



# OCCUPATIONAL AND ENVIRONMENTAL SAFETY

## ASBESTOS MANAGEMENT PROGRAM WRITTEN PLAN



Updated Fall 2025

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## Emergencies

In the event of a suspected release/exposure to **Asbestos Containing Materials (ACM)** or **Presumed Asbestos Containing Material (PACM)** – any material that has not been tested for asbestos) employees shall:

- Stop what you are doing in the area of the suspected release/exposure
- Leave the area
- Secure the area by closing the door
- Contact the Clemson University Police Department (864-656-2222) or call 911

Appropriately trained staff shall respond to the suspected release/exposure and conduct the following:

- Isolate and secure the area
- Post warning signs on doors or at the area
- If possible, turn off fans, shut windows, seal the ventilation system, to prevent migration of fibers

Only properly trained and qualified individuals are allowed to perform clean-up activities of asbestos fiber release emergencies. Clemson University has a designated Asbestos Consultant that will be called in immediately to document any potential contamination, conduct area environmental air sampling and devise a response action suitable to correct the situation. A designated Asbestos Contractor shall be called in immediately for the abatement actions that are required.

## Policy Statement

Employees have a right to a safe workplace. Federal and state law requires employers to provide their employees with working conditions that are free of known hazards. Clemson University is committed to providing a healthy 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 will be implemented and enforced. Individuals who do not comply with the Asbestos Management Plan may be subject to discipline up to and including termination from the University.

When not properly managed asbestos-containing materials (ACM), may release asbestos fibers into the air and pose a health risk to faculty, staff, students, contractors and visitors. Compliance with all Environmental Protection Agency (EPA), South Carolina Department of Environmental Services (SCDES) and South Carolina Occupational Safety and Health Administration (OSHA) regulations pertaining to the management, removal and disposal of ACM is a Clemson University policy.

Department Heads, Managers, and supervisors are responsible for the application and enforcement of university health and safety policies and procedures. All University staff are charged with ensuring compliance with this policy. Occupational and Environmental Safety will enact procedures to evaluate compliance. Violations of this plan may result in appropriate disciplinary measures in accordance with University policies and procedures.

## Purpose and Scope

This Asbestos Management Plan has been developed to protect the health and safety of the Clemson University employees, students, building occupants, and visitors in facilities owned by Clemson University from potential exposure to asbestos and is in accordance with applicable EPA, SC OSHA and State of South Carolina Department of Environmental Services (SCDES) 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 Clemson University.

All Clemson University employees, building occupants must follow the requirements outlined in the Plan for all projects of any size in facilities owned by Clemson University. This includes projects or tasks that disturb any existing building structure, or any other material which may contain asbestos. As defined by the South Carolina Department of Health and Environmental Control, even small projects which require removal, cutting, sanding, drilling or other disturbances of building materials which may contain asbestos are subject to this requirement.

## Enforcement

All University staff are charged with ensuring compliance with this policy. Occupational and Environmental Safety will enact procedures to evaluate compliance. Violations of this plan may result in appropriate disciplinary measures in accordance with university policies and procedures.

## Regulatory Summary

Clemson University is regulated to various extents under the following sets of asbestos regulations, depending upon the type of activity being conducted; these include:

- SCDES Regulation 61-86.1, Standards of Performance for Asbestos Projects
- EPA Asbestos NESHAP (40 CFR Part 61 Subpart M)
- OSHA Asbestos in Construction Standards (29 CFR 1926.1101)
- OSHA Asbestos General Industry Standards (29 CFR 1910.1001)

## Locations Off of Main Campus – Owned/Leased Buildings

Clemson University has a responsibility to ensure compliance with the asbestos regulations and this Asbestos Management Plan in all buildings owned or occupied by Clemson University, including off-campus spaces and spaces leased to third parties. Clemson University is also responsible for work safety in buildings occupied by the University that are owned and operated by entities other than the University. In such instances, the University will endeavor to comply with any applicable Asbestos Management Plan maintained by such building owners.

OES strives for at least one person at all off-campus buildings be certified for Asbestos O&M work. Any off-campus employee wishing to have asbestos training should contact OES at [OEShelp@clemson.edu](mailto:OEShelp@clemson.edu). See the [Training & Regulatory Requirements](#) section below for more information.

## OES Hazardous Materials Specialist – Asbestos Program Manager

The Asbestos Program Manager is a designated OES staff member that is responsible for the Asbestos Management Plan. Asbestos related work shall take place only with the Asbestos Program Manager's knowledge. Emergency situations will be brought to his/her attention as soon as possible. The designated staff also ensures retention of historical files of all inspections, bulk sampling and abatement projects for all University buildings and integrates this data into the University Facilities Vault.

See the [Asbestos Procedures – Responsibilities](#) section for more details.

## Medical Surveillance and Employee Exposure Monitoring

Currently, Clemson University does not have employees that meet the criteria requiring Medical Surveillance. Employee Exposure Monitoring is conducted as necessary through the Clemson University Occupational Health Program.

## Training & Regulatory Requirements Involving ACM Removal/Repair/Maintenance

### Asbestos Activity Categories

According to Federal and State (SCDES) regulations, removal or maintenance of ACM falls under one (1) of four (4) class 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 I and II are considered activities that require licensed asbestos abatement workers.
- Class III – Repair and maintenance that could disturb a small amount of ACM (less than 3ft<sup>2</sup> or linear feet) – examples are: splicing asbestos electrical wire, removing an old gasket from a flange, removing less than 3ft<sup>2</sup> of tile, or removing or repairing less than 3 linear feet of pipe insulation.
- Class IV – Maintenance and custodial activities that contact but do not disturb ACM or PACM. Employees conducting Class IV asbestos work must have attended an asbestos awareness training program.

Clemson University personnel shall **not** perform Class I or II activities. Personnel with proper training may perform Class III and IV maintenance activities only.

### Training

OSHA requires training for all workers who perform Class I through IV asbestos work. The training must meet the requirements of the EPA Model Accreditation Plan (MAP). No untrained workers are to disturb any amount of asbestos.

Clemson University limits permitted asbestos work for university employees to only Class III and Class IV work. Again, Clemson University personnel shall **not** perform Class I or II activities. Personnel with proper training may perform Class III and IV maintenance activities only. No students or student workers are to disturb any amount of asbestos.

