

UNIVERSITY OF FLORIDA

**ASBESTOS
OPERATIONS
AND
MAINTENANCE
PLAN**

Administered by:
Environmental Health and Safety
Building 179
PO Box 112190
Gainesville, Florida 32611

Introduction

The following document contains the University of Florida's Asbestos Operations and Maintenance (O&M) plan. The primary objective of this plan is to protect building occupants and workers by minimizing the potential for exposure to asbestos fibers.

The reader is to use this document as a supplement to his or her current asbestos training. Also refer to the complete OSHA asbestos standards, Florida DBPR requirements, U.S. EPA regulations, the University Asbestos Policy (Appendix G), and other relevant asbestos guidance documents.

Asbestos is the name of a class of minerals that occur in fibrous form. Due to its heat and chemical resistance and its strength and flexibility, asbestos has been used in thousands of different building and non-building related materials. While most uses of asbestos have been banned, some asbestos containing products remain on the market today. The most commonly encountered types of asbestos containing materials at UF include floor tile and mastic, pipe insulation, fireproofing, window glazing, asbestos cement products and roofing. All building materials in structures built prior to 1981 must be presumed to contain asbestos unless laboratory analysis or historical data indicate otherwise. EPA regulations require that all buildings, regardless of age, be surveyed for asbestos prior to demolition or renovation.

Health effects related to asbestos exposure are due to the inhalation or ingestion of asbestos fibers. Asbestos is a known carcinogen that can cause cancer in the lungs, larynx, trachea and other locations of the body. The debilitating respiratory disease, asbestosis, may also result from asbestos exposure.

Asbestos in good condition that remains undisturbed does not represent an exposure hazard. It is important to check with the appropriate contact before disturbing building materials suspected of containing asbestos.

See Appendix A for a list of definitions relevant to this O&M Plan.

Address questions about the use of this plan, or its interpretation to Environmental Health and Safety at (352) 392-3393 [Suncom 622-3393], or tladun@ehs.ufl.edu.

Surveillance of Buildings

The University maintains a program of periodic surveillance of all known or suspected asbestos containing materials. All accessible functional spaces with known or suspected asbestos containing materials other than flooring are visually inspected twice a year. Spaces with known or suspected asbestos containing flooring are inspected once per year. Scheduling leniency is permitted in sensitive areas (e.g. some research labs, housing units). The current condition of the asbestos containing material is evaluated relative to its condition at previous surveys. Deterioration or a change in the condition of any asbestos containing material is documented. If this deterioration results in an increased exposure risk to building occupants the deteriorated area is scheduled for hazard abatement.

Inspections are performed by individuals who are currently certified as EPA Asbestos Building Inspectors or who have been trained to recognize asbestos hazards.

Notification

Building Occupants

Buildings presumed to contain asbestos containing materials are posted with a notice sign (Appendix B) alerting occupants to the presence of asbestos and providing guidance on where to find further information. These notices are posted inside of the buildings near the entrances.

Contractors

Contractors arriving on campus to work are notified about the presence of asbestos containing materials through their contract documents. Specifically, the form titled "Statement for Bids" is included in the bid documents for all construction projects. It gives notice of the possibility of encountering asbestos containing materials in University buildings.

For selected contractors, there is a form titled "Notice to Contractors of Asbestos Containing Materials in University Buildings". This form is included with letters sent by Purchasing to successful vendors.

Information pertaining to asbestos is also included in the University Construction Manual.

Training of Employees

There are various levels of training required depending on the type of involvement with asbestos materials. Each division (i.e., Health Center, IFAS, Physical Plant Department, Reitz Union) is responsible for ensuring employees are trained for their level of asbestos involvement. Environmental Health and Safety can guide and assist in training. Documentation of training activities must be provided to the EH&S office.

Awareness Training

This is the minimum level of training, and is required for all custodial and maintenance employees having the potential to come into contact with asbestos during their normal job duties. The training is required within 30 days of initial assignment and annually thereafter.

Class I and Class II Training

Employees who will be removing or disturbing asbestos or presumed asbestos containing materials must receive training meeting the requirements of the EPA Model Accreditation Plan or complete specialized training as described below.

Specialized Class II Training

Training to allow Class II work on vinyl and resilient flooring, resinous and cementitious (Transite®) panels, roofing material, gaskets, and siding material is available through Environmental Health and Safety, TREEO and other outlets. With the specific exceptions of roofing material and vinyl and resilient flooring, projects performed after this training are limited to 160 square feet or 260 linear feet per project for maintenance purposes only.

Class III Training

Follow requirements for Class I or Class II as appropriate.

Competent Person for Class I and Class II Work

The competent person shall be trained in all aspects of asbestos removal and handling, including: abatement; the contents of the OSHA standard; the identification of asbestos; and other practices for reducing the hazard. Such training shall be obtained in a comprehensive course for supervisors, such as the State approved course conducted by TREEO, or a course equivalent in stringency, content and length. Annual refresher training is required.

Medical Surveillance

Medical examinations and consultations are required for all employees who are engaged in asbestos work for a combined total of 30 or more days per year or; are exposed at or above the permissible exposure limit or excursion limit; and for employees who wear negative pressure respirators. Days when fewer than sixty minutes of asbestos work are completed are not included in the 29-day count.

These examinations are repeated at least annually thereafter. If the examining physician determines that any of the examinations should be provided more frequently than specified, affected employees will be examined at the frequencies specified by the physician.

Medical examinations include a medical and work history, with special emphasis directed to the pulmonary, cardiovascular, and gastrointestinal systems. Along with a pulmonary function test, any examinations or tests deemed necessary by the examining physician will be included.

Information Provided to the Physician

The following information must be provided to the physician by the employee's supervisor before the physical.

- A description of the affected employee's duties as they relate to the employee's exposure.
- The employee's representative exposure level or anticipated exposure level.
- A description of any personal protection equipment to be used by the employee.
- Any information from previous medical examinations of the affected employee that is not otherwise available to the examining physician.

