

UWM Asbestos Management Program

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Purpose

The purpose of this program is to summarize UWM's asbestos management procedures for the University community. The goal of a management plan is to prevent the release of asbestos fibers until the asbestos-containing material (ACM) in a building is scheduled to be professionally removed in advance of maintenance, renovation, or demolition activities. This plan outlines the university's procedures and best practices regarding the day-to-day management as asbestos and the planned or accidental disturbance of asbestos.

Contacts

University Safety and Assurances (US&A), along with Facility Services offer the following services for the UWM Asbestos Management Program:

- Asbestos Awareness Training – Provided by US&A
 - Awareness training for Maintenance/Trades who may be exposed to asbestos on the job.
 - On-line awareness refresher training – annually. Available through University Canvas or in-person, contact safety-office@uwm.edu for more information.
- Sample collection and analysis of building materials for asbestos content.
 - Facility Services, Asbestos Inspector Supervisor
- Project oversight of renovation projects involving asbestos
 - Facility Services, Asbestos Inspector Supervisor
- Operations and Maintenance (O&M) of Asbestos Containing Material (ACM)
 - Sub-contracted
- Liaison with regulatory agencies, State agencies, and the Campus Community
 - US&A and Facility Services
- Involving asbestos management issues
 - Facility Services, Asbestos Inspector Supervisor

Introduction

Asbestos is a general name for a group of naturally occurring minerals composed of small fibers. These fibers are very strong and resistant to heat and chemicals. Because of its properties, it was commonly used in buildings constructed prior to 1980, and was added to building materials as spray-on fireproofing, floor tiles, ceiling tiles, etc. These types of building materials are presumed to contain asbestos unless testing has been proven otherwise.

When asbestos is disturbed and fibers are released, it can enter the body through inhalation or ingestion. Exposure to asbestos fibers can cause several diseases including lung cancer. The symptoms of asbestos induced diseases generally do not appear for 20+ years after initial exposure. The documented health effects of occupational exposure to asbestos fibers is why this material is strictly regulated.

Facility Services ensures a safe “in-place” management system of asbestos, and verifies that all abatement projects follow local, state, and federal asbestos management regulations.

Friable asbestos is defined as a material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. Friable material is the hazardous form of ACM. Most uncovered, dilapidate thermal system insulation is in this category.



Un-milled Mineral Asbestos
(100% Chrysotile)



Example of Friable Asbestos Pipe Insulation
(Sample contains 14% Chrysotile and 10% Amosite Asbestos)

Non-friable asbestos is usually found bounded into other materials (floor tile). Its fibers are harder to break down into powder, but can still be released by cutting, grinding, or sanding.

Examples of materials that may contain asbestos:

- Acoustical material (e.g., plaster, transite board, etc.)
- Adhesives, caulks, glazing, mastics
- Asbestos cement pipe
- Boiler/Furnace insulation and breeching
- Brake pads/Clutch disks
- Chalkboards
- Cooling towers
- Electrical insulation and wiring
- Fire-proofing material
- Fire-protective clothing
- Fire-related material and fire-resistant drywall
- Floor tile (especially 9-inch tile) and tile mastic
- Hair dryers (insulation material)
- Heating pads
- HVAC duct connectors
- Joint/spackling compounds
- Lab hoods, benches, ovens, gloves, insulating material
- Vinyl sheet flooring
- Roofing materials (e.g., shingles and adhesives)
- Siding, roofing paper, shingles, and adhesives
- Surfacing material on walls or ceilings
- Textured surfacing material
- Textured paints and coatings
- Thermal System Insulation (TSI) (e.g., pipe insulation, HVAC duct insulation)
- Theatrical lamps (insulation)
- Transite panels (e.g., garage door panels, fume hood walls, fire walls, acoustical board, etc.)

Asbestos Management

The mere presence of asbestos in a building does not mean that the health of the building occupants is endangered. When left intact and undisturbed, asbestos-containing materials do not pose a health risk to building occupants.

There is, however, potential for exposure when the material becomes damaged or disturbed. Unauthorized removal or disturbance of asbestos is not only dangerous, but also illegal. When materials are exposed or disturbed, asbestos fibers can become airborne and pose an inhalation hazard. Studies have shown that individuals exposed to asbestos fibers over a long period of time may develop lung cancer, Asbestosis (a fibrotic scarring of the lungs), and Mesothelioma (a cancer of the lining of the chest or abdominal cavity). The typical latency period for these diseases range from 20+ years.

