

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
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DISTRICT REGULATION
NO. 385-1-16

20 July 2001

SAFETY AND OCCUPATIONAL HEALTH
ASBESTOS OPERATIONS AND MAINTENANCE PROGRAM REGULATION

1. Purpose. The purpose of an Asbestos Operations and Maintenance (O&M) Program is to minimize potential exposure to team members and occupants of facilities that contain asbestos containing material (ACM). The asbestos O&M program establishes work practices and procedures to properly manage asbestos containing material (ACM) in place.
2. Applicability. This regulation applies to all Savannah District team members.
3. References. See Appendix A.
4. Discussion. Asbestos has been widely used in industry as a heat resistant and bindery material. It is usually encountered in Thermal Steam Insulating (TSI) enclosures, as a binder in roofing and floor tile mastics, in roofing material and floor tiles, in plaster coverings, in heat-proof personal protective equipment, in piping and siding, in gasket material and in brakes/clutches. Asbestos presents a chronic health hazard with debilitating diseases occurring 15-30 years after exposure. Asbestos exposures, work procedures, training and maintenance are jointly regulated by the Occupational Safety and Health Administration (OSHA), and the Environmental Protection Agency (EPA).
5. Policy. This regulation shall provide guidance on managing surfacing material, thermal system insulation, miscellaneous ACM; and assign duties of the asbestos O&M program coordinator and maintenance staff. The O&M projects will be divided into three categories; unlikely to involve direct contact with ACM, accidental disturbance, and small scale short duration maintenance or repair activity which may intentionally disturb ACM. A comprehensive asbestos Operations and Maintenance (O&M) program shall be implemented for all team members with potential occupational exposure to asbestos. The program shall comply with the references in Appendix A and shall include the following program elements:

a. **Exposure Determination:** Initial exposure determination will be made, both Excursion Limit and Permissible Exposure Limit, for each type of asbestos work, or if asbestos is suspected of being involved. This exposure determination will be made by personal sampling or use of objective exposure data of similar operations that conclusively demonstrate exposure levels. Additional monitoring may be required.

b. **Identification of Asbestos Containing Material:** Suspected asbestos containing material shall be sampled by bulk methods and analyzed by a certified lab. Results of identification will be kept by the facility/project asbestos O&M Coordinator who will furnish SO a copy.

c. **Condition of Existing Asbestos Containing Material:** A record of condition will be kept and annually updated by the asbestos O&M Coordinator/District Industrial Hygienist (DIH). This record shall be kept in written form and may be supplemented by visual methods such as digital photography. Records of maintenance will be kept by the facility O&M Coordinator and the condition file will be updated.

d. **O&M Operations:** O&M operations are those operations in which asbestos is managed in place. This may include repair of plaster or cement ducting, glovebag removal of ACM to repair a leaking pipe, or removal of sections of floor tile to repair substrate. Wholesale abatement of ACM is not within the scope of O&M operations, although a small scale, short duration repair operation may, in fact, abate an entire section of ACM. Further definitions are as follows:

(1) Work unlikely to involve direct contact with ACM.

(2) Accidental disturbance.

(3) Small scale short duration maintenance or repair activity which may intentionally disturb ACM.

e. Personnel conducting O&M operations shall be qualified with current certifications meeting the EPA Model Accreditation Plan (MAP).

6. Glossary. A glossary of the terms used in this regulation is provided in Appendix B.

7. Responsibilities.

a. The District Safety & Occupational Health Office shall:

- (1) Manage the District's asbestos O&M program.
- (2) Identify locations of ACM in facilities.
- (3) Review all asbestos abatement plans for the District and contractors.
- (4) Reviews facilities specific asbestos O&M plans and provides technical guidance and assistance to field offices on asbestos abatement, inspection, and testing.
- (5) Provides Level 1 training assistance to field offices.
- (6) Provide monitoring services to determine employee exposure when notified of an asbestos work task.

b. Operation Division/Project Managers shall:

- (1) Select a team member to serve as Asbestos O&M Coordinator for each facility.
- (2) Ensure that team members involved in asbestos work receive the proper asbestos training, have the appropriate Personal Protective Equipment (PPE), and medical clearances to work with asbestos.
- (3) Ensure that all exposed asbestos containing material located at their facility has been identified and documented.
- (4) Notify the District Safety Office that an asbestos work task is planned and arrange air for monitoring services.

c. Asbestos O&M Program Coordinator: The coordinator must be properly qualified through training (EPA MAP Supervisor/Coordinator), experience, and serves as the point of contact in all asbestos activities. Coordinator should have the authority to oversee and direct maintenance, custodial staff, and contractors with regard to all small scale asbestos related activities. The coordinator's duties also include the following:

- (1) Record exact location of ACM in their facility on building documents (plans, specifications, or drawings).

