



ENVIRONMENTAL RESTORATION

U.S. Army Environmental Center

ARMY INSTALLATION ASBESTOS MANAGEMENT

The Issue

Asbestos was commonly used in construction materials prior to 1985. A potential health threat is created when asbestos-containing material (ACM) is damaged/disturbed and asbestos fibers are released into the air. Army installations, including Base Realignment and Closure (BRAC) facilities, can avoid potential health issues by following Department of the Army (DA) guidance, locating and assessing the condition of ACM, and developing/implementing an asbestos management program.

A fibrous mineral used extensively in construction materials, asbestos is commonly found in:

- Surface material sprayed or troweled on to deaden sound or insulate
- Insulation for pipes, ducts, boilers and tanks
- Miscellaneous forms such as ceiling and floor tiles, roofing materials, mastic for glue, concrete, acoustical plaster, fireproofing textiles, and wallboard.

Background

Asbestos fibers may be released from ACM if it is damaged or located in an area where it can be disturbed. Materials containing friable asbestos easily release asbestos particles into the environment. Materials such as floor tiles also contain asbestos. However, if the tile is in good condition, the asbestos is tightly bound to the tile material and is not readily released into the environment. This material is non-friable. Friable asbestos is generally a potential threat to human health and frequently warrants abatement either by removal or encapsulation.

The concern about asbestos arises from evidence that links various respiratory diseases with exposure to high levels of airborne asbestos fibers. Airborne asbestos is known to cause asbestosis, mesothelioma (cancer of the lining around the lung) and lung cancer, as well as possible problems with digestive organs. The potential for disease appears to be related to the physical and chemical characteristics of asbestos fibers as well as the concentration of fibers in the air.

The DA has adopted the following asbestos exposure standards:

1. The acceptable non-occupational exposure (i.e., homes, recreation facilities, etc.) for airborne asbestos is 0.01 f/cm³.
2. The occupational exposure for airborne asbestos in offices, construction, manufacturing, or demolition activities is as follows:
 - 0.1 f/cm³ for an 8-hour time-weighted average.
 - 1 f/cm³ 30-minute excursion limit.
3. The clearance level for allowing unrestricted reoccupancy after asbestos abatement is 0.01 f/cm³.
4. The Safe Drinking Water Act regulates asbestos in drinking water. The maximum contaminant level (MCL) for asbestos under this Act is 7 million fibers/liter longer than 10 microns.

Requirements Under BRAC:

Specific BRAC guidance/policy for asbestos is found in references 2(c), 2(d) and 2(e). Reference 2(e) states the following: "Army policy with regard to asbestos-containing material (ACM) is to manage ACM in a manner protective of human health and the environment, and to comply with all applicable Federal, state and local laws and regulations governing ACM hazards. Therefore, unless it is determined by competent authority that the ACM in the property does pose a threat to human health at least six months prior to time of transfer, all property containing ACM will be conveyed, leased, or otherwise disposed of as is through the Base Realignment and Closure process. ACM will not be abated solely for the purposes of removal."

A. Prior to property disposal, all available information on the existence, extent, and condition of ACM shall be incorporated into the Environmental Baseline Surveys (EBS) or other appropriate document to be provided to the transferee and shall include:

- Reasonably available information on the type, location and condition of ACM in any facility
- Results of testing for ACM
- A description of in-place management control measures conducted

- Any available information on costs or time necessary to remove all or any portion of the remaining ACM. Special studies or tests to obtain this information are not required.
- Results of a site-specific update of the asbestos surveys performed to revalidate the condition of ACM.

B. ACM hazards will be abated prior to property disposal only if the material is of a type and condition not in compliance with applicable laws, regulations and standards or if it poses a threat to human health at the time of property transfer. Abatement will not be required when:

- The facilities are scheduled for demolition by the transferee and the transfer document prohibits occupation of the buildings prior to demolition
- The transferee assumes responsibility for the management of any ACM in accordance with applicable laws.

Active Installations:

AR 200-1, Chapter 8 (ref. 2(a)) establishes the requirement for all active installations to develop and implement an asbestos management program. The objective of the program is to prevent exposure to asbestos hazards on Army properties. Components of the program include:

- Establishment of a multidisciplinary asbestos management team
- Development and implementation of an asbestos management plan
- Conduct both periodic asbestos surveys and exposure assessments of areas containing asbestos
- Abatement of asbestos health hazards
- Training of appropriate staff on all aspects of asbestos management.

Disposition of property from active Army installations essentially mirrors the BRAC policy specified in para. 6 with the specific guidance found in ref. 2(b).

TB 420-70-8 Installation Asbestos Management Program (ref. 2(c)) contains specific details for establishing an asbestos management program. As of March 2000, that document has been provided to the installations for review/use. Once installations evaluate the usability of the document, it will be finalized.

Conclusions/Recommendations:

Asbestos in Army facilities is managed to minimize potential adverse health effects. The key to handling asbestos is knowing its location and condition and developing a management plan. The overall goal of the Army asbestos program is to post, secure and control access to known asbestos locations. Details for developing asbestos surveys and management plans are in the references provided, specifically reference 2(c). All related policy and guidance provided in the reference section should be reviewed prior to the start of asbestos programs at Army installations.

