



**Northern Illinois
University**

Asbestos Management Plan

Department of Environmental Health and Safety
Northern Illinois University

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Review and Updates

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11/23/15	Mary Schlagel	Annual update
3/13/17	Mary Schlagel	Update with changes to all sections.
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PURPOSE

Northern Illinois University (NIU) is committed to provide its students, staff, faculty, contractors, and visitors with a safe work and classroom environment. The purpose of the Asbestos Management Plan (Plan) is to provide processes and procedures designed to protect the campus community from the hazards associated with exposure to asbestos. No health risks exist if asbestos containing materials (ACMs) are properly maintained and not disturbed. If disturbance, clean up, or removal of ACMs is necessary, such operations will be effectively and safely managed through strict compliance with applicable State and Federal asbestos regulations.

SCOPE

The scope of this Plan pertains to asbestos abatement operations involving disturbance, clean-up, repair or removal of identified ACMs present in NIU-owned properties.

APPLICATION

The Plan applies to all NIU owned and operated properties including satellite campuses.

REGULATORY AND UNIVERSITY POLICY REFERENCES

- **Illinois Occupational Safety and Health Administration**
 - 820 ILCS 219/ Occupational Health & Safety Act
 - 56 Ill. Adm. Code 350 Health and Safety
- **Illinois Department of Public Health**
 - 225 ILCS 207 Commercial and Public Building Asbestos Abatement Act
 - 77 Ill. Adm. Code 855 Rules for Asbestos Abatement for Public and Private Schools and Commercial and Public Buildings in Illinois
- **Illinois Environmental Protection Agency (IEPA)**
 - 415 ILCS 5 Environmental Protection Act
 - 35 Ill. Adm. Code 228 Asbestos
- **United States Environmental Protection Agency (USEPA)**
 - 40 CFR 61 National Emission Standards for Hazardous Air Pollutants (NESHAP)
- **United States Department of Transportation**

- 49 CFR 171 Hazardous Materials Regulations: Applicability, General Requirements and North American Shipments
- “*Asbestos Operations and Maintenance Work Practices*”, 2nd Edition, National Institute of Building Sciences, December 1996.
- NIU Health and Safety Policy
- NIU Facilities Management and Campus Services (FMCS) Environmental Health and Safety (EH&S) Policy

DEFINITIONS AND ACRYNOMS

Abatement - is a response action, which includes encapsulation, enclosure, repair and maintenance and removal.

Air Sampling Professional - An individual licensed by the IDPH who performs personal, area and clearance air sampling during asbestos abatement response activities.

Amended Water - Water that has been mixed (amended) with a chemical wetting agent or surfactant to improve penetration and wetting ability.

Analytical Testing Laboratory - Analytical laboratories retained by the university shall maintain American Industrial Hygiene Association (AIHA) accreditation and National Voluntary Laboratory Accreditation Program (NVLAP) certification in order to perform phase contrast, polarized light, or transmission electron microscopy on material known or suspected to contain asbestos.

Asbestos – A fibrous mineral, specifically the asbestiform varieties of actinolite, amosite, anthophyllite, chrysotile, crocidolite, and tremolite.

Asbestos Abatement Project – Any operation involving regulating a work area to engage in an abatement activity involving ACM in quantities greater than three (3) square or three (3) linear feet.

Asbestos Building Inspector - An individual whose primary responsibility is to identify and obtain samples of ACM for laboratory analysis. Individuals who perform these activities are required to be licensed by the IDPH.

Asbestos Containing Material (ACM) - materials that have been tested and determined to contain more than 1% asbestos.

Asbestos Program Coordinator (APC) - The APC (EH&S staff member) administers all aspects of the Plan. The APC (and the Director of EH&S) are licensed by IDPH as an Asbestos Building Inspector, Asbestos Project Manager and Air Sampling Professional. The APC serves as the university representative when corresponding with state and federal regulatory agencies

Asbestos Project Designer - An individual whose primary responsibility is to develop procedures for the abatement of ACM. Individuals who perform these activities are required to be licensed by the IDPH.

Asbestos Project Supervisor – An individual with the training and experience who meets the qualifications of "competent person" as established by 40 CFR 761. An asbestos project supervisor shall be licensed by the IDPH. An asbestos project supervisor must be present on all asbestos abatement projects that involve the removal of ACM.

CFR - Code of Federal Regulations.

Class I asbestos work - activities involving the removal of thermal systems insulation (TSI) and surfacing ACM.

Class II asbestos work - activities involving the removal of ACM that is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding, and construction mastics.

Class III asbestos work - repair and maintenance operations, where ACM, including TSI and surfacing materials, is likely to be disturbed.

Class IV asbestos work - maintenance and custodial activities during which employees contact (or have the potential to contact ACM) but do not disturb ACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.

Disturbance - activities that disrupt the matrix of ACM, crumble or pulverize ACM, or generate visible debris from ACM. Disturbance includes cutting away small amounts of ACM no greater than the amount that can be contained in one standard sized glove bag or waste bag in order to access a building component.

Excursion Limit (EL) Employees cannot be exposed to an airborne asbestos fiber concentration in excess of 1.0 fiber per cubic centimeter (f/cc) of air during a 30-minute period.

Fiber Release Episode - The unintentional disturbance of ACM resulting either from accidental contact or a result of other factors, such as pipe or roof leaks, where the ACM has been physically dislodged increasing the potential for asbestos fibers to become airborne.

Friable - material which is capable of being crumbled, pulverized or reduced to powder by hand pressure when dry, or which under normal use or maintenance emits or can be expected to emit fibers into the air. Also includes previously non-friable materials after such previously non-friable materials becomes damaged to the extent that, when dry, it may be crumbled, pulverized, or reduced to powder by hand pressure.

Glove bag - a 60 x 60-inch impervious plastic bag-like enclosure affixed around an ACM, with glove-like appendages through which material and tools may be handled.

HEPA - High Efficiency Particulate Air (HEPA) filtered equipment must be capable of trapping and retaining 99.97% of all particles larger than 0.3 microns.

IDPH - Illinois Department of Public Health

IEPA – Illinois Environmental Protection Agency

IOSHA - Illinois Occupational Safety and Health Administration

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.

Miscellaneous ACM - ACM that is not surfacing or TSI, such as floor tile, ceiling tile, wire insulation, and asbestos cement products.

Negative Exposure Assessment – demonstrates that employee exposure during an operation is consistently below the PEL.

NIU - Northern Illinois University and associated properties which includes Lorado Taft, Rockford, Hoffman Estates and Naperville campuses and other owned and operated properties in the City of DeKalb.

Non-friable – a material, when dry, may NOT be crumbled, pulverized or reduced to powder by hand pressure.

NVLAP - National Voluntary Laboratory Accreditation Program

Operations & Maintenance (O&M) Program - Specific procedures and practices developed for the interim control of ACM in buildings until such materials are removed.

Permissible Exposure Limit (PEL) - The highest allowable level of exposure to airborne asbestos fibers that an employee may have without using respiratory protection. The PEL is 0.1 f/cc as a time-weighted average (TWA) over an 8-hour workday.

