



# Occupational Safety Program

## Asbestos Management Program Manual

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## **Purpose**

The purpose of the procedure is to protect the campus community from exposure to asbestos in its various forms and asbestos-containing materials (ACM).

## **Scope**

The scope of the program pertains to the management of asbestos and related wastes, as it relates to abatement and other activities involving exposure to asbestos. The program applies to all campus buildings and to personnel who may encounter asbestos or ACM.

## **Definitions**

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

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

**Assistant Secretary:** The Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

**Authorized person:** Any person authorized by the employer and required by work duties to be present in regulated areas.

**Building/facility owner:** The legal entity, including a lessee, which exercises control over management and record keeping functions relating to a building and/or facility in which activities covered by this standard take place.

**Certified industrial hygienist (CIH):** One certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

**Director:** The Director of the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designee.

**Employee exposure:** That exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

**Fiber:** A particulate form of asbestos 5 micrometers or longer, with a length-to-diameter ratio of at least 3 to 1.

**High-efficiency particulate air (HEPA) filter:** A filter capable of trapping and retaining at least 99.97 percent of 0.3 micrometer diameter mono-disperse particles.

**Homogeneous area:** An area of surfacing material or thermal system insulation that is uniform in color and texture.

**Industrial hygienist:** A professional qualified by education, training, and experience to anticipate, recognize, evaluate and develop controls for occupational health hazards.

**PACM:** Presumed asbestos containing material

**Presumed asbestos containing material:** Thermal system insulation and surfacing material found in buildings constructed no later than 1980. The designation of a material as "PACM" may be rebutted pursuant to paragraph (j)(8) of this section.

**Regulated area:** An area established by the employer to demarcate areas where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limits.

**Surfacing ACM:** Surfacing material which contains more than 1% asbestos.

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

**Thermal System Insulation (TSI):** ACM applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain.

**Thermal System Insulation ACM:** Thermal system insulation which contains more than 1% asbestos.

## **Responsibilities**

### **A. Environmental Health & Safety (EHS)**

1. EHS will provide consultation to assist in the identification of asbestos/ACM by building inspection.
2. EHS will prepare the Asbestos Management Plan (and Program) with periodic review and revisions as needed;
3. EHS will distribute the Plan and Asbestos Inventory (Locations) to each affected department for distribution to all individuals who are authorized by the department to perform related activities;
4. EHS will coordinate with Industrial Hygienists/Contractors and Facilities Management to complete asbestos abatement work.
5. EHS will investigate and document all reported incidents and/or near-miss incidents involving asbestos or ACM; and
6. EHS will provide training and retraining to all authorized employees or provide guidance on where to seek appropriate training (e.g. MDE-sponsored training).

### **B. Department Heads/Supervisors**

1. Department Heads will designate Supervisors to execute procedures related to asbestos management.
2. Supervisors will provide list of employees who require asbestos management training to EHS.
3. Supervisors shall provide Asbestos Inventory (Locations) to employees as required.

### **C. Employees**

1. Employees will be trained in Asbestos Awareness if they are likely to encounter asbestos or ACM in their duties.
2. Employees who work in buildings that contain asbestos/ACM will be informed through the Employee Safety Programs manual about precautions and relevant locations.

## **Introduction**

Asbestos is the common name for a group of naturally-occurring silicate minerals that separate into thin but strong fibers. There are six asbestos minerals that have been used commercially: chrysotile, amosite, crocidolite, actinolite, anthophyllite, and tremolite. Asbestos minerals belong to two mineral families: the serpentines and the amphiboles. In the serpentine family,

the only common fibrous mineral is chrysotile. Occasionally, the mineral antigorite occurs with morphology similar to the amphiboles. The amphibole minerals consist of a score of different minerals of which the only five regulated by federal standard are the others mentioned prior commercially available varieties. Chrysotile or white asbestos is a soft, fibrous mineral and it is the most commonly encountered variety of asbestos in the United States (~95% of asbestos in place). Amosite and crocidolite make up most of the remainder, with the other varieties found in very small amounts.

Asbestos is non-combustible, has high tensile strength, has good thermal and electrical insulating properties, and chemically inert (except chrysotile, slightly soluble in hydrochloric acid). It is durable, flexible, strong, and resistant to wear. Because of these desirable properties, asbestos was often used in industry and the home. Asbestos was used in many building materials including the following: pipe and boiler insulation, fireproofing, resilient flooring, roofing materials, ceiling tiles, sheetrock, cement sheet and duct materials, automotive brake/clutch components, decorative coatings, plasters, and many others. Asbestos containing materials (ACM) should never be disturbed unless you have been trained and authorized to do work. Asbestos has been shown through inhalation to cause asbestosis (a non-cancerous fibrosis of the lungs), mesothelioma (cancer of the lung lining), and lung cancer. Based upon exhibited health effects and its prevalence in buildings, asbestos is heavily regulated by federal and state government.

