



CONNECTICUT COLLEGE

ASBESTOS MANAGEMENT PLAN

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1. Purpose

Connecticut College has implemented a policy to identify, inspect, control, maintain and improve our handling of asbestos related issues across the campus. Risks associated with asbestos, including alteration, construction, demolition and repair activities will be addressed in the most expeditious manner possible in an effort to reduce negative environment impact or adverse health effects to the Connecticut College community. The use of proper engineering controls, the elimination of damaged or unwanted material and the use of proper maintenance methods will all be employed in an effort to reduce potential risk and liability.

2. Objectives

Primary Objective

The primary objective of the Asbestos Management Plan is to control building occupant and employee exposure to asbestos fibers, by minimizing any potential hazard posed by asbestos containing materials during cleaning, maintenance, renovation and general operation activities.

Secondary objectives.

- The removal of existing contamination and deterioration that is beyond the scope of normal maintenance or repair activities.
- The minimization of known or potential release.
- The maintenance (encapsulation, enclosure) of in place asbestos until it is to be removed.

3. Applicability

The Connecticut College Asbestos Management Plan shall apply too not only employees of Physical Plant, but to outside contractors as well. Personnel, regardless of affiliation working at or for Connecticut College, will be held contractually accountable to the same health and safety regulations and standards that are required by the state and federal environmental protection agencies and the Connecticut College Contractor Health & Safety Guidelines. No contractor or employee working at or for Connecticut College shall be permitted to work in areas that contains or has the potential to contain damaged or significantly damaged asbestos until such the hazard has been mitigated.

4. Definitions

Amended Water - Water to which soap or other surfactant has been added to increase the ability of the liquid to penetrate asbestos.

Asbestos - Is a naturally occurring mineral that is mined throughout the world in countries such as the United States, Canada, South Africa and Australia. The most common types of Asbestos (chrysotile, amosite and crocidolite) are removed from the ground and then processed for automobile brakes, floor tiles, pipe and duct insulation, decorative plasters, spray-on fire proofing and a wide range of other products. It is this process, not the mineral itself that makes asbestos a hazard to our health and the environment.

AHERA - Asbestos Hazard Emergency Response Act. EPA regulations (40 CFR Part 763) covering management of asbestos in K-12 schools. AHERA requires that education agencies periodically inspect the condition of asbestos materials in schools and share their findings with the parents of their students.

Asbestos Containing Material - Any material (i.e. 9"x 9" floor tile, laboratory bench tops and fume hoods and insulation) that contains greater than 1% asbestos.

Authorized Person - A person authorized by Connecticut College and required by work duties to be present in a "regulated area".

Class I Asbestos Work - Work activities, that involves the removal of boiler, pipe and duct insulation and surfacing material such as spray-on fire proofing. Class I work involves the assistance of an outside contractor, specifically trained and licensed to perform such work.

Class II Asbestos Work - Work activities that involve the removal of other than boiler, pipe and duct insulation or surfacing material such as spray-on fireproofing. Class II work involves the assistance of an outside contractor, specifically trained and licensed to perform such work.

Class III Asbestos Work - Repair and Maintenance Operations can be performed by trained Physical Plant Personnel, or licensed outside contractors. Class III work most often means repair of damaged asbestos utilizing an enclosure or encapsulation (i.e. dip lag).

Class IV Asbestos Work - Work that involves the maintenance and custodial activities during which employees contact but do not disturb asbestos containing materials or "presumed" asbestos containing materials. It may involve the clean up of mechanical or storage areas, including dusts, waste and debris in those areas where asbestos is, was or may be present.

Competent Person - A person 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 action to eliminate or mitigate the hazard.

Demolition - The wrecking or removal of any load-supporting structural member and any related razing, removal or stripping of asbestos containing or presumed asbestos containing materials.

Disturbance - Activities that disrupt asbestos or asbestos containing materials or that generate visible debris. It includes but is not limited to; cutting, kicking, striking or otherwise breaking or damaging asbestos or presumed asbestos containing materials.

