UCI Environmental Health & Safety

Asbestos Management Program

Responsible Administrator: Industrial Hygiene

Revised: March 2024

Summary: This section outlines the policy and procedures related to the Asbestos Program that is administered through the Environmental Health and Safety (EHS) Department.

1. Program Description

This University of California, Irvine (UC Irvine) Asbestos Management Program is to be implemented for the purpose of minimizing and/or eliminating the possibility of exposure to airborne asbestos fibers for UC Irvine building tenants, the public using UC Irvine buildings, tenant employees and maintenance workers. The UC Irvine Asbestos Management Program will remain in effect until all asbestos-containing materials (ACM) have been completely removed from all UC Irvine facilities.

2. Scope

The UC Irvine Asbestos Management Program is designed to minimize the possibility of accidental disturbance of asbestos- containing materials and to protect UC Irvine workers and building occupants who must work around these materials. The UC Irvine Asbestos Management Program includes the following items:

- A written plan,
- A warning and notification system,
- A periodic, routine in-house monitoring or inspection system,
- A work control/permit system to control activities that might disturb ACM,
- A provision for training campus employees who will come in contact with the materials and, if necessary,
- A medical screening program for campus custodial and maintenance employees who work around the materials and,
- A thorough documentation and recordkeeping system.

The UC Irvine Asbestos Management Program follows a systematic approach to document UC Irvine's intentions and to provide an inter- disciplinary approach to the protection of the building occupants and employees. Therefore, technical assistance and recommendations are obtained from relevant parties including Environmental Health and Safety (EHS), legal counsel, the building staff, Facilities Management (including maintenance and custodial personnel), an architectural/engineering or consulting firm, medical advisor, and possibly contractors and other periodically employed journeymen who may work in the campus facilities.

3. Definitions

Accredited Inspectors: Must be AHERA-trained as a Building Inspector/Management Planner. (EHS or EHS approved representative)

AHERA: Asbestos Hazard Emergency Response Act.

Asbestos: Includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.

Asbestos-Containing Material (ACM): Any material containing more than 1% asbestos.

Asbestos-Containing Construction Material (ACCM): Any manufactured construction material which contains more than one tenth of 1 percent asbestos by weight.

Asbestos Coordinator: The person that exercises control over management and recordkeeping functions relating to UC Irvine in which activities covered by this program take place. This person is an EHS employee.

Certified Asbestos Consultant: An asbestos consultant certified by the Division of Occupational Safety and Health (DOSH) pursuant to 8 CCR 1529, Section (q).

Encapsulation: Asbestos-containing material coated with a penetrating or bridging sealant to prevent release of asbestos fibers into the air.

Enclosure: Asbestos-containing material physically separated from the building environment by means of erecting permanent airtight barriers.

Deferred Action: In conjunction with a well-defined Asbestos Management Program, the actual removal, encapsulation, or enclosure is postponed to a later date. It should be noted that under this alternative the exposure potential remains and the potential liability to UC Irvine should be considered when deferring action.

Friable: Any material that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

Nonfriable: A material which, when dry, may not be crumbled, pulverized, or reduced to powder by hand pressure.

Asbestos Management Program: Specific procedures and practices developed for the interim control of asbestos containing materials in buildings until they are removed.

Removal: The asbestos-containing material is removed from UC Irvine buildings by qualified professionals and, if applicable, state licensed and trained personnel and disposed of by burial in a site specifically approved for asbestos.

Staff Support Personnel: Personnel include employees from Facilities Management staff or contractors acting on behalf of UC Irvine.

4. Responsibilities

The UC Irvine Asbestos Coordinator shall implement the asbestos control program. Duties shall include:

- Documenting, updating, publicizing, and disseminating the UC Irvine Asbestos Management Program.

