

Asbestos Management Plan

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Applies To: Faculty, Staff, Student employees, Others

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Glossary of Terms

ACM: Asbestos-containing materials

BEC: Building and Emergency Contact

EHS: Division of Environmental Health and Safety

EPA: U.S. Environmental Protection Agency

HEPA: High-efficiency particulate air

PACM: Presumed asbestos-containing materials

TSI: Thermal system insulation

UPDC: University Planning, Design and Construction

I. Purpose

This plan has been developed to protect the health and safety of the University of Connecticut's employees, building occupants and visitors from potential exposure to asbestos and is in accordance with applicable USEPA, OSHA and State of Connecticut asbestos regulations. Accordingly, the purpose of this plan is to establish a pro-active, in-place management program for recognizing, controlling and mitigating potential asbestos hazards at the University of Connecticut (UConn).

II. Scope

This program applies to all faculty, staff and student employees at the Storrs, regional and Law School campuses.

III. Policy Statement

As stated in the University's [Health and Safety Policy](#), the University of Connecticut is committed to providing a healthful and safe environment for all activities under its jurisdiction and complying with federal and state health and safety standards. As such, to minimize exposures to asbestos and to comply with asbestos regulations, this Asbestos Management Plan shall be implemented at the University of Connecticut.

IV. Enforcement

Violations of this plan may result in appropriate disciplinary measures in accordance with University Laws and By-Laws, General Rules of Conduct for All University Employees, applicable collective bargaining agreements, and the University of Connecticut Student Conduct Code.

V. Definitions

Airtight barriers: means an engineering control that prevents dust generated by an asbestos operation from escaping into the surrounding environment. These can be made of polyethylene sheeting, a manufactured glovebag, or some other fixture or material that achieves the goal of capturing dust at the point of the disturbance or preventing its release to the surrounding environment. Connecticut abatement standards require airtight barriers for spot repairs.

Asbestos Abatement: means any activities intended to prevent the uncontrolled release of asbestos from a building material, including removal, repair, enclosure or encapsulation.

Asbestos Abatement project: in Connecticut means the abatement of ACM or PACM in amounts greater than 3 square feet or 3 linear feet.

Asbestos-Containing Material (ACM): any material containing more than one percent (>1%) asbestos.

Asbestos Coordinators: designated staff that serve as departmental asbestos contacts and abatement project coordinators and have been charged by their department and authorized by EHS to conduct the asbestos-related duties described in Section V. Depending on the type of asbestos activities adopted by a department, the Asbestos Coordinators may or may not oversee Class III and/or Class IV employees. The Facilities Operations & Building Services (Facilities) Asbestos Coordinator has the additional duty of maintaining historical files of all inspections, bulk sampling and abatement projects for all University buildings and integrating this data into the University's asbestos inspection report database.

Class I Asbestos Work: the removal of thermal system insulation and/or surfacing material (ACM or PACM)

Class II Asbestos Work: the removal of any ACM which is not Class I. Examples include, but are not limited to, floor tile, ceiling tiles, glues/mastics, wallboard and joint compounds, gaskets, linoleum, and Transite® board.

Class III Asbestos Work: repair and maintenance operations where asbestos is likely to be disturbed (see the definition of "disturbance").

Class IV Asbestos Work: Maintenance and custodial construction activities during which employees contact but do not disturb ACM or PACM, and activities to clean up dust, waste and debris resulting from Class I, II, or III activities.

Competent Person: means, in addition to the definition in OSHA's Construction Standard, 1926.32 (f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure and who has the authority to take prompt corrective measures to eliminate them. For competent persons of Class I and Class II work, training must meet the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor, or its equivalent. For Class III and Class IV work, training of competent persons must be in a manner consistent with EPA

requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92 (a)(2) (Attending an Asbestos Operations and Maintenance training course is an option) .

Contractor: Any person, business entity or organization that provides goods, materials or services commissioned and under contract for the University, other than under a contract of employment – for example construction/renovation work, building/maintenance work, custodial services, equipment service and installation, and technology and telecom work.

Contractor EHS Manual: the document that stipulates the University of Connecticut Environmental, Health, and Safety (EHS) Requirements for Construction, Service, and Maintenance Contractors. The document is available online at: http://www.ehs.uconn.edu/ppp/Contractor_EHS_Manual.pdf.

Disturbance: is defined by OSHA to mean activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. Disturbance includes cutting away small amounts of ACM or PACM, no greater than the amount which can be contained in one standard size glove bag or waste bag in order to access a building component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width. (See definition of “spot repair.”)

Excursion Limit (EL): A level of airborne fibers specified by OSHA as a short term excursion level. It is currently 1.0 fiber per centimeter (f/cc) of air, 30-minute time-weighted average, as measured by phase contrast microscopy.

Friable Asbestos-Containing Material: Any material that contains more than 1% asbestos and can be crumbled, pulverized, or reduced to powder by hand pressure when dry. Connecticut State regulations concerning asbestos includes in this definition materials that were non-friable at the time of manufacture but that have deteriorated or delaminated in place to the extent that they can release asbestos fibers when physically contacted or eroded by air or water.

Glovebag: means not more than a 60 x 60 inch impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which material and tools may be handled.

HEPA vacuum: means a vacuum cleaner which has been designed with a high-efficiency particulate air (HEPA) filter as the last stage of filtration. A HEPA filter is a filter that is capable of capturing particles of 0.3 microns with 99.97% efficiency. The vacuum cleaner must be designed so that all the air drawn into the machine is expelled through the HEPA filter with none of the air leaking past it.

High Efficiency Particulate Air (HEPA): A type of filter which is 99.97% efficient at filtering particles of 0.3 microns in diameter.

Intact: means that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

Non-friable Asbestos Containing Material: materials in which asbestos is bound in a matrix which cannot, when dry, be crumbled, pulverized or reduced to powder by hand pressure (such as floor tile

and asphaltic building materials). When the bond fails, or is disturbed, the materials become regulated as friable.