## **Applicable Regulations**

- 29 CFR 1910.1001 - Asbestos
- 29 CFR 1926.1101 - Asbestos
- 40 CFR Part 61 Subpart M – National Emission Standard for Asbestos (specifically, 40 CFR 61.145 and 40 CFR 61.150)
- 40 CFR Part 763 Subpart G – Asbestos Worker Protection
- 49 CFR Part 171, Subpart C - Authorization and Requirements for the Use of International Transport Standards and Regulations
- COMAR 01.01.1987.22 – Executive Order, Asbestos Oversight Committee
- COMAR 26.11.21 - Control of Asbestos

## **Procedure**

### **A. Summary of Requirements**

1. Exposure Monitoring
  - a) All personnel potentially exposed to asbestos shall be representatively monitored by breathing zone air sampling to ensure exposures are kept below the 8-hour time-weighted average Permissible Exposure Limit (PEL) of 0.1 fibers/cubic centimeter of air (f/cc) and the 30-minute Excursion Limit of 1.0 f/cc. Sampling and analysis shall be performed in accordance with OSHA-specified methodology.

2. Exposure Assessments
  - a) All asbestos-disturbing activities shall be preceded by a supervisory review of proposed work/procedures and available relevant monitoring data to verify that work will not create worker exposure hazards.
  
3. Medical Surveillance
  - a) All personnel assigned to asbestos-disturbing activities shall be medically examined prior to first assignment and annually thereafter under the direction of a licensed physician. A written opinion must be provided indicating the employee's medical qualification to perform asbestos work.
  
4. Personal Protection
  - a) All personnel performing asbestos-related work shall be provided with full body (including head, hands, and feet) protection and respiratory protection appropriate for the airborne asbestos concentration (not less than half-face air-purifying model for automotive work and full-face powered air-purifying model for all other asbestos activities).
  
5. Engineering Controls
  - a) Emissions shall be controlled by using any or a combination of all of the following controls: local exhaust ventilation equipped with HEPA filtration and exhausted outdoors (whenever possible), vacuums equipped with HEPA filtration, and glove bag or glove box enclosure systems.
  
6. Area Preparation
  - a) Areas where asbestos will be disturbed must be posted with warning signs to restrict access, contained, or enclosed with barriers, and provided with decontamination facilities.
  
7. Waste Handling and Disposal
  - a) Asbestos waste shall be promptly packaged while wet and sealed in impermeable leak-tight containers.
  - b) All waste must be labeled in accordance to verbiage specified by OSHA, EPA, and DOT. The generator, source location, and date of container closure must be on the container.
  - c) Waste shall be disposed in an EPA-approved disposal site.
  
8. Waste Storage, Transport and Documentation
  - a) Asbestos waste shall not be stored at the point of generation.
  - b) Waste must be placed in locked/secured closed vehicles or containers.
  - c) Vehicles or containers shall be marked or posted with warning signs during loading and unloading.

- d) Wastes must be documented in a waste shipment record in accordance with EPA/DOT requirements. This document shall travel to the disposal site with the waste.

## **B. Regulated Areas/Methods**

1. For all abatement projects at TU, project managers will use only asbestos-licensed contractors.
2. Contractors are required to ensure the safety of all staff, students, and visitors in vicinity of the work.
3. EHS will ensure that compliance and best work practices are maintained for all abatement work on campus.
4. All of these projects include an industrial hygienist to oversee the following controls:
  - a) Containment setup will establish an area that is properly sealed off using plastic sheeting and negative air pressure systems and high efficiency air filtration to prevent asbestos fibers from escaping.
  - b) Continuous air sampling inside and outside the containment area to monitor asbestos fiber levels. This involves using air pumps and filters designed to capture airborne asbestos fibers.
  - c) Visually inspect the containment area visually to check for any breaches or damages to the containment barriers.
  - d) Post Abatement Clearance Sampling
    - i. After the abatement work is complete, conduct clearance sampling to verify that the asbestos levels inside the containment area are below regulatory limits. This is typically done by an accredited asbestos inspector or industrial hygienist.
  - e) Analysis is done by sending air samples collected to a certified laboratory for analysis. The laboratory will analyze the samples to determine the concentration of asbestos fibers present.
  - f) Keep detailed records of all sampling results, visual inspections, and any actions taken during the abatement process.