- Maintaining the documented inventory of asbestos-containing materials and their locations.
- Managing the asbestos assessments, surveys and abatement plans.
- Participating in the development, review, and monitoring of program designs, and/or repair and
- alteration projects to ensure compliance with applicable standards and regulations when asbestos-containing materials are to be disturbed.
- Managing and/or performing periodic asbestos inspections and air monitoring.
- Coordination of the asbestos training if UC Irvine decides to train in-house crews for small asbestos abatement projects.
- Participating in the medical surveillance program when the safety and occupational health physician has determined this program should be established.
- Ensuring asbestos programs are documented and recordkeeping requirements comply with regulations.
    - Responsibility for recordkeeping including maintaining the official UC Irvine Asbestos Management Program, the master list of buildings, employee program and training records, and the master list of regulated areas.
- Seeking technical direction and assistance from a qualified industrial hygienist through Environmental Health and Safety (EHS) for program development and implementation, inspection, and personnel training.
- Ensuring that recommended procedures and safety precautions are followed before authorizing construction and maintenance work involving ACM.

4.0 Design & Construction Services (D&CS) - The duties should include:

- Advance partnering with the Asbestos Coordinator on all construction and renovation activities.

4.1 Facilities Management (FM)/Project Management and Project Assessment Team – The duties should include:

- Advance partnering with the Asbestos Coordinator on all construction, renovation, maintenance, or equipment repair work.

4.2 Facilities Management/Trades Group-The duties should include:

- Advance partnering with the Asbestos Coordinator on all construction, renovation, maintenance, or equipment repair work.
- Informing the Asbestos Coordinator when damage to ACM is observed or when debris needs to be cleaned up.
- Avoiding patch or repair of any damaged ACM until the Asbestos Coordinator has assessed the ACM.

5. Program Components

5.0 WARNINGS AND NOTIFICATION

The UC Irvine Asbestos Management Program has a provision for notifying UC Irvine building occupants of the presence of asbestos-containing materials. Assembly Bill 3713 (i.e., The Connelly Bill) passed in California requires building owners to notify employees of the presence of asbestos in their workplace. The notification is performed by the EHS staff.

EHS notifies building occupants of the presence of asbestos in buildings on an annual basis by sending out an Asbestos Notification document to employees. The Asbestos Notification is also posted on the EHS website. This notification follows the requirements of the Connelly Bill. The Asbestos Notification states that a campus-wide asbestos in buildings survey has been conducted and the results are available for review.

UC Irvine personnel often contact EHS to ask if a material contains asbestos in their building. EHS reviews existing data, may collect a sample of the material, and then notifies the building occupant of the results. EHS periodically holds open forums to notify building occupants of the presence of asbestos prior to the initiation of building renovation projects to answer any questions from the occupants.

5.0.1 CONTROLLED ACCESS AREAS

Another method used for warning and notification of building occupants is the use of warning labels or stickers in controlled areas:

Definition: Controlled area stickers are for those areas generally accessed by custodians, maintenance workers or contractors but not by the general public or students. Usually, the entrance to these areas is kept locked to prevent unauthorized personnel from entering. The sticker informs people that they are entering an area containing asbestos materials.

Purpose: The purpose of controlled area stickers is to inform workers, before they enter an area to perform any work, that their activities may disturb asbestos materials. The custodial staff, knowing that the area they are going to clean contains asbestos materials, will use proper techniques such as wet mopping and HEPA vacuuming. If a maintenance worker intends to work on equipment in a mechanical room, the sticker alerts the worker to the fact that he/she must find out if his/her work will disturb asbestos-containing materials. If this work includes removal or repair of asbestos- containing materials, the worker must obtain approval from the campus Asbestos Coordinator.

Placement: Controlled area stickers will be placed on all entrances to mechanical rooms, crawl spaces, attics, pipe chases, and pipe tunnels known to contain asbestos. In some cases, the entrance may be a regular door to a boiler room. But in other cases, the entrance may be a two-foot by two- foot panel accessing the bathroom pipe chase. The sticker should be placed on the door, so it is visible and easily read. The stickers will read: "Danger--asbestos, cancer and lung disease hazard. Authorized personnel only. Respirators and protective clothing are required in this area."