Friable - Material that contains more than 1% asbestos that can crumbled, crushed or reduced to powder by hand and finger pressure. Asbestos is most hazardous to health when it is friable and airborne. The most friable material is sprayed on fireproofing that which is normally applied to ceilings and structural metal supports to provide a fire rating, or pipe covering on heat and steam lines that has become damaged.

HEPA (High Efficiency Particulate Air) - A filter, normally found inside a respirator, HEPA vacuum or other type of filtering system that traps or retains 99.97% of all particles that are 0.3 micrometers or greater in diameter.

Presumed Asbestos Containing Material (PACM) - Suspect materials such as boiler, duct and pipe covering and surfacing material found in buildings that were constructed before 1980 that has not been tested to confirm whether or not it contains asbestos. Until proven by air or bulk sample analysis as being non-asbestos, any material not yet tested is considered to be presumed asbestos containing material.

Regulated Area - An area established by Connecticut College or the outside contractor that clearly delineates areas where Class I, Class II and Class III work activities are conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or there is reasonable possibility they may exceed permissible levels.

Thermal System Insulation (TSI) - Includes insulation on boilers, steam lines and other high temperature applications.

5. Asbestos Identification

5.1. Examples of Potential ACMs

Asbestos has been used by man since ancient times, but became much more widespread during the industrial revolution. By the mid 20th century, uses included fire retardant coatings, concrete, bricks, pipes and fireplace cement, heat, fire, and acid resistant gaskets, pipe insulation, ceiling insulation, fireproof drywall, flooring, roofing, drywall joint compound, and many others:

Window Glazing

Cement Pipes

Cement Wallboard

Cement Siding

Asphalt Floor Tile

Vinyl Floor Tile

Vinyl Sheet Flooring

Flooring Backing

Construction Mastics (floor tile, carpet, ceiling tile, etc.)

Acoustical Plaster

Decorative Plaster

Textured Paints/Coatings

Ceiling Tiles and Lay-in Panels

Spray-Applied Insulation

Blown-In Insulation

Fireproofing Materials

Taping Compounds (thermal)

Packing Materials (for wall/floor penetrations)

High Temperature Gaskets

Laboratory Hoods/Table Tops

Laboratory Gloves

Fire Blankets

Fire Curtains

Elevator Equipment Panels

Elevator Brake Shoes

HVAC Duct Insulation

Boiler Insulation

Breeching Insulation

Ductwork Flexible Fabric Connections

Cooling Towers

Pipe Insulation (corrugated air-cell, block, etc.)

Heating and Electrical Ducts

Electrical Panel Partitions

Electrical Cloth

Electric Wiring Insulation

Chalkboards

Roofing Shingles**Roofing Felt****Base Flashing**

Thermal Paper Products

Fire Doors**Caulking/Putties****Adhesives**

Wallboard

Joint Compounds

Vinyl Wall Coverings

Spackling Compound

The materials in bold are **known** to be present at Connecticut College. But keep in mind that ALL older materials are suspect, and should be tested prior to disturbing during maintenance work.

5.2. ACM Bulk Sample Analysis

The Office of Environmental Health and Safety will take samples during inspections, or at the request of any employee who has been asked to perform work in an area that does, or may contain asbestos. After the "bulk" sample has been taken, the material is sent to an accredited laboratory for analysis.

6. Guidelines for Asbestos Exposure Prevention

Although asbestos can enter the body in different ways, it is most hazardous when it is inhaled. To prevent or reduce your exposure, follow these suggested guidelines.

- Before disturbing suspect materials, contact the Office of Environmental Health & Safety to determine whether or not the area contains asbestos. If necessary, the material will be tested to determine the presence of asbestos.
- If the area contains damaged asbestos, an outside asbestos abatement contractor will have the material repaired or removed.
- If debris or the potential for debris from damaged asbestos is or may be present, proper procedures will be used to clean the contaminated area. OSHA regulations require the area to be either wet mopped, or vacuumed with a HEPA vacuum. Sweeping of asbestos spills or use of a non-HEPA vacuum is prohibited.