Physician's Written Opinion

The examining physician provides a written statement consisting of the physician's opinion whether the employee has any detected medical conditions that would place the employee at an increased risk of health impairment from exposure to asbestos. Any recommended limitations on the employee, or on the use of personal protective equipment such as respirators, will be noted in the opinion.

The opinion will also include statements that the employee has been informed by the physician of the results of the medical examination, and any medical

conditions that may result from asbestos exposure. A statement will also be included that the employee has been informed by the physician of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure.

The physician will not reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure to asbestos. The supervisor will provide a copy of the physician's written opinion to the affected employee within 30 days from its receipt.

Scheduling an Examination

Asbestos examinations for University employees are generally provided by the Occupational Medicine Clinic located in the Dental Science Building. Other providers may be used with the prior approval of Environmental Health and Safety.

Call the Occupational Medicine Clinic at (352) 392-0627 to schedule an exam. Tell the person who answers that you wish to schedule an asbestos examination. Indicate whether this will be an initial or annual exam. You will be asked for the employee's name, department number and the name of the employee's supervisor.

Once the appointment has been scheduled, contact Environmental Health and Safety at (352) 392-3393 and inform them of the pending appointment. A copy of the physician's written opinion shall be provided to Environmental Health and Safety when it has been received.

Updated Asbestos Surveys

An updated asbestos survey, identifying both friable and nonfriable asbestos containing materials, must be conducted of any building or section of a building that is scheduled for renovation or demolition. A draft copy of the survey must be reviewed by the University Asbestos Coordinator for completeness prior to accepting the final product. A copy of the updated survey must be kept on site until the renovation or demolition activities are completed. The survey must be conducted under the supervision of a Florida licensed asbestos consultant. Individuals performing asbestos surveys must be certified as EPA asbestos inspectors through a Florida approved training provider.

Notification Prior to Asbestos Removal Activities

Occupants of areas adjacent to planned asbestos removal projects must be notified prior to the start of removal activities. This notification may be in writing or by personal communication and must include information pertaining to what material is being removed and what measures are being taken to prevent exposure to asbestos fibers.

Administrative Procedures: In-house Work Other than Flooring Which May Disturb Asbestos Containing Materials

To initiate a project, the Competent Person completes the front page of a Maintenance Activity Project Submittal (MAPS, see Appendix C), and an Asbestos Project Notification Form (APNF, Appendix D). Estimates are acceptable for costs and dates, and may be corrected at the completion of the project.

These forms are then sent (POB 112195 University of Florida) or faxed (352 392-3414) to the University Asbestos Coordinator. The University Asbestos Coordinator will provide the necessary notifications to the Department of Environmental Protection. With the exception of emergency projects, this notification must be given a minimum of ten days prior to the beginning of the project.

The University Asbestos Coordinator will review the submittal, and will indicate approval by verifying the worker qualification, record-keeping and notification information on the MAPS. The work may begin after the approved MAPS have been returned to the Competent Person. The second page of the MAPS is

to be completed by the Competent Person as a report of the work.

The Competent Person must assess the expected exposures during the planned work. This assessment provides information necessary to assure that all control systems planned are appropriate for that operation and will work properly. All projects must have a Negative Exposure Assessment (NEA) in accordance with the OSHA regulations for asbestos in construction, or special written permission of the Asbestos Coordinator to be carried out.

Environmental Health and Safety can assist in developing the NEA. Call (352) 392-3393 [Suncom 622-3393], or e-mail to tladun@ehs.ufl.edu for additional information.

During the project, the Competent Person maintains the daily log and checklist for activities at the project site. It is the responsibility of the Competent Person to arrange for necessary project monitoring and final clearance air testing.

Within one week of completing site activities the Competent Person will need to obtain, if applicable, a copy of the air monitoring report, and attach it to the MAPS. The Competent Person will then make copies of the MAPS, along with any attachments, for him or herself and the Division Representative, and send the original MAPS with attachments to the University Asbestos Coordinator at Environmental Health and Safety. An amended APNF should be included if corrections have been made to the original information.

After site activities are completed, bagged waste will normally be taken to a temporary storage site on campus until sufficient wastes have been accumulated to make it cost effective to visit the landfill. These sites are selected by, and the responsibility of the Competent Person.

When waste materials are temporarily stored on campus the Competent Person will identify the storage site on the MAPS. These sites must be secured and have limited access, and provided with appropriate warning signs as required under State and OSHA regulations.

When waste materials are taken to the landfill, the Competent Person shall send a copy of the landfill waste receipt to the University Asbestos Coordinator. The University Asbestos Coordinator shall attach the receipt to the MAPS. When a single landfill receipt covers wastes generated during multiple O&M projects the Competent Person must provide one copy of the receipt for each project, and indicate to the University Asbestos Coordinator, which projects

were associated with the receipt (the waste site manifest could serve this purpose)

Administrative Procedures: In-house Flooring Removal

To initiate a project the Competent Person completes Section I of an Asbestos Project Notification Form - Flooring (APNF - F, Appendix E). Estimates are acceptable for costs and dates, and may be corrected at the completion of the project.

This form is then sent (POB 112195 University of Florida) or faxed (352 392-3414) to the University Asbestos Coordinator. With the exception of emergency projects, this notification must be given a minimum of ten days prior to the beginning of the project.

The University Asbestos Coordinator will review the submittal, and will indicate approval after verifying the worker qualifications. The work may begin only after the approved APNF-F has been returned to the Competent Person and after a required "Notice of Removal of Resilient Floor Covering" notification form is submitted to the Department of Business and Professional Regulation (DBPR). The DBPR notification must be submitted at least 3 days prior to the start of the project and will be submitted by EH&S based on the information provided in the APNF.

Section II of the APNF-F is to be completed by the Competent Person as a report of the work.

The Competent Person must assess the expected exposures during planned work. This assessment provides information necessary to assure that all control systems planned are appropriate for that operation and will work properly.