UWM follows a practice endorsed by the US EPA known as management (of asbestos) in-place. EPA only requires asbestos removal in order to prevent public exposure to asbestos, such as during building renovation or demolition. UWM has maintained an effective in-place management program for many years. This program ensures that the day-to-day management of the building minimizes the release of asbestos fibers into the air, and ensures that when fibers are released, either accidentally or intentionally, proper control and clean-up procedures are implemented.

Campus Inventory

Facility Services maintains an inventory of asbestos containing building materials at UWM. Questions regarding this inventory should be directed to the Asbestos Inspector Supervisor.

In general, any building constructed before 1980 may have asbestos containing building material. Testing will need to be confirm regardless of age or date of construction/renovation unless ample bulk testing history is available.

The following buildings are considered asbestos-free:

- Architecture and Urban Planning
- Cambridge Commons
- Great Lakes Research Facility, 2014 edition
- Greene Museum
- Innovation Campus Accelerator Building
- Kenilworth
- Lapham, north, south and west wings
- Lubar
- Kenwood Interdisciplinary Research Building
- Pavilion
- River View
- Sandburg East
- Zilber

At UWM, bulk samples of suspect ACM have been taken in campus buildings since 1984; over 3,000 records are on file. The inventory is over 100 pages long and is cataloged by building.

Bulk sample results are usually received within 7-10 days. Results can be obtained in as little as 24 hours if prior notice is given to the laboratory. Expedited analysis costs extra. Any material with greater (>) than 1% asbestos is considered ACM. Materials with less (<) than 1% may still be regulated regarding

right-to-know requirements, work practice and exposure control techniques. Only materials with no trace of asbestos, are considered asbestos-free.

Control measures to prevent asbestos exposure take effect when any work is conducted on ACM. Regulated areas are established to demarcate locations where a reasonable possibility airborne level of asbestos may exceed the OSHA Permissible Exposure Limit (PEL) of 0.1 asbestos fibers per cubic centimeter (f/cc) of air.

Not all materials in campus buildings have been tested or labeled. The OSHA standard requires that a building material is presumed to contain asbestos until proven otherwise. If you don't have documentation that it is asbestos-free, it needs to be tested before disturbance.

If you are unsure if a material contains asbestos or not, contact the Asbestos Inspector Supervisor. That person has access to the **Wisconsin Asbestos and Lead Management System (WALMS) database**. This is the current database that tracks abatement activities and sampling results for all campus buildings. Before any building construction/remodeling, this database should be used as a resource. The Asbestos Inspector Supervisor is also the only Certified Asbestos Supervisor at UWM who is qualified to work with abatement companies, take samples of suspicious materials, and enter/update information into the WALMS database.

Reducing exposure potential when working with or around known asbestos-containing materials

If your duties require you to perform maintenance or custodial work around installed asbestos products, learn, and follow these general precautions:

- Check the Work Order to verify if asbestos is in the vicinity of your work area.
- Have the Asbestos Inspector Supervisor check the WALMS database for asbestos in your work area.
 - You have the right to have results resampled. Contact Facilities to submit a work order.
- Never cut through pipe insulation.
- Never drill holes or hammer nails in ceilings or surfaced walls.
- Don't remove ceiling tiles or light fixtures from suspended ceiling grids.
- Avoid scrapping floor tiles, walls, or ductwork.
- Don't dust, sweep up debris or vacuum areas that may contain asbestos contaminated waste.
- If you find any suspect material that may contain asbestos, contact the Asbestos Inspector Supervisor.
- Heed the labels on asbestos products or waste that warn against causing dust or breathing fibers.
- Observe the following care measures for asbestos-containing flooring material:
 - Do not sand asbestos-containing floor material.
 - Use low abrasion pads at speeds lower than 300 rpm and wet methods for stripping finishes.
 - Perform burnishing or dry buffing only on asbestos-containing flooring which has sufficient finish so that the pad cannot contact the asbestos-containing floor.
- Follow the Standard Operating Procedures for Work Procedures for Areas Above Ceiling Tiles and Emergency Work for areas Above Ceiling Tiles.

- Slowly lift each ceiling tile end up independently and check area above with a flashlight. If you do not see any possible ACM, carefully slide the ceiling tile away from the opening. With the flashlight in hand, slowly go up the ladder to allow your head into the ceiling, and perform a more thorough visual inspection.