5.1 PERIODIC INSPECTION AND AIR MONITORING

An inspection of all recorded ACM will be conducted periodic surveillance to monitor the condition of the materials. This effort will help ensure that any ACM damage or deterioration is detected, and the proper preventive or corrective action is taken. It is an effort that is used to recognize a situation and avoid potential exposure. The inspection will comprise of a visual and physical evaluation of the ACM to determine its current condition and physical characteristics. Visual records may be used to enhance the value of the inspections. The inspection shall be conducted by the Asbestos Coordinator or others appointed by the Coordinator. The inspection must be done routinely to maintain consistency and continuity.

Air monitoring may be performed when deemed necessary. However, air monitoring is used only as a supplemental management tool and not as a replacement for the physical and visual inspection. Air monitoring can only detect an asbestos fiber release after it has occurred and therefore, will not serve as an effective preventive measure. Baseline airborne asbestos fiber levels should be established; a representative number of air samples should be collected throughout each building during normal operating hours. Subsequent air monitoring should be conducted if there is a release or suspected release of asbestos fibers. Air monitoring will be conducted by EHS staff or their qualified EHS representative.

5.1.1 PERIODIC INSPECTION

The accredited inspectors should:

- Inspect all friable ACMs and non-friable ACMs for damage or deterioration routinely and report findings to the Asbestos Coordinator.
- Note, assess, and document any changes in the ACM's condition.
- Photographs of damaged materials should be taken for recordkeeping purposes.
- Investigate the source of debris found by custodial or other staff support personnel.

The Staff Support Personnel (such as Facilities Management staff) and building occupants should:

- Inform the Asbestos Coordinator when damage to the ACM is observed or when debris needs to be cleaned up.

5.2 PERIODIC AIR MONITORING - Optional EHS staff may:

- Conduct non-aggressive air sampling to establish baseline airborne fiber levels. A representative number of air samples should be collected from each building, and/or
- Collect air samples if there is a release or suspected release of asbestos fibers in an area.

This O&M program should continue until all ACM is removed. The O&M program may need to be altered if the ACM is enclosed or encapsulated.

5.2 WORK CONTROL / PERMIT SYSTEM

The efficacy of the Asbestos Management Program is strengthened with the implementation of a Work Control/Permit System. This system ensures proper guidance for activities or projects that might disturb ACMs by requiring a detailed analysis of the scope of the project. The system also necessitates active involvement of the UC Irvine Asbestos Coordinator and other EHS stakeholders by requiring collaboration from the project initiator. The success of the system depends on its activation during project planning.

The system requires a collaboration with the EHS Asbestos Coordinator in the planning stages of any project. The collaboration addresses the schedule and location of the project, a description of the work, and its potential to affect ACM. This procedure demands that the project manager research existing records **and additionally** request the assistance of EHS to identify and locate ACM. EHS maintains a database of known ACM locations. Furthermore, EHS is involved with the authorization process and is able to impose conditions with respect to health and safety, suggest work practices, and recommend personal protective equipment.

5.3 O&M PROCEDURES/ WORK PRACTICES

Currently, there is a limited number of UC Irvine personnel that are trained and authorized to perform O&M procedures and work practices. Nonetheless, there may be contract personnel engaged to perform O&M procedures and work practices, and they would be required to follow the elements of this section, as applicable, in addition to all applicable federal, state, and local regulations, standards, and codes governing asbestos management.

Some UC Irvine Facilities Management and Telecom personnel are trained and authorized to handle, to a limited degree, asbestos-adjacent items, such as ceiling panels, as described in section 5.4.5.