Permissible Exposure Limits (PEL): A level of airborne fibers specified by OSHA as an occupational exposure standard for asbestos. It is currently 0.1 fibers per cubic centimeter of air, 8-hour time-weighted average, as measured by phase contrast microscopy.

Presumed Asbestos Containing Material (PACM): OSHA regulations define PACM as follows. Thermal system insulation and surfacing material found in buildings constructed no later than 1980 is presumed to contain asbestos until proven otherwise. Asphalt and vinyl flooring material installed no later than 1980 must also be considered as asbestos containing unless the employer determines that it is not asbestos-containing. Beyond this OSHA definition, most “best practices” refer to PACM as any material or product that has a history of being made with asbestos at some point in time and which in a particular application has not yet been sampled and analyzed for asbestos identification. If the employer/building owner has actual knowledge, or should have known through the exercise of due diligence, that other materials are asbestos-containing, they too must be treated as such.

Regulated Area: means an area established by the employer to distinguish areas where airborne concentrations of asbestos exceed or there is a reasonable possibility that they may exceed the permissible exposure limits.

Spot Repair: in Connecticut means the abatement of ACM or PACM in amounts less than 3 linear feet or 3 square feet. This is comparable to OSHA’s Class III Work, but restricts the amounts of material to even less than OSHA allows.

VI. Introduction

Asbestos is a generic name for a family of naturally occurring fibrous silicate minerals. They differ from other minerals because the crystals form long, thin fibers. Presently there are six recognized minerals that fall under this category: chrysotile, amosite, crocidolite, tremolite, actinolite, and anthophyllite. They represent two groups of mineral structure; serpentine and amphiboles. Chrysotile is the only member of the serpentine group. It accounts for 95% of the asbestos found in building materials.

Asbestos has been used in thousands of building and consumer products because of its unique properties. It was mined, milled or processed and added to many materials because it was cheap, plentiful and had great properties. It is called the ‘miracle mineral’ because of its fire and heat resistance, high tensile strength, chemical resistance, poor electrical conductivity and its sound-absorbing properties. It was routinely added to pipe and boiler insulation, sprayed-on fire-proofing, plasters, floor tiles, wallboards, asbestos-cement products, constructions mastics (e.g., floor and ceiling tile glues), roofing materials, brakes, clutches, gaskets, etc.

Unfortunately, the same fibers that make asbestos the ‘miracle mineral’ also cause severe respiratory disease. These fibers collect in the respiratory system and can cause asbestosis (a fibrotic scarring of the lungs), lung cancer, or mesothelioma (a cancer of the chest or abdominal wall lining). Additional

health effects include pleural plaques and cancers of the larynx, esophagus, stomach, colon, kidney and pancreas. These diseases have a latency period of 10-40 years. Asbestos fibers are invisible to the naked eye and cause no symptoms upon immediate inhalation.

Attempts have been made to ban asbestos containing materials from production or importation in the U.S. Due to an unchallenged 1970s era series of bans, sprayed-on fireproofing, thermal system insulation (TSI), acoustical plasters, and consumer patching compounds made with asbestos no longer are manufactured, imported or installed in buildings legally in the USA. In addition, in 1989, the Environmental Protection Agency (EPA) moved to ban all asbestos. In 1991, though, the ban was vacated by Appellate Court and remanded by Congress. Those materials that were no longer being made with asbestos (those listed above as well as corrugated paper, rollboard, commercial paper, specialty paper, flooring felt) and any new uses of asbestos remained banned. Anything else was and is still allowed. Thus, gaskets, roofing materials, brakes and clutches, flooring materials, non-roof coatings, etc., can still be produced with asbestos today.

As a result, purchasing, procurement and acquisition of materials and installation by outside contractors of presumed asbestos containing materials require vigilance to make certain materials for use or installation at the University do not have any asbestos in them.

Work that could impact ACM at the University is regulated by EPA, the Connecticut Department of Public Health (DPH), CT Department of Energy and Environmental Protection (DEEP), and the Occupational Safety and Health Administration (OSHA). The elements of this management plan take into consideration all of these various regulations.

EPA classifies ACM into 3 broad categories: (1) Thermal system insulation (TSI) which includes pipe and boiler insulation, HVAC components, and other similar material that inhibits heat transfer and prevents condensation.; (2) Surfacing Materials, those that are sprayed-on or troweled on which include fireproofing, decorative or acoustical plasters and textured acoustical materials ('popcorn' ceilings); and (3) Miscellaneous materials which incorporates any other material that is not TSI or surfacing materials and includes materials like floor and ceiling tiles, mastics, gaskets, electrical wire, Transite® materials, etc.

The types of materials that produce the greatest threat to health are friable asbestos-containing materials; in other words, those materials that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. These materials have the greatest tendency to release the asbestos fibers into the air, allowing them to become inhaled-the primary route of exposure. Materials like vinyl asbestos floor tile are considered non-friable because they cannot be reduced to powder by hand pressure. But, these materials can become friable when cut, abraded, ground, or sanded. EPA originally developed these two terms to differentiate between materials that would readily release asbestos fibers when damaged or disturbed and those materials that were less likely to result in significant fiber release. The mere presence of asbestos in a building does not produce a health hazard. Intact and undisturbed asbestos containing materials (ACM) do not pose a health risk.

In EPA's guide *Managing Asbestos in Place – A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials* (July 1990), it published five facts about asbestos containing materials, in an effort to put the risk into proper perspective:

- Fact One: Although asbestos is hazardous, the risk of asbestos-related disease depends upon exposure to airborne asbestos
- Fact Two: Based on available data, the average airborne asbestos levels in buildings seem to be very low. Accordingly, the health risk to most building occupants also appears to be very low.
- Fact Three: Removal is often not a building owner's best course of action to reduce asbestos exposure. In fact, an improper removal can create a dangerous situation where none previously existed.
- Fact Four: EPA only requires prior asbestos removal in order to prevent significant public exposure to airborne asbestos fibers during building demolitions or renovation projects.
- Fact Five: EPA and OSHA recommend a proactive, in-place management program whenever asbestos-containing material is discovered

VII. Regulatory Requirements involving ACM removal/repair/maintenance

According to federal regulations, removal or maintenance of ACM falls under one of four categories.