Unintentional Asbestos Disturbance/Release

Asbestos fibers pose little hazard if they remain bonded together. However, disturbing ACM may release fibers small enough to be inhaled.

If an ACM or PACM material is disturbed:

- Clear the area. Do not through debris in a trash receptacle.
 - Notify all the people in the immediate area. Any individuals potentially exposed or involved in the incident should remain nearby (but outside the room of the incident) for further evaluation.
- Close-off access to the room immediately.
- Contact your supervisor immediately.
- Fill out an "Accident Report" immediately.
- Notify University Safety and Assurances (414-229-6339, 414-430-7507) immediately.
- Contact the Asbestos Inspector Supervisor to schedule asbestos sampling/abatement.
 - Only the Asbestos Inspector Supervisor is authorized to collect samples for testing.

Training

Training is required for all employees who perform Class I through IV asbestos work. No untrained workers are to disturb any amount of asbestos. The following are the basic training requirements for the different types of asbestos work:

OSHA categorized abatement projects into four (4) classes:

- **Class I:** The most potentially hazardous class of abatement. The removal of thermal system insulation (TSI) and sprayed-on or troweled on ACM and presumed asbestos-containing material (PACM). Training for Class I work is either 32 hours (asbestos worker), or 40 hours (contractor/supervisor and function as a competent person). An annual 8-hour refresher course is required for both the worker and the contractor/supervisor competent person level of training.
- **Class II:** The removal of other types of ACM other than TSI or surfacing material. This includes the removal of asbestos-containing wallboard, floor tile and sheeting, siding and roofing shingles, and construction mastics. Training for Class II work may be the same as for Class I work or may be 8 hours of task specific training which includes hands-on training. A separate 12 hour course for flooring removal that complies with the Flooring Industry Settlement Agreement is also offered. An annual refresher is required for all workers.
- **Class III:** Repair and maintenance operations. Class III projects are formally referred to as Operations and Maintenance (O&M) activities, or small-scaled/short duration. Training for Class III work is 16 hours with an annual 4-hour refresher course.

- **Class IV:** Asbestos work which involves maintenance and custodial activities during which employees contact, but do not disturb ACM and PACM. Initial 2-hour asbestos awareness with an annual refresher is required for all custodial, maintenance, trades personnel who work in buildings that contain asbestos.

Asbestos Abatement

Asbestos abatement is a routine occurrence in a facility with the magnitude and complexity of UWM. Most often asbestos is removed during maintenance activities, or during remodeling projects. The majority of projects at UWM are regarded as Class III.

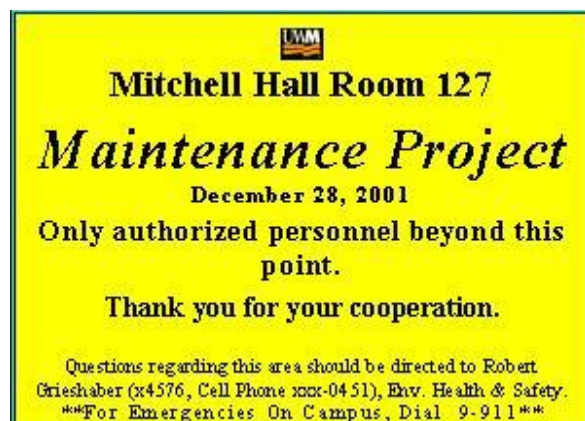
During larger or more complex projects, negative pressure enclosures are constructed to prevent the release of any asbestos fiber into the occupied areas of the building.



Example of a negative pressure enclosure for a Class I abatement project in a campus mechanical room. The large, box-like object in the center, is a HEPA filtered negative pressure machine. This device both filters the air inside the enclosure of any asbestos fibers that may be liberated during the removal process, and it prevents the release of any fibers from escaping the enclosure.

Air monitoring is performed before, during, and after such projects to insure that air quality criteria established by the EPA, OSHA, and DILHR is maintained. Contractors also monitor their own employees involved in abatement activities.

All projects are conducted to minimize disruption to campus activities. All asbestos abatement projects are clearly labeled to indicate to the campus community that such work is going on.



