

CHAPTER 22 – ASBESTOS

A.	INTRODUCTION.....	1
B.	DEFINITIONS	2
C.	CHAPTER-SPECIFIC ROLES AND RESPONSIBILITIES	3
D.	HAZARD IDENTIFICATION	7
E.	HAZARD CONTROL	8
	1. Restrictions on Purchase and New Installation.....	8
	2. Abatement and Repair.....	8
	3. Methods of Compliance.....	9
	4. Prohibited Work Practices.....	9
	5. Safe Work Practices - SI Staff	10
	6. Asbestos Management Plan for Building Materials.....	10
	7. Personal Protective Equipment.....	13
	8. Exposure Limits	13
	9. Medical Surveillance	14
F.	ASBESTOS WASTE DISPOSAL	15
G.	TRAINING	16
H.	RECORDKEEPING.....	17
I.	REFERENCES.....	17
	<u>Attachment 1 – OSHA Construction Asbestos Work Classifications and Training Requirements (OSHA 29 CFR 1926.1101)</u>	20
	<u>Attachment 2 – Sample Asbestos Management Plan</u>	22
	Att. 2.1 – Re-Inspection of Asbestos-Containing Materials	
	Att. 2.2 – Sample Asbestos Fact Sheet for Building Occupants	
	Att. 2.3 – Sample Abatement Notification to Occupants	
	Att. 2.4 – ACM Area Response Cleanup Procedures	
	Att. 2.5 – Recommended Safe Practices When Working On or Around ACM	
	Att. 2.6 – EPA Guidelines for Stripping Asbestos-Containing Floors	
	Att. 2.7 – Safe Work Practices for Transite Panels	
	Att. 2.8 – Safe Work Practices for Asbestos-Containing Counter Tops and Sinks	

CHAPTER 22 – ASBESTOS

A. INTRODUCTION

1. It is the policy of the Smithsonian Institution (SI) to protect its employees, contractors, and visitors from the exposure hazards associated with asbestos-containing materials (ACM).
2. This Chapter applies to all SI facilities containing ACM (e.g., building materials, collection objects, other work materials) and to SI operations involving the handling or disturbance of ACM.
3. This Chapter establishes requirements for the SI to:
 - a. Determine the presence, location, and quantity of ACM in its buildings,
 - b. Develop and communicate safe work practices for working around and/or with ACM, to include exposure assessment, safe work and waste disposal practices, training and recordkeeping; and
 - c. Comply with regulations governing ACM abatement and inspection activities when conducted by SI staff. Contractor activities involving disturbance of ACM shall be done in accordance with SI Construction Specifications Section 028200, “Asbestos Abatement”.
4. In implementing this Chapter, the SI will comply with all applicable Federal, state, and local regulations pertaining to asbestos, including but not limited to the following:
 - a. Occupational Safety and Health Administration (OSHA)
 - (1) 29 CFR 1926.1101, which covers construction work, including alteration, repair, renovation, and demolition of structures containing asbestos.
 - (2) 29 CFR 1910.1001 , which applies to asbestos exposure in general industry, such as exposure during brake and clutch repair, custodial work, and handling or cleaning collections containing ACM .
 - (3) 29 CFR 1920.134, Respiratory Protection.
 - (4) 29 CFR 1200, Hazard Communication.
 - b. U.S. Environmental Protection Agency (EPA)
 - (1) 40 CFR 763, Toxic Substances Control Act, particularly Subpart E, Asbestos- Containing Materials in Schools.
 - (2) 40 CFR 61, Subparts A and M, National Emission Standard for Hazardous Air Pollutants (NESHAPS).
 - c. SI Construction Specifications Section 028200, “Asbestos Abatement”.

B. DEFINITIONS

1. “Asbestos-Containing Material” (ACM), as applicable to this Chapter, means any material containing more than 1% asbestos (including chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos and any of these minerals that have been chemically treated and/or altered).
2. Presumed ACM (PACM). All thermal-system insulation, sprayed-on or troweled-on surfacing materials, and asphalt and vinyl flooring installed no later than 1980 must be treated as PACM unless laboratory analysis per this Chapter proves otherwise.
3. Thermal-system insulation means ACM applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss.
4. Surfacing material means material that is sprayed, troweled-on or otherwise applied to surfaces for acoustical, fireproofing, and other purposes (such as acoustical plasters on ceilings, fireproofing materials on structural members, or drywall joint compound).
5. AHERA stands for “Asbestos Hazard Emergency Response Act,” a law enacted by the Environmental Protection Agency (EPA) that governs asbestos management in schools, training and certification for asbestos-related activities (such as inspections and abatement) and establishes required proficiencies for Asbestos Inspectors, Management Planners, Project Designers, Workers or Supervisors.
6. NESHAPs stands for National Emissions Standards for Hazardous Air Pollutants, part of the Environmental protection Agency’s Clean Air Act. The National Emissions Standard for Asbestos, including regulations on demolition, renovation and waste disposal, are found in the Code of Federal Regulations “40 CFR 61 Subpart M.” NESHAP standards apply to each owner or operator of a demolition or renovation activity, including the removal of ACM amounts greater than or equal to at least 260 linear feet on pipes, or 160 square feet or 35 cubic feet on other facility components.
7. OSHA Construction Standard Asbestos Work Classifications and respective training requirements are summarized in Attachment 1 of this Chapter.

C. CHAPTER-SPECIFIC ROLES AND RESPONSIBILITIES

1. Directors of buildings containing ACM or PACM shall:
 - a. Be responsible for establishing and implementing an Asbestos Management Plan in collaboration with their Office of Facilities Management and Reliability (OFMR) Building Manager (or resident Building Manager in facilities without assigned OFMR staff) in accordance with this Chapter guidance,
 - b. Be responsible for communicating the Plan to all building occupants.
2. Safety Coordinators shall:
 - a. Coordinate with their respective Building Manager to develop, implement and maintain an Asbestos Management Plan per Section E.6. of this Chapter. This plan should contain a record of ACM or PACM in the buildings, including information on the type of asbestos and percentage of each type identified, and sampling and analytical documentation, in accordance with this Chapter.
 - b. Identify all other sources of, or tasks which could result in, asbestos exposure within facility operations (such as repair and maintenance, brake work or collections handling).
 - c. In coordination with project COTRs, ensure that all contracted work in their facility be assessed as to whether it will impact ACM, and if so, ensure that contractor work involving disturbance of ACM in their facilities is properly reviewed for compliance with the SI Construction Specifications Section 028200, "Asbestos Abatement".
 - d. Ensure that staff within their organization who are assigned tasks that may involve exposure to asbestos are identified to the Office of Safety, Health, and Environmental Management (OSHEM) for exposure assessment and development of exposure controls.
 - e. Ensure SI staff members who work in or near ACM areas are notified of ACM locations and measures to prevent its disturbance. Notify SI staff of asbestos abatement work scheduled near their work areas, in accordance with OSHA requirements.
 - f. Assist supervisors in implementing the hazard controls specified by this Chapter, and by OSHEM, to maintain exposure levels to below those specified in this Chapter.
 - g. Ensure that the training requirements of this Chapter are met.
 - h. Ensure that identified ACM areas are posted with signage when appropriate.

3. Supervisors shall:
 - a. Identify, with the assistance of the Safety Coordinator, work tasks under their control that involve working with or around ACM. Identify employees who may be exposed to asbestos to OSHEM for exposure assessment.
 - b. Ensure that OSHEM-recommended engineering and other control measures are implemented to reduce asbestos exposures as low as reasonably achievable but, as a minimum, at or below the OSHA Permissible Exposure Limit (PEL) of 0.1 fiber per cubic centimeter of air (f/cc) as an 8-hour time-weighted average (TWA) concentration, and at or below the OSHA Excursion Limit (EL) of 1.0 f/cc averaged over a 30-minute period.
 - c. Ensure that all employees under their control who are potentially exposed to asbestos concentrations equal to or greater than the OSHA PEL are enrolled, per OSHEM recommendation, in the SI medical surveillance program specified in this Chapter.
 - d. Suspend work activities when materials suspected of containing asbestos are encountered and likely to be disturbed without proper controls and personal protective equipment (PPE) in place.
 - e. Ensure that all employees, including themselves, working on or around ACM whose work may disturb ACM, receive initial and annual refresher training in accordance with the requirements of this Chapter.
 - f. Ensure employees comply with the provisions of this Chapter, including the use of PPE and approved work practices.
4. Employees shall:
 - a. Attend all asbestos-related training or awareness sessions and practice the ACM control measures necessary to keep the job safe.
 - b. Abide by the work practices, PPE, and medical surveillance requirements of this Chapter.
 - c. Inform supervisors of any situations that could potentially pose asbestos contamination or exposure hazards.
5. Office of Facilities Engineering and Operations (OFEO) Office of Engineering Design and Construction (OEDC) and/or Office of Facilities Management and Reliability (OFMR) shall:
 - a. Ensure that for each construction or renovation projects under their respective control, the following actions occur:
 - (1) Prior to the project start, a hazardous materials assessment is to be conducted to identify any ACM that might be disturbed in the course of the contract work. All such inspections are to be

conducted by a certified AHERA Inspector, who is also licensed by the jurisdiction having authority.

- (2) Make available to OSHEM, the respective building safety coordinator and all affected OFEO offices, copies of all documentation regarding ACM inspection, abatement, renovation, or maintenance projects and asbestos disposal under their respective control.
 - (3) Maintain files of all documentation and regulatory records required by contract specifications for each ACM inspection, abatement, renovation, or maintenance project under their respective control.
- c. Serve as the Contracting Officers Technical Representative (COTR) for all contractor construction, renovation, and/or demolition projects involving ACM. Ensure this work and associated recordkeeping is conducted in accordance with SI Construction Specifications Section 028200, "Asbestos Abatement," and ensure these specifications are regularly revised pursuant to OSHEM advice. Contractor's work plans shall be reviewed and approved by OSHEM prior to start of work. COTRs are to notify the respective building Safety Coordinator of asbestos abatement projects in that building.
 - d. Ensure project managers and COTRs are:
 - (1) Knowledgeable of ACM locations within their assigned areas of responsibility,
 - (2) Knowledgeable of applicable ACM abatement regulations and work practices as defined in the SI Construction Specifications Section 028200, "Asbestos Abatement."
 - (3) Compliant with the training requirements of this Chapter and have completed Asbestos Awareness training through OSHEM, and
 - (4) Fully trained, fit-tested and medically certified to wear a respirator, per [Chapter 18, "Respiratory Protection"](#), of this *Manual*, if their job duties require them to enter an asbestos containment or regulated work area for any reason.
 - e. Ensure that each OFMR Building Manager coordinates with their respective building's Safety Coordinator to develop, implement, and maintain an Asbestos Management Plan, per Section E.4 of this Chapter.
6. OFEO Real Estate Division shall ensure that buildings considered for acquisition by the SI shall be inspected for the presence, location and quantity of ACM or PACM in accordance with 29 CFR 1910.1001(j)(2).

7. Office of the Chief Information Officer (OCIO) shall:
 - a. Ensure that service or other contractors directly under its control are aware of ACM locations in their areas of contract work, and be required to follow applicable OSHA safety and health provisions, in addition to SI Construction Specifications Section 028200, "Asbestos Abatement."
 - b. Ensure that service contractors submit their ACM control procedures, subject to review and approval by OSHEM, prior to the start of work.
 - c. Ensure OCIO employees and OCIO COTRs are knowledgeable of ACM locations within their assigned projects, and are knowledgeable of applicable asbestos abatement regulations and work practices as defined in the SI Construction Specifications Section 028200, "Asbestos Abatement." Ensure that all COTRs who may need to enter an asbestos containment work area to inspect or otherwise carry out their duties are fully trained and certified per this Chapter.
 - d. Provide OSHEM, the respective building safety coordinator and hazardous waste coordinator, and all affected OFEO offices with copies of all documentation regarding ACM inspection, abatement, renovation, or maintenance projects and asbestos disposal under their respective control.
8. Office of Safety, Health and Environmental Management (OSHEM) shall:
 - a. Provide technical assistance to Directors in carrying out their responsibilities under this Chapter, including: assistance in conducting ACM visual inspections and sampling for work done by SI staff (i.e., non-contracted work), assistance in revising contractor specifications for ACM work projects, reviewing and approving construction projects involving ACM abatement, coordinating or providing required training, and assistance in developing SI staff work procedures.
 - b. Conduct exposure assessments and medical surveillance for SI staff exposed to asbestos, and provide affected employees and supervisors with documentation of results and recommendations for further actions.
 - c. Maintain medical monitoring and surveillance examinations as required by OSHA standards and [Chapters 8, "Program Reporting and Recordkeeping Procedures"](#), and [39, "Exposure Assessment and Medical Surveillance"](#), of this *Manual*.
 - d. Conduct asbestos awareness training as required by this Chapter.

D. HAZARD IDENTIFICATION

1. For purposes of meeting the requirements of this Chapter, asbestos-containing material (ACM) is defined as any material containing more than one percent of any type or mixture of asbestos minerals.
2. Building materials (e.g., thermal system insulation, surfacing material, and asphalt and vinyl flooring) found in buildings constructed no later than 1980 shall be presumed to contain asbestos, unless proven otherwise by inspection, testing, and analysis according to this Chapter.
3. Testing and analysis for asbestos shall follow the protocols established by pertinent OSHA and EPA regulations.
4. Supervisors, with assistance of Safety Coordinators and OSHEM, will identify tasks which pose the potential for employee exposure to asbestos. OSHEM shall be notified prior to start of work in order to assess the exposure and develop controls to mitigate the hazard.
5. Personal Exposure Monitoring. When notified by a facility of an in-house work task that may be covered by this Chapter, OSHEM shall conduct initial and periodic assessments to determine the extent of potential employee exposure from that task. Monitoring frequency, protocols and assessment of risk will be in accordance with requirements of either OSHA 29 CFR 1910.1001 (general industry) or OSHA 29 CFR 1926.1101 (construction, renovation, repair and maintenance activities), whichever is applicable. Results of the hazard assessment will form the basis for further medical surveillance measures, personal protective equipment, and work practice controls.
6. Exposure assessments. Exposure assessments that indicate that exposures are expected to be consistently below permissible exposure limits for any one specific job will constitute what is known as a Negative Exposure Assessment (NEA). Data for the NEA must conform to the criteria outlined in OSHA 29 CFR 1926.1101(f)(2)(iii).
7. Results of Monitoring. OSHEM personnel shall perform or oversee all SI exposure assessment monitoring for SI staff. OSHEM shall notify affected SI employees of the monitoring results that represent that employee's exposure as soon as possible following receipt of monitoring results. Employees shall be notified verbally and in writing. Written notification of monitoring results shall be provided to the supervisor, affected employees and Safety Coordinator detailing the results of monitoring, the protocols used, criteria for assessment and recommendations for engineering/administrative controls. The report shall specifically advise which employees are required to enter the respective appropriate medical surveillance program.

E. HAZARD CONTROL

1. Restrictions on Purchase and New Installation

- a. Asbestos-containing products (including but not limited to: vinyl asbestos tile, mastics, gaskets and automotive brake components) will not be purchased for any applications within the SI.
- b. Specifications for new construction, repair or renovation shall prohibit ACM installation.
- c. Every effort shall be made to evaluate whether collections objects or specimens being considered for accession might contain asbestos. (See [Chapter 24, "Collections-Based Hazards"](#), of this *Manual*, for guidance). If asbestos is known or suspected to be a part of the item, a work plan for object testing, handling, and safe storage shall be developed by the collections unit, the Safety Coordinator and OSHEM.
- d. Every effort shall be made to review inventories of materials in stock (e.g., automotive brake pads or shoes, mastics) and/or on chemical inventories to determine if suspect ACM products are present.

2. Abatement and Repair

- a. SI staff performing tasks that may impact ACM shall be limited to Class III Operations and Maintenance (O&M) projects only. As such, SI staff can repair (i.e., overhaul, rebuild, reconstruct, recondition, etc.) or disturb ACM (i.e., disrupt the matrix of ACM/PACM or generate visible debris from ACM/PACM), but cannot perform Class I or II asbestos abatement work.
- b. All waste and debris generated by O&M projects conducted by SI staff will be limited to less than NESHAP size jobs (<160 square, 260 linear or 35 cubic feet of material).
- c. All abatement of ACM (except for patching of inspection sample holes and securing damaged areas with temporary measures as part of a cleanup task) shall be conducted by asbestos workers and supervisors licensed in the jurisdiction having authority, in accordance with SI Construction Specifications Section 028200, "Asbestos Abatement."
- d. All repair and maintenance work, where ACM is likely to be disturbed and as defined as Class III activities by OSHA 29CFR1926.1101, shall be conducted by workers trained in AHERA 16-hour Operations and Maintenance training (as a minimum). Contractor employees conducting Class III work must also be licensed in the appropriate jurisdiction.
- e. Existing ACM building materials will be immediately repaired or removed when found to be damaged.

- f. The SI will take advantage of planned renovation projects to remove ACM regardless of condition, from the project areas.
 - g. Asbestos removal is the abatement method of choice. In the event asbestos removal is not feasible, repair, enclosure, or encapsulation shall be employed.
 - h. Service contractors shall be informed of the locations of suspect ACM and be required to follow applicable OSHA safety and health regulations in addition to applicable sections of SI Construction Specifications Section 028200, "Asbestos Abatement", when working on or around ACM.
 - i. Contractor work procedures shall in no way cause an exposure hazard for SI employees nor shall asbestos debris be left behind. Examples of contractor work that could impact ACM include:
 - (1) Carpet or tile replacement;
 - (2) HVAC repair;
 - (3) Working above ceiling panels that are suspended under sprayed-on ACM;
 - (4) Installation and relocation of electrical conduit and telephone lines;
 - (5) Relocation of subdividing partitions;
 - (6) Outside contractor repair of mechanical equipment; and
 - (7) Patching, and painting.
3. Methods of Compliance. The following engineering controls and work practices shall be used, at a minimum, for all asbestos tasks:
- a. HEPA-filtered vacuum cleaners.
 - b. Wet methods
 - c. Prompt cleanup and disposal.
4. Prohibited Work Practices. The following methods shall not be used for work related to or disturbing asbestos, regardless of exposure level:
- a. High-speed abrasive disc saws that are not equipped with HEPA-filtered exhaust enclosures.
 - b. Compressed air, unless used in conjunction with an enclosed HEPA-filtered ventilation system.
 - c. Dry sweeping, shoveling or other dry-cleanup of asbestos-containing dust and debris.
 - d. Employee rotation.

5. Safe Work Practices - SI Staff
 - a. Supervisors and workers shall suspend work activities when materials suspected of containing asbestos are encountered and likely to be disturbed without proper controls and PPE in place.
 - b. Exposures to ACM from any ACM activities covered by this Chapter (including repair, cleanup, research experiments, exhibits, or collections that contain or are contaminated with ACM) shall be controlled using safe work procedures, developed as part of the job hazard analysis process described in [Chapter 4, "Safety Risk Management Program"](#), of this *Manual*, and summarized in [Attachment 2](#).
 - c. Stripping or cleaning of any asbestos-containing flooring shall be conducted in accordance with the safe work procedures in [Attachment 2](#).
 - d. Existing non-friable ACM (e.g., sheetrock/drywall, floor tiles, or laboratory tabletops) shall be managed in-place to maintain the non-friable ACM in good condition. The condition of the non-friable ACM shall be assessed during periodic visual inspections as part of a facility's Asbestos Management Plan, as described in this Chapter
6. Asbestos Management Plan for Building Materials. Each Safety Coordinator, with input from the respective SI Building Manager, shall develop and maintain an Asbestos Management Plan to protect building occupants from exposure to Asbestos-Containing Building Materials (ACBM). The plan should be posted to the facility intranet site and updated at least annually or as new information pertaining to asbestos becomes available. An example is included in [Attachment 2](#). The Plan shall specify procedures in that facility to accomplish the following:
 - a. A record of ACBM locations, quantities and conditions, shall be maintained that can readily be accessed by both the facility safety coordinator and building management.
 - (1) The record shall incorporate information drawn from analytical reports based on EPA-mandated methodologies, including but not limited to: past SI-wide Asbestos Assessment Studies (e.g., Versar, Inc, Hygienetics, Inc), past OFEO Facilities Assessment Branch surveys, OEDC records of environmental surveys and asbestos abatement projects, OFMR ACBM surveys and abatement work, and OSHEM sampling data.
 - (2) The information on locations and condition shall specify the analytical method used to determine the ACBM, the type and percentage of ACBM, and the results of periodic visual observation assessments as described in the next section.

- b. Periodic Visual Observations to monitor the condition of previously identified ACBM shall be performed at least every six months by a team identified by the Safety Coordinator and Building Manager, and trained in the observation and assessment process by OSHEM. Training and certification as an AHERA Inspector is desirable but not required for this particular assessment activity. To facilitate the visual observation process, it is recommended that the assessments be coordinated with such ongoing inspection processes as the safety committee self-inspection, the safety coordinator facility self-assessment, and/or the OSHEM METR. Attachment 2.1, "Re-Inspection of Asbestos-Containing Materials", or equivalent is to be used to records results.
 - (1) ACBM found to be damaged or deteriorated condition is to be reported for immediate action per the requirements of the respective building Asbestos Management Plan.
 - (2) Material suspected of being ACBM shall be reported to OSHEM for bulk sampling by an AHERA Inspector, using the methods prescribed in this Chapter.
 - (3) In accordance with AHERA requirements, Smithsonian Early Enrichment Centers (SEEC) that offers a kindergarten program shall be inspected every six months by an AHERA Inspector.
- c. Restrictions on ACBM purchase, new installation, abatement and service contractor activity to prevent disturbance and fiber release (in accordance with requirements of section E 1 and 2 of this Chapter.
- d. Procedures to notify occupants of ACM locations in their work area, of planned construction activities that may disturb ACM in their work areas, and procedures for reporting damage and possible fiber release episodes.
 - (1) Safety Coordinators, with the assistance of office supervisors, shall notify staff, working in or near ACM areas, where the ACM is located, and how and why to avoid disturbing the ACM. Notification may include memoranda addressing known or suspected ACM areas, informational meetings, and warning labels or signs. (Notification requirements are addressed in the OSHA 29 CFR 1926.1101(k) and 1910.1001(j)). As a minimum, employees working in or near ACM areas shall be provided the following information:
 - (a) Location and condition of ACM within their work area;
 - (b) Location of the facility asbestos identification and assessment report that identifies ACM areas and conditions;
 - (c) Measures to be taken to avoid disturbance of ACM; and

- (d) The name and phone number of the facility Point-of-Contact (POC) to be contacted in the event of an ACM disturbance, damage, or change in condition.
- (2) Attachment 2.2, Sample Asbestos Fact Sheet for Building Occupants, shall be used where appropriate, provided to building occupants in their new employee safety training, and revised and distributed annually to building occupants.
- (3) Signs shall be posted at the entrances or immediately within mechanical rooms where ACM or PACM are present, identifying the ACM locations and safe work practices to be followed by employees working on or around the mechanical room systems.
- (4) Employees working near a planned NESHAPS-sized asbestos removal project shall receive information regarding the nature of the project and associated work controls, 30 days prior to project start (unless superseded by individual state/local requirements, as noted in the facility's Asbestos Management Plan). Notification shall be prepared by the Building Manager with assistance from the facility Safety Coordinator. In the case of an emergency removal or repair, notification shall be provided as soon as feasibly possible. Attachment 2.3 contains a sample notification sign.
 - (a) Local regulations must be consulted for particular requirements. In the District of Columbia, consult D.C. Law Title 20 DCMR Section 800. In Maryland, notification shall follow MDE COMAR 26.11.21. Signage shall be posted at every entrance to the building in which abatement is taking place. In New York City, notification shall follow NYC Asbestos Rules and Regulations, Chapter 1, Subchapter F, Part 2, where signage must remain posted until clearance air monitoring is successfully concluded, and specific sign format is required.
- (5) For leased spaces, OFEO Real Estate Division shall request that building owners inform the SI tenant organization manager of planned asbestos abatement activities prior to the start of the project.
- e. Procedures for working on or around ACM in the building structure or in collections objects per Section E of this Chapter. Written procedures for the safe handling and restoration of artifacts containing or contaminated with asbestos are also to be included as part of the Asbestos Management Plan, Attachment 2.
- f. Emergency Response Procedures for Fiber Releases
 - (1) If ACM damage is noted and/or an accidental fiber release is suspected, the incident shall be reported immediately to the facility POC specified in the Asbestos Management Plan, and to

the Safety Coordinator, who shall proceed with established facility chain-of-command notification procedures.

- (2) A determination shall be made by the safety coordinator as soon as possible to restrict entry to the area and/or temporarily relocate area occupants.
 - (3) OSHEM shall assist the Safety Coordinator and Building Manager in assessing the extent of the asbestos contamination and establishing a plan of action (which may include securing the HVAC systems to the affected area and restricting access to unauthorized personnel).
 - (4) Each facility with ACM, and as part of their Asbestos Management Plan, shall have a team of staff trained to respond to a report of damaged ACM, to include cleaning the debris and applying temporary repair measures to secure the damaged area until licensed AHERA abatement contractors can abate the hazard. SI response staff shall be trained for these response tasks through completion of, as a minimum, an EPA-certified AHERA 16-hour Operations and Maintenance training class, and respiratory protection training through OSHEM. The supervisor of the response team shall also complete, as a minimum, an EPA-certified AHERA 16-hour Operations and Maintenance training class.
 - (5) The SI response staff shall follow the safe work procedures in their facility Asbestos Management Plan (refer to Attachment 2) under the direction of the Safety Coordinator and response team supervisor. Cleaning shall be conducted using wet methods and/or HEPA-vacuuming, with prompt cleanup and disposal. Dry sweeping of debris is strictly prohibited.
7. Personal Protective Equipment (PPE). SI staff tasked with response tasks, and/or potentially exposed to airborne asbestos fibers in the course of their work, shall be enrolled in the SI Respiratory Protection Program (per [Chapter 18, "Respiratory Protection"](#), of this *Manual*), wear approved and fit-tested respirators (minimum of half-face air-purifying respirator with HEPA filters) and wear gloves and full-body protective clothing. **All facepieces shall be tight-fitting; loose-fitting hoods or helmets are not allowed if using respirator for protection against asbestos fibers.** The extent of PPE will depend on the task and degree of potential exposure, as determined in the job hazard analysis.
 8. Exposure Limits
 - a. Employee exposures to asbestos during any tasks covered by this Chapter shall be as low as reasonably achievable, but, as a minimum, at or below the OSHA Permissible Exposure Limit (PEL) of 0.1 fiber per cubic centimeter of air (f/cc) as an 8-hour time-

weighted average (TWA) concentration, and at or below the OSHA Excursion Limit (EL) of 1.0 f/cc averaged over a 30-minute period.

- b. SI employees and visitors who would not contact ACM in the normal course of work, but who may work in or enter areas where ACM risks are controlled by an Asbestos Management Plan shall not be exposed to airborne asbestos concentrations exceeding 0.01 f/cc (8-hour TWA).
- c. During maintenance, repair, renovation, or construction work, where ACM is removed or disturbed, the maximum allowable air level of asbestos outside the work enclosure shall not exceed 0.01 f/cc. Air monitoring schedules and exposure limits required for ACM abatement projects conducted by outside contractors shall follow the SI Construction Specifications Section 028200, "Asbestos Abatement."

9. Medical Surveillance

- a. Respirator Medical Surveillance. SI employees currently certified through an EPA-certified AHERA training course as AHERA Workers, AHERA Supervisors, AHERA Inspectors or Operations and Maintenance workers shall be provided annual respirator medical surveillance examinations through OSHEM as part of the respirator certification process and in accordance with Chapter 18 of the *SI Safety Manual*.
- b. Asbestos Medical Surveillance. In addition to (a), SI employees shall receive an annual asbestos medical surveillance examination if they either are engaged in Class I, II, and III work for a combined total of 30 or more days that year, or are exposed to asbestos concentrations greater than or equal to 0.1 f/cc, regardless of work task, for a combined total of 30 or more days that year. [NOTE: SI staff are not authorized to conduct Class and II work]
 - (1) However, any day in which a worker engages in Class II or III work on intact material for one hour or less, (taking into account setup through cleanup) and adheres to the safe work practices in this Chapter, shall not be counted toward the 30 total days per year triggering annual asbestos medical surveillance, in accordance with 29 CFR 1910.1926.1101(m).
- c. Respirator Certification. Staff conducting any tasks covered by this chapter (including but not limited to: abatement, Class III Operations and Maintenance work, decontamination or dismantling of collection objects containing ACM, bulk sample collection) must be enrolled in the SI Respiratory Protection Program per requirements of Chapter 18 of the SI Safety Manual. In addition, any employee who may be exposed to asbestos above one-half the established PEL per Section 6.a of this Chapter, shall be enrolled in the SI Respiratory Protection Program.

- d. In case of an accidental fiber release episode in which OSHEM determines that there was a potential for airborne asbestos exposure, affected employees shall be advised to contact OSHEM-Occupational Health Services Division for a medical consultation.
- e. The SI Asbestos Medical Surveillance program shall adhere to requirements outlined in OSHA 29 CFR 1910.1001(l) and/or OSHA 29 CFR 1926.1101(m), and all other applicable Federal, state, and local regulations.

F. ASBESTOS WASTE DISPOSAL

1. Asbestos-contaminated material shall be prepared for removal by saturating it with a water/surfactant mixture applied in a fine mist. Containerization shall require double-bagging with either 6-mil thick (minimum) leak-tight plastic bags or plastic-lined drums.
2. Bags and/or drums of asbestos waste shall be sealed, dated and tagged with a warning label that states: "DANGER--CONTAINS ASBESTOS FIBERS--AVOID CREATING DUST--CANCER AND LUNG DISEASE HAZARD". State and/or local regulations may require additional labeling information.
3. Asbestos waste shall be segregated from other wastes and stored in a secure area or securely locked container.
4. Waste material shall be shipped to an EPA-approved landfill by a licensed asbestos disposal firm in accordance with all applicable federal, state and local regulations and SI Construction Specifications Section 028200, "Asbestos Abatement".
5. All asbestos-containing debris, vacuum cleaner bags, filters, cloths, mop heads, protective clothing, and respirator filters shall be disposed as asbestos waste according to SI Construction Specifications Section 028200, "Asbestos Abatement", and EPA 40 CFR Part 763 Appendix D of Subpart E, "Transport and Disposal of Asbestos Waste."
6. All asbestos waste shall be transported with an asbestos waste disposal manifest. At a minimum, the manifest must include: name/address of generator, name/address of pick-up site, estimated quantity of waste, types of containers used, and disposal site.
7. Copies of all transport and disposal manifests for asbestos waste (including copies from OEDC controlled abatement jobs) shall be provided to the jurisdiction having authority. Copies shall be

maintained by OEDC and a copy submitted to the facility safety coordinator and hazardous waste coordinator for permanent record retention.

G. TRAINING

1. Basic Occupant Notification. Occupants of buildings containing ACM or PACM will receive appropriate notification information, in accordance with this Chapter, particularly Section 6.d, and with the facility's Asbestos Management Plan, of the following at a minimum:
 - a. ACM locations in their work area
 - b. Planned construction activities that may disturb ACM in their work areas,
 - c. Procedures for reporting damage and possible fiber release episodes.
2. 2-Hour Asbestos Awareness Class. SI staff, and their supervisors, who work on or around asbestos-containing materials or objects, and whose work may result in contacting or disturbing ACM, (e.g., exhibits, collections management, COTRs, custodial, maintenance, staff assigned to visual inspections under this Chapter) shall receive annual "2-hour Asbestos Awareness" training from OSHEM. This training shall meet the requirements of both OSHA 29 CFR 1910.1001 (General Industry) and 29 CFR 1926.1101, (Construction) and shall include, where appropriate, all aspects of the respective facility Asbestos Management Plan.
3. Regulated Activity Certification and Licensing. In addition to "2-hour Asbestos Awareness" training, any SI employee conducting regulated asbestos abatement, repair, operations and maintenance, sampling or project design, shall be certified in the appropriate course, from an EPA-accredited trainer. Any SI employee conducting such activities as documentation for a contracted abatement, renovation, and/or demolition project shall also be licensed in the appropriate jurisdiction having authority. See [Attachment 1](#) for a discussion of asbestos activity certification requirements.
4. Facility Asbestos Response Teams. Staff and their supervisors assigned to conduct asbestos response team work contacting ACM are to be further trained in the safe work practices for cleanup and securing the area, through the completion of, at minimum, an AHERA 16-hour Operations and Maintenance class and be enrolled in the SI Respiratory Protection Program (per [Chapter 18, "Respiratory Protection"](#), of this *Manual*).

H. RECORDKEEPING

1. OFEO shall maintain all records of ACM survey assessments, presumed ACM locations, and abatement records including clearance sampling for the duration of ownership and shall be transferred to the successor owner.
2. OFEO shall maintain all copies of records related to determinations regarding the rebuttal of PACM/ACM as non-ACM for the duration of ownership. All such records shall be transferred to successor owners.
3. OSHEM shall maintain records of personal and environmental monitoring for asbestos-related medical surveillance records, for the duration of the worker's employment plus 30 years.
4. Facilities shall maintain all employee training records for 1 year beyond the last date of employment of each employee, or 5 years, whichever is longer.
5. Documentation of asbestos waste disposal must be maintained by OEDC and the respective building Safety Coordinator indefinitely.

I. REFERENCES

1. OSHA, U.S. Department of Labor, Occupational Safety, and Health Administration, including:
 - a. [29 CFR Part 1910.1001 \(General Industry\) "Asbestos"](#)
 - b. [29 CFR Part 1926.1101 \(Construction Industry\) "Asbestos"](#)
 - c. [29 CFR 1910.134, Respiratory Protection](#)
2. EPA, U.S. Environmental Protection Agency, including:
 - a. 40 CFR Part 61, Subparts A and M "National Emission Standards for Hazardous Air Pollutants ([NESHAPs](#))
 - b. EPA Document 560/5-85-024 "[Guidance for Controlling Asbestos-Containing Materials in Buildings](#)"
 - c. EPA Document 20T-2003 (July 1990) "[Managing Asbestos In Place: A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials](#)"
3. District of Columbia Law Title 20 DCMR Section 800. District of Columbia Department of Health:
<http://ddoe.dc.gov/ddoe/lib/ddoe/information2/air.reg.leg/chapter8revised.pdf>
4. [Smithsonian Institution Construction Specifications Section 028200, "Asbestos Abatement"](#).

5. Arizona Department of Environmental Quality.
<http://www.azdeq.gov/environ/air/asbestos/index.html>
6. Florida Department of Environmental Protection.
<http://www.dep.state.fl.us/south/> Asbestos removal program established per Chapter 62-257 “Asbestos Program”
<http://www.dep.state.fl.us/Air/rules/fac/62-257.pdf>
7. Hawaii Department of Health:
<http://hawaii.gov/health/environmental/noise/asbestoslead/asbestoslead/asbestoslead/asbforms.html>
8. Maryland Department of the Environment COMAR 26.11
http://www.dsd.state.md.us/comar/subtitle_chapters/26_Chapters.aspx#Subtitle11
 - a. Abatement contractors covered under COMAR 26.11.21 “Control of Asbestos”.
 - b. Training Providers covered under COMAR 26.11.23 “Asbestos Accreditation of Individuals, and Approval of Training Courses”.
9. Maryland Occupational Safety and Health (MOSH):
<http://www.dllr.state.md.us/labor/mosh>
10. Massachusetts Department of Environmental Protection:
<http://www.mass.gov/dep/air/asbguid.htm>
11. New York City Department of Environmental Protection (DEP):
http://home2.nyc.gov/html/dep/pdf/asbestos_rules_11_16_2009.pdf
http://www.nyc.gov/html/fdny/pdf/cda/atru_guidance_document_final.pdf
Notes: Attached links outline new asbestos control rules, effective November 2009.
12. New York State DOL – Division of Safety and Health (DOSH), Asbestos Control Bureau:
http://www.labor.state.ny.us/workerprotection/safetyhealth/DOSH_ASBESTOS.shtm
13. New York State Department of Health: <http://www.health.state.ny.us/>
14. New York State Department of Environmental Conservation:
<http://www.dec.ny.gov/>
15. Virginia Department of Labor and Industry DOLI enforces Virginia Occupational Safety and Health (VOSH) regulations, NESHAP requirements and notification requirements.
http://www.doli.virginia.gov/leadasbestos/leadasbestos_regulations.html

16. Virginia Department of Professional and Occupational Regulation (DPOR): DPOR is responsible for all company and individual licensure in Virginia.
<http://www.dpor.virginia.gov/dporweb/dpormainwelcome.cfm>
17. Virginia Department of Environmental Quality: Virginia DEQ responsible for the regulation of landfills in Virginia.
<http://www.deq.state.va.us/>
18. National Institute of Building Sciences (September 1992) "Guidance Manual: Asbestos Operations and Maintenance Work Practices"

**OSHA Construction Asbestos Work Classifications and Training Requirements
29 CFR 1926.1101**

Class I Asbestos Work:

Activities involving the *removal* of thermal systems insulation (TSI) and surfacing asbestos containing material (ACM) or presumed asbestos-containing material (PACM).

Removal means all operations where ACM and/or PACM is taken out or stripped from structures or substrates, and includes demolition work.

TSI - Asbestos-containing material applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain or water condensation. Examples include pipe wraps, insulation (block, batt, and blanket) and "muds".

Surfacing material - material in a building that is sprayed on surfaces, troweled on surfaces, or otherwise applied to surfaces for acoustical, fireproofing, or other purposes, such as acoustical plaster on ceilings and fireproofing material on structural members.

Class II Asbestos Work:

Activities involving removal of ACM (e.g., wallboard, floor tile and sheeting, roofing and siding shingles, construction mastics and ceiling tile) which is not TSI or surfacing material.

Class III Asbestos Work:

Repair and maintenance operations where ACM, including TSI and surfacing ACM and PACM are likely to be *disturbed*.

Repair means overhauling, rebuilding, reconstructing or reconditioning of structures or substrates, including encapsulation or other repair of ACM/PACM attached to structures or substrates.

Disturbance means activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. Disturbance means cutting away small amounts of ACM/PACM, no greater than the amount which can be contained in one standard sized glove bag or waste bag in order to access a building component. In no event shall the amount of ACM/PACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.

Examples include repairing broken pipes that have asbestos wrapping, installing floor anchors in an area with asbestos floor

tile, installing electrical conduit through walls with asbestos insulation, drilling holes into ACM/PACM).

Class IV Asbestos Work:

Maintenance and custodial activities during which employees contact but do not disturb ACM and PACM, and activities to clean up waste and debris resulting from Class I, II and III work.

Asbestos Training Requirements (All include annual refresher training):

Class I and II Work:	4-day EPA AHERA Worker 5-day EPA AHERA Supervisor
Class III Work:	16-hour AHERA O&M
Class IV Work:	2-hour asbestos awareness training

Sample Asbestos Management Plan

[Name of Facility] ASBESTOS MANAGEMENT PLAN

Approval Signature/Date:

Facility Director:

Facility Safety Coordinator:

Facility Building Manager:

This Plan will be reviewed and updated annually, or as new information pertaining to asbestos in the facility becomes available.

The [Facility] Safety Office and Building Management staffs have established a joint Asbestos Management Plan to protect building occupants from exposure to asbestos-containing materials (ACM). This Plan presents procedures for:

- periodic inspections & ACM location list management,
- restrictions on use and contractor activity,
- occupant notifications,
- staff asbestos awareness & safe work practice training, and
- ACM damage reporting and response

This Plan is based on the requirements of SI *Safety Manual* Chapter 22, Asbestos; the Occupational Safety and Health Administration (OSHA) General Industry and Construction Standards for Asbestos, and the U.S. Environmental Protection Agency (EPA) regulations on asbestos control, training and certification, and disposal. Specific codes are listed as References.

ACM is defined (EPA 40 CFR Part 763) as any material or product containing more than 1 percent of any type or mixture of asbestos.

RECORDS and INSPECTIONS (Refer to Att. 2.1)

1. The [Facility] Safety Coordinator and Building Manager will maintain a **listing** of ACM locations and condition, drawn from the following sources: past SI-wide Asbestos Assessment Studies (Versar, Inc. and Hygienetics, Inc.), past Facilities Assessment Branch surveys, OEDC records of environmental surveys and completed abatement associated with its projects, and OSHEM sampling data.
2. A team selected by the [Facility] Safety Coordinator and Building Manager will conduct **periodic visual observations**, at least every six months, of all previously identified ACM to monitor its condition, report any new suspected ACM, and initiate corrective actions for the repair or removal

any ACM determined to be damaged or in poor condition. The team for [Facility] consists of the following individuals:
[as applicable]

Smithsonian Early Enrichment Centers shall be re-inspected as part of the periodic inspection process.

RESTRICTIONS ON PURCHASE, NEW INSTALLATION, ABATEMENT, and SERVICE CONTRACTORS

1. **ACM products** (including but not limited to: vinyl asbestos tile, mastics, equipment components like gaskets, and asbestos automotive brake pads and shoes) will **not be purchased** for any application. **Specifications** for new construction, repair, or renovation shall **prohibit ACM installation**.
2. **Existing ACM building materials will be immediately repaired or removed when found to be damaged.** The SI will take advantage of planned renovation projects to remove ACM building materials (even in good condition) from the project area.
3. All **repair or removal** of ACM (except for patching of inspection sample holes and securing damaged areas with temporary measures as part of a cleanup task) will be **done by licensed asbestos abatement workers**, in accordance with SI Construction Specifications 02800, "Asbestos Abatement".
4. All **service contractors** shall be informed of the locations of suspect ACM (an OSHA requirement) and be required to follow applicable OSHA safety and health provisions in addition to applicable safe work practices from the SI Construction Specifications 02800, "Asbestos Abatement". Contractor work procedures shall in no way cause an exposure hazard for Smithsonian employees nor shall asbestos debris be left behind.
Examples of contractor work that could impact ACM include:
 - carpet or tile replacement,
 - HVAC repair,
 - working above ceiling panels which are suspended under ACM,
 - installation and relocation of electrical conduit and telephone lines,
 - relocation of subdividing partitions,
 - outside contractor repair of mechanical equipment, or
 - patching and painting.

BUILDING OCCUPANT NOTIFICATION (Refer to Att. 2.2 and Att. 2.3)

1. The [Facility] Safety Coordinator] annually distributes an "**Asbestos Fact Sheet for [Facility] Occupants**", to all facility users. This notification is required by OSHA to inform occupants of the location of ACM in their work areas, ways to prevent damage to it, and ways to report damage should it occur. This Fact Sheet will be coordinated and maintained with this Plan.

2. Building **occupants working near a planned major asbestos removal project**, and with a need-to-know, are to be notified 30 days prior to project start, unless superseded by a local/state law. A standard form, included as Attachment 2.3 or equivalent, must be posted or distributed by OEDC COTRs for all asbestos abatement projects at [Facility], describing the nature of the project and associated work controls.

EMPLOYEE ASBESTOS AWARENESS TRAINING

1. **Employees (e.g., maintenance or custodial) working in buildings containing ACM** building materials, whose work may impact these materials, and [Facility] **Safety Committee members** conducting safety inspections in buildings with ACM, are to be provided 2-hour asbestos awareness training to include:
 - a. Location and condition of ACM with which they may come in contact;
 - b. Safe work practices to be used to avoid disturbance of ACM; and
 - c. The name and phone number of the facility point of contact to whom reports of disturbance, damage or changed in condition of ACM are to be made.
2. Personnel **assigned to be asbestos cleanup responders and/or Operations and Maintenance workers**, are to be currently certified as having successfully completed an EPA-AHERA accredited 16hr. Operations and Maintenance class, and be current in the SI Respiratory Protection Program.

SAFE WORK PRACTICES

1. Supervisors and workers are to **suspend work activities** when materials suspected of containing asbestos are encountered and likely to be disturbed without proper controls and personal protective equipment in place.
2. **Methods of Compliance.** The following engineering controls and work practices shall be used, at a minimum, for all asbestos tasks:
 - a. HEPA-filtered vacuum cleaners.
 - b. Wet methods
 - c. Prompt cleanup and disposal.
3. **Prohibited Work Practices.** The following methods shall not be used for work related to or disturbing asbestos, regardless of exposure level:
 - a. High-speed abrasive disc saws that are not equipped with HEPA-filtered exhaust enclosures.

- b. Compressed air, unless used in conjunction with an enclosed HEPA-filtered ventilation system.
 - c. Dry sweeping, shoveling or other dry-cleanup of asbestos-containing dust and debris.
 - d. Employee rotation.
4. Asbestos area **response cleanup** will follow the procedures in Att. 2.4.
 5. General safe work procedures must follow the requirements of Chapter 22, Asbestos, in the SI Safety Manual; minimum recommendations are in Att. 2.5.
 6. **Stripping or cleaning of any asbestos-containing flooring** must be conducted in accordance with established safe work procedures (refer to Att. 2.6).
 7. Written procedures for the safe handling and restoration of artifacts are to be included as part of this plan.

RECORDKEEPING

The following records are to be maintained with this Plan:

1. All records of ACM survey assessments, presumed ACM locations, and abatement records including clearance sampling.
2. SI shall maintain all copies of records related to determinations regarding the rebuttal of PACM/ACM as non-ACM for the duration of ownership. All such records shall be transferred to successor owners.
3. All records of employee personal exposure monitoring.
4. All employee training records for 1 year beyond the last date of employment of each employee, or 5 years, whichever is longer.
5. Documentation of asbestos waste disposal must be maintained by the facility Safety Coordinator indefinitely.

Re-Inspection of Asbestos-Containing Materials

Location of asbestos-containing material: _____
Versar/Hygenetics/AMA report Page _____ () New location?

Type of Asbestos-Containing Material(s) (check all that apply):

- ____ Sprayed- or troweled-on ceilings or walls
- ____ Sprayed- or troweled-on structural members
- ____ Insulation on pipes, tanks, boilers
- ____ Other (describe): _____

Abatement Status of Material (check one):

____ Encapsulated, ____ Enclosed, ____ Removed, ____ None

If Removed, List Date & Firm/Project Name _____

If Removed, How Much Remains _____

Assessment:

1. Evidence of physical damage: _____
2. Evidence of water damage: _____
3. Evidence of delamination or other damage: _____
4. Accessibility of material:
 ____ high (within reach) ____ moderate (barely reachable)
 ____ low (unreachable)
5. Activity near the material:
 ____ high (daily) ____ moderate (> once/week) ____ low (< once/week)
6. Location in an air plenum, air shaft, or airstream: _____
7. Other observations: _____

Recommendations/Response Code (check all that apply; note priority):

- ____ Response Code A: Immediate removal
- ____ Response Code B: Remove as soon as possible
- ____ Response Code C: Removal should be planned
- ____ Response Code D: Encapsulate or repair
- ____ Response Code E: Monitor for changes in condition
- ____ Response Code F: No action required

(Evaluator/Date) _____

Sample Asbestos Fact Sheet for Building Occupants

ASBESTOS FACT SHEET FOR [facility name] OCCUPANTS**What are “Asbestos-Containing Building Materials” (ACMs)?**

Asbestos is a mineral that was commonly used, between the early 1900s to the 1970s, in a variety of building construction materials. Asbestos is durable, fire retardant, resists corrosion, and insulates well. It was sometimes added, as a durable & flexible binding agent, to decorative art plaster, textured paint, acoustical ceiling treatments, and floor tiles. Asbestos in many of the products was mixed in with other materials such as plaster, fiberboard, or paints. Often the mixture, once applied and set, was coated with paint or canvas wrap as added protection. Some forms, such as sprayed-on or troweled-on insulation (found on walls, ceilings, ductwork, or pipes), was banned (for new application) by the Environmental Protection Agency (EPA) in the 1970s.

What are the Health Risks?

ACM in good condition does not pose a health risk. ACM becomes a problem when, due to damage, disturbance, or deterioration over time, it releases fibers into the air. If inhaled or ingested, asbestos fibers can cause serious health problems, including asbestosis, lung cancer, and mesothelioma. Therefore, the EPA has recommended that ACM either be removed (if significantly damaged or during renovation projects), or be managed in place through periodic inspections and prompt repair when damage is noticed.

How does the Smithsonian Maintain ACM in Good Condition?

Over 20 years ago, the Smithsonian implemented an in-place management program for ACM in its buildings. Comprehensive surveys were conducted by environmental contractors, identifying the locations of ACM, its condition, and the potential for future damage. An abatement priority list was then developed. This program has successfully removed or stabilized ACM throughout SI buildings. Periodic surveys are conducted by certified Asbestos Inspectors. When building areas are scheduled for construction or renovation, a hazardous materials survey is first conducted within the project boundaries and any ACM impacted by the project is removed before work begins. Periodic visual observations and inspections are conducted as part of the [facility name]

Asbestos Management Plan. When damage or deterioration is noted, the Plan has specific steps to follow for prompt cleanup and repair or removal.

Where Can ACM Still Be Found In [facility name]?

Building occupants should be aware of ACM locations that may remain in their areas.

[]

How Can You Prevent Accidental Damage to ACM in Your Work Area?

Be mindful of equipment, broom handles, etc, that you move through the work area and hall ways, so as not to scrape asbestos-containing ductwork or suspect pipes.

Do not store anything atop or near asbestos-containing structures, such as ducts or pipes, to avoid damaging the asbestos material.

Do not hang anything (like planters) from suspect asbestos pipes or ducts.

Do not replace carpeting (which may have been placed over asbestos flooring) or ceiling tiles, or plan room renovations, without first contacting the Building Manager's office.

Who Do You Call If Damage is Noticed?

If you notice any damage to suspect ACM, **contact [facility designated contact and phone number] immediately.**

Sample Abatement Notification to Occupants
[NOTE: NYC REQUIRES SPECIFIC TYPE FACE & SIZE]

NOTICE OF ASBESTOS ABATEMENT

This provides notice that a project will begin on or around (date) to remove asbestos-containing building materials as a routine part of the (describe project and location). The removal will be conducted by (name firm), a licensed asbestos abatement firm, and done in accordance with the safe work practices established by the SI "Asbestos Abatement" specifications. The project has been reviewed by the SI Office of Safety, Health and Environmental Management and daily oversight of the contractor activities, including final clearance air samples, will be conducted on behalf of the SI by (name environmental contractor). Any questions should be directed to the Building Manager (name) at (phone).

**ACM Area Response Cleanup Procedures
Conducted only by workers with minimum of 16-hour Operations and
Maintenance training through an EPA-AHERA accredited provider**

1. Any debris found near friable ACM must be either sprayed with water/surfactant mixture and placed in plastic bags, or removed with a HEPA-filtered vacuum cleaner. Eliminate all visible debris and clean a minimum radius of 5 feet beyond extent of visible debris.
2. Dry sweeping is strictly prohibited.
3. All potentially contaminated carpets shall be removed and disposed of as asbestos waste.
4. All potentially contaminated curtains, books, non-carpeted floors, and horizontal surfaces must be HEPA vacuumed and/or wet wiped.
5. All debris, vacuum cleaner bags, and filters, cloths, mop heads, etc., used to clean ACM areas shall be handled and disposed as asbestos-contaminated waste. These items shall be sprayed with water/surfactant mixture before leaving the job site and discarded in sealed 6-mil-thick plastic bags or leak-tight containers in accordance with Part E, "Waste Disposal," of this Chapter.
6. Supervisors shall inspect the asbestos work area after cleanup has completed. Document that the cleanup took place, and ensure that no visible debris remains.

Recommended Safe Practices When Working On or Around ACM

1. Employees who work in areas where asbestos abatement or repair will occur will be notified in advance per this Chapter and re-located until area is cleared for re-occupancy.
2. Jobs shall be scheduled during evening or weekend hours whenever possible.
3. Warning signs shall be posted at the entrance to the area (or at the ends of corridors leading to the area) to restrict entry to authorized personnel only.
4. PPE for asbestos protection shall be used. Minimum respiratory protection shall include a NIOSH-approved half-face air-purifying respirator with HEPA-filter cartridges. Limited-use, disposable respirators are not allowed for asbestos work. Full-body protective clothing shall be used whenever the project offers the potential for contaminating worker clothing. Double-suiting is preferred. If single-suits are used the worker shall HEPA-vacuum the outside of the suit before removing it.
5. Sources of air movement through the O&M work area shall be restricted.
6. Mini-enclosures, glove bags, HEPA-vacuums, and/or wet methods shall be used. Power tools shall be equipped with HEPA filtration devices.
7. HEPA-filtered vacuums shall be used to clean before and after work, including cleaning all equipment, furniture, and surrounding areas that may have been affected by the asbestos work.
8. Resilient flooring shall not be sanded or scraped unless it is determined to be asbestos free.
9. If filters in a central air ventilation system are suspected of being asbestos-contaminated, they shall be sprayed with water/surfactant mixture before they are removed. The filters shall be treated as asbestos-contaminated waste, placed in a 6-mil-thick plastic bag, and sealed for disposal as asbestos waste.
10. There shall be no smoking or consumption of food or beverages in the affected area during ACM work.
11. A maintenance plan and bag-changing procedures shall be established for HEPA-filtered vacuum cleaners in accordance with the manufacturer's instructions. Filter bags shall be treated as asbestos-contaminated waste, placed in a 6-mil thick plastic bag, and sealed for disposal as asbestos waste.
12. Supervisors shall inspect the area after ACM work is completed to ensure and document that all debris has been removed, and no damage to ACM was caused by the work activities.

EPA Guidelines for Stripping Asbestos-Containing Floors

REMEMBER: Improperly removing asbestos-containing floor covering may result in the release of high levels of asbestos. EPA recommends leaving asbestos-containing floor covering in place (provided the material is in good condition), and always follow proper maintenance procedures, as outlined below.

The Environmental Protection Agency (EPA) recommends that building owners and custodial/maintenance staff considers the following basic guidelines when stripping wax or finish coat from asbestos-containing floor coverings:

1. **AVOID STRIPPING FLOORS.** Stripping of floors should be done as infrequently as possible - once or twice per year depending on circumstances. The frequency should be carefully considered as floor maintenance schedules or contracts are written or renewed.
2. **PROPERLY TRAIN STAFF.** Custodial or maintenance staff that strip floors should be trained to safely operate the machines, pads, and floor care chemicals used at the facility.
3. **FOLLOW APPROPRIATE WORK PRACTICES.** Custodial or maintenance staff that strip floors should follow the work practices recommended here, under informed supervision. Directions from floor tile and floor wax product manufacturers on proper maintenance procedures should also be consulted.
4. **STRIP FLOORS WHILE WET.** The floor should be kept adequately wet during the stripping operation. Do NOT perform dry stripping. Prior to machine operation, an emulsion of chemical stripper in water is commonly applied to the floor with a mop to soften the wax or finish coat. After stripping and before application of the new wax, the floor should be thoroughly cleaned while it is wet.
5. **RUN MACHINE AT SLOW SPEED.** If the machine used to remove the wax or finish coat has variable speeds, it should be run at slow speed (about 175-190 rpm) during the stripping operation.
6. **SELECT THE LEAST ABRASIVE PAD POSSIBLE.** EPA recommends that the machine be equipped with the least abrasive pad possible to strip wax or finish coat from asbestos-containing floors.
7. **DO NOT OVER STRIP FLOORS.** Stop stripping when the old surface coat is removed. Over stripping may damage the floor and may cause the release of asbestos fibers. Do NOT operate a floor machine with an abrasive pad on unwaxed or unfinished floors.

Safe Work Practices for Transite Panels

Locations in this Facility:

Background

Transite is a term for a hard, fireproof composite material, fiber cement boards, typically using in wall construction. Review your facility Asbestos Assessment reports for details; structures that still might contain transite asbestos at the SI include:

- Exterior building siding
- Lining of chemical exhaust hoods
- Cooling towers

Transite surfaces do not pose a hazard if they are intact.

