

**THE PENNSYLVANIA STATE UNIVERSITY**

## ASBESTOS MANAGEMENT PROGRAM

## STANDARD OPERATING PROCEDURES

## for

**OFFICE OF PHYSICAL PLANT**

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The Pennsylvania State University, Department of Environmental Health and Safety

**Table of Contents**

**Introduction** 3

**Allowable Scope of Work Summary** 3

**I. Environmental Health and Safety (EHS) responsibilities:** 3

1. **Office of the Physical Plant (OPP) responsibilities:** 4

Damaged / Deteriorated ACM 4

**Emergency Procedures** 5

Planned ACM Work 5

OPP Asbestos Supervisor / Manager / Designate Responsibilities: 6

OPP Asbestos Worker Responsibilities: 7

# III. Asbestos Handling Procedures 8

1. Glove-bag Technique (25 linear feet or less in any given 8

area at a particular time)

b. Small-scale Gross Removal in Full-Containments 11

1. Vacuum/Clean-up of ACM 11

d. Repairing Deteriorated Asbestos Pipe and Other Thermal Insulations 13

e. Removing and Disposing Resilient Flooring and Adhesives 13

f. Removing and Disposing Transite Sheeting Intact 15

g. Removing Miscellaneous Asbestos Containing Materials 16

**Appendix A** - Asbestos Handling Equipment

**Appendix B** - Respiratory Protection Program

**Appendix C** - Medical Surveillance Program

**Appendix D** -Training Requirements

**Appendix E** - Penn State Asbestos Containing Material Removal Performance Specification

**Appendix F** – Asbestos Gasket / Valve Packing Removal

**Appendix G** - OPP Small Scale Flooring and Mastic SOP

**Appendix H** - OPP Steam System Insulation Removal and Installation SOP

**Appendix I** - Asbestos Handling Working Hours and Project Scheduling

**Appendix J** - Request for Asbestos SOP Variance

**Appendix K** – Accidental Contact with Known or Suspect Asbestos

**Appendix L** – Asbestos Supervisor Inspection Checklist

**Introduction**

Penn State University's Office of Physical Plant's (OPP) in-house asbestos workers main purpose is to provide an immediate response mechanism for removal or decontamination of small areas of asbestos-containing or contaminated materials (ACM) with properly trained individuals. This ensures the safety and health of the University community and compliance with existing state and federal regulations. Large-scale projects are typically conducted by approved asbestos contractors.

All asbestos-related activities are to be conducted in accordance with US Occupational Safety and Health Administration (OSHA), US Environmental Protection Agency (US EPA), PA Department of Environmental Protection (PA DEP) and PA Department of Labor and Industry (PA L&I) regulations.

**Allowable Scope-of-Work Summary**

The current allowable scope-of-work for these Asbestos Workers is as follows.

* Remove ACM **pipe insulation** utilizing the **glovebag technique** in quantities of **25 linear feet or less in any given area at a particular time.**
* **Small-scale gross removal under full-containment** (6-mil plastic on floors / walls, HEPA filtered negative air pressure, decontamination units, etc.).
* **Vacuum / clean-up** of ACM **using HEPA filtered vacuums and wet methods** in any given area at a particular time.

* **Repair deteriorated ACM pipe insulations and other thermal insulations** with original equipment / materials, such as canvas, plaster wrap, etc.
* **Remove and dispose of "resilient flooring"** (e.g. floor tile, sheet flooring, linoleum, covebase and any associated adhesives) **manually** **with minimal breakage**, pulverizing, etc.
* **Remove and dispose of "resilient flooring"** (e.g. floor tile, sheet flooring, linoleum and any associated adhesives) **mechanically** **under full-containment.**
* **Remove and dispose of "Transite" sheeting** **intact or in condition found** (i.e. no additional breakage, drilling, sanding, etc.).
* **Remove miscellaneous ACM** as specified / directed by PSU Environmental Health and Safety (EHS) (e.g. laboratory equipment, light fixtures, gaskets, valve packing, etc.)

**I. Environmental Health and Safety (EHS) responsibilities:**

1. Complete and submit required annual notifications to PA DEP and US EPA
2. Complete and submit bi-annual Residual Waste reports to PA DEP.

c. Conduct air monitoring as needed to determine airborne fiber exposures for personnel involved in the project as well as, area samples to determine the adequacy of containment techniques.

1. Assist OPP in determining whether projects are within the scope of what a particular crew can complete.

e. Notify facility / unit Safety Officers that an asbestos project will be conducted in their area of jurisdiction. This is to be done as early as possible after notification is received from OPP.

f. Identify the presence of ACM when contacted by OPP personnel. Collect bulk samples if the composition of the material is unknown or when deemed appropriate.

g. Contact the OPP supervisor / manager regarding the priority of projects initiated by or through EHS.

h. Follow established OPP procedures in situations where EHS determines ACM needs to be removed or repaired.

i. Respond to asbestos-related emergencies 24 / 7. This can entail coming to campus as needed, or simply answering calls.

j. Establish the extent of repair / clean-up of contaminated areas as needed.

k. Facilitate and/or provide both accredited and on-the-job training for the OPP supervisors and workers to become certified and "competent persons", as per PA L&I, EPA and OSHA requirements.

l. Provide written exposure reports to OPP employees as determined by personal air monitoring when conducted.

m. Maintain personal exposure air sample records.

n. Report damaged ACM and submit Work Orders as needed.

**II. Office of the Physical Plant (OPP) responsibilities:**

a. **Damaged / Deteriorated ACM** - **All** OPP employees shall report damage ASAP. For information on how to identify asbestos-containing materials, see the EHS Asbestos webpage at: <http://ehs.psu.edu/> or call EHS at 865-6391.

1. Pipe Insulation Reminder – Elbows / joints (fittings) and hangers must be evaluated independently from straight runs of insulation. In many cases the fittings and hangers may be ACM, and the straight runs may be fiberglass or rubber. Also, fiberglass may be layered on top of ACM.

Insulation sealants may also be present on duct and pipe insulations (putties or mudded materials over fiberglass seams, flanges, butt ends, etc.).

1. Work Orders must be submitted ASAP.
   1. Emergencies / urgent issues are to be called in to the Work Control Center (i.e. pipes leaking and equipment, furniture, etc. are being damaged; occupied spaces affected, etc.).
   2. Work Orders submitted electronically shall be started with the word “ASBESTOS”.