Helpful Hints:

Installations need to confirm that data in existing asbestos surveys is accurate and can be verified. If data cannot be verified, additional sampling may be required. Periodic surveys (approximately once every 1 to 2 years) need to be conducted to verify the condition of ACM in all buildings.

No more than six months prior to property transfer, the asbestos walk-through surveys must be conducted in all installation buildings under BRAC to verify current condition of asbestos in each building.

More Information

Army Asbestos Experts/Internet Sites:

The following Army personnel have extensive experience related to the conduct of asbestos surveys, asbestos removal/demolition, and/or BRAC guidance/policy on asbestos:

Ms. Laura Loiero (BRAC Policy)

U.S. Army Environmental Center • Environmental Restoration Division • (410) 436-6824

Mr. William Houser

U.S. Army Environmental Center • Environmental Technology Division • (410) 436-6842

Mr. Michael Worsham

U.S. Army Environmental Center • Environmental Compliance Division • (410) 436-7076

Ms. Jennifer Houser (Health Effects)

U.S. Center for Health Promotion and Preventive Medicine (USACHPPM) • (410) 436-3118

Mr. Bryan Nix (Active Installation Policy)

U.S. Army Corps of Engineers (CEDPW) • (703) 428-6176

Internet Web sites related to asbestos include:

• www.osha.gov • www.osha-slc.gov/SLTC/asbestos/index.html

1 Definitions:

- A. Permissible Exposure Limit (PELS) — (1) An airborne concentration of asbestos of 0.1 fiber per cubic centimeter (f/cm³) of air calculated as an eight-hour time-weighted average and (2) an airborne concentration of 1 f/cm³ as averaged over a sampling period of 30 minutes.
- B. Asbestos-containing Material (ACM) — Any material containing more than 1% asbestos as determined by polarized light microscopy. Note that individual states may have a different definition of ACM (California defines ACM at 0.1% asbestos).
- C. Asbestos Abatement — Procedures used to control fiber release from asbestos-containing material in a building or to remove it entirely. These may involve removal, encapsulation, repair enclosure, encasement, and operation and maintenance programs.
- D. Demolition — The wrecking or removal of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.
- E. Friable Asbestos — Any material that contains greater than 1% asbestos as determined by polarized light microscopy that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. This may also include previously non-friable material, which becomes broken or damaged by mechanical force.
- F. Regulated Asbestos-Containing Material (RACM) — RACM is defined as (1) friable asbestos; (2) Category I non-friable ACM that has become friable; (3) Category I non-friable ACM that has been or will be subject to grinding, sanding, etc.; (4) Category II non-friable ACM that may become friable during removal or demolition. Practically speaking, all ACM potentially distributed during renovation or demolition is RACM.
- G. Waste Disposal — ACM is a hazardous material, and not a hazardous waste in most states. However, ACM can be disposed of only in an approved asbestos disposal site. Asbestos material contained in a building structure does not constitute storage or disposal.

2 Army References:

- A. AR 200-1. Environmental Protection Enhancement. Chapter 8. 21 February 1997.
- B. AR 420-70. Buildings and Structures. Chapter 3, Section II. 10 October 1997 (Facilities Engineering Policy).
- C. Public Works Technical Bulletin 420-70-8 Installation Asbestos Management Program. March 1998.
- D. Memorandum, Assistant Secretary of the Army (Environment, Safety and Occupational Health). 31 January 1990. Subject: Base Realignment and Closure Environmental Restoration Strategy.
- E. DoD Policy on Asbestos at Base Realignment and Closure Properties. 31 October 1994.
- F. TB MED 513. Occupational and Environmental Health Guideline for the Evaluation and Control of Asbestos Exposure. 15 December 1986.
- G. The U.S. Army Environmental Center (USAEC) Guidelines for Asbestos Hazard Assessment in U.S. Army Facilities.
- H. U.S. Army Corps of Engineers Guide Specifications CEGS-02080 (Asbestos Abatement Specifications).

3 Regulatory References:

- A. Asbestos Hazard Emergency Response Act (AHERA) (Public Law 99-519, 1986).
- B. 40 CFR 61, Subpart M, Section 61.140-61.157. (National Emission Standards for Asbestos including building demolition).
- C. Title 29, CFR Section 1910.1001. Asbestos — Occupational Health and Safety Standards (Regulations for General Industry).
- D. Title 29, CFR 1926.1101. Asbestos — Occupational Health and Safety Standards (Regulations for Construction).
- E. Guidance for Controlling Asbestos-Containing Materials in Buildings. U.S. Environmental Protection Agency (EPA) Purple Book, EPA 560/5-85-024. June 1985.
- F. Asbestos/NESHAP Regulated Asbestos-Containing Building Materials Guidance, U.S. Environmental Protection Agency, EPA 340/1-90-018. 1990.
- G. Asbestos Waste Management Guidance EPA/530-SW85-007. May 1985.