Clemson provides OSHA 1910.1001 (Class IV) and O&M 1926.1101 (Class III) training for employees.

Clemson does *not* provide training to non-university personnel. OES strives for at least one person at the off-campus facility be certified by SCDES for Asbestos O&M work.

Contact OES at [OEShelp@clemson.edu](mailto:OEShelp@clemson.edu) for training details.

## Training Requirements by Activity Category

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### Class I

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**Currently no Clemson University employee is authorized nor trained to perform this class level of work.**

Class I asbestos work involves the removal of TSI and surfacing ACM and presumed asbestos containing material (PACM). Training for Class I work is either 32 hours (asbestos worker), or 40 hours (contractor/supervisor and function as a competent person). An annual 8-hour refresher course is required for both the worker and contractor/supervisor competent person level of training.

### Class II

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**Currently no Clemson University employee is authorized nor trained to perform this class level of work.**

Class II asbestos work involves the removal of ACM which is not thermal system insulation or surfacing material. This includes the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics. Training for Class II work may be the same as for Class I work (asbestos worker or contractor/supervisor) or maybe 8 hours of task specific training which includes hands-on training. An annual refresher is required for all workers.

### Class III

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Currently this is the highest level of abatement any Clemson employee is authorized to perform. The performance of maintenance and activities disturbing ACM shall be performed by University staff who have Class III (O&M) training and certification. Departments shall not have employees perform any tasks that involve the disturbance of ACM/PACM who are not authorized and certified.

Class III asbestos work involves repair and maintenance operations where ACM including TSI and surfacing ACM and PACM may be disturbed in the course of their work, whether this disturbance is active (cutting/drilling) or inadvertent (e.g., moving a ceiling tile contaminated with fireproofing or other ACM). University staff who cut, drill, or otherwise disturb asbestos containing materials or building materials that have not been tested, as well as University personnel who enter and perform work in any building space where damaged friable ACM is present (including, but not limited to, above suspended ceilings where spray-on fireproofing is present, attics, crawl spaces, mechanical rooms, and wall cavities/interstitial spaces) shall have OSHA O&M training.

Any Clemson employee that performs any Class III activity that disturbs asbestos **must** have SCDES Asbestos Operations and Maintenance (O&M) training. This not only complies with SCDES requirements, but it also prevents asbestos exposure. OES covers the cost and organizes this training. This training must be renewed annually.

OSHA (Construction Industry) Operations and Maintenance (O&M) 1926.1101 requires training for Class III work, 16-hour, with an annual 8-hour refresher course.

## Class IV

Asbestos Awareness training is the most basic level of asbestos training and is required for all custodial employees, at least annually. OES covers the cost and organizes this training.

Class IV asbestos work involves maintenance and custodial activities during which employees contact but do not disturb ACM and PACM.

OSHA (General Industry) 1910.1001 requires employees performing Class IV activities to have awareness training. The initial 2-hour Asbestos Awareness training is required for all custodial, maintenance, housekeeping and service personnel who work in buildings that contain asbestos. An annual refresher training is available on-line through the OES website.

## Signage & Labels

In accordance with OSHA (General Industry) 1910.1001 regulations, warning signs shall be posted at the entrance to all mechanical spaces with ACM/PACM and labels shall be posted on all materials containing ACM unless it is not feasible to do so (e.g., floor tile, mastic, etc.).

OES / the Asbestos Program Manager is responsible for maintaining these warning signs and labels.

See Appendix for [Asbestos Notification Program](#) section for more information.

## Prohibited Activities

In accordance with OSHA (Construction Industry) O&M 1926.1101 regulations, 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

## Negative Exposure Assessment

In accordance with OSHA (Construction Industry) O&M 1926.1101, Clemson will annually conduct a Negative Exposure Assessment (NEA) to verify no O&M worker is exposed above acceptable limits.

## Care of Asbestos-Containing Flooring Material

In accordance with OSHA (General Industry) 1910.1001 regulations, standards for what is permitted and prohibited regarding floor care.

See [O&M Activity Procedure](#) below and Appendix C, D & E for more information on [Work Practices for O&M Work](#).

## Clemson University Asbestos Procedures

### Responsibilities

#### Occupational and Environmental Safety (OES) / Hazardous Materials Specialist & APM

1. Assign an OES staff member to serve as the Asbestos Program Manager and the primary contact to fulfill the responsibilities within the Asbestos Management Program written plan and revising this plan, as necessary
2. Provide expertise and guidance to departments to maintain compliance with regulatory requirements and Asbestos Management Plan
3. Investigate asbestos concerns of students, faculty, staff, contractors, building occupants, and visitors
4. Provide or coordinate necessary asbestos training for university employees: O&M 1926.1101 (Class III) and OSHA 1910.1001 (Class IV)
5. Recommend appropriate response actions to control or eliminate potential hazards
6. Initiate asbestos abatement projects arising from health and safety hazards and emergencies
7. Maintain records of all building surveys, material sampling, employee training, abatement activities, air monitoring, and negative exposure assessments
8. Coordinate and communicate with Project Managers on asbestos related support services:
  - a. Review and approve scope of work of all abatement projects and send out requests for quotes to approved contractors.
  - b. Verify that all time and material charges are accurate.
  - c. Prepare signage and occupant notifications regarding projects
  - d. Review the training/invoice/disposal documentation of the contractor and employees.
  - e. Conduct initial and final reviews of projects
  - f. Approve or deny regulatory variance requests from contractors

- g. Ensure submittal of post project documentation
- 9. Periodically monitor activities at asbestos abatement job sites for compliance with applicable regulations.
- 10. Audit asbestos abatement project and consultant activities to ensure asbestos containing materials are being handled correctly, as necessary.
- 11. Coordinate with University Procurement and Business Services to review and manage asbestos related contracts and prequalify asbestos abatement contractors for asbestos abatement activities on Clemson properties.
- 12. Ensure the university's annual renewal of state license.
- 13. Meet with all regulatory agencies as needed for inspections and asbestos-related inquiries.
- 14. Communicate with regulatory agencies, as needed, as well as with the University community
- 15. Implement Asbestos Notification Program, including signage, labels, and annual asbestos notification.
  - a. See Appendix – [Asbestos Notification Program](#) for more details.