Each University Division conducting asbestos floor tile removal must conduct a negative exposure assessment (NEA) of their work practices on an annual basis (or more frequently if determined to be necessary by EH&S). A NEA is required to verify that the work practices are in compliance with OSHA and University requirements. Sampling for the NEA must be performed under the direction of a licensed asbestos consultant and a copy of the NEA report must be submitted to EH&S for review and filing. Failure to perform an annual NEA may result in the suspension of a Divisions approval to remove asbestos floor coverings.

See appendix H for specific requirements concerning the removal of asbestos containing floor coverings.

Administrative Procedures: Contracted Work

To initiate a project the Project Manager selects an approved asbestos abatement contractor and a licensed asbestos consultant, if required. An Asbestos Project Notification form (APNF, Appendix D) would then be completed and submitted to EH&S. Estimates are acceptable for costs and dates, and may be corrected at the completion of the project.

The completed APNF is sent (POB 112195 University of Florida) or faxed (352 392-3414) to the University Asbestos Coordinator by the Project Manager. The selected contractor shall provide the necessary notifications to the Department of Environmental Protection and/or the Department of Business and Professional Regulation (floor covering removals only).

Within 30 days of completing site asbestos activities the Project Manager will need to obtain project reports from the asbestos contractor, and if applicable the licensed asbestos consultant, and provide them to the Asbestos Coordinator at Environmental Health and Safety. An amended APNF should be sent if corrections have been made to the original information.

Maintenance of Asbestos Containing Materials

All asbestos work on campus shall be conducted in compliance with the applicable OSHA standard: 29 CFR 1926.1101 or 1910.1001 depending on the type of work. OSHA enforces these standards for contractors and consultants, and the US EPA enforces them under the Worker Protection Rule 40 CFR 763 for University employees. Additional State of Florida requirements are found under FS 255.551 – 255.565 and FS Chapter 469.

Prohibited Practices

The following work practices shall not be used for any work that disturbs asbestos containing materials, regardless of measured levels of asbestos exposure or the results of initial exposure assessments:

- High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air;
- Compressed air used to remove asbestos, or materials containing asbestos;
- Dry sweeping, shoveling or other dry clean-up of dust and debris containing ACM and PACM;
- Employee rotation as a means of reducing employee exposure to asbestos.

Projects without a negative exposure assessment may not be carried out without the written permission of the University Asbestos Coordinator.

Specific work practices are in place for tasks impacting wallboard systems containing less than one percent (<1%) asbestos (see Appendix I).

Routine Maintenance and Cleaning

It is important to minimize the disturbance of asbestos-containing materials and the subsequent release of asbestos fibers. This can be accomplished by staying out of physical contact with materials that contain, or are presumed to contain, asbestos.

Dust and debris in an area containing visibly deteriorated ACM shall not be dusted or swept dry, or vacuumed without using a HEPA vacuum filter. This cleaning shall only be carried out by certified asbestos workers.

Asbestos-Containing Flooring Material

All floor tile installed prior to 1990 must be treated as asbestos containing unless sampling has indicated that the material is asbestos free. The asbestos floor covering poses no significant health concerns as long

as it remains in an intact and undamaged state. The Physical Plant Division annually or more often if needed applies wax to the floor tile which serves to seal the flooring and to further minimize the risk of exposure.

Sanding of flooring material is prohibited. Stripping of finishes shall be conducted using the least abrasive pads possible at a speed lower than 300 rpm and employing wet methods.

Burnishing or dry buffing may be performed only on flooring that has sufficient finish so that the pad cannot contact the flooring material, and the tiles and adhesives remain intact throughout the process.

Building occupants must not alter the floor covering in any way that may result in an asbestos fiber release. Care must also be used when moving equipment across any asbestos tile. Any observed damage to the tile must be promptly reported to the appropriate maintenance division, and to EH&S at 392-1591 immediately.

See appendix H for specific requirements concerning the removal of asbestos containing floor coverings.

Removing or Disturbing Asbestos Containing Materials

Final Clearance Air Monitoring

When friable asbestos containing material is removed or non-friable asbestos containing material becomes friable during removal, and the amount of material is 3 square or linear feet or greater, final air clearance sampling must be conducted. For projects 3 linear or square feet to 260 linear or 160 square feet, PCM clearance testing is required. For projects over 260 linear or 160 square feet, TEM clearance testing will be required. All final clearance testing must follow the published AHERA protocol methods.

Class I Work

This is work involving the removal of thermal system insulation, or surfacing material, and typically will not be performed by University employees.

Class II Work

Where a negative exposure assessment cannot be documented, or where the job conditions indicate there may be exposure above the PEL, or where the asbestos containing material cannot be removed in a substantially intact state, a negative pressure enclosure must be used. These barriers are necessary to prevent the migration of airborne asbestos from the regulated area. The effectiveness of the barriers should be verified by perimeter area monitoring or visual surveillance.

Class II work also may be performed using a method allowed for Class I work, and glove bags and glove boxes are allowed if they fully enclose the Class II material to be removed. Impermeable drop cloths must be placed on surfaces beneath all removal activity.

For Class II work the competent person must be specially trained in a course that meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for project supervisor, or its equivalent.

Specialized Class II Work

Removing Vinyl and Resilient Flooring Materials

Vinyl and resilient flooring materials are exempted from the 160 square foot limit. This work requires specialized training provided, or approved, by the University of Florida Asbestos Coordinator.

Flooring or its backing is not to be sanded, ground, abraded or intentionally broken or chipped. Vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) shall be used to clean floors.

Resilient sheeting shall be removed by cutting with wetting of the snip point and wetting during removal. Rip-up of resilient sheet floor material is prohibited. All scraping of residual adhesive and/or backing shall be performed using wet methods.

Dry sweeping is prohibited. Mechanical chipping is prohibited unless performed in a negative pressure enclosure. Tiles must be removed substantially intact.