Only wet methods or a HEPA filtered vacuum may be used for asbestos clean-up activities. Keeping a material wet ensures that the asbestos does not become airborne. Preventing the material from becoming a dust is a critical exposure control measure. Respiratory protection is required when working with asbestos.

State law requires that projects involving more than 160 square feet or 260 linear feet of ACM, require at least a 10-day notification before the start of the abatement. A Class III project is generally defined as being no more than 3 small pipe fittings, or 9 square feet of ACM (floor tile). Other examples include: amounts that can be removed in a single, small glove-bag; removing a gasket on a valve; drilling or cutting a hole into a wall coated with asbestos; or minor repairs to damaged ACM. More extensive projects are NOT considered Class III.

ACM waste must be properly disposed of. On Campus, University Safety & Assurances' Environmental Protection staff can handle hazardous materials, including asbestos. ACM they can handle include: some building materials, and articles such as thermal gloves and theater lamps.

Air Sampling Methods

Air sampling is conducted before and during abatement, to monitor workers' exposure, and to ensure that the site has been adequately cleaned (post-abatement, or clearance monitoring). Two methods are used to analyze air samples: Phase Contrast Microscopy (PCM) and Transmission Electron Microscopy (TEM).

- PCM – Is inexpensive and has wide-spread availability, has minimal sample preparation, and offers quick results. PCM is also the OSHA analytical method. The disadvantages are that it is not asbestos specific, and fibers smaller than a given size are not counted.
- TEM – Unlike PCM, TEM is specific for asbestos, and even the smallest of fibers are counted. The disadvantages are the expensive costs and slow turnaround times.

The clearance level for PCM analysis is 0.01 fiber/cubic centimeter of air (f/cc). Levels above this indicate the need for further cleaning or analysis with TEM to confirm the presence of asbestos fibers opposed to non-asbestos fibers present in the sample. Clearance levels of TEM analysis are less than 70 structures per square millimeter of filter area. The current OSHA Permissible Exposure Limit (PEL-TWA) for asbestos is 0.1 f/cc for an 8-hour day.

National Institute for Occupational Safety and Health (NIOSH) has NOT established an exposure limit for asbestos, since NIOSH has not identified thresholds for carcinogens that will protect 100% of the population. NIOSH recommends that occupational exposure to carcinogens, including asbestos fibers, be limited to the lowest feasible concentration.



Example of a personal sampling pump with a 25 mm MCE filter used to monitor air quality during asbestos abatement projects.

Respiratory Protection

All university employees must be provided with respirators when assigned to work in Class I-III asbestos work or Class IV work that takes place in a regulated area. The university maintains a respiratory protection program for its employees in accordance with OSHA 29 CFR 1910.134. Contact University Safety and Assurances for information on UWM's respirator program.

Housekeeping

All surfaces shall be maintained as free as practicable of ACM waste, debris, and accompanying dust.

Surfaces contaminated with asbestos may not be cleaned using compressed air. Do no drill holes, hammer nails into, hang objects from, or move furniture that damages ACM or PACM. Waste, debris, and accompanying surface dust in areas containing accessible and/or visibly deteriorated ACM, shall not be dusted, swept, shoveled dry, or vacuumed without using a HEPA filter.

All vinyl and asphalt flooring should be treated as ACM unless evidence exists to prove otherwise. The following restrictions exist for the care of ACM flooring: no sanding is permitted, stripping should be conducted using low abrasion pads at speeds lower than 200 rpm with wet methods, and burnishing or dry buffing may be performed only on flooring which has sufficient finish so the pad doesn't contact the flooring material. Broken ACM floor tiles should only be removed by properly trained personnel.

Ceiling tiles should not be moved or replaced until it is confirmed that they are not ACM. Only trained personnel can replace, decontaminate, or otherwise disturb ACM ceiling tiles or tiles that may be contaminated by ACM surfacing material above.

Medical Surveillance

The university maintains a medical surveillance program for all employees who are engaged in Class I-III work for a combined total of more than 30 days per year or are exposed at or above the permissible exposure limit. This medical surveillance consists of a review of medical and work history, a physical exam directed to the pulmonary and gastrointestinal systems, a chest roentgenogram interpreted by a NIOSH certified B reader, and pulmonary function tests. This exam is offered annually at no charge to affected employees. For employees otherwise required to wear a respirator, a physician will determine that the employees are able to perform the work and use the equipment. For further information on medical surveillance, contact your supervisor or University Safety and Assurances, 430-7507.