for Asbestos (as implemented by [San Diego APCD Rule 1206](#)).

Attachment A

Survey and Sampling Protocol

I. Overview

Asbestos-Containing Materials (ACCM) are prevalent in buildings throughout the San Diego State University Campus. Typically, ACCM is found in fireproofing, acoustical and decorative ceiling and wall plasters, and thermal pipe and tank insulation. ACCM may also be found in such materials as plaster walls, ceiling and floor tiles, roof felts, chemical hoods, oven gaskets, automobile brakes and clutches, and many other items. Because of the significant amount of asbestos (both friable and non-friable) within SDSU buildings, it is imperative that a coordinated program be in place for identifying ACCM, notifying building occupants of its presence and location, and developing procedures to minimize disturbance of asbestos and possible exposure. This section summarizes San Diego State University's program for identifying asbestos containing material in buildings prior to construction, renovation, or demolition projects, as well as for building material disposal purposes.

II. Survey & Sampling

Records for ACCM that have been previously identified can be found in [Metabim Facilities Link \("FIS"\)](#) or by contacting EH&S (ehsindustrialhygiene@sdsu.edu or 619-594-3088). Any *Presumed Asbestos-Containing Material (PACM)* (i.e.- thermal system insulation and surfacing material found in buildings constructed prior to 1981) that will be disturbed as part of construction, renovation, or demolition activities must also be sampled by an AHERA certified Asbestos Building Inspector prior to disturbance. Based on historical sampling data, EH&S also advises that all flooring, floor mastic/glue, baseboard, baseboard mastic/glue, ceiling tiles, and ceiling tile mastic/glue in buildings constructed prior to 1981 are sampled prior to disturbance.

In some cases, Project Managers may forgo testing of PACM if they plan to handle and dispose of the material as asbestos-containing and follow all applicable regulations and SDSU policies. In these cases, Project Managers must obtain approval from EH&S or the Environmental Consultant they are working with to verify that sampling is still not needed (e.g.- for pre-demolition surveys).

Asbestos surveys and sampling at SDSU must only be performed by AHERA certified Asbestos Building Inspectors.

A. Inspection (Survey) and Sampling of Previously Unidentified ACCM

Because of the potential for employee exposure to asbestos fibers when building materials are disturbed (e.g., penetrating walls, removing floor & ceiling tiles), appropriate procedures shall be followed to ensure that building materials are sampled and analyzed prior to the start of construction or maintenance activities in locations where suspected asbestos containing construction material may be present. Cal/ OSHA requires that certain building materials be sampled for the presence of asbestos, or assumed to be ACCM. Additionally, the [*National Emission Standards for Hazardous Air Pollutants \(NESHAP\)*](#) requires that RACM (regulated asbestos containing material) must be removed prior to demolition or renovation.

B. Work Request/Project Proposal Review

SDSU Supervisors, Managers, and Project Managers are advised to notify EH&S (ehsindustrialhygiene@sdsu.edu or 619-594-3088) if their construction, renovation, repair, or demolition activities may impact known or presumed asbestos-containing construction materials. EH&S should be notified early in the pre-planning stages of these projects so that potential delays can be avoided when possible. In most cases, the Project Team will need to include a licensed Environmental Consultant to ensure that asbestos-related activities are performed in accordance with all applicable industry standard guidelines and regulations (e.g.- pre-construction/demolition survey, developing/reviewing Asbestos Abatement Plans, submitting regulatory notifications, etc.). Upon request, EH&S can assist the Project Team with selecting a licensed Environmental Consultant if needed.

C. Bulk Materials Sampling & Analysis

AHERA sampling techniques shall be utilized throughout the sampling survey (reference EPA “Pink Book”). Asbestos sampling shall be performed only by EH&S or Facilities Services staff who are trained in this process or, an Environmental Consultant with the appropriate certifications. The samples are analyzed by an EPA accredited laboratory. Copies of sampling results shall be provided to EH&S (ehsindustrialhygiene@sdsu.edu) and the Project Manager, as well as saved electronically for future reference (i.e.- uploaded into SDSU [Metabim Facilities Link \(“FIS”\)](#) by EH&S).