Roofing Material

Roofing materials are exempted from the 160 square foot limit. This work requires specialized training provided, or approved, by the University of Florida Asbestos Coordinator.

When removing roofing material that contains asbestos, remove the roofing material in an intact state to the extent feasible.

Cutting machines shall be continuously misted during use, unless the competent person determines that misting substantially decreases worker safety. All loose dust left by the sawing operation must be HEPA vacuumed immediately. Cutting of cement asbestos (Transite®) is prohibited without the written permission of the University Asbestos Coordinator.

Unwrapped or unbagged roofing material must be immediately lowered to the ground by way of covered, dust-tight chute, crane or hoist, or placed in an impermeable waste bag or wrapped in plastic sheeting and lowered to ground by the end of the work shift.

Upon being lowered, unwrapped material shall be transferred to a closed receptacle in such manner to preclude the dispersion of dust. Roof level heating and ventilation air intake sources shall be isolated or the ventilation system shall be shut down.

Cementitious Asbestos Siding & Transite Panels

These materials are limited to 160 square feet per project, for maintenance purposes only. This work requires specialized training provided, or approved, by the University of Florida Asbestos Coordinator.

Cutting, abrading or breaking siding, shingles, or Transite® panels, is prohibited unless the competent person can demonstrate that methods less likely to result in asbestos fiber release cannot be used. All non-roofing cement asbestos materials with exposed asbestos surfaces shall be sprayed with amended water, or encapsulant before removal.

Gaskets

If a gasket is visibly deteriorated and unlikely to be removed intact, removal shall be done within a glovebag. The gasket shall be thoroughly wetted with amended water before its removal. The wet gasket shall be immediately placed in a disposal container. Any scraping to remove residue must be performed wet. This work requires specialized training provided, or approved, by the University of Florida Asbestos Coordinator.

Requirements for Asbestos Contractors

Work is to be performed in accordance with the 29 CFR 1926.1101 (OSHA Asbestos Construction Standard), in addition to accepted industry work procedures, and other applicable Federal, State, and County regulations.

On site superintendent must be a “competent person” as defined in 29 CFR 1926.1101 (b). Superintendent must be on the job site full time during the entire contract period of work execution. Superintendent must have a minimum (3) three years experience in type(s) of work and products specified for the project.

All work, for all routine projects is to be conducted with asbestos exposures at or below the OSHA permitted exposure level (PEL). Written approval by the University Asbestos Coordinator is required for projects that are intended to exceed the PEL.

Insurance

Contractor must comply with the liability insurance and other pre-job submittal requirements listed in Appendix F.

Requirements for Licensed Asbestos Consultants

Work is to be performed in accordance with the ASTM E 1368-00, *Standard Practice for Visual Inspection of Asbestos Projects*, in addition to accepted industry work procedures, and applicable Federal, State, and County regulations.

On site representatives must be a “competent person” as defined in 29 CFR 1926.1101 (b). At a minimum, the on site representative must have NIOSH 582 or equivalent asbestos air sampling and analysis certification and have an up to date asbestos abatement project management and supervision certification from a Florida approved training provider.

If the on site representative is not able to perform his or her duties due to any contractor created safety or health hazard at the site, the representative must direct the contractor to correct the hazard. If the contractor cannot, or will not correct the hazard, the on site representative shall notify the University Project Manager, and shut the project down until the hazard can be corrected.

Air monitoring by the licensed asbestos consultant shall include adequate personnel samples to confirm contractor’s compliance with the NEA.

The on site representative shall have the necessary training, equipment and experience to verify that the contractor is maintaining adequate diminished pressure and air changes per hour in the NPE.

Appendix A

Definitions

Asbestos: includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that has been chemically treated or altered.

Asbestos-Containing Material (ACM): any material containing more than one percent asbestos.

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

Class II Asbestos Work: removal of any ACM which is not Class I, such as wallboard, floor tile, ceiling tile, linoleum, transite board, roofing materials and mastics.

Class III Asbestos Work: repair and maintenance operations where ACM is likely to be disturbed.

Class IV Asbestos Work: maintenance and custodial activities during which employees contact but do not disturb ACM, and activities to clean up dust and debris which may be generated by Class I, II, or III work.

Clearance Air Monitoring: Air monitoring conducted by an Asbestos Project Monitor at the conclusion of an asbestos project. Clearance air monitoring includes the successful completion of a final visual inspection for work area debris and the collection and analysis of air samples in accordance with AHERA protocols.

Competent person means, in addition to the definition in 29 CFR 1926.32 (f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f): in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor, or its equivalent and, for Class III and Class IV work, who is trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92 (a)(2).

Friable Asbestos Containing Material: any material containing more than one percent asbestos, which when dry, may be crumbled, pulverized or reduced to powder by hand pressure.

High Efficiency Particulate Air (HEPA) Filter: a filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.

Negative Exposure Assessment (NEA): a demonstration by the employer, which complies with the criteria in OSHA 29 (CFR) 1926.1101 paragraph (f) (2) (iii), that the employee exposure during the monitored operation is expected to be consistently below the PELs.

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).

Permissible Exposure Limits (PELs):

(1) Time Weighted Average (TWA): the employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter as an eight (8) hour time weighted average.

(2) Excursion Limit (EL): the employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air as averaged over a sampling period of thirty (30) minutes.

Presumed Asbestos Containing Material (PACM): thermal system insulation and surfacing material in buildings constructed no later than 1980, are assumed to contain asbestos until it has been analyzed to verify or negate its asbestos content.

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.

Vinyl Asbestos Floor Tile (VAT): vinyl floor tile and in some cases its mastic which contain more than one percent asbestos and must be handled as ACM.