Personal Protective Equipment (PPE) - Any device or piece of equipment worn to protect a worker from exposure to, or contact with, any harmful material or force. PPE should be used only if engineering or administrative controls are insufficient to protect against a hazard.

Phase Contrast Microscopy (PCM) This method is used to analyze air samples for the presence of fibers.

Physician or other Licensed Health Care Provider (PLHCP) –individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by applicable medical surveillance requirements outlined in the asbestos standards.

Polarized Light Microscopy (PLM) This method is used to analyze bulk samples for the presence of fibers and determine asbestos type.

Presumed Asbestos Containing Material (PACM) - TSI and surfacing material found in buildings constructed no later than 1980. PACMs shall be treated and handled as an ACM unless analytical testing proves otherwise.

Regulated Area - An area established by the employer to demarcate areas where airborne asbestos fiber concentrations exceed, or can reasonably be expected to exceed, the PEL. Containments established for ACM abatement are considered regulated areas.

Repair - Returning damaged ACM to an undamaged condition or to an intact state to prevent fiber release.

Respirator - A tight-fitting device worn that purifies the air or that provides clean air from another source to the user. NIU employees that are required to don respiratory protection must comply with requirements outlined in the NIU Respiratory Protection Program.

Response Action - Repair of damaged or deteriorated ACMs, or the removal of asbestos or associated debris initiated to abate a hazard to building occupants.

Small-scale, Short-duration Asbestos Projects - An asbestos project in which the amount of ACM disturbed is less than three (3) linear feet or three (3) square feet, and disturbance of the ACM is not the primary intent of the project.

Surfacing material - ACM that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members).

Thermal system insulation (TSI) - ACM applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss/gain or water condensation.

Transmission Electron Microscopy (TEM) This method may be used to determine type and quantity of asbestos fibers in both air and bulk samples.

USDOT – United States Department of Transportation

USEPA - The United States Environmental Protection Agency

RESPONSIBILITIES

Foreman/Supervisor Responsibilities

- Ensure employees understand the requirements outlined in this program.
- Ensure employees practice safe work procedures in accordance with their training, and use the proper equipment and controls.
- Ensure employees attend training based upon their degree of potential exposure.
- Contact the APC for guidance in the event disturbance of ACMs is anticipated in the course of operations.
- Immediately report potential fiber release episodes to the APC.
- Maintain the following records:

- Employee training records for:
 - IDPH- licensed workers
 - Operations and maintenance-trained workers
 - Asbestos awareness trained workers.
- Respirator fit tests;
- Hazard assessments issued by the EH&S Department for capital improvement projects.
- Ensure notice of violations, hazards and/or program deficiencies are promptly addressed and mitigated.
- Inform the APC before a licensed or O&M worker separates from NIU so that the employee's final medical evaluation may be scheduled.

Employee Responsibilities

- Comply with requirements outlined in this program.
- Report any suspect materials to the supervisor or the APC **prior** to disturbance.
- Report accidental disturbances to the supervisor or the APC.
- Perform asbestos disturbance activities in a safe manner following work practices and procedures outlined in the Plan while wearing appropriate PPE as necessary for the type of job performed in accordance with level of training or licensing.
- Employees participating in this Plan have the right to contact the PLHCP conducting their medical evaluations for a hard copy of the medical records generated at the time of their examination.
- Inform the supervisor regarding intent to separate employment with NIU so an appointment for a final physical examination can be performed.

EH&S Department Responsibilities

- Update the Plan as needed to reflect changes to university policies and/or regulatory requirements.
- Coordinate and schedule training with an IDPH-approved training provider.
- Conduct asbestos awareness training.
- Maintain records associated with all aspects of the Plan. Such records include: medical surveillance records for those employees participating in this Plan, fit tests, asbestos abatement project records, and asbestos building inspection records,
- Conduct hazard assessments to identify and evaluate the nature and extent ACMs will be disturbed as part of construction, demolition and capital improvement projects.
- Facilitate asbestos abatement projects to support maintenance, construction and demolition operations.

- Coordinate the disposal of ACM waste generated from O&M operations on campus.
- Serve as the University representative when interacting with state, and federal agencies on asbestos-related matters.

Contractor Responsibilities

- Asbestos abatement contractors and environmental consultants are required to comply with state and federal regulations and university policies during asbestos abatement project.
- Contractors are required to provide their own equipment as referenced in the NIU Contractor Safety Program.
- Contractors and consultants are required to provide the APC with a final report within 30 days post completion of an asbestos abatement project.

HAZARD ASSESSMENT PROCESS

The EH&S Department performs hazard assessments to determine the potential impact to ACMs and PACMs during the capital improvement project process. The Capital Development Board (CDB) retains environmental consultants to provide this service during projects in which they fund. Conducting the hazard assessment process involves collaborating with assigned project managers to evaluate the project scope of work, participating in work request meetings, project meetings and walkthroughs, conducting site visits, performing building surveys and managing asbestos abatement projects when needed. Costs associated with such work are included in project budgets. Projects managers are required to submit abatement documentation upon project completion to the EH&S Department especially for abatement projects in which the EH&S Department may not directly manage (i.e. CDB and energy performance projects).

The EH&S Department maintains a comprehensive inventory of asbestos building inspection records that identify type, quantity and location of identified ACMs in campus buildings. Such records are referenced as part of the hazard assessment process. ACMs must be identified prior to any renovation or demolition project in accordance with EPA regulations. In the absence of available survey data or if survey data is inconclusive, a IDPH-licensed building inspector is required to collect samples of suspect ACMs for analysis at an accredited laboratory. Confirmatory samples will also be collected and analyzed to confirm asbestos content of friable materials including surfacing or TSI materials. Surveys are conducted according to applicable OSHA, EPA, and IDPH rules and regulations. Any material suspected to contain asbestos that has not previously been tested must be presumed to contain asbestos and managed accordingly. Survey and sampling results will serve as the basis for the development of the project scope of work and/or abatement method. No property will be exempted from this requirement based on date of construction or renovation since asbestos is still used in various types of building construction.

Materials Containing Trace Amounts of Asbestos

A material is considered a regulated ACM per EPA when it contains more than one (1) percent asbestos. However, materials containing less than or equal to one (1) percent (trace amounts) are still regulated by OSHA given there is no safe level of exposure to asbestos. Therefore, licensed asbestos or O&M trained workers are still required to regulate the area, don appropriate PPE and implement safe practices when disturbing materials that contain trace amounts of asbestos. Please contact the APC for additional information as needed.

Surveillance and Assessment

All program stakeholders are responsible to perform random and periodic surveillance to evaluate the condition of ACMs in university properties.

ACMs found to be in a "damaged" or "significantly damaged" condition will be demarcated as a regulated area and require an immediate abatement action. The APC will submit a work request to the Physical Plant work request office to facilitate the appropriate method of abatement. It is also the responsibility of all program stakeholders to report damaged ACMs, when discovered, to the work request office to facilitate the abatement process.

HAZARD COMMUNICATION

Notice to Building Occupants

Every effort will be made to notify building occupants who work in or adjacent to areas where asbestos abatement operations are scheduled. The notification shall provide information regarding the work to be performed and the measures employed to minimize the potential for fiber release. The NIU Project Manager that initiated the abatement work is responsible for advising the building representative so the building representative can disseminate the information to the impacted occupants. The NIU Project Manager is also responsible for advising contractors working under their respective purview.