- (a) Asbestos bulk samples shall be collected by, or under the direction of, a person who has completed an asbestos building inspector course and who is currently certified.
- (b) The immediate area shall be secured so that building occupants are not present. Preferably, sampling should be performed outside of normal business hours.
- (c) An appropriate respirator equipped with HEPA (P100) filters shall be donned prior to collecting samples (i.e.- if no “negative-exposure” air sampling has been performed).
- (d) Asbestos containing material should not be sampled dry. Wet the surface of the sample area with a surfactant (typically 50% polyethylene-glycol) or water. For core sampling, a wet sponge can be placed over the sampled area and the core will be run

through the sponge into the suspected ACCM. Penetrate the suspected material completely with a sharp object such as a coring tool, blade or knife and remove a small section of the suspect material. Minimum sampling numbers:

- Area of the homogeneous suspect ACCM <1000 linear or square feet (3) three bulk samples shall be collected.
- Area of homogeneous suspect ACCM is at least 1000 linear or square feet, but <5000 linear or square feet, at least (5) bulk samples shall be collected.
- Area of homogeneous suspect ACCM is >5000 linear or square feet (7) seven bulk samples shall be collected from each area.

(e) Place the sample in a sealed container.

(f) Patch or repair the material where the sample was removed.

(g) Label the sealed container with the following information:

- Date
- Location of sample
- Type of material (e.g., plaster wall, thermal system insulation)
- Sample number - unique to the location and/or sample

(h) Submit the sample to an EPA approved laboratory for analysis.

(i) Depending upon the quantifying limit needed, the sample should be analyzed by either of two methods:

- Polarized Light Microscopy (PLM) for quantifying limits equal to or exceeding 0.1% asbestos by weight.
- Transmission Electron Microscopy (TEM) if a detection limit below 0.1% asbestos by weight is needed.

Note: Fine dust samples from operations like brake rebuilding should be analyzed using TEM.

E. Quality Assurance (QA)

Appropriate analytical Quality Assurance (QA) procedures must be established and followed by the analytical laboratory. It is the responsibility of EH&S to ensure that appropriate QA requirements are provided to Purchasing and Contracts for inclusion in bid specifications.

F. Documentation

All sample results that test positive for asbestos are incorporated into the “[Asbestos Locations by Buildings](#)” section of the SDSU EH&S website, as well as the SDSU [Metabim Facilities Link \(“FIS”\)](#). This list is communicated to building occupants in accordance with the notification requirements of Section B of the Asbestos Management Program.

Asbestos sample results are maintained by the Asbestos Coordinator within the EH&S Department (x4-6778 or ehsoffice@sdsu.edu).

Attachment B

Standard Operating Procedure - Class III Asbestos Work

SDSU	Asbestos Management Program
Standard Operating Procedure (SOP) <i>Class III Asbestos Work</i>	
Effective Date: November 2022	Last Reviewed: November 2022

I. Purpose

The purpose of this Standard Operating Procedure (SOP) is to outline the primary regulatory work requirements for SDSU Class III Asbestos Workers (i.e.- AHERA Certified Asbestos Workers or Contractor Supervisors).

This SOP covers small-scale short-duration maintenance activities, where the intent is not to abate asbestos but perform repair or maintenance with the potential to disturb or create waste that can fit into **a single waste bag or performed in a single mini-enclosure or glovebag**. This SOP does not cover large scale asbestos removal (i.e.- Class I or Class II work) in conjunction with renovation or demolition projects, which would be conducted by a state-licensed abatement company.

II. Background

Asbestos is a naturally occurring group of fibrous minerals. Asbestos fibers were added to many building materials because it is heat and chemical resistant, strong, and not easily degraded. If left intact, asbestos fibers pose no immediate health risk. However, when disturbed, fibers can become airborne and in sufficient numbers can potentially lead to asbestos-related diseases such as mesothelioma, asbestosis, and lung cancer.

To minimize the potential for releasing airborne fibers when working with asbestos containing materials, it is critical for SDSU Class III Asbestos Workers to utilize the appropriate Engineering and Work Practice controls, as well as wear the appropriate Personal Protective Equipment (PPE).