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(2) Inform project team members, maintenance, and custodial workers on the location of the ACM, and caution them on disturbing or damaging the ACM.

(3) Inspect, in conjunction with the District Industrial Hygienist, all ACM material for damage or deterioration at least once a year and record findings. Update the ACM inventory if new ACM is discovered.

(4) Post asbestos warning signs on all accessible asbestos materials in facilities.

(5) Require maintenance staff to wear proper PPE when the potential for disturbing ACM may cause fiber exposure.

(6) With assistance from District Industrial Hygienist, train maintenance/custodial staff on Level 1 awareness asbestos training.

(7) Prepare abatement contract plan following current construction guide specifications. Forward plan to Safety Office for review.

(8) Coordinate with state agencies for disposal and appropriate work notifications.

d. Maintenance Staff will:

(1) Report to O&M coordinator any job that involves working near or around asbestos.

(2) Follow safety guidelines in the asbestos work plan when working near or cleaning up ACM.

(3) Report to facility O&M coordinator any discovery of ACM during maintenance and repairs not already identified.

(4) Wear appropriate PPE (respirators equipped with P100 filters, disposable coveralls) when working with ACM.

(5) Maintain asbestos worker qualifications (EPA MAP asbestos worker).

8. Work Practices Controls.

a. If the potential for disturbing plaster material that contains asbestos is present while performing maintenance activities, these work practices should be used to minimize the release of asbestos fibers during the maintenance activity.

(1) Planned work shall have an asbestos work plan submitted to the Safety Office for review. With assistance from the Safety Office, collect personal air samples.

(2) Remove all objects in close proximity to ACM or cover remaining objects with 6 mil plastic sheeting.

(3) Wet ACM surface material using a spray bottle.

(4) HEPA vacuum fallen ACM debris. HEPA vacuum areas near disturbance after work has been completed. Wet mop floors.

(5) PPE should include air purifying respirators with HEPA filtered cartridges (P100, magenta in color) and disposable coveralls (i.e. Tyvek).

(6) Workers must have EPA MAP asbestos worker training.

b. For accidental disturbance of ACM or ACM debris found:

(1) Spray with water near area where debris is located and place debris in plastic bag labeled asbestos.

(2) HEPA vacuum area near location of ACM debris.

(3) Report to O&M Coordinator.

c. Work unlikely to involve disturbing ACM.

(1) Inspect area prior to start of job.

(2) Avoid pounding walls, it may release pieces of damaged ACM. Also, strong vibrations or power air hoses may release fibers.

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(3) Inspect area after job is completed for ACM debris.

(4) Suspected materials should be HEPA vacuumed or placed in 6 mil bag labeled asbestos.

9. Work Practices Controls for Thermal System Insulation.

a. Likely to be disturbed.

(1) Planned work shall have an asbestos work plan submitted to the Safety Office for review. With assistance from the Safety Office, collect personal air samples.

(2) Follow safety procedures in the asbestos work plan. Place 6 mil plastic below pipe fitting or tank.

(3) Wet ACM before disturbing and HEPA vacuum debris. Dispose of ACM waste in labeled 6 mil plastic bag and dispose of accordingly to state and Federal regulations.

(4) Wear air purifying respirator equipped with P100 filters and disposable coveralls.

(5) Maintenance staff performing asbestos abatement techniques must have completed EPA MAP asbestos worker training. Note that asbestos abatement techniques are used when performing O&M work.

b. Unlikely to involve direct contact with ACM.

(1) Be aware of tools and equipment that may puncture insulation.

(2) If disturbed, inform Coordinator amount of ACM debris.

c. Small Scale Short Duration (SSSD):

(1) Submit asbestos work plan to the Safety Office for approval. Arrange for collection of personal air samples.

(2) Maintenance staff performing asbestos abatement techniques must have completed EPA MAP asbestos worker training. Note that asbestos abatement techniques are used when performing SSSD work.

(3) Utilize glove bag removal procedures when applicable.

(4) Isolate work area.

(5) Wear air purifying respirator equipped with P100 filters and disposable coveralls.

(6) Place waste in 6 mil plastic bag labeled asbestos, and dispose of accordingly to state and Federal regulations.