1. **Damaged ACM is not to be reported as low priority.** Repairs, clean-up or removal must be completed ASAP.
2. **Emergency Procedures:**
3. An **"emergency"** is a sudden, unexpected event or failure, which may threaten safety or public health, property or the environment (e.g. fire, flood, massive steam outage to several buildings).
4. An **"emergency"** is also when an employee is accidentally contaminated with known or suspect ACM. See Appendix K for instructions.
5. **Emergencies are to be called in to the Work Control Center who will then immediately start a Work Order.**
6. The following actions will be undertaken:

a. OPP asbestos supervisor / manager will dispatch the appropriate asbestos crew with all equipment listed in Appendix A.

b. OPP asbestos supervisor / manager will contact EHS and provide the following information (day or night):

1. Building name.
2. Location of incident (room, number, corridor number, etc.).

2. Type of removal, repair or clean-up.

3. Number of linear / square feet to be removed, repaired or cleaned up.

c. EHS may meet OPP at on-site to direct initial containment measures, establish remediation measures and to set-up air monitoring equipment.

1. **For EMERGENCIES after 5 PM or on weekends and holidays, in addition to the Work Control Center, EHS must be contacted at 863-1111 (Police Services).**

c. **Planned ACM removal, repairs or clean-up** - OPP employees shall note or identify the exact section or area of ACM that needs to be removed, repaired or cleaned up, without damaging the material. **Spray paint is not to be used as it can disturb the ACM with the pressurized propellant.**

OPP employees will record the following information:

1. Room and building where the damaged ACM is present.

2. Type of room (i.e. mechanical room, office, laboratory, classroom, etc.).

3. Scope of ACM that must be removed, repaired or cleaned up.

4. Description of the ACM (i.e. insulation, flooring, plaster, etc.).

5. Description damage (i.e. leak, repair, loose accumulations, broken / loose floor tile, cracked Transite, etc.).

6. Damaged ACM is to be reported ASAP. Repairs or removal must be done ASAP.

**d.** **OPP Asbestos Supervisor / Manager / Designate Responsibilities:**

1. Be familiar with and comply with this SOP and all applicable state and federal regulations.

2. If the situation is NOT an "emergency", the following actions will be taken:

1. **OPP asbestos supervisor / manager / designate will notify EHS prior to initiating work. All attempts will be made to notify EHS at least one day in advance of the scheduled date of work.** This may be delegated to employees as needed.

The following information **must** be provided to EHS:

1. Building name and room number **(as per OPP FIS designations)**.

2. Scheduled date (and time, if available) when work will be conducted.

3. Type of removal, repair or clean-up.

4. Number of linear / square feet to be removed, repaired or cleaned up.

5. Work Order number.

6. Caller’s Name.

b. OPP asbestos supervisor / manager / designate will dispatch crew with all equipment listed in Appendix A.

c. EHS may meet OPP at the work site to direct initial containment measures, to establish removal measures and to set-up air monitoring equipment.

3. The OPP asbestos supervisor / manager / designate will determine, with input from EHS, whether the asbestos removal or cleanup is within the allowable scope of the OPP crew.

4. If the project is determined to be larger than the crew can perform, the OPP asbestos supervisor / manager / designate will contact the appropriate contacts for follow-up actions.

5. Ensure all ACM waste is stored at a designated location under the “secure” jurisdiction of OPP until proper transport and disposal.

6. Provide a vehicle to transport ACM waste to the storage facility and landfill. Once approval for disposal is obtained, OPP will make arrangements for the transportation and delivery of the asbestos waste to the landfill.

7. Ensure all waste transport vehicles are properly labeled in compliance with PA DEP Residual Waste regulations.

8. Maintain designated area(s) and vehicle(s) for the storage and transport of all equipment listed in Appendix A.

9. Request in writing to the regional PA DEP office for approval to dispose of asbestos-containing waste materials and prepare all required submittals for disposal and transport.

10. Ensure Waste Shipment Records (manifests) are properly completed, transported and filed.

11. Notify building or room occupants of occupancy changes that may result from any asbestos work. **Supervisors must confirm this is completed, not necessarily complete the task.**

12. Ensure activities as necessary for the preparation of the project. This includes, but is not limited to:

1. Installation of special lock cores to restrict access to work areas
2. Prepare specially designed signs on entrance to work areas.
3. Secure rooms or areas to prevent access by other OPP workers, PSU employees, students and visitors.

13. Conduct inspections to ensure proper and complete abatement, safe work practices, proper PPE use, etc.

1. Inspections are to be completed as often as possible, but at least once a month.
2. Inspections shall be documented with copies sent to the assigned managers and EHS.

14. Ensure all technicians are properly trained, licensed and medically cleared to perform asbestos-related work.

**e. OPP Asbestos Worker Responsibilities**

1. Be familiar with and comply with this SOP and all applicable state and federal regulations.

2. Visually inspect, clean and disinfect all respiratory protection equipment before and after each use.

1. Wear new disposable protective coveralls for each job.

**Street clothes, except underwear / swim trucks and socks, are not allowed under disposable coveralls.**

5. Maintain adequate supply of all equipment and items used during asbestos work.

6. Maintain and repair (as possible) the equipment listed in Appendix A.

7. Label the exterior of each asbestos waste disposal bag with the following information:

Penn State University - University Park, PA

Building Name

Room Number (or Location name if area is not numbered)

Type of asbestos (pipe insulation, ceiling, resilient flooring, etc.) Amount of asbestos waste (linear / square ft)

Work Order Number

8. Complete waste disposal records / reports and provide to OPP Stores with the following information:

1. Building name **(as per OPP FIS designation)**.
2. Room or corridor number **(as per OPP FIS)**.
3. Type of ACM.
4. Quantity of ACM removed, repaired or cleaned up (LF or SF).
5. Date of work.
6. Work Order Number
7. Technician(s) name(s)
8. Slip #
9. Hours worked.

**Waste disposal records must match / correspond and be attached to each manifest used to transport waste to the landfill.**

# III. Asbestos Handling Procedures

**a.** **Glovebag Technique (25 linear feet or less in any given area at a particular time)**

The glovebag technique is mostly used for the removal of pipe insulation. It consists of using a 6-mil bag fitted with long gloves / sleeves, a tool pouch, and port for water and a HEPA vacuum hose. These bags are single use exposure / fiber release control devices that are disposed of at the end of each use.

Two persons shall work together at all times during the glovebag removal process.