### External 3rd party Asbestos Owner Representation Contractor

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The Contracted Owner Rep serves as the daily on-site owner's representative, and have the following responsibilities:

1. Provide technical review of project design and specifications for asbestos abatement on SCDES NESHAP, Small and Minor Projects.
2. Review the contractor's intended method of abatement and work area prep.
3. Review the documentation of the contractor and his employees.
4. Verify asbestos contractor adherence to Federal, State and local regulations.
5. Perform daily inspections of the work and work area.
6. Perform final inspections to assure no asbestos remains and sign off in Abatement Contractor Supervisor's logbook.
7. Take all necessary air samples and perform clearance.
8. Log all reports and results in the University Facilities' Vault.

Additionally, they may also:

1. Review abatement contractor quotes for completeness and cost
2. Develop Scope(s) of Work/Statement(s) of Work
3. Verify that all time and material charges are accurate.
4. Verify contractor adherence to contract specifications.
5. Provide project coordination to support/backup OES, including filing of necessary project documentation
6. Develop variance requests and emergency abatement requests to SCSCDES (have to be submitted by the owner on owner's letterhead)
7. Asbestos Project Monitor services
8. Review the training/invoice/disposal documentation of the contractor and employees.

9. Oversee the third-party Project Monitor/Air Sampling Tech/Owner's Rep.
10. Perform final inspections after work is complete.
11. Project design services.

#### University Employees (non-trained/authorized for asbestos work)

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1. Do not clean, damage, disturb, or remove asbestos-containing materials unless trained and authorized.
2. Contact your supervisor to have a suspected asbestos containing material tested and identified.
3. Contact your supervisor to report suspected asbestos debris or damaged asbestos containing materials.

#### University Supervisors, Managers, or Directors (non-trained/authorized for asbestos work)

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1. Ensure that information and procedures contained within this Asbestos Management Plan are strictly followed by staff/direct reports.
  - a. Notify OES prior to any ACM/PACM disturbance.
  - b. Ensure that authorized employees are following proper work procedures while handling ACM.
  - c. Contact OES for testing of suspect materials encountered during routine operations.
  - d. Notify OES when new employees are hired who will be working with/around asbestos containing materials (ACM) so they may be appropriately trained.
  - e. Immediately contact OES at [OEShelp@clemsun.edu](mailto:OEShelp@clemsun.edu) for clean-up/repair if an employee reports that ACM has been discovered in a damaged state or was accidentally disturbed.

#### University Facilities / Staff Working with or around Asbestos

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1. If required, attend appropriate initial and refresher training as directed by your supervisor and OES.
  - a. Custodial Employees (OSHA General Industry 1910.1001) complete Asbestos Awareness training with annual refresher.
  - b. Maintenance Supervisors and Employees (OSHA O&M 1926.1101) complete OSHA required 16-hour O&M Training with annual refresher.
2. 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 if needed.
3. If authorized, conduct all work in accordance with University policy and training.
4. Notify OES prior to any ACM/PACM disturbance.
5. Ensure any necessary asbestos testing has been performed prior to commencement of work.
6. When maintenance repair, construction and renovation projects are planned, coordinate with OES to obtain existing asbestos surveys and to determine what level of project design and specification documents may be required.
7. Ensure a University Facilities work order is created to request and track asbestos testing and asbestos abatement

8. Ensure that funding for all environmental considerations, including abatement and environmental consultant services, are accounted for in project estimates and budgets.
9. If a regulatory agent requests to see an abatement work area immediately contact OES to be present.
10. Stop work immediately if additional ACM or PACM materials are encountered at a work site and contact OES for further sampling.
11. Any project where asbestos is present must be managed by University Facilities personnel.

### PDC Project Managers

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Construction, renovation, and demolition projects follow procedures outlined in the [PDC Playbook](#). This includes project scoping, design, and construction activity. In addition to above University Facilities staff section, the PDC PM will:

1. Complete (OSHA General Industry 1910.1001) Asbestos Awareness training with annual refresher. OSHA required 16-hour O&M Training with annual refresher highly recommended.
2. Coordinate with OES on all testing and abatement support and to arrange air sampling for abatement activities.
  - a. Review project request forms and proposed scope of work with the requestor.
  - b. Request asbestos inspection for proposed projects.
  - c. Project Managers must approve the scope of work with the cost estimate prior to a purchase order for abatement work being issued.
3. Confirm OES completes proper notifications and placed signage regarding asbestos abatement projects before work is started.
4. Notify OES of any asbestos related incidents at University construction sites.
5. Assist OES in stopping work at abatement sites if requested.
6. Assist OES with external partners if requested.

### External Project Managers, General Contractors, and Sub-Contractors

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1. Ensure that all employees have received asbestos awareness training, including information on the presence, quantity, and location of site-specific materials.
2. Do not disturb ACM or PACM unless specifically trained and authorized to do so.
3. Stop work immediately and contact OES if a previously unidentified ACM or PACM has been disturbed.
4. Communicate hazards related to asbestos work to all other trades on a project site.
5. Engage only prequalified asbestos abatement contractors for asbestos abatement activities.

### External Asbestos Abatement Contractors

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1. Follow all provisions of the applicable State regulations governing asbestos operations, project-specific asbestos abatement specifications, and this written management plan.
2. Maintain Type-II contractor licensure from SCDES as well as appropriate insurance coverage.

3. Annually provide OES and CU Procurement a copy of your company's SCDES Asbestos Abatement certification and current state license.
4. Use only individuals currently accredited as Asbestos Workers or Asbestos Contractor/ Supervisors by SCDES to perform asbestos abatement.
5. Receive approval from OES before requesting a regulatory variance from SCDES for abatement activity.
6. Provide OES copies of project-specific permits from SCDES authorizing abatements to OES for review PRIOR to initiating work.
7. Notify OES and the CU Project Manager of the start and end dates of abatement work.
8. Submit to OES CU Project Manager the required post project documentation including ID's and manifests.

### Operations and Maintenance (O&M) Activities

Any person that will conduct work not considered a renovation, demolition or alteration (i.e. operations and maintenance tasks), is responsible for ensuring that no ACM is disturbed while performing work.

The performance of operations and maintenance (O&M) tasks and activities disturbing ACM shall be performed by university personnel who have EPA Class III (O&M) training and certification. O&M activities include activities like:

- Drilling
- Nailing
- Cutting
- Sanding
- Scraping

Clemson tests on and off-campus University-owned facilities for asbestos. Prior to any activity which might disturb presumed asbestos containing material (PACM) – even something as simple as putting a nail in a wall – contact OES at [OEShelp@clermson.edu](mailto:OEShelp@clermson.edu) to request a review of the data to determine if previous sampling data exists or if testing is required.