Notification to Regulatory Agencies

Asbestos abatement contractors are required to notify the IEPA 10-working days prior to the start of an asbestos abatement project that involves the removal of ACMs exceeding 260 linear feet, 160 square feet, or 35 cubic feet. Contractors are required to notify IDPH two days prior to the start of an asbestos abatement project that involves the removal of ACMs in quantities between three (3) square or three (3) linear feet and 160 square feet, 260 linear feet, or 35 cubic feet. The contractor shall submit a revised notification form to the regulatory agencies if the scope of work is modified.

Regulated Areas

Areas where airborne asbestos fiber concentrations exceed or can reasonably be expected to exceed the PEL are to be properly demarcated to establish the regulated area. OSHA Class I through Class III work must be conducted within a regulated area.

A regulated area:

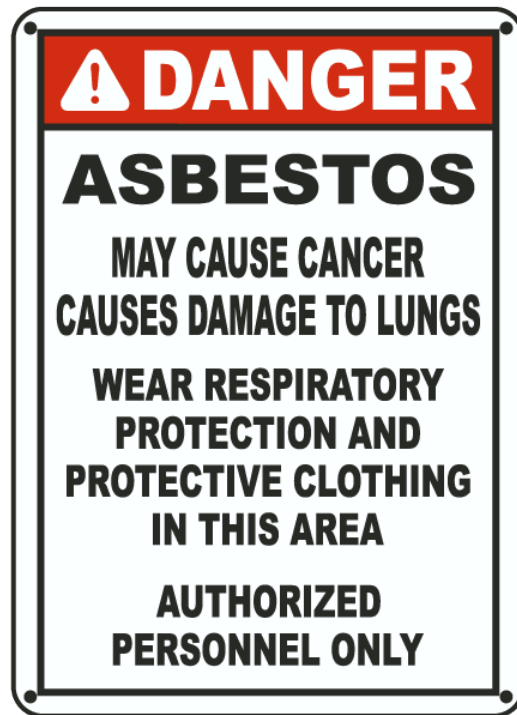
- Shall have ‘Danger – Asbestos’ signs posted and associated ‘Danger- Asbestos' barrier tape erected to define the scope of the regulated area;
- Shall be demarcated in a manner to restrict unauthorized personnel from entering to prevent inadvertent exposure to airborne asbestos;
- Shall not allow employees to eat, drink, smoke, chew tobacco or gum, or apply cosmetics;
- Shall be supervised by a competent person.

Only personnel trained and medically qualified to don respiratory protection are authorized to enter a regulated area with the exception being first responders. First responders are authorized to enter to respond to emergency situations.

Asbestos Signs and Labels

Asbestos signs and labels include ‘Danger-Asbestos’ signs and barrier tape, ‘Caution-Asbestos’ signs, DOT Class 9 Special Waste labels and generator tags. ‘Danger-Asbestos’ signs are posted to regulate an area during Class I, II or III activities. ‘Caution-Asbestos’ signs are posted at entrances to mechanical and utility environments containing TSI or surfacing ACMs to inform staff who have access to these areas that such materials are present therein. Examples of signs are as follows:

Danger-Asbestos Sign



Caution-Asbestos Sign



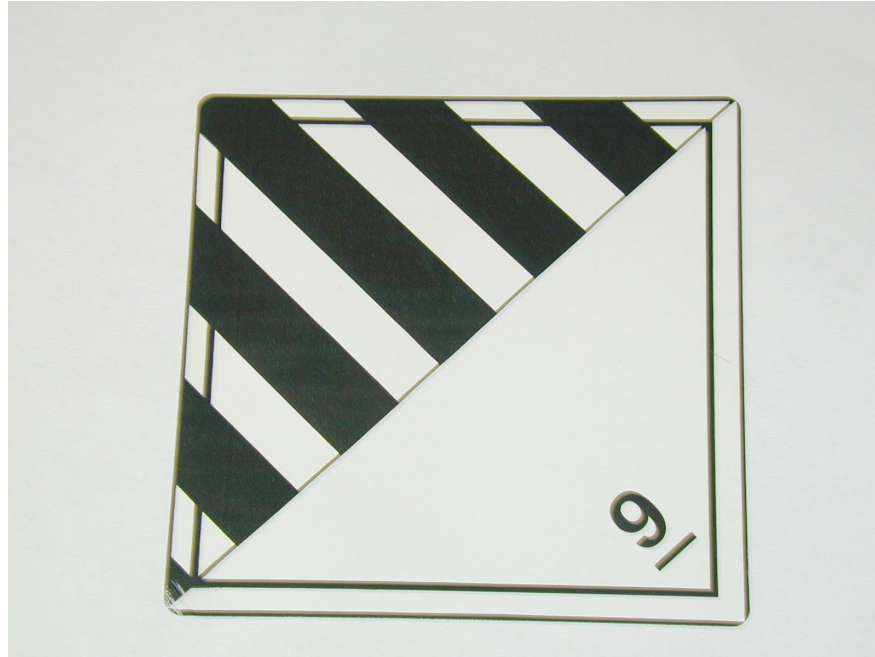
‘Asbestos–Danger’ labels may also be affixed to TSI where feasible in lieu of ‘Caution--Asbestos’ signage as depicted in the following example:

Danger-Asbestos Label



Asbestos waste shall be properly labeled with a ‘Danger – Asbestos’ label, DOT Class 9 Special Waste label and generator tag.

DOT Class 9 Special Waste Label



Generator Tag (example)

<p style="text-align: center;">NIU DEPARTMENT O & M OR PROJECT NAME OF BLDG. DATE OF REMOVAL</p>

The generator tag shall be affixed to or included inside a clear asbestos burial bag between the inner and outer bags or on the outside of an opaque bag or fiber drum. It must have the following information:

- Northern Illinois University
- Name of the Contractor or Department that removed the ACM
- O & M or Project
- Name of the building and room from which the ACM was removed;

- Date of removal

METHODS OF ABATEMENT

Trained and licensed personnel shall comply with project specifications and applicable rules and regulations during asbestos abatement operations. Trained FMCS staff shall also follow the Operations and Maintenance procedures listed in Appendix A for maintenance and repair operations in which the scope of work consists of abatement of no more than three (3) square or (3) three linear feet. Methods of abatement include repair, encapsulation, enclosure, and removal. These methods are further described below:

- **Repair**

Repair activities are used for damaged ACM, which meets all of the following criteria:

- The damage is localized;
- The area of damage is less than 10% of the continuous area of ACM in a functional space;
- The area of damage is less than 10 linear feet or 10 square feet; and
- The volume of debris generated by the activity does not exceed filling one asbestos waste bag.

- **Encapsulation**

Encapsulation (bridging/penetrating) is the application of a sealant to the ACM to prevent the release of asbestos fibers. Encapsulation may only be used if **all** of the following conditions are met:

- The area is localized
- The area of damage is less than 10% of the continuous area of ACM in a functional space; and
- The total area affected is less than 10 linear feet or 10 square feet.