## **C. Reporting**

1. Demolition and renovation projects involving abatement of asbestos-containing materials requires specific notifications be provided to the Maryland Department of the Environment.
2. All employee medical surveillance and personal monitoring shall be provided to employees within 30 days.
3. All asbestos work performed by TU staff shall be reported.
4. All contractors shall submit a Notification of Contractual Abatement to EHS prior to initiation of work.

#### **D. Inspections**

1. All asbestos-containing materials must be identified prior to demolition, renovation or other activities that may cause disturbance to these materials. Surveys, sampling, and analysis shall be performed in accordance with EPA requirements.
2. All asbestos abatement work must be planned and inspected by personnel deemed competent by EPA definition. Clearance air monitoring of the work area is required following all asbestos abatement, except small scale operations performed by in-house maintenance personnel.
3. Asbestos-containing materials are to be inspected semi-annually for condition with repairs or containment implemented as necessary.

#### **E. Recordkeeping**

1. Records shall be maintained of all of the following: surveys, inspections, sampling data, designs or specifications, notifications, medical surveillance, air monitoring results, written respirator program, respirator training and fit-testing, work reports/logs, waste shipment records and any other records related to asbestos work.
2. Personnel medical or exposure records shall be maintained for at least 30 years following termination of employment for any individual exposed to asbestos.

#### **F. Written Program**

1. The written [Asbestos Management Plan](#) is available on the EHS webpage.

#### **G. Training**

All personnel involved in asbestos-disturbing activities must receive training concerning acceptable work practices, engineering controls, regulations, personal protective equipment, hygiene and housekeeping, waste handling & disposal, medical surveillance, exposure monitoring, decontamination facilities, containment enclosures, asbestos health effects and recordkeeping. Specific training programs are required for personnel with the following asbestos-related responsibilities: Worker, Automotive Worker, Supervisor, Project Designer, Building Inspector, Management Planner and Safety & Health Specialist. This training is to be in accordance with the EPA AHERA Model Accreditation Plan or the Maryland State Asbestos Control Program.

Employees who may or may not be involved in activities directly related to disturbing asbestos may take Asbestos Awareness training. Respiratory Protection training is also available. Training may be assigned virtually through Vector Solutions SafeColleges found at the following URL: <https://towsonehs-md.safecolleges.com/training/home>. Employees shall request training or respirator fit testing by emailing [safety@towson.edu](mailto:safety@towson.edu) or by calling the Environmental Health & Safety (EHS) office at 410-704-2949.



## **Resources**

To request documents, reviews for procedures, processes, or equipment, or general inquiries, contact EHS by emailing [safety@towson.edu](mailto:safety@towson.edu) or by calling the Environmental Health & Safety (EHS) office at 410-704-2949.

## Appendix A: Known Locations of Asbestos at TU

(as of May 7, 2024)

Administration Building (7720 York Road) (1957)	Vinyl floor tile/mastic (under carpet) Black tar pipe coating Fittings in walls/above plaster ceilings
Armory (1932)	Vinyl floor tile/mastic in basement Silver roof flashing (applied on grey metal flashing)
Auburn House (1790)	Fire doors
Barnes Hall (2016)	No asbestos detected
Barton House (2011)	No asbestos detected
Burdick Hall (1968)	Vinyl floor tile (under carpet, new tiles & including under hallway floor tiles) Fire doors Fittings (above plaster ceilings/in walls) Transite panels (building perimeter) Black tar pipe/duct coating Exterior overhang – plaster
Center For the Arts (1973)	Vinyl floor tile/mastic Fire doors Fittings (above ceiling tile/in walls)
Child Care Center (2007)	No asbestos detected
College of Health Professions Building (2024)	No asbestos detected
College of Liberal Arts Building (2011)	No asbestos detected
Cook Library (1969)	Vinyl floor tile/mastic (including under carpet) Fire doors Fittings (above ceiling tile/in walls) Exterior overhang – plaster
Douglass House (2011)	No asbestos detected
Enrollment Services (1972)	Fire doors Vinyl floor tile/mastic (including under carpet & hallway floor tile) Fittings (enclosed in walls)
General Services (1970)	Fire doors Fittings (above ceiling tile/in walls) Vinyl floor tile/mastic
Glen Complex Towers A, B, C, & D (1983)	Fire doors
Glen Dining Hall (1983)	Fire doors
Harris Hall (2008)	No asbestos detected