**Removal of pipe insulation using the glovebag technique shall never be done on hot pipes. Heat may cause the bag to melt and has the potential to burn employees (See Appendix H).**

1. Post OSHA / EPA compliant “DANGER ASBESTOS” signs at all entrance(s) / door(s) to work areas. These should not be placed in corridors or public access areas, but only where one would see the signs immediately upon attempted entry to the area.

If signs must be placed in corridors or public areas a black plastic barrier is to be installed to prevent access by those not involved with the work.

1. Post “DANGER ASBESTOS” signs on transport vehicle doors while loading and unloading asbestos waste. Signs to be installed permanently on the interior sides of doors so they are visible when open.
2. Shut down or seal HVAC systems / vents serving the area. Contact EHS for direction as needed.

4. Seal all vents and air ducts in the area with clear 6-mil polyethylene sheeting.

5. Mix amended water (using an approved surfactant) in an airless sprayer according to the manufacturer's instructions. Amended water will also be referred to as a "wetting agent."

Encapsulant is mixed in a separate sprayer according to manufacturer's directions. **Encapsulants must be clear**.

1. All workers involved in glovebag work shall wear a Powered Air Purifying Respirator (PAPR) and hooded "TYVEK" coveralls with attached booties. Half-face air purifying respirators (APR) are acceptable only if wearing a PAPR will restrict safe passage or completion of work.

**Street clothes, except underwear / swim trucks and socks, are not allowed under disposable coveralls.**

7. Inspect the pipe and insulation. If the insulation is damaged in locations that cannot be handled inside the glove bag, wrap these areas with original equipment covering (i.e. canvas, wettable cloth, etc.) and allow to dry before attaching the glovebag.

8. If needed for a clean seal, place vinyl tape around the pipe insulation at each location where the ends of the glovebag will be attached. The tape must be removed when done.

9. Slit the top and sides of the glovebag to create an opening to accommodate the size of the insulation to be removed. Do not cut more than is needed.

10. Place the required tools into the pouch located inside the glove bag. This includes the palm grade encapsulant or wettable cloth used to seal the exposed edges of the remaining pipe insulation.

11. Place the glovebag around the pipe and insulations and seal the edges with vinyl tape. Ensure that the glove bag completely covers the pipe and allows enough room around the pipe to work with both hands.

12. Insert the wand of the amended water sprayer through the side of the bag and tape the plastic tightly around the wand.

13. Insert the nozzle of a small HEPA vacuum through the hose port and tape the plastic tightly around the nozzle. The HEPA vacuum is to be turned on at this point and must remain on until the job is completed and the glove bag is removed from the pipe. **To prevent collapsing the bag, a respirator HEPA filter cartridge must be installed in the opposite side of the bag.**

14. One person places hands into the gloves, and the second person handles the water sprayer and HEPA vacuum.

15. A bone saw or razor knife can then be used to cut through the asbestos insulation at each end of the section to be removed. ACM pipe insulation is generally covered with painted canvas and/or wire mesh. Painted canvas can be cut with a utility knife and peeled away from the ACM underneath. Once the canvas has been cut, the ACM is sprayed with the wetting agent to prevent dust generation.

If insulation is covered with wire mesh, this shall be cut with scissors, snips, or other appropriate tools. Amended water must then be used to wet ACM, pipes and the inside of the glove bag. While cutting, the asbestos shall be kept thoroughly soaked with amended water.

16. The section of insulation is then slit from end to end. The slit should be made along the top or side of the pipe facing the worker and continuously wetted.

17. The tools are then rinsed with water inside the glove bag and placed back into the pouch.

18. The insulation is then removed from the pipe and lowered carefully to the bottom of the glovebag. The insulation should be wet continuously during this step.

19. After removal of the insulation, thoroughly clean the pipe with brushes, rags, scrub pads, scrapers, and amended water. Also, clean any gross debris from the top portion of the glove bag.

20. After all removal and cleaning of the pipe is finished, spray the bare pipe with clear encapsulant.

21. The exposed ends of insulation in the glove bag are then sealed with the palm grade encapsulant or wettable cloth. **Do not use tape to seal exposed insulation ends.**

22. Turn one of the gloves inside out. Rinse all tools and place them in the glove and tape the glove closed.

23. Remove the water wand and respirator HEPA filter cartridge from the bag and seal the penetration with tape. Allow the HEPA vacuum to collapse the bag completely.

24. Twist the bag as close to the pipe as possible and secure the twist with tape.

25. Remove the HEPA vacuum hose and seal the opening.

26. Cut the glove containing the tools at the tape and place glove in bucket of water. Open glove underwater and clean tools.

27. Slip a clear 6-mil ACM disposal bag over the glovebag, then remove the glovebag from the pipe and fold it into the disposal bag. Reclean the pipe if necessary using cloths wetted with amended water. Respray with clear encapsulant if recleaning is done.

1. Prior to removing disposable clothing, use the HEPA vacuum and "buddy system" to vacuum all surfaces of clothing, respirators, etc. Remove disposable clothing, pulling sleeves and legs inside out and place into the disposal bag. Pour water from bucket into bag. The respirator is to remain on throughout this process.
2. Wipe the exterior of respirators and face seal with a clean, damp rag. Dispose of the respirator filters as asbestos waste when cartridges are replaced. Cover respirator cartridge intakes with caps or tape after each use until replaced.
3. After all disposable, contaminated items have been placed in the disposal bag, seal the bag by twisting, "goose necking" and then taping the top.

**Do not squeeze air out of the bag, use the HEPA vacuum to evacuate the air.**

31. Place sealed bag into another 6-mil disposal bag and seal with tape in the same manner as #30. Affix proper labels and tags as directed by OPP Stores.

32. All ends of vacuum hose and the intake port of the HEPA vacuum shall then be sealed with tape before leaving the work area.

**b.** **Small-scale Gross Removal in Full-Containments**

1. Prepare area and conduct removal as per the PSU Asbestos Removal Performance Specifications (Appendix E).

**NOTE: Air monitoring and inspections by an independent 3rd party consultant must be conducted during all gross removal work. Costs for this service shall be included in project budget and scheduling to be coordinated with EHS.**

1. **Vacuum / Clean-up of ACM**

This procedure is for clean-up of small amounts of ACM. For large-scale cleaning of entire rooms or large areas for example, prepare area and conduct work as per the PSU Asbestos Removal Performance Specifications (Appendix E) and complete an OPP Gross Asbestos Removal/Containment Log (Appendix F) and submit to EHS upon completion of work.