- **Enclosure**

An enclosure is the construction or installation over or around the ACM of any solid or flexible covering. It provides an airtight barrier that will not deteriorate or decompose for a period of time. It conceals the ACM, contains ACM fibers, and renders the ACM inaccessible. An enclosure may only be used as a temporary means of isolating the ACM.

- **Removal**

Removal is the preferred abatement method when disturbance cannot be avoided. Removal operations are typically performed to facilitate planned and scheduled renovation/demolition projects.

FIBER RELEASE EPISODE

Fiber release episodes involve a release of asbestos-containing materials (ACMs) that present a potential for occupant exposure and/or contamination of the building environment.

The APC or competent person is responsible to respond to such an episode by initiating the following emergency response procedures:

1. Collect as much information from the initial information source as possible, in particular ascertaining the location of the asbestos problem.
2. Confirm that the affected area has been isolated and secured.
3. Investigate the scene, determining the type of suspected ACM, the extent of the damage and the potential for further damage.
4. Review building asbestos surveys and sampling reports to see if affected materials and those materials in the immediate area contain asbestos.
5. Determine the likelihood and size of the potential fiber release
6. Coordinate with Physical Plant and others if affected.
7. Contact an abatement contractor and environmental consultant to coordinate response process. Coordinate response process with the Physical Plant and designated building representative.

GENERAL HOUSEKEEPING PRACTICES

All asbestos-containing flooring materials must be maintained in the following manner:

- Sanding, grinding, cutting or chipping of flooring materials is prohibited.
- Stripping of finishes shall be performed using wet methods in conjunction with low abrasion pads (white, pink or green pads) at speeds lower than 300 rpm. Black pads are considered high abrasion pads and shall not be used. Burnishing or dry buffing shall only be performed on flooring that has sufficient finish so that the pad cannot penetrate the flooring material.
- As a preventive measure, floor wax compounds shall be applied on a regular schedule especially in high traffic areas.
- Only wet mops shall be used to clean floors. No dry sweeping or mopping is allowed in areas where ACMs are present. Particular attention shall be given to hard-to-clean areas such as in corners, under tables and along baseboards.

Building fixtures (i.e. ceiling light fixtures, elevated surfaces, hard-to-reach areas, etc.) in areas where ACM TSI and surfacing materials are present should be wet-wiped clean on a regular basis.

WASTE DISPOSAL

Operations and Maintenance Operations

Asbestos-containing debris must be promptly cleaned up by licensed or O&M trained personnel and disposed in the proper manner. Staff shall use HEPA filtered vacuums and wet methods to clean up asbestos debris. Adequately wet debris shall be properly disposed in double-layered ACM disposal bags. Disposal bags shall be “goose-necked” and properly labeled for transport to the roll-off asbestos dumpster located on the west side of campus near the Human Resources/Document Services Building. The APC will submit necessary manifests for pickup and transport of the dumpster to an EPA-approved landfill.

Asbestos Abatement Projects

Asbestos waste generated during asbestos abatement projects shall be disposed of at an EPA-approved landfill as listed in the project notification. Abatement contractors are required to arrange for disposal and submit completed waste manifests to the APC upon receipt.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Respiratory Protection

Workers engaged in asbestos abatement operations are required to don respiratory protection when conducting abatement operations that fall under the following criteria:

- Class I activities;
- Class II activities where ACM is not intact;
- Class II and III activities where wet methods cannot be used;
- Class II and III activities that do not have a negative exposure assessment;
- Class III work involving thermal systems insulation or surfacing materials;
- Work where employees are exposed, or may be potentially exposed, to airborne fiber concentrations above the PEL or EL;
- In emergencies.

Staff assigned to perform such operations shall be enrolled in the campus Respiratory Protection Program. Please refer to this program located at the following link for specific requirements: http://www.niu.edu/ehs/pdf/respiratory_prot_plan.pdf. A hard copy of this program is also available in the Safety Resource kiosk located in the Physical Plant Materials Distribution Center. Please contact the APC for additional information as the APC also administers the Respiratory Protection Program.

Protective Clothing

Licensed workers and/or O&M trained employees are required to don protective clothing consisting of disposable Tyvek or cloth suits, protective boots and gloves, safety glasses and other PPE as necessary.

Employees shall double-suit before entering a regulated work area where shower facilities are not provided.

Suits, boots, and gloves shall be routinely inspected for rips or tears while working. Damaged protective clothing shall be sealed with duct tape or immediately replaced. All contaminated clothing shall be disposed as asbestos waste.

HYGIENE FACILITIES

Decontamination units must be established for Class I work that is greater than 25 linear or 10 square feet of friable ACM. The decontamination (decon) unit shall, at a minimum, consist of three chambers including an attached equipment room, shower area, and clean room. The decon unit must be set up adjacent to and connected to the contained work area within the regulated area. All authorized employees must enter and exit through the decon unit to access the contained work area.

Decons are also required for Class I work less than 25 linear or 10 square feet, Class II and III work where exposures exceed the PEL or EL, or where there is no negative exposure assessment.

An equipment decon unit must be established adjacent to the regulated area for the decontamination of employees and equipment. At a minimum, it must consist of an impermeable drop cloth on the floor surface. Suits must be HEPA vacuumed before removal. All equipment and the exteriors of ACM waste bags must also be cleaned prior to removal. All authorized employees must enter and exit through the decon unit to access the contained work area. The same is required of Class III operations and maintenance work of 3 linear feet or 3 square feet or less of ACM scheduled to be removed.

TRAINING AND LICENSING REQUIREMENTS

Several types of asbestos training are provided for employees who have the potential to come into contact and/or disturb ACMs.

- Those employees that perform Class I and II activities are required to obtain and maintain an asbestos abatement worker or supervisor license issued by the IDPH. Licensed workers and supervisors are required to attend an initial and annual contractor/supervisor refresher course.
- Employees that perform Class III operations and maintenance (O&M) where ACM may be disturbed, must be repaired or cleaned up are required to attend an initial and annual O & M refresher course.
- Employees that perform a Class IV (clean up) activity or have the potential to come into contact with but not disturb asbestos, are required to attend an initial and annual asbestos awareness course.

All employees assigned to participate in asbestos abatement projects on campus shall be licensed by the IDPH based upon their respective duties. Licensure includes: asbestos abatement worker/supervisor,

asbestos project manager, asbestos project designer, asbestos building inspector, and air sampling professional.

MEDICAL SURVEILLANCE

Employees performing asbestos abatement activities or employees exposed at or above the PEL for a combined 30 days or more per year will be included in this program. Employees engaging in such activities are required to wear respiratory protection and, therefore, must have a medical screening. This screening consists of:

- Medical questionnaire from OSHA 29 CFR 1910.1001 Appendix D.
- Physical examination with emphasis on respiratory and cardiovascular systems, and the digestive tract.
- Pulmonary function test (PFT) that includes forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV 1.0).
- Chest roentgenogram analyzed by a B-reader, board eligible or certified radiologist or an experienced physician with known experience with pneumoconiosis.
- Additional tests the PLHCP deems appropriate.