- If no asbestos is present, the work may be performed by any employee authorized by Clemson to perform that task.
- If asbestos is present, the work may only be performed by specially trained individuals.

Any and all O&M activities must be recorded and tracked. The Asbestos Project Manager may review these logs periodically.

See Appendix C, D & E for more information on [Work Practices for O&M Work](#).

## Renovation & Construction Projects

Clemson University Project Managers oversee all renovation and construction, including demolition, projects within the University system. Any project where asbestos abatement is included, must be managed by University Facilities personnel.

Construction, renovation, and demolition projects follow procedures outlined in the [PDC Playbook](#). This includes project scoping, design, and construction activity.

See the [Asbestos Testing & Abatement Protocol](#) section below for more information.

## Newly Installed Materials

All replacement building materials should be asbestos-free. It is up to the Project Manager or requisitioner of the project to request written documentation that replacement materials do not contain asbestos. OES can assist with review of replacement building materials. Alternatively, newly installed materials can be sampled by a SCDES-licensed building inspector for asbestos content. Copies of inspection results must be included in the University Facilities Vault.

Clemson University Facilities Planning, Design and Construction group maintains the Standards for Commissioned Architects and Engineers and Design Standards for the University. Visit their [Design & Construction Standards](#) website for more information.

## Communication: Notifications, Signage & Labels

See Appendix for [Asbestos Notification Program](#) section for more information.

OES / the Asbestos Program Manager is responsible for communications.

### Building Occupant Notifications – Regular Operations

OES distributes an annual asbestos notification, maintains warning signs and labels.

### Abatement Notification Signs

Prior to any scheduled asbestos abatement work, OES will send notification to the Building Security Coordinator (BSC) to distribute to the building occupants ten days prior to the start of work and also posts abatement notification signage.

OES will print out and post abatement notification signs, one for each entry to a building; laminate the sign to protect the posting throughout the project duration. OES will remove signage once it is confirmed all abatement activity is complete.

## Contractor Notifications

Prior to arriving on campus to work, contractors will have been notified about the presence of asbestos containing materials through the contract documents. Additionally, PDC Project Managers will notify contractors about the presence of asbestos containing materials in their work area. Contractors will ensure that all employees and subcontractors know of the possibility of encountering asbestos containing materials.

It is expected that all contractors and their sub-contractors doing work for the University are in compliance with all applicable federal and state regulations.

## Asbestos Testing & Abatement Protocol

### Asbestos Testing Survey / Inspections

Per SCDES R. 61-86.1, Section VI, A.1., prior to beginning any renovation (of any size) and/or demolition operation at a Clemson University owned or operated facility, an asbestos inspection must be performed. Asbestos inspections must be performed for all operations and maintenance work as well as other activities that disturb building materials such as, but not limited to, drilling, cutting, sanding, inserting and/or removing screws/nails.

The purpose of the asbestos inspection is to identify the presence, location, quantity and condition of any ACM that will or may be disturbed or otherwise impacted during the course of the project. The inspector will conduct the asbestos inspection based on the scope of work provided.

**Inspection 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.

It is important to realize that some asbestos-containing materials could exist that have not been identified or sampled. Examples of materials that may not have been 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 previous sampling reports, it must be considered a presumed asbestos containing material (PACM) and must undergo the proper testing prior to commencing work.

When a building is scheduled for maintenance, renovation or demolition an asbestos survey must be conducted to comply with the requirements of SCDES and EPA. SCDES requires that an asbestos survey be no older than 3 years; any data older that must be reviewed. All sampling and review must be by an independent 3<sup>rd</sup> party certified to perform such work. OES must review and approve all renovation or demolition work involving disturbance of ACM/PACM.

### Testing Costs

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Testing and inspection surveys for projects under \$10M will be funded by OES. Capital Projects over \$10M shall include the cost of testing surveys in the project budget.

### Request For Testing Process

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To request an asbestos testing and inspection survey, a [service request](#) is submitted to University Facilities and a work order is created.

### Testing Activity

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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 Asbestos Testing Contractor is notified by the work order to complete the work. A documented review of the information in the University Facilities Vault of shared files is the first step in the inspection process. If needed, Testing Contractor may connect with requester and OES to confirm scope of the testing.

OES will review and accept the inspection report. If there is an issue with the report, i.e. not following compliance standards, OES will discuss concerns with the Testing Contractor to resolve and resubmit.

### Testing Reports & Records Retention

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The electronic copies of the inspection reports (with sampling and laboratory data) are filed within the University Facilities Vault.

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 contractor should be contacted to request further sampling.

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## Asbestos Abatement

See the [Responsibilities](#) section above for more detail.

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### Abatement Costs

If asbestos abatement is required, the abatement cost will be rolled into the overall total cost of the maintenance or construction project.

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### Request For Abatement Process

OES must review and approve all renovation or demolition work involving disturbance of ACM/PACM.

The Project Manager shall review previous sampling data/testing inspection for the proposed renovation/demolition area. If the sampling data is greater than three years to the renovation or demolition date, or if more than three years have elapsed since the most recent inspection, the previous inspection shall be confirmed and verified by a person licensed by SCDES as a building inspector and approved by OES.

To request an asbestos abatement, a [service request](#) is submitted to University Facilities and a work order is created. If connected to a construction and renovation project, the Project Manager will create the work order.

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### Scope of Work

The Contracted Owner Rep / Asbestos Testing Contractor will work collaboratively with OES and the PDC Project Manager to determine a scope of work for the abatement. OES or the Owner Rep will contact approved abatement suppliers on University contract to receive a quote for the work. Only prequalified asbestos abatement contractors for asbestos abatement activities are contracted through Clemson University's Procurement Business Services. The PDC Project Manager will accept the quote and University Facilities will submit for a purchase order.

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### Abatement Activity

The Abatement Contractor will communicate with the Project Manager and OES on all abatement activity. The Abatement Contractor will submit SCDES permits authorizing abatement to OES.

OES will install the abatement signage and send the asbestos notification e-mail to the impacted Building Security Coordinator (BSC) to notify their building occupants. See Appendix for [Asbestos Notification Program](#) section for more information.