Appendix B

**ASBESTOS CONTAINING
MATERIAL NOTIFICATION**

STUDENTS, EMPLOYEES, AND BUILDING OCCUPANTS

Asbestos Containing Materials (ACM) may be present in some University of Florida buildings. Typical asbestos containing materials that may be present in this building include pipe insulation, spray applied ceilings, fireproofing, asbestos cement panels (fume hood linings, lab table tops), plaster, and floor tile. Buildings constructed after 1981 are less likely to contain asbestos products though surveys are required prior to any renovation activity regardless of the age of the building.

Asbestos in an undisturbed state poses no significant health concerns. Before disturbing or removing any building material verify its content by contacting a UF asbestos representative. Any damage to ACM should be reported to Environmental Health and Safety.

**Contact Information:
University of Florida
Environmental Health and Safety
(352) 392-3393**

Appendix C

Maintenance Activity Project Submittal (M.A.P.S.) – Page 1

Competent Person: _____

Schedule

Provide scheduling information on APNF to both the UF Asbestos Coordinator and a University Asbestos Consultant (if necessary) at least ten (10) business days before beginning work. If there is an emergency, attempt to contact the UF Asbestos Coordinator by telephone ((352) 392-3393 [Suncom 622-3393]) and follow up with written submittals within 48 hours. Emergency work is defined as work that must be completed immediately to control an imminent health hazard, prevent substantial damage to equipment or property or prevent substantial cost.

Work Shift: 0700-1600 1600-2400 2400-0700 Other (describe)_____

Workers:

| Name | UF ID Number | Medical Exam. | Acknowledgment. | Approved training. |
|----------|--------------|--------------------------|--------------------------|--------------------------|
| 1. _____ | _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. _____ | _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. _____ | _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. _____ | _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Respiratory Protection

- Check box if a Negative Exposure Assessment has been made for this project.
- Check box if you have a copy of the University's written respiratory protection program.

Submit manufacturer's product information for each component used, including NIOSH and MSHA certifications. If product information is already on file with the U.F. Asbestos Coordinator initial here _____

Manifest and Landfill Receipt

In most cases, waste from asbestos work will be stored securely on campus, until sufficient materials have been accumulated to make a trip to the landfill cost-effective. Indicated below the location of the temporary storage site where materials will be taken.

Notification:

The UF Asbestos Coordinator shall provide notification to the NESHAPs Contact (Florida DEP).

MAPS Page 2

Daily Log:

Maintain this log at the work site.

Project Name _____ Date _____

Competent Person _____

Meetings and Pre-construction Conference; purpose, attendees, results (brief)

Other Personnel: List other personnel at the site, and date/time notification was provided to other personnel.

Visitations; authorized and unauthorized (List by name, include times entering and leaving the work area)

Special or unusual events (i.e. barrier breaching, equipment failures)

Air monitoring test results (attach copy of results if available).

Signature of Competent Person or Asbestos Consultant on line next to the following:

Inspection of work area. Signature _____

Inspections before encapsulation. Signature _____

Removal of waste materials from work area. Signature _____

Final inspection/final air test analysis. Signature _____

Provide the original of this log at final closeout of project to the UF Asbestos Coordinator. Keep a copy of this log for your files.

Appendix F

Asbestos Contractor General Liability Insurance Policy

The University of Florida require asbestos contractors doing work for the University to carry asbestos general liability insurance in addition to all other insurance coverage (including but not limited to automobile and workers compensation) required by the bid and contract documents. The asbestos related insurance policy must be procured through an underwriter with an A.M. Best rating of A- or better lawfully authorized to do business in Florida. The insurance policy shall provide that the University of Florida is named as an additional insured. The University shall not be responsible for any sums of money associated with the policy, including any deductible. Coverage shall be on "occurrence" basis, rather than "claims made" and must protect Contractor from all claims arising out of the Contractor's asbestos abatement work for the University. The minimum limits of liability for the asbestos contractor general liability are:

| | |
|---|--------------------------------|
| Each Occurrence | Limit \$1,000,000 |
| Personal Injury and Advertising Injury | Limit \$1,000,000 |
| Fire Damage | Limit (any one fire) \$50,000 |
| Medical Expense | Limit (any one person) \$5,000 |
| Products and Completed Operations Aggregate | Limit \$1,000,000 |
| Aggregate (Other than Products/Completed Operations) | Limit \$1,000,000 |

The Contractor shall file with the University a certificate of insurance and a copy of the policy acceptable to the University prior to the commencement of the work. The policy shall remain in force without interruption from the date of the commencement of the work until the work is completed and the Contractor is off site. The certificate and policy shall indicate that coverage afforded under the policy will not be canceled or allowed to expire until at least 30 days prior written notice has been given to the University.

Bid Submittals

Contractors who have not successfully provided similar work and products for a University of Florida project in the last two years must provide a minimum of (3) positive written references from clients to whom the contractor has provided similar work and products

Pre-Job Submittal and Consultant's Approval

The contractor's pre-job submittals must include an original copy of the certificate of insurance and a copy of the policy acceptable to the University prior to the commencement of the work. The contractor's other pre-job submittals must be approved by the project's asbestos consultant, and EH&S must receive a written statement of approval of the submittals from the asbestos consultant 10 business days prior to project start-up.

Contractor's Superintendent

Contractor's superintendent must be on the job site full time during the entire contract period of work execution. Superintendent must have a minimum (3) three years experience in type(s) of work and products specified for this project. Documentation of work experience must be submitted in the pre-job submittals. Written notice of any proposed change in the Contractor's designated superintendent must be provided to the University; the University reserves the right to exercise all available legal remedies including cancellation of the contract in the event that a successor superintendent fails to meet the requirements of this provision.

Appendix G

Asbestos Policy
Environmental Health and Safety
Business Affairs
University of Florida
UFEH&S-OHS-09/16/2010

OBJECTIVE

Asbestos is a confirmed human carcinogen that was previously used in many different types of building materials. It is important to note that asbestos in an undisturbed state is not considered hazardous. Due to the potential hazards associated with asbestos exposure if the material becomes airborne, Federal and State regulations are in place to control activities impacting asbestos containing materials. The purpose of this policy is to ensure compliance with these regulations and to minimize any risk of exposure for students, staff and the general public at the University of Florida.