Before assignment to asbestos removal, repair or clean-up work, the trained employee must have a pre-placement medical examination. The employee receives medical examinations annually thereafter until separation of employment from NIU. Before separating from NIU the employee will receive a final exam, chest X-ray and pulmonary function test. As such, it is important the employee inform the APC or supervisor well in advance of leaving NIU. The supervisor will inform the APC as soon as possible so the exam and tests can be arranged.

After the initial or annual medical exam the determination is made by the PLHCP on the employee's ability to wear a respirator. The employee will be allowed to perform asbestos work once the PLHCP indicates the employee is medically qualified to don respiratory protection. The EH&S Department maintains respirator approval reports for the duration of the employee's employment plus thirty years.

The PLHCP will maintain and provide copies of the employee's medical record directly to the employee upon the employee's request. The employee also has the right to complete an "Authorization to Release Medical Records" form so the PLHCP can send the employee's medical records to the employee's primary care physician.

AIR SAMPLING PROGRAM

Air sampling is typically performed by an environmental consultant to ensure engineering controls and wet methods are successful in preventing the release of airborne fiber concentrations during asbestos abatement operations. Air sampling may include background, area, personal and clearance testing.

Personal Air Sampling

Personal air sampling shall be conducted as specified by applicable federal and state regulations to verify employees engaged in asbestos abatement operations are not exposed to fiber concentrations above the regulatory limits.

Area Air Sampling

Area air sampling shall be conducted during asbestos abatement projects as specified by applicable federal and state regulations to verify the integrity of the regulated work area and to ensure there are no asbestos fibers migrating from the containment. The competent person managing the project is responsible to investigate and resolve any deficiencies in the integrity of the regulated work area in the event sample results exceed background fiber concentrations.

Clearance Air Sampling

Clearance air sampling shall be performed at the completion of the asbestos abatement project. The EPA and IDPH clearance level of 0.01 f/cc by PCM analysis is required for any project involving greater than three square or three linear feet of ACM that is performed within a negative pressure enclosure. If TEM analysis is performed for clearance purposes, the EPA and IDPH clearance values should be less than 70 structures per millimeter squared (s/mm^2).

When a project is of small-scale, short duration, results of background, area and/or personal air sampling conducted during the project will be considered sufficient for use as clearance results, if the following conditions are met:

- The work activity was not conducted utilizing a negative pressure containment;
- The sampling results indicate a fiber concentration less than the regulated clearance level of 0.01 f/cc; and
- The sample was collected for the duration of work including cleanup.

LABORATORY ANALYSIS PROGRAM

Licensed professionals collect air or bulk samples which are sent to a laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) supported by the National Institute of Standards and Testing (NIST). The following analytical methods may be used to evaluate asbestos fiber concentrations.

- Phase Contrast Light Microscopy (PCM) Analysis shall be performed in accordance with the most recent edition of Appendix A in 29 CFR 1910.1001 or NIOSH method 7400.
- Polarized Light Microscopy (PLM) Analysis shall be performed in accordance with the most recent edition of USEPA specification defined in the Interim Method for the

Determination of Asbestos in Bulk Insulation Samples, 40 CFR 763 or NIOSH method 9002.

- Transmission Electron Microscopy (TEM) Analysis shall be performed in accordance with the most recent edition of USEPA 40 CFR 763, Appendix A or NIOSH method 7402. (Generally speaking, bulk samples of floor tile will be analyzed by TEM in accordance with IDPH recommended guidelines).

APPENDIX A: Operations and Maintenance Procedures

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O&M WORK PRACTICES AND PROCEDURES

Operations and maintenance (O&M) OSHA Class III work that may disturb ACM requires the use of special techniques for the protection of the worker and those occupants in the immediate area. A disruption of ACM is any activity that causes damage to the ACM resulting in the generation of visible dust and debris. The amount of ACM disturbed in any O&M activity should involve no more than 3 square feet (sf) or 3 linear feet (lf) and produce no more waste than one 60" x 60" ACM disposal bag or one standard glovebag. Any work involving clean up, repair, enclosure or encapsulation of ACM must be done by an O&M-trained worker or licensed asbestos worker. Removal of ACM can only be done by a licensed asbestos worker.

Asbestos O&M procedures involve use of:

- Asbestos O&M training;
- Secured and regulated work areas;
- Drop-cloths and plastic barriers;
- PPE (suits and respirators) when disturbing TSI or surfacing ACMs to minimize exposure to the individual doing the work;
- Local exhaust ventilation with a HEPA vacuum;
- Mini-containments or glovebags when disturbing TSI or surfacing materials;
- Engineering controls such as a HEPA filtered negative pressure unit or HEPA vacuum when using mini-enclosures or glovebags;
- Wet methods except where its use could result in electrical hazards, equipment malfunction, icing or slip hazards;
- Air sampling if necessary;
- Lockdown encapsulants if needed; and
- Prompt cleanup and disposal of existing waste in leak-tight ACM labeled bags.

O&M General Procedures

- Ask any bystanders and those working in the affected area to leave until after the ACM related work is completed.
- Secure the work area. If possible, lock doors to deny access.
- Regulate the area with Asbestos-Danger barrier tape and signs. Don respirator and protective clothing. Protect yourself.
- HEPA vacuum the area.
- Put down poly sheeting.
- Wet wipe ACM contaminated surfaces.
- Place ACM waste, protective suit, poly sheeting, etc., in an ACM disposal bag. Soak debris with water. Label and seal the bag properly.
- Visually inspect area to verify that no ACM debris remains.
- Remove barrier tape and signs. Inform occupants the area is available again.
- Transport waste bags to asbestos waste storage area.

Cleanup and teardown (Follow these steps upon completion of O&M activity)

- Apply lockdown encapsulant where the ACM had been removed or disturbed.
- Bag ACM waste for disposal. Verify that each waste bag is properly sealed, double-bagged and labeled with a generator tag, “Asbestos-Danger” and DOT Miscellaneous Class 9 Special Waste label.
- HEPA vacuum the area.
- Wet wipe and HEPA vacuum tools and put tools outside the work area.
- Decontaminate waste packages and put outside the work area.
- HEPA vacuum clothes prior to removal. Dispose of contaminated clothing as ACM waste.
- Carefully pick up drop sheet (rolling it inward from the sides to avoid dropping any waste on the floor) and dispose of it as ACM waste.
- HEPA vacuum area under and around the drop sheet.
- Decontaminate the outside of your respirator.
- Remove your respirator and clean it.
- Seal or dispose of your respirator filters.
- Decontaminate your hands. Wash up.
- Perform a visual inspection to verify the ACM has been removed and the work restored. (If feasible, have the APC check out the work area.)
- Remove any residue left on surfaces by the tape used to create critical barriers.
- Remove any Lockout/Tag-out tags you put on and restart the systems.
- Inform the APC and the supervisor that the work has been completed.
- Store decontaminated equipment, tools and materials.
- Transport waste to the asbestos waste storage area.
- Restore normal accessibility to the area (i.e., deregulate area, allow occupants to enter.)

Surfacing Materials O & M Procedures

ACM fireproofing and acoustical plaster are friable and require additional planning/coordination to minimize potential fiber release during a planned O&M operation. Therefore, please consult with APC before disturbing these ACMs.