III. Key Definitions

"**Class III asbestos work**" means repair and maintenance operations, where "ACM", including TSI and surfacing ACM and PACM, is likely to be disturbed.

"Asbestos-containing material (ACM)", means any material containing more than one percent asbestos (>1% by weight).

Note: in California asbestos is regulated at (>0.1% by weight)

"Presumed Asbestos Containing Material" means thermal system insulation and surfacing material found in buildings constructed no later than 1980.

"Surfacing material" means material that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).

"Thermal system insulation (TSI)" means ACM applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain.

"Competent person" means someone who is adequately trained to identify asbestos hazards and has the authorization to take prompt corrective measures. **NOTE: all AHERA Contractor Supervisor trained staff are Competent Persons.**

"Employee exposure" means exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

"Permissible exposure limit (PEL)"

- 0.1 fiber per cubic centimeter of air as an eight (8) hour time-weighted average (TWA).
- 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes ("**Excursion Limit**")

IV. Responsibilities

Environmental Health & Safety (EH&S):

- Providing adequate Personal Protective Equipment (PPE)
- Maintaining SDSU Asbestos Management Program
- Assisting with identification/sampling of ACM
- Exposure Assessments (air sampling) as needed
- Medical Monitoring Program (*scheduling exams, etc.*)
 - *All Class III Asbestos Workers will attend an annual medical evaluation and respirator medical clearance appointment.*
- Reviewing and Approving Class III Asbestos Work Permits

Facilities Services - Management, Project Managers, Supervisors:

- Ensuring that building materials that may be disturbed as a part of construction, demolition, or repair activities are surveyed/tested to determine if asbestos is present.

- Assigning only AHERA certified Asbestos Workers/Contractors Supervisors to work on Class III Asbestos Work projects.
- Supplying Class III Asbestos Work equipment and tools (e.g.- HEPA vacuums, Negative Air Machines, containment supplies such as plastic sheeting)

Competent Person:

- Submitting *Class III Asbestos Work Permit* to EH&S
- Completing the *Competent Person Designation & Checklist*
- Granting final approval to start Class III work
- Verifying that the appropriate Engineering Controls, Work Practice Controls, and PPE are used for the duration of the project
- Verifying that the work area is clean (no ACM debris) before ending the project

Class III Asbestos Workers:

- Using Engineering Controls, Work Practice Controls, and Personal Protective Equipment as required.
- Maintaining Class III Asbestos Work equipment and tools (e.g.- HEPA vacuums, Negative Air Machines, etc.)
- Disposing of ACM waste properly.

V. Assessments (Testing Building Materials for Asbestos)

Since asbestos sampling is a destructive sampling process, typically samples are only collected when a building material will be disturbed (e.g.- prior to renovation/demolition) or when a building material is already damaged and in need of repair (e.g. - broken/loose floor tiles).

Previous asbestos sampling results can be found by:

- Contacting EH&S (619-594-6778 or ehsindustrialhygiene@sdsu.edu ; or
- Searching the online [SDSU FacilitiesLink \(FIS\) system](#).

If sample collection is needed, **only** AHERA certified Asbestos Building Inspectors are permitted to collect the samples.

VI. Exposure Monitoring (Air Sampling)

EH&S will conduct periodic exposure monitoring of all Class III work where exposures are expected to exceed the Cal/OSHA Permissible Exposure Limit (PEL).

- Monitoring will stop if results indicate exposure is below PEL.
- Monitoring will start again if there are changes in process, control equipment, personnel or work practices that may result in new or additional exposures above the permissible exposure limit.

Exposure monitoring will also help to determine what Engineering Controls are required (e.g. - mini-enclosure with drop-cloth or full-containment), as well as minimum PPE levels (e.g. - half-mask or full-mask respirator, coveralls, etc.)

VII. Notification Procedure (Class III Asbestos Work Permit)

A *Class III Asbestos Work Permit* must be submitted by the Competent Person to EH&S prior to SDSU Facilities Services Asbestos Worker trained ("Class III") employees disturbing asbestos containing materials (ACM). **Class III work cannot proceed until EH&S has reviewed and approved the *Class III Asbestos Work Permit*.**

The Competent Person will also complete *Competent Person Designation & Checklist* and submit it to EH&S at the completion of the Class III work.