- Lastly, in areas where electricity is not an issue, the use of amended water is acceptable. When misted over any area or misted on top of either ACM or PACM, water will hold asbestos fibers down. The use of water reduces airborne asbestos concentrations significantly, lowering the risk of exposure.

7. Asbestos Abatement

- Only licensed asbestos abatement contractors, who will follow all federal and state regulations, will perform asbestos abatement at Connecticut College.
- Asbestos abatement activities at Holmes Hall must be planned and managed by a certified Asbestos Planner.
- When asbestos abatement activities are to be performed inside buildings, the College shall notify the occupants of the building, Campus Safety, and the Physical Plant Service Desk.
- In addition, signage will be posted on each entrance to the building, stating that asbestos work is being conducted in the building, and to stay out of all posted asbestos work areas.
- Labeling and the posting of warning signs is the responsibility of the contractor, and are required at all entrances to asbestos work areas where abatement is being performed (Regulated Area). The signage shall meet the requirements outlined in the OSHA Asbestos Standard for the Construction Industry (29 CFR 1910.1101)
- Bags, both glove and black polyethylene bags used for the containment and disposal of asbestos shall be clearly marked. The word "Asbestos" and the appropriate warnings must be imprinted on the bag.

8. Training

Training is another component of the Connecticut College Asbestos Management Plan. The objective is to establish proper awareness and understanding of work practices for each any every employee who does or may come into contact with asbestos containing materials (ACM) or those that are presumed to be asbestos containing materials (PACM).

The following groups will receive Asbestos Awareness training on an annual basis:

- Building Trades - (Carpenters, Locksmith, Painters)
- Mechanical Trades - (Plumbers, HVAC, Electricians)
- Custodial Staff
- Power House Staff
- Garage Mechanic

The training will include a discussion of the following:

- Types and uses of asbestos
- Hazards associated with asbestos

- Proper cleaning techniques
- Appropriate levels of personal protective equipment
- Proper engineering controls
- Regulatory requirements (Including AHERA requirements for working in Holmes Hall.)
- Appropriate handling practices for asbestos, and
- Hands on training.

9. Custodial Maintenance Procedures - Care of Asbestos Containing Flooring

9.1. Stripping

- Stripping of vinyl asbestos floor coverings should be done as infrequently as possible, e.g., once per year maximum and preferably when the building is unoccupied. Excessive stripping of floors using aggressive techniques will result in increased levels of asbestos fibers in the air.
- When stripping a floor becomes necessary, be sure to follow appropriate work practices. Consult with floor tile and floor finish product manufacturers for a particular problem(s) concerning the maintenance of your floors.
- **Never perform dry stripping.** Always strip floors while wet. Prior to machine operation apply an emulsion of chemical stripper in water to the floor with a mop to soften the wax or finish coat. After stripping and before application of a high solids floor finish, the floor should be thoroughly cleaned while wet.
- The machine used to remove the wax or finish coat should be run at a low rate of speed (i.e., ranging between 175-300 rpm) during the stripping operation. There is a direct correlation between machine speeds and the release of asbestos fibers from asbestos containing floor coverings. The higher the machine's speed the greater the probability of asbestos fiber release.
- When stripping floors becomes necessary, the machine used for stripping the finish should be equipped with the least abrasive pad as possible, a black pad being the most abrasive and the white pad the least abrasive. Consult with your floor tile and floor finish product supplier for recommendations on which pad to use on a particular floor covering.
- Never operate a floor machine with an abrasive pad on unwaxed or unfinished floor containing-asbestos materials. A minimum of 3 coats of floor finish must be in place before buffing. Remember that in general, each time you buff, you remove one layer of finish.

