

DUQUESNE UNIVERSITY

Asbestos Operations & Maintenance Program

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INTRODUCTION

The process of identifying asbestos-containing materials (ACM) within a facility is the first step in controlling building occupant exposure to asbestos fibers. Information generated during the building survey can be assembled into a usable format that allows an asbestos program manager to control disruption of ACM. This process of interim control of exposure to asbestos in buildings is the Operations and Maintenance Plan.

The Operations & Maintenance (O&M) Plan outlines the policies and procedures to be followed at Duquesne University relative to the successful management of ACM. The three primary objectives of the O&M Plan are:

1. Clean existing contamination and minimize future fiber release by controlling access to ACM.
2. Develop a written plan that demonstrates Duquesne University's "reasonable care" in dealing with ACM in its buildings.
3. Defer more permanent abatement action and associated costs.

This plan applies to the asbestos containing materials as identified in the Duquesne University Asbestos Assessment and will apply to all feasible, potentially friable and non-friable ACM found in the University subsequent to this study.

SCOPE

This plan provides for:

1. A hierarchical framework for the reporting of damage to any ACM and a mechanism to assure repair, isolation, or abatement of damaged ACM. This framework has assigned program responsibilities to individuals in order to assure accountability.
2. Cleaning procedures to be used in areas containing friable ACM.
3. Procedures to assure that ACM is not disturbed and procedures to be followed for renovation activities.
4. Locations of ACM
5. Periodic inspection
6. Training
7. Respiratory Protection/Medical Evaluation
8. Emergency Response Procedures

POLICY STATEMENT

It is the policy of Duquesne University to maintain ACM in a state that presents a safe and healthy work environment for employees, students, contractors and visitors. The University will closely monitor the condition of ACM in its buildings and respond immediately to any damage to any ACM.

PROGRAM ELEMENTS

Reporting Framework and Responsibilities

Presented below is a reporting framework to ensure prompt reporting of damage to asbestos containing materials, dust, debris, etc. and to ensure swift remedial action. Listed is a breakdown of the categories in the framework showing project responsibilities.

Maintenance and Housekeeping Staff

Maintenance and housekeeping staff shall report damage or other disturbance of ACM to their respective supervisor.

Maintenance and Housekeeping Supervisors

Supervisors are responsible for relaying damage reports to the Asbestos Program Manager (APM) and will respond to decisions made by the APM.

Asbestos Program Manager (APM)

The APM will:

- Be trained in the health effects of asbestos, the detection, identification, and assessment of ACM, options for controlling ACM, asbestos management programs, and all relevant federal, state and local asbestos regulations.
- Make all decisions regarding abatement activities and will ensure the successful completion of said activities.
- Ensure that all provisions of the O&M program are honored.

Asbestos Abatement Contractor

The asbestos abatement contractor will conduct all abatement activities at Duquesne University. No university employees will conduct any abatement activities.

Cleaning Procedures in Areas that Contain Damaged ACM

Presented below are procedures to be followed for areas containing damaged ACM. The licensed University O&M asbestos abatement contractor will perform all cleaning of visible asbestos dust and debris under this plan.

Cleaning procedure:

All floors shall be wet mopped (if accessible), and all horizontal surfaces shall be wet wiped (if accessible). A mist spray bottle shall be employed to keep cloths damp. Cloths and mop heads

shall be disposed in properly labeled, 6-mil plastic bags. All HVAC filters in the area shall be HEPA vacuumed and disposed in 6-mil plastic bags. Any carpeting and draperies (if present) shall be HEPA vacuumed as well. All waste shall be disposed in a PaDEP licensed asbestos landfill.

Procedures to Assure that ACM is not Disturbed

Contact Unlikely

In most buildings containing ACM, many routine maintenance activities may be performed without contacting the ACM. For example, changing light bulbs in a fixture on a ceiling that contains asbestos acoustical plaster can usually be performed without jarring the fixture or otherwise disturbing the ACM (the top of the fixture should have been wet wiped previously to remove any settled fibers). In these situations, few precautions, other than normal care, are needed. The only precaution is to assure the availability of respirators and a HEPA vacuum if needed. These do not have to be taken to the site but should be available from a known location in the building.

Accidental Disturbance of ACM Possible

Routine maintenance and repair includes work on light fixtures, plumbing fixtures and pipes, air registers, HVAC ducts, and other accessible parts of a building's utility system. Where these fixtures or system parts are near friable ACM, maintenance work may unintentionally disturb ACM and release asbestos fibers.

For example, maintenance work on ventilation ducts in an air handling room that contains asbestos fireproofing only on structural beams could be conducted without contacting the ACM. The fireproofing could be disturbed, however, accidentally during the course of work.