10. Miscellaneous ACM. (which includes floor tile, ceiling tile transite board, ACM cement, and asphalt roofing material.)

a. Accidental Disturbance. Debris must be reported to O&M coordinator and cleaned up using HEPA vacuum or wet mopped. ACM debris collected shall be placed in 6 mil plastic bags labeled asbestos, and disposed of according to state regulations.

b. Likely to be disturbed.

(1) Submit asbestos work plan to the Safety Office for approval. Arrange for collection of personal air samples.

(2) Remove ACM that may be disturbed prior to maintenance/repair or construction work if feasible, follow SSSD procedures. Wet ACM prior to working around it.

(3) Report amount of ACM debris created from maintenance/repair work.

(4) HEPA vacuum or collect ACM in 6 mil plastic waste bag labeled asbestos and dispose of according to state regulations.

(5) Maintenance staff performing asbestos abatement techniques must have completed EPA MAP asbestos worker training. Note that asbestos abatement techniques are used when performing O&M work.

c. Small Scale Short Duration (SSSD):

(1) Submit asbestos work plan to the Safety Office prior to ACM removal. Arrange for collection of personal air samples.

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(2) Remove furnishings from immediate area. Isolate area with plastic barriers, except for roofing material.

(3) Keep ACM wet.

(4) Wear air purifying respirators equipped with P100 filters and disposable coveralls.

(5) Remove transit board in sections, by first removing screws and then placing panels in 6 mil plastic. Do not drop panels to floor.

(6) HEPA vacuum or collect ACM in 6 mil plastic waste bag labeled asbestos and dispose of according to state regulations.

(7) Maintenance staff performing asbestos abatement techniques must have completed EPA MAP asbestos worker training. Note that asbestos abatement techniques are used when performing SSSD work.

11. Training.

a. Level 1 Awareness (Same as OSHA Class IV operations) for maintenance and/or custodial workers involved in cleaning and simple maintenance task where ACM may be accidentally disturbed. Examples: Fixing a light fixture covered with ACM debris, background information on asbestos, health effects, worker protection, location of ACM in buildings, recognition of ACM damaged or deteriorated, the O&M program for their facility, proper response to fiber release episodes. No annual refresher training is required, but must be accomplished for new hires.

b. Level 2 Special O&M Training (Same as OSHA Class II non-critical barrier, has no EPA MAP equivalent, included in the EPA MAP worker training) for general maintenance and asbestos material repair tasks. Examples: Repair or removal of a small section of asbestos pipe insulation, or installation of electrical conducts in an air plenum containing ACM. The training shall include Level 1 plus Federal and State asbestos regulations, asbestos work practices, proper handling of ACM waste and disposal, respirator use, care, and fit testing, glovebag techniques hands-on training, HEPA vacuum use, and worker decontamination.

c. Level 3 Abatement Worker Training (Same as EPA MAP worker, OSHA Class I and II critical barrier operations) workers who may remove asbestos materials. Examples: Encapsulating friable ACM, removing ACM floor tiles, glovebag removal, or dismantling transite board, constructing enclosures and decontamination units. Asbestos worker training course must meet and be an approved EPA class meeting the Model Accreditation Plan (MAP) and must have an annual refresher.

d. Supervisor/Coordinator (Same as EPA MAP and OSHA competent person training). A Supervisor/Coordinator may supervise a small scale, short duration asbestos work task or a maintenance activity that disturbs ACM. The supervisor/coordinator develops the asbestos work plan, and conducts the activities described in the responsibilities section of this regulation. There must be an annual refresher.

12. Medical Surveillance. All team members must receive medical clearance to wear respirators from a licensed health care provider before donning a respirator. Also, respirator training and fit testing must have occurred and be documented in the team member's safety training files. For documented employee exposure that exceeds the 8-Hour Permissible Exposure Limit-Time Weighted Average, entry into the Asbestos Medical Surveillance program will be conducted consistent with guidelines of the OSHA standard.

2 Appendices
Appendix A - References
Appendix B - Glossary

/s/
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APPENDIX A

REFERENCES

- a. Environmental Protection Agency (EPA), “Managing Asbestos in Place; A Building Owners Guide to Operations and Maintenance Programs for Asbestos Containing Materials”, Jul 90, EPA 20T-2003.
- b. 29 CFR 1910.1001, Occupational Safety and Health Administration (OSHA), General Industry Asbestos Standard, 1 Jul 00.
- c. 29 CFR 1926.1101, Occupational Safety and Health Administration (OSHA), Construction Asbestos Standard, 1 Jul 00.
- d. 40 CFR 763, Environmental Protection Agency (EPA), Asbestos Regulations, 1 Jul 00.