VIII. Regulated Areas for Class III Work

All Class III asbestos work shall be conducted within regulated areas:

- Identified by Asbestos Warning Sign.
- Access limited to only Asbestos training personnel.
- Respirators required if:
 - Removing TSI (e.g.- pipe insulation) or Surfacing (e.g.- “popcorn” ceiling);
 - No previous exposure monitoring data or previous data indicates exposure is above exposure limits; or
 - Not using wet removal methods.

NOTE: at SDSU respirator use is advised for ANY asbestos work, regardless of exposure levels or if just removing miscellaneous ACM such as floor tiles, mastics, transite (asbestos cement) pipes/panels.

- Do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the regulated area.
- Work performed within regulated areas must be supervised by a Competent Person.

IX. Work Practices for Class III Projects

Below are basic Class III Asbestos work practices to minimize and contain asbestos fibers when there is the potential to disturb ACM. Exposure Assessments (i.e.- Air Sampling) will aid in determining the level of protection required for general scopes of work (e.g.- containment and respirator level needed for ACM flooring projects). Ultimately, it's the responsibility of the Competent Person to ensure that there is an adequate level of Engineering Controls, Work Practice Controls, and PPE implemented to start a Class III project.

A. Equipment and Tools

- Low-pressure sprayer for applying amended water (“Wet Methods” with water & liquid dish soap solution or similar)
- HEPA vacuum
- Negative Air Machine (“Air Scrubber”) with HEPA filter (for larger full-containment jobs)
- 6-millimeter Polyethylene (“6-mil Poly”) sheeting
- 6-mil Poly Asbestos Waste Bag
- 6-mil Poly Glovebag
- Structural support framing (plastic, wood, etc.) to build mini-enclosure
- Tape
- Wiping rags/cloths
- Smoke-Testing supplies (for glovebags)
- Asbestos Warning Sign

B. Personal Protective Equipment

- Gloves
- Safety glasses/goggles
- Coveralls (if exposure >PEL)
- Respirator (required if exposure >PEL, advised even if exposure <PEL)
- Hearing protection (if using noise generating equipment)

C. General Set-up Steps

1. Verify the SDSU Class III Asbestos Work Permit obtained.
2. Post Asbestos Warning Sign.
3. Secure Area (lock door if possible).
4. Secure HVAC by turning off or covering with 6-mil Poly (*when required*)
 - a. Required if potential to release fibers >PEL.
5. Set-up containment (*when required*);
 - a. Glovebag required for all TSI disturbance such as pipe insulation/valve gasket removal.
 - b. Mini-enclosure required for all Surfacing material disturbance such as spray-on acoustic (“Popcorn”) ceiling.
 - c. Mini-enclosure is not required for disturbance of miscellaneous ACM such as floor tiles, mastics, transite pipes/panels if Exposure Assessment verifies that exposure level is <PEL.
6. Set-up “Equipment Room” for cleaning clothing/tools/equipment (*when required*);
 - a. Two layers of 6-mil Poly drop-cloth on floor, adjacent to Regulated Area, not required if exposure < PEL.
7. Start work only AFTER the Competent Person completes Competent Person Checklist and approval is granted.
 - a. Don (put-on) PPE, including respirator if required.
 - b. Wet the building material with amended-water.

- c. Minimize ACM disturbance during the removal process.
 - i. When feasible, use hand-tools instead of power tools.
 - ii. If power tools are necessary, use power tools with water-delivery and/or HEPA vacuum attachments if available.
 - iii. Remove building materials in whole pieces when possible (e.g. - remove whole floor tiles without further breaking)
- d. Place removed building materials in Asbestos Waste Bag.
- e. Before leaving the area, HEPA vacuum any debris, wet wipe the area, and HEPA vacuum the area a second time.
- f. Clean protective clothing and equipment/tools by HEPA vacuum, wet wipe, and HEPA vacuum a second time.
- g. Place all wet cleaning cloths/rags and disposable PPE (such as Tyvek Coveralls) in the Asbestos Waste Bag.
- h. Use HEPA vacuum to remove air from the Asbestos Waste Bag, secure bag by “goose-neck” twisting and tape. Place the bag in a second Asbestos Waste Bag and secure in the same manner.
- i. Perform joint visual clearance inspection with the Competent Person. Re-clean the area if necessary.
- j. Contact EH&S (619-594-6778 or ehsindustrialhygiene@sdsu.edu) to coordinate the disposal of the waste.