Class I & II – Removal of TSI or Surfacing materials (Class I) and Miscellaneous materials (Class II), greater than 3 square or linear feet

Class III – Repair and maintenance that could disturb a small amount of ACM (less than 3 square or linear feet) – examples are: splicing asbestos electrical wire, removing an old gasket from a flange, removing less than 3 feet of tile, removing or repairing less than 3 feet of pipe insulation, taking asbestos samples

Class IV – Maintenance and custodial activities that contact but do not disturb ACM, such as stripping asbestos-containing floor tile

Class I and II are considered activities that require licensed asbestos abatement workers. These projects utilize Negative Pressure Enclosures, decontamination chambers, respirators and other personal protective equipment (PPE), specific training and engineering and work practice controls required by state and federal authorities. In addition, air sampling professionals, hired separately by the University, monitor the projects for conformance to the regulations and to provide air monitoring. At the University, these projects are conducted only by on-call asbestos abatement contractors and air sampling consultants. A description of the asbestos abatement process can be found in Appendix C, Asbestos Abatement Information Sheet.

According to CT DPH, when more than 10 linear feet or 25 square feet of removal, repair, enclosure or encapsulation, or disturbance is scheduled, DPH must be notified by the asbestos abatement company and the project must comply with a 10-day notification period prior to commencing. This notification

waiting period is mandatory unless an emergency exists, and must be factored into the timeline of the renovation project.

Should asbestos abatement projects be necessary due to a planned renovation, they will be at the expense of the department requesting the renovation or part of the project budget. To schedule an asbestos abatement, contact your division's Asbestos Coordinator.

Class III activities are those that disturb less than 3 linear or square feet of material. They are typically conducted within a glovebag or other airtight barrier and require appropriately trained personnel and specific engineering and work practice controls, in addition to PPE, respirators, personal exposure assessments, and medical surveillance for the employees. This level of abatement is conducted by either the on-call asbestos abatement contractor or a University employee that has received the proper training, in compliance with all state and federal regulations.

In some instances, work with asbestos containing materials does not conform to these previous classifications. These include applying asbestos containing products such as gaskets or roping, or dealing with asbestos brakes and clutches. In these instances OSHA requires training, establishment of regulated areas, use of engineering and work practice controls, personal exposure assessments, medical surveillance, PPE and possibly respiratory protection. Individuals with questions about these jobs or who need direction should contact Environmental Health and Safety (EHS) at (860)486-3613.

VIII. Responsibilities

Division of Environmental Health and Safety (EHS)

- Provides information to the University administration to support decisions on the asbestos management program.
- Conducts Asbestos Awareness (Class IV) training.
- Provides expertise and guidance to departments to maintain compliance with regulatory requirements and university policy.
- Recommends appropriate response actions to control or eliminate potential hazards.
- Initiates asbestos abatement projects arising from health and safety hazards and emergencies.
- Audits asbestos abatement projects and consultant activities, as necessary.
- Along with Facilities, maintains historical files of all inspections, bulk sampling and abatement projects for all University buildings.
- Communicates with regulatory agencies, as needed, as well as with University Communications and the University community at large.
- Audits programs overseen by Asbestos Coordinators.
- Develops and maintains the University's Asbestos Management Plan.

Asbestos Coordinators

- Act as Competent Persons to employees in their department.

- Procure services of licensed abatement contractors and consultants for projects involving disturbance/removal of ACM, as necessary.
- Ensure abatement projects and consultant activities are properly monitored.
- Determine the presence and location of ACM prior to initiating activities that could disturb building materials through the review of inspection reports in the asbestos inspection report database.
- Procure aid of outside licensed inspectors when more sampling/inspection is needed.
- Forward asbestos sampling results and project completion reports to the Facilities Asbestos Coordinator and to EHS.
- Provide written disclosure of the presence of ACM and PACM to outside contractors.
- Distribute the [Contractor EHS Manual](#) and the Asbestos Certification Form ([Appendix E](#)) to contractors and receives the appropriate signatures prior to the start of the project.
- Notify EHS of all asbestos projects and in-house Class III work activities (utilizing the Asbestos Maintenance Notification (AMN) and Asbestos Project Notification (APN) forms in Appendices A & B)
- Provide notification to each departmental Building and Emergency Contact (BEC) within a building of impending asbestos abatements using the Asbestos Abatement Information Sheet in [Appendix C](#).
- Secure and stores waste materials according to state and federal regulations.
- Arrange for waste disposal to approved landfills from Class III and Class IV work activities.
- Notify EHS in cases of asbestos emergencies during normal work hours (860-486-3613).
- Notify the Public Safety Communication Center/Dispatch in cases of asbestos emergencies at night or on weekends (860-486-4925).
- Schedule training, medical surveillance, and personal air monitoring for employees, as appropriate.
- Facilities Asbestos Coordinator ensures the integration of up-to-date asbestos data into the asbestos inspection report database.

University Planning, Design and Construction (UPDC)

- Ensure compliance with the University's Asbestos Management Plan.
- When procuring services of outside contractors, notify those contractors of ACM or PACM present and provide written documentation of testing results.
- Distributes the [Contractor EHS Manual](#) and the Asbestos Certification Form ([Appendix E](#)) to contractors and receives the appropriate certifications prior to the start of any work.
- Request asbestos inspections and/or asbestos abatements through the appropriate Asbestos Coordinator prior to projects or other work conducted by outside contractors (e.g., carpet removals, painting and other renovations).
- Circulate communications received from EHS and Asbestos Coordinators to all affected occupants within a building through the Departmental Building and Emergency Contacts.
- If routinely procuring services of outside contractors, send designated departmental staff to Asbestos Awareness training (if not trained as an Asbestos Coordinator).