1. Post “DANGER ASBESTOS” signs at all entrance(s) / door(s) to work areas in compliance with OSHA and EPA regulations. These should not be placed in corridors or public access areas, but only where one would see the signs immediately upon attempted entry to the area.

If signs must be placed in corridors or public areas a black plastic barrier is to be installed to prevent access by those not involved with the work.

1. Post “DANGER ASBESTOS” signs on transport vehicle doors while loading and unloading asbestos waste. Signs to be installed permanently on the interior sides of doors so they are visible when open.
2. Shut down or seal HVAC systems / vents serving the area. Contact EHS for direction as needed.
3. Dress in disposable coveralls and respiratory protection.

**Street clothes, except underwear / swim trucks and socks, are not allowed under disposable coveralls.**

1. Larger clean-up areas may require set up a HEPA filtered negative air machine (typically 2000 CFM unit) as soon as feasible but without contaminating the unit. The floor area where the machine is to be placed may need to be cleaned first. Contact EHS for direction as needed.

6. Larger clean-up areas may require covering and sealing all vents and air ducts inside the work area with 6-mil polyethylene sheeting and vinyl tape.

7. All HVAC filters which may have been contaminated must be wetted, removed and disposed as friable asbestos waste.

8. All furniture and other moveable items in the area shall be HEPA vacuumed, wet wiped and removed as needed, depending on scope of clean-up. Consideration should be given to disposing curtains, cloth covered furniture and carpeting as friable asbestos waste.

9. Stationary items in the work area shall be HEPA vacuumed, wet wiped and covered with one layer of 6-mil polyethylene sheeting.

10. Seal off all openings into the work area with one layer of 6-mil polyethylene sheeting and vinyl tape (e.g. doors, windows, vents, etc.).

11. HEPA vacuum the floor if any ACM is potentially present. Then if necessary, cover the floor with one layer of 6-mil polyethylene.

12. Whenever possible, the ACM should be wetted prior to clean-up. The wetting agent shall be used according to the manufacturer's instructions.

13. Saturate the ACM, but avoid accumulating excess water, while the material is being HEPA vacuumed.

14. Keep all ACM wet until it is properly bagged for disposal.

1. Clean up the asbestos debris or materials as intact as possible. Materials should not be further broken, dropped or thrown to the floor.

16. Two clear 6-mil polyethylene ACM waste bags shall be used for disposal. Bags shall be immediately sealed at the work area and labeled and tagged with appropriate information. Sealing the bags shall consist of evacuating the air from the bags via a HEPA vacuum, then twisting, "goose necking" and taping the top of each bag. Bags shall be placed into metal or fiber drums if they will be stored outdoors.

17. After all the ACM is removed, all affected surfaces in the room shall be wet cleaned to remove any remaining fibers.

18. Remove the layer of polyethylene from the walls and floor, carefully folding inward to form a bundle, and package in two 6-mil polyethylene bags for disposal. Leave HVAC units and ducts covered with polyethylene sheeting sealed with duct tape.

19. Supervisors and workers shall visually inspect all surfaces to ensure all accumulations have been cleaned and contact EHS for possible inspection to determine the effectiveness of the cleaning.

20. Clean all equipment used in the removal area using wet methods.

21. Prior to removing disposable clothing, use the HEPA vacuum and the "buddy system" to vacuum all clothing surfaces. Remove disposable clothing by pulling sleeves and legs inside out. Wipe the exterior of the respirator with a damp rag. Disposable clothing is to be treated as friable asbestos-containing waste material.

22. EHS may conduct air monitoring to determine whether the work area can be re-opened. If the air samples are approved by EHS, all remaining polyethylene shall be removed and disposed of as asbestos-containing waste materials.

**d. Repairing Deteriorated Asbestos Pipe and Other Thermal Insulations**

1. If the deteriorated pipe insulation is severely damaged and its repair may release asbestos fibers into the air, or any quantity of the insulation will need to be removed to conduct the repair, all repairs and / or removals shall be conducted within a glovebag according to the procedures specified in this SOP.
2. Dress in disposable coveralls and respiratory protection.

**Street clothes, except underwear / swim trucks and socks, are not allowed under disposable coveralls.**

3. Seal damaged or exposed pipe ends or coverings with original equipment materials (i.e. canvas, wettable cloth, etc.).

4. To seal damaged thermal insulations other than pipes

1. Prior to conducting repairs, visually ensure that all asbestos containing insulation debris that may be present on horizontal surfaces (including floors) adjacent to the repair area are adequately cleaned by HEPA vacuuming and wet wiping.

**e. Removing and Disposing Resilient Flooring and Adhesives**

**NOTES: Mastics and adhesives must be included in scope-of-work when removing any resilient flooring.**

**New tiles, linoleums or sub-floors shall not be installed over old flooring.**

1. For **"manual removal"** of resilient flooring and adhesives **with hand tools and chemical strippers**, modified containment procedures are required.

Prepare area and conduct removal as per the PSU Asbestos Removal Performance Specifications (Appendix E). A summary of specification requirements is below:

1. Post OSHA / EPA compliant “DANGER ASBESTOS” signs at all entrance(s) / door(s) to work areas. These shall not be placed in corridors or public access areas, but only where one would see the signs immediately upon attempted entry to the area.

If signs must be placed in corridors or public areas (e.g. during emergencies) a black plastic barrier shall be installed to prevent access by those not involved with the work.

1. Post “DANGER ASBESTOS” signs on transport vehicle doors while loading and unloading asbestos waste. Signs to be installed permanently on the interior sides of doors so they are visible when open.
2. Shut down or seal HVAC systems / vents serving the area. Contact EHS for direction as needed.
3. Seal all vents, air ducts, windows, doors, etc. in the area with clear 6-mil polyethylene sheeting and tape.
4. Cover walls with polyethylene sheeting (one-layer), 6 feet high.
5. All furniture and other moveable items in the area shall be removed (e.g. desks, chairs, books / racks, cubicles, lab casework, radiator / unit-vent covers, etc.).
6. Stationary items in the work area shall be HEPA vacuumed, wet wiped and covered with one layer of 6-mil polyethylene sheeting, sealed with tape.
7. Decontamination unit with shower is not required.

Seal entrance with clear 6-mil polyethylene plastic doors only (3 flaps taped on opposite sides to create an air lock in the event there is an electrical failure).