The following procedures should be used if accidental disturbance of ACM is possible:

- Approval must be obtained from the university asbestos program manager before beginning work. The asbestos program manager must make an initial visit to the work site.
- The work should be scheduled after normal work hours, if possible, or access to the work area should be controlled. Doors should be locked from the inside and signs posted to prevent unauthorized persons from entering into the work area. Note that emergency exits must remain operational.
- The air handling system should be turned off or temporarily modified to prevent the distribution of any released fibers to areas outside the work area.
- 6-mil polyethylene plastic drop cloths should be placed beneath the location of the maintenance work, extending at least 10 feet on both sides if possible. Alternatively, a rectangular enclosure constructed of 6-mil plastic on a frame can be positioned underneath the maintenance area to inhibit the spread of fibers from fallen ACM.
- Workers should at least wear air purifying respirators equipped with P100 cartridges. They should also wear disposable protective clothing including body suit and booties.
- The ACM in the maintenance areas should be misted lightly with amended water. Ensure that the electrical system is locked out/tagged out before spraying around any conduits or fixtures.
- After maintenance work is completed, all tools, ladders, and horizontal surfaces should be wet wiped with a damp cloth and HEPA vacuumed.
- Any debris on the drop cloth, floor, etc. should be HEPA vacuumed.

- The plastic drop cloth (or enclosure) should be wet wiped with a damp cloth, HEPA vacuumed, folded carefully, and discarded as asbestos waste.
- All cloths, vacuum bags/filters, and other disposable materials must be discarded in sealed and labeled 6-mil plastic bags and disposed as asbestos waste.
- Workers should HEPA vacuum and wet wipe with a damp cloth respirators and protective clothing at the work site. The clothing should be discarded as asbestos waste. If ACM was disturbed during the course of work, the workers should then proceed to a shower room while wearing their respirators for showing. Workers should shower with their respirators on.

All work will be conducted by an EPA/PA/ACHD accredited asbestos abatement contractor.

Disturbance of ACM Intended or Likely

Some maintenance and repair activities will unavoidably disturb ACM. For example, installing new sprinkler or piping systems will necessitate hanging pipes from structural members or ceilings. If the beams or ceilings are insulated with ACM, the ACM will be scraped away to install hangers.

Likewise, pulling cables or wires through spaces with ACM or ACM debris is likely to dislodge pieces of the ACM or disturb the ACM debris. Furthermore, anytime tiles are moved to enter the space above a suspended ceiling, settled dust on top of the tiles will be disturbed. If the beams or decking above the ceiling are covered with ACM, the dust is likely to contain asbestos fibers. All of these examples involve the disturbance of ACM or asbestos dust and debris and will likely result in elevated levels of airborne asbestos fibers.

Small Disturbances

The following procedures are appropriate for maintenance activities which involve the abatement of less than 3 square feet of ACM or when disturbance of ACM dust and debris or unintentional contact with ACM is likely. All work will be conducted by an EPA/PA/ACHD accredited asbestos abatement contractor.

- Approval must be obtained from the asbestos program manager before beginning work, and the work must be supervised by an OSHA competent person.
- The work should be scheduled after normal working hours, if possible, or access to the work area must be controlled: doors should be locked from the inside and signs posted to prevent unauthorized persons from entering the work area. Signs should read:

**DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY**

Note: emergency exits must remain in operation.

- The air handling system should be shut off or temporarily modified to prevent the distribution of fibers from the work area to other areas of the building.
- Workers must wear, at a minimum, air purifying respirators with P100 cartridges and protective clothing including a body suit, hood, booties, and gloves.
- A 6-mil polyethylene plastic drop cloth should be placed beneath the location of the maintenance work, extending at least 10 feet beyond all sides of the work area (In the case of entry into the space above a suspended ceiling, the work area should be the area of the tiles removed to gain access). Alternatively, a rectangular enclosure constructed of 6-mil plastic on

a frame can be positioned underneath the maintenance area to inhibit the spread of fibers from fallen ACM.

- If entry to the space above a suspended ceiling is necessary, the entry tile should be removed carefully with a little jarring as possible. The air above the opening, the top of the removed tile, and all tiles surrounding the opening, and the ACM likely to be disturbed should be misted with amended water using an airless sprayer. A thorough misting of the air will help fibers to settle quicker. Ceiling tile should also be cleaned with a HEPA vacuum, ensuring that care is taken not to vibrate the tile and disturb the ACM.
- Selected workers should wear personal air monitors as required by OSHA unless a negative exposure assessment has been performed by the asbestos abatement contractor's competent person.
- During the course of the work, any ACM that is removed should be collected by the HEPA vacuum. This is best accomplished by placing the vacuum hose just below the ACM being removed.
- Upon completion of the work, any visible debris on the top of the suspended ceiling, on the drop cloth, on the floor, or anywhere else should be collected with the HEPA vacuum.
- All tools and equipment should be wiped with damp cloths and HEPA vacuumed.
- The plastic drop cloth (or enclosure) should be wet wiped with a damp cloth, HEPA vacuumed, folded carefully, and discarded as asbestos waste.
- All cloths, vacuum bags/filters, and other disposable materials must be discarded in sealed and labeled 6-mil plastic bags and disposed as asbestos waste.
- Workers should HEPA vacuum and wet wipe with a damp cloth respirators and protective clothing at the work site. The clothing should be discarded as asbestos waste. If ACM was disturbed during the course of work, the workers should then proceed to a shower room while wearing their respirators for showing. Workers should shower with their respirators on.