Deans, Directors and Department Heads

- Ensure compliance with the University's Asbestos Management Plan.
- Request asbestos inspections and/or asbestos abatements through the appropriate Asbestos Coordinator prior to projects or other work conducted by department personnel or outside contractors (e.g., carpet removals, painting and other renovations).
- When procuring services of outside contractors directly (e.g., through a Purchase Order), notify those contractors of ACM or PACM present, provide written documentation of testing results.
- When procuring services of outside contractors directly, distributes the [Contractor EHS Manual](#) and the Asbestos Certification Form ([Appendix E](#)) to contractors and receives the appropriate certifications prior to the start of any work.
- Circulate communications received from EHS via the departmental Building and Emergency Contacts and Asbestos Coordinators to all affected occupants within the building.
- If routinely procuring services of outside contractors, send designated departmental staff to Asbestos Awareness training.

Departments Employing Maintenance and Custodial Personnel

- Notify appropriate Asbestos Coordinator when work activities that may disturb ACM and PACM are necessary.
- Notify EHS in cases of asbestos emergencies during normal work hours.
- Notify the Public Safety Communication Center/Dispatch (860-486-4800) in cases of asbestos emergencies at night or on weekends.
- Contacts the Facilities Operations Center (860-486-3113) when ACM/PACM needs to be removed during nights or weekends due to an emergency event (e.g., loss of power to a residence hall).
- Schedule Asbestos Awareness (Class IV) training for employees, as necessary.
- Examine work orders prior to assignment for possible asbestos-containing materials.
- Disclose presence of ACM and PACM to outside contractors (when not hired by UPDC or Facilities) and provide them with written documentation of testing results as well as a copy of the [Contractor EHS Manual](#).
- Monitor ACM/PACM for conditions and notify the Asbestos Coordinator to request necessary repairs or to report damage or deterioration.
- Ensure that employees are appropriately trained for their level of asbestos involvement (Class III or IV).
- Provide documentation of any Class III or other asbestos training beyond Class IV to EHS.
- Provide written documentation of asbestos inspection results to employees prior to start of work.
- Ensure a competent person oversees Class III and Class IV employees

Competent Persons

- Oversee Class III or Class IV employees, as appropriate.

- Identify asbestos hazards and takes prompt corrective measures to eliminate them.
- Conduct onsite inspections at regular intervals sufficient to assess whether conditions have changed, and at any reasonable time at employee request. These inspections shall confirm employees are working within their appropriate level of training, following applicable State and Federal regulations and UConn policies, and using appropriate engineering and work practice controls to prevent asbestos exposure.
- Ensure work orders are examined prior to assignment for possible ACM.
- Ensure employees get written documentation of inspection results on the jobsite.
- Request additional inspections through the Asbestos Coordinator as necessary.
- Ensure that employees are appropriately trained for their level of asbestos involvement (Class III or Class IV).
- Ensure employees undergo medical surveillance and respirator training for Class III activities.
- Supervise work of Class III individuals in regulated areas.
- Conduct exposure assessments as necessary for covered work.
- Provide documentation of Class III or other asbestos training beyond Class IV to EHS.
- Request repairs or removals through the appropriate Asbestos Coordinator when notified about damaged or deteriorated asbestos containing building material.
- Secure and store waste materials according to State and Federal regulations.
- Ensure that employees (Class III or Class IV) monitor ACM/PACM for conditions.

Maintenance and Custodial Employees (Class III or Class IV training)

- Comply with Federal and State regulations and UConn policies as advised by EHS.
- Attends training on yearly basis.
- Examine work area for building materials that may be disturbed prior to start of job and contact supervisor to conduct a review of the asbestos database.
- Maintain documentation of written inspection results on the jobsite.
- If asbestos or a material suspected to be asbestos has been damaged, immediately stop work, secure the area and call the Asbestos Coordinator.
- Monitor ACM/PACM for conditions and notify the Asbestos Coordinator to request necessary repairs or to report damage or deterioration.
- Conduct work activities in a manner which prevents uncontrolled disturbance of ACM or PACM.

Procurement Services

- When University departments request renovation or installation services from contractors, before approving the purchase request, Procurement Services will require the requesting department to provide confirmation from an Asbestos Coordinator that an asbestos inspection has been conducted and that ACM or PACM will not be impacted or disturbed during the course of the project.

- Procurement Services will maintain language in specifications and contracts notifying all contractors of the presence of asbestos in University buildings and the requirements concerning replacement building materials, as found in Section VII of this Asbestos Management Plan.
- Distributes the [Contractor EHS Manual](#) and the Asbestos Certification Form ([Appendix E](#)) to contractors and receives the appropriate certifications prior to the start of any work.

Central Stores

- Maintains appropriate supplies of personal protective equipment and equipment and materials for asbestos repair activities, as required by Asbestos Coordinators, competent persons, and EHS.
- Stocks only non-asbestos containing materials at Central Stores.

IX. Notification

Building Occupant Notifications

1. In accordance with OSHA regulations, all mechanical spaces in pre-1980 buildings must be posted with information on the ACM and PACM that is found within the space. Facilities will be in charge of maintaining these postings. An example of a typical mechanical space posting is found in [Appendix D](#).
2. Prior to all abatement activities requiring a containment, building occupants will be notified of abatement by the Asbestos Coordinator through the use of the BEClis. The Asbestos Information Sheet in [Appendix C](#) can be used for this purpose.

Contractor Notifications

1. Prior to arriving on campus to work, contractors will have been notified about the presence of asbestos containing materials through their contract documents which will give notice of the possibility of encountering asbestos containing materials. Contractors will ensure that all employees and subcontractors know of the possibility of encountering asbestos containing materials.
2. Information pertaining to asbestos, and how contractors must comply, is also included in the University's [Contractor EHS Manual](#). It is expected that all contractors and their subcontractors employed by the University are in compliance with all applicable federal and state regulations.