1. Set up HEPA filtered negative air system (4 air changes per hour, no dead air space.

Negative air exhaust to be run to exterior of building whenever possible. Exhaust to interior spaces must be approved by EHS.

1. Workers shall wear two sets of disposable coveralls (double-suit) and use the "buddy system" to HEPA vacuum and wet-wipe contaminated coveralls before exiting the work area.

**Street clothes, except underwear / swim trucks and socks, are not allowed under disposable coveralls.**

1. Mastic to be completely removed from floors and walls.

**Mastic that can be scraped from flat surfaces or picked out of cracks and crevices is not adequately removed.**

1. **No visible dust shall remain on any surfaces in containment when work is complete. Use bright flashlight held horizontally to inspect all surfaces.**

1. For **"intact removal"** of resilient flooring and adhesives **with electric heat guns and chemical strippers**, no containment is required.
2. Restrict access by others as needed for basic safety and emergency egress.
3. Do NOT heat tiles until they smoke.
4. HEPA vacuum, wet clean and dispose of all dust, debris, tile and mastic, same as other procedures in this SOP.
5. For **"mechanical removal"** of resilient flooring and adhesives **with machines**, full containment of the area is required.
6. Prepare area and conduct removal as per the PSU Asbestos Removal Performance Specifications (Appendix E).

**NOTE: Air monitoring and inspections by an independent 3rd party consultant must be conducted during all gross removal work. Costs for this service shall be included in project budget and scheduling to be coordinated with EHS.**

1. Waste shall be packaged disposed as follows:
2. Floor tile (manual removal) – Non-friable ACM.
3. Floor tile (mechanical removal or significantly damaged when found / removed) – Friable ACM.
4. Mastic removed by hand with rags or scrapers – Non-friable ACM.
5. Mastic removed with electric floor scrubbing machines – Friable ACM.

**f.** **Removing and Disposing Transite Sheeting Intact**

If Transite cannot be removed intact, prepare area and conduct removal as per the PSU Asbestos Removal Performance Specifications (Appendix E).

**NOTE: Air monitoring and inspections by an independent 3rd party consultant must be conducted during all gross removal work. Costs for this service shall be included in project budget and scheduling to be coordinated with EHS.**

1. Dress in disposable coveralls and respiratory protection.

**Street clothes, except underwear / swim trucks and socks, are not allowed under disposable coveralls.**

1. Wet intact material prior to and during removal and seal in polyethylene sheeting.
2. Wrap intact Transite sheeting with two separately sealed layers of clear 6-mil polyethylene sheeting and seal with tape.

~~4~~. Label exterior of wrapped intact Transite sheeting as "NON-FRIABLE ASBESTOS".

**g.** **Removing Miscellaneous Asbestos Containing Materials**

1. Contact EHS on a case-by-case basis.

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**APPENDIX A**

**ASBESTOS HANDLING EQUIPMENT**

**a. Protective Clothing**

Tyvek (or equivalent) disposable coveralls, various sizes with attached head covers and booties. Gloves, boots and eye protection as needed.

**b.** **Respiratory Protection** - Brands and models as per the OPP Respiratory Protection Program

HEPA filtered Powered Air Purifying Respirators (PAPR's)(and spectacle kits if needed)

HEPA filtered Half-face or Full-face Air Purifying Respirators (APR)

**c.** **Equipment**

HEPA vacuum(s) for negative pressure in glove bags

HEPA vacuum(s) to clean-up wet and dry accumulations

HEPA filtered, negative air pressure machines - Micro-Trap 1800 CFM or equivalent

HEPA filtered, negative air pressure machines - Micro-Trap 600 CFM or equivalent

Negative air machine exhaust duct (wire reinforced)

Decontamination unit (3 stage, with shower)

Decontamination System Drain Pump and Water Filter capable of capturing fine particles

Manometer - negative pressure gauge (digital or analog)

Ground-Fault Interrupters (GFI's)

6-mil polyethylene sheeting (clear and black)

6-mil burial bags with warning labels. **Bags must be clear.**

Glovebags (various sizes)

Scrapers, utility knives, wire brushes (large and small)

Buckets

Double-sided tape #105, asbestos removal grade

Yellow vinyl tape (2 3/4" wide)

Spray glue 3M #77 (or equivalent)

Surfactant / wetting agent

Encapsulants (spray applied and palm grade). **Spray applied must be clear.**

Wettable cloth, canvas

Bone saws

Floor scrubbers (low speed, ~300 RPM) and pads

Chemical strippers for mastics and adhesives (low odor / low VOC)

Airless sprayer (hand-pump or electric as needed)

"DANGER" Asbestos Signs (format as per OSHA / EPA regulations)

Appendix Created: 9/88 Revised 3/90

Revised 3/92 MJB Revised 10/97 MJB

Revised 2/04 MJB Revised 9/11/06 MJB

Revised 1/16/20

**APPENDIX B**

**RESPIRATORY PROTECTION PROGRAM**

See the Respiratory Protection Program (RPP) on the EHS website at:

<https://ehs.psu.edu/respiratory-protection/requirements-guidelines>

**APPENDIX C**

**MEDICAL SURVEILLANCE PROGRAM**

OPP has a medical surveillance program in conjunction with the PSU Occupational Medicine Department in accordance with applicable OSHA regulations.

More specifically, these examinations are performed under the supervision of a licensed physician and are performed prior to employee's exposure to airborne asbestos fibers.

These examinations shall include, but not be limited to:

1. A medical and work history with special emphasis directed to the pulmonary, cardiovascular, and gastrointestinal systems.

2. On initial examination, the standardized questionnaire, and, on annual examination, the abbreviated standardized questionnaire contained in the regulations is completed by employees.

3. The physical examination directed to the pulmonary and gastrointestinal systems, including a chest roentgenogram to be administered at the discretion of the physician, and pulmonary function tests of forced vital capacity (FVC) and forced expiratory volume at one second (FEV1). Interpretation and classification of chest roentgenogram shall be conducted in accordance with these regulations.

4. Other examinations or tests deemed necessary by the examining physician.

The physician shall provide OPP with a written opinion as to whether the employees have any medical conditions that would place them at an increased risk of health impairment from exposure to asbestos; any recommended limitations on the employee or on the use of personal protective equipment such as respirators; a statement that the employee has been informed by the physician of the results of the medical examinations and of any medical conditions that may result from asbestos exposure.

A copy of these written opinions will be maintained by OPP and Occupational Medicine.