The PDC Project Managers will notify contractors about the presence of asbestos containing materials in their work area. The Abatement Contractor should communicate hazards related to asbestos work to all other trades on a project site.

Throughout the abatement activity, the Contracted Owner Rep will review the documentation of the contractor and his employees, verify asbestos contractor adherence to Federal, State and local regulations, and perform inspections of the work and work area and log all reports in the University Facilities' Vault. The PDC Project Manager, the Contracted Owner Rep, and the abatement contractor should notify OES of any asbestos related incidents at University construction sites and stop work immediately and contact OES if a previously unidentified ACM or PACM has been disturbed.

The Contracted Owner Rep will take all necessary air samples and perform clearance and final inspections to assure no asbestos remains and sign off in Abatement Contractor Supervisor's logbook.

Once confirmed abatement is complete, OES will remove all signage.

The Abatement Contractor will submit asbestos disposal manifests to OES. OES will review and accept the abatement report. All report details are stored in the University Facilities Vault.

### Abatement Project Close-Out Documentation

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Within 30 days of completing site asbestos activities, OES must be provided with project reports from the contractor and consultant, including but not limited to waste manifests, SCDES permit(s), and air sampling data if available. Failure to submit this project documentation within 30 days may have contract and payment implications.

The electronic copies of the abatement activity are filed within the University Facilities Vault.

## Appendix A - Asbestos Notification Program

OSHA and the EPA require communication and notifications to employees regarding asbestos.

### Annual Asbestos Notification

This annual notification provides information about asbestos-containing materials at Clemson University. All employees and tenants or tenant representatives likely to disturb ACM should be included in the notification program on a continuing basis.

### Signage & Labels

In accordance with OSHA (General Industry) 1910.1001 regulations, warning signs shall be posted at the entrance to all mechanical spaces with ACM/PACM and labels shall be posted on all materials containing ACM unless it is not feasible to do so (e.g., floor tile, mastic, etc.).

OES is responsible for maintaining these warning signs and labels.

### Asbestos Abatement Area Signage

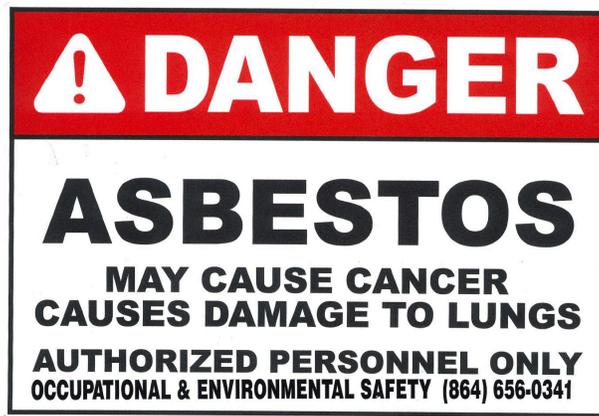
# ATTENTION

## ASBESTOS ABATEMENT IN PROGRESS

Please stay clear of any areas with warning tape and signs.  
As long as you do not enter the sealed workspace,  
there are no hazards to building occupants.

Questions should be directed to Occupational and Environmental Safety  
864-656-0341 or oeshelp@clemson.edu

### Asbestos Area Signage



OES notifies Building Security Coordinators to notify occupants.

# NOTIFICATION

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**TO: BUILDING OCCUPANTS**  
**FROM: Occupational and Environmental Safety**  
**DATE: [Insert current date]**  
**RE: ASBESTOS ABATEMENT**

Attention **[insert building name]** occupants. Your health and well-being are important to us.

Please be advised that an asbestos abatement is necessary in **[insert building name and location]**. The abatement will be conducted on **[insert day and time frame]**. This will not present a health hazard to occupants or visitors as long as you do not enter the sealed workspace.

Background: Due to the age of **[insert building name]** some of the materials used to construct it may contain small amounts of Asbestos. Most, if not all, of this Asbestos is contained in such materials as floor tile, mastic, concrete, mortar, and other "hard" materials; some is enclosed under tape, non-asbestos insulation, or other non-asbestos sealant. Since it is encased or enclosed, the asbestos does not present the same hazard as uncontained asbestos. As long as the Asbestos Containing Material (ACM) is undisturbed, fibers are not released into the air.

The University has hired certified personnel to perform both *non-friable* and *friable* abatement work. If the abatement is *non-friable*, no fibers will be released into the air during the removal. The contractor personnel will cordon off the affected area with warning tape and signage per regulations. If the work is *friable*, the contractor will seal the area off from the rest of the building, installing a special filtered air system to ventilate the workspace, and take other special precautions to ensure that there will not be a release of asbestos fibers into the building air. Additionally, the University has hired an independent third party testing firm to sample the air both in the workspace and outside the workspace while *friable* abatement work is in progress to verify that there is no release.

There is no hazard to occupants as long as they stay clear of any areas with warning tape and signs and do not enter sealed work spaces.

Questions regarding this notice should be directed to: **Occupational and Environmental Safety: 864-656-0341**

## Appendix B – Sample List of Asbestos Containing Materials

The following sample list of known Asbestos Containing Materials (ACM) is from the EPA, is not all inclusive, and is intended to show the types of materials that have been found to contain asbestos. Each building and material are different, and the list below is NOT exhaustive. For Clemson University building specific information and questions regarding a building survey or specific material, contact [OEShelp@clemson.edu](mailto:OEShelp@clemson.edu).

- Cement Pipes
- Elevator Brake Shoes
- Cement Wallboard
- HVAC Duct Insulation
- Cement Siding
- Boiler Insulation
- Asphalt Floor Tile
- Breaching Insulation
- Vinyl Floor Tile
- Ductwork
- Flexible Fabric Connections
- Vinyl Sheet Flooring
- Cooling Towers
- Flooring Backing
- Pipe Insulation (corrugated air-cell, block, etc.)
- Base Flashing
- Construction Mastics (floor tile, carpet, ceiling tile, etc.)
- Heating and Electrical Ducts
- Acoustical Plaster
- Electrical Panel Partitions
- Decorative Plaster
- Electrical Cloth
- Textured Paints/Coatings
- Electric Wiring Insulation
- Ceiling Tiles and Lay-in Panels
- Chalkboards
- Spray-Applied Insulation
- Roofing Shingles
- Blown-in Insulation
- Roofing Felt
- Fireproofing Materials
- Taping Compounds (thermal)
- Thermal Paper Products
- Packing Materials (for wall/floor penetrations)
- Fire Doors
- High Temperature Gaskets
- Caulking/Putties
- Laboratory Hoods/Tabletops
- Adhesives
- Laboratory Gloves/Equipment
- Wallboard
- Fire Blankets
- Joint Compounds
- Fire Curtains
- Vinyl Wall Coverings
- Elevator Equipment Panels
- Spackling Compounds

## Appendix C – Work Practices for O&M Work | *Penetrating Wallboard Systems containing Asbestos*

### Introduction

Only approved O&M trained personnel are allowed to penetrate ACM/PACM. Contact OES for the list of approved staff.