The O&M procedures are designed to structure a program for handling specific types of asbestos- containing materials (ACM) and activity areas. The purpose of the program is to minimize the exposure potential of a specific type of ACM or activity area by addressing and organizing special procedures to: 1) clean up and properly dispose of asbestos fibers previously released, 2) repair damaged ACM, 3) prevent further disturbance or damage of the ACM, and 4) monitor conditions until removal.

Most areas with ACM can be cleaned by wet methods and/or HEPA-vacuuming methods. As different circumstances arise, modifications may be necessary. Regardless of the circumstances, prudent safety precautions should be used. Cleaning and/or removal of ACM should never be performed without a NIOSH-approved respirator and wet methods of cleaning or removal.

When work involves removal of ACM, personnel should follow emergency abatement techniques. These activities shall not take place unless authorized by EHS. All removal work shall be performed by AHERA-trained personnel wearing respirators that provide adequate protection from airborne asbestos fiber concentrations existing in the work area. The removal work shall be limited to less than three (<3) square feet of area.

The following sections (5.3.1 – 5.3.5) describe interim repair and control techniques to be employed by qualified personnel when asbestos-containing materials are damaged or deteriorated. Because of the high costs associated with these techniques, they shall generally be considered as temporary control techniques rather than alternatives to removal. When these repair practices are conducted, workers should:

- Wear full-body disposable protective clothing and a powered air-purifying respirator or, at a minimum, a half-face, dual cartridge respirator equipped with HEPA filters and NIOSH-approved for protection from asbestos fibers.
- Isolate the work area with barriers and warning signs.
- Seal off all HVAC ducts, windows and any other sources of air circulation through the work area.
- Pre-clean the work area with wet-cleaning and/or HEPA-vacuuming techniques. Vacuum all the carpets throughout the building with a High Efficiency Particulate Air (HEPA)-filtered vacuum cleaner; NEVER use a conventional cleaner. HEPA-vacuum all curtains, books and other stationary items. Discard vacuum bags and filters in sealed plastic bags according to EPA regulations for disposal of asbestos waste. Mop all non- carpeted floors with wet mops. Wipe all shelves and other horizontal surfaces with damp cloths. Use a mist spray bottle to keep cloths damp. Discard cloths and mop heads in sealed plastic bags according to EPA regulations for disposal of asbestos waste.
- Place a layer of six-mil polyethylene plastic on the floor beneath the item to be repaired/replaced. The plastic should be one foot in length and width for each foot above the floor where the work is to be conducted, but never less than six feet by six feet. Where this work area is confined by walls, workers should extend the plastic up the wall at least one foot and seal the top edge with duct tape.
- Thoroughly dampen all debris with amended water from the cleanup and repair work, seal the debris in two six-mil polyethylene bags (or two layers of six-mil plastic sheeting), label properly per OSHA, EPA and DOT and dispose of the bags through the EHS Hazardous Waste Facility located on the UC Irvine campus. If an outside contractor conducts the cleanup, it is that contractor's responsibility to dispose of the debris waste according to hazardous waste disposal regulations.

When performing the repair work, workers will take precautions to minimize disturbance of the asbestos-containing material.

After performing the repair work, workers will clean the floor plastic with wet and/or vacuuming techniques and dispose of with the same procedures accorded asbestos-containing material.

5.3.1 PIPE INSULATION AND MUDDED JOINT FITTINGS

Work area preparation and cleaning shall be in accordance with the requirements previously listed in this section.

Repair minor dents and tears in the protective jacket with duct tape or bridging encapsulant with glass cloth reinforcement. Duct tape should only be used for temporary control until the bridging encapsulant is installed.

If the glove bag removal is not feasible, wrap uncovered pipe insulations with protective jackets consisting of bridging encapsulant with glass cloth reinforcement.

Wrap moderately water damaged or contact damaged pipe insulations with new protective jackets or reinsulate affected areas. The source of the water damage must be eliminated. More severely damaged pipe insulations may require removal by glove or gross containment techniques. Request authorization for removal from EHS.