Appendix Created: 9/88

Revised 3/92 MJB

Revised 10/97 MJB

Revised 2/04 MJB

Revised 1/16/20

**APPENDIX D**

**TRAINING REQUIREMENTS**

OPP Asbestos Workers and Supervisors shall successfully complete a PA Department of Labor and Industry accredited AHERA-based Asbestos Worker or Supervisor training program before conducting any asbestos-related activities. This shall be followed by required annual refresher training.

Environmental Health and Safety (EHS) shall also provide training as needed.

The content of training shall include, but not be limited to:

1. Methods of recognizing asbestos and the health hazards of asbestos exposure.

2. Relationship between asbestos, smoking and lung cancer.

3. Operations which could result in asbestos exposure.

4. Importance of necessary protective controls to minimize exposure including, engineering controls, work practices, respirators, housekeeping procedures, hygiene facilities, protective clothing, decontamination procedures, emergency procedures, and waste disposal procedures.

5. Purpose, proper use, and limitations of respirators.

6. Medical surveillance program.

7. OSHA / EPA "competent person" training, and EPA NESHAPS requirements.

8. Penn State specific policies and procedures.

Appendix Created: 9/88

Revised 3/92 MJB

Revised 10/97 MJB

Revised 2/04 MJB

Revised 1/16/20

### APPENDIX E

**THE PENNSYLVANIA STATE UNIVERSITY**

**DEPARTMENT OF ENVIRONMENTAL HEALTH AND SAFETY**

**ASBESTOS CONTAINING MATERIAL REMOVAL**

**PERFORMANCE SPECIFICATION**

Included as Appendix F of the Asbestos Management Program

Appendix Created: 10/97 MJB

Revised 8/99 MJB

Revised 2/04 MJB

Revised 1/16/20

Revised 10/21

**APPENDIX F**

**ASBESTOS GASKET / VALVE PACKING REMOVAL**

**Gasket / Valve Packing Identification:**

* Pipe flange gaskets are assumed to be ACM, unless they are clearly green in color.
* Duct flange gaskets are assumed ACM, unless they are clearly black rubber.
* Valve packings are assumed ACM, unless they are clearly plastic or rubber.

**OPP Process:**

1. Work Order created to mobilize OPP Techs and OPP 212 Asbestos.
2. OPP 212 removes ACM pipe / equipment insulations as needed before demolition or repairs, as per Asbestos SOP’s.
   1. Damaged ACM nearby must be removed, repaired and / or cleaned up to prevent further deterioration from vibration, as per Asbestos SOP’s.
3. Clean metal around flange seams and seal with duct tape.  OPP 212 not needed for this task but they can do if already on-site.
4. **Pipes / equipment to be demolished:**
   1. OPP Techs set-up scaffold, secure pipes / equipment, etc. as per SOP for plumbing / mechanical system operations.
   2. OPP Techs cut pipes / equipment on either side of flanges and lower to floor as per their SOP’s, with OPP 212 also on-site.
   3. OPP 212 packages and disposes of valves and flanges as friable ACM waste.
5. **Pipes / equipment to remain for reuse:**
   1. OPP Techs set-up scaffold, secure pipes / equipment, etc. as per SOP for plumbing / mechanical system operations.
   2. **Flange separation:** OPP 212 dismantles flanges; 2-man operation using wet methods and HEPA vacuums.  One backs out bolts while other holds HEPA vacuum nozzle under or next to bolt. If bolts cannot be removed manually use the process described in steps 3 and 4 or contact EHS.
   3. **OSHA Regulated Area:** Other OPP Techs or contractors must leave immediate area during this operation.  If space is large enough an OSHA Regulated Area (barricades) can be erected and both trades can work in room. Barricades or distance must be at least 20 feet from work area, or room must be vacated by others.

1. **Flange gasket / packing removal (OPP 212):**
   1. Intact / loose gaskets / packing to be wetted, removed and disposed as friable ACM waste.
   2. Gaskets stuck to flanges, or packing stuck in valves, to be removed via Negative Pressure Glovebags as per OPP Asbestos SOP’s.

**Asbestos Contractor Process:**

1. Asbestos contractor to conduct all operations associated with insulation and gasket removal as noted above.
   1. OPP Planner / Estimators, Project Managers / Coordinators **must** coordinate with EHS if pipes are to be demolished (during design / planning so scope can be included in RFQ / bid documents).    This may require multiple shut-downs and mobilizations.  This may also affect Prevailing Wage determination, as demolition-related abatement work is Labor rate and insulation removal only is Asbestos rate.

Created: 1/16/20

**APPENDIX G**

**OPP SMALL SCALE FLOORING AND MASTIC REMOVAL SOP**

This appendix applies to OPP Renovations Services flooring Asbestos Workers and OPP 212 Asbestos Crew who can utilize these procedures as needed.

**Scope**

* Only small quantities of flooring can be handled in this manner (20 SF or less). This procedure is for minor, single event, floor maintenance or removal only, not for removing flooring in entire rooms or areas.
* If larger areas need to be addressed, notify your supervisor so arrangements can be made for standard asbestos work.
* Large areas of flooring also cannot be broken down or addressed as multiple smaller areas that fit into the 20 SF category.
* When addressing damaged areas, not planned for removal, intact tiles are to be re-glued back into place whenever possible. There are no size or area limits to re-gluing tiles.

**Asbestos Floor Tile and Mastic Identification**

* All floor tile (9"x9" and 12"x12"), linoleums and mastics are assumed to contain asbestos until proven otherwise by laboratory analysis.
* Contact EHS for sampling or to check past records.  **DO NOT** sample materials yourself.

**Set-Up and Working Hours**

Enclosed Rooms, Corridors or Stairs (not Publicly Accessible)

* Seal doors and restrict non-asbestos worker access.
* “Danger Asbestos” signs must be posted inside entrances and must be immediately visible after entering from the outside.
* Glass doors must be covered with black plastic.
* Work can be conducted any time.

Publicly Accessible Lobbies, Corridors or Stairs

* Erect OSHA / EPA defined “Regulated Area” using black plastic curtains.
* “Danger Asbestos” signs must be posted inside entrances and must be immediately visible after entering from the outside.
* Non-asbestos workers must be kept at least 20 feet away.
* **Corridors and / or stairs cannot be blocked during normal occupancy or class use hours, unless there are adequate alternate emergency egress pathways.  Contact Steve Triebold (EHS Fire Protection Engineer) for review and approval.**

Renovation Areas (not Publicly Accessible)

* Erect OSHA / EPA defined "Regulated Areas" using at a minimum construction tape and "Danger Asbestos" signs.
* Non-asbestos workers must be kept at least 20 feet away.