These work practices are to be followed whenever drilling or installing nails/screws or other small penetrating objects through known or assumed asbestos containing joint compound where the wallboard system (wallboard, taping and mud together) is known to contain asbestos.

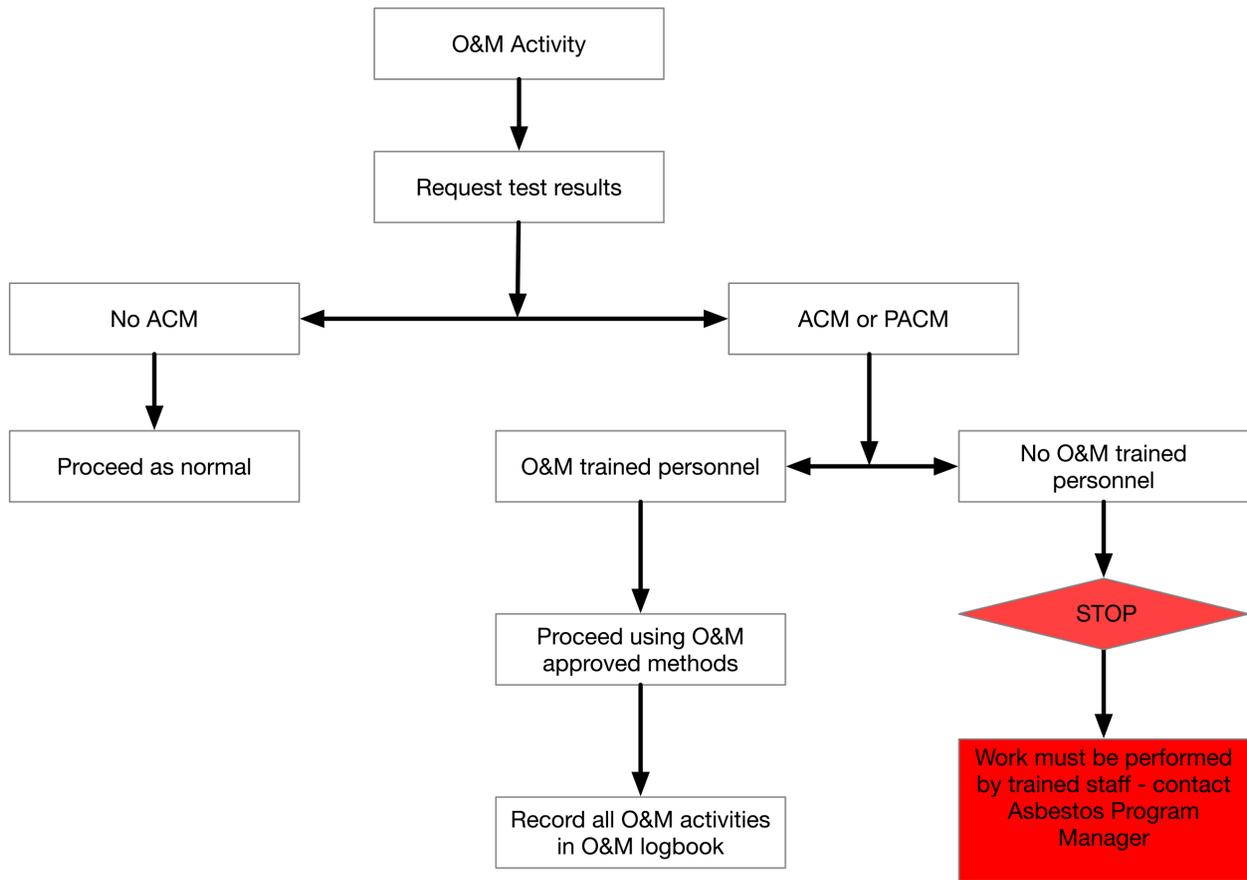
**You are not required to test for asbestos prior to penetrating the wall system if you use these procedures. Testing is still recommended.**

This includes activities such as:

- Hanging pictures
- Installing coat hooks
- Installing shelving track
- Earthquake strapping
- Removal of wall fixtures and furnishings
- Attaching modular furniture to walls
- Installing wiremold
- Screwed in door stops
- Patching and painting
- Drilling/coring asbestos containing concrete/masonry.

If other work tasks such as **sanding and/or scraping walls, or specifically cutting along asbestos containing drywall seams** are necessary; **they must be done by the asbestos contractor.**

## O&M activity flow chart



### O&M activity flow chart description:

1. Confirm performance of O&M Activity
2. Request test results
  - a. No ACM
    - i. Proceed as normal
  - b. ACM or PACM
    - i. Is there an O&M Personnel on site?
      1. If an O&M trained personnel present
        - a. Proceed using O&M approved methods
        - b. Record all O&M activities in O&M logbook
      2. If no O&M trained personnel present
        - a. STOP
        - b. Work must be performed by trained staff – Contact Asbestos Program Manager

## Requirements for O&M Program

### Supervisor

- 16-hour Asbestos O&M Training
- Hands on training in shop

### For workers

- 16-hour Asbestos O&M Training
- SCDES registration (contact OES)
- Hands on training in shop
- This is a two person procedure

### Work requirements

- Wet, non-aggressive methods
- Prompt clean up of material
- Supervisor assurance that all workers have appropriate training
- Supervisor verification that current permit is on record, if a permit is required.
- Control area

### Equipment

- HEPA wet/dry Vacuum cartridge type only
- Spray bottle or garden sprayer of amended water
- Sponge(s)
- Plastic waste bag(s)
- Plastic sheeting
- Paper towels/absorbent pads
- Duct tape
- Blue masking (painters) tape
- Encapsulant
- Paint or Killz
- Taping compound
- Do not enter work area tape

Other tools required to complete task: drill, razor knife, saw, screwdriver, Jab saw etc.