APPENDIX B

GLOSSARY

1. Asbestos Containing Materials (ACM): Contents of materials identified through laboratory analysis to contain greater than 1 percent asbestos.
2. Surfacing Materials: ACM sprayed or trowled onto surfaces, i.e., decorative plaster on ceilings, acoustical ACM tiles on decking, or fire proofing materials sprayed on structural members.
3. Thermal System Insulation: ACM applies to pipes, boilers, tanks, and ducts to prevent heat loss or gain, or condensation.
4. Miscellaneous ACM: Ceiling and floor tiles, ACM cement panels, siding, and roofing materials.
5. Small Scale Short Duration (SSSD): Maintenance or repair jobs that involve the removal of small quantities of asbestos on pipes, beams, plaster ceilings, replacement of asbestos containing gasket or valve, installation of electrical conducts throughout or proximate to asbestos containing materials.
6. High Efficiency Particulate Air (HEPA): HEPA filter that meets an efficiency of 99.97 percent using 0.3 micron DOP particles. Referred to as P100 type filters when selecting for respiratory protection.
7. Permissible Exposure Limit (PEL): No employee will be exposed to an airborne concentration in excess of 0.1 fiber per cubic centimeter of air (f/cc), expressed as an 8-hour time weighted average (TWA).
8. Excursion Limit (EL): No employee will be exposed to an airborne concentration in excess of 1.0 f/cc expressed as a 30-minute sample. EL samples will be integrated into the 8-hour TWA calculation.

(NOTE: Listed by topic, not alphabetically)

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9. Initial Monitoring: Initial monitoring (air sampling) of each category of asbestos work shall be conducted by a competent person to determine airborne concentrations of fibers. Initial monitoring will also determine if personal protective equipment is appropriate, or if additional monitoring is required. Objective data that demonstrates that asbestos cannot be released under the expected conditions of work will alternatively suffice as an initial determination.

10. Competent Person (air monitoring only, not to be confused with an EPA MAP abatement supervisor, although included in supervisors course): Personnel having current documentation of specific training and education to perform sampling and analysis of fibers (EPA MAP Supervisors Course/NIOSH 582 Course).

11. Class 1 Asbestos Work: An OSHA term to define activities involving removal of TSI and surfacing ACM.

12. Class 2 Asbestos Work: An OSHA term to define activities involving ACM wallboard, floor tile, roofing, siding, other transite material and mastics.

13. Class 3 Asbestos Work: An OSHA term to define activities of an operations and maintenance nature that disturb ACM.

14. Class 4 Asbestos Work: An OSHA term to define activities of normal maintenance and custodial work that may contact ACM but not disturb and release fibers.

15. Asbestos Work Plan: A plan developed by the asbestos O&M coordinator describing the repair work procedures, PPE requirements, disposal requirements and air monitoring requirements. The plan is submitted to the Safety Office for review.

16. Asbestos Abatement Plan: A plan developed by a project designer describing the abatement work procedures, PPE requirements, disposal requirements and air monitoring requirements. The plan is submitted to the Safety Office for review. This plan is not to be confused with operations and maintenance activities plan as described above. This work process (abatement) is beyond the scope of this regulation and O&M procedures.

17. Asbestos Worker: An EPA MAP term to describe the personnel and work task as follows. An accredited worker may conduct a small scale, short duration asbestos work task or may conduct a maintenance activity that disturbs ACM. A worker must complete a 4 day training course and an annual refresher.

18. Supervisor/Coordinator: An EPA MAP term to describe the personnel and work task as follows. An accredited supervisor/coordinator may supervise a small scale, short duration asbestos work task or a maintenance activity that disturbs ACM. The supervisor/coordinator develops the asbestos work plan, and conducts the activities described in the responsibilities section of this regulation. The supervisor/coordinator must complete a 5 day training course and an annual refresher.

19. Inspector: An EPA MAP term to describe the personnel and work task as follows. An inspector may inspect an educational facility or a public/commercial building for ACM. The inspector must complete a 3 day training course and ½ day annual refresher.

20. Management Planner: An EPA MAP term to describe the personnel and work task as follows. A management planner prepares O&M management plans for educational facilities and must complete a 3 day inspector course and a 2 day management planner course. There is a ½ day annual refresher for an educational facility management planner. There is no training requirement for persons performing the manager role in public/commercial buildings.

21. Project Designer: An EPA MAP term to describe the personnel and work task as follows. A project designer designs abatement activities in educational and public/commercial buildings. The project designer shall complete a 3 day training course and an 8 hour annual refresher.