X. Newly Installed Materials

All replacement building materials shall be asbestos-free, unless written approval is received from EHS. It is up to the project manager or requisitioner of the project to request written documentation that replacement materials do not contain asbestos. The Asbestos Certification Form ([Appendix E](#)) shall be used for this purpose and maintained in the project management files with a copy forwarded to EHS.

Alternatively, newly installed materials can be sampled by a licensed inspector for asbestos content. Copies of inspection results must be forward to the Facilities Asbestos Coordinator and EHS.

Central Stores shall ensure that all materials stocked and sold are free of asbestos, through the review or use of Safety Data Sheets (SDS), or sampling as conducted by a licensed asbestos inspector.

XI. Asbestos Identification and Surveys

Prior to any repair, renovation or demolition of building materials, EPA, OSHA, and the State of Connecticut require that an asbestos inspection occur for ACM. Written documentation of inspection results must be maintained on the jobsite of a repair, renovation, or demolition. If ACM will be disturbed in the course of the repair, renovation or demolition activity, it must be removed prior to the commencement of the job. If it is not intended to be disturbed, it must be accounted for and protected from accidental or incidental disturbance by all the construction trades and University employees.

Inspection and removal is required regardless of the size of the job or the age of the building. While many manufacturers stopped or reduced the use of asbestos, most applications and asbestos products are still not banned and are available for use today. Until such time that asbestos is banned, even new buildings must be included in the inspection process unless data exists that proves asbestos products were not utilized. Uncontrolled releases of asbestos during any type of repair or renovation are forbidden by University policy and are violations of federal and state environmental laws.

UConn has identified asbestos-containing materials in UConn buildings in a directory of shared files that serves as the University's asbestos inspection database. Access to the directory is by authorized personnel only, as identified by EHS. The original hard copies of the inspection reports (with sampling and laboratory data) are filed with Facilities and EHS.

A documented review of the information in this directory of shared files is the first step in the inspection process. Printing copies of the necessary information from this directory can serve as a written documentation of the inspection. **If the material that will be disturbed is not listed in this directory, the appropriate Asbestos Coordinator should be contacted to request further sampling.** According to state and federal regulations asbestos inspections can only be conducted by accredited and licensed asbestos inspectors. The University uses appropriately trained and licensed consultants to conduct asbestos inspections.

The directory includes asbestos sampling data of all *accessible* interior and exterior building materials. Destructive testing that would cause significant physical or structural damage was not conducted and the directory does not include this information.

It is important to realize that some asbestos-containing materials could exist that have not been identified or sampled. Examples of materials that were **not** sampled include but are not limited to:

- Thermal system insulation within wall cavities

- Construction mastics for weatherproofing or vapor barriers interior to walls or on foundations, especially below grade.
- Leveling compounds
- Multiple layers of flooring or wall or ceiling systems
- Adhesives behind chalkboards and whiteboards
- Ceramic tile setting compound and grout
- Joint expansion sealants
- Fire door and door frame insulation
- Gaskets, elevator brakes, and parts of other electrical and mechanical and HVACR systems

If a material will be impacted that is not found in this directory, it must be considered a presumed asbestos containing material (PACM) and must undergo the proper testing prior to commencing work.

To request an asbestos inspection for renovation or demolition purposes, contact the Asbestos Coordinator in your department or division or submit a work order through the Facilities work order system. It will be forwarded through the Facilities Asbestos Coordinator to one of the University's on-call consultants, who will conduct the inspection.

XII. Training of Employees and Custodial Contractors

There are various levels of training required depending on the type of involvement with asbestos materials. Each University department is responsible for ensuring employees are trained for their level of asbestos involvement. EHS can guide and assist in training. Documentation of any Class III or other asbestos training beyond Class IV must be provided to the EHS office.

Maintenance and Custodial Employees

- **Awareness Training (Class IV)**

This is the most basic level of asbestos training, and is required for all custodial and maintenance employees prior to assignment to a building containing ACM or PACM, and annually thereafter. Custodial contractors must supply proof of Asbestos Awareness Training to Facilities for each employee on an annual basis and for new hires.

Any UConn employee who conducts renovations or demolitions or performs maintenance on University buildings must attend a yearly Asbestos Awareness class. This includes maintenance and custodial personnel, and any employee who may be expected to buff or strip floor tile in buildings. Training is conducted by EHS. Online training is also available for those individuals who have already attended a live in-class presentation. Topics in the training include, but are not limited to:

- history of asbestos use
- health effects
- controls
- locations and recognition of asbestos-containing materials

- UConn policies concerning asbestos

- **Class III Training**

For departments that choose to allow in-house staff to disturb or remove small amounts of ACM in the course of their repair and maintenance work, Class III training will be required. This training is designed for trade workers who may encounter asbestos in the course of their work that will require the disturbance or removal of less than 3 square or linear feet of ACM or PACM. Initially, 16 hours of training are required, with annual refreshers lasting approximately 4 hours. This training is provided by outside EPA-accredited asbestos training providers. Contact EHS for details.

Competent Persons

Departments employing maintenance or custodial personnel must designate one or more individuals to serve as competent persons, providing oversight for any Class III or Class IV employees within the department. Training for competent persons must be in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92 (a)(2). This is the minimum level of training required of individuals who oversee Class III or Class IV employees. This training is a 16 hour course developed by an EPA-approved training provider in conjunction with EHS. Mandatory annual refresher courses are conducted by EHS.

Alternatively, competent persons can attend an EPA-accredited Asbestos Operations and Maintenance Course through an off-site EPA-approved training provider.

Asbestos Coordinators

Asbestos Coordinators act as competent persons providing oversight to the Class III and Class IV trained employees as well as providing contact and oversight with asbestos abatement contractors and consultants. The Coordinator should be trained in all aspects of asbestos removal and handling, including: abatement; the contents of the OSHA standard; the identification of asbestos; and other practices for reducing hazards. The minimum level of training is a 16 hour course developed by an EPA approved training provider in conjunction with EHS. Mandatory annual refresher courses are conducted by EHS.