X. Emergency Response (Accidental ACM Disturbance)

Accidental ACM disturbances either by personnel or natural disasters (e.g.- earthquakes) are possible. These “fiber release” incidents can be categorized as:

■ Minor Fiber Release (< 3 square or linear feet of ACM)

- a) Stop working.
- b) Secure the area.
 - (1) Lock the door if possible or isolate the area with visual indicators such as cones/caution tape, and place “Keep Out” warning signage.
- c) Leave the area once secured.
- d) Notify Supervisor, Facilities Services - Work Control, and EH&S of the incident.
- e) Cleanup debris following the procedure in this program.
 - (1) Reminder - only Facilities Services Asbestos Certified Workers can clean up asbestos debris.

■ Major Fiber Release (>3 square or linear feet of ACM)

- a) Stop working.

- b) Secure the area.
 - (1) Lock the door if possible or isolate the area with visual indicators such as cones/caution tape, and place “Keep Out” warning signage.
- c) Leave the area once secured.
- d) Notify Supervisor, Facilities Services - Work Control, and EH&S of the incident.
- e) A licensed-abatement contractor will need to perform the debris cleanup.

Depending on the severity of the fiber release, EH&S may collect exposure air samples as a precautionary measure. Any personnel who were potentially overexposed to fibers may also be medically evaluated as a precaution and to document the incident.

XI. Other Hazards

Class III Asbestos Workers are reminded that in addition to Asbestos, many of their job tasks can result in the disturbance of and exposure to other hazards while working on Class III projects. These hazards included, but are not limited to:

A. Crystalline Silica

- Can be present in concrete, ceramic tiles, grouts/mortars, drywall, joint compounds.
- Use Wet Removal methods, HEPA vacuum, and appropriate PPE (*respiratory protection, glove, eye protection at minimum*)

B. Lead Paint

- Can be found in paint and primers <1978 and ceramic tile glazes.
- Use Wet Removal methods, HEPA vacuum, and appropriate PPE (*respiratory protection, glove, eye protection at minimum*)

C. Mold

- Spores are naturally occurring but when present in large numbers (visible mold) due to elevated humidity/water damage, take precautions when cleaning or removing items/surfaces with mold spotting.
- Use Wet Removal methods, HEPA vacuum, and appropriate PPE (*respiratory protection, glove, eye protection at minimum*)

D. Chemicals

- Chemical exposure can occur by way of encapsulation compounds, cleaning compounds, mastic removers, paints/primers, etc.
- Chemicals should only be used in areas with sufficient ventilation.

- Refer to the product's Safety Data Sheet for other Engineering Control, Work Practice, and PPE requirements. EH&S can also

E. Noise

- Power tools and equipment can generate loud noises. Workers are advised to wear adequate hearing protection when working with or near noise generating tools or equipment.

XII. Appendix A - Class III Asbestos Warning Sign



Asbestos

May Cause Cancer
Causes Damage to Lungs

Authorized Personnel Only

**WEAR RESPIRATORY PROTECTION
AND PROTECTIVE CLOTHING IN THIS
AREA**

For more information, please contact:
Environmental Health and Safety at (619) 594-6778
Facilities Services at (619) 594-4754

Attachment C

Class III Asbestos Work Permit and Competent Person Designation & Checklist

CLASS III ASBESTOS WORK PERMIT

This form must be completed prior to SDSU Facilities Services Asbestos Worker trained ("Class III") employees disturbing asbestos containing materials (ACM) for emergency repair/planned renovation projects. **In addition to completing this form, the Competent Person for the project must also complete a Competent Person Designation & Duties Checklist.**

This form must be submitted to EH&S (ehsindustrialhygiene@sdsu.edu or Hardy Tower Rm. 58) for preliminary approval. **The Competent Person is responsible for granting final approval after verifying that all Engineering, Work Practice, and PPE controls are in place.**