Hawkins Hall (1977)	Fire doors Vinyl floor tile/mastic Transite in floor (heating duct) Outside light fixture insulation pads Chalk board glue dots Roof drain mastic by pipe penetration to roof
Health & Counseling Centers (Ward Hall) (1951)	Fire doors Fittings (In walls/crawl space) NOTE-Crawl space: soil encapsulated-do not disturb by penetrating ground
Health & Counseling Centers (West Hall) (1951)	Fire doors Fittings (in walls/crawl space) NOTE-Crawl space: soil encapsulated-do not disturb by penetrating ground
John B. Schuerholz Park (2001)	No asbestos detected
Johnny Unitas <sup>®</sup> Stadium (1977)	No asbestos detected
Landscape Services (2001)	No asbestos detected
Lecture Hall (1977)	Fire doors Floor tile/mastic Roof flashing
Linthicum Hall (1968)	Vinyl floor tile/mastic (including under hallway floor tiles) Fittings (except mechanical room) Transite panels in mechanical room/walls/perimeter Offices Black mastic: behind white/caulk Boards; pipe Covering inside walls
Marshall Hall (2016)	No asbestos detected
Media Center (1957)	Vinyl floor tile/mastic (mainly under carpet) Fire doors Fittings (except ground floor mechanical/electrical rooms) Fittings/pipes (enclosed in walls/floors)
Millennium Hall (2000)	No asbestos detected
Newell Dining Hall (1914)	Fire doors Fittings (in walls and ceilings) Insulation Rope - 12" water line

Newell Hall (1914)	Fire doors Fittings (in walls & in crawl space) Fireproofing (NW Third Floor Bathroom-behind wall)
Power Plant (1914)	Fire doors
Prettyman Hall (1957)	Fire doors Fittings (above ceilings/in walls) Vinyl floor tile/mastic (under carpet RA/RLC room)
Psychology Building (1977)	Vinyl floor tile/mastic Fire doors Outside light fixture insulation pads Heating duct fittings Transite in floor (heating duct)
Public Safety Building (2013)	No asbestos detected
Residences at 10 West Burke Avenue (1984)	No asbestos detected
Residence Tower (1972)	Ducts (mechanical room floors) Acoustical spray (in ceiling fixtures-lights, conduit)
Richmond Hall (1923)	Fire Doors Fittings (in walls & crawl space) Vinyl floor tile/mastic
Scarborough Hall (1964)	Fire doors Fittings Vinyl floor tile/mastic (basement storage rooms) Vinyl floor tile/mastic
Science Complex (2021)	No asbestos detected
Smith Hall (1964, 1976)	Fire doors Fittings (above ceiling tile, under sinks, in walls) NOTE: New Smith Hall only-fittings are non-ACM) Transite panel-cabinets/hoods Epoxy floor with black mastic Floor tile/mastic Epoxy floor with black mastic
Stephens Hall (1914)	Fittings/pipe insulation (enclosed in walls/floor)
TU Arena (2013)	No asbestos detected
Towson Center (1977)	Fire doors Floor tile and mastic Metal duct caulk

	Pipe fitting end cap encapsulate Black mastic-behind mirrors/boards
Towson Run (1989)	No asbestos detected
TUNE (2013)	No asbestos detected
Tubman House (2008)	No asbestos detected
University Union (1972)	Fire doors Spray on fireproofing: Behind/above ducts in ceilings Debris in walls/columns, Above blockwalls Elevator Room (above plaster) Fittings (1st, 2nd, 3rd floors [enclosed in walls/tunnel]) Floor tile and mastic Steam pipe gaskets-Room 129
Van Bokkelen Hall (1932)	Fire doors Fittings/debris (basement crawl space) Floor tile/mastic (First floor lobby area) Stairwell tread/mastic – red
West Village Commons (2011)	No asbestos detected
401 Washington Ave (1970)	Fire doors Pipe insulation and fittings in mechanical rooms Vinyl floor tile/mastic Roof flashing Lobby plaster ceiling Fittings
7400 York Road (Renovated 2014)	No asbestos detected
7800 York Road (1962)	Spray-on fire proofing Vinyl floor tile/mastic Pipe fittings Black tar pipe/duct coating

NOTE: Many of these buildings contain vinyl floor tile/mastic, sheetrock/spackle and mastic behind caulk/white boards or mirrors, or coating on pipes/pipe fittings, which may contain asbestos. The State provided survey did not include bulk sampling or analysis of these for asbestos content. This portion of the survey is being accomplished through the University's resources (case by case basis) and results, when available, shall be added to the list of known locations of asbestos. Until this can be accomplished, all vinyl floor tile/mastic, sheetrock/spackle and mastic shall be presumed asbestos containing materials (PACM) and proper precautions taken. If maintenance work is required which involves disturbing any of these items, please consult Environmental Health & Safety 410-704-2949 prior to performing work.

This list, by building, is intended to be a guidance document only. It is substantially complete; however, the intent is to inform and alert personnel to the known locations of asbestos containing materials and thereby avoid accidental disturbance of the material and reduce the potential for fiber release episodes.