Alternatively, Asbestos Coordinators can take the EPA 24-hour Asbestos Inspector Course as well as the EPA 16-hour Asbestos Operations and Maintenance course in order to receive training as an Asbestos Coordinator.

XIII. Medical Surveillance

Medical examinations are required for all employees who: (1) are engaged in asbestos work for a combined total of 30 or more days per year, or (2) are exposed at or above OSHA's Permissible Exposure Limit or the Excursion Limit; and (3) for employees who will conduct any Class III work on TSI or surfacing material and will, thereby, be required to wear negative pressure respirators, in compliance with the University's Respirator Program.

These examinations must be conducted at least annually thereafter. If the examining physician determines that any of the examinations should be provided more frequently than specified, affected employees will be examined at the frequencies specified by the physician.

Medical examinations include a medical and work history, with special emphasis directed to the pulmonary, cardiovascular, and gastrointestinal systems. Along with a pulmonary function test, any examinations or tests deemed necessary by the examining physician will be included.

Information Provided to the Physician

The following information must be provided to the physician by the employee's supervisor before the physical

- A description of the affected employee's duties as they relate to the employee's exposure.
- The employee's representative exposure level or anticipated exposure level.
- A description of any personal protective equipment to be used by the employee.
- Any information from previous medical examinations of the affected employee that is not otherwise available to the examining physician.

Physician's Written Opinion

The examining physician provides a written statement consisting of the physician's opinion of whether the employee has any detected medical conditions that would place the employee at an increased risk of health impairment from exposure to asbestos. Any recommended limitations on the employee, or on the use of personal protective equipment such as respirators, will be noted in the opinion.

The opinion will also include statements that the employee has been informed by the physician of the results of the medical examination, and any conditions that may result from asbestos exposure. A statement will also be included that the employee has been informed by the physician of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure.

The physician will not reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure to asbestos. The supervisor will provide a copy of the physician's written opinion to the affected employee within 30 days from its receipt.

Scheduling an Examination

Asbestos examinations are the responsibility of the employing department. Asbestos examinations for University employees are provided by the University of Connecticut Occupational and Environmental Health Center (OEHC) Clinic at the University of Connecticut Health Center in Farmington or CorpCare Occupational Health in South Windsor, CT. Other providers may be used with the prior approval of EHS.

Call the OEHC Clinic at (860)679-4564, or CorpCare at (860)647-4796 to schedule an exam. Tell the person who answers that you wish to schedule an asbestos examination. Indicate whether this will be an initial or annual exam. You will be asked for the employee's name, department number, the name

of the employee's supervisor, and pertinent departmental financial information. Personal health insurance must not be used.

Once the appointment has been scheduled, contact EHS at (860)486-3613 and inform them of the pending appointment.

XIV. Employee Exposure Monitoring

The Asbestos Coordinator or the competent person must assess the expected employee exposures during the planned asbestos work. This assessment provides information necessary to assure that all control systems planned are appropriate for that operation and will work properly. All Class III activities must have a Negative Exposure Assessment (NEA) in accordance with OSHA regulations for asbestos in construction, or special written permission of EHS to be carried out. EHS can assist in developing the NEA through the use of a contracted asbestos consultant. It is the responsibility of the Asbestos Coordinator or the competent person to arrange for necessary personal air monitoring of affected employees, as needed, for compliance with OSHA regulations.

Class III activities without a negative exposure assessment may not be carried out without the written permission of EHS.

XV. Administrative Procedures

Notification to Occupants Prior to Asbestos Removal Activities

Occupants of areas adjacent to planned asbestos removal projects must be notified prior to the start of removal activities. This notification may be in writing to the Building and Emergency Coordinator and must include information pertaining to what material is being removed and what measures are being taken to prevent exposure to asbestos fibers. For removal projects in which containments are constructed (work conducted by licensed asbestos abatement contractors), the Asbestos Abatement Information Sheet, [Appendix C](#), should be utilized.

In-house Work – Class III Maintenance Activities

For departments that conduct Class III work, to initiate a Class III maintenance project, the Asbestos Coordinator must complete the front page of an Asbestos Maintenance Notification form (AMN, see [Appendix A](#)). This form must then be sent to EHS. The Asbestos Coordinator must verify the worker qualification, record-keeping and notification information on the AMN and submit it to EHS. The work may begin after a receipt confirmation from EHS has been received by the Asbestos Coordinator. The second page of the AMN must be completed by the Asbestos Coordinator as a record of the work.

After site activities are completed, bagged waste will normally be taken to a temporary storage site on campus until sufficient waste has been accumulated to make it cost effective to be removed to an approved landfill. These sites are selected by, and the responsibility of the Asbestos Coordinator and the competent person following approval from EHS.

When waste materials are temporarily stored on campus the Asbestos Coordinator will identify the storage site on the AMN. These sites must be secured and have limited access, and provided with appropriate warning signs as required under State and OSHA regulations.

Within one week of completing site activities, the Asbestos Coordinator must obtain, if applicable, a copy of the employee air monitoring report, and attach it to the AMN. The coordinator must make and retain copies of the AMN, along with any attachments, for him or herself and send the original AMN with attachments to EHS.

When waste materials are sent to the approved landfill, the Asbestos Coordinator shall send a copy of the waste shipment receipt to EHS. EHS will attach the receipt to the AMN. When a single landfill waste shipment receipt covers wastes generated during multiple Class III projects, the Asbestos Coordinator must retain one copy of the waste shipment receipt for each project. The Asbestos Coordinator shall send a copy of the waste shipment receipt to EHS and indicate which projects were associated with it.

Contracted Work – Class I or II Activities

For departments that engage the services of asbestos abatement firms, to initiate a project the Asbestos Coordinator must select an approved Connecticut Department of Public Health (CT DPH) licensed abatement contractor, an approved licensed consultant, and completes an Asbestos Project Notification form (APN, see [Appendix B](#)). Estimates are acceptable for dates, and may be corrected at the completion of the project.