AUTHORITY

40CFR Part 763 (EPA Worker Protection Rule); 29CFR1910.1001, 29CFR1926.1101 (OSHA Asbestos Standards); FS 255 & 469 (State of Florida Asbestos Regulations)

POLICY

All asbestos related activities must be conducted in a safe manner and in full compliance with applicable Federal and State regulations.

The use of respiratory protection may be required for some asbestos related activities. Each division conducting activities that disturb asbestos containing materials must also comply with the University respiratory protection program requirements.

Medical monitoring may be required for staff involved in the removal or disturbance of asbestos containing materials. When required, medical clearance shall be obtained through the Student Health Care Center – Occupational Medicine Office.

Notification

All activities involving the removal of asbestos containing materials require the submission of an Asbestos Project Notification Form (APNF) to Environmental Health and Safety at least **ten days** prior to the start of an asbestos project.

The asbestos contractor, demolition contractor or in-house abatement team actually performing the work is responsible for submitting an additional notification to the designated regulatory authority, typically either the Florida Department of Environmental Protection or the Florida Department of Business and Professional Regulation.

RESPONSIBILITIES

Environmental Health and Safety

Environmental Health and Safety is responsible for administrative decisions regarding asbestos control and abatement activities at the University of Florida. All activities involving asbestos containing materials require prior approval from Environmental Health and Safety.

Environmental Health and Safety shall provide consultive and technical assistance to campus organizations involved in activities related to asbestos. Biannual inspections of known asbestos containing materials for the purposes of assessing the materials condition shall be conducted by AHERA accredited inspectors in Environmental Health and Safety.

Environmental Health and Safety will serve as the University liaison with regulatory agencies and serve as the clearinghouse for the dissemination of regulatory and University requirements and new information to groups involved in asbestos related activities.

Environmental Health and Safety shall have stop work authority for any asbestos removal project that deviates from the regulatory requirements or that represents an immediate health and safety risk. Stop work authority shall also be extended to any construction project where the unauthorized removal of asbestos or suspected asbestos containing materials is observed.

Physical Plant Division and Other Division Maintenance and Facilities Departments

Each department shall appoint a management level staff member to serve as an Asbestos Coordinator.

The coordinator will act as liaison between his or her division and Environmental Health and Safety and shall be responsible for the coordination of all asbestos activities within their respective division or department. Such activities include the identification of projects involving asbestos, informing all contractors of the presence of asbestos and the University policy for addressing asbestos within their work areas and the implementation of asbestos surveys and abatement projects within their divisions.

The division directors shall have overall responsibility for compliance with all applicable asbestos regulations and the University policy by their staff and by contractors working under their oversight.

PROCEDURES

Asbestos Operations and Maintenance Plan

The Environmental Health and Safety shall implement and maintain an asbestos operations and maintenance (O&M) plan for asbestos containing materials known or assumed to exist in university buildings. The asbestos O&M plan shall be periodically reviewed and updated in accordance with regulatory requirements.

Asbestos Surveys

An asbestos survey meeting the requirements of Federal and State regulations shall be completed prior to the commencement of any renovation, remodeling or demolition project involving a University owned building; component of a University owned building or of a building scheduled to be purchased by the University. A survey is required regardless of the age of the building. Asbestos surveys must be conducted by a Florida Licensed Asbestos Consultant (LAC) or their appointed representative.

A limited survey, based on a review of the project scope of work, may be authorized by Environmental Health and Safety. All surveys are required to be submitted to Environmental Health and Safety for review prior to the start of a construction project. Environmental Health and Safety reserves the authority to reject a survey based on incomplete content or failure to follow regulatory requirements.

A copy of the completed asbestos survey must be kept on site for the duration of a construction project.

Abatement Procedures

University personnel conducting removal work involving less than 160 square or 260 linear feet of asbestos containing materials are exempt from the state asbestos contractor licensing requirements but must comply with all federal and state requirements pertaining to notifications, training, monitoring and documentation. Asbestos abatement work involving amounts greater than 160 square and 260 linear feet must be conducted by a Florida licensed asbestos contractor. All asbestos removal activities must comply with the applicable federal and state regulations.

Environmental Health and Safety reserves the right to require that additional protective measures be instituted beyond those required by regulation on any asbestos abatement project.

University personnel removing asbestos containing floor tile and mastic must comply with the training and notification requirements stated in the OSHA Asbestos Construction Standard (29CFR1926.1101) and in FS 469. All removal must be conducted in strict accordance with the procedural requirements of the Resilient Floor Covering Institute (RFCI). An updated negative exposure assessment (NEA) shall be conducted at least annually by each group conducting floor covering removal using the RFCI methods. Air sampling for the NEA must be conducted by a Licensed Asbestos Consultant and a copy of the final NEA report must be submitted to EH&S for approval.

Environmental Health and Safety shall be notified at least **ten days** prior to the commencement of an asbestos abatement project.

Project work plans or full project specifications may be required depending on the scope of the abatement project. A Licensed Asbestos Consultant shall be responsible for developing work plans and specifications related to an abatement project when needed.

Project monitoring including work area inspection and routine and final clearance air sampling shall be required on all asbestos abatement projects except for floor tile removal conducted according to the RFCI methods. Environmental Health and Safety shall be the final decision making authority involving questions related to project monitoring requirements.

Insurance

Prior to the university entering into any asbestos abatement contract, project managers shall ensure compliance with the insurance requirements of Florida Statute 255.56.

Training

University personnel involved in the removal of asbestos containing materials must have training appropriate to their assigned job duties. Individuals must comply with the requirements of the EPA's Model Accreditation Plan (MAP) for asbestos abatement project supervisors and workers.

Personnel involved with asbestos floor tile removal according to the RFCI method must comply with the training requirements of the OSHA Asbestos Construction Standard (29CFR1926.1101) and FS 469.