Large Disturbances

Any maintenance work which involves the abatement of 3 or more square feet of ACM should be considered large disturbance. Again, all work will be conducted by an EPA/PA/ACHD accredited asbestos abatement contractor. Furthermore, all work shall be conducted in accordance with 29 CFR 1926.1101, the OSHA Construction Industry Standard.

Locations of Building ACM

The location of ACM within the buildings of Duquesne University may be found in the Inspection Report for Campus Wide Asbestos Survey dated November 2006.

Periodic Inspection

Periodic review of the O&M plan is essential to ensure that the program objectives are being met. A key feature of the review is periodic inspection of the ACM in the campus buildings. Combined with ongoing reports of changes in the condition of the ACM made by university personnel, the periodic inspection will ensure that any damages or deterioration of the ACM will be detected and corrective action taken.

A periodic inspection will be conducted on an annual basis by an EPA/PA accredited asbestos building inspector/management planner.

Training

All maintenance and housekeeping staff who work in a building that contains ACM will be given annual asbestos awareness training in accordance with 29 CFR 1926.1101(k)(9).

Respiratory Protection/Medical Evaluation

Respiratory Protection and Medical Evaluation shall be provided in accordance with Duquesne University's Respiratory Protection Program.

Emergency Response Procedures

As long as ACM remains within a building, a fiber release episode could occur. Housekeeping and maintenance personnel should report the presence of debris on the floor, water or physical damage to ACM, or evidence of a possible fiber release to the Asbestos Program Manager. The APM will contact the Asbestos Abatement Contractor to clean up the debris or make necessary repairs as soon as possible.

Minor Episodes

Minor episodes (less than 3 linear or square feet of material) may be treated with standard wet methods and HEPA vacuuming as follows:

- Workers should wear disposable clothing and air-purifying respirators equipped with P100 cartridges, at a minimum.
- Workers shall thoroughly saturate the ACM with amended water using an airless sprayer. The debris shall then be placed in a labeled, 6-mil plastic bag for disposal, and the floor shall be cleaned with damp cloths or a mop. Alternatively, the debris may be collected with a HEPA vacuum.
- All debris and material used in the cleanup shall be disposed as asbestos waste.
- Workers shall vacuum their disposable clothing before leaving the work area, proceed to a shower room, shower with their respirators on, and clean their respirators while in the shower. All disposable clothing shall be disposed as asbestos waste.
- The damaged ACM shall be repaired with asbestos free spackling, plaster, cement, or insulation; or sealed with latex paint or an encapsulant.

Major Episodes

A major episode is defined as an event involving 3 square feet or 3 linear feet or more of ACM. ACM falling from heights or a breach of a containment barrier are examples. The following response procedures shall be employed:

- The area shall be isolated as soon as possible after the ACM debris is discovered. If the area can be sealed by doors, the doors shall be locked from the inside (escape corridors must remain in operation) and signs posted to prevent unauthorized personnel from entering the area (**DANGER, ASBESTOS, CANCER AND LUNG DISEASE HAZARD, AUTHORIZED PERSONNEL ONLY, RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA**).

- The air handling system shall be shut off or temporarily modified to prevent distribution of asbestos fibers from the work site to other areas of the building. If possible, doors, windows, and air vents shall be sealed with 6-mil plastic sheeting and duct tape.
- All work procedures required by the EPA, OSHA, and ACHD for abatement shall be employed. These include containment barriers, negative pressure ventilation, respiratory protection, protective clothing, decontamination facilities, and air monitoring.
- Workers shall wear respiratory protection and protective clothing in accordance with 29 CFR 1926.1101.
- Fallen debris shall be sprayed with amended water and placed in 6-mil plastic bags for disposal. The floor shall be cleaned with a HEPA vacuum.
- Walls, ceilings, pipes, boilers, or other surfaces that have ACM damaged or delaminated should be repaired temporarily. This may involve re-plastering with asbestos-free material, spraying with an encapsulant, or taping with duct tape. ACM beyond the immediate area of damage may require abatement to prevent additional episodes.
- Air monitoring shall be conducted before containment systems are removed. Monitoring shall be conducted in accordance with ACHD requirements.
- After barriers are removed, consideration shall be given towards decontamination of the entire building or a portion thereof.
- All equipment utilized shall be washed or wiped with damp cloths. All disposable materials shall be discarded as asbestos waste.

Each fiber release episode shall be documented. Documentation should include the following:

- Date of the episode
- Location
- Method of repair or abatement
- Name(s) of the person(s) performing the work
- Waste Shipment Record

This program will be reviewed at least annually and updated as necessary.