Install Wiring in Plenum Where Exposed ACM is Present

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Lay a continuous run of poly under the area where the cable is to be installed. Secure it to prevent slips and trips.

Set up the mini-containment and negative pressure unit.

Place HEPA vacuum in the mini-containment. Use a hose long enough to reach above the suspended ceiling to the work area or lift and secure HEPA vacuum so hose can reach.

Don respirator and protective clothing.

Carefully lift and place to one side one ceiling tile to provide access to the plenum.

HEPA vacuum the tops of the ceiling tiles around the access hole.

Mist with amended water any fireproofing or acoustical ceiling plaster that may be disturbed.

If practical, install a poly drop sheet at ceiling level to catch ACM dust or debris.

Wet wipe cable after it has run past ACM.

Saturate the debris on top of the drop sheet.

Dispose of sheet and debris in ACM disposal bag.

Spray tops of ceiling tiles with encapsulant and replace last tile.

Cleanup and teardown.

Move Non-ACM Ceiling Tile Located Below a Plenum Containing Exposed Surfacing ACM.

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay a poly drop sheet under work area.

Set up the mini-containment and negative pressure unit.

Place tools and HEPA vacuum in the mini-containment. Use a hose long enough to reach above the suspended ceiling to the work area.

Don respirator and protective clothing.

Carefully lift and place to one side one ceiling tile to leave an access hole to the plenum.

HEPA vacuum edges and top of tile and the tops of the ceiling tiles around the access hole.

Mist plenum and tops of ceiling tiles with amended water.

Put any debris in ACM disposal bag.

Do the required operation or maintenance work.

Vacuum all sides of the tile and replace.

Package waste.

Decontaminate ladder, tools, materials, clothes.

Decontaminate mini-containment for re-use or dispose of it and the protective suit as ACM waste.

Dispose of sheet and debris in ACM disposal bag.

Wet wipe area under opened ceiling.

Cleanup and teardown.

Cut or Drill into Surfacing ACM - Attach, Repair or Replace an Item Attached to a Surfacing ACM

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay a poly drop sheet under work location.

If feasible, set up a glovebag or mini-containment with a negative pressure unit.

Place HEPA vacuum in the mini-containment or connect to glovebag.

Don respirator and protective clothing.

Wet work location.

Do the required operation or maintenance.

Keep work location damp while drilling or cutting.

Encapsulate holes.

Put all ACM debris and waste in ACM labeled disposal bag.

Cleanup and teardown.

Change Bulbs in a Fixture Attached to an ACM Surface

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay poly sheeting under work location.

Don respirator and protective suite.

Replace bulbs.

Clean up dust or debris with HEPA vacuum.

Dispose of ACM waste in ACM bag

Painting an ACM Surface.

(At 3 square feet or less, this is a touchup only.)

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay a poly drop sheet under the work area.

If feasible, set up a mini-containment and negative pressure unit.

Don respirator and protective clothing.

Use a pump-style (low velocity airless) sprayer if the surface is acoustical plaster or fireproofing.

When finished, dispose of drop sheet. Clean any rollers, etc., that have touched the ACM surface or dispose of them as well.

HEPA vacuum or wet wipe to clean the area under and around the drop sheet.

Cleanup and teardown.

Repair Damaged Surfacing ACM.

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay a poly drop sheet under the work area.

Set up a mini-containment and negative pressure unit. (Required with surfacing ACMs.)

Place HEPA vacuum and tools inside the mini-containment.

Wet down damaged area.

Remove loose material.

Encapsulate edges.

Use a non-ACM material to repair damaged area.

Cleanup and teardown.

Thermal System Insulation (TSI) O&M Procedures

Clean up ACM Debris in Tunnel or Crawlway

Please note: If the work is in a confined space, see the NIU Confined Space Program.

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Don respirator and protective clothing.

Lay a poly drop sheet just outside the work area.

Seal the area to create a mini-containment. Do not cover the floor.

Set up negative pressure unit.

Wet floor and debris.

Place debris in an ACM disposal bag.

If further repair or abatement of TSI is required, do it within containment.

HEPA vacuum the floor within mini-containment.

Cleanup and teardown.

Access the Surface of Piping, Fitting, Duct, Boiler or Flue Covered with ACM Insulation

Please note: If a live steam line, arrange to have it shut down and allowed to cool before working on it.

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay a poly drop sheet just outside the work area.

Don respirator and protective clothing.

Use a glovebag in removal of ACM insulation.

If a mini-containment is used, keep the nozzle of the HEPA vacuum in the work zone to capture fibers and debris.

Do the required work.

Repair or re-insulate with non-ACMs.

Cleanup and teardown.

Repair Damaged ACM Insulation on Pipe, Fitting, Duct, Boiler or Flue

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay a poly drop sheet just outside the work area.

Don respirator and protective clothing.

Glovebag damaged area of ACM insulation.

Wet area to be repaired with amended water..

HEPA vacuum to remove loose or damaged material.

Cut out damaged TSI with HEPA vacuum nozzle at point of operation to capture fibers or debris.

Repair or re-insulate with non-ACMs.

Cleanup and teardown.

Remove ACM Pipe or Duct Insulation on HVAC Unit for Maintenance Work

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay a poly drop sheet just outside the work area.

Set up a mini-containment with negative air unit or glovebag.

Don respirator and protective clothing.

Wet insulation down with amended water.

Remove insulation with the nozzle of the HEPA vacuum at the point of operation.

Use a wet nylon brush (not a wire brush) to scrub down the pipe or duct.

Seal with lockdown encapsulant.

Do the required maintenance.

Cleanup and teardown.

Remove ACM Pipe or Duct Insulation Above a Suspended Ceiling or in an Elevated Location

Note: Use fall protection at work elevations of six feet or greater.

HEPA vacuum under work area.

If work is above a suspended ceiling, carefully lift a ceiling panel and slide it to one side.

HEPA vacuum tops of panels around opening and keep the HEPA nozzle in that area above the ceiling.

Attach glovebag.

Wet insulation with amended water.

Remove insulation.

Clean surface of pipe and seal it with lockdown encapsulant.

Remove glovebag. Lower it to the floor. Do not drop.

Do required maintenance work.

Cleanup and teardown.

Miscellaneous Asbestos Materials O&M Procedures

Clean up

Dusting – Use a damp rag or electrostatic material to wipe up dust, then HEPA vacuum.

Carpeted Floor – HEPA vacuum the floor. Do not use a non-HEPA vacuum.

Non-Carpeted Floor – Damp mop, then wash. Do not use a dry duster or non-HEPA vacuum.

Drapes, Fabrics – HEPA vacuum drapes top to bottom as well as drapery rods, then HEPA vacuum floor last.

Change Filter or Bag in HEPA Vacuum or Negative Air Pressure Unit

Note: This must be done in containment. Take all precautions. What is trapped in the bags and filters are the most easily respired and therefore the most hazardous particles of asbestos.

Secure work area to keep people out of area.

Set up a mini-containment with negative air unit if one does not already exist. (Another HEPA vacuum can serve as the negative air unit.)

Set tools, supplies, replacement bags and/or filters and an additional HEPA vacuum inside the mini-containment.