Anticipated Project Start Date:	
Anticipated Project Finish Date:	
Name of Competent Person:	
Names of Certified Class III Workers:	
Building Name & Room Number:	
ACM Being Disturbed: (e.g.- flooring, ceiling, insulation, etc.)	
Amount of ACM Being Disturbed: (how many sq ft or linear ft?)	
Work Order Number & Reason for Disturbing ACM: (e.g.- leak repair access? ACM damage cleanup? etc.)	
Engineering Controls:	☐ Full Containment ☐ Mini-enclosure ☐ Glove-bag ☐ Encapsulant ☐ Negative Air Machine ("HEPA Air Scrubber") ☐ Wet Removal ☐ HEPA Vacuum ☐ Critical barriers (e.g.- over vents, windows, etc.)
Work Practice Controls:	☐ Warning signage ☐ Secured access to work area ☐ Only AHERA Certified Asbestos Workers on project ☐ ACM Waste collection bags available ☐ Equipment/Decon Area
Personal Protection Equipment:	☐ Respirators ☐ Gloves ☐ Eye Protection ☐ Coveralls ("Tyvek") ☐ Head Protection ☐ Hearing Protection ☐ Foot Protection
EH&S Reviewed & Approved: (Sign & Date)	

COMPETENT PERSON DESIGNATION & CHECKLIST

This form must be completed prior to all SDSU Facilities Services Asbestos Worker trained ("Class III") emergency repair/planned renovation projects. This form must be completed by the Competent Person, who is responsible for overseeing the project and verifying that [all appropriate procedures are followed](#). If you have any questions or need assistance, contact EH&S at 619-594-6778 or ehsindustrialhygiene@sdsu.edu

Name of Competent Person:	
Project Start Date:	
Work Order Number & Scope of Project <i>(Location, ACM being disturbed, etc.)</i>	
Class III Asbestos Work Permit Obtained from EH&S?	☐ Yes ☐ No
Setup of regulated area, enclosure, and/or containment completed?	☐ Yes ☐ No
Warning Signage Posted?	☐ Yes ☐ No
Verified that employees are utilizing proper Engineering Controls for the project? <i>(e.g. - HEPA vacuum, Negative air Machine, low-pressure amended water sprayer, etc.)</i>	☐ Yes ☐ No
Verified that employees are following proper Work Practice Controls? <i>(e.g. - using wet removal methods, proper collection and labeling of waste, decontamination of tools, no food/drink, etc.)</i>	☐ Yes ☐ No
Verified that employees working within the regulated area are wearing appropriate Personal Protective Equipment (PPE)? <i>(e.g. - respiratory protection, protective clothing such as "Tyvek" coverall, gloves, etc.)</i>	☐ Yes ☐ No
Competent Person Approval: <i>(Sign & Date)</i>	

This form must be submitted to EH&S (ehsindustrialhygiene@sdsu.edu or Hardy Tower Rm. 58) at the completion of the project.

Attachment D

Asbestos Hazard Awareness Training

I. Training Requirements

Cal/OSHA Title 8 CCR 5208 and 8 CCR 1529 requires that asbestos awareness training is provided *annually* to employees who perform housekeeping, maintenance, and custodial during which employees may contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities. This awareness training must include information about:

- Methods of Recognizing Asbestos (including signs/labels)
- Methods of Recognizing Damaged Asbestos
- Health Effects Associated with Asbestos Exposure
- Relationship between Smoking & Asbestos Diseases
- Minimizing Exposure to Asbestos
- Appropriate Work Practices (including engineering controls, decontamination, and waste disposal)
- Emergency Procedures
- Respiratory Protection/Personal Protective Equipment (PPE)
- Medical Surveillance Program

II. SDSU Asbestos Awareness Training

Asbestos Awareness Training is provided at SDSU either in-person by SDSU EH&S (Asbestos Program Manager) or online (e.g.- CSU Learn). An SDSU email account is required to enroll in the online training.

To schedule in-person training or to enroll in the online training, contact EH&S (Asbestos Program Manager) at x4-6778 or ehsindustrialhygiene@sdsu.edu.