9.2. Finishing/Buffing

- Prior to applying a finish coat to a vinyl asbestos floor covering, apply 2 to 3 coats of sealer. Continue to finish the floor with a high percentage solids finish. It is an industry recommendation to apply several thin coats of a high percentage solids finish to obtain a good sealing of the floor's surface, thereby minimizing the release of asbestos fibers during finishing work.

- When spray-buffing floors, always operate the floor machine at the lowest rates of speed possible and equip the floor machine with the least abrasive pad as possible. A recent USEPA study indicated that spray buffing with high-speed floor machines resulted in significantly higher airborne asbestos fiber concentrations than spray buffing with low speed machines.
- When dry-burnishing floors, always operate the floor machine at the lowest rate of speed possible to accomplish the task (i.e., 1200-1750 rpms), and equip the floor machine with the least abrasive pad as possible.
- After stripping a floor and applying a new coat of sealer and finish, use a wet mop for routine cleaning whenever possible. Petroleum-based mop treatments are not recommended for use when dry mopping,

9.3. Additional Precautions to be Taken to Maintain Floor Coverings

- Check to see if chair and desk glides are in good condition and replace where indicated. Worn glides can gouge the floor coverings and possibly cause asbestos fiber release.
- During the winter months when sanding and/or salting of icy parking lots becomes necessary, it is an industry recommendation that a 16-24 ft. matting be used at the entrance way to the school building and inside the doorway where feasible. This would significantly eliminate the scuffing of floors by abrasive sanding materials brought into the building on the shoes of building occupants. Also more frequent wet mopping and dry mopping of floors should be performed during the winter months to minimize damage to the floors.
- Where feasible, use mats at entranceways to cafeterias, gymnasiums, libraries, etc., to protect against possible scuffing of floor covering(s), etc.

10. Building and Mechanical Trades Maintenance Procedures

Asbestos in good condition should not be disturbed. In those areas where alteration, demolition and renovations are being performed, asbestos removal should be considered.

10.1. Prohibited Activities

- Cutting or drilling holes in plaster ceilings and walls in buildings that were built before 1980, unless the ceiling and walls have tested asbestos free. (Exception - if other engineering controls are used (i.e. water / HEPA vacuum), then the work can be performed, provided the scope of work is limited.)
- Dry scraping or sanding of plaster walls in buildings that were built before 1980, unless the floor linoleum or tile has been replaced.
- Sweeping, dry brushing or using a non-HEPA vacuum in a mechanical room or storage area where the presence of asbestos containing material is possible.
- Removing ceiling tiles in buildings that were built before 1980, if there is a possibility that pipes with damaged asbestos insulation may be present.

10.2. Guidelines for Working in Asbestos-Containing Environments

- When working in a room or area (Mechanical spaces) that contain or may contain asbestos containing materials in good condition, dustless (e.g., wet mopping instead of sweeping) cleaning methods should be utilized.
- The Office of Environmental Health & Safety should be notified before work is initiated in areas where the asbestos is discovered to be in fair to poor condition.
- Utilize HEPA vacuum if a suspect material is disturbed.

11. AHERA Requirements - Holmes Hall

The Human Development/Children's Program located in Holmes Hall (79 Nameaug Avenue) is a child and family-focused early childhood program for about 90 infants and young children. It falls under the requirements of the EPA's AHERA program, which regulates asbestos activities in K through 12 schools. The [AHERA regulations](#) require public and non-profit schools to:

- Perform an original inspection to determine whether asbestos-containing materials are present and then re-inspect asbestos-containing material in each school every three years.
- Develop, maintain, and update an asbestos management plan and keep a copy at the school.
- Provide yearly notification to parent, teacher, and employee organizations on the availability of the school's asbestos management plan and any asbestos-related actions taken or planned in the school.
- Designate a contact person to ensure the responsibilities of the school or non-profit school are properly implemented.
- Perform periodic surveillance of known or suspected asbestos-containing building material.
- Ensure that trained and licensed professionals perform inspections and take response actions.
- Provide custodial and maintenance staff with asbestos-awareness training.
- Maintain records of building maintenance or renovations.