If the negative air machine's filters are to be changed, lay out two sheets of poly to wrap the HEPA filter in. This filter will not fit in an ACM disposal bag.

Don respirator and protective clothing.

Make certain the vacuum or negative air unit to be cleaned is turned off and disconnected from any power source.

Open dirty vacuum or negative air pressure unit in containment.

Wet down the bag or filters with amended water.

Remove dirty filters or bag and place in an ACM disposal bag. If too large for an ACM disposal bag, dampen dirty filters or bag and seal in one layer of poly, then in the second.

Use second HEPA unit to vacuum out first vacuum or negative air pressure unit.

Wet wipe inside of unit.

Install clean bag or filters.

Close up unit

Wet wipe exterior of unit.

Make sure all appropriate labels are applied and visible—required are the Danger Asbestos, generator tag and DOT Class 9 Miscellaneous label.

Decontaminate tools and equipment.

Cleanup and teardown.

Cut or Drill

Cut or Drill ACM Drywall, Plaster, Tape or Joint Compound

Note: Shock Hazard. Be careful when using water and power tools.

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay down poly drop sheet.

Set up mini-containment and negative pressure unit.

If the back side of the wall is likely to be penetrated, contain that area under negative pressure as well.

Don respirator and protective clothing.

Wet the area to be cut with amended water

Cut or drill with the nozzle of the HEPA vacuum at the point of operation.

Remove pieces and place in an ACM disposal bag.

HEPA vacuum the front and back of the hole.

Encapsulate exposed edges.

Remove the backside enclosure, wet wipe that area.

Do the required operation or maintenance.

Cleanup and teardown.

CUT OR DRILL ACM CEMENT PANEL (TRANSITE)

Note: Shock hazard. Be careful when using water and power tools.

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Lay down poly drop sheet.

If feasible, set up a mini-containment with negative air pressure unit.

If the back side of the wall is likely to be penetrated, contain that area under negative pressure as well.

Don respirator and protective clothing.

Wet the area to be cut with amended water.

Cut or drill with the nozzle of the HEPA vacuum at the point of operation.

Remove pieces and place in an ACM disposal bag.

HEPA vacuum the front and back of the hole.

Encapsulate exposed edges.

Remove the backside enclosure, wet wipe that area.

Do the required operation or maintenance.

Cleanup and teardown.

Other options for cutting and drilling (the Shaving Cream Method)

Note: Many shaving creams have a flammable material as a propellant. Be careful using it. Consider the Shaving Cream Method a secondary solution to containment and collection. HEPA vacuuming at the source of disturbance is preferred.

The Shaving Cream Method

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay down poly drop sheet.

Don respirator and protective clothing.

Mist the area to be drilled with amended water.

Poke a hole in the bottom of a paper, disposable plastic or Styrofoam cup.

Put drill bit through the hole in cup so debris can be caught in cup.

Fill cup with shaving cream. (Shaving cream works better than shaving gel.)

Set drill bit in place and drill hole. (Shaving cream acts as amended water and captures ACM debris.)

Remove foam-filled cup and place in an ACM disposal bag.

Wet wipe surface and clean off bit, place wipe in ACM disposal bag.

Encapsulate exposed edges of ACM.

Do the required operation or maintenance.

Cleanup and teardown.

Removal

Remove ACM Gasket or Packing

Note: Shock Hazard. Be careful when using water and power tools.

Shut down HVAC unit. Lockout and tagout.

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay a poly drop sheet under the work area.

If the temperature will not exceed 150 degrees F, use a glovebag. If the temperature of the surface will be too high or if the unit to be maintained cannot fit inside a glovebag, set up a mini-containment and negative pressure unit.

Don respirator and protective clothing.

Open up unit to access gasket or packing.

Wet the gasket or packing with amended water.

Scrape gasket or packing from its seat. Have the nozzle of the HEPA vacuum at the point where the gasket or packing separates from the flange or packing box.

Put the pieces in an ACM disposal bag.

HEPA vacuum up any debris.

Wet wipe the seat.

Keep the work zone wet.

HEPA vacuum and wet the surface where the item was attached. Do not use a wire brush (either that on a power tool or by hand) to remove any residue.

Install new gasket or packing.

Reassemble equipment.

Cleanup and teardown.

Remove ACM Drywall

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay a poly drop sheet under the work area.

If feasible, erect a mini-containment with negative air pressure unit.

Don respirator and protective clothing.

Use amended water to wet area of drywall to be removed.

Cut perimeter. If possible, keep nozzle of HEPA vacuum at the cut.

Open hand-grips.

Mist cavity and back side of drywall.

Pull so the drywall folds.

Package for disposal. If section removed is too large for an ACM disposal bag, seal in two layers of poly and attach appropriate labels (‘Danger Asbestos,’ DOT and generator tag).

Encapsulate edges.

Remove fasteners, clean off debris with amended water and a nylon brush.

HEPA vacuum and wet wipe work area to capture any dust generated in the removal.

Do required operations or maintenance work.

Pack up debris and waste in ACM disposal bag.

Cleanup and teardown.

Remove ACM Ceiling Tiles (Lay-in or Spline Ceiling Systems)

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum the area under the tiles to be removed.

Lay a poly drop sheet under the work area.

Set up a mini-containment with negative air pressure unit.

Don respirator and protective clothing.

Mist tiles with amended water.

Remove tiles and place in an ACM disposal bag.

HEPA vacuum the suspension components the tiles had touched, then wet wipe.

Cleanup and teardown.

Remove ACM Glued-On Ceiling Tiles

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum the area under the tiles to be removed.

Lay a poly drop sheet under the work area.

Set up a mini-containment with negative air pressure unit.

Don respirator and protective clothing.

Mist tiles with amended water.

Cut outer ½” from tongue/groove edge of tile.

Pull tile away and off ceiling

Place tile and debris in an ACM disposal bag.

Wet and scrape away glue residue, wet wipe surface.

HEPA vacuum area.

Cleanup and teardown.

Remove ACM Paper or Cloth on Ductwork

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay a poly drop sheet under the work area.

Use a glovebag or if feasible set up a mini-containment with negative air pressure unit.

Don respirator and protective clothing.

Wet material to be removed with amended water.

Remove material and wet it again.

Place material in an ACM disposal bag if it is not already in a glovebag.

HEPA vacuum and wet wipe duct and the floor beneath it.

Do required maintenance or operations work.

Cleanup and teardown.

Remove ACM Flex Duct Connector

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Shut off power and lock out/tag out unit.

Seal duct or HVAC unit on either side of the flex connector (critical barriers).

HEPA vacuum under work area.

Lay a poly drop sheet under the work area.

Don respirator and protective clothing.

Wet the flex connector and flanges with amended water.

Remove screws while holding connector.

Clean screws with water and a nylon brush if the screws are to be kept.

Slide connector off ductwork and place it in an ACM disposal bag.

HEPA vacuum the inside of the duct to either side of the connector.

Do required maintenance or operations work.

Remove critical barriers.

Cleanup and teardown.

Remove lock out/tag out and restart unit

Remove HVAC Filters

Shut down HVAC unit. Lockout and tagout.