All maintenance personnel with the potential to come into contact with an asbestos containing material during their normal work assignment are required to have annual asbestos awareness training. Annual awareness training is provided by Environmental Health and Safety.

Recordkeeping

Copies of all documentation related to asbestos activities including the consultant and contractor final reports and waste disposal manifests must be provided to Environmental Health and Safety within 45 days of the completion of an abatement project.

Environmental Health and Safety shall be responsible for maintaining and archiving all asbestos related documentation for the time mandated by federal regulatory requirements.

Appendix H

Asbestos Floor Tile Policy
UFEHS-OSH-04/27/06
Environmental Health and Safety
Finance and Administration
University of Florida

OBJECTIVE

The objective of this policy is to clarify the requirements for addressing the removal of vinyl asbestos floor tile and other asbestos containing floor coverings during renovation and remodeling projects.

AUTHORITY

OSHA 1926.1101 (Asbestos Standard for Construction); 40 CFR Part 763 (EPA Worker Protection Rule); FAC 469 (Asbestos Practices Act)

POLICY

The goal of this policy is to eliminate asbestos containing materials from the University of Florida main campus and from off campus facilities as they are encountered during renovation/refurbishment projects. It has been determined that covering over asbestos flooring (e.g., vinyl asbestos tile and sheet goods) and adhesive leads to greater costs and additional time to do future projects. This has also led to confusion as to which areas never had asbestos flooring, which have asbestos flooring under another covering and which were removed prior to new covering being applied.

RESPONSIBILITY

Environmental Health and Safety is responsible for administering the University's asbestos management program and for monitoring compliance with applicable State and Federal asbestos regulations.

Project managers and supervisors are responsible for determining whether or not asbestos floor covering will be impacted by a project and, if so, arranging for its safe removal and disposal.

PROCEDURES

The presence of asbestos flooring and/or adhesives that contain asbestos must be determined at the beginning of affected projects so additional funding and time can be incorporated into the project.

Floors with existing exposed asbestos tile that are well maintained and firmly attached to the substrate may remain in service, provided that the tiles are free of broken or crumbling material. If the area is remodeled or a new floor covering is to be installed all flooring related asbestos in the affected area is to be properly removed.

If existing materials covering asbestos flooring are replaced, all materials including the asbestos flooring and adhesive, must be removed prior to installation of new material. These materials include, but are not limited to existing vinyl composition tile, glued-down carpet, or stretched carpet with pad. The costs involved in asbestos removal shall be borne by the entity that is funding the remodeling or new floor covering project.

All asbestos removal activities will be done by appropriately licensed companies using only trained workers or by appropriately trained and certified in house staff, in concert with the Division Project Manager and Specialists from Environmental Health and Safety. All necessary safeguards required to protect the workers, University staff, students, visitors and property from asbestos exposure will be utilized during removal projects. Every effort will be made to maintain good indoor air quality conditions in the affected space when solvent based adhesive removal is conducted.

Appendix I

Work Practice for Maintenance Activities Associated with Wallboard Systems with <1% Asbestos

The following Work Practices are to be used when impacting wallboard in any University of Florida (UF) facility. Prior to any maintenance activity that may impact wallboard (cutting, drilling, painting, nailing, patching, removal, etc.), the project manager or facility manager must be notified. It is the responsibility of the project/facility manager to have the subject wallboard tested for the presence or absence of asbestos in the material. Records will be maintained by the facility manager and the Environmental Health and Safety (EH&S) Department of the sampling locations and analytical results. If the wallboard system (note: 'wallboard system' is defined as the combination of the wallboard, joint compound (mud) and seam tape) is negative for asbestos, then the following procedures do not apply. If the composite wallboard system is positive for asbestos (> or equal to 1% asbestos), then the material must be handled by an UF asbestos term contractor. If the composite wallboard system is <1% asbestos (example: wallboard is negative for asbestos, joint compound is positive for asbestos), then the following procedures must be followed. An OSHA compliant Negative Exposure Assessment (NEA) must be established with regards to each task and procedure by an UF asbestos term contractor before the following procedures can be implemented on a standard Maintenance level.

These work practices are to be followed whenever *drilling or installing nails or screws or cutting through known or presumed asbestos containing joint compound where the wallboard system (wallboard, taping and mud together) contains less than 1% asbestos*. This includes activities such as:

1. hanging pictures
2. installing coat hooks
3. installing shelving track
4. removal of wall fixtures or furnishings
5. attaching modular furniture to walls
6. installing wiremold, switches or outlets,
7. patching
8. painting

These procedures have been reviewed and approved by the UF EH&S Department.

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

Requirements

For Workers

16-Hour Awareness Training
Respiratory Protection and Respirator Fit-Test
Hands on training for penetrating <1% asbestos joint compound
Know who the competent person is and how to contact them

Work Requirements

Approval of competent person
Wet, non-aggressive methods
Prompt clean up of material
Supervisor assures all workers have appropriate training.
Supervisor verifies current NEA is on record.
Supervisor provides contact number for competent person to workers.

Equipment

HEPA 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 thick primer
Taping Compound
Tyvek suit

Other tools required to complete task: drill, razor knife, saw, screwdriver etc.
½ face respirator with high efficiency particulate air (HEPA) filters during NEA monitoring.

Note:

Within a furnished space, 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 may cause.

Work Practices

Work Procedure for Drilling

Staff and/or Employees can be present in rooms where drilling or nailing is occurring as long as a current NEA exists that documents exposure levels below the OSHA Permissible Exposure Level (PEL). If obtaining NEA data, room cannot be occupied by non-authorized and non-properly protected personnel.