The Supervisors of Building Trades and Mechanical Trades will coordinate all maintenance activities in Holmes Hall with the Director of EH&S, to ensure that:

- ACM/PACM is not inadvertently disturbed.
- Outside contractors are notified of the location of ACM/PACM, to prevent inadvertent disturbance of ACM/PACM.
- Records of maintenance activities are maintained.
- A certified "Asbestos Project Designer" prepares plans for any asbestos abatement projects.

12. Medical Surveillance

Since Connecticut College employees are not asbestos workers, medical surveillance is not required for asbestos related work, except for the Director of Environmental Health & Safety, who is a licensed Asbestos Inspector. The Director of EH&S wears a respirator with HEPA filters when collecting samples.

Medical records for employees that have either worked with asbestos on campus, or may have been adversely exposed will be maintained by the Occupational Health and Wellness Manager in the Human Resources office at Strickland House for a period of 30 years plus duration of employment

13. Asbestos Hazard Assessments

During hazard assessments or surveys, the Director of EH&S (Asbestos Inspector), will evaluate the current condition of ACM/PACM in college buildings, and determine the potential for future damage.

Based on this visual inspection, which may include touching to determine friability, the Inspector will identify the type of asbestos (air cell, mag block, transite etc.), its condition, potential for disturbance and a priority level for corrective actions. The corrective actions are:

- Repair
- Encapsulation/Enclosure
- Removal, or
- No Action Required

14.1 ACM Current Condition Assessment

The **current condition** of the ACM or PACM will receive a numerical ranking as follows:

- **8, 9 or 10 (Good):** Surfacing material has no visible damage or small amounts of damage; covering on TSI is intact or has small amounts of damage; miscellaneous materials are intact or have small amounts of damage; no visible debris or small amounts of debris.
- **4, 5, 6, or 7 (Fair):** Surface material has moderate but not extensive amounts of visible damage; covering on TSI is cut or torn, exposing moderate but not extensive amounts of insulation, moderate but not extensive damage to miscellaneous materials such as floor tile; moderate but not extensive amounts of dust and debris.
- **1, 2 or 3 (Poor):** Extensive damage to surfacing material; covering on TSI, is cut or torn extensively and insulation itself is damaged; miscellaneous materials such as floor tiles extensively damaged and underlying mastic exposed;

extensive amount of debris.

14.2 ACM Potential Damage Assessment

The **potential for future damage** will also receive a numerical ranking based on the activities in the area, accessibility, and environmental disturbances such as vibrations, air movement, corrosive atmospheres and water damage:

- 1, 2, 3, (Low)
- 4, 5, 6, or 7 (Medium)
- 8, 9, 10 (High)

14.3 Corrective Actions

Using these criteria, the Inspector will prioritize corrective measures as:

- High
- Medium
- Low
- None

Damaged ACM/PACM receiving a “High” priority will be addressed immediately.

14. Emergency Response Procedures

Whenever an asbestos emergency occurs or is discovered, the Director of EH&S should be immediately notified at extension 2252. After hours, contact Campus Safety.

The following steps in order should be taken:

- 1) If you do not know whether something is asbestos or not, assume that it is, until it is proven otherwise.
- 2) Evacuate the area where the incident has occurred.
- 3) Persons who have or might have been exposed should wait for EH&S to arrive on the scene so that proper decontamination can be performed. All persons that were exposed or could have been exposed will be required to complete the Connecticut College Incident Report.
- 4) Turn off all fans and A/C units. HVAC and other forms of ventilation can be secured by contacting Physical Plant at extension 2253.
- 5) Disturb the material as little as possible, and take measures to prevent others from disturbing the damaged material.
- 6) Secure the area. Prevent the spread of the spilled material by keeping people from walking through the area by closing the door and posting warning signs.