Monitor the condition of the asbestos-containing materials and non-asbestos-containing materials. This will greatly assist in routine monitoring and detection of potential ACM deterioration.

5.3.2 FIREPROOFING

Work area preparation and cleaning shall be in accordance with the requirements listed previously.

On a temporary basis, the exposure potential of fireproofing can be reduced by constructing airtight walls and ceilings around the ACM, enclosing the exposed area. This process will disturb the ACM through contact, vibration, etc., so the same isolation and control techniques used for removal projects must be incorporated into this type of work. An enclosure project would generally be applicable only to a small area. Enclosure of a large area often requires such effort and expense that removal is a more cost effective and practical solution.

Fireproofing may be sprayed with an encapsulant if the fireproofing is well bonded to its substrate and is less than one inch thick. This is to be considered a temporary control measure. As with enclosure, isolation and control techniques used for removal projects must be incorporated into encapsulation work. Test results have shown that, due to the impact of the spray, spraying with an encapsulant can entrain into the air more fibers than a gross wet removal project.

If the fireproofing has localized water damage and/or is becoming delaminated in a small area, spot removal of the damaged material may be necessary. If the remaining fireproofing is well bonded to its substrate, it can then be encapsulated; however, the source of the water must be eliminated.

If work involves hanging ducts, conduit or pipes, etc., from surfaces sprayed with fireproofing, the asbestos material around the area may have to be abated prior to the work. Avoid disturbing fireproofing whenever possible.

5.3.3 ACOUSTICAL PLASTERS (SPRAYED-ON OR TROWELED-ON)

Work area preparation and cleaning shall be in accordance with the requirements listed previously.

If the plaster is in good condition, with no delamination, deterioration, or signs of water damage, it should be left alone but carefully monitored for signs of change in status.

If the plaster is water damaged and/or is becoming delaminated from the substrate, it should be removed rather than encapsulated. Encapsulation can make the condition worse by increasing the rate of delamination. The source of the water damage must be eliminated. Request authorization for removal from EHS.

Avoid disturbing acoustical plaster by not hanging plants, drilling holes in the ceiling, and moving furniture, etc. Work area preparation and cleanup for all types of maintenance and repair work shall be in accordance with the requirements listed previously in this section. When the plaster must be disturbed, mist the affected area with amended water (soap and water solution) and use a HEPA vacuum to collect fibers being released.

5.3.4 MISCELLANEOUS/CEMENTITIOUS MATERIALS

Fiber released from cementitious (nonfriable) materials is normally extremely low unless these materials are broken, drilled, sanded, or otherwise disturbed. During disturbance, the materials should be thoroughly dampened followed by a thorough HEPA equipped vacuuming to collect fibers being released. Follow the work area preparation and cleanup requirements previously listed. Some examples of cementitious and miscellaneous nonfriable materials that may contain asbestos are:

Floor tiles	- Tile underlay
Wall plasters	- Transite pipes
Scratch coats	- Drywall plaster
Transite paneling	- Linoleum
Exterior siding	- Roofing felts

Friction products (brake linings, clutches, etc.)

5.3.5 ASBESTOS CONTAINING CEILING PANELS

Work area preparation and cleaning shall be in accordance with the requirements listed previously.

UC Irvine personnel in Facilities Management and Telecommunications sometimes displace asbestos containing ceiling panels. Only personnel trained in Asbestos Awareness and equipped with proper respiratory protection (issued by EHS) and disposable coveralls should displace these panels. Asbestos ceiling panels should be carefully lifted out of the T-bar and slid gently over on top of the adjacent ceiling panels without breaking or tipping the panel. Caution should be taken to make sure that the ceiling panel covers are not damaged by abrasion. If pieces of the ceiling panel fall to the ground, carefully wipe the area with a damp cloth and place large debris of the panel in a sealed plastic bag and notify EHS to pick up the debris for proper disposal.

