

Calvin College

Asbestos Operations and Maintenance Plan

INTRODUCTION

Calvin College's Asbestos Operations and Maintenance Plan has three primary objectives: 1) remove existing contamination and remove/repair small quantities of damaged asbestos containing material (ACM), 2) minimize potential for disturbance and release of asbestos fibers through controlling access, and 3) maintain ACM until removed.

The goal of this program is the elimination of employee exposure to ACM. Specific procedures have been developed which, if followed, will allow employees to safely conduct routine and non-routine maintenance activities on equipment that may be in the vicinity of ACM without risk of employee exposure.

Calvin College employees will not perform regularly scheduled or anticipated Class I asbestos abatement. Calvin College will contact outside contractors to perform Class I asbestos abatement activities. In an emergency situation Calvin College Physical Plant Staff with 16-Hour Operations and Maintenance Training may intercede to prevent a sudden, unexpected event that if not immediately attended to will result in a public safety or health threat, will damage equipment, or will result in unreasonable financial burden from deteriorating while awaiting the arrival of the abatement contractor.

The O & M program has been written with the following considerations in mind:

- Notification
- Labeling
- Safe Work Practices
- Training of Key Employees
- Record Keeping
- Administrative Controls

The success of Calvin College's O & M program is dependent on cooperation, communication, and increased awareness of key employees. Key employees are those who may come in contact with ACM on a daily basis.

This plan identifies accepted practices and administrative controls to assist employees in their efforts to maintain a safe working environment.

ACM has been positively identified on Calvin College's campus. Surveys of areas known to possess ACM are maintained on file by Environmental Health and (EHS).

The following sections explain the key elements of the O & M program. In addition, responsibilities of individuals who may be assigned to assist in managing the ACM are also identified. If you have questions regarding the program, consult the EHS Officer.

DEFINITIONS

Accessible-	When referring to ACM, means that the material is subject to disturbance by building occupants or custodial or maintenance personnel in the course of their normal activities.
Asbestos-	Includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, actinolite, and any of these minerals that have been chemically treated and/or altered.
ACM-	Asbestos containing material - any material or product which contains more than one percent asbestos by weight.
ACBM-	Asbestos containing building material - Surfacing material, thermal system insulation, structural members or other parts of a building which contain 1% by weight of asbestos (or greater).
Asbestos Debris-	Pieces of ACBM that can be identified by color, texture, or composition, or dust, if the dust is determined by an accredited inspector to be ACM.
Damaged Friable Miscellaneous ACM-	Friable miscellaneous ACM which has deteriorated or sustained physical damage such that the internal structure (cohesion) of the material is inadequate or, if applicable, which has delaminated such that its bond to the substrate (adhesion) is inadequate or which for any other reason lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by the separation of ACM into layers; separation of ACM from the substrate; flaking, blistering, or crumbling of the ACM surface; water damages significant or repeated water stains, scrapes, gouges, mars or other signs of physical damage on the ACM. Asbestos debris originating from the ACBM in question may also indicate damage.
Encapsulation-	The treatment of ACBM with a material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent the release of fibers, as the encapsulant creates a membrane over the surface or penetrates the material and binds its components together.
Enclosure-	An airtight, impermeable, permanent barrier around ACBM to prevent the release of asbestos fibers into the air.
Fiber Release Episode-	Any uncontrolled or unintentional disturbance of ACBM resulting in visible emissions.
Friable-	Material which, when dry, may be pulverized, crumbled or reduced to a powder by hand pressure, and includes previously non-friable material which becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to a powder by hand pressure.

HEPA Filter-	High Efficiency Particulate Air (HEPA) filters refer to a filtering system capable of trapping and retaining at least 99.97 percent of all monodispersed particles 0.3 micrometers in diameter or larger.
Non friable-	Material in a building which, when dry, cannot be reduced to a powder by hand pressure.
PACM-	Presumed asbestos containing material (PACM): thermal system insulation and surfacing material found in buildings constructed no later than 1980.
Repair-	Returning damaged ACM to an undamaged condition or to an intact state so as to prevent fiber release.
Response Action-	A method, including removal, encapsulation, enclosure, repair, and operations and maintenance, that protects human health and the environment from friable ACM.
Routine Maintenance Area-	An area, such as a boiler room or mechanical room, that is not normally frequented by personnel and in which maintenance employees or contract workers regularly conduct maintenance activities.
Surfacing ACM-	Surfacing material that is ACM.
Surfacing Material-	Material in a building that is sprayed-on, trowelled-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, or other purposes.