- 7) Contact the Director of EH&S. If the Director of EH&S is unavailable, contact the Work Control Desk directly, at extension 2253, or after hours, Campus Safety.
- 8) The Director of EH&S, will evaluate the situation to determine the most appropriate remediation response action.
- 9) The Director of EH&S will ensure that exposed employees are referred to the Manager of Occupational Health and Wellness for documentation and medical evaluation.

15. Asbestos Spill Clean-up Procedures

Major Asbestos release events may pose a health risk to the occupants of the building, and must be cleaned up by a licensed asbestos worker, and must include air clearance testing before building occupants are allowed back into the affected space.

Clean up of minor ACM spills, or removal of less than 3 square feet of damaged (loose) asbestos floor tiles may be cleaned up by Physical Plant personnel who are trained and licensed as Operations and Maintenance (O&M) asbestos workers, using wet methods and/or a vacuum cleaner equipped with a high-efficiency particulate (HEPA) filter.

Alternatively, an asbestos contractor may be used to clean the spill during any repair/abatement of damaged ACM.

The ACM waste and contaminated cleaning materials must be double-bagged in a polyethylene "Asbestos" bag, and taken to the asbestos waste storage facility at the service building, pending proper disposal.

16. Recordkeeping

Within 15 days of the completion of the asbestos abatement project, the asbestos abatement contractor will provide a packet that includes copies of all the records listed below, to the Director of EH&S. The asbestos contractor and Connecticut College shall retain these records for a minimum of thirty (30) years following completion of the project.

- 1) The location and description of the project and the estimated amount and type of asbestos involved in the project;
- 2) The start and completion dates of the project;
- 3) A copy of the Asbestos Abatement Notification to the State of Connecticut. If not required, a statement of explanation.
- 4) A summary of the procedures used to comply with Sections 19a-332a-5 to 19a-332a-12;
- 5) The name and address of the authorized asbestos disposal facility and verification from the authorized asbestos disposal facility indicating the amount of asbestos received for disposal;

- 6) The methodology and results of all air sampling conducted during the abatement process;
- 7) A complete list of the names and social security numbers of asbestos abatement workers, asbestos abatement site supervisors and other agents involved in the asbestos abatement activity and working for the asbestos contractor on that project and individuals entering the enclosed work area;
- 8) A log of control of access to the work area;
- 9) All records for compliance with the requirements of OSHA, Conn OSHA, DEP and EPA regulations; and,
- 10) Documentation to demonstrate compliance with the post abatement re-occupancy criteria established by Section 19a-332a-12.

In addition to records and document provided by asbestos abatement contractors, the following records must also be maintained by the Director of EH&S:

- 1) Asbestos Management Plan
- 2) Building Plans and Drawings
- 3) Periodic ACM / PACM Surveillance Records
- 4) Copies of Notifications and Warnings
- 5) Training Records
- 6) Written Respiratory Protection Program
- 7) AHERA documents pertaining to surveillance and maintenance at Holmes Hall
- 8) Medical Surveillance Records (Kept at Human Resources)

17. Regulatory Citations

- Section 19a-332a-1 to Section 19a-332a-16 of Regulations of Connecticut State Agencies (RCSA)
- Section 19a-333-1 to Section 19a-333-13 of RCSA
- 29 CFR 1910.1001 (OSHA)
- 40 CFR 763 (EPA)



Annual ACM/PACM Hazard Assessment Form

Building: _____ Inspector: _____

Date	Location Floor Room	Type Air cell, mag block, transite, TSI, VAT, etc.	Quantity Linear ft. Square ft. Cubic ft.	Friable Y or N	Current Condition Good-8, 9, 10 Fair-4, 5, 6, 7 Poor-1, 2, or 3	Potential for Damage Low-1, 2, 3 Medium-4, 5, 6, 7 High-8, 9, 10	Repair Priority High Medium Low None	Comments

Date	Location	Type	Quantity	Friable	Current Condition	Potential for Damage	Repair Priority	Comments