When moving ceiling panels in occupied areas, caution should be taken not to alarm the building occupants of asbestos hazards. When moving asbestos-containing ceiling panels in small, enclosed offices, ask the occupant to leave the space until the required work is complete.

If many ceiling panels are damaged during the controlled displacement, notify EHS so that an appropriate response strategy is developed and implemented.

6. Reporting Requirements

Notification to regulatory agencies is generally made by the asbestos contractor. Notification to affected UC Irvine personnel is facilitated by the asbestos coordinator. All notifications shall be performed in strict accordance with all applicable federal, state, and local regulations, standards, and codes governing asbestos abatement, and any other trade work done in conjunction with the abatement.

The most recent editions of any relevant regulation, standard, document, or code shall be in effect. Where conflict among the requirements or with these specifications exists, the most stringent requirements shall apply.

7. References

All work shall be performed in strict accordance with all applicable federal, state, and local regulations, standards, and codes governing asbestos abatement, and any other trade work done in conjunction with the abatement.

The most recent editions of any relevant regulation, standard, document, or code shall be in effect. Where conflict among the requirements or with these specifications exists, the most stringent requirements shall apply.

Such documents include, but are not limited to, the following:

- U.S. Department of Labor, Occupational Safety and Health Administration (OSHA)
  - Title 29 of the Code of Federal Regulations, Part 1926.1101, Asbestos Construction Standard (29 CFR 1926.1101)
  - Asbestos General Industry Standard (29 CFR 1910.1001)
  - Personal Protective Equipment (29 CFR 1926, Subpart E)
  - Hazard Communication (29 CFR 1910.1200)
  - Specifications for Accident Prevention, Signs, and Tags (29 CFR 1910.145)

- California Division of Occupational Safety and Health (Cal/OSHA)
  - Title 8 of the California Code of Regulations, General Industry Safety Orders, Section 5208 - Asbestos Standard (8 CCR GISO 5208) and Construction 8 CCR 1529
  - Registration for Asbestos-Related Work (8 CCR 341.6 through 341.14)
  - Respiratory Protective Equipment Standard (8 CCR GISO 5144)
  - Hazard Communication Standard (8 CCR GISO 5194)
  - Accident Prevention Program (8 CCR GISO 3203)
  - Access to Employee Exposure and Medical Records (8 CCR GISO 3204)
  - Accident Prevention Signs (8 CCR GISO 6003)
  - Emergency Action Plan (8 CCR GISO 3220)
  - Fire Prevention Plan (8 CCR GISO 3221)
  - Electrical Safety Orders (8 CCR Chapter 4, Subchapter 5)
  - Construction Safety Orders (8 CCR Chapter 4, Subchapter 4)

- U.S. Environmental Protection Agency (EPA) National Emissions Standard for Hazardous Air Pollutants (NESHAP) Asbestos Regulation (40 CFR 61, Subparts A, B, and M)

- South Coast Air Quality Management District (SCAQMD) Rule 1403, Asbestos Emissions from Demolition/Renovation activities

- American National Standards Institute (ANSI)
  - Practices for Respiratory Protection (ANSI Standard Z88.2-1980)
  - Fundamentals Governing the Design and Operation of Local Exhaust Systems (ANSI Z9.2-79)

- National Fire Protection Association (NFPA)
  - National Electric Code (No. 70-1984)
  - Fire Extinguishers (No. 10-1984)

- California Department of Health Services (DHS), Title 22, Division 4, Chapter 30 of the California Code of Regulations - Minimum Standards for Management of Hazardous and Extremely Hazardous Waste

8. Recordkeeping

The original of all documents pertaining to this Asbestos Management Program will be kept on file at EHS. The standard documents to be kept on file will be:

- UC Irvine Asbestos Management Program - Original
- Reports of Survey and Laboratory Analyses - Original Records of Areas Removed or Encapsulated
- Disposal Records Verification

9. Summary of ACM on Campus

- Consult with EHS for the most updated summary.