½ face respirator with high efficiency filters during NEA monitoring.

### PPE

- Safety Glasses
- Foot Protection
- Disposable Nitrile Gloves

## Work practices

Note: Within building enclosures, painters tape should be used in all instances where tape will be in contact with finished building materials. Duct tape must not be in contact with finished building materials because of the significant damage that it causes.

## Work procedure for drilling

Customers **cannot** be present in rooms where drilling is done. If room cannot be closed a controlled area will be made with tape and no one can enter.

Air monitoring is optional at the supervisor's discretion.

1. Gather all required tools at the worksite.
2. Assure all training is up to date, and OES is aware of the project.
3. Place plastic on the floor next to or under work area and secure with duct tape or painters tape.
4. Mark the wall where the penetration is needed.
5. Vaseline/shaving cream method
  - a. Put a dollop of Vaseline/shaving cream on the mark where the penetration will be.
  - b. Coat the drill bit in Vaseline/shaving cream.
  - c. Place drill on the mark.
  - d. Drill hole.
6. Set the drill on the plastic on the floor.
7. Wipe paper towels wetted with amended water across the area where the hole was drilled, being careful not to release any dust.
8. Place the paper towels on the plastic.
9. Wet some paper towels and wipe the wall to assure all debris is removed.
10. When all drilling is complete, spray the drill with amended water and wipe with a wet paper towel to assure all dust is removed. Pay special attention to the drill bit.
11. Wrap waste up in plastic sheeting and secure with duct tape, and place in an asbestos plastic bag then goose necked.
12. Put waste in the marked and locked asbestos container located in a specified area. When full notify OES for removal of contents.

### Work procedure for installing nails/screws

Customers **cannot** be present in rooms where nailing is occurring. This also applies to installing drywall anchors.

1. Gather all required tools at the worksite.
2. Assure all training is up to date, and OES is aware of the project.
3. Place plastic sheeting on the floor next to work area and secure with duct tape.
4. Mark the wall where the penetration is needed.
5. Vaseline/shaving cream method
  - a. Put a dollop of Vaseline/shaving cream on the mark where the penetration will be.
  - b. Coat the nail in Vaseline/shaving cream.
  - c. Place nail on the mark.
  - d. Hammer nail in place.
6. Set the hammer on the paper towels on the floor.
7. Wet some paper towels and wipe the wall to assure all dust is removed.
8. Wet wipe hammer to assure all dust is removed.
9. Wrap waste up in plastic sheeting and secure with duct tape, or place in an asbestos plastic bag then goose necked.
10. Put waste in the marked and locked asbestos container located in a specified area. When full notify EHS for removal of contents.

### Work procedure for removing nails/screws/etc.

Customers **cannot** be present in rooms where nailing is occurring. This also applies to installing drywall anchors.

1. Gather all required tools at the worksite.
2. Assure all staff are approved by SCDES (see appendix F).
3. Make OES is aware of the project.
4. Place plastic sheeting on the floor next to work area and secure with duct tape.
5. Spray the wall with amended water until thoroughly wet.
6. Gently remove the nail/screw while holding HEPA vacuum on area.
7. Wet some paper towels and wipe the wall to assure all dust is removed.
8. Wet wipe all tools to assure all dust is removed.
9. Wrap the removed nail/screw and wet wipes up in plastic sheeting and secure with duct tape, and place in an asbestos plastic bag.
10. Turn the waste over to ES for placement in the asbestos waste container.

### Work procedure for removal of sections of wallboard

This procedure applies to removal of 6"x6" sections or smaller.

Customer **cannot** be present in rooms where sections of wallboard are removed.

This is a minimum **two-person** work practice.

1. Gather all required tools at the worksite.
2. Ensure all training and work procedure training is up to date and OES is aware of the project.
3. Place plastic sheeting on the floor next to work area and secure with duct tape.
4. Mark the area of wall to be removed.
5. Spray wall surface with amended water.
6. Begin cutting, having another person periodically spray the area where the blade is penetrating while holding the end of the HEPA vacuum to the area being cut.
7. When cutting is complete, spray amended water around penetration.
8. Gently remove the section of wall system as a whole piece.
9. Set removed wall material on plastic, wrap and duct tape or place in an asbestos plastic bag.
10. Spray edges of remaining wall opening with encapsulant.
11. Wet wipe tools to assure all dust is removed.
12. Wrap waste up in plastic sheeting and secure with duct tape, or place in a plastic bag.
13. Put waste in the marked and locked asbestos container located in a specified area. When full notify EHS for removal of contents.

### Work procedure for patching penetrations

**Never sand exposed asbestos taping compound. Never conduct any activity which disturbs only the taping compound. When scoring, never cut through all the paint layers.**

1. Gather all tools at the worksite.
2. Ensure all training and work procedure training is up to date and OES is aware of the project.
3. Place plastic on the floor next to the work area and secure with duct tape.
4. Ensure all fixtures have been removed from the wall, exposing holes (wire mold, modular furniture, etc. – refer to removal section).
5. Encapsulate affected area with paint or encapsulant.
6. Use hammer to drive any toggle bolt anchor, etc., below surface.
7. Re-encapsulate affected area.
8. Fill hole with patching compound and wet sand area.
9. Let dry and paint.

### Work procedure for patching glue damage or extensive wall damage

Repairing when sections of wall do not have to be removed.

1. Gather all tools at the worksite.
2. Ensure all training and work procedure training is up to date and OES is aware of the project.
3. Place plastic on the floor next to the work area and secure with duct tape.
4. Encapsulate affected area with paint or encapsulant.
5. If paper is torn but no taping compound is present on paper to be removed, paper can be cut off. Contact OES with any questions.
6. If taping compound is present on torn paper, encapsulate area. DO NOT REMOVE PAPER.
7. If paper with taping compound needs to be removed or repairing large holes, refer to "Procedure for Removal of Sections of Wallboard". Once this is done, "California Patch" or other repair can be done.

### Work procedure for label removal

1. Gather all required tools at the worksite.
2. Assure all training is up to date, and OES is aware of the project.
3. Place plastic sheeting on the floor next to work area and secure with duct tape.
4. Mist with amended water.
5. Use scraper to remove label, being careful not to penetrate paint layers.
6. If taping compound is damaged, stop work and contact OES.