NOTIFICATION

Communication of the O & M plan and its key elements are essential for its success. Employees and subcontractors will be made aware of the location of ACM and that certain activities are prohibited to avoid a fiber release event.

Employees whose responsibilities may require that they work in an area that contains ACM, will be made aware of the hazards of asbestos, the location of the material, and the activities which are likely to cause a fiber release incident. This information will be communicated through awareness training, safety meetings, postings, email and/or memos. The procedure for notification of asbestos abatement project can be found in Appendix E. Environmental Health and Safety will be responsible for posting the Asbestos Abatement Notification Form (Appendix F).

In the event additional information is required or questions arise contact the Environmental Health and Safety Officer at 526-8591.

SIGNAGE

Mechanical rooms where ACM is present will be posted with signs that are clearly visible when the door to the room is opened. Any employee or student that has not had Asbestos Awareness training may not enter the room unless accompanied by an employee that has appropriate training and knows the locations of ACM in the room.

Asbestos abatement projects will be posted as outlined in the Procedure for Notification of Asbestos Abatement, Appendix E. Notification postings will be produced using the Asbestos Abatement Notification Form, Appendix F.

LOCATIONS

Materials positively identified as containing asbestos are listed in the Asbestos Survey Results Binder. These surveys, stating the location of ACM, are available to staff through the Environmental Health and Safety Office.

WORK PERMIT SYSTEM

A work permit system will play a role in the proper management of asbestos containing materials. All proposed maintenance, architectural, and custodial work orders and design projects located in an area where ACM is present and will be disturbed will be reviewed by the Environmental Health and Safety Officer. All asbestos disturbing activities will be required to have a completed Project ACM Assessment and Authorization form, Appendix C. The Physical Plant Asst. Director responsible for the project will complete the applicable section on the form and then forward it to EHS. The EHS Officer will be responsible for completing the form for work orders/design projects that will disturb ACM/PACM.

The responsibilities of the Assistant Director, Design include:

- Consult with EHS officers on any work orders or project requests where ACM/PACM could be impacted. EHS officers will use the Asbestos Survey Results Binder (ASRB) and other applicable sources to evaluate the work
- Processing work orders and projects where EHS determines that a survey was completed for the work area and no asbestos has been detected

The responsibilities of the Assistant Director, Architectural and Assistant Director, Maintenance include:

- Evaluation of selected projects for the potential disturbance of ACM
- Notifying EHS at least 10 days prior to anticipated project start date when ACM/PACM is present
- Providing all contractors working in areas with ACM/PACM applicable asbestos related information and locations
- Ensuring that the Contractor Pre-Notification Form is on file with the EHS prior to project start (Appendix D)

The responsibilities of the Environmental Health and Safety Office include:

- Consult with Physical Plant Services Manager on any work orders or project requests where ACM/PACM could be impacted. EHS officers will use the Asbestos Survey Results Binder (ASRB) and other applicable sources to evaluate the work
- For work areas where an asbestos survey has not been performed arrange for the survey to be completed.
- Initiation of the Project ACM Assessment and Authorization form when applicable and discuss it with the Physical Plant Asst. Director responsible for the project
- If it is determined that the proposed work may disturb the ACM, the EHS will complete the Project ACM Assessment & Authorization form stating the precautionary measures to be exercised to minimize the potential for disturbance and then returned to the appropriate supervisor for scheduling.
- If the work cannot be completed safely or ACM must be removed from the site, a qualified asbestos contractor will be contacted.

If the work is to be conducted by an outside contractor, the contractor will be required to complete the Contractor Pre-Work Notification Form (Appendix D) stating that they have been made aware of the asbestos materials in the area. In addition, they acknowledge that they have been properly trained, if required, to work in or around asbestos.

Work not involving asbestos shall be conducted according to standard operating procedures. For asbestos disturbing activities, a copy of the Project ACM Assessment & Authorization, and, if applicable, the Contractor Pre-Work Notification Form shall be filed in the asbestos file maintained by EHS.