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay a poly drop sheet under the work area.

Don respirator and protective clothing.

Saturate filter with amended water.

Remove filter and put it in an ACM disposal bag.

HEPA vacuum the inside of the duct and wet wipe floor and inside of unit.

Install clean filter and pre-filters.

Cleanup and teardown.

Remove lock out/tag out and restart unit.

Remove ACM Fire-door

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Lay a poly drop sheet under the work area.

Don respirator and protective clothing.

Wet damaged areas with amended water.

Remove door from frame.

Remove hardware from door.

Wash any parts for be saved, dispose of the rest as ACM waste.

Lay two sheets of poly on the floor.

Lay the door on the poly, wrap and seal. Repeat with second sheet of poly.

Label properly for disposal.

HEPA vacuum the poly drop sheet.

Cleanup and teardown.

Remove or Replace Hardware on ACM Fire Door

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Lay a poly drop sheet under the work area.

Don respirator and protective clothing.

Wet area to be worked on with amended water.

Remove and dispose of hardware as ACM waste.

HEPA vacuum work area on the door.

Install new hardware.

Cleanup and teardown.

Remove ACM Chalkboard

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Lay a poly drop sheet under the work area.

Don respirator and protective clothing.

Wet the board, including the sides and top, to dampen any debris behind it.

Remove fasteners, then remove the board from the wall.

Wet the glue both on the board and on the wall with amended water.

Lay two layers of poly sheeting on the floor.

Lay the chalkboard on the poly sheeting.

Mist the board, then wrap, seal and label for ACM disposal.

Mist and scrape glue from the wall.

HEPA vacuum wall and floor beneath.

Wet wipe wall and floor beneath.

Clean up and teardown.

Remove ACM Transite Panels

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

HEPA vacuum under work area.

Lay a poly drop sheet under the material to be removed.

Don respirator and protective clothing.

Wet panel with amended water. Keep panel wet.

Dampen fasteners during removal.

Remove panels without breaking the panel further.

Place pieces in an ACM disposal bag or seal in two layers of poly sheeting.

If working at elevation, lower the bag or package to the ground. **DO NOT DROP.**

HEPA vacuum and wet wipe the area.

Do the required operations or maintenance.

Cleanup and teardown.

Remove ACM Transite Cooling Tower Louvers

Note: Fall protection is required for work at elevations over 6 feet.

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Shut down and lock out/tag out cooling tower systems.

Lay a poly drop sheet under the material to be removed.

Don respirator and protective clothing.

Wet panels with amended water. Keep panels wet.

Dampen fasteners while they are being removed.

Wash any fasteners to be kept, dispose of them as ACM waste if not.

Remove louvers without breakage to ACM disposal bags or seal them in two layers of poly sheeting. Bag chips and debris.

Lower bags or packages to the ground. Do not drop.

Wet wipe the surfaces the louvers had contacted.

Do required maintenance or operation.

Cleanup and teardown.

Remove ACM Built-Up Roofing, Asphalt Shingles or Roof Flashing

Note: Slipping Hazard. Fall protection is required for work at elevations over 6 feet.

Caution: Potential Electrical Hazard

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Seal windows, intakes, HVAC units, etc. (except plumbing vents) with poly.

Lay a poly drop sheet under the removal area.

Don respirator.

If safe to do so, wet the area of roofing to be removed.

If using power tools, put shaving cream along the cut-line. Cut through the shaving cream.

Scrape up roofing and debris and place in ACM disposal bag.

Lower bag to ground. Do not drop.

HEPA vacuum or wet wipe.

Do the required operation or maintenance.

Cleanup and teardown.

Remove ACM Floor Tile or Baseboard and Associated Mastics

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

If mastic is to be removed, protect walls, etc. with poly sheeting.

Don respirator and safety glasses.

Wet the tiles and/or baseboard to be removed with amended water.

Remove tiles and mastic using one of the methods described below.

Floor Tile Removal Methods

Flood Method

Pour water over area to be abated.

Cover area with a sheet of poly. Tape down edges.

Let soak for 24 to 48 hours. Check for leaks on floor below abatement area.

Remove tape and poly, lift loose tiles.

Wedge Method

Wedge a flat, long, wide blade scraper (spatula) under tiles or baseboard and lift.

Put tiles or baseboard in an ACM disposal bag.

Heat Gun Method

Note: Burn Hazard, Outgassing Hazard.

Heat the tile or baseboard to soften the mastic.

Slide scraper under the tile and lift.

Put tiles or baseboard in an ACM disposal bag.

Dry Ice

Note: Frostbite Hazard, Oxygen Deficiency Hazard. Contact EH&S before using this method.

Put on thermal gloves.

Put the dry ice in a cloth (burlap) bag and crush the ice.

Lay the bag on the tile or push it up against the baseboard to be removed.

After a few minutes, move the bag to the next tile, etc., and use the wedge method to remove the first. Repeat as needed.

Mastic Removal

Apply the mastic remover to the area and let it soak until mastic is liquefied.

Wipe up the dissolved mastic and remover.

Check for leaks on floor below the cleaned work area.

Dispose of wipes, etc., as ACM waste.

Wash tools.

HEPA vacuum area.

Cleanup and teardown.

Remove ACM-backed Vinyl Sheet Flooring

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Don respirator and protective clothing.

Wet area to be removed with amended water.

Cut perimeter of area to be removed.

Make parallel cuts 6” apart inside area to be removed.

Pull up corner of first strip.

Separate from backing.

Wet along cuts and delaminations.

Repeat for next two strips.

Soak backing material and mastic with mastic remover.

Scrape up felt backing and wipe up mastic residues.

Put waste in ACM disposal bag.

HEPA vacuum area.

Repeat process on next sections until finished.

Let floor dry.

HEPA vacuum the whole work area.

Cleanup and teardown.

Remove Carpet Over ACM Flooring (Carpet Mastic Not ACM)

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Don respirator and protective clothing.

Pull up a corner or seam, or pierce the carpet.

HEPA vacuum floor and back of carpet.

Remove carpeting in pieces, misting the back of the carpet as it is removed.

Mastic or felt residue still adhering to the floor may be removed with mastic remover.

Put carpet, wipes, etc., into ACM disposal bag.

Let substrate dry.

HEPA vacuum work area.

Cleanup and teardown.

Remove ACM Carpet Mastic

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Set up critical barriers.

Don respirator and protective clothing.

Pull or pry up carpet, misting with amended water or keeping the nozzle of a HEPA vacuum at the separation point as work progresses.

Soak exposed mastic with mastic remover and let soak in.

Wipe up mastic and remover. Dispose of wipes, carpet, etc., as ACM waste.

Wet wipe and HEPA vacuum the tools and work area.

Cleanup and teardown.

Procedure to Install a Partition Over ACM Flooring

Secure work area to keep people out of area.

Regulate area with red “Danger Asbestos” tape and signs.

Don respirator and protective clothing.

Using amended water, wet the flooring where the work is to be done.

Scrape down high spots.

Remove damaged flooring in work area. Fill low spots.

Do any necessary drilling through shaving cream.

HEPA vacuum the work area to pick up debris.

Install the base plate and anchoring fasteners.

Cleanup and teardown.