### Procedure for HEPA vacuum cartridge replacement

1. Gather all HEPA wet/dry vacuums used for this work.
2. Determine if vacuum/cartridge is full and needs replaced.
3. Contact JBR to come and replace any cartridges for vacuums that are full or near full.
4. Once JBR finishes, return the vacuums to service.

### Supervisor checklist

- Current O&M training for all participants
- Notify OES of project details (date, location, etc.)
- Building Permit, if necessary
- Knowledge of work procedure
- HEPA wet/dry Vacuum
- Spray bottle or garden sprayer of amended water
- Sponge(s)
- Plastic waste bag(s)

- Plastic sheeting
- Paper towels/absorbent pads
- Duct tape
- Blue masking (painters) tape
- Encapsulant
- Paint or Killz
- Taping compound
- Tyvek suit
- Other tools required to complete task: drill, razor knife, saw, screwdriver, etc.
- Provide OES contact number to workers
- Air monitoring (if required)

## Appendix D – Work Practices for O&M Work | *University Work Practices for access to the space over a drop ceiling*

### Introduction

Drop ceilings are common in Clemson buildings. In some of our older structures, there is asbestos containing materials (ACM) present above the drop ceiling. Depending on the age and condition of the ACM, asbestos containing dust may have settled on the back of the ceiling tile.

Before entering the space above a ceiling tile, Clemson employees must confirm there is no ACM contamination present. See the O&M Work Activity Flow Chart in [Appendix C](#).

Certified Asbestos Supervisor not required. For workers, the 16-hour Asbestos O&M Training is required.

### Work practice

Only asbestos O&M trained personnel may access space above drop ceilings. Before moving a ceiling tile, call in a work order to University Facilities (656-2186) to have the space evaluated by the University's testing contractor.

The asbestos contractor will evaluate the materials in the space for ACM, verify there is no ACM dust on the back of the ceiling tile, and sample the air to verify no airborne asbestos fibers.

#### If NO ACM contamination is present

University employees may proceed with the work as planned.

#### If ACM contamination IS present

University employees may NOT proceed with the work as planned. The space must be decontaminated or abated before University employees can access the space. This cost is NOT covered by University Facilities or OES.

Once the area has been abated, work may proceed as planned.

Alternately, the work may be performed by the University's asbestos abatement contractor. This cost is NOT covered by University Facilities or OES.

### Supervisor checklist

- Current O&M training for all participants
- Notify OES of project details (date, location, etc.).
- Building Permit, if necessary
- Work order for evaluation initiated
- Asbestos is either not present, or has been abated

## Appendix E – Work Practices for O&M Work | *Care of Asbestos-Containing Flooring Material*

See the O&M Work Activity Flow Chart in [Appendix C](#).

Below are prohibited and permitted work practices for floor care of asbestos containing materials.

- 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

University personnel have a few options to maintain floor tile in place: 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.

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.

## Appendix F – Definitions

**Abatement** - Procedures to control fiber release from regulated asbestos-containing materials. This includes removal, enclosure, encapsulation, repair, and any associated preparation, clean up and disposal activities having the potential to disturb regulated asbestos-containing material.

**Asbestos** - The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthophyllite, and actinolite-tremolite.

**Asbestos containing material (ACM)** - Material containing asbestos of any type, either alone or mixed with other materials, in an amount greater than one percent (1%) as determined by using the method specified in 40 CFR Part 763, Appendix A, Subpart F, Section 1, as amended, or an accepted equivalent. (NOTE: "Appendix A to Subpart F" has been redesignated as, and shall hereinafter be referred to as, "Appendix E to Subpart E" - 60 FR 31917, June 19, 1995.)

**Asbestos Project** - Any activity associated with abatement including inspection, design, air monitoring, in-place management, encapsulation, enclosure, renovation, repair, removal, any disturbance of regulated asbestos containing materials (RACM), and demolition of a facility.

**Category I nonfriable asbestos containing material (ACM)** - Nonfriable asbestos or nonfriable asbestos-containing packing, gaskets, and resilient floor covering; and asphalt roofing products containing greater than one percent (1%) asbestos as determined using the method specified in 40 CFR Part 763, Appendix E, Subpart E, or an accepted equivalent.

**Category II nonfriable ACM** - Any material that cannot, when dry, be crumbled, pulverized, or reduced to powder by the forces expected to act upon it in the course of demolition or renovation operations, excluding Category I nonfriable ACM and containing greater than one percent (1%) asbestos as determined using the methods specified in 40 CFR Part 763, Appendix E, Subpart E, or an accepted equivalent.

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

**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, etc.

**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 activities during which employees contact but do not disturb ACM or PACM.

**Contractor** - Any individual, partnership, corporation or other business concern that performs asbestos abatement but is not a permanent employee of the facility owner.

**Demolition** - Wrecking or taking out any load-supporting structural member of a facility together with any related handling operations, the burning of any facility, or moving of a structure.

**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, but can also include entering mechanical spaces including but not limited to above suspended ceilings where spray-on fireproofing is present, attics, crawl spaces, mechanical rooms, and wall cavities/interstitial spaces.

**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.

**EPA** - United States Environmental Protection Agency.

**Friable asbestos containing material** - Any material that, when dry, can be or has been crumbled, pulverized, or reduced to powder and contains greater than one percent (1%) asbestos as determined using the method specified in 40 CFR Part 763, Appendix E, Subpart E, as amended, or an accepted equivalent.

**Glove bag** - 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

**Negative Exposure Assessment (NEA)** – A demonstration that employee exposure during an operation is expected to be consistently below the OSHA Permissible Exposure Limit (PEL). “NEA Tasks” are those that have been determined by the Clemson ES, via personal air sampling, not to pose a risk of exposure above the OSHA exposure threshold limits.

**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.

**Operation and Maintenance (O&M) activity** - The disturbance of regulated asbestos-containing material only when required in the performance of an emergency or routine maintenance activity that is not intended solely as asbestos abatement.

**OSHA** - Occupational Safety and Health Administration.

**Permissible Exposure Limit (PEL)** – The regulatory limit on the amount or concentration of a substance in the air. The OSHA PELs for asbestos are defined as 0.1 fibers per cubic centimeter (f/cc) as an 8-hour time weighted average (TWA) exposure, and 1.0 f/cc as a 30 minute excursion limit.

**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.

**Renovation** - Altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions.