



**A STANDARD OPERATING PROCEDURE  
for**

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**ASBESTOS OPERATIONS &  
MAINTENANCE ACTIVITIES**

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## INTRODUCTION

This Standard Operating Procedure (SOP) has been developed for the purpose of outlining the general safety and health precautions to be followed during tasks involving use, handling, storage, and disposal of asbestos-containing building materials (ACBM) by General Services Administration (GSA) personnel within the Heartland Region.

The Occupational Safety and Health Administration (OSHA) has published regulations for the use and handling of ACM in Title 29, Code of Federal Regulations, Part 1910, Subpart 1001 (29 CFR 1910.1001). The criteria contained in the regulations are the basis for the requirements set forth in this SOP. Managers and supervisors who insist on compliance with these rules will greatly reduce the chance of an undesirable event occurring with ACM.

In accordance with General Services Administration's (GSA) policy to minimize exposure to asbestos fibers in GSA-controlled space, asbestos management plans (AMP) have been regionally developed, supplemented by facility-specific information (e.g., asbestos inspection). These plans include operations and maintenance work (O&M) practices and a hazard assessment of materials' relative condition. AMPs are intended to meet compliance with the Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA) regulations, and current GSA policy.

This SOP is not to be used by contractors under a GSA contract. Contractors must comply with all OSHA standards. The procedures developed or initiated by contractors to comply with standards are their responsibility.

A copy of the OSHA standards applicable to the GSA Asbestos Operations & Maintenance Activities Program must be available to all supervisors and employees who are required to perform work involving ACM. A copy of 29 CFR 1910.1001, Asbestos, may be obtained from the local OSHA Area Office or purchased from the Superintendent of Documents, Government Printing Office, Washington, DC 20402.

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General Services Administration  
Heartland Region  
**ASBESTOS OPERATIONS & MAINTENANCE ACTIVITIES**

1. **POLICY**. It is GSA's policy to maintain a safe and healthful workplace for all GSA employees, tenants and visitors in our buildings, and to ensure all employees exercise every reasonable precaution against accidental exposure to asbestos-containing building materials (ACBM). This will involve compliance with regulations promulgated by the Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), General Services Administration (GSA), as well as related state and local regulations. Elements of this program include establishment of procedures and responsibilities for handling and disposal of ACM.

2. **REFERENCES**.

- a. OSHA 29 CFR 1910.1001, Asbestos.
- b. OSHA 29 CFR 1926.1101, Asbestos.
- c. EPA 40 CFR 763, Asbestos.

3. **DEFINITIONS**. The following definitions are used within this SOP:

- a. Asbestos-Containing Building Material (ACBM). ACBM is surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a building.
- b. Asbestos-Containing Material (ACM). ACM is any material or product which contains more than 1 percent asbestos.
- c. Asbestos Program Manager (APM). Is the building manager or designated representative who supervises all aspects of the facility asbestos management and control program.
- d. Damaged Friable Miscellaneous ACM. Means friable miscellaneous ACM which has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or, if applicable, which has delaminated such that its bond to the substrate (adhesion) is inadequate or which for any other reason lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by

the separation of ACM into layers; separation of ACM from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage; significant or repeated water stains, scrapes, gouges, mars or other signs of physical injury on the ACM. Asbestos debris originating from the ACBM in question may also indicate damage.

e. Damaged Friable Surfacing ACM. Means friable surfacing ACM which has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or which has delaminated such that its bond to the substrate (adhesion) is inadequate, or which, for any other reason, lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by the separation of ACM into layers; separation of ACM from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage; significant or repeated water stains, scrapes, gouges, mars or other signs of physical injury on the ACM. Asbestos debris originating from the ACBM in question may also indicate damage.

f. Damaged or Significantly Damaged Thermal System Insulation ACM. Means thermal system insulation ACM on pipes, boilers, tanks, ducts, and other thermal system insulation equipment where the insulation has lost its structural integrity, or its covering, in whole or in part, is crushed, water-stained, gouged, punctured, missing, or not intact such that it is not able to contain fibers. Damage may be further illustrated by occasional punctures, gouges or other signs of physical injury to ACM; occasional water damage on the protective coverings/jackets; or exposed ACM ends or joints. Asbestos debris originating from the ACBM in question may also indicate damage.

g. Friable. Means that the material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure, and includes previously nonfriable material after such previously nonfriable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.

h. Miscellaneous material. Means interior building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation.

i. Surfacing Material. Means material in a school building that is sprayed-on, troweled-on, or otherwise applied to

surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

j. Thermal System Insulation. Means material in a school building applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes.

4. RESPONSIBILITIES. Maintenance of the asbestos in the facility is primarily the responsibility of GSA and the Property Management Center via contracted abatement. Facility tenants and contractors however, also have a responsibility for proper asbestos handling whenever their activities impact these building materials.

a. GSA Regional Property Management Director. The Director of the Property Management Division has overall management responsibilities for asbestos by virtue of their responsibility for all facilities. The Director is responsible for communicating issues, events and progress on asbestos-related issues to upper management and client agencies as necessary. They are responsible for providing organizational support and enforcement of the requirements, regulations and policies associated with appropriate GSA asbestos management. They are also responsible for reviewing the performance of the regional safety and environmental team and property management center directors regarding asbestos program activities.

b. The Regional Safety & Environmental Management Team is responsible for overall asbestos program management for Region 6 GSA. This includes conducting facility asbestos inspections and management plans. Additional responsibilities include:

(1) The team reviews design and construction project documents where asbestos work is involved and in limited capital improvement/renovation projects contracting the industrial hygiene oversight of asbestos-related work.

(2) The team also acts as a technical reference regarding regulatory and policy issues involving asbestos and related activities (e.g., medical surveillance, training, PPE, respiratory protection).

(3) A team spokesperson will serve as a regional communication point with agencies, regulators, employee

representatives, contractors and visitors on technical issues regarding asbestos, as needed.

b. Property Management Center (PMC) Directors.

(1) Each Director within Region 6 is directly responsible for the day-to-day management of asbestos within their facilities. This includes some oversight and review of employee and contractor activities that involve asbestos work in their buildings. This also includes direct communication with their tenant agencies and visitors to their buildings regarding asbestos issues and planned events.

(2) Directors are directly responsible for directing the response to asbestos emergencies and planned small-scale renovation and repair projects in their facilities.

(3) They are responsible for ensuring facility and employee asbestos-related records are kept as applicable to their PMC office.

c. GSA employees. Each employee performing maintenance, custodial duties or supervising or inspecting such duties within the Property Management Centers (PMCs) has responsibilities regarding asbestos.

(1) All such employees are prohibited by Region 6 policy from engaging in asbestos activities or entering asbestos regulated areas, where the Permissible Exposure Limit (PEL), as defined by OSHA (0.1 f/cc for 8hr TWA) may likely be exceeded. Such asbestos-related activities (e.g., removal, repair, abatement) shall be performed by contracted licensed asbestos abatement firms.

(2) Each such employee therefore also has the responsibility to recognize areas of damaged asbestos, avoid entering or remaining in such areas and reporting the damaged condition to their supervisors or other responsible parties (as listed above) in a timely manner so the material condition may be abated as soon as possible.

(3) All such employees have access to this plan and inventory (via internet, CD-ROM, printed copies) and receive periodic asbestos awareness training sufficient to fulfill these responsibilities.

5. INSPECTION/MANAGEMENT PLANNING.

a. Inspection Process. All GSA Region 6 asbestos inspections are designed to substantially fulfill the requirements of EPA/ASHARA-AHERA [40 CFR 763] protocol, as it might apply to Federal facilities.

(1) Each Region 6 Federally-owned facility was inspected years ago when this program was first initiated. Since that time, re-inspections are programmed for every three (3) years.

(2) The initial inspection, and all subsequent re-inspections, must be performed by contractors certified as Asbestos Inspectors (and sometimes Management Planners) by EPA and within the state in which the building resides (i.e., Missouri, Kansas, Nebraska, Iowa).

(3) Re-inspection involves:

(a) Reviewing past inspection records

(b) Physically walking the building(s) taking notes of location, condition and types of suspect asbestos, marking their findings on building drawings (to be later transferred to an AutoCad file)

(c) Collecting bulk samples of suspect materials in accordance with the following criteria, and as necessary to identify all ACBMs:

/1/ Miscellaneous materials (e.g., floor tile, ceiling tile, etc.) are sampled at 1 sample per material type. However, in cases where large quantities of a single, homogenous miscellaneous material is present in the building (e.g., sheetrock), multiple samples should be collected to better ensure their proper identification.

/2/ Thermal system insulation (e.g., pipe, tanks, etc.) are sampled at 3 samples per material type\*

/3/ Surfacing materials (e.g., fireproofing):

- 3 samples if area is <1000 square feet (ft<sup>2</sup>).

ft<sup>2</sup>.

- 5 samples for areas between 1000 and 5000
- 7 samples for areas >5000 SF.

b. Assessment Process. ACBM or suspect asbestos materials are assigned a current condition of "Good," "Fair," or "Poor." This is based on the amount of damage observed at the time of the inspection as follows:

- Good = Undamaged
- Fair = Some damage present
- Poor = >10% distributed, 25% localized

Materials are also judged for their potential to be damaged in the future, as either "Low," "Medium," or "High." This is based on the subjective determination of the inspector.

The current condition and future potential ratings are then combined according to the following EPA decision tree to assign an overall Hazard Assessment score for each material.

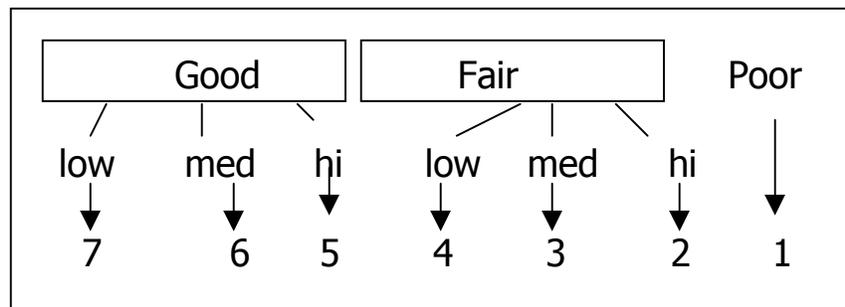


Figure 1. ACBM Ranking Scores

c. Response Actions. There are five (5) response actions available for handling asbestos:

- (1) Removal
- (2) Repair
- (3) Encapsulation
- (4) Enclosure

(5) Operations and Maintenance (O&M)

**Materials ranked as in "poor" (ranking value of 1) condition require IMMEDIATE ACTION to abate the damage! Repair or removal are the ONLY two actions most likely appropriate for ACBMs in "poor" condition.**

**All Other Damaged Asbestos:** ACBMs with a hazard assessment value of 2,3 or 4 represent damaged materials with varying potential for future damage. These materials should be repaired, removed, encapsulated, or enclosed during normal building O&M operations.

d. Management Plan. The management plan is developed for each building or complex and contains the following:

- (1) All re-inspection data (in database and on AutoCad drawings).
- (2) A hazard assessment value (1-7 ranking) for each asbestos material found.
- (3) An O&M program with detailed control options.
- (4) A respiratory protection/PPE program.
- (5) A narrative summary of the asbestos and other relevant notes from the inspection.

6. OPERATIONS AND MAINTENANCE PROGRAM. The Operations and Maintenance (O&M) program is designed to meet the needs of a given building. A complete O&M program will cover all aspects of the day-to-day management of asbestos in a building. Associated with the O&M practices are the GSA Heartland Region's medical surveillance, training, personal protective equipment (PPE), and respiratory protection programs. An O&M program covers all activities needed to maintain asbestos in GSA-controlled facilities. It includes the following:

a. Communication. It is GSA's long-standing policy (nationwide) to promote open communication with all potentially affected parties regarding all asbestos-related activities. Potentially affected parties include: GSA employees, building tenants, contractors, building visitors, local/regional environmental/safety regulators and the press. Communication should always be honest and occur early and often in the process.

(1) Communication is the responsibility of those involved in the process, such as: project managers, PMC representatives, region safety & environmental people, GSA management staff, or independent experts.

(2) Examples of methods that have been effective in communicating asbestos issues include:

- Formal and informal meetings.
- Email alerts (mass mailings).
- Documents and updates posted to websites, bulletin boards, or building kiosks.
- Phone calls.

(3) Essential to selecting any one of the above methods is ensuring the correct audience is chosen, all audience members have access to all of the information, and all the relevant information can be presented in the format chosen. Providing incomplete information, or making it only available to certain groups, is as bad as providing NO information. The results are the same: trust is jeopardized and inaccurate rumors can flourish.

b. Training. Asbestos training in GSA region 6 may cover varying levels of detail for different people or groups. However, at a minimum, employees with responsibility for asbestos-related activities shall receive periodic asbestos awareness training prior to engaging in asbestos-related activities. This shall be offered annually or often enough to incorporate new work practices, policies, and regulatory updates.

(1) This training is designed to meet the EPA and OSHA definitions of asbestos awareness training and includes:

- Definition of asbestos.
- Types of asbestos.
- Health effects associated with exposure.

- Locations and condition of asbestos in our facilities.
- Precautions that must be taken to avoid exposure.
- Explanation of this management plan and the inventory to include where employees may find all necessary information.

(2) Some individuals or groups may receive more specialized asbestos training depending on their duties and activities. For example, safety and environmental team member(s) may receive periodic training as EPA asbestos inspectors, management planners, and/or project designers depending on whether they engage in those activities.

(3) Contractors hired to do asbestos removal must be trained as asbestos workers or supervisors.

(4) These types of additional courses will always be EPA AHERA asbestos courses and shall follow those outlines/guidelines.

(5) In addition, some in-house awareness courses may be modified to suit the appropriate audience. For example, Property Acquisition and Real Estate Services (PARS) personnel may receive a slightly different version of the awareness training that focuses on their leasing-related duties.

(6) Awareness training is designed to be 8 hours in length initially and may be longer or shorter in subsequent years (as a refresher) depending on the amount of information that must be presented.

c. [Asbestos Labeling](#). It is GSA policy that each mechanical room containing ACBMs, the material be identified by label in some fashion sufficient to prevent contractors or employees from accidentally disturbing the material. Such labels may be affixed directly to the ACBM or may be in the form of a notice or plaque readily visible to all entering the room. All labels, postings, or plaques shall conform to EPA ASHARA standards for their content and wording:

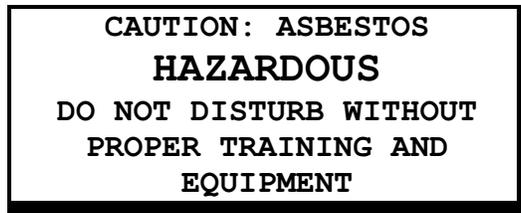


Figure 2. Asbestos Label

d. Specialized Cleaning Procedures. Release of asbestos in a facility, either over extended periods (through age) or from incidental contact may require some specialized cleaning. Since such cleaning is directed at asbestos and is therefore considered separate from routine building cleaning, it shall be performed by a contracted abatement company. This type of special cleaning shall always involve:

(1) HEPA vacuuming

(2) Wet wiping

(3) Steam cleaning (optional depending on the scope and nature of the issue).

(4) All horizontal surfaces and fabric surfaces shall be cleaned and cleaning personnel may wear personal protective equipment, depending on and appropriate to the individual circumstance. Personnel responsible for asbestos activities within the PMC and in the regional office shall provide input and direction to contractor personnel in defining the exact nature and scope of any cleaning effort.

(5) Custodial workers and custodial contractors are not to be utilized to clean up asbestos releases, not to clean asbestos debris left after asbestos projects or to perform this type of specialized cleaning.

e. Routine Maintenance Procedures. The following routine procedures have been derived from the NIBS Guides for Asbestos maintenance and are intended to meet current OSHA and EPA requirements as they may apply. When asbestos is disturbed or first discovered to have been disturbed, the following procedures should be followed (a checklist is provided in [Appendix A](#) to provide additional assistance):

(1) Notify a person responsible for asbestos management in the PMC or regional office and consult with them about appropriate actions.

(2) Turn off the ventilation to and from the immediate area (if possible) as soon as feasible.

(3) Remove all people from the immediate area and restrict access to only asbestos abatement contractor personnel or other trained, equipped personnel.

(4) Post OSHA-approved warning signs (or have contractor do this) at all entrances to the area in location and fashion sufficient to prevent accidental entry, but to avoid widespread panic. Example: On a piece of plastic hanging just inside a closed door.

(5) Have the abatement contractor use one of the specific procedures for handling asbestos (or one of their own if similar in protection), accepting that they will use proper PPE throughout the procedures. The following appendices list specific procedures to be used:

- (a) [Appendix B: CLEANING ABOVE A DROP CEILING](#)
- (b) [Appendix C: GLOVE BAG PROCEDURE](#)
- (c) [Appendix D: FLOOR TILE CLEANING, STRIPPING AND BUFFING PROCEDURE](#)
- (d) [Appendix E: FLOOR TILE REMOVAL PROCEDURE](#)
- (e) [Appendix F: OUTDOOR NONFRIABLE ASBESTOS REPAIR OR REMOVAL](#)

g. Following any one of these procedures, the immediate work area must be cleaned up by wet wiping and HEPA vacuuming all horizontal surfaces, and disposing of plastic and disposable suits as contaminated waste along with the ACBM waste to a landfill licensed to handle asbestos. Air sampling before, during, and after this work may be necessary to document the condition of the air quality. Contact the regional GSA safety and environmental office or PMC representative in advance to determine what sampling requirements will be necessary. Air sampling is normally done by PCM and/or TEM and acceptable results are:

- PCM: 0.01 fibers/cubic centimeter (f/cc).
- TEM: 70 structures/square millimeter (s/mm<sup>2</sup>).

7. PERIODIC SURVEILLANCE. Essential to the overall asbestos control program is the evaluation of the health hazard potential relevant to a particular area and condition of ACM. Air/surface monitoring and re inspection are three techniques used to evaluate the hazard potential. Monitoring and inspection shall be conducted only by individuals trained and experienced in conducting sampling and inspection. All sample analyses shall be performed by those laboratories having been accredited and/or proven proficient by agencies and/or organizations responsible for asbestos air and surface sample analysis quality assurance (i.e., EPA, NIOSH, NIST, the American Industrial Hygiene Association). Copies of all laboratory reports shall be routed through the regional S&EM branch for tracking purposes.

a. Air Monitoring. Air monitoring will routinely be performed by contract professionals and with technical assistance from the regional S&EM branch. There are four basic categories of air monitoring, each with a specific function:

(1) Background Monitoring. Initial air monitoring that is used to establish an existing airborne fiber concentration. It is usually performed in anticipation of an asbestos removal project.

(2) Periodic Monitoring. This is conducted to evaluate any significant change in background fiber levels. Periodic air monitoring is performed annually in occupied and common areas of buildings containing asbestos surfacing material.

(3) Episodic Monitoring. This is performed to detect for any airborne entrainment in the vicinity of asbestos removal (area and ambient sampling) or near areas of recent fiber release.

(4) Clearance Monitoring. This is conducted to establish acceptability for re occupancy following an asbestos response action (removal, repair, etc.)

(5) The number and location of air samples collected for any event is determined by the regional S&EM branch or by a qualified air monitoring contractor. As a general rule of thumb, each air sample should usually not represent more than 500 ft<sup>2</sup> of floor space. All air monitoring is performed following the NIOSH 7400 method. Clearance monitoring may include an amended AHERA protocol for TEM analysis, depending on the project scope. The interpretation of air monitoring results

is based on accepted ambient and re-occupancy levels (0.01 f/cc and 70 s/mm).

b. Surface Sampling. Surface sampling involves collecting settled dust in areas of potential ACM fiber release. It may be performed simultaneously with routine air monitoring in areas containing surfacing materials or wherever periodic fiber release episodes occur. The collected samples may be analyzed as a bulk sample or using electron microscopic methods, if the asbestos is below optical resolution. Any of the following methods may be used to collect surface samples:

(1) Wipe Samples. This method involves collecting dust by wiping up the dust with a clean low-fiber towel wetted with amended water. The cloth, with dust attached, is subsequently put in a suitable bulk sample container, identified and sent to the laboratory.

(2) Sample Train. This method involves using the same equipment necessary for air monitoring. However, instead of drawing air through the sample cassette, dust is drawn through it, like a vacuum cleaner. First, the air sampling train is connected with either a high flow pump (5-10 liters/minute) or a battery-powered pump turned up to a maximum flow rate (3 liters/min). The open-faced cassette is then held at about a 45 degree angle to the surface and the dust is swept into the cassette. When finished, the cassette is resealed, identified as a bulk sample and sent to the laboratory.

(3) Pressure-sensitive Tape. The least effective method of the three, this method simply involves attaching tape to the dusty surface. When the tape is pulled up, the dust is stuck to the adhesive. The tape is subsequently put in a suitable bulk sample container (i.e. 35mm film canister, or similar), identified, and sent to the laboratory.

(4) Interpretation of surface sample results will be based upon positive asbestos identification relative to a control sample from a similar location.

8. PERIODIC INSPECTIONS. Formal re-inspections are conducted three (3) years after the initial inspection. Periodic inspections are performed by the APM or their designee to assess general asbestos conditions between formal inspections. This periodic "walk-through", typically performed during normal building maintenance inspections, is intended to identify gross condition changes or recent fiber release.

## **APPENDIX A**

### **CHECKLIST FOR O&M PROJECTS**

## CHECKLIST FOR O&M PROJECTS

- \_\_\_ Receive and review Job Request Form.
- \_\_\_ Work to be performed: \_\_\_\_\_
- \_\_\_ Review or request survey data to determine whether ACM is affected.
- \_\_\_ Review historical air monitoring data for work practices to be used.
- \_\_\_ Work Practice(s) selected for all ACM to be encountered -
- \_\_\_ Select personnel protective equipment and decontamination requirements to be used, if needed
- \_\_\_ Select appropriate materials and review potential hazards (confined spaces, scaffold use, etc.)
- \_\_\_ Schedule work when area is not in use or plan developed to isolate area
- \_\_\_ Federal, state and local notifications filed (if applicable)
- \_\_\_ Notify personnel affected by.
- \_\_\_ Assign trained air monitoring person and determine air monitoring to be performed (if needed).
- \_\_\_ Provide copies to workers/contractor of:
  - \_\_\_ Work practice(s): \_\_\_\_\_
  - \_\_\_ General Procedure(s)
  - \_\_\_ Notifications
  - \_\_\_ Schedule of work
- \_\_\_ As practical, review work practices during work for compliance with requirements and worker general procedures.
- \_\_\_ File all required records in proper files.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## **APPENDIX B**

### **CLEANING ABOVE A DROP CEILING**

## **CLEANING ABOVE A DROP CEILING**

### **General Procedures:**

1. Put down plastic drop cloth (preferably 6-mil thickness), place needed tools and equipment on cloth.
2. Carefully lift up ceiling panel while HEPA vacuuming around edges of panel. Keep panel as flat as possible while lifting panel.
3. Lift panel slightly above grid system and slowly slide panel to one side, leaving panel on top of an adjacent panel.
4. Lightly mist top side of ceiling where work will occur using garden sprayer with amended water.
5. Pick up any bulk debris on top of ceiling panels where work will occur and place into disposal bags.
6. HEPA vacuum ceiling suspension system and top side of ceiling where work will occur.
7. Wet wipe or HEPA vacuum the underside of the panel which was moved.
8. Carefully replace ceiling panel and perform work required and clean-up and tear-down steps on Worker Checklist to complete work.

### **Attaching to asbestos ceiling material (e.g., panel, plaster, skim coat, etc.):**

1. Put down 6-mil drop cloth and place tools on it.
2. Wet area on ceiling where item will be attached using garden sprayer with amended water.
3. Using hand tools and HEPA vacuum near attachment location, or power tools with attached HEPA vacuum, attach item to ceiling.
4. If small holes are being drilled, they can be drilled through a wet sponge or shaving cream to control fiber release.
5. If a wet sponge or shaving cream is not appropriate or adequate, scrape away surfacing to at least 1/2" [13 mm]

beyond where hole is needed. Keep the hose of an operating HEPA vacuum within 6" [150mm] of where scraping is occurring.

6. Adequately wet scraping area and any dust or debris generated. Drill hole through substrate after ACM is removed.
7. Place all debris and sponges into ACM disposal bags.

**Mini-enclosure to cut into ceiling material:**

1. Cover floor with 6-mil plastic, erect mini-enclosure and set up negative pressure system and/or HEPA filtered local exhaust ventilation to it.
2. Put tools inside. Include a HEPA vacuum inside enclosure for use during the work.
3. If surface to be drilled is above a ceiling, extend enclosure (if feasible) to within approximately 1/2" [13 mm] of surfacing ACM.
4. Place polyethylene sheet below removal location to catch any falling debris.
5. Adequately wet area where hole is to be drilled.
6. Small holes can be drilled through a wet sponge or shaving cream.
7. After drilling, remove shaving cream using wet/dry type HEPA vacuum. If a wet sponge or shaving cream is not appropriate or adequate, scrape away surfacing to at least 1/2" [13 mm] beyond where hole is needed.
8. Keep the hose of an operating HEPA vacuum within 6" [150 mm] of where surveying is occurring.
9. Adequately wet, any dust or debris generated.
10. Drill surveying area and hole through substrate after ACM is removed.
11. Place HEPA vacuum hose near or through hole and rim for several minutes to clean air on backside of surface.

12. If large area is being cut, clean area around edge of mini-enclosure first using HEPA vacuum and scraping tools. Then extend the mini-enclosure until it seals firmly against the cleaned ceiling and continue with cutting operations keeping all materials wet with amended water.
13. Let HEPA vacuum run for at least 15 minutes to clean air in enclosure following removal.

## **APPENDIX C**

### **GLOVE BAG PIPE PROCEDURE**

## **GLOVE BAG PIPE PROCEDURE**

1. Ensure surface temperature of pipe doesn't exceed 120-150 degrees Fahrenheit as it will melt conventional bags.
2. Wrap any damaged ACBM on the line (that's not scheduled for removal) in plastic and duct tape to secure it during removal.
3. Attach the glovebag according to the manufacturer's recommended process with proper tools inside and amended water connected to opening.
4. Attach HEPA vacuum to bag also and turn on in a fashion to maintain slight negative pressure in the bag at all times. As an alternate to negative-pressure bags, the larger work room area may be setup under negative pressure using a conventional air machine and plastic.
5. Remove no more asbestos piping than the width of the bag, keeping it wet all the time. However, do not use so much water that it runs off the material.
6. Seal or wrap the exposed ends of insulation with lag cloth, mastic or joint compound and encapsulate the bare pipe.
7. Close, seal the bag and remove into a disposal bag.

## **APPENDIX D**

### **FLOOR TILE CLEANING, STRIPPING AND BUFFING PROCEDURE**

## **FLOOR TILE CLEANING, STRIPPING AND BUFFING PROCEDURE**

Asbestos flooring should be kept wet or damp during all these flooring procedures. If this is not possible, custodians and contractors should discuss appropriate alternatives with those responsible for asbestos management for these facilities.

### **STRIPPING** -

1. Do not strip any asbestos flooring that is damaged (e.g., severely broken, crushed or pulled up tiles).
2. Any loose or damaged flooring should be repaired or replaced before stripping is started.
3. Stripping pads should be kept wet during use and rinsed thoroughly immediately after use and prior to storage.
4. After wax or finish has softened, strip flooring using least abrasive pad and low speed setting (300 RPM maximum). Keep floor adequately wet during machine operation.
5. Do not overstrip. Stop stripping when the old wax or finish is removed.
6. Work small areas at a time.

**BUFFING** - This practice assumes that the floor has adequate coats of polish, and that the flooring itself will not be damaged or contacted by the buffing equipment. Buff according to the manufacturer's recommended method, making sure not to damage the flooring.

**CLEANING** - This may be done in the same manner as non-asbestos flooring, keeping the floor damp during mopping and making sure not to damage the tiles.

## **APPENDIX E**

### **FLOOR TILE REMOVAL PROCEDURE**

## **FLOOR TILE REMOVAL PROCEDURE**

1. Determine in advance which method will be used to remove the tile: heat, physical prying, dry ice.
2. Wet the material with amended water in an amount appropriate to the method chosen.
3. If electrical heat is to be used avoid too much water which might present an electrical hazard.
4. If dry ice is used, make sure there is adequate outside ventilation into the work area.
5. Heat, pry or place dry ice on the tile. As heat is applied the tile will soften.
6. Once soft enough to lift off by hand, gently pick it up and place in disposal bag.
7. Dry ice will harden the tile making it brittle enough to simply pop loose from the mastic. Pry it up gently to avoid breaking in many pieces or otherwise making it friable.
8. As vinyl asbestos tile (VAT) is nonfriable, it can be disposed of in a slightly different manner than friable asbestos, provided the landfill operator is willing to accept it.
9. Place the tiles in a cardboard box or other rigid container lined with 6-mil plastic.
10. Seal the box or container, place disposal warning labels on it and contact the landfill to make sure it can be disposed of as ordinary construction waste.

**APPENDIX F**

**OUTDOOR NONFRIABLE ASBESTOS  
REPAIR OR REMOVAL**

**OUTDOOR NONFRIABLE ASBESTOS REPAIR OR REMOVAL  
(e.g., roofing material, transite panels)**

1. This procedure requires minimum protective measures (aside from PPE) given the surroundings and the nature of the ACM.
2. Secure the area and limit access to only abatement contractor personnel and authorized GSA personnel.
3. Delineate the area with "Caution Tape" far enough removed from the immediate work area to prevent people from accidentally coming in contact with the asbestos.
4. Carefully dismantle the asbestos material without breaking it if at all possible.
5. If it is being removed (and not dismantled) spray the material with amended water then carefully remove it to a disposal bag labeled for asbestos or wrap it in 6-mil plastic sheeting affixed with an asbestos waste label.
6. Clean the immediate area with HEPA vacuum or wet wiping.