**Personal Protective Equipment**

**Respirators**

* Tight-fitting respirators (1/2 face or PAPR), with HEPA filters, are required whenever floor tile or mastic is adhered to the point that it must be removed with hand tools.
* Picking up and re-gluing intact tiles does not require a respirator.

**Safety Glasses** - ANSI Z-87 approved safety glasses are required during all work.  These are not required if a PAPR is used.

**Protective Clothing** - Tyvek, or equivalent, disposable cover-alls are required for all work, except for regluing intact tiles.

**Gloves** - Required as needed to prevent burns, cuts, abrasions or exposure to chemical strippers.

**Work Practices**

* PA Asbestos Worker or Supervisor licenses are required on-site at all times.
* **OPP Hot Work Program must be reviewed before each task requiring heat guns.**
* Floor tile (adhered) - Must be removed intact with heat guns and putty knives.
* Floor tile (loose and/or broken) - Loose pieces are to be simply picked up.
* Debris and Dust - Must be HEPA vacuumed and area must be wet wiped.
* **Dry sweeping or wiping of dust or debris is prohibited.**
* Mastic must be removed via chemical strippers.
* **Dry scraping of mastic is prohibited.**
* **Mastic / adhesives left after this process are not to be exposed to foot traffic. Either cover with new flooring or floor paint immediately.**

**Worker and Equipment Decontamination**

* Employees must wash hands and face immediately after completing task or before breaks.
* Equipment, respirators, cover-alls, HEPA vacuum, etc. must be wet wiped after each task and before removal from work area.

**Waste Handling and Disposal**

* Floor Tile and Mastic Waste - Packaging Disposal is via same process as existing OPP Asbestos SOP.
* Coveralls - Can be disposed in standard trash.  The procedures in this SOP will prevent contamination.

**Notifications**

EHS must be notified before any OPP asbestos work.  This is an EPA requirement.  Failure to do so can result in disciplinary action.

Created: 1/19/09 MJB / Steve Triebold (EHS) / Don Fronk (OPP) / OPP Renovation Services

Revised 1/16/20

**APPENDIX H**

**OPP STEAM SYSTEM INSULATION REMOVAL AND INSTALLATION SOP**

Although not specifically created for OPP Asbestos Workers, this SOP is included as a reference.

***SAFETY PROCEDURE***

1. **PURPOSE**

This procedure is to ensure that precautions are taken to prevent injuries and exposures during removal, installation and repair of all types of insulations on steam systems. This policy will set forth the official practices required for this work.

1. **SCOPE**

This procedure applies to all work on “hot systems” and all types of insulation (i.e. asbestos, fiberglass, etc.).

1. **PROCEDURES** 
   1. **Insulation Removal**

Prior to any work, affected insulations must be inspected to determine if they are Asbestos Containing Materials (ACM).

* 1. Any thermal system insulations (i.e. pipe, duct, heat exchanger, valve, fitting, etc.) that are not obviously fiberglass or foam rubber are assumed to contain asbestos. This includes cementitious, or "mudded", pipe fitting insulations.
  2. If insulations normally assumed to contain asbestos need to be confirmed for cost savings, EHS must be notified to make this determination. In some cases, they will need to sample the insulation. DO NOT sample suspected or assumed ACM yourself.
  3. For insulations that are assumed or confirmed to be ACM, EHS will dictate specific procedures for removal or repairs, based on the customer’s specific needs.

If you work for OPP, refer to the OPP Asbestos Worker and Supervisor Standard Operating Procedure.

If you are an asbestos contractor, refer to the PSU Asbestos Removal Performance Specification.

* 1. Prior to removing any insulation from any “hot system” the surface temperature of the

piping shall be cooled to 150 degrees Fahrenheit or less. This will prevent injuries and contact burns to employees who are working on the system. The cooling time may vary depending on the status of the steam line.

NOTE: Use of glove bags for asbestos removal may require cooling to temperatures lower than 150 degrees Fahrenheit.

* 1. **Insulation Installation**

Prior to installing any insulation on a “hot system” the surface temperature of the piping shall be cooled to 150 degrees Fahrenheit or less. This will prevent injuries and contact burns to employees who are working on the system. The cooling time may vary depending on the status of the steam line.

* 1. **Insulation Repair**

Prior to repairing any insulation where contact to “hot system” components cannot be avoided, the surface temperature of the hot components shall be cooled to 150 degrees Fahrenheit or less. This will prevent injuries and contact burns to employees who are working on the system. The cooling time may vary depending on the status of the steam line.

1. **EXCEPTIONS**
   1. **Hot Caps**

Due to the nature of installing hot caps, it is not always necessary to cool the system to 150 degrees Fahrenheit. Hot caps may be installed without going through the cooling process in some cases.

Created: June 28, 2006 – Donald Fronk, OPP Safety Coordinator

**APPENDIX I**

**ASBESTOS HANDLING WORKING HOURS AND PROJECT SCHEDULING**

Due to specific regulatory requirements, emergency egress and occupant safety issues, asbestos-related work often requires special scheduling and planning considerations.

**Working Hours**

Enclosed Rooms, Corridors or Stairs (not Publicly Accessible)

* Gross removal where decontamination units or other equipment must be placed in publicly accessible areas (e.g. corridors) must be conducted during non-occupied hours (nights and / or weekends).
* Emergency exceptions must be evaluated and approved by EHS on a case-by-case basis.
* Set-up and other asbestos handling work can be conducted any time (e.g. glovebag removal, repairs, etc.).

Publicly Accessible Lobbies, Corridors or Stairs

* All asbestos handling, except small-scale flooring and mastic removal, in these areas must be conducted during non-occupied hours (nights and / or weekends).
* Emergency exceptions must be evaluated and approved by EHS on a case-by-case basis.
* Corridors and / or stairs cannot be blocked during normal occupancy or class use hours, unless there are adequate alternate emergency egress pathways.  Contact Steve Triebold (EHS Fire Protection Engineer) for review and approval.

Open Renovation or Construction Areas (not Publicly Accessible)

* Gross removal where decontamination units or other equipment must be placed in publicly accessible areas (e.g corridors) must be conducted during non-occupied hours (nights and / or weekends).
* Emergency exceptions must be evaluated and approved by EHS on a case-by-case basis.
* Set-up and other asbestos handling work can be conducted any time (e.g. glovebag removal, wrap-and-cut operations, repairs, etc.).