The completed APN must be sent or faxed to EHS. When the project requires a notification be submitted to the CT DPH, the selected contractor shall provide the necessary notification to CT DPH no less than ten days prior to the start of the project and provide copies to the requesting Asbestos Coordinator. The Asbestos Coordinator, in turn, will attach a copy of that notification to the APN and send it to EHS no less than 5 days prior to the start of the project, unless an emergency exists, in which case the notification shall be sent to EHS upon receipt from the abatement company.

Within 30 days of completing site asbestos activities, the Asbestos Coordinator must obtain project reports from the contractor and consultant, and provide them to EHS. An amended APN should be sent if corrections have been made to the original information and should be accompanied by copies of the selected contractor's revised notifications required to be sent to the CT DPH.

XVI. Maintenance of Asbestos Containing Materials

Prohibited Activities

The following work practices shall not be used for any work that disturbs ACM, PACM, or materials that contain <1% asbestos regardless of the measured exposure level to the employee:

- High-speed abrasive disc saws without point of cut ventilation to HEPA filtered vacuums or HEPA shrouded equipment

- Compressed air
- Dry sweeping, shoveling or other dry cleaning method of ACM or dust and debris containing ACM and PACM
- Employee rotation as a means to reduce employee exposure to asbestos

Routine Maintenance and Cleaning

All surfaces shall be maintained as free as practicable of asbestos dusts and debris. Dust and debris in an area containing visibly deteriorated ACM shall not be dusted or dry swept, or vacuumed without using a HEPA vacuum. Employees trained to Class IV (asbestos awareness) requirements can clean up small amounts of dust and debris only, using a HEPA vacuum or wet paper towel. They can also pick up loose floor tile for proper packaging and disposal as asbestos waste. Loose is defined as tile that has completely disassociated from the substrate and no mastic effectively continues to hold the tile to the substrate. Care would need to be taken not to disturb any mastic remaining on the floor. All other clean-up will be conducted by Class III trained University employees or licensed abatement workers.

Small amounts of waste generated from limited clean-up or loose tile must be bagged and label appropriately and stored in a secured location. Immediate steps must be taken to request the bag of debris get picked up by the on-call hazardous material abatement contractor.

Place wet debris in a 6 mil plastic bag and label with the following:

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

Once labeled, store in a secure location in the building of generation and immediately submit a work order to have the debris picked up, providing details on location of debris, or contact your Asbestos Coordinator.

If HEPA vacuums are used to clean debris, DO NOT OPEN THE VACUUM TO EMPTY THE CONTENTS. Once full, submit a work order or contact your Asbestos Coordinator to have the vacuum picked up for cleaning. Instruct the on-call hazardous materials abatement contractor to empty and clean the vacuum and return for future use.

Surveillance of Asbestos Containing Materials

Departments with maintenance and custodial employees are required to conduct periodic surveillance of conditions of asbestos containing materials in all University buildings. Employees with Class IV

training will conduct these surveys, monitoring for conditions. Deterioration or disturbance is documented and reported to the appropriate Asbestos Coordinator, Competent Person or EHS for necessary repairs or abatements.

Care of Asbestos-Containing Flooring Material

- Sanding of flooring material is prohibited
- Stripping of finishes shall be conducted using:
 - Low abrasion pads
 - Speeds lower than 300rpm
 - Utilizing wet methods
- Burnishing or dry buffing shall only be conducted on floors with a sufficient coat of floor finish, and only on floors where tiles and adhesives will remain intact throughout the process
- Floor care includes:
 - Regular sweeping and wet mopping to maintain tile in good condition
 - Regular applications of floor finish
 - Use of mats in high traffic areas

Maintenance/Repair of Floor Tiles

State and federal regulatory requirements for maintenance and repair of floor tile affect decisions on repair. The regulatory limit for maintenance and repair activities by an asbestos contractor or Class III trained in-house personnel is 3 linear or square feet in any one location, which equates to approximately three 12x12 inch or five 9x9 inch floor tiles. Beyond that amount, full-scale abatement is required, which involves construction of containments and the presence of project monitoring and air sampling professionals.

University personnel, in an effort to maintain floor tile in place have a few options: sealing of the floors with floor finish, void filling, and spot repair.

- Floor finishes can be applied to prevent damage to the raw tile and is often recommended in offices where chair casters are scratching flooring or where sand and salt in the winter months is abrading the tile. **It is highly recommended that individual departments purchase mats to be placed underneath chairs with casters.** Often, damage to tile can be prevented by the use of mats.
- Void filling is the application of a cement feathering compound in small 'holes' in the tiles, usually at edges where tiles meet. This stabilizes the tile and prevents further chipping.
- Spot repair involves repair or removal of less than 3 square feet of tile by appropriate trained personnel with immediate replacement with new tile. This becomes problematic if the tile is not replaced as soon as possible as adjacent tile and exposed mastic is susceptible to disturbance.

Adherence to these procedures remains the most effective option for maintaining floor tile in place. Broken and loose tiles should be reported through a work order. The appropriate maintenance staff will assess the tile for necessary repairs.

XVII. Emergencies

Fiber Releases

A major fiber release is defined as the unintentional or uncontrolled disturbance of more than 3 feet of *friable* asbestos containing building material. A minor fiber release is defined as the unintentional or uncontrolled disturbance of less than 3 feet of *friable* ACM. Recall that non-friable materials can be rendered friable and result in a fiber release episode.

In the event that either occurs:

- Isolate and secure the area
- Post warning sign on doors or at the area
- If possible, turn off fans, shut windows, seal the ventilation system, to prevent migration of fibers
- Contact your supervisor, Asbestos Coordinator, or EHS (860-486-3613) directly.
- After hours and on weekends, contact the Public Safety Communication Center/Dispatch at 860-486-4800 and identify that this is an *asbestos* emergency
- Branch campus personnel should contact their Facilities managers who have the contact information for the asbestos abatement company and on-call consultant.