The use of asbestos to manufacture transite was phased out in the 1980s. However, unless manufacturer or previous environmental sampling results prove that a transite material is negative for asbestos, ALL transite materials in the SI must be presumed to contain asbestos and treated in accordance with safe use and handling requirements outlined in Chapter 22, Asbestos, of the SI Safety Manual and the facility's Asbestos Management Plan.

Precautions for Users Working On or Around Transite Surfaces

1. No physical modification (cutting, drilling, sanding, etc.) is allowed.
2. Do **NOT** abrade the surface.

What Damage to Look for and Actions to Take

- Rough and/or powdery edges around bolts, seams, or connections in the transite.
- Siding that is no longer smooth and/or encapsulated with a sealant or paint (i.e., surfaces that can become powdery and air-borne).
- Any cracks/breaks, even if remainder of material is hard and intact.

STOP work on this surface/in this hood should any evidence of damage be identified. Notify your supervisor, Safety Coordinator and/or Building Manager per the emergency response directions of this Asbestos Management Plan.

Periodic Visual Observation, to inspect for transite material condition, will continue as part of the facility semi-annual visual observation program.

The following actions can be accomplished only by licensed asbestos abatement workers (in accordance with SI Constructions Specifications 02800, or by SI staff certified as having successfully completed an EPA-AHERA accredited 16 hr. Operations and Maintenance (O&M) class:

Periodic Maintenance of Transite Panels: Provide periodic repainting or resealing as necessary to prevent rough surfaces that could release fibers. ***No drilling, cutting, or abrading of transite panels.***

Repair of Damaged Transite: Damaged or worn areas (or areas of water-damage and deterioration/erosion) must immediately be repaired or stabilized to prevent debris and fiber release. Use most appropriate methods and materials, such as: repainted/resealing with asbestos encapsulant, or enclosure with glued-on molded fiberglass or other non-ACM corrugated building siding or panels.

Removal of Transite: If transite materials need to be removed, they are to be removed intact with the following measures to minimize fiber release:

- O&M certified workers, approved to wear, and wearing, a respirator (half-mask, air purifying with HEPA filters; not “disposable” masks) may conduct this task. *If there is a potential for transite fiber breakage or other fiber release, removal is to be done by licensed asbestos abatement workers.*
- Areas around bolts, screws, or nails are to be made adequately wet with a surfactant (soapy water) and the hardware is to be carefully removed from the panel, keeping the area saturated or under vacuum (only with a HEPA-filtered vacuum unit).
- Check to see if the access panels in lab hoods are attached with screws that tap into a metal brace behind the panel. If so, these access panels will be easier to remove safely without the danger of fiber release.
- The entire panel is to be wrapped in two layers of 6-mil polyethylene sheeting and securely taped. Hardware should be also wrapped and disposed as asbestos waste.
- The packages are to be clearly labeled “Danger - Asbestos Containing Panels - Do not Damage or Open Wrapping”, and stored safely until disposal through a licensed asbestos waste disposal contractor.

Waste Clean-up and Disposal: Cleanup of any transite panel debris is to be performed only by O&M certified workers, approved to wear, and wearing a respirator (half-mask, air purifying with HEPA filters; not “disposable” masks).

- Dry sweeping is strictly prohibited. Any debris must be either sprayed with water/soap (surfactant) mixture and placed in 6-mil-thick plastic bags or leak-tight containers, or removed with a HEPA-filtered vacuum cleaner.
- All debris and contaminated cleaning items (vacuum bags, cloths, etc) must also be wetted and sealed in proper container for disposal as regulated asbestos waste in accordance with Part F, "Waste Disposal," of Chapter 22, SI Safety Manual.
- Supervisors shall inspect the asbestos work area after cleanup has completed. Document that the cleanup and ensure that no visible debris remains.

Safe Work Practices for Asbestos-Containing Counter Tops and Sinks

<p><i>Locations in this Facility:</i></p>
--

Background

- Many laboratory counter tops in SI facilities have been identified by asbestos assessment reports as containing or presumed-to-contain asbestos, which would have been added in the manufacturing process to render the materials resistant to chemicals and heat.
- Many grey/black sinks and counter tops throughout the SI are made from soapstone, a rock having a talc base. True soapstone is inert, will not be affected by alkalis or acids, and has commonly been used for laboratory and building fixtures for these reasons.
- Non-friable, hard counter tops and sinks, presumed to contain asbestos, will not pose a hazard if they are intact.
- **However**, talc and other asbestiform minerals are part of the same metamorphic family of rocks and often exist in the same area. Therefore, unless bulk sampling or manufacturer analytical statements prove the material to be non-asbestos, quarried soapstone fixtures are presumed to be asbestos-containing for the purpose of maintenance activities and removal, and must be treated in accordance with safe use and handling requirements outlined in Chapter 22, Asbestos, of the SI Safety Manual and the facility's Asbestos Management Plan.

Precautions for Users Working On or Around of Counter Tops and Sinks

3. No physical modification (cutting, drilling, sanding, etc.) is allowed.
4. Do **NOT** abrade the surface.

What Damage to Look for and Actions to Take

- Rough and/or powdery edges around bolts, seams, or connections.
- Surface that is no longer hard and smooth
- Surfaces made from quarried rock such as soapstone, which has deteriorated, become friable, or is crumbling (i.e., surfaces that can become powdery and air-borne).
- Any cracks/breaks, even if remainder of material is hard and intact.

STOP work on this surface. Notify your supervisor, Safety Coordinator and/or Building Manager per the emergency response directions of the facility Asbestos Management Plan.

Periodic Visual Observation, to inspect for material condition, will continue as part of the facility semi-annual visual observation program.

The following actions can be accomplished only by licensed asbestos abatement workers (in accordance with SI Constructions Specifications 02800, or by SI staff certified as having successfully completed an EPA-AHERA accredited 16 hr. Class III Operations and Maintenance (O&M) class:

Periodic Maintenance of Counter Tops and Sinks: Provide periodic resealing as necessary to prevent rough surfaces that could release fibers. ***No drilling, cutting, or abrading is permitted unless as part of an approved O&M project.***

Repair of Damaged Counter Tops and Sinks: Damaged or worn areas (or areas of water-damage and deterioration/erosion) must immediately be repaired or stabilized to prevent debris and fiber release. Use most appropriate methods and materials, such as sealing with asbestos encapsulant.

Removal: If countertops or sinks need to be removed, they are to be removed intact with the following measures to minimize fiber release:

- O&M certified workers, approved to wear, and wearing, a respirator (half-mask, air purifying with HEPA filters; not “disposable” masks) may conduct this task. *If there is a potential for transite fiber breakage or other fiber release, then this removal is to be done by licensed asbestos abatement workers.*
- Areas around bolts, screws, or nails are to be saturated with soapy water and the hardware is to be carefully removed from the panel, keeping the area saturated or under vacuum (only with a HEPA-filtered vacuum unit).
- The entire counter top or sink sections are to be wrapped in two layers of 6-mil polyethylene sheeting and securely taped. Hardware should be also wrapped and disposed as asbestos waste.
- The packages are to be clearly labeled “Danger - Asbestos Containing Panels - Do not Damage or Open Wrapping”, and stored safely until disposal through a licensed asbestos waste disposal contractor.

Waste Clean-up and Disposal: Cleanup of any debris is done only by O&M certified workers, approved to wear, and wearing a respirator (half-mask, air purifying with HEPA filters; not “disposable” masks).

- Dry sweeping is strictly prohibited. Any debris must be either sprayed with water/soap (surfactant) mixture and placed in 6-mil-thick plastic bags or leak-tight containers, or removed with a HEPA-filtered vacuum cleaner.
- All debris and contaminated cleaning items (vacuum bags, cloths, etc) must also be wetted and sealed in proper container for disposal as regulated asbestos waste in accordance with Part F, "Waste Disposal," of Chapter 22, SI Safety Manual.
- Supervisors shall inspect the asbestos work area after cleanup has completed. Document the cleanup and ensure that no visible debris remains.