Gather all required tools at the worksite. Assure all training is up to date, and the competent person is aware of the project. Place plastic on the floor next to work area and secure with tape. Mark the wall where the penetration is needed. Cut a hole in the sponge. Wet the sponge with amended water. Place the sponge over the drill bit. Place drill on the mark. Hold the sponge firmly against the wall. Drill hole. Keep the sponge firmly in place and remove the drill. Set the drill on the plastic on the floor. Wipe the sponge across the area where the hole was drilled, being careful not to release any dust. Place the sponge on the plastic. Wet some paper towels and wipe the wall to assure all debris is removed. When all drilling is complete, remove the power source and spray the drill with water and wipe with a wet paper towel to assure all dust is removed. Pay special attention to the drill bit. Wrap waste in plastic sheeting and secure with duct tape, or place in a plastic bag and seal bag. Dispose of waste in the shop dumpster. Since the material contains less than 1% asbestos, it does not need to be disposed of as a regulated waste or labeled.

Work Procedure for Installing Nails

Staff and/or Employees can be present in rooms where drilling or nailing is occurring as long as current NEA exists that documents exposure levels below the OSHA Permissible Exposure Level (PEL). If obtaining NEA data, room cannot be occupied by non-authorized and non-properly protected personnel.

Gather all required tools at the worksite. Assure all training is up to date, and the competent person is aware of the project. Place plastic sheeting on the floor next to work area and secure with duct tape. Mark the wall where the penetration is needed. Cut a hole through the sponge for the nail. Wet the sponge with amended water. Put the nail through hole in sponge. Place the nail over the mark. Hold the sponge firmly against the wall. Make sure the cut sponge wraps around the nail. Keep the sponge firmly in place, hammer the nail in place. Set the hammer on the paper towels on the floor. Have another person hold the end of the HEPA vacuum to the area and gently pull the sponge down until it is below the nail, being careful not to release any dust. Place the sponge in a plastic bag. Wet some paper towels and wipe the wall to assure all dust is removed. Wet wipe hammer to assure all dust

is removed. Wrap waste in plastic sheeting and secure with duct tape, or place in a plastic bag and seal bag. Dispose of waste in the shop dumpster. Since the material contains less than 1% asbestos, it does not need to be disposed of as a regulated waste or labeled.

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.

Staff and/or Employees can be present in rooms where patching is occurring as long as current NEA exists that documents exposure levels below the OSHA Permissible Exposure Level (PEL). If obtaining NEA data, room cannot be occupied by non-authorized and non-properly protected personnel.

Gather all tools at the worksite. Ensure awareness training and work procedure training is up to date and the competent person is aware of the project. Place plastic on the floor next to the work area and secure with duct tape. Ensure all fixtures have been removed from the wall, exposing holes (wiremold, modular furniture, etc.). Encapsulate affected area with paint or encapsulant. Use hammer to drive toggle bolt anchor, etc., below surface. Re-encapsulate affected area. Fill hole with patching compound and wet sand area. 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.

Staff and/or Employees can be present in rooms where patching is occurring as long as current NEA exists that documents exposure levels below the OSHA Permissible Exposure Level (PEL). If obtaining NEA data, room cannot be occupied by non-authorized and non-properly protected personnel.

Gather all tools at the worksite. Ensure awareness training and work procedure training is up to date and the competent person is aware of the project. Place plastic on the floor next to the work area and secure with duct tape. Encapsulate affected area with paint or encapsulant. If paper is torn but no taping compound is present on paper to be removed, paper can be cut off. Contact competent person with any questions. If taping compound is present on torn paper, encapsulate area. **DO NOT REMOVE PAPER.** If paper with taping compound needs to be removed or repairing large holes, refer to "Procedure for Removal of Sections of Wallboard" (this document). Once this is done, a patch or other repair can be done.

Work Procedure for Label Removal

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

Work Procedure for Removal of Sections of Wallboard

Staff and/or Employees cannot be present in rooms where sections of wallboard are removed. **Removal of sections of wallboard greater than five (5) square feet MUST be done by an UF term abatement contractor.** For sections of wallboard less than five (5) square feet:

This is a two person work practice

Staff and/or Employees can be present in rooms where removal is occurring as long as current NEA exists that documents exposure levels below the OSHA Permissible Exposure Level (PEL). If obtaining NEA data, room cannot be occupied by non-authorized and non-properly protected personnel.

Gather all required tools at the worksite. Ensure awareness training and work procedure training is up to date and the competent person is aware of the project. Place plastic sheeting on the floor next to work area and secure with duct tape. Mark the area of wall to be removed. Spray wall surface with amended water. 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. When cutting is complete, spray amended water around penetration. Gently remove the section of wall system as a whole piece. Set removed wall material on plastic, wrap and duct tape or if small enough place in a plastic bag. Spray edges of remaining wall opening with encapsulant. Wet wipe tools to assure all dust is removed. Wrap waste in plastic sheeting and secure with duct tape, or place in a plastic bag and seal bag. Dispose of waste in the shop dumpster. Since the material contains less than 1% asbestos, it does not need to be disposed of as a regulated waste or labeled.

Supervisor Checklist

- Asbestos sample results
- Current training
- NEA (One year)
- Knowledge of work procedure
- Notify Asbestos Coordinator/Project Manager of date, etc., of project
- Provide Asbestos Coordinator's/Project Manager's contact number to workers

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|---|---|
| 1. Asbestos Awareness Training Required (16-Hour) | Until a NEA is established. |
| 2. Certified Asbestos Supervisor not required | |
| 3. Personal Protective Equipment | <ul style="list-style-type: none"> ▪ Safety Glasses ▪ Foot Protection ▪ Gloves |
| 4. Engineering Controls: One or more of the following must be used, including prompt clean-up | <ul style="list-style-type: none"> ▪ Wet Methods ▪ HEPA Vacuum ▪ Drop Cloths (6 mil) ▪ Wet Sponges or Shaving Cream |
| 5. Air Monitoring | <ul style="list-style-type: none"> ▪ Negative exposure assessment or objective data |
| 6. Isolate work area from non-essential personnel and notify essential personnel of work | |
| 7. Shut down HVAC, if possible | |
| 8. Debris is non-regulated asbestos waste and may be disposed of as general construction waste in Physical Plant dumpster | |