**Gross Removal and Air Monitoring Scheduling**

Full-containment projects require 3rd party consultant air monitoring and inspections.

EHS must be contacted at least 10 days in advance of project start to confirm consultant availability, send RFQ’s if needed and to confirm that OPP has generated Purchase Orders or Release Numbers for payment.

Created: 2/5/09 MJB

**APPENDIX J**

**REQUEST FOR ASBESTOS SOP VARIANCE**

Any variance from these SOP’s must approved by EHS and OPP Safety before work can commence.

Requests for variance must be submitted in writing to EHS, OPP Renovations Manager or OPP Asbestos Supervisor. This process is similar to Requests for Information (RFI’s) in contractor projects.

Variances are anticipated to be applied to very unique situations and emergencies only (e.g. fire or flood where work may need to be conducted immediately in an occupied area or unusual asbestos containing material handling needs).

Variances shall be one time approvals for the particular project in question. Similar variances requests must be submitted and approved for each future occurrence.

Created: 2/5/09 MJB

Revised 1/16/20

**APPENDIX K**

**ACCIDENTAL CONTACT WITH KNOWN OR SUSPECT ASBESTOS**

OPP employees may accidentally contact visible known, or suspect, Asbestos-Containing Materials (ACM) due to maintenance or renovations, pipe leaks, roof leaks, etc.

**In order to prevent possible contact with ACM, it is extremely important to pre-plan, walk the site, etc. before work begins. Any damaged known, or suspect, ACM must be reported, repaired, removed or cleaned-up before work begins.**

The following steps are to be taken when visible known, or suspect, ACM comes into contact with you, your clothing, personal items, equipment, etc. (e.g. pipe insulation or plaster debris falls, a pipe bursts, etc.).

**Immediate Action**

1. Stop what you are doing and notify EHS immediately (814-865-6391).
   1. If outside normal hours, contact the Work Control Center (WCC) at (814-865-4731) and Police Services (814-863-1111).
   2. Service Desk is to call EHS immediately. Police call EHS as per their SOP.
2. Do not brush off clothes, remove or otherwise disturb the material.
3. Leave the room or space but do not leave the immediate area unless it is unsafe to stay (e.g. uncontrolled electricity, fire, smoke). Tools and equipment must be left in the area.
   1. Notify EHS, WCC or Police where to find you.

**Follow-Up**

1. EHS will evaluate each incident on a case-by-case basis. Arrangements for sampling, emergency clean-up, etc. will be made as needed.
2. Contact your immediate supervisor or Manager who will also contact the OPP Safety Office.
   1. Employees who have been contaminated should inform their supervisor and request to file a First Report of Injury (FROI).  This along with any sample results are kept on file for 30 years after employment.
3. Further direction will be given by EHS based on the conditions of the potential exposure.

Created: 1/16/20

**APPENDIX L**

**ASBESTOS SUPERVISOR INSPECTION CHECKLIST**

**Building:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Room / Location:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Project / WO Number:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Project / WO Description:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Date(s):** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Supervisor:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Workers:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Type of Inspection:** \_\_\_\_\_ Preparation (Pre-Work) \_\_\_\_\_ During Work

\_\_\_\_\_ Final \_\_\_\_\_ Other **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. **Personal Protective Equipment:**

* Respirators clean and all valves functioning properly? Yes / No
* Tyvek coveralls worn properly (hoods over respirator straps)? **No street clothes under coveralls.** Yes / No
* Gloves, safety glasses, etc. used as needed? Yes / No
* Gear bags clean? Yes / No

1. **Preparation (Pre-Work) / During Work:**

* Moveable furniture, fixtures, etc. cleaned and removed from area (e.g. desks, cabinets, books, computers, radiator covers, etc.) Yes / No
* Critical seals over fixed items, vents, floor drains, windows, light switches, etc.? Yes / No
* Plastic sheeting in place? Yes / No
  + - * Entire walls (as needed)? Yes / No / NA
      * 6-foot up walls (flooring removal)? Yes / No
* Entrance sealed with over-lapping plastic sheets as per SOP’s? Yes / No
* HEPA / Negative Air units in place? Yes / No / NA

How many? \_\_\_\_\_ (enough for proper negative pressure)? Yes / No

Size of unit(s), circle one: (2000 CFM) (700 CFM)

Unit setting if variable, circle one: (high) (med.) (low)

Negative Air Pressure >0.02" H2O? Yes / No / NA

Exhaust duct vented outside building? Yes / No, **Exhaust not allowed inside building without EHS review and approval.**

* Work area entrance posted with DANGER Asbestos signs? Yes / No, **Signs are not to be posted in public areas.**

1. **During Work:**

* All surfaces free of ACM and other loose debris?
* **NO** **VISIBLE DUST or debris on any surfaces**? Yes / No
* ACM removed from all pipe threads, bolts, cracks / crevices / rough surfaces, etc. Yes / No
* ACM / surfaces wetted during removal or cleaning? Yes / No
* Glovebag(s) installed, sealed properly with HEPA vacuum creating negative pressure? Yes / No
* HEPA vacuum(s) working properly? Yes / No

1. **Final:**

* All surfaces encapsulated (e.g. pipes)? Yes / No
* Cleaning inspection using flashlights held horizontally to surfaces:
* **All Work - NO** **VISIBLE DUST or debris on any surfaces**? Yes / No
* Glovebag removal / clean-up - ACM removed from all pipe threads, bolts, cracks / crevices / rough surfaces, etc. Yes / No
* Flooring - Mastic completely removed (can’t be scraped with knives, razors, etc.)? Yes / No
* Flooring – Covebase adhesives completely removed? Yes / No
* HEPA units still operating until tear down done? Yes / No

1. **Waste Handling**

* Waste properly packaged and labeled? Yes / No
* Waste properly wetted? Yes / No
* Waste records completed with OPP FIS building names, work locations, etc. (e.g. Old Main, Corridor Q201, 20 SF floor tile)? Yes / No
* Transport vehicles clean (vans, box trucks)? Yes / No
* Transport vehicles and dumpsters properly labeled during loading and unloading ACM waste? Yes / No
* Dumpsters properly covered? Yes / No
* Dumpsters leaking? Yes / No
* Waste bags or containers leaking? Yes / No

**Notes:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Created: 1/16/20