WORK PRACTICES AND PROCEDURES

Several types of asbestos containing materials were identified as a result of building surveys including, but not limited to: pipe and pipe fitting, tank and duct insulations, vinyl asbestos floor tile, ceiling tile glue pods, 2'x 4' suspended ceiling tile, resilient sheet flooring, spray-on ceiling texture and plaster. Pipe and pipe fitting, duct and tank insulations, suspended ceiling tile, plaster and spray-on ceiling texture can be a friable material when punctured or damaged. If disturbed, there is a reasonably high probability of releasing fibers. The vinyl asbestos (floor) tile (VAT), resilient sheet flooring and ceiling tile glue pods are non-friable materials. As with most non-friable materials, there does exist the potential to become friable under a given set of circumstances. Using power tools on non-friable materials is considered a prohibited activity. See *Appendix H: Care of Asbestos Containing Flooring* for Calvin College's work practices.

Potential friable materials are located throughout the campus. If work is to be conducted in the vicinity of these materials, the EHS Officer, upon completing the Work Authorization Form, shall include a description of precautionary measures required to minimize or eliminate the risk of disturbing the ACM. In addition, air monitoring may be conducted as a precaution in the event the ACM is disturbed.

Non-friable materials are also located throughout the campus. The EHS Officer by means of a completed Work Authorization Form shall approve work in these areas. She may or may not decide to monitor the job depending on the type of work involved. Although these materials are non-friable, several types of activities shall be prohibited to assure asbestos fibers are not released. Activities requiring the use of power tools such as cutting, sanding, and drilling are strictly prohibited.

Whenever ACM is present, there exists the possibility for fibers to become airborne if the proper precautionary measures are not practiced. Incidences where fibers do become airborne are generally controlled by licensed asbestos abatement contractors and trained consultants. Proper ventilation controls and respiratory protection are essential to protect against adverse health effects.

If a fiber release episode is suspected, the following steps shall be taken:

- Immediately isolate the contaminated area,
- Immediately contact EHS,
- Restrict airflow into and out of the contaminated area. This may be accomplished by closing doors and windows (without entering the area) and shutting down the HVAC system (if possible),
- Restrict entry into the contaminated area by posting signs, erecting barrier tape, and locking doors.

Once the above criteria have been met, a Hazardous Condition Report Form (Appendix G) should be completed by EHS and placed in the permanent asbestos file. The Hazardous Condition Report Form shall include the following.

- The date and exact location of the fiber release,
- The cause of the fiber release,
- The names of persons in the vicinity of the fiber release,
- The procedures taken after the fiber release, including isolation and cleanup procedures.

TRAINING

All Calvin College Physical Plant Staff shall be provided with a minimum of 2 hours of "Asbestos Awareness" training for ACM. This training shall be conducted within 60 days of employment for new hires. The training document shall be placed in the employee file and in a file maintained by EHS.

Proper training of Physical Plant Staff is one of the key elements in a successful O & M program. The 2-hour awareness training will cover the following topics:

- Background information on asbestos,
- Health effects of asbestos,
- Locations of ACM in the building,
- Recognition of ACM damage and deterioration,
- The O & M program for that building,
- Proper response to fiber release episodes.

The EHS Officers and specified Mechanical Maintenance employees shall receive 16-hour Operations and Maintenance Training (Class III) to allow for minor response activities (either 3 linear feet or 3 square feet of removal or clean-up) on campus where a sudden, unexpected event that if not immediately attended to will result in a public safety or health threat, will damage equipment, or will result in unreasonable financial burden.

RECORDKEEPING

EHS shall maintain several files containing the documentation mentioned in this document. Listed below are the types of records maintained.

- The O & M Program,
- Employee Training File,
- Completed Work Authorization Forms,
- Incident Reports,
- Abatement Project/ACM repairs, and documentation,
- Contractor Pre-work Documentation Form.

ATTACHED APPENDISES

Appendix A: Periodic Asbestos Surveillance Report
Appendix B: Flowchart of Procedure for Assessing Asbestos Work
Appendix C: Project ACM Assessment & Authorization Form
Appendix D: Contractor Pre-Work Notification Form
Appendix E: Procedure for Notification of Asbestos Abatement
Appendix F: Asbestos Abatement Notification Form
Appendix G: Hazardous Condition Report Form
Appendix H: Care of Asbestos Containing Flooring