Only properly trained and qualified individuals are allowed to commence clean-up activities of major fiber release emergencies. Asbestos materials covering or consisting of less than 3 square or 3 linear feet that become broadcast over a wide area due to the nature of the disturbance (a pinhole prick in a steam line) most likely will need assessment by the Asbestos Coordinator or EHS to determine suitability of clean up by University Class III trained employees. It is likely that a licensed abatement contractor will be better experienced and equipped to handle such a clean-up.

Critical Events Requiring Asbestos Removal After-hours

In the event that asbestos needs to be removed after hours or on weekends due to another critical event, such as loss of heat to a building, and a fiber release has not occurred, maintenance and custodial employees should contact the Facilities Operations Center (860-486-3113) and provide details of location, type and approximate quantity of removal necessary. Operations will then contact on-call hazardous materials abatement contractor to arrange removal after-hours.

Appendix A

Asbestos Maintenance Notification (AMN) Form and Daily Log

(Link to online fillable form: www.ehs.uconn.edu/forms/AMN.pdf)

Appendix B

Asbestos Project Notification (APN) Form

(Link to online fillable form: www.ehs.uconn.edu/forms/APN.pdf)

Appendix C

Asbestos Abatement Information Sheet

(Link to online fillable form: <http://www.ehs.uconn.edu/occ/doc/AsbInfo.pdf>)

Appendix D

Mechanical Space Posting

DANGER
CERTAIN MATERIALS WITHIN THIS MECHANICAL ROOM/AREA
CONTAIN ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
AVOID BREATHING AIRBORNE ASBESTOS FIBERS

As required by the Occupational Safety and Health Administration (OSHA) for building constructed no later than 1980, this posting is to alert you to the presence of asbestos-containing materials (ACM) within this building area/space. Any questions may be directed to the University Department of Environmental Health and Safety Division, 3102 Horsebarn Hill Road, Unit 4097, (860) 486-3613.

AREA: example: Depot Campus – Brown Hall – Mechanical Room

The following forms of confirmed ACM are present within this space.

ACM Material	General Location

Any of the following suspect materials which are present within this space are presumed asbestos containing materials (PACM) in accordance with OSHA regulations until proven otherwise.

PACM Material	General Location
No PACM found	

Note that additional building materials yet to be identified may also contain asbestos fibers, but are not required to be labeled as PACM by OSHA. Contact the University Architectural and Engineering Services Department prior to any renovation, demolition or disturbance of building materials.

Do not disturb the ACM/PACM or use dry sweeping or non-HEPA vacuums to clean up ACM/PACM debris. Report ACM/PACM damage to the University EHS Department at 486-3613.

DO NOT REMOVE THIS POSTING

Appendix E

Asbestos Certification Form

A. Asbestos Certification

Contractor shall certify that all material/equipment installed in any portion of the Work is be asbestos free. The owner may perform sampling to verify all suspect material/equipment is asbestos free. If any material/equipment is found to contain asbestos, the Contractor shall pay for the lawful and proper removal and disposal of product(s), and re-install acceptable material/equipment all at its sole expense.

B. For purposes of this requirement, materials include, **but are not limited to** the following:

2.1 Surfacing Treatments

Fireproofing Acoustical Plaster
Finish Plasters, Skim Coats of Joint Compound, Fibrous Type Paint Applications, Sprayed-on applications

2.2 Thermal System Insulation

Equipment Insulation, Gaskets, Valve Packings,
Boiler, Breeching, Boiler Rope, Duct or Tank Insulation,
Cement or Mortar used for boilers and refractory brick.
Piping and Fitting Insulations including but not limited to Wrapped Paper, Millboard, Rope, Cork, Preformed Plaster, Job Molded Plaster and Coverings over Fibrous Glass Insulation.

2.3 Roofing and Siding Materials

Insulation Board, Vapor Barriers,
Felts, Coatings & Adhesives,
Flashing, Shingles, Cementitious Board (Transite),
Galbestos, Non-Metallic or Non-Wood Roof Decking

2.4 Other Miscellaneous Materials

Cove Base, Floor Leveling Compound,
Ceiling & Floor Tiles, Vibration Isolators, Laboratory Tables and Hoods,
Mastics, Adhesives, Coatings & Caulks,
Wallboard & Joint Compounds,
Friction Products, Gaskets,
Fire Door Materials,
Cementitious Products (Transite)

Building: Project No.:

The Contractor certifies that all material/equipment installed in any portion of the Work is asbestos free:

Contractor Signature: Date:
Print Name:
Company:

Appendix F

Materials Containing <1% Asbestos

Presently, EPA and CT DPH do not regulate materials containing less than 1% asbestos (<1%). By their definitions, an asbestos-containing material contains greater than 1% asbestos. OSHA also agrees that materials containing more than 1% asbestos are considered regulated materials. However, their philosophy is that any amount of asbestos in the building material could, potentially, produce airborne employee exposures, depending upon what the employee is doing to the material, so it is the responsibility of the employer to make sure that employees are not being exposed to asbestos that exceeds OSHA's Permissible Exposure Limit (PEL) or Excursion Limit (EL). Other Universities in Connecticut recently have documented exposure to employees above the asbestos PEL and EL generated from work procedures conducted on certain surfacing materials which had asbestos in less than 1% amounts.

To conduct work on materials containing <1%, employers are required to conduct Negative Exposure Assessments (NEA). This is personal employee exposure monitoring, the goal of which is to document that utilizing known engineering controls and work practices (HEPA shrouded power equipment, wet methods, etc.), employees will not be exposed to asbestos above OSHA limits.

If a NEA does not exist for a typical operation or building material, regulated areas will have to be set up and work will have to be conducted by licensed abatement workers or employees trained in Class III maintenance activities.

This would include materials such as wallboard systems where joint compound may be <1%, or plasters where the skim or base coats are found to contain <1% asbestos, and would affect even routine activities such as drilling to attach shelves, scraping and sanding for refinishing, and attaching wire molds or outlets.